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# **Northshore Mine Mile Post 7 Tailings Basin Project**

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**Department of the Army Environmental  
Assessment and Statement of Findings**



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St. Paul District

## **Department of the Army Environmental Assessment and Statement of Findings for the Northshore Mine Mile Post 7 Tailings Basin Progression Project**

This document constitutes the Environmental Assessment, 404(b)(1) Guidelines Evaluation, Public Interest Review, and Statement of Findings for the Northshore Mine Mile Post 7 Tailings Basin Expansion Project and is referred to as the Decision Document for this project.

Lead Federal Agency: U.S. Army Corps of Engineers

Applicant: Northshore Mining Company

Applicant Reference Number: MVP-2015-02528-RMM

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## Subject

Department of the Army Environmental Assessment and Statement of Findings for the Above-Referenced Standard Individual Permit Application

This document constitutes the Environmental Assessment, 404(b)(1) Guidelines Evaluation, Public Interest Review, and Statement of Findings for the subject application.

Several Appendixes are referenced in this document, the appendixes include the following:

- Appendix A Watershed Assessment
- Appendix B Stream Mitigation Plan
- Appendix C Updated Stream Mitigation Information
- Appendix D MnRAM Assessment for Project Site
- Appendix E Corps Determination of MnRAM Assessment for Project Site
- Appendix F Environmental Justice Analysis
- Appendix G MPCA 401 WQC Issued June 29, 2021
- Appendix H DNR Environmental Review Needs Determination Decision Memo
- Appendix I 1977 Federal EIS Mile Post 7 Tailings Basin
- Appendix J Corps ORM Database 5 Year Cumulative Data Jan 2015 – Dec 2019

## 1.0 INTRODUCTION

This document is prepared in accordance with the Council on Environmental Quality's (CEQ) regulations implementing the National Environmental Policy Act (NEPA)(40 CFR Parts 1500-1508)<sup>1</sup>, and U.S. Army Corps of Engineers ("Corps") NEPA regulations (33 CFR Appendix B to Part 325); the Clean Water Act (CWA) Section 404(b)(1) Guidelines (40 CFR Part 230); and the Corps' regulations, including the Public Interest Review (33 CFR 320.4) under the authority delegated to the District Engineer by 33 CFR 325.8 and pursuant to Section 404 of the CWA. This document has been prepared by the Department of the Army (DA), St. Paul District Corps of Engineers for the Northshore Mile Post 7 Tailings Basin Progression Project (Project) proposed by Northshore Mining Company (Applicant) and will be referred to in the remainder of this document as the Decision Document.

This document describes the Corps' decision to authorize discharges of dredged and fill material into waters of the United States (WOTUS) in association with the Project as detailed in Section 2 of this document. The authorization is subject to special conditions and the specified mitigation described in this Decision Document.

The findings in this document are based on a collaborative and robust process among the Corps and the Applicant. The information provided by the Applicant provides a sufficiently detailed analysis of the environmental impacts of the Project and a reasonable range of alternatives, including the No Action Alternative, to inform federal review and authorization for this Project.

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<sup>1</sup> Since the NEPA process for this action commenced prior to the effective of the updated NEPA implementing regulations, the Corps uses the pre-2020 NEPA regulations in this permit action. See 40 CFR 1506.13 (2020).

Several regulatory entities were involved in the process. Mainly two state agencies are referenced throughout this document. The Minnesota Pollution Control Agency (MPCA) is involved through several different regulatory programs but the MPCA referenced in this document focuses primarily on the CWA Section 401 water quality program. The Minnesota Department of Natural Resources (DNR) is involved with the project by two different departments within the agency. DNR Division of Lands and Minerals is involved through the Wetland Conservation Act (WCA) and it is the Local Government Unit for WCA and approved the aquatic resource impacts for the Project on May 9, 2019. DNR Division of Ecological and Water Resources is also involved because it granted a permit to mine to the Applicant for the existing tailings basin. The DNR is referenced throughout this decision document and most references to DNR are about the DNR Division of Ecological and Water Resources as it conducted an environmental review need determination process for the permit to mine amendment (environmental review need determination was completed on June 28, 2021). The DNR Lands and Minerals division approved the Applicant's permit application seeking a WCA permit to allow them to fill wetlands as part of the Project.

## **1.1 BACKGROUND**

In June 2018, the Applicant submitted a DA permit application for their proposed relocation of the West Ridge railroad at the Mile Post 7 Tailings Basin as part of the tailings basin progression. Northshore owns and operates the Peter Mitchell Mine in Babbitt, Minnesota; the EW Davis taconite processing facilities at Silver Bay, Minnesota; and an interconnecting railroad. These facilities have been in operation producing taconite pellets since the 1950s. With the current ore resources and the current rate of mining, production operations at these facilities will continue for several decades; however, the Mile Post 7 tailings basin facility is reaching its current capacity. The facilities, including the Mile Post 7 Tailings Basin at Silver Bay, have been planned by Northshore and permitted through a Permit to Mine by the DNR for the life of the Peter Mitchell ore body.

The Corps is the only federal permitting/funding agency involved in the Project and is therefore the lead federal agency. As lead federal agency under NEPA, the Corps has determined an Environmental Assessment (EA) is appropriate to advise whether the preparation of an Environmental Impact Statement (EIS), or supplement to the prior 1977 EIS, will be necessary. The Corps reviewed the original Final Environmental Impact Statement, Power Plant Discharge Structure, Delta Stabilization Dike, and On-Land Taconite Tailings Disposal, Reserve Mining Company, Silver Bay, Lake County, Minnesota, March 1977 (Federal EIS) and determined that additional environmental documentation for the current proposed activities is needed. Several laws and regulations have been updated since 1977, as well as the need to allow for public comment and consultation with the tribes to obtain their input on the Project as proposed now. Therefore, in accordance with 40 CFR 1501.3 and 40 CFR 1501.4, the Corps has prepared this EA, encompassed herein, to determine if the proposed Project will have a significant impact which would require an EIS or supplement to the Federal EIS.

During the application review process the Corps' geographic jurisdiction under Section 404 of the CWA changed on June 22, 2020, as a result of the Navigable Waters Protection Rule (NWPR) that went into effect on that date. An Approved Jurisdictional Determination (AJD) was completed under the NWPR on June 22, 2020. A previous AJD was completed on January 19, 2017, under the Corps 1987 Regulations and Rapanos guidance; however, the NWPR AJD supersedes the Rapanos AJD.

The Project includes aquatic resource impacts to jurisdictional and non-jurisdictional wetlands, deepwater habitat, streams and ditches. The Corps has conducted an AJD under the NWPR and found that several aquatic resources are non-jurisdictional. The Project will result in the following jurisdictional and non-jurisdictional aquatic resource impacts: 243.51 acres of direct wetland impacts, 45.49 acres of indirect wetland impacts, 29.57 acres of deepwater habitat, 9,960 linear feet of ditch impact, and 8,570 linear feet of stream impact. As a result of the June 22, 2020, AJD completed by the Corps, the aquatic resources which are jurisdictional under the NWPR under Section 404 of the CWA is limited to the following aquatic resources: 163.43 acres of wetland impact (direct and indirect), 29.57 acres of deepwater habitat, and 8,570 linear feet of stream impact. The remainder of this document is based on the geographic jurisdiction under the NWPR.

As stated above, the state resource agencies involved in regulating aquatic resource impacts for the Project include the MPCA and the DNR Lands and Minerals division. There are discrepancies between aquatic resource impacts and the amount of compensatory mitigation required from each regulatory entity (Corps, DNR, MPCA) because they each have jurisdictional authorities over different aquatic resources on the site. The DNR's Notice of Decision for the aquatic resource permit was issued on May 9, 2019 and authorized the filling of 264.27 acres of wetland and required 264.27 credits of wetland mitigation to offset the authorized impacts. The MPCA's 401 Water Quality Certification (WQC) issued on June 29, 2021 authorized the filling of 309.57 acres of Waters of the State and required the Permittee to purchase 309.57 credits of wetland mitigation to offset the authorized impacts. The MPCA also required stream mitigation to account for the 8,570 linear feet of permanent stream impacts. The Corps and MPCA worked with the Applicant to refine their stream mitigation.

During the review process the 1971 rules regarding Section 401 of the CWA were updated and became effective in 2020; however, MPCA certified the project under the 1971 Section 401 rule which was in place at the time it received the certification request from the Applicant. The MPCA's June 29, 2021 WQC notes in the Decision section, "The MPCA has reviewed these documents and information under the federal and state statutes and rules in places at the time of application..." The Corps coordinated the WQC with the U.S. Environmental Protection Agency (EPA) to complete the required 401(a)(2) process which allows EPA 30 days to determine if the Project may affect neighboring certifying authorities jurisdiction's water quality standards. The 401(a)(2) process was initiated by the Corps on July 1, 2021 with the EPA. EPA completed the process on July 30, 2021 and stated it was not notifying downstream jurisdictions that the project may affect the quality of their waters.

