July 2013 version

ENVIRONMENTAL ASSESSMENT WORKSHEET

This Environmental Assessment Worksheet (EAW) form and EAW Guidelines are available at the Environmental Quality Board's website at:
http://www.eqb.state.mn.us/EnvRevGuidanceDocuments.htm.

The EAW form provides information about a project that may have the potential for significant environmental effects. The EAW Guidelines provide additional detail and resources for completing the EAW form.

Cumulative potential effects can either be addressed under each applicable EAW Item, or can be addresses collectively under EAW Item 19.

Note to reviewers: Comments must be submitted to the RGU during the 30-day comment period following notice of the EAW in the *EQB Monitor*. Comments should address the accuracy and completeness of information, potential impacts that warrant further investigation and the need for an EIS.

1. Project title: **Cuyuna Connection and Cuyuna Hills Trail Project**

2. Proposer: **Cuyuna Lakes Mountain Bike Crew**

Contact person: Meredith Novak
Title: Volunteer President
Address: PO Box 162
City, State, ZIP: Deerwood, MN 56444
Phone:
Fax: N/A

3. RGU: **Minnesota DNR**

Contact person: Cynthia Novak-Krebs
Title: Environmental Planner
Address: 500 Lafayette Road
City, State, ZIP: St. Paul, MN 55155
Phone: 651-259-5115
Fax: (651) 296-1811
Email: info@cuyunalakesmtb.com
Email: cynthia.novak@state.mn.us

4. Reason for EAW Preparation: (check one)

Required:	Discretionary:
EIS Scoping	Citizen Petition
X Mandatory EAW	RGU Discretion
	Proposer Initiated

If EAW or EIS is mandatory, give EQB rule category subpart number(s) and name(s):
Minnesota Rule 4410.4300, Subp. 37(A) Constructing a trail at least ten miles long on forested or other naturally vegetated land for a recreational use other than snowmobiling or cross-country skiing, unless exempted by part 4410.4600, subpart 14, item D, or constructing a trail at least 20 miles long on forested or other naturally vegetated land exclusively for snowmobiling or cross-country skiing.

5. Project Location:

County: Crow Wing County

City/Township:

- Cuyuna Connection Trail Loop (CCT) – City of Crosby, City of Cuyuna
- Cuyuna Hills Trail Loop (CHT)– City of Cuyuna, Rabbit Lake Township

PLS Location (¼, ¼, Section, Township, Range):

- CC- Section 31, Township 47 N., Range 28 W. Section 36, Township 47 N., Range 29 W.
- CH- Sections 32 & 33, Township 47 N., Range 28 W.

Watershed (81 major watershed scale): Mississippi-Brainerd-10 Watershed

GPS Coordinates:

- CCT - Latitude: 46.509402°, Longitude: -93.941026°
- CHT- Latitude: 46.508127°, Longitude: -93.901493°

Tax Parcel Numbers:

- ***Cuyuna Connection Trail Loop*:** 160011202000009, 160011202000009, 160011202000009, 160011202000009, 160011202000009, 160011202000009, 160011202000009, 160011202000009, 180361400000009
- ***Cuyuna Hills Trail Loop*:** 170323300000009, 170323400000009, 870324300000009, 870324400000009, 870333300000009, 870333400000009, 170323200000009, 170323100000009, 870324200000009, 870324100000009, 870333200000009, 870333100000009, 170322300000009, 170322200000009, 191080030000009, 19108002001Z009, 191080020070009, 19108002008Z009, 191080010000009, 191040050230009, 191040050220009, 19104005024Z009, 19104006012Z009, 19104005001Z009, 19104004007Z009, 19104002026Z009, 19104001001Z009, 19104002001Z009, 191040030000009, 191040060320009, 19104006026Z009, 191040060010009, 191040060020009, 19104006003Z009

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.

This EAW includes the following figures:

- Figure 01 – General Project Location Map State/County
- Figure 02 – Detailed USGS Project Location Map
- Figure 03A – Existing Site Conditions – Cuyuna Connection Trail Loop
- Figure 03B – Existing Site Conditions – Cuyuna Hills Trail Loop
- Figure 04A – Proposed Site Conditions – Cuyuna Connection Trail Loop
- Figure 04B – Proposed Site Conditions – Cuyuna Hills Trail Loop
- Figure 05A – Trail Connections & Crossings – Cuyuna Connection Trail Loop
- Figure 05B – Trail Connections & Crossings – Cuyuna Hills Trail Loop
- Figure 06A – Site Wetlands Map – Cuyuna Connection Trail Loop
- Figure 06B – Site Wetlands Map – Cuyuna Hills Trail Loop

- Figure 07A – Soils Map – Cuyuna Connection Trail Loop
- Figure 07B – Soils Map – Cuyuna Hills Trail Loop
- Figure 08 – Water Resources Map

6. Project Description:

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

Cuyuna Lakes Mountain Bike Crew (the Proposer), proposes to construct a total of 11.40 miles of recreational trails, consisting of the Cuyuna Connection Trail Loop (Cuyuna Connection) and the Cuyuna Hills Trail Loop (Cuyuna Hills). The trails are designed to be used for non-motorized recreation access including mountain biking, hiking, trail running, snowshoeing and cross-country skiing in the Cuyuna area.

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.

Project Overview: The Proposer would construct 11.40 miles of recreational trail in Crow Wing County. The project is located on state and county managed lands (see figures 01 and 02 *Project Location Maps)*. The project would consist of two trail loops, Cuyuna Connection and Cuyuna Hills. The proposed trails would provide non-motorized recreation access to the public in spring, summer and fall to include activities such as mountain biking, hiking, trail running and bird watching. Cuyuna Connection would be groomed in the winter for fat tire (3.7"+) biking. The Proposer expects the main use of the trail loops to be mountain biking, so they designed the trails using the International Mountain Bicycling Association (IMBA) rating system (beginner, intermediate, advanced). The project consists of the following components:

Cuyuna Connection *(see Figure 04A):* The Cuyuna Connection trail would be a 3.29 mile-long trail between the City of Cuyuna and the Yawkey Unit of the Cuyuna Country State Recreation Area (CCSRA). The Yawkey Unit is northeasterly of Trunk Highway No. 6 and contains the Yawkey Mine Lake. The trail would exit the CCSRA, connect to the end of Tripp Avenue in Cuyuna and return to the CCSRA near the exit location. Cuyuna Connection would be a beginner level, directional, one-way loop. IMBA defines a Beginner trail as having the following characteristics:

- Trail bench width of 36" or more
- Up to 5% +/- average grade; not to exceed 15% in any area
- Unavoidable obstacles being less than 2" high vertical edge

In the winter Cuyuna Connection would be groomed via a utility snowmobile and specialized drag to accommodate fat tire (3.7"+) mountain biking, snow shoeing and cross-country skiing. Winter hiking would not be allowed to avoid degrading the groomed surface.

Cuyuna Hills *(see Figure 04B)*: The Cuyuna Hills trail would be an 8.11-mile-long trail located between Iron Hub Road and Lost Long Lake (18-85 P/18008500) on County owned land occupying an "L" shape. The loop would travel through County property from a trailhead on Iron Hub Road to the shores of Lost Long Lake and return to the Iron Hub trailhead. Cuyuna Hills would be a directional, one-way loop, constructed at an Intermediate level. Despite its Intermediate rated design, it would be considered an advanced level for mountain bike users. The difference in the construction rating and posted rating is due to the total length of the trail without any ability to shortcut any section. Existing northerly & southerly forest roads that bisect the trail at a few locations are not maintained and often impassible, limiting the ability of riders from shortcutting the trail. IMBA defines an Intermediate trail as having the following characteristics:

- Trail bench width of 24" or more
- Up to 10% +/- average grade; not to exceed 15% in any area
- Unavoidable obstacles being less than 8" high vertical edge

Mountain biking on this proposed loop is designed to feel like a backcountry experience. This might be described as an adventure in a remote location, one in which the user feels they are far from civilization. Cuyuna Hills is designed to look more natural by integrating it into the surrounding landscape by using fewer constructed soil features, such as berms. Cuyuna Hills would not be groomed for fat tire (3.7"+) mountain biking and therefore would not be used during the winter months by mountain bikers. The trail would close to mountain biking naturally with the snowfall and open as the snow melts. It would be open to snowshoeing in the winter months.

Cuyuna Hills would include a trailhead constructed south of Iron Hub Road on County property. The trailhead includes a gravel parking area, consisting of five parking spaces and an access road, as well as several informational kiosks and a picnic table.

Proposed Project Construction

The trail loops would be developed as sustainable trails using the techniques described in the IMBA book *Trail Solutions (2004).* Minnesota Department Natural Recourses (DNR) adopted these techniques in the trail building guidebook, *Trail Planning, Design, and Development Guidelines (2007)*. Sustainable trails are constructed using a technique called "bench cutting" to create a slightly out-sloped trail tread that effectively sheds water. The spoil material from the backslope is cast to the froreslope and embankment. A mini-excavator would be used for construction of the trails, with a track width between 36 and 42 inches. Generally speaking, these trails would be constructed using the following steps. See attached illustration of the construction steps described below.

