December 2022 version

Environmental Assessment Worksheet

This most recent Environmental Assessment Worksheet (EAW) form and guidance documents are available at the Environmental Quality Board's website at**:** https://www.eqb.state.mn.us/ The EAW form provides information about a project that may have the potential for significant environmental effects. Guidance documents provide additional detail and links to resources for completing the EAW form.

Cumulative potential effects can either be addressed under each applicable EAW Item or can beaddressed collectively under EAW Item 21.

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 anEIS.

1. **Project title:** Cedar Lake Manoomin Restoration

2. **Proposer:** MN Department of Natural Resources

Contact person:	Ben Nicklay
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3. **RGU:** MN Department of Natural Resources

Contact person:	Kathy Metzker
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4. **Reason for EAW Preparation:** (check one)

Required:	Discretionary:
EIS Scoping	Citizen petition
Ξ Mandatory EAW	RGU discretion
	Proposer initiated

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

MN Rule 4410.4300 Subp. 27A. Public waters, public waters wetlands, and wetlands.

5. **Project Location:**

County:	Carlton
City/Township:	Perch Lake Township
PLS Location (¼, ¼, Section, Township, Range):	Section 10, Township 49N, Range 18W
Watershed (81 major watershed scale):	St. Louis River
GPS Coordinates:	46.737750515368994, -92.6069527141861
Tax Parcel Number:	92-010-1660, 92-010-1710, 92-010-1700, 92-010-1600, 92-010-1610, 92-010-1580

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

- County map showing the general location of the project;
  Figure 1 – Project Location Map

- U.S. Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries (photocopyacceptable); and
  Figure 2 – Topographic (USGS) Map

- Site plans showing all significant project and natural features. Pre-construction site plan andpost-construction site plan.
  Figure 3a and 3b –Pre-construction condition for Simian Creek and Cedar Lake
  Figure 4a and 4b –Post-construction condition for Simian Creek and Cedar Lake

- List of data sources, models, and other resources (from the Item-by-Item Guidance: *Climate Adaptation and Resilience* or other) used for information about current Minnesota climate trends and how climate change is anticipated to affect the general location of the project duringthe life of the project (as detailed below in item 7. Climate Adaptation and Resilience).

  Other Figures:
  Figure 5 – Public Waters Inventory Map
  Figure 6 – Minnesota County Biological Survey
  Figure 7 – National Wetland Inventory Map
  Figure 8 – Land Cover Map
  Figure 9 – Potential Debris Removal Sections Map

  Appendices:
  Appendix A – Fond du Lac Band of Lake Superior Chippewa, Minnesota Cedar Lake Wild Rice Restoration Study
  Appendix B – Cedar Lake Design Memo_20251201
  Appendix C – Restoration Plan
  Appendix D – Project Plan sheets
  Appendix E – Technical Memorandum - Native Plant Community Mapping
  Appendix F – Natural Heritage Information System (NHIS)

  Data Sources/Other Resources:
  - MnGeo – Geospatial Information for Minnesota
  - MN DNR's MN Climate Trends Map
  - Minnesota Climate Projections (Coupled Model Intercomparison Project phase 5 (CMIP5))
  - MN DNR Natural Heritage Information System Concurrence
  - University of Minnesota Lake Browser
  - What's in My Neighborhood
  - Fond du Lac Band Zoning Maps

6. **Project Description:**

Glossary

Amphibious ATV:
A small utility vehicle capable of operating on land and in shallow water. Typically used for access or transport in wet or soft ground conditions.

Amphibious Excavator:
A tracked excavation machine equipped with floats or wide tracks that allow operation in wetlands or shallow water. It is used where conventional equipment cannot operate without excessive soil disturbance.

Debris:
Loose material such as vegetation, wood, soil, or construction remnants generated during project activities. If unmanaged, debris may obstruct flow paths or contribute to environmental impacts.

Ditch:
An artificial channel constructed to convey surface water or drain land. Ditches are typically linear and designed for drainage rather than natural stream function.

Low Ground Pressure (LGP):
A characteristic of equipment designed to reduce pressure on the ground surface by distributing weight over a larger contact area. LGP equipment is commonly used to minimize soil disturbance in saturated or sensitive areas.

Monitoring:
The act of observing, measuring, or documenting site conditions or project effects over time. Monitoring is conducted to evaluate compliance or environmental response.

Monitoring Plan:
A written document that specifies monitoring objectives, methods, locations, and frequency. A monitoring plan provides a structured approach for evaluating environmental effects.

Rutting:
Depressions formed in the soil surface due to repeated vehicle or equipment traffic. Rutting may contribute to erosion or sediment movement.

Sediment:
Soil or mineral particles that are detached and transported by water, wind, or mechanical disturbance. Excess sediment can adversely affect water quality and aquatic resources.

Sidecasting:
The placement of excavated material adjacent to the area of excavation. Sidecast material may be regraded, stabilized, or removed to prevent erosion or sediment transport.

Stream Channel:
A defined natural feature that conveys flowing surface water, including the channel bed and banks. Stream channels may be perennial, intermittent, or ephemeral.

Thinly Spreading:
The placement of excavated material in a shallow, uniform layer across the ground surface. This practice is used to limit mounding and reduce erosion potential. Completed by pushing material parallel to soil surface with the excavator bucket.

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

The Minnesota Land Trust, in partnership with the Fond du Lac Band of Lake Superior Ojibwe and the Minnesota Department of Natural Resources, proposes to re-establish water levels favorable for Manoomin (wild rice) productivity at Cedar Lake, a designated wild rice lake on the Fond du Lac Reservation. The project would restore historic lake levels by removing downstream beaver dams and associated materials. It also includes installation of a restricted-access boat ramp to enable long-term lake management.

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 equipmentor industrial processes, 3) significant demolition, removal or remodeling of existing structures, and 4) timing and duration of construction activities

The Cedar Lake Restoration Project includes activities to restore conditions favorable for manoomin (wild rice) at Cedar Lake within the Fond du Lac Reservation in Carlton County, Minnesota (Figure 1). Cedar Lake is a shallow, 59-acre lake designated by the Fond du Lac Band of Lake Superior Chippewa as a wild rice lake. Fond du Lac (FdL) Resource Management determined that excessive water depth has been causing manoomin decline over the past two decades. U.S. Army Corps of Engineers (USACE) modeling indicated beaver dams, associated channel encroachment on the outflow from Cedar Lake, and encroachment of Simian Creek are restricting outflow rates, causing increased water levels in Cedar Lake.

The project area includes two distinct areas of activity: One is located along and within Simian Creek (Figures 3a and 4a), extending from the Cedar Lake outlet one mile to Twin Lakes Road in Carlton County, Minnesota; the other is comprised of an unimproved lake access (Figures 3b and 4b) located on private land along the east shoreline of Cedar Lake on Cedar Lake Road. Once started, construction is estimated to take six to eight weeks, with all project construction expected to be completed before March 31, 2027.

The proposed project would first re-establish natural water depths in Cedar Lake by clearing out excess organic debris. The debris is associated with encroachment of vegetation, trees that have tipped into the stream channel, and beaver dams (active and remnant dams) along and within Simian Creek. Accumulated sediment located at the active and remnant beaver dams (Figure 9) may be excavated to achieve the necessary lake depths. (Appendix B, pages 9-10). The contractor would be using an amphibious excavator to complete the tasks for this project. Amphibious excavators are backhoes mounted on tracked pontoons which have low ground pressure (due to wide tracks) making it possible to drive across wetland habitat with zero to minimal rutting of wetland soils. The pontoons allow the excavator to float in water when that type of construction is needed. These machines are regularly used while working in aquatic and wetland habitats throughout the United States. The amphibious excavator would be hauled to site on a trailer, unloaded, and driven across the wetland to the Simian Creek project area. All equipment would be cleaned following the Aquatic Invasive Species (AIS) Best Management Practices (BMPs) specified in MN DNR's Operational Order 113 prior to arriving on-site.

Below is an example photograph of the equipment. The photograph is representative of an amphibious excavator and how it functions. This project is not excavating a straight ditch with large pile of debris on side (as shown in the photo); however, this type of equipment is needed to access the site.

Image 1. Amphibious Excavator.

The contractor would selectively remove debris in locations where the channel is blocked or significantly narrowed to the point that it does not meet the natural stream design of 6-12 feet wide and 1-2 feet deep (Figure 9). The channel dimensions were determined using the *Stream Classification System*, based on survey data provided by the MN DNR and regional curves for eastern Minnesota and the north shore, along with the "E-channel Calculator" tool available from the "Watercourse Morphology Dataset" website. Cedar Lake's target water surface elevation (WSE) is 1301' above mean sea level (AMSL), a reduction of three feet from the current condition (1304' to 1301' AMSL). The current Ordinary High Water Level (OHWL) was determined by the MN DNR in March 2026 with a vertical datum expressed as North American Vertical Datum 1988, commonly abbreviated NAVD88. Because of Cedar Lake's unique bathymetry, (surveyed by FdL Natural Resources and provided in the 2017 USACE report) this WSE change increases wild rice habitat from 3.5 acres to 38.4 acres while only reducing the open water area of the lake by five acres.

After historic water levels and channel dimensions are re-established, the FdL Resource Management will complete regular site inspections and clear beaver dams as needed to maintain the stream channel.

Second, a permanent, restricted-access boat ramp would be constructed to enable FdL to conduct vegetation management and seeding to re-establish manoomin beds and to maintain the outflow channel over time. The boat launch will not be open to the public. All disturbed areas and newly exposed shoreline would be seeded with locally sourced native plants having cultural importance to FdL, to facilitate recovery.