The Applicant noted in their original application materials to the Corps that the proposed maximum elevation of the pond in the tailings basin would be 1355' with a freeboard of 10' bringing the maximum elevation of the dams to 1365'. During the review process, in order to align with other regulatory processes underway (DNR and MPCA), the Applicant revised the language in their permit application to reflect the following: "There is one principal construction component to the proposed Project. The embankment that currently supports the existing railroad would be relocated approximately 4,000 feet to the northwest. Portions of the proposed new embankment would become the dam defining the ultimate limit of the tailings basin and some sections of dam would be constructed separately from the railroad embankment. The embankment will allow tailings deposition to progress to the northwest, per the original tailings basin design. Tailings would be deposited into the basin for the remaining life of the operation, until ultimately reaching the proposed new railroad embankment along areas where the natural topography is below a 1315' elevation." The update to the pond elevation was submitted to the Corps by the Applicant on March 12, 2021.

There was substantial amount of back and forth between the Corps and Applicant regarding information that was necessary to reach a permit decision. Several in-person meetings were held to facilitate face-to-face meetings so that the Applicant could ask specific questions about information requests from the Corps. Those meetings also allowed the Corps to ask the Applicant project specific questions and to address information gaps that came from reading their submittals. In the end, the Corps was able to work with the Applicant to get the necessary information to reach a permit decision.

### **1.1.1 Tribal Consultation**

In an effort to meaningfully consult early in the project review phase, the Corps requested consultation with Tribes prior to receiving a complete permit application from the Applicant. During the preapplication phase of this Project, the Corps requested government-to-government consultation, on July 25, 2017, with the following nine Tribes in Minnesota, Wisconsin, and Michigan: Bad River Band of Lake Superior Chippewa (WI), Bois Forte Band of Chippewa (MN), Fond du Lac Band of Lake Superior Chippewa (MN), Grand Portage Band of Lake Superior Chippewa (MN), Keweenaw Bay Indian Community (MI), Lac Courte Oreilles Band of Lake Superior Chippewa (WI), Lac du Flambeau Band of Lake Superior Chippewa (WI), Lac Vieux Desert Band of Lake Superior Chippewa (MI), and Red Lake Nation (MN). Follow-up with each Tribe was conducted by the Corps to identify those who wished to consult. Of the nine notified Tribes, Bad River, Bois Forte, Grand Portage, Fond du Lac, and Red Lake expressed interest in consulting on a government-to-government basis.

In summer and fall 2018, in response to tribal concerns, the Corps tried to coordinate an on-site visit to the Project location and an in-person meeting with consulting tribal staff, to continue to share information and better understand concerns with the proposed Project. In July 2019, the Corps provided additional Project information, including the Phase I archaeological report, and requested to meet with consulting tribal staff to discuss the Project information, the identification of historic properties and properties of religious and cultural significance to Tribes, and tribal concerns with the Project proposal. In August 2019, the Corps met with representatives from consulting Tribes.

On October 23, 2019, in response to discussion with Tribes, the Corps coordinated a site visit to the Project location for consulting tribal staff. Following the site visit and discussion, on January 10, 2020, the Corps held an in-person consultation meeting at the Duluth Regulatory field office. Results from the October field visit and the January meeting led to the Corps requiring a tribal survey of the proposed Project, which culminated in the Fond du Lac Band contracting (with the Applicant) to conduct tribal cultural investigation for the proposed Project. As a result of the Covid-19 pandemic, the scheduling of the tribal cultural investigation was delayed several months. In September 2020, the tribal cultural resources survey (TCRS) was completed, and in October 2020, five Elder interviews were conducted within at least two tribal communities. Results of the identification efforts and findings from the tribal investigation further informed the Corps' consultation with Tribes and continuing review under the National Historic Preservation Act.

For additional information on the Corps' tribal consultation process see the following sections from this document: Section 11.3 Section 106 of the National Historic Preservation Act, 11.3.1 Tribal Trust Responsibilities, and 11.13 Executive Order 13175.

## 1.2 ACTIVITY LOCATION

The Project encompasses approximately 1,200 acres and is located about 5 miles west of Silver Bay, in Lake County, Minnesota. The legal location of the Project is described below:

Township: 55, Range: 8, Section: 6, Forty: NENE, NWNE

Township: 56, Range: 8, Section: 20, Forty: NESE, NWSE, SESE, SWSE, SESW

Township: 56, Range: 8, Section: 21, Forty: NESW, NWSW, SESE, SWSE, SESW, SWSW

Township: 56, Range: 8, Section: 28, Forty: NENE, NWNE, NENW, NWNW, SENW, SWNW, NWSW

Township: 56, Range: 8, Section: 29, Forty: All 16

Township: 56, Range: 8, Section: 30, Forty: SENE, NESE, NWSE, NESW, SESE, SWSE, SESW, SWSW

Township: 56, Range: 8, Section: 31, Forty: NENE, NWNE, NENW, NWNW, SENE, SWNE, NESE, NWSE, SESE, SWSE

Township: 56, Range: 8, Section: 32, Forty: NWNE, NENW, NWNW, SENW, SWNW, NWSW



Figure 1. Mile Post 7 Tailings Basin Overview Map

## 1.3 MILE POST 7 TAILINGS BASIN HISTORY

The Mile Post 7 Tailings Basin has a long history dating back to the 1950's. Reserve Mining Company began processing taconite ore to produce iron pellets at Silver Bay, Minnesota, since 1955. The taconite was mined from reserve's open pit mine located in northeastern Minnesota near Babbitt. The taconite was shipped via rail approximately 47 miles to the processing facility at Silver Bay, Minnesota, which is on the north shore of Lake Superior. In 1955, Reserve was

the first mining company to place in operation large scale, commercial mining and processing facilities to produce iron pellets. The waste product from creating iron pellets, called tailings, from Reserve's Silver Bay processing facilities were discharged directly into Lake Superior at the rate of 21 million long tons annually or 64,400 long tons daily. This resulted in several lawsuits and the preparation of a State (DNR) and Federal (Corps) EIS to determine where the tailings basin would be after Reserve Mining was forced to stop discharging their tailings directly into Lake Superior.

The tailings discharge into Lake Superior was the subject of concern and criticism since their original permits were granted by the State of Minnesota and the Corps. In 1969 the US Secretary of the Interior convened the Lake Superior Enforcement Conference and the tailings discharge into Lake Superior and particulate emission into the air from Reserve's Silver Bay processing facilities were the subject of extensive public debate, administrative proceedings, and court litigation.

On 20 April 1974, the US District Court for the District of Minnesota held that Reserve Mining Company's discharges of tailings into Lake Superior and particulate matter into the air at Silver Bay, Minnesota, contained fibers that endangered the health of people exposed to the discharges. The US District Court ordered an immediate halt to the discharges.

Reserve Mining Company explored several options for on-land disposal of tailings in response to the court's order to halt discharging in Lake Superior. The State of Minnesota as well as the Corps were involved in investigating alternatives for the project. In November 1974 Reserve Mining submitted several permit applications to the MPCA and the DNR for a disposal site near Mile Post 7 of Reserve Mining Company's railroad, approximately five miles southwest of Silver Bay. Reserve submitted applications to the Corps in February 1976. The DNR and MPCA held extensive hearings on Reserve's permit applications from June 1975 to April 1976. The State-appointed hearing officer's final recommendation was to approve Reserve Mining's 1976 Midway alternative.

In July 1976 the DNR and MPCA denied Reserve's applications for permits for use of the Mile Post 7 site. Reserve appealed the decisions to the State District Court for Lake, Cook, and St. Louis Counties. In January 1977 the State District Court ruled in favor of Reserve Mining Company and ordered the state to issue the permits to Reserve for the Mile Post 7 site.

In December 1976 Reserve changed their plans and submitted a revised permit application to the Corps which substantially reduced anticipated fugitive dust problems. On December 10, 1976, Reserve submitted revised permit applications to the Corps based on their revised plans. Reserve submitted 32 permit applications to the Corps which according to the Federal EIS (Appendix I) can be broken down by type as follows:

- 5 Main Dams
- 5 Diversion Channels
- 5 Diversion Dikes
- 3 Seepage Collection Dams
- 6 Road Crossings of Streams
- 3 Rail Crossings of Streams
- 1 Delta Stabilization
- 1 Combination Road and Pipeline Crossing
- 1 Cofferdam



1 Tailing Disposal Area  
1 Power Plant Discharge Pipe

The Federal EIS noted that all the features identified above, “save for the delta stabilization dike, are necessary for Reserve to dispose of taconite tailings at the Mile Post 7 site.” The revised permit applications included everything necessary for the tailings facility to be operational and store tailings.

