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 be addressed 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 an EIS.

1. Project title: Prospectors Loop Trail System Phase 2 (Connect Four)

2. Proposer

Contact: Nick Wognum
Title: Club President
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3. RGU

Contact: Becky Horton
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4. Reason for Preparation

Required	**Discretionary**
☐ EIS Scoping	☐ Citizen Petition
☒ Mandatory EAW	☐ RGU Discretion
	☐ Proposer Initiated

If EAW or EIS is mandatory provide EQB rule category, subpart number(s), and name(s): Minnesota Rule 4410.4300 Subp. 37 B

5. Project Location:

Description	
County	St. Louis
City/Township	Refer to table below
PLS Location (¼, ¼, Section, Township, Range)	Refer to table below
Watershed (81 Major watershed scale)	St. Louis River (#3), Rainy River Headwaters (#72), Vermilion River (#73), Little Fork River (#76)
GPS Coordinates:	Refer to table below
Tax Parcel Number	Refer to Attachment A-1

Project location information

Trail Segment	GPS Coordinates	Local Government	Type	Township	Range	Section(s)[1]
Babbitt to Hoyt Lakes	Western Terminus 47.515438, -92.124375	Hoyt Lakes	City	58 North	14 West	15, 16, 22, 23
Babbitt to Hoyt Lakes	Western Terminus 47.515438, -92.124375	Babbitt	City	59 North	13 West	24, 25, 36
Babbitt to Hoyt Lakes	Western Terminus 47.515438, -92.124375	Babbitt	City	60 North	12 West	36
Babbitt to Hoyt Lakes	Western Terminus 47.515438, -92.124375	Bassett	Township	58 North	13 West	1, 2, 11, 14, 19, 20, 21, 22, 23
Babbitt to Hoyt Lakes	Western Terminus 47.515438, -92.124375	Bassett	Township	59 North	12 West	1, 2, 10, 11, 15, 16, 17, 18, 19
Babbitt to Hoyt Lakes	Western Terminus 47.515438, -92.124375	Whiteface Reservoir	Unorganized Territory	58 North	14 West	25, 26
Bear Run	Western Terminus: 47.870774, -92.121061	Eagles Nest	Township	62 North	14 West	1, 2, 3, 4, 9
Bear Run	Western Terminus: 47.870774, -92.121061	Morse	Township	62 North	13 West	6, 7, 8, 9, 10, 11, 12
Cloquet Line to North Grassy Lake Road	Southern Terminus: 47.996771, -91.819832	Northeast St. Louis	Unorganized Territory	64 North	12 West	23, 25, 26
Tower to Pfeiffer Lake, Y Store Spur, & Your Boat Club Spur	Western Terminus: 47.745821, -92.466056	Vermilion Lake	Township	61 North	16 West	10, 11, 12, 14, 15, 16, 21, 22, 28, 29, 30

Trail Segment	GPS Coordinates	Local Government	Type	Township	Range	Section(s)[1]
Tower to Pfeiffer Lake, Y Store Spur, & Your Boat Club Spur	Western Terminus: 47.745821, -92.466056	Kugler	Township	61 North	15 West	5,6,7
Tower to Pfeiffer Lake, Y Store Spur, & Your Boat Club Spur	Western Terminus: 47.745821, -92.466056	Lake Vermilion	Unorganized Territory	61 North	17 West	23, 24, 25
Tower to Pfeiffer Lake, Y Store Spur, & Your Boat Club Spur	Western Terminus: 47.745821, -92.466056	Tower	City	62 North	15 West	31, 32

[1] Section ¼, ¼ provided in Attachment A-2

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

- County map showing the general location of the project.
- U.S. Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries (photocopy acceptable); and
- Site plans showing all significant project and natural features. Pre-construction site plan and post-construction site plan.
- 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 during the life of the project (as detailed below in item 7. Climate Adaptation and Resilience).

Figures and Attachments

- Figure 1: Project Overview Map
- Figures 2-1 through 2-7: Project Area Map
- Figures 3-1 through 3-3: USGS 24k Topographic Map
- Figures 4-1 through 4-7: Hydrology Map
- Figures 5-1 through 5-7: Soils Map (SSURGO)
- Figures 6-1 through 6-6: Land Cover Map (NLCD, 2016)
- Figures 7-1 through 7-7: MNDNR NPCs and Sites of Biodiversity Significance
- Attachment A-1: Tax Parcels
- Attachment A-2: Public Land Survey ¼, ¼, Section, Township, Range
- Attachment B: Trail Design Typical Sections
- Attachment C: Soil Characteristics
- Attachment D: NHIS letter
- Attachment E: State Historic Preservation Office Correspondence

6. Project Description:

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

The Prospectors Trail Alliance (Club) is proposing four new ATV trail segments and a connecting spur as part of Phase 2 (also termed "Connect Four" segments) of the greater Prospectors Loop Trail for off-highway vehicles. Approximately 59.14 miles of trail are included. The segments provide new connections to existing trails and amenities in northern St. Louis County.

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

Existing Trail System

The existing Prospector Loop trail system (System) connects communities in northern St. Louis and Lake Counties on natural surface trails and shared-use natural surface or gravel roads. The Prospectors Loop Trail (shown on **Figure 1**) connects the communities of Ely on the north, the greater Finland area on the east, Hoyt Lakes on the south, and Tower on the west, with points in between.

Proposed Phase 2

The proposed project (project) would build and/or designate segments of the Prospectors Loop Trail system for seasonal (spring, summer, fall) motorized all terrain/utility terrain vehicle (ATV/UTV) and off-highway motorcycle (OHM) use[1]. Phase 2 trail construction would be anticipated to start in 2023 and be phased over one to two years. Timing of construction of segments will vary depending on funding, permitting, and seasonal restrictions.

Upon the completion of Phase 2, the System will include an estimated 277.19 miles of trails, with 218.05 miles of existing trail and an additional 59.14 miles of Phase 2 trail.

Construction

The Club proposes construction in the summer or during winter, with the intention of avoiding January through March for those sections proposed to be co-located on snowmobile trails, and outside of seasonal road restrictions. Physical improvements to allow sustainable/non-erosive ATV travel could include fill/hardening, culverts, boardwalks, and/or bridges at wetland and water crossings. The proposer will communicate with local snowmobile clubs to ensure trail design is compatible with shared use by snowmobile grooming equipment where appropriate. Active construction is expected to take approximately three to six months (within an approximately eight-month primary construction window) for each segment, over a duration of one to two years, depending on complexity. Construction sequence would start with clearing and grubbing, if necessary (see item 8), followed by installation of stormwater perimeter control, earthwork, structure construction (if needed), and ending with site stabilization. Construction timing will abide by seasonal regulations (e.g., exclusion dates for Northern long-eared bat, trout, etc.).

Based on existing conditions, the routes will require varying amounts of work to prepare connections for inclusion in the Prospectors Loop Trail system. Existing conditions are divided into three categories. Proposed work and trail design will vary by each of the categories. These categories are described in the following table. ATV use is anticipated to be a compatible use under the existing

[1] The term "ATV" is used throughout this document, to refer to all motorized vehicles intended for use on the trail including ATVs, UTVs, and OHMs.

State Trail master plan for the segment 'Tower to Pfeiffer Lake Trail' where the system shares a corridor with the David Dill/Taconite State Trail. As identified in the Master Plan, portions of the State Trail accommodate ATV use, primarily non-paved segments where sustainability criteria can be met. The use of new trail alignments was minimized, and the proposed routes have been chosen to avoid sensitive features (such as wetlands) to the greatest extent practicable. ATV-only trails will have a 12 to 14-foot-wide drivable top surface within a maximum 26-foot-wide cleared corridor for new trail segments. Where trails will have dual use for ATVs and snowmobiles, an approximately 16 to 20-foot-wide drivable top surface will be required to accommodate trail grooming equipment. Anticipated corridor height for future maintenance of vegetation is approximately 10 feet. There may be a temporary need for corridor clearing up to 30 feet in height for construction activities if a crane is needed for placement of bridges or other trail structures. This activity would be localized and temporary, if needed.

Information on Proposed Routes

Route Category	Type	Landscape Position	Miles
1	Existing route, open to ATV use	On road	22.43
2	Existing route, proposed new ATV use (improvements needed)	On road/trail	27.65
3	Proposed route, new construction proposed for ATV use	Off road	9.06
		Total	59.14

Short stretches of alternative alignments are considered in this review, as they may provide opportunities to avoid sensitive resources or improve trail user experience. Therefore, the total length of corridor reviewed herein is 59.14 miles, with a proposal to ultimately build/designate 59.14 miles of trail.

Route Category 1

This category is currently open to ATV traffic and needs no physical road or surface work. The 22.43 miles in this category are located on County or Forest Service roads. Proposed routes in this category would be added to future trail user maps. The only physical work that would be completed is adding signage, where not already in place, identifying the route as part of the System. The review area of this proposal includes the existing roadway, an approximately 18 to 26-foot aggregate surface.

Route Category 2

This category includes existing roads and recreational trails with areas not currently designated for ATV use. Some areas would require physical improvements to allow sustainable/non-erosive ATV travel. This category includes trail proposed on state, federal, private and tax forfeit lands for a total of 27.65 miles, including 7.04 miles as shared corridors with snowmobile trails (David Dill/Taconite State Trail, Ely-Vermilion Lake Trail, and Seven Beavers Trail) and the remaining 20.61 miles are other roads or trails, including the Bird Lake Ski Trail. Proposed improvements include fill/hardening, culverts, boardwalks, and/or bridges for sustainable trail surface at wetland and water crossings. Because these are existing routes, clearing of woody vegetation would generally be minor where needed. The routes would be included on future maps of the System once allowed for ATV use. The most conservative estimate for build area where improvements are necessary is a 26-foot-wide

corridor. The review area to evaluate environmental effects includes a 40-foot corridor, extending 20 feet on either side of the proposed alignment centerline. Evaluation of a wider corridor allows for minor adjustments in trail alignment, particularly where adjustments might allow avoidance or minimization of wetland impacts, otherwise sensitive surface areas, or alignment adjustments due to topography.

Route Category 3

This category includes areas without an existing road or trail corridor and would require new construction. New trail is proposed on tax forfeit, Bois Forte Band, federal, MnDOT right-of-way, and private lands. New trail on private land would affect one property owner. These proposed routes would construct a 12 to 14-foot-wide drivable top surface with a footprint no wider than 26 feet to accommodate shoulders and clearance on either side of the trail, depending on the specific design requirements. New construction includes clearing of vegetation, fill/hardening sections, boardwalk, culverts and/or bridges for sustainable trail surface. As indicated in the description of Route Category 2, the review area considered in this EAW to evaluate environmental effects is 40 feet wide, to allow for minor alignment adjustments. Upon completion, the routes would be included on future user maps of the Prospectors Loop Trail system.

Trail design for new trail construction would follow guidelines in the *"Trail Planning, Design, and Development Guidelines"* manual (MN DNR, 2007) intended to construct and improve sustainable natural surface trails. For all trail improvements, construction would follow standard practices. Prior to ground disturbing activities, the contractor would install downgradient stormwater Best Management Practices (BMPs) and would apply other BMPs throughout construction. Specific BMPs would be selected during final design and incorporated into the Stormwater Pollution Prevention Plan (SWPPP). BMPs would include erosion control blankets on steep slopes, bioroll/filter logs to capture mobilized sediment, and/or rock construction entrances. Construction methods include earth moving with small excavators and/or skid steers. Where fill is needed, the trail would have geogrid placed as a base layer. Where needed based on soil characteristics, the trail would be excavated to 12-inch depth, backfilled with gravel, and covered with geotextile. All fill sections would have 6 to 18 inches of fill placed above the ground surface, depending on existing ground conditions. The typical section will have approximately 2% slopes away from the centerline for appropriate drainage (Attachment B).

Design

The proposed segments would provide designated, safe routes, sustainable for ATV use. Safe routes consider factors such as minimizing conflicts with other uses (e.g., highway vehicle traffic), accommodating maintenance activities, and providing adequate space for two-way traffic. These will be multi-use trails, and signage for ATV use will alert other users (hikers, mountain bikers, and/or equestrians) of ATV use. Signage will be consistent with other multi-use trails in the system. Trail widths will allow safe passing for pedestrians. Sustainable trails, as the term is used throughout this document, are those that follow the guiding principles of ecological sustainability as outlined in the "*Trail Planning, Design, and Development Guidelines"* manual (MN DNR, 2007) as follows:

1. Avoid sensitive ecological areas and critical habitats.
2. Develop trails in areas already influenced by human activity.
3. Provide buffers to avoid/protect sensitive ecological and hydrologic systems.
4. Use natural infiltration and BMPs for Stormwater management.
5. Provide ongoing stewardship of the trails and adjoining natural systems.
6. Ensure that trails remain sustainable.
7. Formally decommission and restore unsustainable trail corridors.