Project figures include: United States Geological Survey (USGS) topographic map on Figure 2; pre-construction conditions on Figure 3; and post construction conditions on Figure 4. Cedar Lake and Simian Creek are identified on the Minnesota Department of Natural Resources Public Waters Inventory (PWI). The Minnesota County Biological Survey (MBS) identifies the project area as part of

the Cedar Lake Peatland, which is assigned a biodiversity significance ranking of Moderate. Figure 5 shows the existing PWI water bodies, and Figure 6 shows the MBS boundaries of Cedar Lake Peatland.

Construction is anticipated to begin in 2026 and be completed by February 28, 2027. The construction components of the project are as follows:

- Simian Creek Channel Restoration
  - Fall/Winter 2026
    - Creek restoration/removal of debris and accumulated sediment
    - Removal of beaver dams
- Cedar Lake Boat Landing
  - Fall/Winter 2026
    - Construction of restricted use boat landing.

Detailed Site Description

Cedar Lake

Cedar Lake is an approximately 59 acre, shallow lake located within the Big Lake (040102011501) watershed (Figure 5). The watershed originates at Big Lake and connects to Cedar Lake through a series of intervening wetland complexes. Simian Creek serves as the outlet for Cedar Lake and extends more than eight miles downstream to its confluence with the St. Louis River, according to online mapping tools.

Publicly available data on Cedar Lake water quality and depth are limited. However, discussions with FdL staff indicate that more than 75 percent of the lake has water depths greater than three feet, with maximum depths of less than ten feet. Public water quality data from the University of Minnesota Lake Browser[1] indicates that seasonal mean water clarity ranged from approximately 2.7 to 3.0 meters between 1985 and 2000 and declined to approximately 1.1 to 1.3 meters, according to monitoring data collected since 2017. A MN DNR Wildlife lake survey conducted in 1957 determined a maximum depth of 13.5 feet, with 84% of the lake measuring 1.0-4.0 feet deep. The survey also documented "heavy growths of wild rice and other emergent vegetation" covering 70% of the open water area.

There are six property owners within the shoreland zone (within 1,000 feet of the lake), and only one existing residence is located within this zone.

Simian Creek

The stretch of Simian Creek in the project area is approximately one mile in length. Within this reach, there are approximately three beaver dams, of which only one appears to be actively maintained.

This stretch was previously studied by the USACE to evaluate the effects of stream restoration or modification on the lake levels in Cedar Lake. That 2017 study (Appendix A) included creek cross-section surveys and hydrologic and hydraulic modeling using the Hydrologic Engineering Center's River Analysis

[1] Minnesota LakeBrowser

System (HEC-RAS) to evaluate floodplain conditions and water levels. The purpose of the USACE analysis was to improve the knowledge and management of the Simian Creek watershed. Model results were used to understand the impacts that hydrologic and hydraulic changes may have on wild rice growth and propagation due to water level fluctuations. To achieve lake levels conducive to manoomin growth (0.5-3 feet), the USACE recommended removal of beaver dams and restoration of channel capacity in Simian Creek.

Proposed Project Goal and Activities

The 2017 USACE report and supplemental data collected in 2025 were used to develop an updated Cedar Lake Design Memorandum (Appendix B). The memorandum and supporting technical studies form the basis of the project and define the project objectives.

The intended outcome of the project is to lower the existing surface water elevation of Cedar Lake from approximately 1304.0 feet to 1301.0 feet (NAVD88). Lowering the lake to the proposed elevation is expected to increase suitable manoomin production area to approximately 35 acres, while reducing the open water surface area by approximately 5 acres. Changes in lake water levels would be monitored through deployment of pressure transducer data loggers. Table 1 summarizes the anticipated effects of the proposed surface water elevation change. Areas transitioning from open water along the shoreline are expected to retain wetland characteristics; therefore, the project is not expected to result in a loss of aquatic resources.

Table 1: Summary of Lake Level Lowering Metrics

Lake elevation	Estimated Open Water Area of Lake [Acres]	Area of Wild Rice Habitat [Acres]	Reduction of Open Water Area [Acres]	Increase in Wild Rice Habitat [Acres]
1304.0	59.6	3.5	0	0
1303.5	58.1	4.6	1.5	1.1
1303.0	57.6	6.3	2.0	2.8
1302.5	56.8	10.4	2.8	6.9
1302.0	56.3	18.5	3.3	15.0
1301.5	55.7	29.7	3.9	26.2
1301.0	54.6	38.4	5.0	34.9

Project Site Preparation

Site preparation for the proposed boat launch and shoreline restoration area would include clearing of speckled alder (*Alnus incana*) and willow species (*Salix* spp.) within an area totaling approximately 1.6 acres adjacent to the future boat launch location (Appendix C and Figure 4b). Removal of mature trees is not anticipated. Trees will only be removed if determined to be hazardous to the proposed construction or site preparation activities.

Simian Creek Restoration Activities

Restoration activities within Simian Creek (Figure 3b and Appendix D) would consist of breaching beaver dams and clearing the channel of accumulated materials that obstruct

flow to restore the channel capacity necessary to lower water levels in Cedar Lake to historic conditions that support the growth of manoomin. Material to be removed includes accumulated sediment, organic and woody debris, and vegetation mats which are all typical of beaver influenced streams.

Channel restoration would remove accumulated debris to restore the creek to an estimated cross-section of approximately 10 feet in surface width, a 4-foot channel bottom width, and a depth of approximately 2 feet, consistent with existing channel characteristics. Excavated materials would be sidecast and spread thinly within the adjacent wetland; this is the practice of placing excavated material adjacent to the excavator and pushing the material with the excavator bucket parallel to the soil surface and "spreading" the material thinly to avoid inhibiting growth of vegetation through the excavated material. Materials would not be placed in piles and would be distributed to avoid conversion of wetland to upland. Plant communities adjacent to the stream channel where material would be sidecast are shallow marsh and shrub-carr. No placement of sidecast material is proposed in habitats that are currently classified as peatland, based on vegetation and hydrology.

Restoration activities would be conducted using a tracked excavator designed to float and produce low ground pressure to minimize rutting. The excavator would remain within the project area during restoration activities, and would be stored overnight in upland areas. Equipment operators will access the machine daily using low ground pressure tracked equipment (e.g., marsh master or Argo type vehicles).

Image 2. Marsh Master

Image 3. Argo type vehicle

Restoration activities, including beaver dam breaching, are anticipated to occur over approximately 15 working days.

Beaver dams would be breached to match the channel width and would be removed perpendicular to the creek alignment to discourage repair by beavers. Three beaver dams have been identified through aerial imagery review and site visits, with one dam (Figure 4a) identified as active. The central, active dam is expected to be the primary control on current water levels, in combination with additional channel obstructions from natural debris.

For the central beaver dam, perpendicular removal would extend approximately 150 – 200 feet in both directions from the creek alignment. The dam material would be

broadcast thinly to avoid any conversion to non-wetland areas. Drawdown associated with breaching of the central dam is expected to occur over approximately three to four days following the initial breach. During this period, the contractor and engineering representatives will observe how site conditions respond at Cedar Lake and along Simian Creek. This includes downstream monitoring for any potential flooding at Twin Lakes Road. Hydraulic modeling indicates that breaching the dam is not expected to result in overtopping of Twin Lakes Road. The monitoring includes observations of the water level staff gauge near Twin Lakes Road and tracking the rise/fall of surface water elevation during the breaching. The breaching is planned to occur through two – three stages based on professional judgement and staff gauge measurement. A couple of breaches would occur outside the main channel, forcing the ponded water to flow through the taller wetland vegetation. This process would slow the "surge" of water vs breaching the dam in the main channel. The County would be contacted regarding the breach and if needed "Flooded Road" signs would be deployed, although this is not expected.

Debris generated from beaver dam removal would be scattered and spread thinly to avoid the formation of piles. The two nonactive beaver dams would be breached in a similar manner; however, perpendicular removal would be limited to approximately 75 – 100 feet from the creek alignment.

Cedar Lake Boat Landing

Construction of a boat launch (Appendix D) as part of the project is required to support future FdL management activities on Cedar Lake, including aquatic vegetation management necessary for manoomin restoration. Post project, FdL will implement their standard manoomin restoration practices.

FdL uses an AVC-101 Aquatic Vegetation Shredder to manage wild rice lakes. The AVC101 requires approximately five feet of water depth for unloading from its trailer. To meet this operational requirement, excavation of material would be required at the bottom of the boat ramp. The ramp would be constructed with precast concrete planks with breakaway connectors. Each plank will measure approximately 12 feet in length, one foot in width, and five inches in thickness. The ramp subbase will include approximately 12 inches of coarse aggregate filter material over six inches of crushed rock (Appendix D). The ramp would be constructed at an approximate slope of 15 percent, with the lake bottom graded away from the base of the ramp at an approximate 1 vertical to 10 horizontal slope. The ramp would be approximately 40 feet in length and would include a 20-foot-long level area at the base. A total of 400 cubic yards of material would be removed. Current plans for disposal include utilizing the higher organic material on-site to enhance the adjacent hayfields, with the remaining sediment potentially hauled to an existing gravel pit located within FdL. Material would be stored in the upland fields of an adjacent private landowner. Some of the material would ultimately be spread on the landowner's fields and the remaining material would be hauled to an existing gravel pit. While stored in the field, erosion control BMPs would be used to reduce sediment-laden runoff, including installation of silt fencing and/or biologs (double perimeter), and the stockpile would be temporarily seeded with a cover crop.