The Federal EIS, states that Reserve would curtail its operations after 40 years if allowed to use the Mile Post 7 site. The Mile Post 7 tailings basin does not appear to have filled up at the pace with which Reserve originally intended and is the result of market shifts in the iron ore industry. The Federal EIS captured the ultimate build-out (6,000 acres in size) of the final tailings basin and that was estimated to take 40 years to fill up. The Federal EIS indicated that approximately 800 acres of wetlands would be filled by the Mile Post 7 proposal (with most of the wetland types being 6, 7 and 8). After 40 plus years the basin is now being proposed to progress to its final configuration (3,700 acres). The Federal EIS also covered over 1,000 acres of additional project limits that will not be utilized as a part of the final progression of the tailings basin. This reduction in the geographic scope of the project will result in reduced impacts in comparison to what was proposed in the Federal EIS.

Multiple Corps permits were issued in the late 1970s related to the existing Mile Post 7 Tailings Basin, including numbers 76-412B (construction of Dam No. 1), 76-413-B (construction of Dam No. 2), 76-422 (deposition of the tailings into Tailings Deposition at Mile Post 7). These three permits were extended up to the year 2004. Prior to their expiration, Northshore Mining Company, the successor entity to Reserve, requested an extension on them in order to continue the expansion of the basin. In 2005, rather than extending the permits, a public notice (2005-2628-TWP) was issued for the discharge of fill material into 20 acres of wetlands for the expansion of the basin by approximately 160 acres through the relocation of the railroad for the next 25 years, with 20 acres of compensatory mitigation purchased in the form of wetland bank credits. The intent of the new permit was to consolidate several old permits into one. In June of 2006 a Corps permit was provided to Northshore Mining Company (authorizing 20 acres of wetland fill) stating that “All areas within the tailings basin dikes up to an elevation of 1252 feet were permitted by various Corps permits prior to the issuance of Corps permit 2005-2628-TWP. Corps permit 2005-2628-TWP authorized the discharge of fill materials in the wetlands between elevation 1,252’ and the limits identified in Corps Permit 2005-2628-TWP. Appropriate compensatory mitigation has been provided for all of the wetlands permitted to be filled by these permits.”

The material that will be deposited in the Mile Post 7 tailings basin will come by rail line from the Applicant’s Peter Mitchell Mine located 3.5 miles south of Babbitt, MN. The Applicant has estimated based on current rates of mining that the Peter Mitchell Mine will take another 60+ years (best estimate at this time) to deplete the ore reserves found there. As a result of the proposed multi-decade mining, the Applicant needs to expand their Mile Post 7 tailings basin. The Applicant was in the process of obtaining Corps authorization at their Peter Mitchell Mine site to move into new ore resource areas; however, after the Navigable Waters Protection Rule became effective all aquatic resources at the mine site were determined to be non-jurisdictional under Section 404 of the CWA. An approved jurisdictional determination was completed and sent to the Applicant (refer to Corps project 2019-01933-EJI for more details). Therefore, there are no Corps permits associated with the expansion of the Peter Mitchell Mine. The Peter Mitchell Mine project will impact approximately 48.98 acres of non-jurisdictional wetlands. This

is the extent of the discussion on the Peter Mitchell Mine impacts and the remainder of this document will focus on the jurisdictional aquatic resource impacts at the Mile Post 7 site.

The other action associated with the Mile Post 7 tailings basin is referred to as the Bear Lake Diversion project (Corps project 2007-00841-TWP). In 2009, the Corps issued a permit to the Applicant to discharge dredged and fill material into 4.33 acres of wetlands abutting an unnamed tributary of the West Branch of the Beaver River for the purpose of permanently diverting the outlet of Bear Lake. Prior to the permitted work, Bear Lake overflowed out of the northwest corner of the lake into a seepage recovery pond adjacent to Dam 5. Water that accumulated in the seepage recovery pond was pumped into the main tailings basin water pond. Water was released from the tailings pond to a tributary of the West Branch of the Beaver River via a permanent discharge. The Dam 5 seepage recovery pond needed to be modified as the tailings dam continued to be constructed wider and higher. As a result, a new outlet was needed for Bear Lake that would divert the overflow away from the tailings dam. The new outlet directs Bear Lake overflow to the West Branch of the Beaver River.

The Bear Lake project resulted in 4.33 acres of wetland impact, including 0.38 acres of floodplain wetland (Type 1), 1.64 acres of wet meadow wetland (Type 2), 0.18 acre of deep marsh wetland (Type 5), 1.66 acres of scrub/shrub wetland (Type 6), and 0.46 acres of forested wetland (Type 7). A total of 2.97 acres of wetland were directly impacted by the project and 1.16 acres of wetland was indirectly impacted as a result of drainage associated with the project and 0.2 acre of wetland was indirectly impacted as a result of clearing vegetation.

As detailed in the 2007-00841-TWP Decision Document, compensatory mitigation was required for the 4.33 acres of unavoidable wetland impacts and the mitigation was accomplished through the purchase of wetland banking credits from the Embarrass River Wetland Mitigation Bank. Northshore was required to replace for a majority of the impacts at a 1:1 ratio; however, some of the mitigation was out-of-kind and was required to be replaced at a 1.25:1 ratio. A total of 4.54 credits were purchased. This is the extent of the discussion on the Bear Lake impacts, and the remainder of this document will focus on the effects associated with the loss of jurisdictional aquatic resource impacts at the Mile Post 7 site.

There have been several authorizations associated with the Mile Post 7 site over the years that have allowed the existing tailings basin to be created in its current configuration. All necessary mitigation has been provided for those previous permits. The Project, as proposed today, will result in the expansion of the existing structure that has previously been permitted. The proposed impacts for the Project are in addition to areas that have been previously permitted. Accordingly, this decision document contains the Corps' NEPA analysis, Section 404(B)(1) Guidelines determination and Public Interest Review determination to cover the new areas within the Mile Post 7 tailings basin that have not yet been permitted.

## **1.4 AUTHORITIES**

The Applicant proposes to discharge dredged and fill material into WOTUS, including wetlands, which requires authorization from the Corps. This permit action is being undertaken through authority delegated to the District Engineer by 33 CFR 325.8, pursuant to Section 404 of the CWA (33 USC 1344). The Corps has authority through Section 404 of the CWA to regulate the discharge of dredged and fill material into WOTUS.

Pursuant to CEQ regulations for implementing NEPA (40 CFR Parts 1500-1508) and Corps regulations for NEPA procedures for the Regulatory Program, found at Appendix B to 33 CFR Part 325, the Corps has reviewed and evaluated the information about the project, including all supplemental data subsequently provided, and has found the information to be sufficient and appropriate for the purposes of performing the required analysis under NEPA and issuing a permit decision.

## 2.0 SUMMARY OF DECISION

A DA permit pursuant to Section 404 of the CWA (33 USC 1344), is being issued to the Applicant for the discharge of dredged and fill material into WOTUS, including wetlands. The DA permit authorizes the Applicant's proposed action (Mile Post 7 site), as described in Section 3 and Section 5. The impacts as a result of the discharges of dredged and fill material into WOTUS are described in greater detail throughout this document. The selected alternative incorporates all practicable avoidance and minimization measures.

The proposed Project utilizes the existing tailings storage facility footprint and land adjacent to it, progressing in a westerly direction. The main construction component of the project involves the construction of the railroad and dam embankment. Dam 1 is on the south side of the basin, Dam 2 is on the north side, and Dam 5 is on the east side. The dams are constructed using Plant Aggregate that is delivered to the basin via rail from the Applicant's Silver Bay plant, which has been the case since the basin operation commenced. The rail provides a means of delivery using much of the same rail infrastructure constructed by the Applicant to deliver ore from the Peter Mitchell Mine to the plant and the use of Plant Aggregate. As the tailings basin rises due to tailings deposition, the dams will be raised. Portions of the new embankment would become the dam defining the ultimate limit of the Mile Post 7 tailings basin. The Project will also include an extension to Dam 1 to be constructed beginning at the west end of Dam 1 to prevent tailings deposition and water infiltration into the existing coal ash landfill. In addition, an embankment supporting a rail switchback from Dam 1 (allowing access for coarse tailings delivery to Dam 1) would be constructed near the southern end of the relocated primary railroad embankment.

The table below represents the jurisdictional stream and wetland impacts (as identified in the June 22, 2020 AJD provided by the Corps) authorized by the DA permit.