The proposed System would use existing corridors to the maximum extent practicable, including co-locating with existing snowmobile trails. The proposer does not anticipate conflict with snowmobile use or winter trail grooming given ATV use would only be seasonal (spring, summer, fall).

The segment design will incorporate the following elements:

Trailhead maps, signage, and system kiosks

Newly prepared and installed maps and signage would provide wayfinding and trail markers on new areas of the trail segments. These will also be maintained on existing routes. Signage on public roadways will meet standards as indicated in the *"Minnesota Manual on Uniform Traffic Control Devices"* (MnDOT) which can be found on the Minnesota Department of Transportation Traffic Engineering webpage.

Natural surface trail

The Club is proposing physical improvements to the System on existing or proposed natural surface trails that will support ATV use. Some areas would require fill and culvert or boardwalk crossings to create a sustainable trail surface as outlined in the *"Trail Planning, Design, and Development Guidelines"* manual (MN DNR, 2007). New/improved stream crossings are opportunities to ensure proper culvert size and placement for fish passage and stream stability. To ensure correctly installed culverts, the proposer should refer to the Minnesota Department of Transportation's (MnDOT*) "Minnesota Guide for Stream Connectivity and Aquatic Organism Passage Through Culverts"*, as found on DNR's website. Routes were evaluated by the Club to minimize aquatic resource crossings while still following existing trail corridor. Crossings of aquatic resources will be considered on a case-by-case basis during design, based on the size and flow of the aquatic resources. Culverts, bridges and/or boardwalks may be proposed. All crossings will meet design requirements based on the classification of the aquatic resource (e.g., public water trout streams). Trail design would also consider compatibility with shared uses. Trail segments co-locating with snowmobile use would typically have a 20 to 26-foot-wide footprint to accommodate a 16 to 20-foot top surface for snowmobile groomers. The segments would have a maximum construction width of 26 feet to accommodate shoulders and clearance on either side of the trail depending on the specific design requirements of any new construction, including accommodation of winter use by snowmobile groomers. Routes not shared with snowmobiles are planned for a 12 to 14-foot-wide drivable top surface. Typical sections are included as Attachment B.

Maintenance

The Club anticipates that the project will increase ATV traffic on the existing sections currently open to ATV use; however, the additional traffic is not anticipated to necessitate additional maintenance. Maintenance needs will be monitored following the (Grant in Aid) GIA program which involves collaboration between the DNR, the LGU, and the Club to identify maintenance priorities and a monitoring schedule. This also involves the Trail Ambassador program in which volunteers, who are trained to identify invasive species and appropriate trail conditions, assist with trail monitoring.

c. Project magnitude:

Description	Number
Total Project Acreage	301.94 acres
Linear project length[1]	59.14 miles
Number and type of residential units	not applicable
Residential building area (in square feet)	not applicable

Description	Number
Commercial building area (in square feet)	not applicable
Industrial building area (in square feet)	not applicable
Institutional building area (in square feet)	not applicable
Other uses – specify (in square feet)	not applicable
Structure height(s)	not applicable

[1] Includes 3.04 miles of alternative routes

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

The purpose of the project is to provide safe accessible trails for ATVs in northeastern St. Louis County. Phase 2 of the Prospectors Loop Trail (herein, Phase 2) will expand the existing 218-mile trail system, providing several new links to existing trail, and greater connection between the adjacent communities and recreational areas. The existing system stretches between Ely, Soudan (Breitung Township), Tower, Babbitt, and several townships and unorganized territories in St. Louis County, and several townships and unorganized territories in Lake County.

This project will not be carried out by a local government unit.

e. Are future stages of this development including development on any other property planned or likely to happen? ☐ Yes ☒ No
If yes, briefly describe future stages, relationship to present project, timeline and plans for environmental review.

All planned trail segments are included in this review. Future phases of the trail system are not currently defined or reasonably foreseeable. Environmental review needs will be evaluated if future phases are proposed.

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

There are approximately 218-miles of existing trail within Phase 1 of the Prospectors Trail Loop system. Phase 2 is an extension of this system. Phase 1 received a negative declaration for an Environmental Impact Statement on November 7, 2016. Construction of Phase 1 began in 2019 and was completed in 2022.

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 during the life of the project.

General projections in Northeastern Minnesota predict that the climate will be warmer and wetter at the end of the century as compared with the historical period of 1981 through 2010[2]. The proposed project is not anticipated to affect overall climate trends in the location.

[2] Minnesota Climate Projections | Climate (umn.edu)

Operational use of ATVs and vehicles trailering ATVs to the project location will contribute to greenhouse gas emissions. This topic is discussed in further detail in item 18. The Club encourages trail stewardship which includes maintaining vehicles to maintain standard emission requirements. Emission levels for individual ATVs and vehicles trailering ATVs are expected to remain below current EPA standards and are not expected to affect overall climate trends in the location.

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

Resource Category	**Climate Considerations**	**Project Information**	**Adaptations**
Project Design	No aspects of project design are anticipated to negatively impact climate considerations.	Climate change risksand vulnerabilities identified include Increased frequency and intensity of storm events and increased precipitation.	Culverts, bridges, and boardwalks will be designed to be suitable for high flow events.

Resource Category	Climate Considerations	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 managed for silviculture and/or used for recreation. Trees/shrubs will be cleared for proposed new trail segments. Tree and shrub clearing is contained to a relatively small work area (15.42 acres along approxi-mately 6 miles of trail); the proposed project is not anticipated to affect overall climate trends in the location. Increased equipment use may pose a fire risk, so rider education should include warnings to avoid idling/parking in tall dry grass. Trails may provide opportunity for improved firefighting equipment access and firebreaks. The project proposer, in coordination with DNR, will evaluate temporary closures during extreme drought conditions.
Water Resources	Climate trends for the general location predict a wetter climate with more frequent and higher intensity storm events. Water Resources are addressed in further detail in item 12.	The proposed project will result in permanent and temporary aquatic resource and wetland impacts, which are addressed in further detail in item 12.	Aquatic resource and wetland impacts were minimized to the greatest extent practicable by utilizing existing trail corridors where possible. Avoidance and minimization efforts are addressed in further detail in item 12.

Resource Category	Climate Considerations	Project Information	Adaptations
Contamination/ Hazardous Materials/Wastes	Climate change predictions are not anticipated to influence the potential environmental effects of generation/use/ storage of hazardous waste and materials.	Climate change risks and vulnerabilities identified include none. Not Applicable	Not Applicable
Fish, wildlife, plant communities, and sensitive ecological resources (rare features)	Climate trends may result in changes in the distribution of fish, wildlife, and plants. Warmer climate trends may result in more available habitat for invasive species. Fish, wildlife, plant communities, and sensitive ecological (rare features) are addressed in further detail in item 14.	Risks include the transport and spread of invasive species to the project area from construction equipment, ATVs. An increased risk for disease in both plants and animals because of climate change and habitat fragmentation and potential transportation by motorized vehicles may result.	Efforts to mitigate the transport and spread of invasive species will be implemented (and are discussed in detail in item 14). Efforts to mitigate the spread of invasive species should also help mitigate spread of disease. Maintaining hydrologic connections across the trail will reduce fragmentation for wetland and aquatic species. Specifying plants that have potential to migrate north in response to climate change will be evaluated in design. This may be appropriate for restoration of temporary disturbance from construction, should it be needed.

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

Cover Types	Before(acres)	After (acres)
Wetlands and shallow lakes (<2 meters deep)	12.35	6.32
Deep lakes (>2 meters deep)	0.00	0.00
Wooded/forest[1]	158.76	158.76
Rivers/streams	0.00	0.00
Brush/Grassland	53.94	35.74

Cover Types	Before(acres)	After (acres)
Cropland	0.00	0.00
Livestock rangeland/pastureland	0.00	0.00
Lawn/landscaping	60.50	54.72
Green infrastructure TOTAL (from table below*)	0.00	0.00
Impervious surface	2.86	2.86
Stormwater Pond (wet sedimentation basin)	0.00	0.00
Non-paved trail[2]	13.53	43.57
TOTAL	301.94	301.97
Cover Types	**Before(acres)**	**After (acres)**

[1.] Some existing trail length is included in the wooded/forest cover type category, because a continuous forest canopy is present. Because forest cover will remain, wooded/forest land cover is not considered to change post-project.

[2] New non-paved trails will meet the definition of natural surface trail: "soft surfaced, follows the contours of the land, and is much more susceptible to natural forces" (MN DNR 2007). Natural surface trails are shaped into the landscape being traversed and to provide interesting nuances of a site for the trail user. Hardening would be minimized and would take place only where the existing surface is not sustainable for ATV use. Trail design specifications would maintain a pervious surface, through methods such as selection of proper granular material.

Green Infrastructure*	Before (acreage)	After (acreage)
Constructed infiltration systems (infiltration basins/infiltration trenches/ rainwater gardens/bio-retention 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%	Approximately 500[1]
Number of new trees planted	0	0

[1] Tree clearing will be avoided and minimized to the greatest extent practicable during construction. New corridor clearing will have flexibility to route around most mature trees and removals will be limited, leaving canopy intact

even in areas of new corridor clearing.

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 prohibited until all appropriate environmental review has been completed. See Minnesota Rules, Chapter 4410.3100.*

Potential funding sources for these trail segments include the Legislative-Citizen Commission on Minnesota Resources (LCCMR), state bonding funds, the state off-road vehicle dedicated fund, and Department of Iron Range Resources and Rehabilitation (IRRR) grants.

The table below shows permits and approvals anticipated for the project.

Unit of Government	Type of Application	Status
Minnesota Pollution Control Agency (MPCA)	National Pollutant Discharge Elimination System (NPDES) Construction Stormwater Permit	To be obtained
MPCA	Section 401 Water Quality Certification	To be obtained if needed
St. Louis County	Section 401 Water Quality Certification	To be obtained if needed
DNR	Wetland Conservation Act (WCA) Delineation Approval	Submitted, additional to be obtained
DNR	WCA Replacement Plan	To be obtained
DNR	Public Waters Work Permit	To be obtained if needed
DNR	Rare Species Takings Permit	To be obtained if needed
DNR	ATV Grant-in-Aid Trail Application	Submitted February 2022 - Pending
MN Department of Transportation	Right-of-Way Permit	Obtained
U.S. Army Corps of Engineers	Section 404 Clean Water Act Permit	To be obtained
Bois Forte Band of Chippewa	Cultural Resources Review	To be obtained
Bois Forte Band of Chippewa	Tribal Council Approval	To be obtained
Cities and Townships	Zoning or other approvals	To be obtained if needed
Private landowner	Easement or other permission	To be obtained
U.S. Forest Service	Land use permission	To be obtained

Although not a formal permit or approval, a DNR Division of Parks and Trails (PAT) Resource Assessment (RA) is needed for projects occurring on Parks, PAT Division administered lands, and State Trails. The RA incorporates regulations, statutes, policies, guidelines, and plans, some of which are division specific. State Trails are to be managed to provide a travel route through an area with minimal disturbance of the natural environment and recognizing other multiple use land activities. Resource Specialists within the Division of Parks and Trails implement the RA process to incorporate comments from other DNR staff as well as findings from the Natural Heritage

Information System. Resource Specialists inform PAT leadership about project impacts so that informed decisions can be made about projects occurring on PAT administered lands and State Trails.

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 parks and open space, cemeteries, trails, prime or unique farmlands.

      Land use within and surrounding the project site is primarily undeveloped natural areas managed for silviculture and/or used for recreation. Phase 2 is located on several managed trails, including state, grant-in-aid, and forest service trails. The routes follow portions of the Taconite State Trail, Seven Beavers Trail (East Range Multi-use), and Ely-Vermilion Lake (Little Grassy Winter) Trails, and Superior National Forest cross country ski trails.

      Ownership is primarily the State of Minnesota and US Forest Service, with some Bois Forte Band of Chippewa Tribal lands, municipal lands, and private owned parcels (Figures 2-1 through 2-7). Most of Phase 2 is located on existing forestry roads, county roads, within road right-of-way, tax-forfeited, or public lands. Public lands include the Bear Island State Forest, the Sturgeon River State Forest, and the Superior National Forest Laurentian and Kawishiwi Ranger Districts. Coordination for grant-in-aid permits for the land use is ongoing. Permits will be maintained for the duration of the trail system.

      Phase 2 would use existing trails to the greatest extent practicable, including 4.60 miles of the Taconite State Trail. Improvements to public trails fall under Route Category 2: existing route, proposed new ATV use (improvements needed). The Taconite State Trail extends between Grand Rapids and Ely for 165 miles and intersects the David Dill/Arrowhead State Trail near Tower, where it transitions to the David Dill/Taconite State Trail until its northern terminus. There are multiple uses for the trail depending on each segment, but the primary use is snowmobiling. Areas currently open to ATVs include an approximately 10.5-mile segment from Ely west to an intersection with existing Prospector trail near Purvis Lake. Other areas of the Taconite State Trail currently open to ATV use do not intersect the existing or proposed Prospector system. Most of the trail is natural surface developed for winter use, and sections may be impassible during warm weather months when the ground is not frozen due to wet soils and standing water. Typical existing trail widths vary but are often between 12 to 16 feet wide.