The proposed boat launch would be located along the east shoreline of Cedar Lake on private property. Portions of the property are encumbered by an existing Reinvest in Minnesota (RIM) easement. An agreement with the property owner is in the process of being finalized, and adjustments to the existing RIM management plan would be completed prior to construction.

Vegetation Management
Vegetation in the vicinity of the boat ramp would be managed to remove undesirable species including reed canary grass (*Phalaris arundinacea*) and replanted/seeded with appropriate locally sourced native and/or culturally important species. The planned control method for the reed canary grass is to use appropriate herbicide (aquatic approved as needed), and will follow the FdL recommendations based on their approved methodology.

Future Monitoring and Adaptive Management
Following completion of the project, the FdL would assume responsibility for ongoing creek maintenance, vegetation management, and beaver management activities within this portion of Simian Creek.

c. Project magnitude:

Description	Number
Construction Acreage	15.1
Acreage affected by project	65.63
Linear project length	5,800 feet
Number and type of residential units	0
Residential building area (in square feet)	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): Boat landing	5,700 square feet
Structure height(s)	0

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

Purpose
The purpose of the Cedar Lake Manoomin Restoration Project is to restore and sustain water levels in Cedar Lake that support the growth of manoomin, a culturally significant and ecologically important resource for the FdL Band. The project proposes to address altered hydrologic conditions by removing channel obstructions, primarily beaver dams and accumulated debris, along Simian Creek to re-establish historic lake elevations. Restoring water levels conducive to wild rice growth is intended to improve habitat conditions, support longterm sustainability of manoomin beds, and enable long-term stewardship of Cedar Lake by the Fond du Lac Band.

Need
Over the past 20 to 30 years, water levels in Cedar Lake have become higher than desired for successful manoomin growth, resulting in reduced habitat suitability and limiting the

ability of wild rice to establish and persist. Hydrologic evaluations indicate that obstructions within Simian Creek, including beaver dams and accumulated debris, are a primary factor contributing to elevated lake levels.

Historically, Cedar Lake served as an important gathering place where FdL members taught younger generations the skills and techniques of harvesting manoomin. Prolonged elevated water levels have eliminated opportunities for harvesting and for passing on traditional ecological knowledge associated with wild rice stewardship. Restoration of water levels is needed to improve wild rice habitat conditions, support the continuation of culturally significant practices, and sustain the ecological and cultural functions of Cedar Lake over the long term.

Beneficiaries

The beneficiaries of the project include the FdL Band, who rely on manoomin for cultural, subsistence, and personal reasons. Fish and wildlife species are also expected to benefit from improved habitat conditions and the availability of aquatic food resources associated with restored hydrology.

e. Are future stages of this development including development on any other property planned orlikely to happen? Yes Ξ No
If yes, briefly describe future stages, relationship to present project, timeline and plans forenvironmental review. N/A

f. Is this project a subsequent stage of an earlier project? Yes Ξ No
If yes, briefly describe the past development, timeline and any past environmental review. N/A

7. Climate Adaptation and Resilience:

a. Describe the climate trends in the general location of the project (see guidance: *Climate Adaptation and Resilience*) and how climate change is anticipated to affect that location duringthe life of the project.

In general, climate change projections for Minnesota predict a warmer and wetter climate, with more frequent extreme precipitation events. Projections also predict increasing risk of heat waves and increasing risk of drought, as more precipitation arrives in intermittent large events. According to MN DNR, Minnesota has warmed by 3.0°F between 1895 and 2020, and annual precipitation has increased by an average of 3.4 inches across the state (Climate trends | Minnesota DNR accessed February 10, 2026).

To evaluate climate trends in the general location of the project, this document used the St. Louis River major watershed as the general project location. For this area, average annual temperatures have increased about 0.30°F each decade from 1895-2025. Warming is more pronounced in winter months vs. summer, with average January temperatures increasing by about 0.47°F each decade from 1895-2025. Trends for monthly and annual averages in precipitation for the area are flatter, although averages may miss trends of increased variability. Compared to the state average, the St. Louis River major watershed is warming more quickly (Minnesota Climate Explorer| Minnesota DNR accessed February 10, 2026).

The Minnesota Climate Mapping and Analysis Tool (Minnesota CliMAT (Climate Mapping and Analysis Tool) | UMN Climate Adaptation Partnership, accessed February 10, 2026)

was reviewed to understand climate projections (for the next 50 years, as the default of the tool) for conditions in the St. Louis River major watershed under an intermediate emissions scenario. On average, by mid-century (2040-2059) daily average temperature in the St. Louis River watershed in winter (Dec-Jan-Feb) is projected to increase 6.6°F relative to historical simulations (1995-2014).

The daily average temperature in summer (Jun-Jul-Aug) is projected to increase 4.8°F relative to historical simulations. Although precipitation is projected to remain relatively flat for annual averages, the projection for events of greater than two inches of precipitation in a day is projected to increase more for the St. Louis River major watershed than for the rest of the state.

The proposed project supports climate adaptation and resilience by restoring hydrologic connectivity and re-establishing more responsive water level variability in Cedar Lake and adjacent peatlands along Simian Creek. By reducing the elevated water levels associated with beaver dam impoundments, the project is expected to improve the lake's response to changing precipitation patterns and hydrologic extremes. Restored hydrologic conditions are anticipated to promote greater habitat diversity compared to potential cattail dominated shallow marsh conditions caused by the creek obstructions, thereby enhancing ecological resilience. These improvements are expected to benefit fish by allowing stream species to be able to migrate to deeper waters without being inhibited by beaver dams or vegetation encroachment. Wildlife species would benefit from the long-term sustainability of manoomin.

b. For each Resource Category in the table below: Describe how the project's proposed activitiesand how the project's design will interact with those climate trends. Describe proposed adaptations to address the project effects identified.

Resource Category	**Climate Considerations** (example text provided below is to be replaced with project-specific information)	**Project Information**	**Adaptations**
Project Design	No aspects of project design are anticipated to negatively impact climate considerations.	Climate change risks and vulnerabilities identified include: Increased frequency and intensity of storm events and increased precipitation.	Stream channel restoration would be designed to be suitable for high flow events. Design would consider downstream culvert capacity to prevent flooding.

Resource Category	Climate Considerations (example text provided below is to be replaced with project-specific information)	Project Information	Adaptations
Land Use	Climate trends for the general location predict a warmer, wetter climate with more frequent and higher intensity storm events.	Climate change risks and vulnerabilities identified include: Increased frequency and intensity of storm events, increased precipitation. Increased temperature and dry periods between storm events may lead to increased risk of wildfire.	Land use in the project area is primarily undeveloped natural areas. No land use conversion is proposed. Shrub clearing is restricted to a work area of 1.6 acres for a new boat launch. The proposed project is not anticipated to affect overall climate trends in the location.
Water Resources	Address in item 12	Address in item 12	Address in item 12
Contamination/ Hazardous Materials/Wastes	No impacts on contamination / hazardous materials / wastes are expected. During construction, contractors would protect soil and water resources from contamination and hazardous materials.	Climate change risks and vulnerabilities identified include: Construction equipment will use potentially hazardous materials, such as gasoline or diesel fuels, motor oils, hydraulic fluids, and other lubricants.	Vehicles would be equipped with spill kits for rapid response. Hazardous materials would be stored in containment apparatuses while not in use.

Resource Category	Climate Considerations (example text provided below is to be replaced with project-specific information)	Project Information	Adaptations
Fish, wildlife, plant communities, andsensitive ecological resources (rare features)	Address in item 14.	Address in item 14.	Address in item14.

8. **Cover types:** Estimate the acreage of the site with each of the following cover types before and afterdevelopment:

Cover Types	Before (acres)	After (acres)
Wetlands and shallow lakes (<2 meters deep)	62.16	62.10
Deep lakes (>2 meters deep)	0	0
Wooded/forest	0	0

Rivers/streams	1.87	1.87
Brush/Grassland	1.6	1.6
Cropland	0	0
Livestock rangeland/pastureland	0	0
Lawn/landscaping	0	0
Green infrastructure TOTAL (from table below*)	0	0
Impervious surface	0	0.06
Stormwater Pond (wet sedimentation basin)	0	0
Other (describe)		
TOTAL	65.63	65.63

Green Infrastructure*	**Before (acreage)**	**After (acreage)**
Constructed infiltration systems (infiltration basins/infiltration trenches/ rainwater gardens/bioretention areas without underdrains/swales with impermeable check dams)	0	0
Constructed tree trenches and tree boxes	0	0
Constructed wetlands	0	0
Constructed green roofs	0	0
Constructed permeable pavements	0	0
Other (describe)	0	0
TOTAL*	0	0

Trees	**Percent**	**Number**
Percent tree canopy removed or number of mature trees removed during development	0	0
Number of new trees planted	0	approximately 240

9. 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 prohibiteduntil all appropriate environmental review has been completed. See Minnesota Rules, Chapter 4410.3100.*

Unit of Government	Type of Application	Status
BWSR RIM Easement	Management Plan Updates	To be submitted
Carlton County	Wetland Conservation Act Decision	To be submitted, if needed
Carlton County	Minnesota NO-RISE Certification	Submitted
Fond du Lac Band	Tribal Historic Preservation Office (THPO) Review	Submitted
Fond du Lac Band	Tribal Environmental Policy Ordinance (TEPO) CatEx	Completed
Minnesota Department of Natural Resources (MN DNR)	Public Waters Work Permit	To be submitted
Minnesota Department of Natural Resources (MN DNR)	Aquatic Plant Management Permit	To be submitted
Minnesota Pollution Control Agency	Notification – Disposal of Dredged Material without a Permit (<3,000 CY)	To be submitted
Minnesota Pollution Control Agency (MPCA)	NPDES and SWPPP	To be submitted
Minnesota Pollution Control Agency (MPCA)	Clean Water Act Section 401	To be submitted, if needed
MN DNR	Natural Heritage Information Review	Completed 4/09/2026
U.S. Army Corps of Engineers (USACE)	Clean Water Act Section 404	To be submitted
U.S. Fish and Wildlife Service	Review under Section 7 of the Endangered Species Act	Preliminary review in IPaC online tool complete

Cumulative potential effects may be considered and addressed in response to individual EAW Item Nos.10-20, or the RGU can address all cumulative potential effects in response to EAW Item No.22. If addressing cumulative effect under individual items, make sure to include information requested in EAW Item No. 21.