Corps jurisdictional impacts based on June 22, 2020, jurisdictional determination under NWPR

Aquatic Resource ID	Aquatic Resource Type	Project Activity	Type of Impact	Duration of Impact (P-permanent T-Temporary)	Direct Wetland Impacts (Fill) (ac)	Indirect Wetland Impacts (ac)	Total Wetland Impacts (ac)	Jurisdictional Deepwater Impacts (ac)	Jurisdictional Stream/Ditch Impacts (lin ft)
14	Wetland	Railroad/Dam	F	P	0.94	0.00	0.94		
15	Wetland	Tailings Basin	F	P	31.28	0.00	31.28		
16b	Wetland	Tailings Basin	F	P	0.24	0.00	0.24		
18	Wetland	Tailings Basin	F	P	42.74	0.00	42.74		
18	Deepwater	Tailings Basin	F	P	0.00	0.00	0.00	29.57	
19	Wetland	Railroad/Dam	F	P	0.74	0.00	0.74		
22	Wetland	Tailings Basin	F	P	4.66	0.00	4.66		
23	Wetland	Railroad/Dam	F	P	3.42	0.00	3.42		

23	Wetland	Tailings Basin	F	P	10.79	0.00	10.79		
23	Wetland	Impoundment	I	P	0.00	5.69	5.69		
24	Wetland	Tailings Basin	F	P	2.18	0.00	2.18		
25	Wetland	Tailings Basin	F	P	21.56	0.00	21.56		
26	Wetland	Railroad/Dam	F	P	2.55	0.00	2.55		
26	Wetland	Tailings Basin	F	P	1.50	0.00	1.50		
26	Wetland	Fragmentation	Fr	P	0.00	0.20	0.20		
27	Wetland	Railroad/Dam	F	P	1.96	0.00	1.96		
27	Wetland	Tailings Basin	F	P	3.09	0.00	3.09		
27	Wetland	Impoundment	I	P	0.00	27.48	27.48		
28	Wetland	Railroad/Dam	F	P	0.75	0.00	0.75		
28	Wetland	Tailings Basin	F	P	0.62	0.00	0.62		
29	Wetland	Railroad/Dam	F	P	1.03	0.00	1.03		
29	Wetland	Tailings Basin	F	P	0.03	0.00	0.03		
39a Little 39 Creek	Stream	Railroad/Dam	F	P	0.00	0.00	0.00		1,025 (0.35 ac)
39a Little 39 Creek	Stream	Tailings Basin	F	P	0.00	0.00	0.00		1,563 (0.46 ac)
39a Little 39 Creek	Stream	Impoundment	I	P	0.00	0.00	0.00		832 (0.24 ac)
39b Big 39 Creek	Stream	Railroad/Dam	F	P	0.00	0.00	0.00		650 (0.22 ac)
39b Big 39 Creek	Stream	Tailings Basin	F	P	0.00	0.00	0.00		1,805 (0.53 ac)
39b Big 39 Creek	Stream	Impoundment	I	P	0.00	0.00	0.00		2,695 (0.97 ac)
Totals (area=acres, LF=linear feet)					130.06	33.37	163.43	29.57	8,570 LF

NOTE: Type of Impact - Fr: Fragmentation of Resource; F: Fill, I: Impoundment

This authorization requires compensatory mitigation for the direct and indirect effects to the WOTUS. This authorization also includes special conditions to avoid and minimize potential adverse impacts; to compensate for unavoidable adverse impacts to the aquatic ecosystem; and to ensure the Project would not be contrary to the public interest. The Corps' mitigation determination is included in Section 8 of this document.

The issuance of this DA permit will result in the expansion of an existing waste treatment system at the Project site. Under current regulations defining WOTUS (known as the NWPR at the time this document is finalized), waste treatment systems, once permitted, are no longer WOTUS (33 CFR 328.3(b)(12)). With the issuance of the DA permit for the Project, all the aquatic resources within the new tailings basin will be part of an active waste treatment system and those aquatic resources may no longer be jurisdictional. The NWPR defines waste treatment systems to include "all components including ... treatment ponds ... designed to...retain concentrate, settle, reduce, or remove pollutants, either actively or passively, from wastewater prior to discharge." 33 CFR 328.3(c)(15). The Project is expected to actively and

passively treat wastewater prior to discharging in the Beaver River. A crucial component to waste treatment systems is a National Pollutant Discharge Elimination System (NPDES) or State Disposal System (SDS) permit for the treatment system. The Project has an NPDES/SDS permit from the MPCA (NPDES/SDS Permit MN0055301). Water discharging from the waste treatment system to WOTUS will be treated and continue to be subject to regulation by the CWA section 402 permitting program.

### **3.0 PROPOSED PROJECT**

#### **3.1 PROJECT HISTORY**

In 2015, the Applicant submitted a delineation of waters to the Corps. The Corps concurred in writing with the delineation of boundaries of aquatic resources on May 9, 2016. The concurrence acknowledged the boundaries of the aquatic resources were accurate but did not approve the type of each aquatic resource (e.g. stream or wetland), nor did it identify whether waters were subject to jurisdiction under Section 404 of the CWA. The Corps was unable to approve the type of aquatic resources submitted by the Applicant because their report identified two aquatic resources that were later determined to be streams as Wetland 23 and Wetland 27. A site visit was scheduled with the Applicant to review the aquatic resources.

On August 10-11, 2016 the Corps met on-site to collect information on the jurisdictional status of several waters and to verify whether Big and Little Thirtynine tributaries (formerly known as Wetlands 23 and 27) still had identifiable ordinary high water mark indicators as well as bed and banks. The Corps was able to confirm the jurisdictional status of several aquatic resources on that two-day site visit. The Corps also confirmed the two tributaries (Big Thirtynine and Little Thirtynine Creek) exhibited physical indicators of streams and bed and banks were observed on several stretches of the tributaries. The Corps sent the Applicant an AJD on January 19, 2017 stating which aquatic resources were non-jurisdictional (please see administrative record for more details on the specific waters that were determined to be non-jurisdictional under the 1986 Regulations and Rapanos Guidance). The AJD also confirmed that Murphy's Pond was jurisdictional. The AJD cover letter concluded with a paragraph explaining to the Applicant that the aquatic resources identified in the delineation as Wetlands 23 and 27 are tributaries because of the presence of bed and banks and physical indicators that show an ordinary high water mark along the bank. The Applicant was informed it would need to identify the limits of the ordinary high water mark on both tributaries.

As noted above in Section 1.1, the NWPR took effect on June 22, 2020, and provided a new definition of WOTUS. The original AJD completed for this site on January 19, 2017, was completed in accordance with the Corps 1986 implementing regulations and supporting guidance resulting from the Rapanos Supreme Court decision. The Corps reconsidered the jurisdictional status of on-site aquatic resources jurisdictional under Section 404 of the CWA at the request of the Applicant. A new AJD under the NWPR rule was finalized on June 22, 2020 and superseded the January 19, 2017 AJD.

In April 2017, the Applicant had not produced sufficient information to document Wetlands 23 and 27 should be identified as wetlands instead of streams. The Corps conducted a two-day site visit, April 11-12, 2017, to document the presence of bed and banks and physical indicators indicative of an ordinary high water mark. The Corps and the Applicant's agent, Barr Engineering, traversed both tributaries taking data points along the way. The Corps completed

their field work and produced a trip report dated May 27, 2017 (full report can be found in the administrative record), which documented physical indicators of an ordinary high water mark as well as evidence of bed and banks along both tributaries. The site visit confirmed through the presence of physical indicators as well as bed and banks that Wetlands 23 and 27 were in fact streams. The Corps advised the Applicant to update their aquatic resources in future submittals to include Big and Little Thirtynine Creeks in place of Wetlands 23 and 27.

The Corps and DNR have had a lengthy permitting history with the Applicant including two separate EIS' (one state and one federal EIS) for the project in the late 1970's. In December 2016 the Applicant submitted a draft application to the Corps and DNR. In accordance with the Applicant's request, the Corps did not initiate processing of the application (i.e. the Corps did not issue a public notice for the project at that time). The Corps did agree to begin reviews, including consultations, needed in association with the Corps' responsibilities under the Endangered Species Act (ESA), National Historic Preservation Act (NHPA), and tribal trust responsibilities prior to a formal permit application to ensure adequate time for those reviews.

The DNR responded to the Applicant's December 2016 draft application. The DNR assessed whether a supplemental EIS was needed for the proposed project boundaries. As part of its assessment, the DNR considered the pool elevation of the tailings basin increasing from 1315' (the elevation initially considered in the State EIS) to 1365' (the elevation as proposed in the 2016 draft application). In their March 16, 2017, memorandum the DNR determined that the project "does not appear to result in substantial changes that affect the potential significant environmental effects of tailings management at the site. The project also does not appear to generate significant environmental effects that were not considered in the 1977 Final EIS nor does it appear to affect the availability of prudent and feasible alternatives with lesser environmental effects. Preparation of an EIS Supplement is not supported." Specific to the 50-foot increase in basin crest height, the DNR concluded that any seepage impacts to the water quality of the Beaver River would remain negligible. DNR concluded "the seepage pond system, along with the seepage relief wells and trenches, can control head pressures at the aquifer thus limiting the amount of seepage leaving the site."

It was later determined by DNR that their March 16, 2017 memorandum was not sufficient to document the project did not require additional environmental review. The DNR took official action on December 15, 2020 when the Applicant submitted a permit to mine amendment for future operations at their Mile Post 7 facility. The DNR stated, "The proposed amendment includes extending Dams 1 and 2, relocating the materials supply rail line, continued placement of fine tailings into the basin, and development of a new borrow site to supply clay suitable for dam construction." DNR as the Responsible Government Unit has to make a decision as to whether a supplemental EIS is necessary since a state EIS was conducted in 1976. The DNR has concluded in their Environmental Review Need Determination dated June 28, 2021 that a supplemental EIS is not warranted (Appendix H). The DNR also confirmed that the ultimate height of the dams at the Mile Post 7 tailings basin will be 1315'.