1. After flagging the trail edge, the tread width is scratched into the soil.
2. Raking of the surface of the ground where trail will be located, removing loose biological material (duff) from the surface.
3. To stabilize the soil, erosion control measures would be used during construction of the trails.
4. Bench is cut into the hillside. Removed soil is cast down the side slope of the hill, except where the trail is higher in elevation than and parallel to wetlands or water bodies.

5. Backslope iscut into the hillside and outsloping of the bench (5%) is established. Removed soil is cast down the side slope of the hill, except where the trail is higher in elevation than and parallel to wetlands and water bodies.
6. The backslope and bench are compacted using a walk behind plate compactor, starting with the intersection of the bench with the foreslope and moving toward the backslope.
7. The duff is dispersed on the backslope and edge of the foreslope to promote regrowth of local vegetation.

The project does not include modifications to existing equipment or demolition, removal, and/or remodeling of existing structures.

Construction of the trails would begin in the spring and would continue until the project is complete. The Proposer expects construction to be complete near the end of September. Typically, mountain bike trails are built at a rate of several hundred feet of trail a day, about 0.5 mile per week. This varies with soil conditions and weather. The Proposer expects the contractor to have a minimum of two crews working at any given time on these trail loops. Construction of the trailhead off Iron Hub Road is expected to occur first. This area is wooded and only requires grading, it would serve as a staging area for construction equipment. Cuyuna Hills would be scheduled to proceed first, likely late spring (May). Cuyuna Hills is longer than Cuyuna Connection and entirely on county owned property. This loop would require no coordination with any parties other than Crow Wing County. Construction on Cuyuna Connection would be likely be scheduled midsummer (August), when Cuyuna Hills is partially complete. This loop would require coordination between DNR, Forestry, CCSRA, and Crow Wing County. The goal of the staging would be to have both trail loops open to users by fall (October). Construction activities within the CCSRA have shown trails seem to be more stable if they receive a winter's worth of freeze/thaw cycles before the full weight of usage occurs.

Sustainable trails require regular inspection and trail maintenance. Cuyuna Lakes Mountain Bike Crew (CLMTBC) and the public would report any issues on the trails through the website Trailforks.com and/or social media sites. Those reports would be used to inform CLMTBC trail work volunteers of needed maintenance. The Proposer expects most maintenance to involve maintaining proper drainage and post-thaw/post-storm clean up.

c. Project magnitude:

Total Magnitude (both loops)	
Total Project Acreage*	409 acres
Linear project length	11.40 miles
Number and type of residential units	0
Commercial building area (in square feet)	0
Industrial building area (in square feet)	0
Institutional building area (in square feet)	0
Other uses – specify (in square feet)	32,100 ft^2 (parking & kiosk area)

Total Magnitude (both loops)	
Structure height(s)	0

*The trails are proposed in lands owned by the Minnesota Department of Natural Resources and Crow Wing County, totaling thousands of acres. To prevent including properties by the aforementioned owners that will not be affected by this proposal, the area extent is 100' outward of the proposed trail centerline.

Cuyuna Connection Loop	
Total Project Acreage	133 acres
Linear project lengthPr	3.29
Number and type of residential units	0
Commercial building area (in square feet)	0
Industrial building area (in square feet)	0
Institutional building area (in square feet)	0
Other uses – specify (in square feet)	100 ft² (kiosk area)
Structure height(s)	0

Cuyuna Hills Loop	
Total Project Acreage	276 acres
Linear project length	8.11 miles
Number and type of residential units	0
Commercial building area (in square feet)	0
Industrial building area (in square feet)	0
Institutional building area (in square feet)	0
Other uses – specify (in square feet)	32,000 ft² (parking & kiosk area)
Structure height(s)	0

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.

Project purpose is to expand the surrounding trail system with an additional 11.40 miles of recreational trails. The trails are designed to be used for non-motorized recreation access (mountain biking, hiking, trail running, cross-country skiing and snowshoeing) in the Cuyuna area.

The trails would expand upon the robust outdoor recreation currently available in the Cuyuna Lakes region. The Cuyuna Lakes and Brainerd Lakes area are hubs for tourism in the summer. Providing a diverse set of experiences for visitors could make an already valuable vacation destination even more appealing. By adding the trails, the area gets closer to the goal of 75 miles of mountain biking trails as identified in the *Cuyuna Lakes Mountain Bike Trails - System Expansion Concepts* (2014). A 75-mile trail system could encourage longer stays for mountain bikers, thereby helping the local economy, as a minimum three days mountain bike riding is typical for a trail system of this length. The Project would connect the City of Cuyuna to a broader system of trails running from Riverton, MN to Deerwood, MN. The Project would also allow access to public parcels that are currently difficult to access.

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

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

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

Total Project – Table 7.1 Land Cover Types

	Before	**After**		**Before**	**After**
Wetlands	12.74 acres	12.73 acres	Lawn/landscaping	0	0
Deep water/streams	0	0	Impervious surface	0	0.11 acres
Wooded/forest	395.42 acres	245.99 acres	Stormwater Pond	0	0
Brush/Grassland	0.84 acres	0.73 acres	Trails*	0	5.79 acres
Cropland	0	0			
			TOTAL	**609 acres**	**609 acres**

*The trail area is estimated using a width of 4'. As sustainable trails vary in total width based on sideslopes, turns and other features, there is no definable width, maximum or average. On a 20% sideslope, which is the average sideslope for both projects, a 3' wide bench would have a 0.75' wide backslope, for a total disturbed area width of 3.75'.

Cuyuna Connection Loop – Table 7.1 Land Cover Types

	Before	**After**		**Before**	**After**
Wetlands	2.68 acres	2.68 acres	Lawn/landscaping	0	0
Deep water/streams	0	0	Impervious surface	0	0
Wooded/forest	130.32 acres	128.46 acres	Stormwater Pond	0	0
Brush/Grassland	0	0	Trails*	0	1.86 acres
Cropland	0	0			
			TOTAL	**133 acres**	**133 acres**

*The trail area is estimated using a width of 4'.

Cuyuna Hills Loop – Table 7.1 Land Cover Types

	Before	**After**		**Before**	**After**
Wetlands	10.06 acres	10.05 acres	Lawn/landscaping	0	0
Deep water/streams	0	0	Impervious surface	0	0.11 acres
Wooded/forest	265.10 acres	261.18 acres	Stormwater Pond	0	0
Brush/Grassland	0.84 acres	0.73 acres	Trails*	0	3.93 acres
Cropland	0	0			
			TOTAL	**276 acres**	**276 acres**

*The trail area is estimated using a width of 4'.

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

Table 8.1 Anticipated Permit Requirements

Unit of Government	Type of Application	Application Status
Minnesota Pollution Control Agency (MPCA)	Construction Site Stormwater Permit	To be submitted
Crow Wing County	Recreational Trail Development and Improvement Request (includes parking and kiosk area construction)	Application started
Minnesota Department of Natural Resources (DNR)	Trails and Roadway Easement	Preliminary process completed
Minnesota Department of Natural Resources (DNR)	Rental agreement for Section 36 school trust land	Preliminary process completed
Crow Wing County	WCA Approval	Application started
MN State Historical Preservation Office (SHPO)	Historic Properties Review	Letter received, Phase 1A Archeological Survey completed by Terracon, Inc.
U.S. Army Corps of Engineers (USACE)	Section 404 Permit	Application started

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

9. Land use:

a. Describe:

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

General Project Area*:* Land cover within the proposed area is primarily forest and open water. Much of the land in the Project area is publicly owned and the proposed trails would be developed on public land. Existing land use surrounding the general project area consists primarily timber management zones, managed by the respective public landowners, DNR and Crow Wing County. The general area is largely recreation-based, including camping, fishing, hunting, boating, canoeing/paddling, mountain biking and biking, swimming, birding, hiking, snowshoeing and winter fat-tire biking. The mountain bike system in the surrounding area includes natural-surfaced trails, accommodating various skill levels. Grant-

In-Aid (GIA) snowmobile trails and Off Highway Vehicle (OHV) trails that follow old mining and logging roads are located in the general project area.

Cuyuna Connection Loop: (see Figure 03A) The CCSRA, Yawkey Unit is located south (directly adjacent) of this proposed loop. The Yawkey Unit is located northeasterly of Trunk Highway No. 6. The CCSRA contains many purpose built trails for mountain biking and is usable by other non-motorized users. There are over 30 miles of singletrack mountain biking trails within the CCSRA, with approximately 6.2 miles of those trails located within the Yawkey Unit. The Cuyuna Connection Loop would cross two separate public landowners, DNR managed land (Sec. 36) and Crow Wing County managed land (Sec. 31). The City of Cuyuna is northeast of this proposed loop. There are residents located on the extreme northerly and southerly ends of the proposed trails, the closest residence being 200' northeasterly from the trail.

Within the CCSRA are Grant-In-Aid (GIA) snowmobile trails that connect from the City of Crosby to the City of Cuyuna. Part of this trail would pass through the Cuyuna Connection Loop. The GIA snowmobile trails follow abandoned mining roadways within the CCSRA. These roadways are closed to motorized use, with the exception of the Yawkey Access Road (from Trunk Highway No. 6). Within the State and County managed lands several forest roads and trails, originally created for logging, are now used almost exclusively by OHVs.