      The project would also use grant-in-aid snowmobile trail corridors, including 1.26-miles of the Ely-Lake Vermilion Trails, and 2.9-miles of the Seven Beavers Trail located off Skibo Road. Like the Taconite State Trail, existing trail widths vary, but are often between 12 to 16 feet wide. Cross-country ski/hiking trails in the project area include 9.58 miles of the Bird Lake Trail System. This system includes 12 miles of beginner and

intermediate trails east of Hoyt Lakes, with a shelter on the Lillian Lake Loop and a picnic site at Bird Lake. The trail is currently off limits to motorized vehicles. The proposed ATV trail would utilize part of the Bird Lake ski trail, outside of the skiing season. The existing ski trail is approximately 8 to 10 feet wide; some selective clearing will be necessary to establish a 12 to 14-foot-wide trail section. Summer use would be shared with hikers. Like other multi-use trails, the trail will be signed for ATV use indicating that this use is present to hikers. Trail width will allow safe passing of ATVs and pedestrians.

A 0.94-mile section of trail would be in the right-of-way corridor for Highway 169 and a high voltage transmission line (HVTL) adjacent to Highway 169. This section is in Route Category 3: new construction proposed for ATV use. The corridor is maintained to be clear of trees and shrubs, requiring minimal clearing for the new ATV use. Improvements to establish a trail surface are anticipated.

Approximately 0.8-miles of the 'Y Store Spur', a section of the 'Tower to Pfeiffer Lake Trail', is located within lands owned by the Bois Forte Band (the Band). Trail improvements would be Route Category 3 for new construction. Approximately half of the trail is located within cleared habitat, including a HVTL corridor and other areas that appear to be maintained to be clear of trees. Vegetation clearing will be required for the other half, as it passes through a forested area with no existing trail. Coordination between the Band and Club is ongoing and will continue as the project progresses.

The project proposer has started coordination with landowners/administrators along the routes. MnDOT has approved use of Trunk Highway 169 Right of Way. Coordination is ongoing with St. Louis County Lands and Minerals. The Prospector Club has presented the project at Township Board meetings. The U.S. Forest Service (USFS) Laurentian Ranger District is underway on National Environmental Policy Act (NEPA) review for trail in their District. The Kawishiwi Ranger District of the Superior National Forest received a formal proposal of the project from SEH Engineering on February 22, 2023. The timing and determination of which level of NEPA analysis for this project which includes the Bear Run and Cloquet Line to North Grassy Lake Road segments has not been determined. Bois Forte Band has discussed the proposed trail with the Prospector Club and has reviewed alignment information. The private landowner is having ongoing discussions with the proposer.

Regional lands outside of the project area are mainly used for outdoor recreational activities, such as hiking, camping, fishing, canoeing, viewing wildlife, snowmobiling, cross-country skiing, ATV trail riding, etc. The greater area includes the Boundary Waters Canoe Area Wilderness (BWCAW); several Scientific and Natural Areas (SNAs) such as Burntside Islands, Eagle's Nest Island #4, Kawishiwi Pines, Lost Lake Peatland, Purvis Lake-Ober Foundation, and the Sand Lake SNAs; Wildlife Management Areas (WMAs) including Pine Island, Pike Bay, and Old Koschak Farm WMAs; the Soudan Underground Mine and Bear Head Lake State Parks; and the Sturgeon River, Kabetogama, Bear Island, and Burntside State Forests.

The project crosses agricultural land of statewide importance in eight locations (Web Soil Survey, accessed Apr 2022); however, the lands are not currently being farmed nor do they have a history of being farmed. Of the 3.0 acres of mapped farmland soils, 1.5 acres would be used as a recreational corridor.

Timber lands owned by the State of Minnesota within the Project area might be, or can be, used for logging. Forest cover types on the DNR-managed lands across the project

area consist of upland and lowland timber cover types that are actively managed. DNR lands within the project area are subject to ongoing, active timber sale contracts. The proposer may be responsible for reimbursing the value of timber production ("timber damages") in forested areas converted to new trail use.

Overall, the proposed project and surrounding area land use is timber production, water quality protection, forest recreation, and managed trail use. Land use would remain similar under all route categories (recreational and silviculture) with main use changes as follows:

- Route category 2: The trail footprint in these areas is already cleared of woody vegetation for snowmobile or other vehicle travel. Areas cleared of woody vegetation only, without other improvements include open grassland and wetland habitat, including seasonally flooded, sedge meadow, fresh (wet) meadow wetland, shallow marsh, deep marsh, and open bog community types. These 27.65 miles will have a new use for ATV travel, but adjacent land use will remain similar (recreational, silviculture, etc.).
- Route category 3: New trail construction would require clearing a corridor through naturally vegetated areas that do not currently have an existing trail, path, or road. With the addition of ATV travel on an estimated 9.06 miles of new trail segments. New trail is located on a variety of land ownerships/administrations: county (tax forfeit), tribal, federal, state (MnDOT and DNR), municipal, and private. DNR administered parcels are the parcel containing the Tower Area Headquarters and Lands and Minerals.

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

County

St. Louis County's *Comprehensive Land Use Plan* (2019) includes Recreation and Tourism Goals, Objectives, and Implementation (pages 52-53 of the plan). The goals are:

Goal R1 "Preserve opportunities for outdoor recreation in St. Louis County." Objective R-1.1 "Where possible, use the Future Land Use Maps and county ordinances to guide intensive development, such as residential subdivisions or industry, to areas with supporting infrastructure and services, and away from forestry and agricultural areas appropriate for hunting and other outdoor activities." Objective R-1.2 "Work with local, state, and federal agencies to improve and promote existing lake and river access points."

Goal R-2: Promote regional trail development and maintenance. Objective R-2.1 "Work with local communities, advocacy groups, and others to expand the regional trail system and to maintain and expand opportunities for all possible user types. Prioritize links that are identified in county and regional trail plans" Objective R-2.2 Protect existing trails and support permanent easements through private lands to help facilitate trail maintenance and construction.

Further, St. Louis County Ordinance #64 provides an opportunity for ATV clubs to request county approval for a corridor access trail within county road right-of-way.

State Forestry and Forest Classification and Road/Trail Designation Plans

The Project is located within areas identified under two separate Plans, the DNR Forestry-Administered Lands in Northern St. Louis County (October 2008) and the Sturgeon River State Forest (September 2008).

The DNR Division of Forestry anticipates future harvest will occur within these areas, and all DNR-prescribed harvest activity is considered. In addition to evaluating forest classification and retaining or modifying current classification as appropriate, the Plans identify "…forest roads and trails that the DNR proposes to (un)designate for various motorized and non-motorized purposes within the planning area." The Plans include classifications of managed, limited, and closed areas. Designations specific to each plan are identified in the following paragraphs.

DNR Forestry-Administered Lands in Northern St. Louis County (October 2008)[3]

This Plan contains approximately the northern half of St. Louis County and includes Bear Island State Forest. The plan recommends recreational trail designations including 9.2 miles of shared ATV/OHM (Off Highway Motorcycle) trail, 4.2 miles of ATV/OHM trail to be developed by St. Louis County in the northern part of the county and 3.5 miles of Minimum Maintenance Road/Off Highway Vehicle (MMR/OHV) trail will also be designated on state lands outside of named state forests.

Sturgeon River State Forest (September 2008)[4]

The Plan applies to the Sturgeon River State Forest and some additional state lands outside of the forest boundary. It recommends recreational trail designations for 12.7 miles of shared OHV trail/State Forest Road Dual-Designation, including "…4.7 miles of the Taconite State Trail (that) will eventually be open to motorized use."

David Dill/Taconite State Trail

The David Dill/Taconite State Trail, as described in the *Taconite State Trail Master Plan* [5](MN DNR, 2017) has a goal to "provide trail users with a regionally integrated multi-use recreation facility that connects Ely to Grand Rapids and capitalizes on the inherent user benefits of the area's natural and cultural resources (page 10)". The trail is designated as a multi-use, multi-season feature. However, the primary uses are in winter, and certain activities are not allowed depending on the segment. Snowmobiling is a primary activity, with other uses including bicycling, hiking/walking, horseback riding, cross-country skiing, and OHV riding including ATVs.

Federal

The 2004 Superior National Forest *Land and Resource Management Plan*[6] indicates that trails, including ATV trails, are desired conditions in some management areas. The plan recognizes that the use of ATVs and other off-road-vehicles are a legitimate use of the National Forest System land and must be carefully managed. The revised plan provides for an additional 90 miles of ATV trail to be designated.

iii. Zoning, including special districts or overlays such as shoreland, floodplain, wild and scenic

[3] Microsoft Word - NoStLPlan_Final.doc (state.mn.us)
[4] Microsoft Word - SRFinalPlan.doc (state.mn.us)
[5] Taconite State Trail Master Plan
[6] Microsoft Word - Superior_FP_Preface.doc (mn.gov)

rivers, critical area, agricultural preserves, etc.

The project is not located within a wild and scenic river corridor, critical area, or agricultural preserve. Mapped floodplain would be crossed at one location, the Pike River adjacent to Highway 169. A boardwalk or bridge would be constructed for the crossing and impacts to the floodplain are not anticipated.

The project is in shoreland area, land within 1,000 feet of a lake, pond, or flowage, and 300 feet of a stream or river or the landward coverage of its designated floodplain, as defined by the local ordinance. The ordinance applies to waters included in the Public Waters Inventory (see Figures 4-1 to 4-7 for public waters within the project area). St. Louis County has zoning authority over most of the System, except within the municipal boundaries of the Cities of Babbitt and Hoyt Lakes.

The project proposes to cross four public waters, including the Vermilion River within HVTL right-of-way adjacent to Highway 169 (Figure 4-6); the Range River near Browns Lake Forestry Road (Figure 4-1); West Two River west of County Road 409 (Figure 4-7); and Wolf Creek south of CSAH 1 (Figure 4-5). West Two River is a destinated trout stream with an existing wooden bridge crossing, and Wolf Creek has existing fill over a box culvert; both are anticipated to be suitable for ATV use. The Vermilion and Range River crossings would require new structures. Crossings on public waters might require DNR Public Waters Work permits for impacts below the Ordinary High Water Level (OHWL). Impacts above the OHWL, and on non-public waters, are subject to permitting requirements of the local zoning authority, Wetland Conservation Act (WCA), and the Clean Waters Act (CWA) Section 404 issued by the U.S. Army Corps of Engineers (USACE). Bridges or boardwalks, subject to state and local permitting requirements, are planned for new construction segments and would be designed to minimize impacts to water resources. Design of trail sections and water crossings would follow the recommendations from the *"Trail Planning, Design, and Development Guidelines"* manual (MN DNR, 2007). The proposed trail would be designed for a sustainable trail surface that reduces erosion to stream resources. The design of each crossing (fill and culvert, bridge, or boardwalk) would be evaluated in engineering design for each crossing, considering avoidance and minimization measures required in wetland and waterway permitting. Design would also consider fish passage per the designation of each water crossing.

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.

No critical facilities are proposed in floodplain areas or areas identified at risk for localized flooding. New water crossings would be constructed in a manner to withstand seasonal flooding to the greatest extent possible.

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

County

The proposed project meets the goals and objectives of the St. Louis County Tourism and Recreation section of their Comprehensive Plan and further advances the purpose of the Plan as noted in section 10.a.ii to promote regional trail development and maintenance.

State Forest Classification and Road/Trail Designation

The Plans have evaluated forest classification to manage, limit, or close various areas to motor vehicle use to protect environmental features such as wetlands. The plan allows for some motorized use and coordination with state, county and private landowners may be required.

Taconite State Trail

The Taconite State Trail Master Plan, including the David Dill/Taconite State Trail, designates some sections of the trail as compatible with ATV use. This designation is based on surface types and non-winter conditions. Portions of the trail may never consider ATV use as compatible, although as improvements occur in natural surface sections ATV use may be accepted on a case-by-case basis. Concern over wetland impact and the spread of invasive species by ATVs/OHVs is expressed in the Plan. Guidelines were set forth to prescribe methods to avoid and control the spread of invasive species and avoid and/or minimize wetland impact as practicable.

Federal

Although the Forest Service plan does express concern about impacts from off-highway vehicles, the proposed project is compatible with the management plan as the type of project that is permissible to enhance the off-highway vehicle use experience. The Forest would work closely with the DNR, local government units (LGUs) and interest groups to evaluate site-specific locations of the trails and ensure the trails are compatible and interlink if possible. Objectives and guidance are laid forth for the control and limiting of invasive species, sustaining watershed health, and soil resources. Coordination with the Forest Service will occur to best ensure compatibility with these objectives.

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

Additional coordination with state, county, and private landowners for access approvals may be needed to allow ATV use on portions of the trail system. The proposer would request approval as needed for ATV use on segments of the Taconite State Trail.