The Corps reviewed the original 1977 Federal EIS and has determined that an EA would be developed to evaluate the environmental effects of the Project as described in the permit application. The EA would conclude with either a finding of no significant effect or a determination that a supplemental or new EIS is warranted.

The Applicant submitted their first formal application to the Corps on June 18, 2018. The Corps requested information necessary to complete the application for public posting and issued a public notice for the Project on October 17, 2018 (See Section 4.0 for comments received in

response to that public notice). The Corps sent a letter on May 22, 2019, to the Applicant, transmitting the public notice comments and identifying all information needed to reach a permit decision, including among other items, a watershed assessment need to identify the scope and intensity of effects within the HUC 10. After further dialogue, the Applicant submitted their final watershed assessment to the Corps on May 1, 2020 (Appendix A Watershed Assessment).

In addition to the Corps' review, the Applicant worked concurrently with the MPCA on completing the process for obtaining Section 401 WQC for their Project. The MPCA issued their 401 WQC on June 29, 2021. The Corps initiated the Section 401(a)(2) process with EPA on July 1, 2021. EPA notified the Corps on June 30, 2021 it would not notify neighboring jurisdictions of water quality effects. The 401(a)(2) process concluded on June 30, 2021.

The wetland and stream compensatory mitigation plan was the final piece of information needed from the Applicant for the Corps to fully evaluate the Project and reach a permit decision. The Corps issued a Public Notice (PN) for the Project for the second time on July 28, 2020 to solicit comments on this plan (Appendix B Stream Mitigation Plan). The public and tribes submitted several substantive comments (See Section 4.0 for comments). The Corps sent a letter to the Applicant on October 14, 2020, transmitting the PN comments and a list of questions that needed to be addressed for the Corps to reach a permit decision. The Corps noted in that letter that formal comments on their stream mitigation proposal would be forthcoming shortly. On October 16, 2020, the Corps sent comments to the Applicant regarding their stream mitigation proposal. The Applicant responded on November 4th, November 24th, and December 9th, 2020, with their response to the stream mitigation questions raised by the Corps (Appendix C Updated Stream Mitigation Information). The Applicant responded to the Corps' October 14, 2020 letter, which conveyed questions that arose from public notice comments, on December 9, 2020.

## **3.2 WATERSHED AND SITE CONDITIONS**

This section contains information on the specific Project area as well as the larger HUC 10 Beaver River Watershed.

### **SITE CONDITIONS**

The Project area encompasses approximately 1,200 acres, which includes the tailings storage area and supporting infrastructure, and is located west of Silver Bay, in Lake County, Minnesota. Some of the project area consists of lands disturbed by past activities, including depleted borrow pits and access roads, as well as a landfill. Just east of the Project area is the existing tailings storage facility.

A gravel road along the existing railroad tracks borders the eastern edge of the Project area and western extent of the existing tailings basin. The western extent of the Project area is partially bordered by a diversion channel and much of the remainder closely follows a watershed divide. A local impoundment of surface runoff against the existing railroad embankment is referred to as Murphy's Pond, which is fed in part by the remnant watercourses of Big Thirtynine and Little Thirtynine Creeks. Those watercourses were diverted to the Beaver River upstream of the Project area during the original construction of the Mile Post 7 Tailings Basin in the late 1970s. These remnant watercourses are referred to in this report as Watercourse One for the remnant downstream of the diversion of Big Thirtynine Creek, and Watercourse Two for the remnant downstream of the diversion of Little Thirtynine Creek.

The Project area straddles the eastern edge of the Duluth Complex and the western edge of the Northshore Volcanic Group, which is predominantly gabbro and basalt, and is located approximately 5 miles from Lake Superior. Landforms are the Nickerson and Highland moraines, which contain drift over dense Superior till at depths of a few inches to more than 50 feet over bedrock. Topography is sloping with ridges and valleys and slopes generally ranging from 4 to 5 percent to the west of the existing tailings basin, with interspersed uplands and wetlands. Wetlands are typically found in several topographic forms, including long drainage ways on slopes, relict excavated seepage areas with eroded material over bedrock, ditches, broad organic flats, and floodplains.

Slopes within most of the Project area wetlands range from approximately zero to three percent, and the wetlands are generally flat to slightly concave in shape. However, wetlands within the Project area occurring on slopes contain some narrow channels with grades up to eight percent. In contrast, uplands in the Project area have short and irregular areas that are much steeper, ranging from 8 percent grade to steep vertical bedrock faces that are convex. Generally, elevations in and around the Project area decrease from the northwest to the southeast, sloping towards Lake Superior. Within the Project area, elevations range from approximately 1190 to 1390 ft. above mean sea level (AMSL).

The portion of Big and Little Thirtynine Creeks proposed to be impacted by the Project includes a total of 8,750 linear feet of tributary that occurs within the East Branch Beaver River sub watershed. Historically, these two tributaries combined downstream to form Thirtynine Creek, which discharged into the Beaver River. However, Thirtynine Creek no longer exists due to the placement of the existing tailings basin. As part of the original tailings basin construction a diversion ditch was constructed for operation of the tailings basins and greatly diminished flow within both tributaries. In addition to the altered hydrology, a recent field visit by the Applicant identified approximately 17 small beaver dam impoundment features along the 5,150 linear feet reach of Big Thirtynine Creek and approximately 6 separate beaver dam impoundment features along the 3,420 linear feet of Little Thirtynine Creek. Prior to the construction and operation of the diversion, there appeared to be few beaver impoundments along the 8,750 linear feet of Big and Little Thirtynine Creeks.

The Applicant calculated the total functional loss or stream debits, using the Minnesota Stream Quantification Tool (MNSQT) Debit Option #2 (which used an existing conditions worksheet for select function-based parameters and standard scores for all other function-based parameters). Two reaches were assessed for each tributary. The “Big Thirtynine Beaver Dam Areas” reach encompassed all the impounded reaches and consisted of 3,925 linear feet of tributary, while the “Big Thirtynine Channel Areas” reach excluded impounded sections and consisted of the remaining 1,225 linear feet of tributary. The “Little Thirtynine Beaver Dam Areas” reach encompassed all the impounded reaches and consisted of 1,340 linear feet of tributary, while the “Little Thirtynine Channel Areas” reach excluded impounded sections and consisted of the remaining 2080 linear feet of tributary. The Corps required the Applicant to collect field data to calculate the Existing Condition Scores for Reach Runoff, Floodplain Connectivity, Lateral Migration, Bed Form Diversity, Temperature, Dissolved Oxygen, Total Suspended Solids, Macroinvertebrates, and Fish parameters. Field data was not collected for the other parameters, Large Woody Debris and Riparian Vegetation, so the standard 0.8 Existing Condition Score was used for these parameters in the Debit Calculator.

The field data collected for Existing Condition Scores within Big and Little Thirtynine Creeks indicate that most parameters are functioning or functioning at risk, except for the Biology



category in all reaches. Generally, the reaches do not have eroding banks and are connected to the floodplain but lack bed form diversity features in the Geomorphology category. Both tributaries have low dissolved oxygen and high summer temperatures in the Physicochemical category. The macroinvertebrate and fish IBI scores in the Biology category are all non-functioning, likely due to the lack of connectivity of the remnant reaches to the downstream receiving water as a result of over 6000' of ditch and the impoundment, called Murphy's Pond, that lies over a portion of the remnants that has been inundated.

All of the wetlands in the Project area are mapped as palustrine systems. The dominant wetland type at the site includes forested, primarily deciduous wetlands that are saturated to the surface for extended periods during the growing season (PFOB, PFO1B, PFO6B). Many of the forested wetlands are also mapped with adjacent shrub-carr saturated wetlands (PSSB). Forested and shrub-carr wetlands adjacent to Big and Little Thirtynine Creeks are mapped as having a seasonally flooded/saturated water regime (PFOC and PFO/SSE). The NWI mapping shows about 100 acres of less total wetland within the Project area than the field delineated wetlands completed by the Applicant's agent. Some wetlands that may have been man-made (and were included in the Applicant's delineation) due to ground disturbance or that have been scraped or excavated are not mapped in the NWI including several drainageway wetlands. Appendix D of this document provides additional analysis on the condition of each wetland within the Project. The Corps has reviewed the Applicant's assessment of the existing wetlands within the Project and determined that it is appropriate for assessing the functions of the existing wetlands (Appendix E).

A Soil Survey Geographic Database (SSURGO) soil survey at a scale of 1:24,000 has been completed for the entire Project area. The soil survey shows that the majority of the Project area contains undisturbed soils, while several areas are mapped as impacted by previous mining activity, road construction, railroad construction, and tailings basin construction.