Cuyuna Hills Loop (see Figure 03B)**:** This proposed loop is east of the City of Cuyuna. It lies southerly of Iron Hub Road heading easterly from Cuyuna. It would located entirely within Crow Wing County managed land. Surrounding properties to the north and the south are privately owned, though undeveloped, large tracts. The closest residence to the north is 200' from the boundary of county owned properties and a quarter mile from the proposed parking area. The closest residences to the south are one-eight mile from the southern edge of the county owned properties. Lost Long Lake (18-85 P/18008500) is located on the eastern boundary. On the southern edge of this property is a GIA snowmobile trail that connects from the Cities of Crosby and Cuyuna to the City of Deerwood. This GIA trail is part of the same that would pass through the proposed Cuyuna Connection Loop. There are four existing OHV trails that this proposed loop would cross (See Figure 05B). There are several previously used logging roads and trails within the proposed Cuyuna Hills Loop. These trails run mostly north/south from the GIA trail, and provide public access during the spring, summer and fall months. A loop trail exists on the east part of the proposed area, where the GIA trail heads southerly. Most of the north/south trails are largely overgrown and dead-end, resulting in lower traffic. The loop trail on the east area is used regularly by OHVs.

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.

The proposed trail loops would be located on publicly owned land within the municipal boundaries of the City of Cuyuna and Crow Wing County. The public lands both trails are proposed to be located on are currently managed as timber management locations with

forestry activities. Plans relevant to the Project include Crow Wing County's Comprehensive Plan and the City of Crosby Comprehensive Plan.

Crow Wing County Comprehensive Plan 2003-2023: The Plan includes a section on Parks, Recreation, and Open Space on County Managed Plan. The Plan recognizes the demand for recreational opportunities and has a policy to "… provide diverse recreational opportunities" for residents and visitors." The Crow Wing County Parks, Trails and Open Space Plan (Crow Wing County, 2005) includes acknowledgement, discussion and support for planned developments and their proximity to and relationship to the local communities, further support the Plan.

City of Crosby Comprehensive Plan 2016: The plan includes Crosby's long-range role in the region to remain a recreational/tourism area. Further, under Parks/Recreation/Open Spaces & Cultural Arts, a goal is to "Maintain and grow Crosby's open space system for recreation and other uses, taking advantage of natural features, and using land not suitable for intensive development whenever possible." The plan includes the goal of the Mountain Bike Crew to expand the area's current mountain bike trails from 25 miles to 75.

The land use described in these plans is consistent with the proposed recreational opportunities in the Project. No other plans were identified to be applicable to the area.

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

City of Cuyuna Zoning: Both loops of the proposed Project would be located on property that The City of Cuyuna Zoning Ordinance, No. 903 (June 1983) has zoned as "O" – Open Development/Extraction District. "The intent of this district is to provide for and allow a wide range of open space activities…" Under this ordinance, recreation is one of the permitted uses.

Shoreland Districts: The eastern segments of the Cuyuna Hills Loop are within the shoreland district of Lost Long Lake (18-85 P/18008500). The southern segments of the trail loop would be in the shoreland district for Yawkey Lake (18-134 P/18043400); however, Yawkey Lake does not have a shoreland classification. The northern segments of the Cuyuna Connection Loop are just outside of the shoreland district for Cuyuna Lake (formerly Mud Lake) (18-94 P/18009400).

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

The proposed Project is compatible with all management plans applicable to the project area and nearby land use. Both proposed trail loops would be located on properties with existing OHV and GIA snowmobile trails. The proposed loops would cross these trails; however, mitigation at these crossings would help prevent issues (see section 9.c).

The proposed trail develop would use best management practices (BMPs) for Shoreland management—avoiding, minimizing and mitigating impacts to waterways. Development would meet or exceed setback standards; treat stormwater runoff on site; use natural vegetative buffers to infiltrate runoff and screen much of the development from lakes; and minimize disturbance and fragmenting of riparian and aquatic habitats.

Since the proposed project is located on public land, hunting is permitted during designated hunting seasons. The proposed Project would be compatible with hunting by closing during firearms deer season and minimizing the impact to hunters as discussed in section 9.c.

Wetlands are located within the project area. This trail loop avoids the wetlands onsite with one exception, the wetland south of the proposed parking area off Iron Hub Road. This wetland was delineated in May 2018. The trail would have to cross the wetland, as there is no other method of connecting the area off Iron Hub Road to the rest of the property. This wetland has been classified as a Type 7 – Wooded Swamp (New Cowardin Classification: PSSA, C, F and G; PSS1, 5 and 6B) with de minimis disturbance of 10,000 ft².

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

OHV and snowmobile crossings To prevent impacts to the users of existing snowmobile and forested roads in the area, the Proposer has minimized the number of crossings. Where crossings are unavoidable, the trail would employ gated trail crossing on the proposed trails. These gate systems serve three functions: 1) prevent unauthorized users, such as OHVs from using the mountain bike trails; 2) allow the trails to be completely closed during closure periods; and 3) inform users of the trail of a crossing. The proposer has designed the crossings with the intent that users of the proposed trails would yield/stop at these points versus the users of the snowmobile and OHV trails. These crossings would have signage before and at the crossing alerting users of the impending need to stop and yield right-of-way. The Proposer reports that this system of yielding right-of-way to motorized users is currently used within the CCSRA and has proven effective.

Hunting uses on public lands The proposed trails are on public land and therefore open for hunting and trapping. Practices consistent with and that have proved successful within the CCSRA would be used as follows. During firearms deer season, which occurs in November of each year, the trails would be closed. Signs would notify users of trail closures as well as electronic updates. Also, by closing the trail gates, multiple points along the trail length would be closed. Consistent with management of trails within the CCSRA, the trails would not be closed during other hunting seasons, such as turkey, small game, waterfowl, etc. for the following reasons:

- The concentration of hunters is much lower than during firearms deer season
- The zones of usage do not overlap as hunters are either far from trails (waterfowl), luring in prey (turkey) or following prey (most small game)
- Firearms used are not high-powered rifles with long lethality ranges.

Wetland areas Due to the benchcut nature of these trails, hydric soil is avoided as it does not provide a stable trail tread. Therefore, save for the wetland area near Iron Hub Road, all other wetland areas would be avoided. Due to the unique topography of the site(s) in question, wetlands are almost exclusively a function of elevation. That means they are easy to identify and avoid. To further prevent impacts to wetland areas, any location where the trail is higher in elevation than a wetland, soil would not be cast downhill during construction and a series of coir logs or silt fencing would be placed between the trail and the wetland to prevent any runoff from directly impacting the wetland area. For the wetland south of Iron Hub Road, a raised bed turnpike would be constructed through the wetland, with a small section of puncheon as a bridge would be placed over the wetland ditch adjacent to the old railroad grade. There would be puncheon sections within the length of the turnpike at regular intervals within the turnpike area to minimize any surface hydrology changes.

Trail use management Because of the connections to existing trails within the Yawkey Unit of the CCSRA, the Cuyuna Connection trail loop would be managed as if it is part of the Yawkey Unit. When the trails within the CCSRA close, the Cuyuna Connection trail loop would close also. The Cuyuna Connection trail loop would have closure gates at the connection point with the Yawkey Unit trails, allowing the trail loop to close independently of the Yawkey Unit. These would be employed when activities, such as timber operations, are ongoing near the connection trail. The Cuyuna Hills trail loop would be independently managed (except during hunting closures) from the CCSRA.

Currently, trails within the CCSRA are inspected and maintained by volunteers. Volunteers regularly inspect the trails and report back any locations that require either trail work or management updates. This method of management has proved successful within the CCSRA and would be replicated for these trails.

10. Geology, soils and topography/land forms:

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

No geologic hazards are known within the project area. Per the Crow Wing County Geologic Atlas (Atlas C-16, PART A, Plate 5) Quaternary subsurface geology is the result of glacial moraine activity. The Geologic Atlas of Crow Wing County (Geologic Atlas) shows varying bedrock depth between 101’ to 250’, that bedrock being the Trommald Formation, an iron ore bearing formation, with the shallowest depth to bedrock being northerly of the Cuyuna Hills trail loop and the deepest depth southwesterly of the Cuyuna Connection trail loop.

Cuyuna Connection Loop: Per the Geologic Atlas map, the geology on the southerly section of trails are noted as being “less than 50 feet of fine-grained sand to gravel over one or more beds of till, or in places, clayey lake sediment, over a sand bed generally thicker than 10 feet” and

"complex surficial geology including till, bedded sediment, and sediment redeposited by mining." The northerly section of the trails are noted as being "one to several tills over bedrock; generally contains at least one sand aquifer thicker than 10 feet within the till or in between the till and bedrock".

Domestic water wells on residential properties to the south (Well ID #566522) and to the north (Well ID #548692 & #536999) indicate a sandy layer with aggregates to about 35'-40' in depth with a clay and aggregate layer between 35'-40' to a depth of 90'. This is consistent with the Geologic Atlas. It should be noted that well data in this area varies widely in both date of drilling and details given. Newer well drillings contain more information. Well ID #198645, drilled in 1983, describes clay, sand and sandy clays extending to approximately 75' in depth with clay and aggregates at the point of refusal.

Exploration wells drilled prior to iron ore mining in the area, show the bedrock (Trommald Formation) is approximately 152' in depth on the southerly end of the trail and approximately 143' in depth on the northerly end of the trail.