Approximately 9.06 miles of proposed new trail would be located on tax forfeit (3.75 miles), tribal (0.80 miles), federal (2.18 miles), state (MnDOT and DNR, 0.55 miles), municipal (0.48 miles), and private land (1.30 miles). The alignments on tax forfeit land would be developed to ensure compatibility for ATV use with the County Comprehensive Land Use Plan. The trail on federal land would be developed to ensure compatibility for ATV use with the Superior National Forest Land and Resource Management Plan. The proposer intends to utilize existing county, forest, and logging roads, existing managed trails, and unidentified trails through woods to the greatest extent practicable, thus minimizing new trail construction.

11. Geology, soils and topography/land forms:

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

Geology in the vicinity of the project is generally shallow bedrock of the Canadian Shield. Depth

to bedrock is variable, typically ranging between 0 to 100 feet below the ground surface. Rock outcrop complexes are common in the arrowhead region of the state and are present within the project area. Approximately 75% of the mapped soil units have areas of bedrock at the ground surface, as described by the United States Department of Agricultural (USDA) National Resources Conservation Service (NRCS). Soils and plant communities on extremely shallow or exposed bedrock can be vulnerable to recreational over-use. For areas that need improvement or new construction, trail design will follow the *"Trail Planning, Design, and Development Guidelines"* manual (MN DNR 2007) to address any effects to geologic features such as sensitive bedrock outcrop areas. Club members and volunteers (trail managers) should work with area partners such as the DNR Trail Ambassador program to monitor shallow soils and exposed bedrock. The Trail Ambassador Program establishes informational and educational contacts by enabling volunteer monitoring efforts to promote safe, environmentally responsible operation of ATVs. Trail ambassadors are trained on the rules and regulations of operating ATVs and guidelines and policies of proper trail use in the recreation area. They are certified to monitor trail conditions, identify invasive species, and provide first aid. Other mitigation measures may include use of buffers and/or signage near sensitive areas. As with soil suitability in Item 11.b. below, the design level at preparation of this document is a broad characterization of soils and geology, to identify likely suitable soils and challenges. Detailed design will more precisely locate areas of instability or erosion potential and make minor reroutes (i.e., within the review corridor) or improve/construct a built-up trail section as appropriate.

There are no sinkholes, shallow limestone formations, unconfined/shallow aquifers, or karst conditions known to be within the project area. Susceptible geologic features are not anticipated to be impacted or result in limitations on project feasibility.

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.

The proposed project covers a wide area with many different soils, comprised of 45 soil map units plus areas of open water. See Attachment C for a table that includes soil map units and their characteristics within the review area. Soils are discussed below in the context of K and T factors. Briefly, the K Factor quantifies relative susceptibility of soil to sheet and rill erosion. The T Factor is an estimate of the maximum average annual rate of soil loss that can occur without significantly affecting crop productivity.
Figures 5-1 through 5-7 display the project area soil map units by erodibility, as defined by Soil Erodibility Factor (K factor). The K factor quantitatively represents the soils susceptibility to erosion. The lower the K factor the less susceptible the soil is to erosion and more capable the soil is to water permeation.
Some segments are in soils with T factors of 5 and 4 (see Attachment C). These are least susceptible to adverse effects due to erosion, and likely correlate with other beneficial characteristics for a road or trail alignment (e.g., avoiding steep slopes and wet areas). Segments not currently open to ATV use in soils with lower T factors (more susceptible to erosion) may need improvements to prevent erosion and allow sustainable trail use. Precise volumes of excavation and grading will be determined through final design, which generally follows the DNR Natural Surface Guidelines for ATV trails.

For proposed trails in Route Category 1 (existing routes currently open to ATV use) no change or potential impacts are anticipated to soils and topography.

Trail in Route Category 2 would need physical improvements to create a sustainable natural surface trail. Ground disturbance for improvements would consist of shallow excavation (approximately 12 inches in depth where needed to prepare subgrade) and shaping to prepare a sustainable natural trail surface. To minimize potential adverse impacts caused by erosion or soil instability, the proposer would coordinate with state, local, and federal agencies to monitor and maintain the trail according to BMPs as outlined in "Trail Planning, Design, and Development Guidelines" manual (MN DNR, 2007).

New use on natural surface trails has the potential to compact soils and lead to increased runoff. According to the DNR Watershed Health Assessment Framework, soil erosion potential is high throughout the primary watersheds associated with the project. Individual catchments range from mid to high for susceptibility, but most of the region is on the higher end of the range. No streams with impairments for total suspended solids (TSS) are located within or immediately downstream of the routes. Appropriate erosion and sediment control BMPs would be selected based on current site conditions and maintained through the duration of each construction phase. The purpose of BMPs is to reduce the potential for sedimentation occurring to surface water resources or migrating off site. Temporary BMPs will be inspected and maintained (per the NPDES Construction Stormwater Permit) until permanent vegetation and stabilization has occurred. Permanent BMPs will be incorporated into the trail design to minimize erosion of the trail during ongoing use per the "Trail Planning, Design, and Development Guidelines" manual (MN DNR, 2007). Design will consider modifications based on appropriate slopes and drainage, propose boardwalks or fill to correct areas of unsuitable soils, and avoid areas requiring extensive earthwork to the extent practicable.

Proposed trail without an existing road or trail corridor in Route Category 3 would require ground disturbance for improvements that may consist of shallow excavation (approximately 12 inches in depth where needed to prepare subgrade), backfill, and shaping to prepare a sustainable natural trail surface. Perimeter erosion control would be installed where needed, particularly in sensitive areas, prior to construction. Erosion control measures are described in Item 12.b. ii.

Construction of these routes would include slopes and surfaces designed to allow ATV use with minimal erosion, per the "Trail Planning, Design, and Development Guidelines" manual (MN DNR, 2007). Stormwater control measures, including vegetative buffers and other BMPs, would be incorporated into the project design and development of sustainable natural surface ATV trails as described in Item 12.b. ii.

Post construction, an adaptive management plan will be implemented to address soil and topography stabilization, corrections, and erosion controls as needed. Trail monitoring will follow the GIA program.

12. Water resources:

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

i. **Surface water** - lakes, streams, wetlands, intermittent channels, and county/judicial ditches. Include any special designations such as public waters, 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 species and 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 DNR Public Waters Inventory number(s), if any.

The proposed project is in a water resource rich area with many nearby rivers, streams, lakes, and wetlands. There are currently multiple waterbody crossings on the Prospectors Loop Trail, and wetlands are frequent. These surface water features are discussed in more detail in Section 11 a.iv below.

Several Wild Rice lakes are located nearby the System. These are East Vermilion, Stone Lake, Cranberry Lake, Gafvert Lake, East Twin Lake, West Twin Lake, Burntside Lake, Picket Lake, Grassy Lake, and Low Lake. Construction is proposed nearby the Grassy Lake and Low Lake outlets. The proposer will evaluate adding date restrictions for construction to avoid disturbance to wild rice outlets at Grassy Lake and Low Lake during the spring wild rice growing season. The Pike Bay Wildlife Management Area (WMA) is the only WMA within one mile of the system. No Waterfowl Management Areas, Wild and Scenic Rivers, or Designated Wildlife Lakes are located within one mile of the System.

One trout stream is present in the review area. The West Two River is a DNR-designated trout stream intersecting the System route (Table 12.1).

Stream Name	Stream ID (Kittle Number)	DNR Designation	Route Category Intersection	Figure Page
West Two River	H-001-046-024	Trout Stream	Existing Trail/ Improvements Needed	Figure 4-7

If work is required below the OHWL, required BMPs would be established during permitting. These could include floating silt curtain, construction during no flows/low flows, or winter conditions, and, if required, incorporate coffer or check dams into the final plans. These BMPs would avoid or minimize (TSS) – turbidity/sedimentation from entering nearby water resources. A DNR document, “Best Practices for Meeting MN DNR General Public Waters Work Permit GP 2004-0001” provides substantial guidance to engineers for designing and implementing projects that affect public waters.

Table 12.2 below lists the MPCA Section 303(d) listed Impaired Waters within one (1) mile of the proposed project

Stream Name	Reach	Impairment	Proximity to System
Partridge River	Headwaters to St. Louis River	Mercury in fish tissue, mercury in water column; and sulfate	Within 1 mile
Pike River	Sand River to Vermilion Lake	Sulfate	Existing crossing
St. Louis River	T58N R13W S35, east line to Partridge River	Mercury in fish tissue and water column	Within 1 mile

Table 12.3 below lists lakes within one mile of the proposed project designated as Section 303(d) listed impaired.

Lake	DNR Public Waters Inventory ID	Impairment	Proximity to System
Burntside	69-0118-00	Mercury in fish tissue	Within 1 mile
Colby	69-0249-00	Mercury in fish tissue	Within 1 mile
East Twin	69-0163-01	Mercury in fish tissue	Within 1 mile
Grassy	69-0082-00	Mercury in fish tissue	Within 1 mile
Low	69-0070-00	Mercury in fish tissue	Within 1 mile
Pfeiffer	69-0671-00	Mercury in fish tissue	Within 1 mile
Pike Bay	69-0378-03	Mercury in fish tissue and sulfate	Within 1 mile
Pike River Flowage	69-0580-00	Mercury in fish tissue	Within 1 mile
West Robinson	69-0217-00	Mercury in fish tissue	Within 1 mile
West Twin	69-0163-02	Mercury in fish tissue	Within 1 mile

Lake	DNR Public Waters Inventory ID	Impairment	Proximity to System
Wolf	69-0161-00	Mercury in fish tissue	Within 1 mile

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.

The project covers a relatively broad geographic area (see section 6c) with variable topography, therefore the depth to groundwater is variable across the review area. Areas of wet soils requiring improvements to allow ATV travel likely have shallow groundwater (less than 12 inches from the surface). One Minnesota Department of Health (MDH) wellhead protection area is located within one mile of the project, but proposed trails will not intersect the area.

The MDH County Well Index identifies one well within a 40-foot buffer of the entire project route. Well number 00244414 is located along the Babbitt to Hoyt Lakes Trail on the county road where no improvements are required. It is located approximate 13 feet from edge of roadway and will not be impacted.

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

i. **Wastewater** - For each of the following, describe the sources, quantities and composition ofall 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.

No sanitary, municipal/domestic, or industrial wastewater will be produced or treated by the project.

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

Areas surrounding the project are largely forested. This natural vegetation slows runoff and promotes infiltration where soils are suitable. Existing roads generally are graded to drain to vegetated roadside ditches.

Additional seasonal ATV use on existing routes (Route Category 1) and new and ongoing ATV use in Route Categories 2 and 3 have the potential to lead to increased sediment mobilization and erosion on natural surface trails. Monitoring and maintenance of natural surface trails would be necessary to prevent erosion that could contribute to adverse effects on stormwater quality, such as increased total suspended solids (TSS). The Club would work with local, state, and federal agencies to minimize potential adverse impacts caused by erosion or soil instability by monitoring and maintenance of the trail and using BMPs as described in the "*Trail Planning, Design, and Development Guidelines*" manual (MN DNR 2007).

Construction for Route Categories 2 and 3 (which could include fill and culvert, bridge, or boardwalk) would have potential to cause erosion and sedimentation to downstream water resources. Design at each wetland or aquatic resource crossing would follow avoidance and minimization requirements for wetland and waterway permitting. The proposer would work with engineers to develop and maintain a Stormwater Pollution Prevention Plan (SWPPP) that will specify temporary erosion and sediment control BMPs. Temporary and permanent erosion control BMPs might also be requirements of any necessary Public Waters Work Permits, local planning and zoning approvals, and/or WCA permits and CWA Section 404 permits. These BMPs include, but are not limited to, erosion control blanket on steep slopes, biorolls/filter logs, rock construction entrances, and/or seeding.

The project will disturb approximately 115.69 acres for trail improvements and new trail construction. Construction will be phased and not all disturbance will be concurrent. For access to areas of sensitive soils, means and methods will be left up to the selected contractor. The contractor will be expected to meet all permit conditions. Methods for protecting sensitive areas could include construction in frozen conditions or temporary access (e.g., swamp mats) to be removed after construction.

Climate trends are anticipated to increase the frequency of large storm events, making stormwater management critical for trail maintenance and prevention of stormwater pollution. Trail hardening creating a stable and compacted tread material, following the rolling grade, limiting tread grades to shorter segments may be utilized to limit soil erosion and sedimentation.

Ongoing maintenance will be necessary to keep these mitigation measures in place after construction. Through the GIA process, DNR reviews maintenance funding annually. Trail stewards currently conduct a weekly field review to check trail condition. In the Prospector Club's experience, there are Trail Ambassadors somewhere on site every weekend. Ambassadors coordinate to make sure the effort is spread out (e.g., not multiple groups on one weekend and none on others). The trail will be visited by Prospector Club, DNR, and other sponsors during the ongoing maintenance phase. Maintenance activities would also include standard erosion and sediment control BMPs as needed.

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

This project proposes no water appropriations nor well abandonment. No dewatering is anticipated at this time. While temporary in nature, if construction dewatering is needed, a DNR Water Appropriation Permit may be required.