Vegetation within the Project area comprises predominantly native forest communities, which is true for both upland and wetland communities. A minority of the project area is comprised of altered communities dominated by a mixture of native and exotic species, particularly herbaceous species. These communities develop incidentally or by deliberate seeding after anthropogenic disturbance such as road and ditch construction or excavation of borrow material for use in mine operations. Upland forests are dominated by aspen (*Populus tremuloides*) and paper birch (*Betula papyrifera*). Typical for forests in the region, these forests have likely been managed for timber resources for decades. Canopy trees are mostly in the range of 6-8 inches dbh (diameter at breast height) or smaller. Canopy cover is roughly 50 percent, with significant variation, suggesting early successional forest thinning. Few, if any, larger canopy trees are present, and canopy tree species richness is very low. Occasional individuals of balsam fir (*Abies balsamifera*) are present. Forest understories include saplings of aspen, birch, balsam fir, and black ash (*Fraxinus nigra*) and shrubs including hazel (*Corylus americana* and *C. cornuta*), and mountain maple (*Acer spicatum*). Ground cover herbs include ubiquitous north woods species such as big-leaved aster (*Eurybia macrophylla*), wild sarsaparilla (*Aralia nudicaulis*), blue bead lily (*Clintonia borealis*) and Canada mayflower (*Maianthemum canadense*). Native Plant Community (NPC) classes for these upland forests are FDn33 (Northern Dry-Mesic Mixed Woodland) and FDn43 (Northern Mesic Mixed Forest).

## **WATERSHED CONDITIONS**

Prior to human development in the region, the HUC 10 Beaver River watershed (0401010201) was characterized by forested land cover with numerous streams draining to Lake Superior,

predominantly through the Beaver River and its major tributaries, East Branch Beaver River, West Branch Beaver River, and Thirtynine Creek, along with other minor tributaries. The City of Beaver Bay, which is located southeast of the Project area, was established in 1856 and remains the oldest continuously occupied community on the North Shore of Lake Superior in Minnesota. The production of lumber was prevalent in the region during Duluth's population boom in the 1860s followed by more extensive clearcutting of forests along the North Shore in the 1890s. The Reserve Mining Company obtained permits for the construction of the E.W. Davis taconite processing plant in 1947 (City of Silver Bay). Construction of the town of Silver Bay began in 1951 and was officially incorporated in 1956 (City of Silver Bay). Following construction, the E.W. Davis plant made its first shipment of pellets in April 1956 (City of Silver Bay). Taconite tailings produced at the plant were discharged into Lake Superior in accordance with state permits until 1980, when the discharge was required to cease by a federal order. The Mile Post 7 tailings basin was constructed in the late 1970s and began operations in 1980. Other than the cities of Beaver Bay and Silver Bay, development in the watershed is primarily focused along Highway 61, adjacent to Lake Superior with homes, resorts, and small businesses. A few other major features are present within the watershed, including the Silver Bay municipal airport (located in the West Branch Beaver River subwatershed), which opened in 1965 and was closed in 2018; a golf course (located predominantly in the East Branch Beaver River subwatershed) that opened in 1959 (Wild North Golf, 2019); and wastewater treatment ponds (located in the Lower Beaver River subwatershed) that were built before the 1990s. There is minimal development in the remainder of the watershed. The major highways connecting the cities within the watershed include Minnesota Trunk Highway 61 and County State Aid Highways (CSAH) 3, 4, 5, 15, 31, and 32.

The U.S. Department of Agriculture-U.S. Forest Service (USDA-USFS) Superior National Forest covers 42,714 acres in the northwestern portion of the watershed area, or approximately 44 percent of the watershed. Finland State Forest encompasses 15,395 acres in the northwestern portion of the watershed, or approximately 16 percent of the watershed. The United States Geological Survey (USGS) National Land Cover Data (NLCD; 2016) identifies primary land cover types in the watershed area as forests and wetlands. Other minor land cover types include developed areas, barren land, cultivated crops/hay/pastureland, and open water.

Generally, elevations in and around the watershed decrease from the northwest to the southeast, sloping towards Lake Superior. Elevations range from approximately 2000 feet in the upper watershed to about 600 feet at Lake Superior. The majority of the watershed is steeply sloping with nearly 60 percent of the watershed containing slopes steeper than 3 percent and 17 percent of the watershed containing slopes steeper than 10 percent. Approximately the lower one-third of the watershed, predominantly within 3-4 miles of Lake Superior, is even more steeply sloped, typically over 5 percent. The watershed geologically straddles the eastern edge of the Duluth Complex and the western edge of the Northshore Volcanic Group. The Duluth Complex makes up about 70 percent of the watershed area, including Beaver Bay Complex subvolcanic felsic and mafic rock, including gabbro. The Northshore Volcanic Group comprises about 30 percent of the watershed, primarily within the lower half of the watershed and is predominantly composed of basalt. Surficial landforms include Superior Lobe moraine of the Nickerson and Mille Lacs - Highland associations, which contain drift over dense Superior till at depths of a few inches to more than 50 feet over bedrock. The Nickerson ground moraine makes up about the lower one-third of the watershed including clayey till along the North Shore. The Mille Lacs ground moraine comprises approximately the middle half of the watershed with drumlins and flutes common, thin drift, and sandy to stony till. The Mille Lacs end moraine is present in the upper part of the watershed with a very small portion of the watershed comprised of Rainy Lobe ground moraine from the St. Croix Association.

The Natural Resources Conservation Service (NRCS) has established four basic hydrologic soil groups, which are used to classify soils within the soil survey to provide a standardized system that contributes to estimating runoff. Soil map unit components assigned to a specific hydrologic soil group have similar physical and runoff characteristics. Hydrologic soil groups have been established for about 80 percent of the watershed, with the exception of the watershed headwaters, the Mile Post 7 tailings basin, lakes, cities, and a few other disturbed areas. Over 75 percent of the characterized watershed is classified as Group D soils. Group D soils are described as having very slow infiltration rates resulting in high runoff potential when thoroughly wet, typically with more than 40 percent clay content, and predominantly clayey textures.

Within the watershed the MPCA has conducted monitoring to identify impaired waters and waters in need of protection. The MPCA identified two streams within the watershed: Beaver River was found to be impaired in fish index of biological integrity, turbidity/TSS, and pH and the second stream was the West Branch of the Beaver River and it was impaired for fish index of biological integrity and macroinvertebrates index of biological integrity.

### **3.3 PROJECT DESCRIPTION**

There is one principal construction component to the Project. The embankment that currently supports the existing railroad would be relocated approximately 4,000 feet to the northwest. Portions of the proposed new embankment (which would also support the railroad) would become the dam defining the ultimate limit of the tailings basin and some sections of dam (portions that are not part of the embankment) would be constructed separately from the railroad embankment. The embankment will allow tailings deposition to progress to the northwest, per the original tailings basin design. Tailings would be deposited into the basin for the remaining life of the operation, until ultimately reaching the proposed new railroad embankment along areas where the natural topography is below a 1365' elevation with a pond elevation, as approved by DNR, to 1315'.

Northshore presently operates three dams to contain the tailings basin. Dam 1 is on the south side of the basin, Dam 2 is on the north side, and Dam 5 is on the east side. The dams are constructed using coarse tailings that are delivered to the basin via rail. The dams are slowly raised at a rate of approximately 2-3' a year, and that rate is if the mine is operating at full capacity. As the tailings basin rises due to tailings deposition, the dams must be raised. In order to continue delivery of coarse tailings to the dams, the railroad must periodically be raised as well. Rather than make smaller, incremental changes to the diversion ditches and railroad, the Applicant has stated their need to relocate the railroad to its final location so that the tailings basin can serve as the final dam construction and progression of tailings deposition. Project designs have been completed to relocate the railroad to the far western extent of the basin at elevations that will allow rail service onto the dams until basin closure. The railroad will also be located inside of existing diversion ditches that were designed and constructed at the western limit of the tailings basin boundary.

The Project would also include an extension to Dam 1 to be constructed beginning at the west end of Dam 1 to prevent tailings deposition and water infiltration into the existing coal ash landfill. In addition, an embankment supporting a rail switchback from Dam 1 (allowing access for coarse tailings delivery to Dam 1) would be constructed near the southern end of the relocated primary railroad embankment.

The aquatic resource impacts associated with the Project described in this section can be found in Section 2 above.

### **3.4 PROJECT DESIGN REVISIONS**

The Applicant has not proposed any project revisions since the Corps issued a second public notice on July 28, 2020.

### **3.5 PROJECT PURPOSE AND NEED**

#### **3.5.1 APPLICANT'S STATED NEED AND PURPOSE**

Applicant's stated purpose: To store tailings from Northshore's Silver Bay taconite processing facility in a responsible manner to ensure continued ability to economically produce iron units from the reserves at the Peter Mitchell Pit.

The applicant has several needs that are driving this Project, as outlined below.