10. Land use:

a. Describe:
   i. Existing land use of the site as well as areas adjacent to and near the site, including parksand open space, cemeteries, trails, prime or unique farmlands.

      Land use (Figure 8) within and surrounding the project site is primarily undeveloped natural areas and rural residential land use within the Fond du Lac Reservation. Land ownership in the project area is a mix of private and Fond du Lac tribal land. The project area does not contain any prime or unique farmland or public trails.

The main uses of the site are rural residential, hunting, and other low density outdoor recreation activities. Cedar Lake has no public access. Fond du Lac Natural Resources reports that manoomin harvest was an important land use in the past but is not currently.

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

This project is consistent with FdL Band Manoomin restoration concepts.

The private landowner in the project area has portions of the parcel encumbered by a Board of Water and Soil Resources (BWSR) Reinvest in Minnesota (RIM) reserve program easement. The FdL staff is working with the landowner on access agreements and updates to the RIM management plans for the restoration activities and boat landing area.

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

Simian Creek is located within a Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Zone AE, as shown on FIRM Panel 27017C0276D, dated March 13, 2024. Cedar Lake and Simian Creek are subject to shoreland regulations and are located within a designated shoreland management district.

According to FdL maps[2], the project area is identified as "Cultural Preservation." This land use designation is intended to protect sacred sites and natural resources and reflects land management consistent with Anishinaabeg values.

Carlton County is currently in the process of updating its Comprehensive Plan through the year 2050. Under the existing Comprehensive Plan, the project area is located within an A-1 (Agriculture/Forest Management) zoning district. The proposed boat launch area is located within an A-2 (Agriculture/Rural Residential) zoning district.

iv. If any critical facilities (i.e. facilities necessary for public health and safety, those storing hazardous materials, or those with housing occupants who may be insufficiently mobile) are proposed in floodplain areas and other areas identified as at risk for localized flooding,describe the risk potential considering changing precipitation and event intensity.

Simian Creek is located within a FEMA FIRM Zone AE, as shown on FIRM Panel 27017C0276D, dated March 13, 2024. Projects proposing work within the mapped floodway require a floodplain analysis to evaluate potential impacts to flood elevations. A No-Rise Certification has been prepared for the proposed project based on HydroCAD modeling of the proposed conditions, demonstrating no increase in base flood elevations. Additional information, including modeling assumptions and results, is provided in Appendix B.

[2] Fond du Lac Resource Management - FDL Maps

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

No changes to land use or land conversion are proposed for the project area. The FdL staff are coordinating with BWSR RIM staff related to the easement and management plan. Since the restricted use boat landing has the purpose of allowing vegetation management for ecological benefit, the project is expected to be compatible with the RIM easement.

c. Identify measures incorporated into the proposed project to mitigate any potentialincompatibility as discussed in Item 10b above and any risk potential.

No incompatibility is identified.

11. Geology, soils and topography/land forms:

a. Geology - Describe the geology underlying the project area and identify and map any susceptiblegeologic 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.

The Minnesota Geological Survey indicates that depth to bedrock within the project area is approximately 51 to 100 feet. Bedrock underlying the site is mapped as the Thomson Formation, which is part of the Animikie Group. The Thomson Formation consists primarily of slate and metamorphosed graywacke of Paleoproterozoic age, approximately 2,200 to 1,800 million years old.

According to the Minnesota Department of Natural Resources (MN DNR) Karst Inventory, no karst features are present within the project area (accessed February 11, 2026). In addition, no sinkholes, shallow limestone formations, or unconfined or shallow aquifers are located within or adjacent to the site.

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 12.b.ii.

A review of the NRCS Web Soil Survey indicates that the majority of the project area is mapped as Mooselake mucky peat (accessed February 11, 2026). The Mooselake soil series consists of very poorly drained organic soils formed primarily in hemic organic material with woody fiber. These soils occur on glacial moraines and outwash lake plains, have moderately

rapid permeability, and slopes of less than one percent. The taxonomic classification of Mooselake mucky peat is Euic, frigid Typic Haplohemists.

The NRCS estimates the depth of groundwater in Mooselake soils to be at or near the ground surface (0 centimeters).

Soil and lake sediment removal is needed to establish a solid base for the boat launch and to create enough water depth to launch a boat. The total lake area disturbed would be approximately 0.18 acres. Approximately 400 cubic yards of material would be removed from Cedar Lake, and spread in an adjacent upland field and/or hauled to a nearby gravel pit. Approximately 50 cubic yards of washed aggregate bedding and concrete planks would be placed in Cedar Lake for the boat launch.

- 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 12 must be consistent with thegeology, soils and topography/land forms and potential effects described in EAW Item 11.

12. Water resources:

Cedar Lake is located within the exterior boundaries of the Fond du Lac Reservation and is therefore subject to the Fond du Lac Band of Lake Superior Chippewa's federally approved Water Quality Standards[3], for surface water classifications. These standards establish tribal-specific designated uses that reflect cultural, ecological, and subsistence values unique to the Reservation, including wildlife, warm water fisheries, primary contact recreation, cultural wild rice (manoomin) waters, agricultural uses, navigation, and commercial uses. As a result, water quality protections and impact evaluations for Cedar Lake are appropriately based on the Fond du Lac designated uses and criteria, and may supersede Minnesota state surface water classifications for waters within Reservation boundaries.

The designated standards are found in the 12-98 Water Quality Standards 202007 pdf (12-98WaterQualityStandard2020.07.pdf) located at the website in footnote #3 below. A short list of the Cedar Lake designated uses that differ from the State of Minnesota include:

- B: **Wildlife** - all surface waters capable of providing a water supply, vegetative habitat and food, including, but not limited to wild rice and prey for the support and propagation of wildlife located within the Fond du Lac Reservation
- C2: **Aquatic life**: warm water fisheries - a stream, reach, lake, or impoundment where water temperature, habitat and other characteristics are suitable for support and propagation of warm water fish and other aquatic life, or serving as a spawning or nursery area for warm water fish species. Examples of warm water fish species include large mouth bass and bluegills.
- D1: **Recreation:** primary contact recreational - recreational use of a stream, reach, lake or impoundment involving prolonged contact and the risk of ingesting water in quantities sufficient to pose a health hazard. Examples are swimming and water skiing.

[3] Fond du Lac Resource Management - Revised Water Quality Standards

- E1: **Cultural:** wild rice areas - a stream, reach, lake or impoundment, or portion thereof, presently historically or with the potential to be vegetated with wild rice (manoomin)
- F: **Agricultural:** water quality is adequate for uses in irrigation and livestock watering
- G: **Navigation:** water quality is adequate for navigation in and on the water
- H: **Commercial:** water quality is adequate for use(s) as commercial water supply for business processes

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, shoreland classification and floodway/floodplain, trout stream/lake, wildlife lakes, migratory waterfowl feeding/resting lake, and outstanding resource value water. Include the presence of aquatic invasive speciesand the water quality impairments or special designations listed on the current MPCA 303d Impaired Waters List that are within 1 mile of the project. Include MN DNR Public Waters Inventory number(s), if any.

Watersheds
The project is in the St. Louis River major watershed and the Big Lake minor watershed.

Public Waters
Cedar Lake (09003100) is a public water basin and Fond du Lac Band-designated wild rice lake. It has been assigned a shoreland classification of Natural Environment, according to Minesota Rules 6120.3000.

Simian Creek (S-002-015) is a public watercourse that flows through Cedar Lake to the St. Louis River, and has been assigned a shoreland classification of Tributary.

There are no known aquatic invasive species in the project area.

Impaired Waters
Simian Creek flows north to Simian Lake and eventually to the St. Louis River, roughly seven miles from the project area. The St. Louis River (04010201-503) is listed by the MPCA as impaired due to mercury in the water column and fish tissue and is on the Total Maximum Daily Load (TMDL) commitment list.

MPCA Exceptional Aquatic Life Use Waters or Outstanding Resource Value Waters
There are no MPCA Exceptional Aquatic Life Use Waters or Outstanding Resource Value Waters within a 1-mile radius of the project area.
Cedar Lake is identified as a Class 2B waterbody (warm water habitat) by the State of Minnesota (see above for FdL classification). No use classification is available for Simian Creek.

Floodway/Floodplain
The Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL) dataset shows the project area includes flood zone type AE as indicated on FIRM Panel 27017C0276D dated 3/13/2024. The project will be submitting a No-Rise Certification.

Wetlands

Wetland communities are present throughout the project area. The National Wetlands Inventory (NWI) classifies wetlands adjacent to the creek as largely shallow marsh and shrub--carr. In close proximity is forested wetland that the Native Plant Community memo (Appendix E) identifies as a Forested Peatland complex. The proposed project does not include excavation in the forested area. The plan is for excavation of accumulated debris in the stream channel and shallow marsh or shrub-carr area adjacent to the stream channel. Additional information regarding wetland communities adjacent to the creek is provided in the Native Plant Community Memo included as Appendix E.