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.

Wetland scientists have conducted field delineation of wetlands on most of the segments, and all areas will be delineated prior to permitting and construction. For context of wetland resources in the project area, Figure 4-1 through 4-7 shows approximate wetland locations as mapped by the National Wetlands Inventory.

Table 12.4 below summarizes the estimated impacts to wetlands in the project area. These estimates were prepared, erring on the side of overestimation, based on a maximum impact width through the estimated wetland areas.

Existing trails with no improvements proposed (Route Category 1) are not expected to have an impact on surrounding wetland resources.

Existing trails with proposed new ATV use and improvements (Route Category 2) and new trail segments without an existing corridor (Route Category 3) would have the potential to cause erosion and sedimentation to downstream water resources, including wetlands. Erosion would be managed as described in Section 12.b.2 above. Wetland disturbance would be minimized by crossing wetlands with boardwalks where practicable and using the narrowest trail footprint that would accommodate all allowed vehicles on each segment (i.e., 20 to 26 feet for segments shared with snowmobiles and trucks/highway vehicles and 12 to 14 feet for ATV only segments). Table 12.4 below summarizes potential wetland impacts due to improvements on existing trails and new trail construction. These are conservatively estimated from an intersection of the estimated wetlands and the widest possible build footprint using fill.

Both the Wetland Conservation Act (WCA) and Clean Water Act (CWA) require that impacts to aquatic resources be avoided or minimized; project alternatives are needed in justifying all impacts. Wetland replacement/mitigation is the last resort when avoidance is not feasible, and minimization has already been achieved. Project design will minimize impacts where practicable by proposing a narrower footprint or boardwalk crossing. Alternative routes were also considered for avoidance and minimization of wetland impacts. The Club has evaluated routes to identify the best alignments to make desired connections while evaluating cost and minimizing wetland impacts and impacts to other sensitive environmental areas. Examples of alternatives rejected include multiple alignments for the Range River crossing which had greater wetland impacts. These alternatives were rejected early in the evaluation process and are not presented here for detailed review. Minimization measures will be refined in the design process, and applications for WCA and CWA approvals will describe minimization measures and sequencing of project alternatives in detail.

Compensatory mitigation would be required for all permanent wetland impacts. Assessment for trails established using forestry exemptions will be conducted as the segments are permitted. Permitted impacts will include past forestry exemptions in replacement plan applications as needed.

Trail design would consider minimizing effects to the host watershed by such means as using equalizing culverts to maintain hydrologic connections between remaining wetlands. Like prevention of adverse effects due to stormwater discussed in 12 b. iii. above, climate trends are anticipated to increase the frequency of large storm events, making stormwater management critical for reducing impacts to the host watershed.

Wetland Type, Circular 39	Area of Wetland in Study Area (Acres)	Wetlands in Build Area Potential Impact Areas (Acres)
Type 1 (Seasonally Flooded Basin)	0.71	0.36
Type 2 (Fresh (Wet) Meadow)	0.23	0.12
Type 3 (Shallow Marsh)	0.83	0.42
Type 4 (Deep Marsh)	0	0
Type 5 (Shallow Open Water)	0	0
Type 6 (Shrub Swamp)	5.36	2.71
Type 7 (Wooded Swamp)	1.44	0.71
Type 8 (Bog)	3.57	1.63
Riverine Systems	0.21	0.08
Total	**12.35**	**6.03**

None of the wetland complexes are identified as public water wetlands by the Public Waters Inventory. Non-public water wetlands might be subject to permit requirements of the local WCA authority – typically St. Louis County, DNR, or a municipality depending on the location of impacts. Water-related permits applicable to the project include the CWA Section 404 permit issued by the USACE, the National Pollution Discharge Elimination System (NPDES) permit issued by the MPCA, and CWA Section 401 Water Quality Certification.

A section 401 water quality certification is required for any project with a federally issued license or permit that authorizes an activity that results in a discharge to a Water of the United States. The 401 certification becomes an enforceable component of the associated federal license or permit – either issued under Section 404 of the CWA or Section 10 of the Rivers and Harbors Act. The scope of a CWA section 401 certification is limited to assuring that a discharge from a federally licensed or permitted activity will comply with water quality requirements. MPCA is the certifying authority in the State of Minnesota.

Wetland mitigation requirements would be established in permitting, but generally would be provided by purchase of credits from an established wetland bank. Selection of a mitigation bank would follow siting criteria in MN Rule 8420.0522 Supb. 7, with replacement within watershed as priority if credits are available in the same watershed as the impact. The compensatory mitigation replacement ratio would be negotiated with the approving agency based on the type of impact. For wetland loss, the minimum would be 1:1 replacement, where every acre of wetland lost is replaced by a minimum of one acre of wetland. Depending on the wetland and/or water body impacted, outstanding resource value water (ORVW), trout stream or location of replacement, the ratio might increase. Temporary impacts to wetlands would be restored to pre-construction conditions as dictated by permit conditions. This would likely include restoring natural contours, re-seeding with recommended native vegetation, and/or other measures specific to the type of temporary impact.

b) **Other surface waters**- Describe any anticipated physical effects or alterations to surface water features (lakes, streams, ponds, intermittent channels, county/ judicialditches) 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 the water features. Discuss how the project will change the number or type of watercraft on any water body, including current and projected watercraft usage.

No changes in water quality, impairments, or fish and wildlife values of nearby waters are anticipated on existing routes currently open to ATV use (Route Category 1). Monitoring and maintenance of natural surface trails would be necessary to prevent erosion which could contribute to TSS impairments. Air emissions from ongoing use may emit mercury, similar to any combustion of fossil fuels; however, these emissions would be negligible compared to highway vehicle traffic, power plant, or other industrial sources of air emissions. Therefore, ATV use would not be expected to contribute to mercury impairments because of their negligible contribution to the overall deposition of mercury to these watersheds. The Club would work with local, state, and federal agencies to minimize potential adverse impacts caused by erosion or soil instability by monitoring and maintenance of the trail and using BMPs as described in the "*Trail Planning, Design, and Development Guidelines*" manual (MN DNR, 2007).

Improvements for Route Category 2 and Route Category 3 would have potential to cause erosion and sedimentation to downstream water resources. To minimize potential construction effects that could contribute to TSS effects, the project would require erosion and sediment control measures such as erosion control blanket on steep slopes. To minimize potential TSS effects from ongoing use, trail design would follow "*Trail Planning, Design, and Development Guidelines*" manual (MN DNR, 2007). Like Route Category 1, air emissions from ongoing use may emit mercury similar to any combustion of fossil fuels; however, these emissions would be negligible compared to highway vehicle traffic, power plant, or other industrial sources of air emissions. Therefore, ATV use would not be expected to contribute to mercury impairments.

Individual crossings would be designed based on the size and flow. Improvements include fill/hardening, culvert, boardwalk, and/or bridges for a sustainable trail surface at wetland and water crossings. Potential direct effects of improvements are modified/improved crossings of streams to provide safe fish passage. New or improved trout stream crossings would be designed to meet DNR requirements for maintaining flood flow, fish passage, and navigability (if applicable). Small stream crossings are anticipated to be temporary bridges without permanent alterations to the bed, bank, or cross section of the stream. Temporary bridge design would meet DNR's "no permit needed" criteria as described on the DNR's brochure for temporary bridge crossing available on the DNR Water Permits webpage[7].

[7] Temporary Bridges and Low-Water Ford Crossings (state.mn.us)

13. Contamination/Hazardous Materials/Wastes:

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

Areas in Route Category 1 (current ATV use, no improvements needed) would not have the potential for contamination, wastes, or hazardous materials as there are no improvements or construction anticipated for these segments.

Existing conditions were reviewed for trails that are not currently suitable for ATV use (i.e., areas in Route Category 2 currently used as snowmobile or ski trails) and for new trails (Route Category 3). Proposed construction in these route categories could include shallow excavation limited to about 12 inches in depth for subgrade preparation, where needed.

A query of the MPCA's "What's in My Neighborhood" online database (accessed March 2022) identified the following active Sites:

- Underground tanks associated with the Y Store Cenex (TS0005298), located approximately 300 feet from the Y Store Spur Tail

- Hazardous waste (MNR000108720) and aboveground tanks (TS0122436) associated with Minnesota DNR Trails & Waterways, located approximately 370 feet from the Your Boat Club Spur Trail.

- Aboveground tanks (TS0017071), underground tanks (TS0017071), and a petroleum remediation site (LS0021338) associated with the St. Louis County Tower Garage, located approximately 315 feet from the Your Boat Club Spur Trail

  Based on the shallow depth of proposed excavation and distance from known active sites, the proposer does not expect to encounter contaminants during construction. If contaminated soil is encountered during construction, the state duty officer will be contacted immediately.

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

There is potential during operation of the trail (i.e., ATV riding) that solid waste (trash) could be left behind. The Club works to promote trail stewardship and maintenance including discouraging littering. When this proposed project is completed, it will be operated, maintained, and managed by the Prospectors Alliance through the Minnesota Trail Assistance program (Grant-in-Aid program) which allows the use of Trail Ambassadors to help monitor for trail etiquette. Trail ambassadors would help monitor and maintain trails and manage trash. Solid waste would also be addressed by trail riders being encouraged in the rules and in the signage to stay on the mapped and signed trails. The proposed project is

not expected to generate significant amounts of solid waste during construction for those trail segments that would require improvements/construction. Solid waste generated during construction would be limited and would consist primarily of items like construction material packaging. The contractor would be responsible for removing any construction-generated wastes to appropriate off-site facilities for disposal.

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 adverse effects from the use/storage of chemicals/hazardous materials including source reduction and recycling. Include development of a spill prevention plan.

   During operation (i.e., ATV riding), the project could introduce small quantities of fuel and other materials such as hydraulic oils into the environment. The release of such material is anticipated to be negligible in quantity. To minimize fuel leaks, the Club encourages trail stewardship which includes maintaining vehicles to avoid leaks. For trail segments that would require improvements/construction, some hazardous materials (such as fuel and lubricants for machinery) would be used. These materials would be used during active construction only, and the contractor would be required to follow Pollution Prevention Management Measures (Part IV.F.2) of the NPDES Construction Stormwater Permit. Refueling spills and equipment breakdowns, such as a broken hydraulic line, could introduce contaminants into the soil during construction. Equipment operators would be instructed to take precautions when refueling equipment and on what to do in the event of an equipment breakdown. Refueling would be conducted away from surface waters and equipment would be regularly inspected by the contractor with appropriate oversight from the lead engineer, and repaired to prevent inadvertent loss of fuels, oils, or other hazardous fluids. Any spills will be reported to MPCA by the contractor or lead engineer. All hazardous materials will 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, and disposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of hazardous waste including source reduction and recycling.

   No hazardous wastes are anticipated to be generated/stored during construction or ongoing trail operation.

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 has connections over a relatively broad geographic area (see section 6c). As classified by the DNR's Ecological Classification System (ECS), the Prospectors Loop Trail is located within the Laurentian Mixed Forest (LMF) ecological province, with conifer forest, mixed conifer-hardwood forest, and conifer-dominated wetlands. The routes are in the Northern Superior Uplands ecological section, which is characterized by shallow bedrock of the Canadian Shield, with high topographic relief. Typical native vegetation is fire-dependent forests and woodlands with inclusions of peatlands and wet forests.

   The project is nearby many Minnesota Biological Survey (MBS) sites of high biodiversity significance.

Short lengths of the routes proposed for improvement cross some of these sites. Forest management and recreation are dominant current land uses.

Fisheries: The Prospectors Loop Trail is in an area nationally and regionally known for its plentiful lake and stream resources. Fish commonly sought by anglers in the proposed project area are typified by coolwater and warmwater game fishes, such as walleye, sauger, northern pike, smallmouth bass, sport fish (sunfish and crappies), and small forage fish (minnows, shiners, and darters). The walleye fishery attracts anglers to the area and many lakes are managed for walleye through stocking and fishing regulations. Deeper lakes in the area also possess a coldwater fish community which includes species such as lake trout, whitefish, cisco, and burbot. Additionally, state-designated trout streams in the project area possess populations of brook trout.

Wildlife: Resident wildlife in the proposed project area includes species common to areas with conifer and mixed forest, such as beaver, wolves, black bear, northern long-eared bat, bald eagle, and spruce grouse, ruffed grouse, white-tailed deer, moose, woodcock, an array of songbirds, hawks, and owls, and many small mammals such as voles, shrews, squirrels, mink, etc, and furbearers such as fisher, marten, red and gray fox, and otter. Rare species are discussed under item 14b below.

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-____) and/or correspondence number (MCE_____) from which the data were obtained and attach the Natural Heritage Review letter from the DNR. Indicate if any additional habitat or species survey work has been conducted within the site and describe the results.