1. Adequate capacity to safely store (dam safety requirements and company safety standards) 735 Million Cubic Yards (MCY) of total tailings to support the remaining life of the Peter Mitchell Mine. Factors for consideration in the constructability of the dams include site topography, geology, existing dam designs, dam slopes, and seepage management. Total tailings storage includes:
  - a. Fine tailings storage volume of approximately 543 MCY.
  - b. Plant aggregate storage volume of approximately 192 MCY. Storage of aggregate is accomplished through construction of dams to contain fine tailings.
2. Sufficient Plant Aggregate or native construction materials (sand, gravel, and clay) in close proximity (i.e. those that are economically within transportable distance from the tailings storage facility) for dam construction.
3. Site suitable to support the infrastructure required for the safe disposal of tailings which includes:
  - a. Tailings generation facilities, which include crusher and concentrating facilities which generate the tailings and transportation facilities to move concentrate to the processing facility;
  - b. Water management infrastructure, which includes pipeline and pumping systems to transport recovered water back to the crusher and concentrator facilities; seepage collection facilities, as may be necessary to recover seepage from the dam toe into the basin; wastewater treatment and a nearby waterway to accept the discharge, as may be necessary to discharge excess water from the system at rates and qualities that can achieve applicable water quality standards; availability of makeup water supply sufficient for

basin design and operation in accordance with Minnesota's Water Appropriations Permit Program; and

- c. Support infrastructure, which includes facilities (truck, rail or conveyor) to transport Plant Aggregate to the basin and redundant pipelines and associated redundant pumping systems to transport fine tailings to the basin; and other associated support infrastructure including electrical power, access roads, and water supply.

### **3.5.2 BASIC PROJECT PURPOSE, AS DETERMINED BY THE CORPS**

To construct a taconite mining waste disposal facility.

### **3.5.3 WATER DEPENDENCY DETERMINATION**

The activity does not require access or proximity to or siting within a special aquatic site to fulfill its basic purpose. Therefore, the activity is not water dependent. Consistent with the 404(b)(1) Guidelines at 40 CFR 230.10(a)(3), if the proposed activity is not water dependent, the availability of practicable alternatives not involving special aquatic sites needs to be evaluated because such alternatives are presumed to be available and presumed to be less damaging unless clearly demonstrated otherwise.

### **3.5.4 OVERALL PROJECT PURPOSE, AS DETERMINED BY THE CORPS**

To construct a taconite mining waste disposal facility that provides enough storage capacity to support the life of the Applicant's Peter Mitchell Mine with the disposal facility being located along the existing railroad that runs between the Peter Mitchell Mine near Babbitt, MN and the existing processing facility and tailings basin located in Silver Bay, MN.

## **3.6 SCOPE OF REVIEW**

### **3.6.1 SCOPE OF ANALYSIS FOR NEPA**

The scope of analysis includes the specific activity requiring a DA permit. Other portions of the Project are included because the Corps does have sufficient control and responsibility to warrant federal review.

When determining whether there is sufficient control and responsibility to include portions of the Project beyond the regulated activities in waters, the Corps considered as appropriate the following factors from Appendix B of 33 CFR part 325.

First, the purpose of the proposed activities in waters is to provide additional storage for the continued tailings disposal associated with existing mining operations through the expansion of the existing tailings basin. The project is not a linear or corridor type project in nature. The proposed regulated activities do not comprise merely a link in a corridor type project.

Second, the Corps considered the extent to which there are aspects of work in uplands in the immediate vicinity of the regulated activity which affect the location and configuration of the regulated activity. There are approximately 193 acres of jurisdictional wetlands and waters and 8,570 linear feet of jurisdictional stream impacts located throughout and adjacent to the location of the approximately 1,200-acre footprint of the Project. The encompassing nature, size, and function of the basin required curvature of the railroad and distribution of regulated aquatic resources throughout the upland area restricts the location and configuration of the regulated activity.

Third, jurisdictional aquatic resources are distributed throughout the proposed project area. The encompassing nature of the basin and its function as a receptacle for tailings slurry as well as the scattered nature of aquatic resources within the landscape disallows the separation of the upland and aquatic impacts; the expansion is not feasible without the authorization of impacts to jurisdictional aquatic resources. Further, given the scattered nature and distribution of waters throughout the site, it is unlikely that any development could be proposed at this site that would avoid impacts to all waters.

Fourth, the extent of cumulative control and responsibility was considered to determine if there are portions of the project beyond the limits of aquatic resources being regulated where the cumulative involvement of the Corps is sufficient to grant legal control over such additional portions of the project. The proposed work is privately funded by the applicant, with no federal funding, assistance, or direction involved. The Corps is the only federal agency with a role in the issuance of a permit. The United States Fish and Wildlife Services (USFWS) is involved through response to the Corps' initiation of Section 7 consultation under the ESA and has provided input consistent with the Fish and Wildlife Coordination Act.

#### **FINAL DESCRIPTION OF SCOPE OF ANALYSIS:**

The distribution of jurisdictional waters and proposed regulated activities occur throughout the entirety of the proposed project area. Therefore, the scope of analysis includes the entire project area, comprised of the 1,200-acre project area. Direct, indirect and cumulative effects of activities within the scope of analysis will be considered and described throughout this document.

### **3.6.2 CORPS ACTION AREA FOR ENDANGERED SPECIES ACT OF 1973**

The Corps action area includes all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. The Federal action being considered is the issuance of a permit for activities regulated under Section 404 of the CWA. Direct effects are those effects that are caused by the proposed action (i.e., the regulated activity in WOTUS) and occur at the same time and place. Indirect effects are those that are caused by the proposed action (i.e., the regulated activity in WOTUS) and are later in time but are still reasonably certain to occur. The action area for this project is coincident with the areas described above for the NEPA scope of analysis.

### **3.6.3 SCOPE OF ANALYSIS FOR SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT**

The permit area includes those areas comprising WOTUS that will be directly affected by the proposed work or structures, as well as activities outside the WOTUS for which all three tests identified in 33 CFR 325, Appendix C(1)(g)(1) have been met.

- 1) *“Such activity would not occur but for the authorization of the work or structures within the waters of the United States”*

But for authorizing the discharge of fill material into the aquatic resources for the expansion of the tailings basin, its construction could not occur because the WOTUS that will be impacted as a result of the project are distributed throughout the Project area. Attempting to construct a basin that avoids WOTUS is not feasible due to size and configuration of the basin and the curvature requirements of the rail line. The upland activities would not occur without the authorization of the impacts to WOTUS.

- 2) *“Such activity must be integrally related to the work or structures to be authorized within waters of the United States. Or, conversely, the work or structures to be authorized must be essential to the completeness of the overall project or program”*

The purpose of the regulated activity is to provide storage for tailings that will be discharged into the expanded tailings basin. Regulated impacts to aquatic resources will result from the realignment of the railroad which will serve as the embankment for the new basin boundaries and allow for the placement of the tailings into the expanded basin. The discharge is integral to the completion of the tailings basin expansion and to its function. Without the authorized fill the basin could not be expanded, and tailings could not be disposed of within it.

- 3) *“Such activity must be directly associated (first order impact) with the work or structures to be authorized”*

The activities in uplands associated with the construction of the railroad embankment will provide the ability to store tailings within the new boundaries is directly associated with the work in WOTUS to be authorized. Discharge of tailings within the new boundaries will impact aquatic resources and upland all contained by the railroad embankment and are therefore inextricable. The activity in uplands is directly associated with the regulated activity, as tailings will be stored in both the upland and aquatic areas within the basin.

## **FINAL DESCRIPTION OF THE PERMIT AREA:**

Based on the application of the three-part test above, the Permit Area includes the entire Project area. Indirect effects of the undertaking on historic properties are considered within the indirect Area of Potential Effects (APE), should historic properties be present.

To determine the APE in the context of indirect effects, the Corps considered the nature of the activities in the permit area, which include the construction of the rail line acting as a dam for the basin and the extent of the progression to the northwest that expands the basin itself. The APE was identified for archaeological resources and was confined to the footprint of the ground-disturbing work. The architectural APE was approximately a one-mile buffer surrounding the tailings basin perimeter. In order to refine the architectural APE the Applicant conducted a

viewshed analysis to identify potential visual effects from the Project. The viewshed analysis showed that variations in topography precluded visibility and thus excluded portions that would not be affected in the one-mile buffer.

The permit area and APE are described in greater detail and with figures in a letter to the Minnesota State Historic Preservation Office (SHPO) dated May 5, 2020 and can be found in the administrative record.

## **4.0 Public Involvement**

### **4.1 OVERVIEW OF PUBLIC INVOLVEMENT**

The Project review process took place over several years and as a result a public notice (PN) was issued twice for public comment. The Applicant applied to the Corps in June 2018. The application was determined to be complete in accordance with 33 CFR 325.3, which includes specific information that is necessary to consider an application complete for public comment.

The project was originally put on public notice on October 17, 2018. While the application was considered complete for public posting it did not contain sufficient information to complete the required analysis needed in order to reach a permit decision. Upon receipt of the additional information requested by the Corps a determination was made that a second public notice would be issued. The Project was noticed for a second time on July 28, 2020 and closed on September 26, 2020 (this PN was extended another 30 days in response to a public request). In response to both PNs, substantive comments were received and are addressed in this document. The comments received from the public, federally recognized Tribes, non-governmental organizations, and agencies included many similar topics. Because of the similar nature of the comments the Corps grouped comments into themes and responses to those comments are provided below. The administrative record contains all the official comments received. The key themes included wetlands, streams, compensatory mitigation, NEPA process and documentation, assessing direct/indirect effects, and alternatives.