Cuyuna Hills Loop: Per the Geologic Atlas, the geology for the northern and western sections of the trail are noted as being "complex surficial geology including till, bedded sediment, and sediment redeposited by mining," There has been no mining on this property and the complex geology is a function of the complex topography. On the easterly section of trails, near Lost Long Lake, the geology is noted as being "One to several tills over bedrock; generally, contains at least one sand aquifer thicker than 10 feet within the till or in between the till and bedrock."

There are no adjacent domestic water wells, with the closest wells being at least ¼ mile away from the trails. Domestic water wells on residential properties to the north (Well ID #576391), west (Well ID #548692) and to the south (Well ID #730331, Well ID #573312 & Well ID #455856) describe vastly different mixes of sands, clays and aggregate layers. This would be typical of the complex geology of glacial moraines and is consistent with the Geologic Atlas.

To the north of the property is the former Kennedy Iron Mine. Therefore, adjacent exploration wells exist. Those wells show the bedrock (Trommald Formation) is approximately 100' in depth on the northerly end of the trail with the bedrock being approximately 122' in depth easterly of the trail.

b. Soils and topography - Describe the soils on the site, giving NRCS (SCS) classifications and descriptions, including limitations of soils. Describe topography, any special site conditions relating to erosion potential, soil stability or other soils limitations, such as steep slopes, highly permeable soils. Provide estimated volume and acreage of soil excavation and/or grading. Discuss impacts from project activities (distinguish between construction and operational activities) related to soils and topography. Identify measures during and after project construction to address soil limitations including stabilization, soil corrections or other measures. Erosion/sedimentation control related to stormwater runoff should be addressed in response to Item 11.b.ii.

Project soils and topography: Soils on the site consist primarily of loamy sandy soils, with the Gerrish-Hapludalfs-Hegberg-Eutrudepts complex, pitted, 20 to 40 percent slopes (6-5F), Gerrish-Hapludalfs-Hegberg-Eutrudepts complex, pitted, 10 to 20 percent slopes (6-5D), Gerrish-Hapludalfs-Hegberg-Eutrudepts complex, pitted, 2 to 10 percent slopes (6-5B), Gerrish-Hapludalfs-Hegberg-Eutrudepts complex, 10 to 20 percent slopes (6-13D), Gerrish-Hapludalfs-Hegberg-Eutrudepts complex, 20 to 40 percent slopes (6-13F), Rosholt-Chetek complex, 2 to 8 percent slopes (C17B), Augustana-Hegberg complex, 1 to 8 percent slopes (C50B), Seelyeville-Seelyeville, ponded, complex, 0 to 1 percent slopes (540), Udorthents, iron mine, 2 to 120 percent slopes (1048). The soil descriptions and their distribution on the site are included in figures 07A and 07B.

Relevant properties of these soils as described by the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (WSS) are listed in the table below.

Soil Classification	Hydric Rating	Recreation - Trails & Paths*	Land Management - Erosion Hazard (Road, Trail)	Soil Health - Fragile Soil Index	Soil Health - Soil Susceptibility to Compaction
6-5B	5	Somewhat limited	Moderate	Slightly Fragile	Medium
6-5D	5	Somewhat limited	Moderate	Slightly Fragile	Medium
6-5F	5	Very limited	Severe	Moderately Fragile	Medium
6-13D	0	Somewhat limited	Moderate	Slightly Fragile	Medium
6-13F	0	Very limited	Severe	Slightly Fragile	Medium
C17B	0	Not limited	Moderate	Moderately Fragile	Medium
C50B	11	Very limited	Moderate	Moderately Fragile	Medium
540	100	Very limited	Slight	Not rated	Not rated
1048	0	Not rated	Not rated	Not rated	Not rated

* Per the WSS, this rating is based on the premise that "[p]aths and trails for hiking and horseback riding should require little or no slope modification through cutting and filling." However, modern sustainable trails employ slope modification through cutting the soil away to create a stable tread that sheds water.

Cuyuna Connection Loop *(See Figure 07A):* Site topography on the southern section of the trails is rather flat, with land sloping southerly at approximately 3% slope. The northerly section of the trails is glacial moraines, with slopes between 10% and 40% with the average slope being

20%. The trail is adjacent to mine tailings piles, which average 100% to 120% in slope, however, the trail would not be located directly on these piles.

Surface elevation in the project area varies from approximately 1241 feet above sea level to 1366 feet above sea level. On the southerly section of the trails the low point is 1278 feet above sea level, the high point is 1296 feet above sea level. At the northerly section of the trails, adjacent to the former Tripp Avenue, the low point is 1280 feet above sea level, the high point being 1313 feet above sea level.

Cuyuna Hills Loop *(See Figure 07B):* Site topography on the northern section of the trails, near the old railroad grade is rather flat, with land sloping upward southeasterly at approximately 5% slope. The majority of the topography south of the railroad grade is large glacial moraines, with slopes between 10% and 40% with the average slope being 20% with vertical elevation differences of approximately 100 feet.

Surface elevation in the project area varies from approximately 1214 feet above sea level on the northerly section adjacent to Iron Hub Road to 1386 feet above sea level near the highest hills in the central section.

Long-term, high-volume use of similar trails within the CCSRA have shown that even in soils rated as "severe" for erodibility, with careful management pre, during, and post-construction, erosion is not an issue. Additionally, during construction, soils that are high in sands or silts and therefore more likely to erode would receive a layer of aggregates added to the bench in a process known as "capping." Capping materials slowly are compressed into the bench with usage and help to stabilize the bench and prevent soil degradation in both dry and wet conditions. Following the same CCSRA management of trails, they would be closed these during weather and climate events that would potentially harm the trail.

Erodibility of many of the soils are listed as moderate to severe; however, sustainable trails are designed to minimize the possibility of erosion by creating unerupted sheet flow across the trail. Erosion control Best Management Practices (BMPs) as part of trail construction should further minimize erosion on the site. The following erosion BMPs would be employed:

Erosion control will be addressed in the site construction Stormwater Pollution Prevention Plan (SWPPP) that would be developed.

The Cuyuna Lakes Mountain Bike Crew along with the respective land manager would monitor the trailhead and trail system. Monitoring would identify maintenance projects, trail user safety, and erosion. Volunteer trail crews would be tasked to regularly inspect the trail for any erosion and safety concerns. Special volunteers make up a post-storm inspection group that rides the trails post-storm to remove fallen limbs/trees and identify any section(s) of the trail that may have been damaged by the storm. Each trail ambassador would receive training how to monitor trail conditions, repair if possible, or note and report issues for future repair. This method of employing volunteers to inspect and maintain the trails is consistent with CCSRA and has proven successful within the CCSRA.

These erosion control methods are based on what has proved successful on trail construction projects within the CCSRA. The narrowness of the trail will reduce soil movement volume. For a linear foot of 36" wide trail within a 20% side slope hill the volume of removed soil is 0.125 yards^3 of soil. Soil movement will vary based on the terrain. Soil will not be cast downhill where the trail is higher in elevation than an adjacent wetland or body of water. The following erosion BMPs would also be employed:

Sustainable trail construction techniques as described in section 6b would be used, including but not limited to the following:

- Duff will be raked back onto backslope and foreslope immediately raked back after trail is constructed to allow existing native vegetation to re-establish without separate seeding
- Straw will be placed as a cover over all disturbed areas
- Annual seeding (oats) are also applied to disturbed areas to allow quick revegetation while native plants re-establish themselves
- Perennial native seed mix 36-711: WOODLAND EDGE – CENTRAL are applied to disturbed areas to allow long term revegetation of native species
- Coir logs or silt fencing will be added between trail and any wetland or water body
- For deep backslope cuts (greater than 5' vertical) erosion control blanket is placed on backslope

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

11. Water resources:

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

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

Project water resources *(See Figure 06A, Figure O6B & Figure 08):* Surface waters on or near (1 mile radius of) the trails consist of:

Lake Name	Crow Wing County Designation	DNR Designation	Ordinary High Water Elevation
Yawkey Mine Lake	18-134 P	18043400	None listed
Manuel Mine Lake	18-435 P	18043500	None listed
Portsmouth Mine Lake	18-437 P	18043700	None listed

Lake Name	Crow Wing County Designation	DNR Designation	Ordinary High Water Elevation
Cuyuna Lake (Mud Lake)	18-94 P	18009400	None listed
Clinker Lake	18-181 P	18013100	1197.44
Rabbit Lake	18-93 P	18009300	1197.50
Agate Lake	18-60 P	18006000	1248.30
Lost Long Lake	18-85 P	18008500	None listed

Wetlands based on the National Wetland Inventory within the project boundary consist of:

Wetland	Source	Classification (New Cowardin Classification)	Area within Project Boundary
Wetland 01W	NWI	PSS1B	1.65 acre
Wetland 02W	NWI	PFO1B	0.14 acres
Wetland 03W	NWI	PSS1B	0.18 acres
Wetland 04W	NWI	PFO1B	0.14 acres
Wetland 05W	NWI	PFO1B	0.12 acres
Wetland 06W	NWI	PFOB	0.16 acres
Wetland 07W	NWI	PSS1B	0.26 acres
Wetland 01E	Delineated	PF01/EM5C	0.50 acres
Wetland 02E	Delineated	PSSA, C, F and G; PSS1, 5 and 6B	5.09 acres
Wetland 03E	NWI	PSSB	0.24 acres
Wetland 04E	NWI	PFO1B	0.38 acres
Wetland 05E	NWI	PFO1B	0.38 acres
Wetland 06E	NWI	PFO1B	0.13 acres
Wetland 07E	NWI	PFO1B	0.11 acres
Wetland 08E	NWI	PROB	0.08 acres
Wetland 09E	NWI	PFOB	0.10 acres
Wetland 10E	NWI	PF01B	0.18 acres
Wetland 11E	NWI	PFO1B	0.14 acres
Wetland 12E	NWI	PFO1B	0.24 acres
Wetland 13E	NWI	PFO1B	0.19 acres
Wetland 14E	NWI	PFO1B	0.12 acres
Wetland 15E	NWI	PFO1B	0.05 acres
Wetland 16E	NWI	PFO1B	0.19 acres
Wetland 17E	NWI	PFO1B	0.39 acres
Wetland 18E	NWI	PSSB	0.08 acres
Wetland 19E	NWI	PSSB	0.21 acres
Wetland 20E	NWI	PSSB	0.37 acres

Wetland	Source	Classification (New Cowardin Classification)	Area within Project Boundary
Wetland 21E	NWI	PSSB	0.66 acres
Wetland 22E	NWI	PSSB	0.02 acres
Wetland 23E	NWI	PSSB	0.41 acres

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.

Cuyuna Connection Loop: The depth of water on the southerly end of the trail (Well ID #566522) is approximately 1223 feet in elevation. To the north of the trail there are two wells (Well ID #548692 & Well ID #536999) that show a groundwater elevation of 1235 feet and 1222 feet respectively. Yawkey Mine Lake (18-134 P/18043400), the closest lake to the southerly end of the trails, has a surface elevation of 1240 feet, per LIDAR. Cuyuna Lake (formerly Mud Lake) (18-94 P/18009400), the closest lake to the northerly end of the trails, has an elevation of 1198 feet.

Cuyuna Hills Loop: The depth of water at the closet well (Well ID #734346), located northwesterly of the trail, is approximately 1193 feet in elevation. To the south of the trail are three residential wells for homes on Agate Lake (Well ID #730331, Well ID #573312 & Well ID #455856) that show a groundwater elevation of approximately 1240 feet, 1243 feet and 1243 feet respectively. Lost Long Lake (18-85 P/18008500) is the closest lake with a surface elevation of 1270 feet per LIDAR. Agate Lake (18-60 P/18006000), located a ¼ mile south of the trails, has an OHW elevation of 1248.3 feet. Rabbit Lake (18-93 P/18009300), located a ¼ mile north of the trails, has an OHW elevation of 1197.5 feet.

The City of Cuyuna has a wellhead protection area (WHP ID #59401) situated between the two proposed trail loops. It occupies an area of 99.25 acres south-southwesterly of Well ID #198645. Due to the size and shape of the wellhead protection area, no part of the proposed project site would be within its boundaries. There are no domestic water wells are the proposed Project site. (See Figure 08).

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

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

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

2) If the wastewater discharge is to a subsurface sewage treatment systems (SSTS), describe the system used, the design flow, and suitability of site conditions for such a system.
3) If the wastewater discharge is to surface water, identify the wastewater treatment methods and identify discharge points and proposed effluent limitations to mitigate impacts. Discuss any effects to surface or groundwater from wastewater discharges.

Wastewater is not expected to be produced during construction or use.

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

A construction SWPPP would be developed for temporary erosion control, and will focus on minimizing impacts to the wetlands on the site. Post-construction stormwater runoff should return to preconstruction levels with revegetation of the trail. Sustainable trails are designed to encourage sheet flow across the trail to minimize erosion of the trail. This sheet flow reduces any changes to existing stormwater drainage patterns.

A small gravel parking area would be constructed southerly of Iron Hub Road as part of the Cuyuna Hills Loop. The new parking area at the trailhead would be constructed as a gravel surface and is assumed impervious for purposes of stormwater management. The parking area would be graded to prevent water from entering the adjacent wetland (Wetland 01E).

Erosion control BMPs as part of trail construction should further minimize erosion on the site. The following erosion BMPs would also be employed:

- Sustainable trail construction techniques as described in sections 6b and 10b
- Duff will be raked back onto backslope and foreslope immediately after trail is constructed to allow existing native vegetation to re-establish without separate seeding
- Straw will be placed as a cover over all disturbed areas
- Annual seeding (oats) are also applied to disturbed areas to allow quick revegetation while native plants re-establish themselves
- Perennial native seed mix 36-711: WOODLAND EDGE – CENTRAL are applied to disturbed areas to allow long term revegetation of native species
- Coir logs or silt fencing will be added between trail and any wetland or water body

- For deep backslope cuts (greater than 5' vertical) erosion control blanket is placed on backslope

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

Not applicable. Water appropriation would be not conducted on the proposed project.

iv. Surface Waters

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

Project wetlands *(See Figures 06A & 06B):* Thirty wetlands exist within the project boundary. Proposed construction is planned avoid wetland impacts with one exception, Wetland 02E, discussed below. These wetlands are a function of topography, either natural or man-made. The proposed trails would maintain a buffer of 15' or greater from the edge of wetlands. Where impacts cannot be avoided, the impacts will be minimized and mitigated as required by the Wetland Conservation Act and USACE requirements. All proposed developments will be reviewed by resource specialists with expertise in wetland identification.

Actions to minimize disturbance to wetlands may include, but are not limited to, the following:

- Minimizing the width of trail
- Operating within previously disturbed areas
- Using bridges, boardwalks, or open bottom culverts for stream and wetland crossings where feasible
- Minimizing vehicular disturbance in the area (allow only vehicles/equipment necessary for construction activities)
- Refraining from parking equipment or stockpiling supplies in the areas;
- Refraining from placing soil within these areas

- Using effective erosion prevention and sediment control measures, as discussed in 11.b.2
- Inspecting and cleaning all equipment prior to bringing it to the site to prevent the introduction and spread of invasive species
- Using signage to encourage visitors to stay on designated trails
- Revegetating disturbed soil with native species suitable to the local habitat as soon after construction as possible
- Using only weed-free mulches, topsoils, and habitat-appropriate native seed mixes.

The proposed trails would be full benchcut, singletrack trails following recommendations and guidelines from the trail standards of the DNR's Trail Planning Guide (2007), the United States Forest Services' Trail Construction and Maintenance Notebook (2007) and the *Trail Solutions: IMBA's Guide to Building Sweet Singletrack (2004)*. These types of trails are incredibly narrow, often times being less than 5' in width, including backslope. The narrowness, along with construction and erosion control mitigations listed above will allow these trails to blend into the surrounding environment.

Wetland 02E (Cuyuna Hills Loop): In May 2018, the wetlands adjacent to the parking area (Wetland 01E) and south of the railroad grade (Wetland 02E) were delineated by Widseth Smith & Nolting. The Proposer was unable to avoid impacting the upland portions of Wetland 02E as it occupies the area between the easterly property line and open water to the west. This wetland has been classified as a Type 7 – Wooded Swamp (New Cowardin Classification: PSSA, C, F and G; PSS1, 5 and 6B). Because the proposed trail must cross the wetland twice (once at the beginning of the loop and once at the end of the loop) some means to cross the wetland would be required. For a Type 7 – Wooded Swamp wetland the de minimis for disturbance is 10,000 ft². Two raised bed turnpikes, one for each section of the loop, would be constructed through the wetland. Each section would include a small section of puncheon as a bridge placed over the wetland ditch adjacent to the old railroad grade. There would be puncheon sections within the length of the turnpike at regular intervals to minimize any surface hydrology changes as the surface flow is angled relative to the direction of the proposed turnpikes. Creating the turnpikes without the puncheons would alter the surface hydrology by preventing the present northwesterly surface flow direction.

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

water features. Discuss how the project will change the number or type of watercraft on any water body, including current and projected watercraft usage.

Project surface water alterations *(See Figure 08):* No physical alteration to surface waters is planned as part of this project. The closest the proposed trail would come to the shoreline of Lost Long Lake (18-85 P/18008500) is 85 feet. Since the trail would be higher in elevation than the lakeshore, in the area adjacent to the shoreline, removed soil will not be dispersed downhill and erosion control BMPs as discussed in section 11.b will be used to prevent any increased silting or outwash to the lake.

12. Contamination/Hazardous Materials/Wastes:

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

Project pre-project site conditions (wastes): No known soil or groundwater contamination exists on the site or has been documented on the MPCA or Minnesota Department of Agriculture (MDA) "What's in My Neighborhood?" databases. The proposed trail would cross an abandoned railroad grade near the abandoned Tripp Avenue, within the Cuyuna Connection Trail Loop, and an abandoned railroad grade south of Iron Hub Road, within the Cuyuna Hills Trail Loop. There would be no excavation of the railroad grade.

The City of Cuyuna dump (Site ID: #191230) located directly north of the trails of the Cuyuna Connection Loop and was closed on October 19, 1977.

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.

Not applicable No solid wastes would be generated or stored as part of this proposed project.