On February 22, 2022, SEH staff submitted a request for Natural Heritage Information System (NHIS) staff to review and comment on the proposed project. In correspondence #MCE 2022-00080, the Natural Heritage Review notes that floating marsh-marigold, state-listed as endangered and New England sedge, state-listed as threatened are known from areas near the trail and botanical survey may be needed. The proposed trail in the vicinity of the New England sedge occurrence will not require construction, therefore the proposer does not plan to conduct survey for New England sedge. Floating marsh-marigold has been identified in the proposed trail corridor and is discussed in more detail below. The correspondence also recommends use of natural netting erosion control products and avoidance of plastic-containing mulch to avoid impacts to smoky shrew (state-listed as special concern) and wood turtle (state-listed as threatened).

In addition, the proposer's consultant, SEH, queried the DNR NHIS data (LA-1027) on March 17, 2022 to determine what significant natural features and rare features are known to occur within a one mile buffer of the proposed project area. The query identified multiple rare features near the project area, including federal and state listed species, as identified below and discussed in Item 14c.

Ecologically Significant Areas. Minnesota Biological Survey (MBS) identified several Sites of Biodiversity Significance in the proposed project including areas designated as Preliminary Sites. Sites of Biodiversity Significance have varying levels of native biodiversity and are ranked based on the relative significance of this biodiversity at a statewide level. Sites ranked as High contain very good quality occurrences of the rarest species, high quality examples of the rare native plant communities, and/or important functional landscapes. Sites ranked as Moderate contain occurrences of rare species and/or moderately disturbed native plant communities, and/or landscapes that have a strong potential for recovery. These sites contain multiple native plant communities and old-growth forests. The project should minimize additional disturbance within

and adjacent to these sites as much as possible. Actions to help minimize disturbance of ecologically significant areas is discussed below in 14d. No new trail construction is proposed within sites of high biodiversity significance. Attached **Figure 7** shows the location of MBS sites in relation to the trail segments. The MBS sites crossed are listed in the table below.

MBS Site Name	Biodiversity Significance	Segment / Route Category (RC)
Allen Junction Fen	High	Babbitt to Hoyt Lakes / RC 2
Burntside	High	Cloquet Line / RC 2
Colvin Creek Headwaters	Moderate	Babbitt to Hoyt Lakes / RC 1
Hush Lake Peatlands	High	Babbitt to Hoyt Lakes / RC 2
S Branch Partridge River	Moderate	Babbitt to Hoyt Lakes / RC 1

There are MBS-mapped Native Plant Communities (NPCs) in the review area for the Babbitt to Hoyt Lakes segment. MBS has not mapped NPCs in areas of proposed new trail construction. The communities are FDn43b1 (Aspen – Birch Forest, Balsam Fir Subtype) and AFP_CX (Alder Swamp/Forested Peatland Complex). These are in areas of Route Category 2, existing categories which may require improvements for sustainable ATV travel. The FDn43b1 community has a conservation rank of S5 (secure). The AFP_CX community could range from S3-S4-S5 (vulnerable, apparently secure, or secure), depending on the specific community type within the complex. Attached **Figure 7** shows the location of mapped NPCs in relation to the trail segments.

According to DNR data, there are no designated old growth forests or designated future old growth forests within 0.25 miles of any trail segment. There is one candidate old growth forest within 0.25 miles of the Tower to Pfeiffer segment. No disturbance to the candidate old growth forest is proposed.

State-Listed Species. Minnesota's Endangered Species Statute (Minnesota Statutes, Section 84.0895) requires the DNR to adopt rules designating species meeting the statutory definitions of endangered, threatened, or species of special concern. The resulting List of Endangered, Threatened, and Special Concern Species is codified as Minnesota Rules, Chapter 6134. The Endangered Species Statute also authorizes the DNR to adopt rules that regulate treatment of species designated as endangered and threatened. These regulations are codified as Minnesota Rules, Parts 6212.1800 to 6212.2300.

Minnesota's Endangered Species Statute and the associated Rules impose a variety of restrictions, a permit program, and several exemptions pertaining to species designated as endangered or threatened. A person may not take, import, transport, or sell any portion of an endangered or threatened species. However, these acts might be allowed by permit issued by the MN DNR; plants on certain agricultural lands and plants destroyed in consequence of certain agricultural practices are exempt; and the accidental, unknowing destruction of designated plants is exempt. Species of special concern are not protected by Minnesota's Endangered Species Statute or the associated Rules; however, the measures incorporated to protect listed species and generally minimize impacts to wildlife and wildlife habitat will also benefit non-listed species. The following state or federally listed or otherwise protected species might occur within the project are listed in the table below.

Species	State Status	Federal Status	Habitat
Pale Moonwort (Botrychium pallidum)	Special Concern	Not applicable	The habitat of pale moonwort consists of disturbed sites (old fields, gravel pits, roadsides, etc), mesic hardwood forests, and upland/wetland ecotones. These habitats are neither regionally unique nor rare.
St. Lawrence Grapefern (*Botrychium rugulosum*)	Special Concern	Not applicable	St. Lawrence grapefern occurs in a wide variety of habitats but particularly transitional communities and upland /wetland ecotones. These habitats are neither regionally unique nor rare.
Least Moonwort (*Botrychium pallidum*)	Special Concern	Not applicable	Least moonwort occurs in a wide variety of habitats but particularly prairies, edges of forests, and upland/wetland ecotones. These habitats are neither regionally unique nor rare.
Pale Moosehair Lichen (*Bryoria fuscescens*)	Special Concern	Not applicable	Pale moosehair lichen is uncommon across the Northern Superior Uplands and is not habitat specific. It is known to occur on variety of tree species- although most consistently on conifers - as well as on cliff-faces.
Floating Marsh-marigold (*Caltha natans*)	Endangered	Not applicable	Floating marsh-marigold occurs in shallow, slow-moving water, pools, beaver ponds, and sheltered lake margins.
Gray Wolf (*Canis lupus*)	Not applicable	Threatened	Suitable habitat for the gray wolf occurs throughout the LMF in MN into the Eastern Broadleaf Forest ecological province. This habitat is neither regionally rare nor unique.
New England Sedge (*Carex novae-angliae*)	Threatened	Not applicable	New England sedge is known from mesic hardwood forests particularly any wetland/upland ecotones.
Ram's Head Orchid (*Cypripedium arietinum*)	Threatened	Not applicable	Ram's head orchid is known from coniferous swamps, upland conifer forests, and upland mixed conifer hardwood forests.
Neat Spikerush (*Eleocharis nitida*)	Special Concern	Not applicable	Neat spikerush is often found in small, wet, localized depressions including shallow ditches and wheel ruts.
Wood Turtle (*Glyptemys insculpta*)	Threatened	Not applicable	Wood turtle is known from small to medium sized fast-moving watercourses, and will often occupy wetlands within ¼ mile of a watercourse

Species	State Status	Federal Status	Habitat
Black Sandshell (*Ligumia recta*)	Special Concern	Not applicable	Black sandshell occurs in watercourses. It was reported from the St. Louis River nearby the project.
Canada Lynx (*Lynx canadensis*)	Special Concern	Threatened	The system occurs within mapped critical habitat of the Canada lynx. Coniferous/boreal forests are the primary habitat of the Canada lynx.
Broadleaf Water Milfoil (*Myriophyllum heterophyllum*)	Special Concern	Not applicable	Submerged aquatic species known from lakes.
Northern Long-Eared Bat (*Myotis septentrionalis*)	Special Concern	Threatened (will be classified as endangered on March 31, 2023)	The northern long-eared bat typically roosts in tree snags, under loose tree bark, and in tree cavities in forested habitats. Roost Trees have been reported in Morse Township (T62N R12W), and hibernacula are present in Breitung Township (T62N R15W).
A Purse Casemaker Caddisfly (*Ochrotrichia spinosa*)	Endangered	Not applicable	This caddisfly feeds on diatoms and is associated with fast-moving watercourses.
Small Green Wood Orchid (*Platanthera clavellata*)	Special Concern	Not applicable	The habitat of the small green wood orchid consists of coniferous swamps, bogs, and fens.
Small Shinleaf (*Pyrola minor*)	Special Concern	Not applicable	Small shinleaf is primarily known from coniferous swamps and bogs.
Lapland Buttercup (*Ranunculus lapponicus*)	Special Concern	Not applicable	Lapland buttercup is known from coniferous swamps.
Smoky Shrew (*Sorex fumeus*)	Special Concern	Not applicable	Smoky shrew is known from sphagnum bogs, mossy, talus slopes, glacial boulder streams, and mixed forest.
Peppered Moon Lichen (*Sticta fuliginosa*)	Special Concern	Not applicable	Peppered moon lichen is known from a variety of tree species in forested wetlands, old-growth forest, and cliff-faces.
Torrey's Mannagrass (*Torreyochloa pallida*)	Special Concern	Not applicable	Torrey's mannagrass occurs in a variety of wetland habitats particularly the margins of slow-moving streams, lakes, and ponds in mucky substrate.

Additional Species Survey Work

A formal listed species survey has not been completed. However, during the wetland delineation conducted in the fall of 2021, SEH botanists and wetland scientists reviewed the alignments for presence of suitable habitat for rare plants. Three populations of floating marsh-marigold were observed along the proposed trail alignment. SEH provided this data to NHIS in January 2022. If alternatives to avoid the populations are determined to not be practicable, an application for a takings permit is anticipated. Additional coordination with NHIS is anticipated during project

permitting. Surveys for rare species and any avoidance plans will be completed as needed.

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. Separately discuss effects to known threatened and endangered species.

Species Impacts. Construction in Route Categories 2 and 3 and ongoing trail use could alter wildlife habitats. Wildlife currently conditioned to the proposed project site would be subject to new types of disturbances caused by the ongoing human activity and noise associated with ATV use. The proposed project will not create large scale habitat change, therefore wildlife species less sensitive to disturbance are unlikely to be impacted. Where trails are near roads, more and less sensitive wildlife in the area may already be conditioned to human use. In more remote areas, the increase in ATV use may cause more sensitive species to change their habits to avoid noise. Large predators (e.g., wolves and Canada lynx) may use trails for travel and hunting. Of 59.14 miles of trail included in the proposed project, 50.08 are existing and may already be used by predators in this manner. The proposed 9.06 miles of new trail may alter predator travel/hunting patterns. Collisions with large predators or ungulates are unlikely on the new natural surface trails given the speed of travel; however, smaller wildlife (e.g., reptile) collisions and mortality are possible. During construction, "natural netting" or "bio netting" erosion control blankets will be specified to avoid impacts to small vertebrates.

Floating marsh-marigold is sensitive to habitat disturbances, such as indirect impacts from surface runoff or the spread of invasive species. As currently proposed, there will be trail construction or improvements in two of the three areas where floating marsh-marigold was observed. The originally planned route for the Tower to Pfeiffer Lake/ Y Store Spur intersection would have impacted the third observation of floating marsh-marigold but has been re-routed off existing trail to avoid impacts to the species at that occurrence. Impacts to the two other occurrences would be due to the placement of fill to allow for the trail to be constructed on stable soils. If impacts to the other two occurrences of floating marsh marigold cannot be avoided, a takings permit with associated mitigation will be applied for. Threatened and endangered species takings permits are only done on Parks and Trails (PAT) administered lands in special situations when all alternatives have been explored. Avoidance of the species is strongly preferred and when possible, PAT works to improve the status of rare species. Threatened and endangered take permits require the Commissioner's approval.

Suitable habitat for New England sedge and rams head orchid is present within the project area. No known populations of these plant species would be impacted. Suitable habitat for gray wolf, wood turtle, Canada lynx, and northern long eared bat (NLEB) is also present within the project area.

Impacts to the gray wolf and Canada lynx are anticipated to be negligible. The trails are largely following existing corridor which limits habitat conversation. Noise generated by trail users will be temporary and short in duration but would be anticipated to temporarily displace the gray wolf or Canada lynx away from the trail.

Plant Community and Ecosystem Impacts. Potential for effects includes construction related effects of direct excavation and fill, erosion/sedimentation, and transport of invasive species. Ongoing ATV use has potential to cause erosion and may spread invasive species.

Wetlands within MBS Sites of High Biodiversity Significance might qualify as rare natural communities under the WCA. Wetlands that have the potential to be identified as a rare natural

community would be further evaluated and under Minnesota Rules 8420.0515, Subp. 3 states that a wetland replacement plan for activities that modify a rare natural community must be denied if the LGU determines the proposed activities will permanently adversely affect the natural community.

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.

Activities that could impact the northern long-eared bat (NLEB) include disturbance to hibernacula and destruction/degradation of habitat. To avoid impact, tree removal would be avoided during pup rearing season, June 1st through August 15th. The US Fish and Wildlife Service (USFWS) interim guidance will be followed. The DNR Lake States Forest Management Habitat Conservation Plan will be followed on DNR managed lands. Impacts to the NLEB from noise is anticipated to be negligible. Increases in noise will be temporary and typically short in duration only occurring during daytime hours. Bats roosting in trees may be disturbed by ATV/OHV noise; however, suitable roosting forested habitat away from the trails is neither unique nor rare in the surrounding area, and if impacted by noise adjacent to the trail there should be suitable roosting locations nearby. Impacts to the bat's ability to feed are not anticipated as trail use would largely occur during daylight hours.