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.

1) Based on the Minnesota Hydrogeology Atlas, the depth to groundwater ranges from 0-10 feet across the site.
2) Based on the Minnesota Department of Health (MDH) Source Water Protection Web Map reviewed at https://www.health.state.mn.us/communities/environment/water/swp/mapviewer.html (accessed February 13, 2026), the project is not within a MDH wellhead protection area or drinking water supply management area (DWSMA).
3) Based on the MN DNR Minnesota Spring Inventory, there are no known springs or seeps within or adjacent to the project area. Based on the MDH Minnesota Well Index, the nearest known well is a domestic well (714817) located northwest of the project area. Other domestic wells are located within one mile of the project area. No known wells are within the proposed area of activity.

b. Describe effects from project activities on water resources and measures to minimize or mitigatethe 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.

Not applicable.

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 sucha system. If septic systems are part of the project, describe the availability of septage disposal options within the region to handle the ongoing amounts generated as a result of the project. Consider the effects of current Minnesota climate trends and anticipated changes in rainfall frequency, intensity and amount with this discussion.

Not applicable.

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, taking into consideration how current Minnesota climate trends and anticipated climate change in the general location of the project may influence the effects.
Not applicable.

ii. Stormwater - Describe changes in surface hydrology resulting from change of land cover. Describe the routes and receiving water bodies for runoff from the project site (major downstream water bodies as well as the immediate receiving waters). Discuss environmental effects from stormwater discharges on receiving waters post construction including how the project will affect runoff volume, discharge rate and change in pollutants. Consider the effects of current Minnesota climate trends and anticipated changes in rainfall frequency, intensity and amount with this discussion. For projects requiring NPDES/SDS Construction Stormwater permit coverage, state the total number of acres that will be disturbed by the project and describe the stormwater pollution prevention plan (SWPPP), including specific best management practices to address soil erosion and sedimentation during and after project construction. Discuss permanent stormwater management plans, including methods of achieving volume reduction to restore or maintain the natural hydrology of the site using green infrastructure practices or other stormwater management practices. Identify any receiving waters that have construction-related water impairments orare classified as special as defined in the Construction Stormwater permit. Describe additional requirements for special and/or impaired waters.

The project proposes changes in surface hydrology by breaching beaver dam impoundments; however, the surrounding landscape has natural cover that slows and filters overland flow. Modeling of beaver dam breach and stream channel restoration indicates that the action would result in no rise in flood conditions and that existing downstream culverts have adequate capacity to convey runoff without flooding roadways.

Erosion and sediment control measures, such as silt fence and flotation silt curtain would be implemented during construction to minimize surface erosion and sedimentation leaving the site. Both above BMPs would be used at the boat landing and the flotation silt curtain would be installed near the Twin Lakes Drive culvert. All areas of soil disturbance would be stabilized and revegetated following construction.

A maximum of four acres of wetland would be disturbed as part of the proposed manoomin restoration project. An NPDES Construction Stormwater Permit and a Stormwater Pollution Prevention Plan (SWPPP) would be prepared for this portion of the proposed project. Proposed soil disturbance includes excavation and side-casting of material, consisting of encroaching vegetation, woody debris, and beaver dam material, along Simian Creek. Turbidity and sediment would be managed using existing vegetation along the creek corridor as a buffer to limit sediment movement. Excavated material would be thinly spread adjacent to the creek at a thickness of approximately 6 to 12 inches. Placement of this material would not be deep enough to create upland habitat, and the highly organic material is expected to decompose

over time. A flotation curtain would be installed at the downstream end of the project area to capture any sediment transported beyond the immediate work area.

Construction of the proposed restricted use boat landing would result in soil disturbance associated with grading, shoreline work, and installation of access features. A SWPPP would be developed prior to construction for this area. Erosion and sediment control would be implemented through the use of silt fence along upland disturbance areas and a floating turbidity curtain within the adjacent waterbody. These measures would be used to minimize off-site sediment transport during construction and would remain in place until disturbed areas are stabilized.

The area of impervious surface for the boat launch is 3,480 square feet for the gravel driveway and 816 square feet of boat landing planks (primarily under the water surface). The existing turnaround of 800 square feet would be improved with this project and this area is included in the impervious surface calculation. No permanent stormwater treatment is required.

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 MN DNR water appropriation permit is required. Describe anywell abandonment. If connecting to an existing municipal water supply, identify the wells tobe 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. Discuss how the proposed water use is resilient in the event of changes in total precipitation, large precipitation events, drought, increased temperatures, variable surface water flows and elevations, and longer growing seasons. Identify any measures to avoid, minimize, or mitigate environmental effects from the water appropriation. Describe contingency plans should the appropriation volume increase beyond infrastructure capacity or water supply for the project diminish in quantity or quality, such as reuse of water, connections with another water source, or emergency connections.

A MN DNR water appropriation permit is not required as the project would not appropriate surface water and dewatering is not planned. No well abandonment or changes to municipal water sources are proposed.

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, taking into consideration how current Minnesota climate trends and anticipated climate change in the general location of the project may influence the effects. 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.

For beaver dam removal and creek maintenance work, physical effects to wetlands would be minor and no conversion to non-wetland is anticipated. Material removed from Simian Creek would be spread thinly across adjacent shallow marsh or shrub-carr wetlands to minimize disturbance to hydrology and vegetation. The project does not propose or plan any impacts to forested wetlands. No compensatory mitigation is required or proposed for this work. These activities are typically approved under a USACE Nationwide Permit and WCA No Loss or Exemption decision, which would be evaluated in permitting.

The creek restoration activities would directly excavate the vegetation and debris accumulated in the stream. These areas would be excavated and the removed vegetation and sediment spread thinly in the surrounding areas, at a thickness that is not expected to impact the surrounding wetlands.

Changes to water flow through Simian Creek are proposed due to removal of accumulated material and breaching of beaver dams, but are not anticipated to cause a loss of wetland habitat. Removal of impoundments would restore the historic hydrology of Simian Creek and the surrounding wetlands and watershed.

Beaver dam removal and Simian Creek maintenance are intended to lower Cedar Lake surface water elevation. The elevation would be lowered by three feet, which would likely change up to five acres of the shoreline from open water to emergent wetland. This may create opportunities for undesirable shallow marsh vegetation to establish; however, the FdL plans ongoing vegetation maintenance to manage for manoomin. No compensatory mitigation is planned as the areas are expected to remain wetland habitat. This information would be evaluated in permitting.

The boat launch area would have 0.06 acres (2,680 square feet) of wetland impact for construction of the boat launch access. Lowered water levels in Cedar Lake would require excavation for installation of the launch. The boat launch also includes constructing a 20-foot-wide gravel entrance leading to the concrete planks of the boat landing. This may require compensatory mitigation by purchase of wetland credits and will be evaluated in permitting.
Excavation of 0.18 acres (8,080 square feet) within the lake at the end of the boat landing is proposed to bring slopes back to existing bottom.

Since wetland alterations are proposed to be minor, with 0.06 acres of direct wetland loss, overall impacts to the host watershed are negligible. Climate trends may influence surface hydrology in the watershed through periods of drought or due to large, intermittent storm events; however, this is not expected to interact with the project in a way that would exacerbate these effects.

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, taking into consideration how current Minnesota climate trends and anticipated climate change in the general location of the project may influence the effects. 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 thewater features. Discuss how the project will change the number or type of watercraft on any water body, including current and projected watercraft usage.

Simian Creek would be altered through the breaching of beaver dams, clearing logs, branches, and excess vegetation and sediment to restore the channel closer to its historic condition. This removal would lower the water level of Cedar Lake approximately three feet, which is closer to historic water levels. Beaver dam removal may result in short-term increases in turbidity, a potential nutrient pulse, and suspended sediment downstream; however, these effects are generally temporary and localized.

When conducted in a controlled manner, dam removal reduces the risk of uncontrolled dam failure and restores historic flow conditions. The removal of impoundments can restore lotic conditions, improving reaeration and reducing thermal warming associated with ponded water.
With consideration to climate trends, these activities are not anticipated to have any negative effects as they are intended to create suitable, sustainable conditions for manoomin and are not anticipated to negatively affect the system's ability to convey large precipitation events or flood flows.

A boat launch is proposed for Cedar Lake that FdL would use for vegetation management. There is currently no public access boat launch on Cedar Lake and the proposed boat launch would only be utilized for FdL Resource Management staff and their equipment. Access during harvest season would be limited to non-motorized canoe style watercraft. The construction of the boat launch would increase watercraft usage on Cedar Lake, but is intended to be limited to FdL Resource Management staff. BMPs used during construction to minimize turbidity and sedimentation into Cedar Lake would include silt fence and flotation fence.

13. Contamination/Hazardous Materials/Wastes:

a. Pre-project site conditions - Describe existing contamination or potential environmental hazardson 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.

A query of the MPCA's "What's in My Neighborhood" online database (accessed February 2026) identified the following active site:

- Subsurface sewage treatment system (SSTS) (205434) associated with 3-D Construction & Enterprise LLLP located at 501 Brookston Rd, Cloquet, MN 55720, approximately 1.75 miles east of the project area.

Several other inactive sites are located within two miles of the project, but outside the area of potential effect.

The inactive Perch Lake dump (closed in 1972) is located approximately 2.25 miles southwest of the project area.

Based on the distance from known active sites, the proposer does not expect to encounter contaminants during construction. Any contaminants encountered during site work would be handled in accordance with all applicable federal, state, and local protocols, procedures, and policies.

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 solidwaste including source reduction and recycling.