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

The proposed project would not generate any toxic or hazardous materials. However, fuels, antifreeze, and hydraulic oils would be used in some equipment for construction, operations and maintenance activities. Accidental spills of fuel used for motorized tools or equipment during construction and maintenance are possible. Construction and maintenance related fueling would occur away from streams, wetlands and surface waters. Equipment operators perform routine inspections on stock and equipment to ensure proper working order and do not have any leaks or signs of corrosion. Construction and maintenance crews would carry appropriately sized spill kits and immediately contain and clean up all spills. All wastes from spill cleanups would be properly disposed off-site. The contractor would be required to abide by the Pollution Prevention Management Measures (Part IV.F.2) of the NPDES Construction Stormwater Permit.

No above ground or below ground storage tanks are proposed with this project. Motorized equipment to be used on this project must be equipped with spark arrestors.

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 would be generated through the use of the mountain bike trails.

13. 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 proposed trails are located within the following Native Plant Communities:

- MHc26 – Mesic Hardwood Forest System
- MHn46 – Northern Wet-Mesic Hardwood Forest

The proposed project area is mainly forested with large percentages of aspen, maple, oak, birch and other deciduous tree species. Some ferns, forbes and grasses are present on the forest floor. The properties are used for forest management, therefore maintain similar tree age, and canopy height. Wildlife is similar to other mixed forested areas in central Minnesota. While technically in a city, the large area of green space available on the DNR and Crow Wing County lands, as well as the adjacent CCSRA, have created a rich habitat for wildlife. Deer, foxes, grouse, hawks and other species are common.

Thirty wetlands are located in the project area. These wetlands are all Palustrine System, either Forested or Scrub-Scrub. These wetlands are home to many amphibian species, especially in the spring. Two of the wetlands have changed classification due to the creation of the railroad and its subsequent abandonment south of Iron Hub Road, adjacent to the Cuyuna Hills Trail Loop. Wetland 01E is now closer to a PABH classification. Wetland 02E has bifurcated into two types of wetland. To the west, a permanently flooded area, likely PABH or PUB. To the east, Wetland 02E,

the PSSA, C, F and G or PSS1, 5 and 6B area the trails would cross. The open water of Wetland 02E is large enough that it is used as a migratory bird resting/feeding site.

Cuyuna Connection: Yawkey Mine Lake (18-134 P/18043400) is located on the southern end of the trails and is a designated trout lake. Native species are not present due to it being a mine lake. There are currently no invasive species documented in the Yawkey Mine Lakes.
Cuyuna Hills Loop: Lost Long Lake (18-85 P/18008500) is located on the eastern end of the trails. DNR does not list the lake, so there is no information available on species contained within the lake. Crow County lists the lake as "Natural Environment."

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

The Minnesota Natural Heritage Information System (NHIS) database was queried by Natural Heritage Review staff to determine what rare, threatened, or endangered plant or animal species or other significant natural features are known to occur within or near the proposed project area. The Natural Heritage letter dated August 9, 2018 is attached. An additional query was completed during production of the EAW. The response dated August 7, 2019 is attached. Because information in the NHIS database is continuously updated, the NHIS database will be queried again prior to each construction phase. Based on the query, rare features have been documented within the search area as follows:

The proposed project site is located within an area identified by the Minnesota Biological Survey (MBS) as a site of *Moderate Biodiversity Significance*. 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. DNR Natural Heritage Review letter provided a series of recommendations to minimize disturbance, which included:

- minimize width of trail
- operate within already-disturbed areas as much as possible
- avoid routing trails through wet swales or depressions, or sensitive rock outcrop areas
- bridge all stream and wetland crossings
- minimize construction equipment and vehicular disturbance in the area
- do not park equipment or stockpile supplies in the area
- do not place spoil within sensitive areas
- employ effective erosion prevention and sediment control measures
- pre-inspect and clean all equipment for invasive species prior to entering the site
- trail maintenance should address erodible soils, especially in steep areas
- use signage to encourage visitors to stay on designated trails

- revegetate disturbed soil with native species suitable to the local habitats as soon after construction as possible
- use clean, weed-free mulches, topsoils, and seed mixes.

State-Listed Species

- Blanding Turtle (*Emydoidea blandingii*) Minnesota Status: Threatened. This rare species have been reported in the vicinity of the proposed project and may be encountered on site.
- Red Shouldered Hawk (Buteo lineatus) Minnesota Status: Special Concern. This species has been documented during the breeding season in the vicinity of the project.

The Proposer queried the US Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) online tool for the proposed project area against records for federally-listed plant and wildlife species. The following species were identified as potentially occurring in the project vicinity:

- Gray Wolf (*Canis lupus*). The project area is within the range of the gray wolf identified as critical habitat by the USFWS.
- Northern Long-eared Bat *(Myotis septentrionalis)*, Federal Status: Endangered, Minnesota Status: Special Concern. There are currently no known Northern Long-eared Bat roost trees or hibernaculum sites in the project area. However, forest habitat does exist that has the potential to provide habitat and/or roost trees

The proposed trails would be located within the following Native Plant Communities: Mesic Hardwood Forest System (MHc26) & Northern Wet-Mesic Hardwood Forest (MHn46).

Specific habitat or species survey work has not been conducted within the proposed project site.

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

Fisheries The proposed project is not expected to impact fisheries due to the relatively large distances between the proposed trails and waterways. The closest point the trail gets to any waterway is 85', within the Cuyuna Hills Loop, where trail parallels Lost Long Lake (15-85 P/18008500) for a distance of approximately 600'. Below is a table showing waterways with 1 mile of the trails and actual linear distance from the closest point in the trail to said waterway.

Lake Name	Crow Wing County Designation	DNR Designation	Minimum Distance to Adjacent Trail
Yawkey Mine Lake	18-134 P	18043400	132'
Manuel Mine Lake	18-435 P	18043500	1128'
Portsmouth Mine Lake	18-437 P	18043700	3533'

Lake Name	Crow Wing County Designation	DNR Designation	Minimum Distance to Adjacent Trail
Cuyuna Lake (Mud Lake)	18-94 P	18009400	1258’
Clinker Lake	18-181 P	18013100	2645’
Rabbit Lake	18-93 P	18009300	1883’
Agate Lake	18-60 P	18006000	1752’
Lost Long Lake	18-85 P	18008500	85’

Wildlife. The wildlife impacts of mountain bike use are similar to hiking. Wildlife and their habitats would be affected by activities related to trail development and usage, with the magnitude of impacts varying greatly by species. Potential project-related environmental effects to wildlife include: changes in ground habitat resulting from limited removal of understory vegetation along the trail route; accidental introduction of invasive species; and disturbance and alteration of use patterns of wildlife species, especially avoidance of the installed trail network by those species that are sensitive to human intrusion.

The suitability of existing travel corridors through the area proposed for the trailhead and parking area may be diminished during construction and subsequent recreational uses. Construction and maintenance-related effects would be temporary, while species sensitive to human intrusion may show long-term responses, for example abandonment of preferred foraging or nesting areas. Disturbance that alters behaviors within a local population, which then results in displacement effects, may ultimately affect the health and status of some local populations, including local reductions. Species predisposed to use manmade trails as part of their life histories, such as white-tailed deer, could benefit from the trails. No regional consequences are anticipated.

Red Shouldered Hawk - Nesting habits could be disturbed by human activity with relatively fast-moving objects traveling within sight distance of its nest. A small segment of the proposed Cuyuna Connection Loop would be within the 984-foot buffer of a red shouldered hawk nest. No part of the Cuyuna Hills Loop falls within the buffer zone of the Red Shouldered Hawk, therefore there would be no potential impacts within this loop.

Blanding Turtles – Potential disturbance could include direct fatalities, injuries, or habitat disturbance/destruction during construction activities associated with the proposed project. Once operational, the possibility of direct fatality or injury could occur by a user of the proposed trails. To note, the Proposer does not anticipate impacts to the turtles considering trails within the CCSRA have existed for approximately eight years without any turtle species reported as injured or killed.

Gray Wolves. Gray wolves have been spotted on game cameras in the area and at least one is regularly seen within the CCSRA. No known packs operate within the area. The wolf prefers den sites in upland areas that offer protection from the weather and human disturbance. The proposed project is not likely to adversely affect the wolf because of: 1) the lack of suitable den habitat; 2) the long-ranging roaming nature of the species; and 3) the species’ predisposition to avoid human disturbance and interaction.

Northern Long-eared Bat Potential summer roosting and foraging habitat for the federally-

threatened northern long-eared bat may be present within the proposed Project area. According to guidance provided by the USFWS, northern long-eared bat habitat can be classified as trees measuring at least 3 inches in diameter with peeling bark or crevices. There are no roost trees or hibernacula identified within Wolford Township, Rabbit Township or the City of Cuyuna in Crow Wing County as of April 1, 2019, based on the Minnesota NLEB Township List and Map (attached). For northern long-eared bats in general, any project-related removal of large trees with suitable bark, cavities, or degree of decay could diminish available roosting and rearing habitat. Tree removal during the summer months could dislocate and thus directly affect nursing females with pups.