To avoid and minimize impacts to wood turtle and other aquatic species, construction BMPs will be used to exclude turtles from the construction area and prevent erosion/sedimentation to aquatic habitat. Erosion control measures should not be mesh (plastic, nylon, etc.) that could cause entrapment of wood turtles or other wildlife. In addition, construction and regular maintenance of trails near suitable wood turtle streams should be scheduled, to the extent practicable, outside of wood turtle nesting season (approximately May-June).

DNR Public Waters Work Permits would include work exclusion periods to protect fish spawning and migration. No activity affecting the bed of the protected water would be conducted during exclusion periods. For warm water system, the exclusion period is April 1 – June 30 of the same year. For cold water systems (designated trout streams), the exclusion period is September 15 through June 30 of the following year.

Habitat/site of high biodiversity significance impacts can also be addressed by trail riders being encouraged in the rules and in the signage to stay on the mapped and signed trails as well as to use the PlayCleanGo program, including cleaning machines prior to using the trail system. The Minnesota GIA program would allow the use of Trail Ambassadors to help keep invasive species in check and monitor for trail etiquette and safety. The trail will be signed adequately to inform users of the designated routes and trail rules/requirements. Installation of gates in specific locations will be considered to restrict access during sensitive environmental periods such as in spring or particularly wet periods, on old logging roads, burned over areas, other easily accessible forest sites, and areas adjacent to but not approved for ATV use.

Stormwater pollution prevention BMPs would be implemented to prevent water quality degradation. To reduce potential impacts to wildlife habitat itself, design standards will follow the sustainable natural surface trail design practices described in the "*Trail Planning, Design, and Development Guidelines*" manual (MN DNR, 2007) throughout the project area to minimize tread area and potential erosion.

Potential design features that could provide benefit to wildlife include greater buffering along water and wooded areas. Project amenities such as picnic areas or overlooks are planned for

existing clearings and trail corridors and will avoid sensitive habitat.

The Trail Ambassador Program establishes informational and educational contacts by enabling volunteer monitoring efforts to promote safe, environmentally responsible operation of ATVs. Trail ambassadors are trained on the rules and regulations of operating ATVs and guidelines and policies of proper trail use in the recreation area. They are certified to monitor trail conditions, identify invasive species, and provide first aid. They are not however licensed peace officers, and therefore cannot arrest or detain violators. The ATV GIA program would also allow an area ATV club to help maintain the trail system and remove invasive species.

Invasive species can adversely impact wildlife habitat. Prevention and control of invasive species would be considered in the design, construction, and maintenance of trails. Measures to prevent the spread of invasive species during construction include working in non-infested areas first before moving to infested areas; thoroughly cleaning equipment after working in infested areas; and revegetating disturbed areas as soon as possible after construction is completed. Wood chips or other mediums which allow invasive plants to easily take root will not be used for the trail system. Where infestations are identified, control methods will be applied to limit the spread and impact of invasive species. Where disturbed land will be stabilized by seeding, native seed mixes will be used. Contractors will be instructed to clean equipment before and after use, and the construction will use clean fill.

The Trail Ambassador Program establishes informational and educational contacts by enabling volunteer monitoring efforts to promote safe, environmentally responsible operation of ATVs. Trail Ambassadors are trained on the rules and regulations of operating ATVs and guidelines and policies of proper trail use in the recreation area. They are certified to monitor trail conditions and identify invasive species. The ATV GIA program would also allow an area ATV club to help maintain the trail system and remove invasive species. Trail maintenance funding will be used to hire contractors to control invasive species as needed. Keeping riders on designated trails will limit the potential of transporting invasive species to other areas.

If a lake, stream, or wetland contains an aquatic invasive species that could spread to other waters, it is added to the infested waters list. During trail construction, any work in infested public waters, such as construction of crossings, would require a joint Public Waters Work Permit/Invasive Species Permit. The joint permit includes conditions to help mitigate the spread of aquatic invasive species, such as decontamination of equipment used in infested waters and for the transport of infested materials. A list of infested waters is available on the DNR Infested Waters webpage.

15. Historic properties:

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

According to the Minnesota Office of the State Archaeologist's Public Viewer[8] previously known historic

[8] MN OSA Public Viewer

structures, archeological sites, and/or traditional cultural properties are in the same sections as proposed segments of the Prospectors Loop Trail. There are two properties located in the same municipality as proposed trail segments which are listed in the National Register of Historic Places: The First Diamond Drill Site located in the City of Hoyt Lakes and the Bull-of-the-Woods Logging Scow located in Morse Township. Neither of these properties are within the proposed project area and will not be impacted by the project.

A project review request was sent to the Minnesota State Historic Preservation Office (SHPO) on March 8, 2022. SHPO responded on April 5, 2022 (Attachment E, correspondence #2022-1112) with a recommendation for Phase 1a literature review and archaeological assessment in the project area. The proposer plans to contract a consultant to undertake this review and will coordinate findings with SHPO and other regulatory and funding authorities when available. Follow up Phase 1 field survey will be conducted if recommended based on the results of the Phase 1a review.

16. Visual:

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

The Prospectors Loop Trail enjoys multiple scenic views and vistas because of the natural land cover and steep topography common in the region. These areas are an important part of trail user experience due to unique aesthetic value. Substantial changes to scenic and views/vistas are not anticipated, and no lighting or vapor plumes are proposed as part of the project.

Impacts to visual aesthetics are expected to be minimal and include the installation of additional signage identifying the route. The signage would be similar to wayfinding signage for other roads, trails, and amenities in the area. Signs would follow the standards of the "Minnesota Manual on Uniform Traffic Control Devices" (MnDOT). Clearing of trees/shrubs required for proposed new trail segments would result in visual changes; however, might provide the opportunity to access scenic views/vistas to new users because of the proposed trails. Although not as popular as non-motorized hiking trails, ATV trails do provide hiking opportunities, and sometimes provide a more accessible option for persons unable to hike the rough terrain of non-motorized trails such as the Superior Hiking Trail. The ATV trails will be open to hikers which provides the opportunity to access on foot scenic views/vistas along the proposed trails.

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 effects from stationary source emissions.

   There are no stationary sources of air emission currently on the proposed project site or proposed as part of the project.

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

or mitigate vehicle-related emissions.

During operations, an expected increase in vehicle-related emissions would occur because of the proposed new ATV travel and associated trailering traffic. These increases are anticipated to be sporadic and intermittent. Air emissions would be restricted to the months in which the trails are open for ATV use. Construction equipment would have emissions during construction of new trail and improvements. Construction emissions are anticipated to be minor and temporary in nature. Ongoing ATV operations emissions are expected to increase.

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

No significant odors are anticipated to result from ATV trail riding. Odors that may be strong or offensive to some would be generated where vehicles congregate; however, such congregations are anticipated to be sporadic and temporary. As the proposed routes become operational, ATVs may create dust on natural surface trails. Dust would depend primarily on types and numbers of vehicles, operating speeds, time of day, and trail moisture conditions.

Dust from the construction of new trails or the physical improvement of existing trails is expected during periods of dry weather. Dust would be visually monitored and recorded in conjunction with the NPDES Construction Stormwater Permit inspections. Appropriate dust control BMPs, such as soil wetting or misting/water vapor, would be implemented by the construction contractor as necessary. Specific BMPs would be determined based on severity, weather conditions, and site conditions. Post-construction, the Club may implement dust mitigations measures, such as wetting the trail during dry periods.

18. Greenhouse Gas (GHG) Emissions/Carbon Footprint

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 come to that conclusion and any GHG emission sources not included in the total calculation.

Construction Emissions

During construction, gas-and diesel-powered equipment will generate GHG emissions. Construction equipment will generally be on-site. Construction emissions are anticipated to be minor and temporary in nature. Construction is anticipated to begin in fall and last approximately six months, with some exclusions assumed due to weather or other site conditions. For the purposes of this assessment, it is assumed that there is a maximum of 120 days of construction for the project and two pieces of equipment are assumed to be in operation for 12 hours per day (hrs/day in the table below).

Gallons of diesel fuel that will be used during construction are estimated using the information

above. Emission factors for greenhouse gas inventories are published by the EPA[9] and were utilized to estimate the emissions of carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) generated by construction of the project. Emissions of carbon dioxide, methane, and nitrous oxide are multiplied by their global warming potentials[2] and summed using the following equation to estimate total greenhouse gas emissions (CO_2e^2):

$$CO_2e = 1*CO_2+25*CH_4+298*N_2O$$

According to this GHG assessment, carbon emissions related to the construction equipment is estimated to be 596.5 metric tons.

Off-road Equipment	No./ day	Hrs/ day	Total Days	Gal/hr	Est. gals	Emission Factors[1] CO_2 kg/gal	Emission Factors[1] CH_4 g/gal	Emission Factors[1] N_2O g/gal	Emissions CO_2 MT	Emissions CH_4 MT	Emissions N_2O MT	Emission CO_2e^2 MT
Diesel Construction Equipment	2	12	240	10	57,600	10.21	0.2	0.47	588.1	0.012	0.03	596.

[1] EPA Emission Factors for Greenhouse Gas Inventories Tables 2, 3, and 4 (updated March 26, 2020)

[2] CO_2e emissions calculated using Global Warming Potentials from 40 CFR Part 98 Subpart A Table A-1 ($CO_2e = 1*CO_2+25*CH_4+298*N_2O$)

Operational Emissions

Similar to air emissions, GHG emissions related to ATV travel and associated trailering traffic are also anticipated to increase as a result of the proposed project. These increases in emissions are anticipated to be sporadic and intermittent. ATV emissions would be restricted to the months in which the trails are open for ATV use.

For context of likely traffic counts, local trail managers estimate ATV trail usage of the existing Stoney Spur segment of the Prospectors Loop Trail at 80 to 120 machines per month. There is no readily available trail use data for other segments of the Prospectors Loop Trail system.

When completed, the entire Prospectors Loop Trail system is anticipated to attract 100 to 150 machines per week or 400 to 600 per month on loop portions and 25 to 75 machines per week on spurs such as the Bear Run segment. The Prospectors Loop Trail system is open for six months out of the year for ATV use (closed December through March for snowmobile season, all of November for big game hunting, and April during spring break-up.), therefore the approximate yearly ATV trail use is estimated at 3,600 machines for the entire trail system.

Operational emissions related to the 59.14 miles of trail included in the project were estimated using an estimated 3,600 ATVs per year and an average of 10 miles per gallon. Total greenhouse gas emissions (CO_2e^2) were estimated using a similar method as described above for the emissions related to construction. Estimated gallons of gasoline used annually were calculated using the estimated ATVs per year, mileage of the trail, and average miles per gallon. Emission factors for gasoline were used to calculate emissions of carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) and global warming potentials were applied to estimate total greenhouse gas emissions (CO_2e^2) related to annual operational use of the trail segments.

Estimates indicate use of the segments of trail included in the project would generate 191 to 192 metric tons of emissions annually.

[9] Emission Factors for Greenhouse Gas Inventories (epa.gov)

[2] eCFR :: Table A-1 to Subpart A of Part 98, Title 40 -- Global Warming Potentials

On-trail Equipment	Est. Annual ATVs	Miles	Miles/ gal	Est. gals	Emission Factors[1] CO_2 kg/gal	Emission Factors[1] CH_4 g/mile	Emission Factors[1] N_2O g/mile	Emissions CO_2 MT	Emissions CH_4 MT	Emissions N_{2O} MT	Emissions CO_2e^2 MT
Recreational Vehicles (2-stroke engine)	3,600	59.1	10	21,276	8.78	7.81	0.03	186.80	0.166	0.001	191.1
or Recreational Vehicles (4-stroke engine)	3,600	59.1	10	21,276	8.78	8.45	0.19	186.80	0.18	0.004	192.5

[1] EPA Emission Factors for Greenhouse Gas Inventories Tables 2, 3, and 4 (updated March 26, 2020)

[2] CO_2e emissions calculated using Global Warming Potentials from 40 CFR Part 98 Subpart A Table A-1 (CO_2e= 1*CO_2+25*CH_4+298*N_2O)

b. GHG Assessment

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

The Club encourages trail stewardship, including the maintenance of vehicles to maintain emission standards. Otherwise, no mitigation measures are proposed. Construction-related emissions will be temporary. The construction contractor will be encouraged to reduce emissions through practices such as limitations on idling equipment.

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

Not applicable. No mitigation measures proposed.

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.

Estimates indicate operational ATV use of the trail segments included in this project could generate 4,341 to 4,682 metric tons of emissions annually. Overall, the project is not anticipated to negatively affect the achievement of any GHG reduction goals.

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 state noise standards, and 4) quality of life. Identify measures that will be taken to minimize or mitigate the effects of noise.