The proposed project is not expected to generate significant quantities of solid waste during construction. Any solid waste generated would be limited and would primarily consist of construction-related materials such as packaging. The contractor would be responsible for collecting and disposing of all construction-generated waste at appropriate off-site disposal facilities.

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 new above or below ground tanks to store petroleum or other materials. Indicate the number, location, size and age of existing tanks on the property that the project will use. Discuss potential environmental effects from accidental spill or release of hazardous materials. Identify measures to avoid, minimize or mitigate adverseeffects from the use/storage of chemicals/hazardous materials including source reduction and recycling. Include development of a spill prevention plan.

Limited quantities of hazardous materials, primarily fuels and lubricants for construction equipment, may be used during the construction phase. These materials would be used during active construction. A Marsh Master or Argo style tracked vehicle would deliver fuel and lubricants to the excavator during work along Simian Creek. The contractor would be required to follow standard Pollution Prevention Management Measures and applicable Best Management Practices.

Potential sources of contamination could include refueling activities or equipment malfunctions, such as hydraulic line failures. Equipment operators would be instructed on proper refueling procedures and response actions in the event of equipment breakdowns.

Refueling would be conducted in a manner to minimize spills, and construction equipment would be regularly inspected and maintained to prevent inadvertent releases of fuels, oils, or other hazardous fluids, with oversight from engineering field staff. The contractor will have spill kits and a contamination prevention plan prepared for review.

The contractor or lead enginer will report any spills to the Fond du Lac Band and the Minnesota Pollution Control Agency (MPCA). All hazardous materials would be removed from the project site upon completion of construction.

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, anddisposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of hazardous waste including source reduction and recycling

No hazardous waste is expected to be generated or stored during construction.

14. Fish, wildlife, plant communities, and sensitive ecological resources (rare features):

a. Describe fish and wildlife resources as well as habitats and vegetation on or in near the site.

The project area is located within the North Shore Highlands (212Lb) ecological subsection of the Northern Superior Uplands (212L) ecological section, within the Laurentian Mixed Forest (212) ecological province. Fish and wildlife resources within and adjacent to the project area are associated primarily with Simian Creek, Cedar Lake, and the surrounding wetland and upland habitats.

Cedar Lake is a shallow lake that provides aquatic habitat for common warmwater fish species and supports aquatic invertebrates adapted to low gradient lake systems. The lake functions as an important foraging and resting area for waterfowl and other migratory birds and provides habitat for amphibians, reptiles, and semiaquatic mammals. Cedar Lake is hydrologically connected to Simian Creek, which allows for movement of aquatic organisms between the lake and downstream wetland and stream habitats.

Aquatic habitat within the project area consists of a shallow, low-gradient stream system connected to Cedar Lake, providing habitat for fish and aquatic invertebrates adapted to slow-moving waters. The creek and lake support common warmwater fish species and serve as movement corridors for aquatic organisms within the watershed. Several beaver dams are present along the length of Simian Creek, contributing to localized ponding and wetland conditions within the stream corridor.

Wetland habitats are present throughout the project area and include shallow marsh and shrub--carr communities adjacent to Simian Creek. These wetland communities provide habitat for amphibians, reptiles, waterfowl, wading birds, and other wildlife species that rely on shallow water, emergent vegetation, and shrub cover for breeding, foraging, and shelter. Wetlands within the project area also contribute to habitat connectivity between Cedar Lake and downstream aquatic systems.

Vegetation within the project area is dominated by native wetland plant communities typical of shallow marsh and shrub--carr systems. These communities include emergent and submergent aquatic vegetation, sedges, grasses, forbs, and woody shrubs adapted to saturated soils and fluctuating water levels. Northern cedar swamp, northern pine conifer swamp, and forested peatland complexes are present nearby. Native vegetation provides food and cover for wildlife species and supports ecological functions such as bank stabilization and nutrient cycling. Away from the immediate lake and stream shorelines, trees and mosses (e.g., *Sphagnum* species) typical of forested peatlands are present. Tamarack (*Larix laricina*) and black spruce (*Picea mariana*) trees appear stressed and water levels are higher than typical for these communities, suggesting a shift in hydrologic conditions in the peatland as well as in Cedar Lake. Additional information regarding native plant communities adjacent to the creek is provided in the Native Plant Community Memo included as Appendix E.

b. Describe rare features such as state-listed (endangered, threatened or special concern) species, native plant communities, Minnesota Biological Survey Sites of Biodiversity Significance, andother sensitive ecological resources on or within close proximity to the site. Provide the license agreement number (LA-2024-062) and/or correspondence number (MCE 2026-00046) from which the data were obtained and attach the Natural Heritage Review letter from the MN DNR. Indicate if any additional habitat or species survey work has been conducted within the site and describe the results.

A review of the Minnesota Department of Natural Resources Natural Heritage Information System (NHIS) was conducted under SEH License Agreement No. **LA2024062** on August 7, 2025, with a formal review letter received April 9, 2026. The NHIS search did not identify any occurrences of state-listed endangered, threatened, or special concern species within one mile of the project area. In addition, no mapped rare natural communities were identified within or adjacent to the project area.

The project area is primarily located within the Cedar Lake Peatlands Minnesota Biological Survey (MBS) Site of Biodiversity Significance (Figure 6). The site has a Moderate biodiversity significance rank. No calcareous fens, MN DNR designated old growth forests, Important Bird Areas, Prairie Conservation Plan areas, Lakes of Biological Significance, U.S. Fish and Wildlife Service Habitat Conservation Plan areas, or MN DNR mapped native plant communities were identified within or adjacent to the project area, based on available MN DNR mapping and database reviews.

The U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) web tool was consulted on February 11, 2026, to identify federally listed species with the potential to occur in the project area. The IPaC species list identified five species that may occur within the broader region, including Canada lynx (*Lynx canadensis* – Threatened), gray wolf (*Canis lupus* – Threatened), northern long-eared bat (*Myotis septentrionalis* – Endangered), monarch butterfly (*Danaus plexippus* – Proposed Threatened), and Suckley's cuckoo bumble bee (*Bombus suckleyi* – Proposed Threatened). No designated critical habitat for these species was identified within the project area.

SEH staff conducted a native plant community field mapping effort in 2025. Results of this survey are included as Attachment E. Native plant communities identified within the project area include:

- Fire Dependent Forest
- Forested Peatland Complex
- Northern Cedar Swamp
- Northern Poor Conifer Swamp
- Wet Meadow/Carr System – Dogwood Shrub Swamp
- Wet Meadow/Carr System – Dogwood Shrub Swamp / Northern Mixed Cattail Marsh

No additional rare species surveys beyond the NHIS review, IPaC consultation, and native plant community field mapping have been conducted within the project area.

c. Discuss how the identified fish, wildlife, plant communities, rare features and ecosystems may be affected by the project including how current Minnesota climate trends and anticipated climate change in the general location of the project may influence the effects. Include a discussion on introduction and spread of invasive species from the project construction and operation. Separatelydiscuss effects to known threatened and endangered species.

Fish and Wildlife

The proposed project would have temporary negative impacts on the fish and wildlife communities of Cedar Lake and Simian Creek. Short-term displacement of fish and wildlife may occur due to increased activity, noise, and in-water work. Sediments disturbed during channel restoration may temporarily impact water quality in the Simian Creek area. Reduction in Cedar Lake water levels by approximately three feet may affect waterfowl, fish, and mammals adapted to the current depths. These species may move to deeper areas of the lake or adjacent waterbodies, depending on how mobile they are. Less mobile organisms including aquatic macroinvertebrates, mussels, and amphibians may shift in their distribution in the lake due to the decrease in water levels.

Habitat improvements related to removal of beaver dams would include improved natural connectivity, increased habitat diversity, and potentially additional spawning/rearing habitat for some warm water species. The restoration to a natural flow has the potential to lead to cooler water leaving this segment of Simian Creek, which could benefit fisheries throughout the system. It would also be expected to promote greater habitat diversity than that found currently.

Lowering of the water level would increase emergent vegetation in the newly created shallow areas. This would provide increased cover and food sources for wildlife. The increase in manoomin would greatly benefit wildlife, especially waterfowl, by providing cover and food resources. According to the “Natural Wild Rice in Minnesota: Report to the Legislature”, 17 Minnesota Species of Greatest Conservation Need (SGCN) utilize wild rice habitat, and could possibly benefit from this project. (source: https://files.dnr.state.mn.us/wildlife/wildrice/natural-wild-rice-in-minnesota.pdf?v=2026.03.13-09.57.07, page 8).

Plants

The project purpose is to restore conditions suitable for manoomin. Lower water levels in Cedar Lake will be more suitable for manoomin, and may shift plant communities from open water floating leaf and submerged aquatic vegetation to emergent and wetland plant communities.

Due to removing impoundments, plant communities along Simian Creek may shift from marsh and shrub-carr communities back to forested peatland. Historical aerial photos show peatland above and below the beaver dams, while more recent observations of the flora identify shallow marsh species establishing in the sphagnum mats as well as dead and stressed trees upstream of the dam, suggesting that the dammed surface water is causing habitat to trend away from peatland to surface water-dominated habitats. It is therefore anticipated that removal of the beaver dams may re-establish forested peatlands. This change would likely occur slowly over the course of years after the project.

Project construction has the potential to introduce or spread invasive species. This would be mitigated by instructing the contractor to clean equipment prior to use on site, and to follow the guidelines set forth in MN DNR's Operational Order 113. A low ground pressure excavator would be staged onsite throughout the project, and accessed using a Marsh Master or Argo style vehicle. This would reduce the number of pieces of equipment traversing the site, and help reduce the potential for spread of invasive species.