Vegetation and Native Plant Communities The trail would result in some fragmentation of the landscape, however, this is not expected to cause great ecological impacts. The Proposer expects much of the disturbed area to revegetate; however, the vegetation directly adjacent to the trail would be continually disturbed. That vegetation is subject to trampling effects and trimming. Adjacent vegetation could be affected by soil conditions on the trail itself, such as rutting, soil compaction, and accelerated erosion. Over time grasses, which are the most tolerant of trampling and maintenance clipping, would be the type of vegetation most likely to survive in the managed trail corridor. Use of the trail would generate small amounts of erosion and dust during the summer and fall months that may affect vegetation. A small gravel parking lot would be created south of Iron Hub Road as part of the Cuyuna Hills Trail Loop having an impervious surface of 0.11 acres. Vegetation would be permanently removed from this area.

Invasive Species Project-related construction and ongoing visitor use (once operational) can provide opportunities for the introduction and/or spread of invasive plant species. Invasive species can adversely affect wildlife habitat and lessen biodiversity, the latter due to invasive species outcompeting native plants. Soil disturbance due to construction, or unmanaged trail development or use, can provide conditions suitable for establishment of invasive plant species introduced to the site by animals, birds and wind, operator clothing, or on equipment, trucks, or bicycles originating from offsite infested areas. Materials such as gravel could provide seedstock for the introduction of invasive plant species to the project site. The site has not been surveyed for the presence of invasive species.

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

Construction of the proposed project would be staged to minimize impacts to rare features or sensitive ecological resources beginning with the construction of the parking area off Iron Hub Road. This will create an area to stage construction materials during the length of the construction. The creation of the turnpikes for the trail(s) across Wetland 2E would proceed as early in the construction process as possible to minimize impacts to flora and fauna.

Candidate Site of Moderate Biodiversity Significance Project construction and operation would adhere to sustainable trail development guidelines that mirror the recommendations provided by the DNR Natural Heritage Review as listed in item 13.b. Implementing these measures should allow the site to retain some biodiversity value, especially with successful invasive species control. Although the overall contribution to the ecological integrity of the greater unit would be diminished, some value would remain.

Wildlife There are measures available to minimize operational impacts to wildlife. These include: retaining vegetative communities and associated habitat to the extent practicable; controlling the potential introduction and spread of invasive plant species; and limiting adverse effects to adjacent vegetation. Application of soil erosion and sedimentation BMPs can also lessen potential adverse effects to wildlife habitat. Narrow trails with a minimum of soil movement and removal of native plants will mitigate some potential impact. Additionally, no further trail construction or branching would be proposed within the properties to prevent further fragmentation of the forest.

Blanding Turtles*:* The construction contractor will be briefed from the Minnesota Department of Natural Resources fact sheet before construction begins. Blanding Turtle notices will be placed on kiosks to alert trail users of the potential of coming across Blanding Turtles on the trail. Turtle crossing signs will be placed on each side of Wetland 2E, to ensure trail users remain alert to the possibility of turtles (of all species) in this location.

Gray Wolves: There are project measures available to minimize impacts to any wolves that may use the proposed project site. These include: controlling the potential introduction and spread of invasive plant species; maintaining the minimum corridor width to meet project objectives; and limiting impacts to adjacent vegetation. The Proposer commits to avoid denning sites if found.

Northern Long-eared Bat. Tree clearing, if required, would be conducted in accordance with the 4(d) rule to ensure no prohibited take of the northern long-eared bat occurs. Specifically, no trees would be cleared within 150 feet of a known, occupied roost tree from June 1 to July 31, and no trees would be cleared within 0.25 miles of a known hibernaculum at any time. Data collection of known, occupied roost trees and hibernacula is updated by the DNR and USFWS on a regular basis and data would be reviewed upon DNR and USFWS data releases, expected to occur in April of every year.

Vegetation and Native Plant Communities Efforts will be made to minimize disturbance in these areas as may include, but are not limited to the following:

- Development will be avoided in wetland communities as practicable
- Minimize trail width. The narrow nature of the rails will reduce impacts of trail construction and usage.
- Avoid routing trails through wet swales or depressions, or any sensitive rock outcrop areas.
- Use bridges, boardwalks, or open bottom culverts for stream and wetland crossings where feasible.
- Minimize vehicular disturbance in the area (allow only vehicles/equipment necessary for construction activities)
- Do not park equipment or stockpile supplies in the areas
- Do not place soil within these areas
- Use effective erosion prevention and sediment control measures as detailed in the SWPP and in Section 11.b.ii

- Inspect and clean all equipment prior to bringing it to the site to prevent the introduction and spread of invasive species;
- Trail maintenance plans will address erodible soils, especially in areas of steep topography
- Use signage to encourage visitors to stay on designated trails
- Revegetate disturbed soil with native species suitable to the local habitat as soon after construction as possible
- Use only weed-free mulches, topsoils, and seed mixes.

Invasive Species

The area of the project has not been inventoried for invasive species. Trail construction activities and subsequent trail use could introduce invasive species to the project area or exacerbate existing invasive species. Invasive species can be introduced during the project's construction phase and through ordinary use of the trails. Both of these possibilities require prevention, detection, and management protocols specific to them. During construction and operation, proper site management would include measures to prevent, detect, monitor, educate, and eradicate (where practical) invasive species at the project site. Construction BMPs available to limit introduction of invasive species include: 1) inspecting and cleaning equipment prior to entering the site; 2) minimizing soil disturbance to the extent practicable; 3) minimizing the import of new materials by reusing onsite materials; 4) locating and using staging areas that are free of invasive species; and 5) monitoring revegetation once construction is complete. The Proposer also commits to use clean non-native materials for construction purposes, such as the Class V gravel proposed for the parking-staging area. Keeping riders on designated trails would limit the potential for transporting invasive species to un-infested parts of the site. Specifically, the Proposer commits to the following:

- Contractor will be given materials from MN DNR's Invasive Terrestrial Plants database to help them identify any areas of invasive species infestation
- If areas of infestations are identified, either by contractor or others, work will commence in non-infested areas first before moving to infested areas
- Contractor will be required to thoroughly clean all equipment before commencing construction and before mobilizing to a different portion of the project site or a different project
- Contractor to prioritize the revegetating of disturbed areas as soon as possible after construction is completed in an area
- Wood chips or other materials which allow invasive plants to easily take root will not be used for construction of the trail
- Post-construction invasive species monitoring and control measures will be specified by the trail management and maintenance plan for the system in conjunction with the respective land managers
- Users of the trail will be reminded of to stay on the trails via trail signage
- Minnesota's PlayCleanGo program information will be available at the trailhead
- The trailhead and trail system will be managed by the Cuyuna Lakes Mountain Bike Crew, in conjunction with the land managers for monitoring and identifying invasive species

presence; trail maintenance volunteers may also be solicited to assist in keeping invasive species in check and monitor for new infestations
- All trail volunteer leaders will receive training on the identification of invasive species

Soil erosion and sedimentation BMPs would be installed to further prevent impacts to plant and fish communities outside of the directly affected areas. BMPs may include, but are not limited to, measures such as: 1) employing a sustainable trail design; and 2) use of erosion control blankets, biologs, vegetation buffers, mulch, and silt fencing as appropriate.

No other fish, wildlife, plant communities, or sensitive ecological resources are expected to be affected and therefore no additional measures are planned.

14. Historic properties:

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

Crow Wing County contacted the Minnesota Office of the State Archaeologist and the State Historic Preservation Office (SHPO) as part of their review process. That review found that "no known cultural or historic artifacts or sites have been surveyed on any County owned and managed parcels located within the proposed trail corridor."

A review by SHPO was requested July 12, 2018 and a Phase 1 archeological survey was recommend. Terracon Consultants completed this survey on June 6, 2019. The SHPO response letter and Terracon's survey are attached. In an addendum to the survey, a small historic dump site (#21CW0347) was identified in the Terracon survey for the Cuyuna Connection trail. Due to the small site and location on the edge of the proposed project boundary, the Proposer does not expect the Project to affect this site. Geographic Information System (GIS) information has been obtained from Terracon to ensure the trail is not constructed near this area.

If any historical resources are encountered during construction, appropriate measures will be implemented to evaluate and, if necessary, protect the resources. Immediately upon discovery of potential historical objects of an archeological nature within the proposed project site, the contractor shall suspend operations in the immediate area of the discovery to preserve the potential historical resources. The Proposer would notify the DNR Project Manager of the presence of potential historical resources.

15. Visual:

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

The proposed trails are situated in the managed forests of the Minnesota Department of Natural Resources and Crow Wing County. While the Yawkey Unit of the CCSRA and the overlook of Lost Long Lake may be considered scenic, they are not designated scenic vista locations. The majority of the project site is currently occupied by wooded hills, which, while scenic, are relatively normal in the region. The Proposer has designed the trails to fit into the naturally occurring topography. Following revegetation, it is expected that the project will blend with the natural landscape. Construction would occur during typical daylight hours and would only introduce lighting at a small, localized scale, and only if needed. No permanent lighting or vapor plumes are proposed as a part of development.

Given the Project would not alter vistas or lighting, it is not expected to generate any adverse visual effects on or near the Project area.

16. Air

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

   Not applicable; the Project would not introduce any stationary emission sources.

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.

   The Project is not anticipated to generate a substantial increase in traffic-related air emissions during construction activities. A small increase in vehicle-related air emissions may be expected as a result of increased visitation by trail and other recreation users. The Project is not expected to cause any substantial decrease in air quality.