Generally, ATV noise is regulated by MN Rule 6102.0040, Subp. 4.B, which restricts noise emission from ATVs and ORVs

"…so that overall noise emission does not exceed a sound level limitation of not more than 99 decibels on the A scale from a distance of 20 inches using test procedures and instrumentation as set forth in the Society of Automotive Engineers' Standard, SAE J1287, June 1988, or, if different procedures or instrumentation are used, a noise level equivalent to that level."

Ambient noise on existing snowmobile trails is currently generated by winter vehicle (snowmobile) traffic. A change in use to allow ATVs would involve new of increased noise due to ATV traffic in the spring, summer, and fall.

The region surrounding the Prospectors Loop Trail is mostly sparsely populated, and surrounding land use is mostly natural vegetation, timber management, and recreation. Sensitive receptors include the public recreating near the segments and private landowners adjacent to trail segments. Most trail segments are distant from private residences.

For the proposed trail segments, any private parcel within 0.25 miles was considered "nearby" for purposes of evaluating noise effects. The numbers of private landowners, parcels with structures, and parcels identified as owner homestead within 0.25 miles of a proposed trail segment are summarized below. Numbers displayed are based on available parcel and tax data for parcels within 0.25 miles of a trail segment; although a parcel is within 0.25 miles of a proposed trail segment, the structures therein may be more distant from the trail.

Trail Segment	Number of Private Landowners within 0.25 miles	Building/Structure Present	Owner Homestead
Babbitt to Hoyt Lakes	94	91	62
Bear Run	50	26	10
Cloquet Line to North Grassy Lake Road	1	1	0
Tower to Pfeiffer Lake, Y Store Spur, & Your Boat Club Spur	72	41	20

Most residences near the trails are concentrated near developed areas. For example, of the 94 private landowners within 0.25 miles of the Babbitt to Hoyt Lakes segment, 61 are located near the developed area of Hoyt Lakes. Overall, the ATV traffic near private residences is anticipated to be like other common noise sources in the area, such as highway traffic from Highway 169 / Highway 1. ATV traffic is anticipated to be intermittent and temporary in nature as the riders travel along the trail segments. Minor seasonal increases in noise are expected for areas not in proximity to existing highways. Buffering vegetation will remain between the trail and private structures, and private landowners are not anticipated to experience a negative change in quality of life from the intermittent noise generated during routine trail operations.

Wildlife would also be exposed to noise levels near or along the trail. This noise is anticipated to be sporadic and short in duration. Increased background noise can affect wildlife behavior and physiology. Noise generated by trail use would be temporary and short in duration and not anticipated to increase overall background noise. The short and temporary increases in noise could temporarily dislocate wildlife not conditioned to noise generated by ATVs/OHVs. Species present would have a varying level of tolerance to disturbance in general and noise in particular. Noise-sensitive species such as bats may be temporarily displaced or change roosting/foraging habits in vicinity of the trails.

Construction effects would include noise typical of road or trail project construction contractors using skid steers, small excavators, or similar machinery. Construction noise would be temporary and limited to daytime hours.

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 alternative transportation modes.

Public parking is currently provided at number trailheads including the Babbitt Softball complex, the Bird Lake Trailhead parking area at Bird Lake, and the Bird Lake Trailhead parking area east of Hoyt Lakes. One new parking area is proposed to accommodate about six vehicles and trailers, to be accessed from TH 169 on the Bear Run segment. The proposer has an access permit from MnDOT for this parking area. Additional available parking areas are provided by local businesses offering services such as food, lodging, gas, trailer/vehicle parking, and minor repairs. These services (including parking) are provided and maintained by those businesses.

The proposed project involves an estimated 59.14 miles of trail, including 50.08 miles of existing snowmobile trail, ski trail, and/or roads and 9.06 miles of new trail. Increases in traffic- would occur because of new ATV use and associated vehicles trailering ATVs to the trail system. These increases would be sporadic and intermittent and restricted to seasonal (spring, summer, fall) use in which these segments would be open to ATVs. There is no plan for winter use by ATVs, therefore no conflicts with snowmobile use or groomer operations are anticipated. Seasonal (spring, summer, fall) ATV traffic is anticipated to be similar to current winter snowmobile traffic, where users access trailheads from parking areas. Construction-related traffic is anticipated to be minor and temporary in nature.

For context of likely traffic counts, local trail managers estimate ATV trail usage of the existing Stoney Spur segment of the Prospectors Loop Trail at 80 to 120 machines per month. There is no readily available trail use data for other segments of the Prospectors Loop Trail system. When completed, the entire Prospectors Loop Trail system is anticipated to attract 100 to 150 machines per week or 400 to 600 per month on loop portions and 25 to 75 machines per week on spurs such as the Bear Run segment. The Prospectors Loop Trail system is open for six months out of the year for ATV use (closed December through March for snowmobile season, all of November for big game hunting, and April during spring break-up), therefore the approximate yearly ATV trail use is estimated at 3,600 machines for the entire trail system.

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

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 transportation effects.

Project related transportation effects are not anticipated. Any increase in traffic that might occur is expected to be minor. Any temporary traffic disruptions would be mitigated by implementing proper traffic control measures as specified in the "*Minnesota Manual on Uniform Traffic Control Devices*" (MnDOT). There are no identified long-term traffic minimization plans 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 that could combine with other environmental effects resulting in cumulative potential effects.

The geographic scale of the project-related environmental effects is the segment corridors shown on Figure 1. This is the general locale for future activity associated with the proposed project and future forest management.

The timeframe for considering potential cumulative effects would be approximately 10 to 15 years related to on-going use of the trail system, but more immediately, the first five years of construction and early operations. The primary construction window for the trail segments is approximately eight months. In practice, duration and timing of the construction phase would depend on several factors, including but not limited to 1) accessibility to the project area; 2) avoidance of threatened and endangered species; 3) logistical considerations.

Potential environmental effects related to this project that could combine with environmental effects from other reasonably foreseeable future projects for which a basis of expectation has been laid include traffic, dust and noise, spread of invasive species, erosion, and water quality. The proposed project would temporarily generate dust and noise during the phases of construction, with the potential for noise and dust generation during ongoing use. The proposed project would increase traffic levels, which would vary as a function of total recreational use of the site. Routine use of the trails can result in increased erosion and introduction or spread of invasive species

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.

St. Louis County

According to the 2020-2024 St. Louis County Capital Improvement Program (CIP), there is one planned roadway project in the area of the proposed project as follows:

2022: County Project 558209 (Township 62, Range 14, Section 14) Gravel Road Investment Program (GRIP) - CR 408 (Mud Creek Rd) - TH 1/169 to UT 8206. This project should reduce the frequency of maintenance blading and extend the time between re-graveling operations.

Timber

Timberlands owned by the state of Minnesota, St. Louis County, and the Superior National Forest within the proposed project area may be used for logging. Forest cover types on the lands managed for timber across the project area consist of upland and lowland timber cover types that are actively managed. Lands within the project area are subject to ongoing,

active timber sale contracts.

Voyageur Country

The Voyageur Country ATV Club's Master Plan identifies new segments of the Voyageur Country ATV System that could provide additional connections to communities and amenities in the Northern Minnesota. The Voyageur Country ATV Club will have ongoing maintenance on their existing trails; however, construction effects will have no geographic overlap with the trail segments described in this EAW. Additionally, ongoing use of the Voyageur Country ATV System will have no geographic overlap with the trail segments described in this EAW. It is plausible that ATV riders accessing the Voyageur Country ATV System could also travel on the Prospectors Loop Trail. These trail systems have separate project proponents, and each individual trail system is not dependent on the existence of another.

Quad Cities, Northern Traxx and Ranger ATV Clubs

The Quad Cities ATV Club, Northern Traxx ATV, and The Ranger Snowmobile and ATV Club have proposed approximately 24 miles of trail improvements between four different trail segments in St. Louis County. Quad Cities ATV Club proposes two trail segments. One segment consists of seven miles of trail improvements from Virginia to County Road 303 and four miles of trail improvements from Pfeiffer Lake Forest Road to County Road 361. The Northern Traxx ATV Club is currently proposing to develop a five-mile designated ATV route from Chisholm to Hibbing. The Ranger ATV-Snowmobile Club is proposing to connect Gilbert to Biwabik with eight miles of trail improvements. The above trail clubs will have ongoing maintenance on their trails, but construction effects will not overlap in geographic scale. These trail systems have separate project proponents, and each individual trail system is not dependent on the existence of another.

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

Traffic

Temporary localized increases in traffic could occur near locations of other reasonably foreseeable projects during construction. There might be temporary increases in localized traffic and parking demand where future segments share connection points and amenities. Following trail development, cumulative traffic effects would persist over the lifetime of use of the trails proposed for this project, in combination with other recreation-oriented reasonably foreseeable projects, due to increased use in the area. Traffic effects would likely have seasonal peaks around the three major summer holidays as well as other peak use levels, such as special events (e.g., organized ATV events).

Dust and Noise

Cumulative dust and noise effects are possible if any of the road construction or timber harvest projects overlap the planned project construction and trail use. Construction related effects would be expected to occur during daylight hours and would end when construction is complete. At this time, it is not known whether construction on any of the reasonably foreseeable projects will overlap with this project. State noise standards are not expected to be exceeded in these cases. The potential exists that ATV noise may increase; however, it is expected to be temporary and sporadic in nature and the proposer does not believe that noise levels will constitute a nuisance under state law (*see* Minnesota Rules Chapter 7030).

Plant Communities/Invasive Species

Cumulative invasive species effects are possible, both during construction and use of the trails. Both construction equipment and ATVs can create the opportunity for and establishing and transporting invasive species both inside and outside the proposed project area. Reasonably foreseeable ATV trail improvements/expansions would provide additional possible infestation sources, as would the existing trail system. Any invasive species established along these trails could serve as potential source for additional invasive species spread to any subsequent nearby project. Species generally of concern in the project area and surrounding region include spotted knapweed, common tansy, and Canada thistle. Trailheads and parking lots are the most likely sources during ongoing trail use. On segments requiring improvements, fill and aggregate brought in to construct trail may be a source of invasive species. Spread of invasive species is an ongoing possibility and will require routine monitoring and maintenance of the trails to manage. Trail managers should work with area partners such as the DNR Trail Ambassador program to monitor and reduce the spread of invasive species in the Prospectors Loop Trail. Contractors will be instructed to clean equipment before and after use, and the construction will require use of clean fill.
The project proposer (Prospector Trail Alliance) is responsible for ongoing monitoring and maintenance including for invasive species. Through the GIA program they will work in collaboration with and be held accountable to DNR for maintenance planning and use of maintenance funds. Measures to prevent the spread of invasive species during construction include working in non-infested areas first before moving to infested areas; thoroughly cleaning equipment after working in infested areas; and revegetating disturbed areas as soon as possible after construction is completed. Wood chips or other mediums which allow invasive plants to easily take root will not be used for the trail system. Where infestations are identified, control methods will be applied to limit the spread and impact of invasive species. Where disturbed land will be stabilized by seeding, native seed mixes will be used. Keeping riders on designated trails will limit the potential of transporting invasive species to other areas.

If other trail systems or forestry projects have impacts to floating marsh-marigold, this may contribute to cumulative effects on this species. Proposed trails in suitable habitat for this species should have surveys for floating marsh-marigold and avoid impacts to the species, if practicable. Mitigation for unavoidable impacts to floating marsh-marigold would be established during permitting.

Erosion

Cumulative erosion effects are possible if project construction activities overlap any of the other planned construction activities in the area. Any land alteration activity entails the risk of erosion, so effective site erosion and sedimentation control precautions are essential. While overlap with other projects is not anticipated, it is important to note that the magnitude of any cumulative effects is variable and would be minimized by all projects following the erosion precautions stipulated in their respective workplans and as conditions of their permits. The possibility of cumulative effects from construction activities is also minimized if construction activities do not overlap in time. Timber management activities my take place in the same geographic scale and timeframe for construction and ongoing use. Where the Prospectors Loop Trail might share use with traffic for timber management, regular monitoring and maintenance will be important to keep sustainable slopes and treads to prevent erosion.

Water Quality

Cumulative water quality effects are possible but expected to be minimal if the proposed

project meets conditions of permitting including conditions of a WCA replacement plan and the MPCA-administered Construction Stormwater General Permit. Measures required under these permits are designed to avoid and minimize as well as limit erosion and subsequent offsite transport of sediment and nutrients to adjacent waterbodies. Proposed trail segments might require wetland fill or alterations to waterways to provide sustainable crossings for ATV traffic. The proposer would work with permitting to minimize effects and provide mitigation where alternate routes are not possible. Timber management potential effects on water resources might occur in the same geographic areas and timeframe as the proposed project. In order to prevent project-related construction and ongoing use from contributing to water resource effects overlapping with timber management effects, construction BMPs (such as silt fence, erosion control blanket, or biorolls) and sustainable trail design will be implemented.

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 the how the environment will 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 to 21.

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

I hereby certify that:

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

Signature Rebecca Horton Digitally signed by Rebecca Horton Date: 2023.03.27 17:38:43 -05'00' Date _____

Title _____