No threatened and/or endangered species are known to be present and should not be impacted by the project.

Climate trends in Minnesota, including increased precipitation intensity and greater variability in seasonal water levels, may place additional stress on aquatic and wetland systems over time. The project may have the following effects on climate-related impacts to local plants and wildlife:

- Restoring more natural hydrologic functions in Cedar Lake and Simian Creek may have a beneficial effect. Lowering lake water levels and removing impoundments would improve the system's ability to accommodate fluctuating inflows and water levels associated with increased intensity precipitation events. This may support more stable habitat conditions for fish, wildlife, and wetland plant communities, including manoomin, under above average rain and intense rain events by allowing the system to accommodate excess hydrology under high precipitation conditions. The system would naturally hold back a portion of the waters in the surrounding wetland habitat and release it to the creek.
- A negative effect of restoring the historic flow pattern could occur during drought periods. Water will not be held back by the beaver dams to stabilize wetland hydrology during the drought. Conversely, there may be a beneficial effect of reducing the potential for local flooding if beaver dams are not removed and are subsequently breached in high flows.
- Having harvestable manoomin at Cedar Lake would help sustain the FdL Band and make regional wild rice production more resilient to future climate changes by increasing the acreage and number of locations with harvestable manoomin.

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

Measures to avoid, minimize, or mitigate adverse effects to fish, wildlife, plant communities, ecosystems, and sensitive ecological resources would be implemented during project construction and site restoration. Construction activities would be conducted in accordance with applicable Best Management Practices, including use of low ground pressure equipment to minimize soil disturbance and protect adjacent aquatic and wetland habitats in the project area. Thinly broadcasting spoils limits the number of trips required across wetland habitat, minimizing rutting and compaction as compared to loading and hauling all the debris off site. Equipment would require maintenance and refueling, and the contractor will provide details on spill minimization and containment with fuel deliveries. Construction equipment would be regularly inspected and maintained to prevent the release of fuels, oils, or other hazardous materials. Equipment would be inspected and cleaned prior to arriving at and leaving the site to reduce the potential spread of invasive species.

MN DNR recommends that the project be designed to avoid impacts on ecologically significant areas. Actions to avoid or minimize disturbance include, but are not limited to, the following recommendations:

- As much as possible, operate within already-disturbed areas.
- Minimize vehicular disturbance in the MBS Site (allow only vehicles/equipment necessary for construction activities).
- Do not park equipment or stockpile supplies in the MBS Site.
- Do not place spoil in the MBS Site or other sensitive areas.
- If possible, conduct the work under frozen ground conditions.
- Use effective erosion prevention and sediment control measures.
- Inspect and clean equipment prior to operation and follow recommendations to prevent the spread of invasive species.
- Revegetate disturbed soil with native species suitable to the local habitat as soon after construction as much as possible.
- Use only weed-free mulches, topsoils, and seed mixes. Of particular concern are birdsfoot trefoil (Lotus corniculatus) and crown vetch (Coronilla varia), two invasive species that are sold commercially and are problematic in prairies and disturbed open areas.

See MN DNR Op Order 113 (https://files.dnr.state.mn.us/assistance/grants/habitat/heritage/oporder_113.pdf) for further details on specific practices.

Areas of temporary disturbance would be stabilized and revegetated with native landscape-appropriate plants following construction. These measures are intended to limit effects to short term construction-related disturbance and protect fish and wildlife resources, native vegetation, and ecological functions within and adjacent to the project area.

FdL Resource Management staff will implement a beaver management plan following construction. In general, the area appears to be getting less attractive to beaver because food sources are getting further away. However, beaver are currently present and the expectation

is they will rebuild. Beaver management needs to be persistent and should focus on their removal and/or use of other water leveling means (Clemson Leveler) to maintain restored hydrologic conditions.

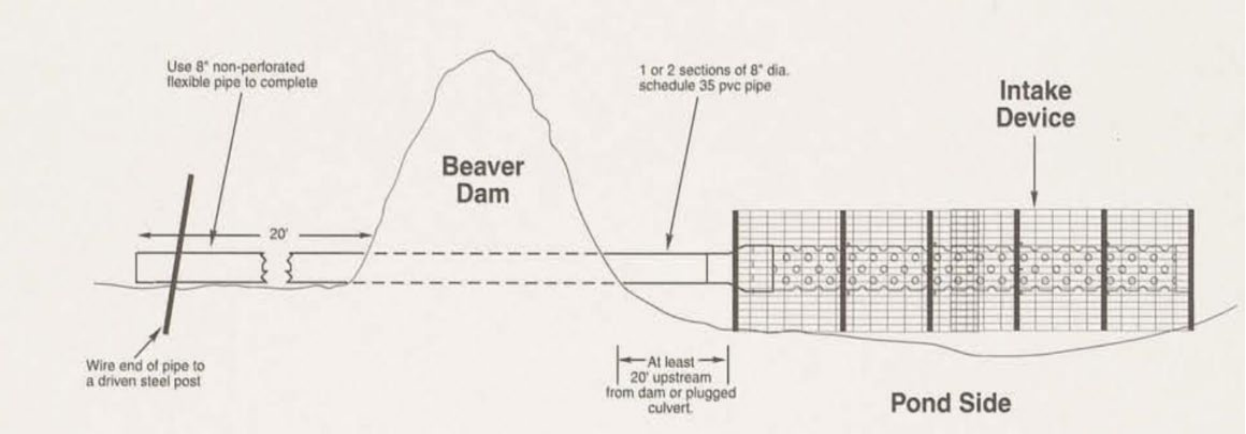

Image 4. Example of a Clemson Leveler

Dam removal is the primary method of discouragement, followed by future animal removal, or construction of a Clemson Leveler. FdL has previously used the levelers with low to moderate success.

15. Historic properties:

Describe any historic structures, archeological sites, and/or traditional cultural properties on or inclose 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.

According to the FdL Tribal Historic Preservation Officers (THPO) and the Minnesota Office of the State Archaeologist's Public Viewer, accessed on February 10, 2026, no previously known historic structures, archaeological sites, and/or traditional cultural properties are in the same sections as the proposed project.

The SHPO Minnesota Statewide Historic Inventory Portal public viewer identifies several historic buildings nearby, but outside the project limits. The National Register of Historic Places (NRHP) map viewer did not identify any historic places in the vicinity. No impacts to any buildings are proposed.

MN DNR Forestry and Fish and Wildlife Cultural Resources was also consulted. Their review found no significant archeological sites, designated State Historic Sites, or properties listed on the State or National Registers of Historic Places documented within the project area on the Office of the State Archeologist Portal or the Minnesota Statewide Historic Inventory Portal. Review of LiDAR derived elevation models, historic maps and plats, and aerial photographs indicated a low potential for archeological sites along most of the shoreline and drainage; one area with high potential is located at the northeast end of Cedar Lake on private land within an existing farmstead and adjacent fields, and is not covered under Minnesota Statutes 138.40.

The project area is located within the boundaries of the Fond du Lac Reservation. Review of historic preservation is within the jurisdiction of the FdL THPO. Their review was requested on 04/08/2026.

16. Visual:

Describe any scenic views or vistas on or near the project site. Describe any project related visualeffects 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.

No visual changes to scenic views or vistas are proposed.

17. 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. 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 effectsfrom stationary source emissions.

No new stationary source emissions are proposed.

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 minimizeor mitigate vehicle-related emissions.

No long-term increase or change to traffic or air emissions are proposed due to this project. Construction emissions are anticipated to be minor and temporary in nature.

c. Dust and odors - Describe sources, characteristics, duration, quantities, and intensity of dust andodors generated during project construction and operation. (Fugitive dust may be discussed under item 17a). 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 ormitigate the effects of dust and odors.

The project would generate odors during construction. These include exhaust from diesel and gasoline engines. Odor generation during construction would be temporary and sporadic.

Dust generation should be minimal for work in the wetland and stream channel. Dust generated during construction of the access to the boat launch would be minimized, as needed, through standard dust control measures such as applying water to exposed soils and limiting the extent and duration of exposed soil conditions.

Four residential homes are within 1000 feet of the project area. Under some ambient environmental conditions, diesel and gasoline odors could be detected in these areas, but if so the odors would be sporadic and temporary.

18. Greenhouse Gas (GHG) Emissions/Carbon Footprint

The emissions quantified in this tool account for the lifecycle GHG impact of a project throughout the construction and operational phases of the project. The tool quantifies emissions from project activities that occur on-site as well as emissions that occur upstream and downstream of the project. The tool defines and quantifies emissions from 16 unique sources. The emission sources utilized for calculations on this project include:

Construction equipment: Emissions from electricity and fuel used in off-road construction equipment (e.g., dozers, excavators, loaders, generators, etc.) during the construction phase.

Employee commuting: Emissions that result from employees commuting to the project site during the construction phase of the project.

Land use change: The net carbon change from the transition of one land use type to another due to project construction or operation.

Material inputs: Emissions associated with the production of materials used during the construction phase of the project, including the extraction of raw materials, the transportation of raw materials to the manufacturing site, and the manufacturing of materials.

Transportation of material inputs: Emissions that result from transportation of construction materials from the manufacturing facility location to the project site (for use or installation) during the construction phase of the project.

a. GHG Quantification: For all proposed projects, provide quantification and discussion of project GHG emissions. Include additional rows in the tables as necessary to provide project-specific emission sources. Describe the methods used to quantify emissions. If calculation methods are not readily available to quantify GHG emissions for a source, describe the process used to cometo that conclusion and any GHG emission sources not included in the total calculation.