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

   In addition to hand tools, portions of the trail construction would be performed using small diesel or gasoline powered mechanized equipment such as mini-excavators, chainsaws, and brush-cutters. These tools would emit some exhaust fumes during operation. The trail construction would result in minimal odors and dust during daylight hours.

The temporary construction of the trailhead components (e.g., parking area, informational kiosk) would use typical construction equipment such as trucks, graders, excavators, and similar equipment. Dust would be controlled with water or a chemical dust suppressant that would be applied if necessary. The Stormwater Pollution Prevention Plan will address fugitive dust and soil protection issues.

Standard trail use on the native mineral soils is not anticipated to generate substantial dust. During dry weather periods, the vegetation adjacent to the trail would help mitigate minor dust generation.

17. Noise

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

Existing noise conditions in the proposed Project area consist of natural sounds (e.g., wind-blown vegetation; insects; and birds), limited vehicle traffic, and motorized recreational equipment (e.g., snowmobiles, OHV).

During trail construction, small diesel- or gasoline-powered mechanized equipment (e.g., mini-excavators) would generate noise when operating. Noise levels can be lessened by employing noise-reduction mufflers on construction and other maintenance equipment. This noise would be temporary in nature and would occur only during daylight hours. Construction of the trailhead components would also generate noise from equipment preparing the area such as trucks, graders, excavators, and similar equipment. Sound would likely be associated with grading, tree removal, and assembly of the structures.

Ongoing trail maintenance activity (e.g., winter grooming for fat tire riding) is expected to be limited to daytime hours, which are defined under state noise rules as those hours between 7 AM to 10 PM. Although maintenance would largely utilize hand tools and/or small equipment such as snowmobiles, chainsaws, brush cutters, or similar, conducting the work during daytime hours would assist in maintaining noise standards for nearby residences. Otherwise, trail maintenance is expected to be indistinguishable from other maintenance activity in surrounding areas. No substantial change in long-term noise impacts is expected under normal use of the project, thus no change in quality of life is expected.

18. Transportation

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

There are currently no designated parking spaces on the site. Existing parking on the south end of the proposed trails is located in the Yawkey Unit of the CCSRA. This is a gravel parking lot accommodating approximately twelve vehicles. Parking is also available at the City of Cuyuna Park & Pumptrack. This gravel parking area can accommodate approximately twenty vehicles. The proposed Project trailhead parking area would create an estimated five parking spaces and would be constructed on the north end of the property, adjacent to Iron Hub Road.

The Minnesota Department of Transportation (MNDOT) maintains several traffic counters near the proposed project, however, none are directly adjacent to the project areas. The closest and most relevant of these is the traffic counter (SEQ #33148) on County Road No. 31 just south of the City of Cuyuna Park & Pumptrack. Annual Average Daily Traffic (AADT) count per this counter is 1250 for this segment of road. The closest public road to the southerly end of the trails is State Trunk Highway No. 6. MNDOT maintains a traffic counter (SEQ #1208) just north of the City of Crosby. Annual Average Daily Traffic count per this counter is 4400 for this segment of road. There is no data available for Tripp Avenue, Main Street or Iron Hub Road, the three streets that would access the northerly end of the Cuyuna Connection Trail Loop, the City of Cuyuna Park & Pumptrack or the Cuyuna Hills Trail Loop.

It is estimated that the project would not increase the daily traffic load significantly. This estimate is largely due to the bicycle connectivity that already exists within the area, with direct connections available from Riverton, MN to Deerwood, MN. The small size of the proposed parking area for Cuyuna Hills Loop is designed to encourage greater numbers of riders to either park in the City of Cuyuna or ride in from the existing trail network. The estimated number of cyclists using Tripp Avenue, Main Street and Iron Hub Road is expected to vastly increase in number, as riders would have a connection between trails in the area and the City of Cuyuna. Currently, there is no way to estimate that number.

Public transit does not currently exist for the proposed Project area.

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

The minor increase in traffic generated by the Project is not anticipated to affect traffic congestion on adjacent roads or the regional transportation system. Both State Trunk Highway No. 6 and County Road No. 31 have relatively high Annual Average Daily Traffic (AADT) volumes because they are important connectors to points north, such as Grand Rapids, MN and Breezy Point, MN. Iron Hub Road does not any traffic count data available. However, similar roads in the area have AADTs below 200. Peak hour traffic generated is expected to be far below the vehicle threshold and the daily total trip threshold of 2,500 for a traffic impact study. A traffic impact study will not

be required as part of this EAW. As discussed in section 18.a., the total trip number is expected to be less than 1000 trips per day. Given the locally modest increase in traffic due to the proposed Project, project-related traffic is not expected to adversely affect local roads or the regional transportation system.

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

The proposed trail was designed to connect to existing trail systems and parking locations to minimize usage of motor vehicles. As the volume of traffic to be generated by the project is not expected to generate significant congestion or other traffic issues, no additional mitigation should be required.

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

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

Potential project-related environmental effects that can interact with other reasonably foreseeable projects include noise, traffic, spread of invasive species, erosion, and water quality. Environmental effects during construction and operation include the noise generation during the phases of construction, with the potential for noise generation during ongoing maintenance and wintertime trail grooming. The project would increase traffic levels above existing conditions during phases of construction and operation. There is a risk that project construction, operation and maintenance could lead to the introduction and spread of invasive species. The area at greatest risk for invasive species introduction and spread include the construction corridor during the construction phase. Routine use of the trails can result in increased introduction or spread of invasive species and erosion. Environmental effects regarding water quality would occur during construction of the proposed project.

The geographic scale of all of the project-related environmental effects includes the immediate Cuyuna Connection and Cuyuna Hills Trail loops, as defined within the project boundary depicted on Figure 02. This is general locale for future activity associated with the project construction and future forest and recreational trail management.

The timeframe for considering potential cumulative environmental effects would be during construction and operational phases of the project. Construction period is likely to take place during the spring and summer over one to two years. Operation and maintenance of the project would be on-going and primary maintenance activities would occur for grooming during the winter and vegetation management during non-frozen conditions.

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.

DNR proposes to expand recreational opportunities within the CCSRA, in Crow Wing County, by developing up to 50 miles of new trails in the Yawkey, Mahnomen and Portsmouth Units, and adding a trailhead and an outdoor event space in the Sagamore Unit. Of this, 0.53 would intersect with the Cuyuna Connection Loop (see figure 04W).

No other projects are known to be proposed within the vicinity of the project at this time.

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.

Noise Cumulative noise effects are possible if the additional reasonably foreseeable project's construction or trail grooming activities overlap with the proposed project's construction and trail grooming. This would be expected to occur during daylight hours and would end when construction and grooming are complete. At this time, it is not known whether construction and grooming on the reasonably foreseeable project would overlap with this project. While likely future maintenance activities timelines would overlap, any cumulative effect would be temporary, minor, and limited in extent.

Traffic Temporary localized increases in traffic could occur while construction is occurring if the additional reasonably foreseeable construction overlaps with the planned project construction. At this time, it is not known whether construction on the reasonably foreseeable project would overlap with this project. Upon completion of Project development, cumulative traffic effects would persist from individual vehicles entering, parking, and leaving the respective recreation area. Traffic effects would likely have seasonal peaks. While future use of the proposed project and reasonably foreseeable project would overlap, any cumulative effect would be temporary, minor, and limited in extent.

Invasive Species There is some potential for cumulative effects due to the spread of invasive species, both during construction and during the long-term use of the trails. Construction equipment and user equipment (i.e. mountain bikes, shoes, clothing, gear), can transport invasive species from outside the proposed project area as well as from connecting trails in the surrounding areas (such as the DNR CCSRA). The reasonably foreseeable bike trail expansions could provide additional possible infestation sources, as would the existing bike trail system. Any invasive species established along these trails could serve as a potential source for additional invasive species spread to any subsequent nearby project. This is a permanent possibility and would require permanent routine monitoring and maintenance of the bike trails to manage the effect. In order to ensure this is limited in extent, the Proposer commits to BMPs as discussed in section 13.d.

Erosion Cumulative erosion effects are possible if project construction activities overlap other planned construction activities in the area. Possible locations where this might occur include the Yawkey Unit of the DNR CCSRA where environmental effects have the potential to combine if construction periods overlap. The magnitude of any cumulative effects is highly variable, and

would be minimized by all projects following the erosion precautions stipulated in their 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.
Cumulative erosion effects from use of the trails would be a permanent possibility; this can be minimized by regular proper maintenance of biking trails. Erosion during long-term project operations is expected to be minimal due to trail design practices.

Water Quality Cumulative water quality effects are likely to be limited to the immediate project area during construction, consistent with the conditions of the MPCA NPDES/SDS Construction Stormwater General Permit. This, combined with pollutant contributions from other reasonably foreseeable projects is expected to be temporary, limited in extent and minor, due to the overall regulatory controls of this permit.

20. Other potential environmental effects:

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

Climate change in Minnesota is linked to an increase in intensity of rainfall events, which increases the severity of erosion caused by rainfall and flooding. Changing climate also disrupts existing patterns in temperature, rainfall, and daylight to which native species are adapted and may change environmental conditions to be more favorable to new, invasive species than they are to native species.

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 Cynthia J Novak-Kreker Date August 12, 2019

Title EAW Project Manager