The table below outlines estimated cumulative and annualized GHG emissions (in short tons) of the project based on a 50-year life. These estimates were generated using the Minnesota Climate Calculator Version 1.2, May 2025 retrieved from https://www.eqb.state.mn.us/environmental-review/climate-assessments. Input data from the design was used to generate GHG emissions estimates, where applicable. Default values were applied where information was not readily available. Emissions from the project are due to construction (including material inputs, transportation of material inputs and hauling away soil material, employee commuting, construction equipment), land use change and construction waste.

Phase	Cumulative CO_2e Emissions	Annualized CO_2e Emissions
Construction	**50.08**	**1.00**
Material inputs	12.44	0.25
Transportation of material inputs	0.22	0.00
Employee commuting	3.52	0.07
Construction equipment	34.35	0.69
Land use change (construction)	(0.45)	(0.01)
Construction waste	-	-
Operation	-	-
Total	**50.08**	**1.00**

b. GHG Assessment

i. Describe any mitigation considered to reduce the project's GHG emissions.

The project sponsor will encourage the selected contractor to reduce GHG emissions from construction, which may include minimizing idling equipment or encouraging carpooling to the site by workers.

Practices below can reduce the project's GHG emissions:

- Maintain All Equipment in Proper Condition
- Limit Vehicle Idling

ii. Describe and quantify reductions from selected mitigation, if proposed to reduce the project's GHG emissions. Explain why the selected mitigation was preferred.

The use of the actions and features listed above will help to mitigate the project's GHG emissions. It is difficult to quantify the exact reduction in GHG emissions due to the nature of the project which is being initiated for the purpose of restoration and is already implementing practices to improve the health and function of Cedar Lake.

iii. Quantify the proposed projects predicted net lifetime GHG emissions (total tons/#of years) and how those predicted emissions may affect achievement of the Minnesota Next Generation Energy Act goals and/or other more stringent state or local GHG reduction goals.

The project's estimated net lifetime GHG emissions are 50.08 tons of CO_2 emissions over the course of 50 years. This accounts for less than 0.0000002% of 2022 Minnesota's Climate Action Framework Next Generation Energy Act (NGA) goal[4]for 2030.

19. 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 statenoise standards, and 4) quality of life. Identify measures that will be taken to minimize or mitigatethe effects of noise.

[4] Greenhouse Gas Emissions / One Minnesota Plan

The known existing noise sources in the project area are the baseline rural ambient noise of distant traffic, wind, residential uses, and wildlife utilizing the habitat of Cedar Lake. No ambient noise monitoring has been conducted based on the limited number of noise sources in the project area. The identified noise-sensitive receptors within the project vicinity (1,000 feet) are four residential homes. Project construction activities would be temporary in nature and limited to an anticipated duration of approximately six weeks. Construction equipment would be operated in compliance with applicable Minnesota state noise standards, and noise levels are expected to be consistent with typical short-term construction activities. Given the temporary duration of construction, daytime limitation for construction activities, and adherence to state noise requirements, the project is not anticipated to result in long-term noise impacts or permanent effects on the quality of life for nearby residents.

Minnesota Rules, part 7030.0040 establishes two noise levels, L10 and L50, based on the percent of time noise levels exceed the standard over a one-hour time period: L10 is defined as "noise levels exceeding the standard for ten percent of the time for one hour (6 minutes/hour)" and L50 is defined as "noise levels exceeding the standard for 50 percent of the time for one hour (30 minutes/hour)." The rules also establish daytime and nighttime noise level standards based on Noise Activity Classification (NAC) levels. Minnesota Rules, part 7030.0050 defines NAC levels based on land uses as 1, 2, 3, or 4. NAC Level 1 includes residential areas and NAC 3 includes highways and rail lines.

Four homes are adjacent to the project area and would be considered NAC Level 1 areas. The nearest residence is approximately 700 feet from proposed construction activities. Noise standards established for NAC Level 1 areas are as follows: daytime standards (7:00 am to 10:00 pm) for the respective L levels are 65 decibels (dBA) (L10) and 60 dBA (L50); and nighttime standards (10:00 pm to 7:00 am) are 55 dBA (L10) and 50 dBA (L50). According to the Federal Highway Administration (FHWA), the average noise level at 50 feet from an excavator is 81 dBA (FHWA Construction Noise Handbook, Table 9.1). Sound decreases from a point source at a rate of six dBA for every doubling of distance from the source (MPCA Guide to Noise Control in Minnesota). Construction on Simian Creek and the Cedar Lake Boat Landing would include noise typical of construction contractors using skid steers, excavators, or similar machinery. Construction noise would be temporary and limited to daytime hours. Following project completion, additional noise generating activities may occur for sporadic project maintenance. The table below provides an estimated noise level as a function of distance, based on information from the FHWA handbook and the MPCA guide.

Distance from source (feet)	Noise level (dBA)	Notes/Reference
50	81	Average excavator, from FHWA handbook
100	75	Calculated using MPCA guide
200	69	Calculated using MPCA guide
400	62	Calculated using MPCA guide
800	56	Calculated using MPCA guide

The contractor would conduct work during daytime (7:00 am to 10:00 pm) hours and maintain noise levels below the state standards for the nearby NAC Level 1 areas (residences).

20. 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 alternativetransportation modes.

No additional parking or transit is proposed as a result of the project. Construction-related traffic is anticipated to be minor and temporary in nature.

b. Discuss the effect on traffic congestion on affected roads and describe any traffic improvementsnecessary. 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,

No traffic congestion or improvements to the local road system are anticipated or proposed. Traffic within and near the project area is not expected to change substantially because of the proposed project. Peak hour traffic generated is not anticipated to exceed 250 vehicles or 2,500 total daily trips. Increased congestion is not anticipated due to the project, nor are traffic improvements expected to be needed.

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

Temporary traffic disruptions are not anticipated or planned for this project. If disruptions to local public roads are needed, proper traffic control measures will be implemented as specified in the Minnesota Manual of Uniform Traffic Control Devices (MMUTCD). There are no identified long-term traffic changes associated with the project.

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

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

The geographic extent of possible environmental effects from the proposed project is limited to Cedar Lake and Simian Creek.

Environmental effects of the proposed project are short term, limited to the proposed construction activities, and include:

- Water Quality: Stream channel work, beaver dam removal, and excavation and placement of fill material for the boat launch may generate suspended sediment. The water quality impacts will likely be water turbidity. This impact will be of short duration and minimized as water flow rates should be at seasonal lows during construction.
- Peak Flows: During beaver dam removal there would be an increase in stream flows as the impounded water is drained down. This would be done in a slow and controlled manner, lowering the dam head by a small amount and allowing the water levels to equalize over the course of several days. This would be done to ensure the downstream system is not overwhelmed.
- Fish and Wildlife: construction would have temporary impacts and may displace animals during construction in 2026. Activities would be timed to avoid disturbing spring and summer nesting birds. Adverse effects to the northern long-eared bat would be avoided by a combination of minimal tree disturbance and timing construction activities to avoid roosting and nesting seasons.

Long term effects following construction include:

- Fish and Wildlife: shallower water level in Cedar Lake may shift distribution of fish and wildlife.
- Plant Communities: There would be a beneficial effect on manoomin growth and harvest opportunities. Lowered water levels may also reduce marsh and shallow open water species that have become established in the peatlands and may maintain or re-establish the forested peatlands.

Maintenance activities are anticipated to be necessary to maintain the Cedar Lake outlet and Simian Creek channel for manoomin. These maintenance activities could include additional beaver dam removal if beaver attempt new construction, or additional sediment and debris removal if such material accumulates in Simian Creek to the extent that it shifts the channel profile enough to affect water levels in Cedar Lake. If this happens, any impacts to water quality and wildlife would be similar to the effects of the proposed project. The project area would be monitored frequently to identify these possibilities early so the areal extent of any potential impacts would be small (less than one acre of potential impacts).

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.

FdL is evaluating management needs for hybrid/narrowleaf cattail and other invasive plants in the same geographic area as the project, including the shoreline of Cedar Lake and wetlands adjacent to Simian Creek. Invasive plant management would likely be conducted using herbicide treatments, following manufacturer label requirements and applicable state and federal regulations.

FdL Resource Management will conduct maintenance activities at Cedar Lake in future years. This may have minor water quality effects that would not overlap in time with the

construction project. Maintenance is intended to have beneficial effects on manoomin restoration in the same geographic scale.

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

Invasive vegetation management may contribute to a beneficial cumulative effect by reducing the cover of invasive plants present and reducing likelihood of spreading either pre- or post-construction of the project. No other projects with potential to interact with the environmental effects of the Cedar Lake Manoomin Restoration Project during construction are foreseeable.

Long-term, the proposed project is expected to contribute to larger watershed-wide efforts to restore and maintain manoomin and may restore the surrounding forested peatland. Restored hydrologic conditions are anticipated to promote greater habitat diversity compared to potential cattail dominated shallow marsh conditions caused by the creek obstructions, thereby enhancing ecological resilience. These improvements are expected to benefit fish by allowing stream species to be able to migrate to deeper waters without being inhibited by beaver dams or vegetation encroachment. Wildlife species would benefit from the long-term sustainability of manoomin.

22. **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 th e how the environmentwill be affected, and identify measures that will be taken to minimize and mitigate these effects.
There are no other known or potential environmental effects that were not discussed in EAW items 1 through 21.

RGU CERTIFICATION. *(The Environmental Quality Board will only accept* ***SIGNED*** *EnvironmentalAssessment 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 Kathleen D. Metzker Date 7/27/26

Title MN DNR Environmental Review- Project Manager