### **4.2 FIRST PUBLIC NOTICE COMMENTS AND RESPONSES**

The project was first issued for public notice for 30 days starting on October 17, 2018, ending on November 16, 2018. During the course of the public comment period several commenters requested an extension to the 30 days. The Corps considered the extension requests and agreed to extend the comment period until December 10, 2018.

*Several commenters requested a PN extension as well as a public hearing.*

**Response:** The Corps granted an extension of the public notice from November 16, 2018 to December 10, 2018 in response to several requestors. The Corps determined the requests were appropriate given the volume and nature of the public comments that were being submitted. A public hearing was also requested. The Corps considered the request and reviewed the public hearing requirements set forth in 33 CFR 327, but determined that a public hearing would not be held. 33 CFR 327.4(b) states the Corps shall grant a public hearing request, unless the district engineer determines that the issues raised are insubstantial or there is otherwise no valid interest to be served by a hearing. The applicant retained a qualified consulting firm and several regulatory agencies were involved in the review of the Project.



Accordingly, the Corps did not believe a public hearing would generate new information that would change or inform the review process.

*Several commenters stated that the 1977 Federal EIS was inadequate or that the proposed impacts associated with the project are significant and should be reviewed under an EIS. Another commenter stated the original 1977 EIS was done at a time of less stringent environmental regulation and new requirements have been enacted since then.*

**Response:** In addition to the Federal EIS which was prepared in 1977, the Corps has completed this EA to identify the scope and scale of intensity of impacts associated with the project in the watershed and to inform the decision-making process as to whether a permit can be issued with an EA or if an EIS is needed.

*One commenter noted that connected actions must be disclosed under NEPA. The commenter said the evaluation should include additional taconite mining that would be allowed with the tailings basin expansion.*

**Response:** The Corps has disclosed connected actions under NEPA which includes the Peter Mitchell Mine and the Bear Lake Diversion Project. These connected actions are discussed in Section 1.3 of this document.

*One commenter stated the current tailings basin operation has demonstrated insufficiencies and referenced an October 22, 2000 spill of tailings.*

**Response:** This comment is outside the purview of the Corps' review as it is associated with the ongoing operation of the mine site. Furthermore, it appears that the appropriate state agency took action and, according to the commenter, the Applicant was required to pay a civil penalty.

*Several commenters noted the applicant had not provided a description of the cumulative impacts associated with the project. Several commenters also stated the cumulative effects should be considered within the Beaver River Watershed and the 1854 Ceded Territory.*

**Response:** Due to the large nature of this proposal, the Applicant did not provide a detailed cumulative effects analysis at the time of public notice. Under 33 CFR 325.3, cumulative impacts are not required to be disclosed in a public notice. The Corps has completed a cumulative effects analysis which is described in Sections 6.9 and 9. The Corps has determined that the project will not result in significant impacts. Tribal consultation was conducted, and a formal Tribal Cultural Resources Survey complete with on-site review and elder interviews was conducted by the Fond du Lac Band of the Lake Superior Chippewa. The results of that effort are described in Sections 11.3, 11.3.1, and 11.13.

*Several commenters had concerns about stream and wetland impacts. Some were concerned about additional impacts outside of those identified in the PN. One commenter believes an assessment of the geomorphic changes to the Beaver River downstream of the project site should be completed. One commenter stated the Corps must consider the quality and types of wetlands. One commenter said the loss of wetlands and stream length will reduce watershed storage.*

**Response:** Stream and wetland impacts have been refined throughout the review process. The Corps has ensured the Applicant considered an appropriate scope of review for direct and

indirect effects to wetlands and streams. Section 6 and Section 7 of this document provide greater details on the stream and wetland impacts, including both direct and indirect effects.

*Several commenters raised issues with the adequacy of the proposed compensatory mitigation described in the PN.*

**Response:** The Corps is required to issue a public notice for complete permit applications. The Applicant's submittal, while not complete to make a permit decision, was complete for purposes of issuing a public notice. At the time of the original PN the Corps provided a description of what the Applicant proposed for compensatory mitigation. That proposal included mitigating wetland impacts at a 1:1 ratio (1 acre of impact mitigated for 1 wetland credit), mitigating for Murphy's Pond by creating a similar type of wetland at the Peter Mitchell Mine, and no stream mitigation. There has been a considerable amount of work with the Applicant and resource agencies to refine stream and wetland compensatory mitigation. Section 8 in this document provides more details on the final stream and wetland compensatory mitigation.

*Two commenters noted the project may adversely affect Historic Properties including the Beaver Bay to Lake Vermillion Trail. One commenter also noted there was no notification to Tribal governments that exercise treaty rights within the 1854 Ceded Territory.*

**Response:** The Corps requested government-to-government consultation on July 25, 2017, with the following nine Tribes in Minnesota, Wisconsin, and Michigan: Bad River Band of Lake Superior Chippewa (WI), Bois Forte Band of Chippewa (MN), Fond du Lac Band of Lake Superior Chippewa (MN), Grand Portage Band of Lake Superior Chippewa (MN), Keweenaw Bay Indian Community (MI), Lac Courte Oreilles Band of Lake Superior Chippewa (WI), Lac du Flambeau Band of Lake Superior Chippewa (WI), Lac Vieux Desert Band of Lake Superior Chippewa (MI), and Red Lake Nation (MN). Following the invitation request, follow up efforts utilizing phone and email communications were conducted for each Tribe. Of the nine notified Tribes, Bad River, Bois Forte, Grand Portage, Fond du Lac, and Red Lake expressed interested in consulting on a government-to-government basis. The Corps' consultation with the Tribes led to the requirement of a tribal cultural resource survey (TCRS) investigation, which included archival research, methodology and field survey, and oral history interviews (Elder interviews). The TCRS completed by Fond du Lac (on behalf of the Applicant) did not identify any historic properties, archaeological resources, or evidence related to historic trails within the Project area. Sections 11.3 and 11.3.1 of this document include greater details on the full scope of Tribal consultation as well as the Corps' compliance with Section 106 of the NHPA.

*Several commenters noted the Applicant should consider indirect impacts to aquatic resources within the project area and downstream as well. Specifically, it should address fragmentation impacts to wetlands; assess downstream aquatic resource impacts; evaluate the functional losses of those wetlands; provide compensation if impacts are likely; and develop a monitoring plan for indirect impacts. One commenter also suggested a dewatering system to maintain wetland baseline hydrology and that it could eliminate the need for post project monitoring.*

**Response:** The Corps has required the Applicant to consider indirect impacts to aquatic resources. The Applicant has prepared an indirect monitoring plan for wetland impacts. However, the only potential indirect effects to wetlands have been identified as non-jurisdictional wetlands under Section 404 of the CWA. As such, the Corps will not require the Applicant to monitor those wetlands. If during construction and operation of the Project, there are indicators that additional indirect impacts have occurred to jurisdictional wetland or streams, the Applicant would be required to provide an adaptive management plan or compensatory mitigation for

those impacts. Direct and indirect impacts are discussed in more detail in Section 6.9 and Section 9 of this document. Special conditions have also been added to address potential indirect effects that may be identified in the future. The MPCA is requiring indirect wetland and stream monitoring as part of their 401 WQC. The DNR Division of Lands and Minerals is also requiring indirect wetland monitoring as part of their Wetland Conservation Act permit.

*Several commenters stated the no action alternative was not sufficient or not realistic and the Applicant should consider other no action alternatives. Another commenter also stated the project purpose was too narrow which they said constrains the range of alternatives.*

**Response:** The Corps has determined the Applicant's no action alternative is sufficient. Please see Section 5 in this document for more detailed information on the no action alternative. The Corps worked with the Applicant to address their purpose and need to ensure they were not so restrictive that they eliminated potential alternatives. Section 3.5 provides the final purpose and need statement from the Applicant and the Corps' determination of the basic and overall project purpose.

*One commenter noted a report conducted by Barr Engineering (agent working on behalf of Applicant) identified several state plant species that are of concern or are on a state listed endangered, threatened or special concern list.*

**Response:** The Corps does not have responsibility over state listed species. The DNR has the authority for ensuring those species are handled under the appropriate state laws.

*One commenter expressed concern that there was no quantification or assessment of visual or auditory impacts to the Superior National Forest Scenic Byway.*

**Response:** The Corps has consulted with the United States Forest Service, DNR, and Lake County to identify any potential impacts to the scenic byway. Please see more information in Section 7.9 which describes the Corps' consultation proceedings on the Scenic Byway.

*Two commenters suggested the Applicant should strip organic material from wetlands and stockpile and reuse at a later date for re-vegetation.*

**Response:** This comment is outside the purview of our review as there are no temporary wetland impacts occurring and the remainder are permanent wetland impacts. Due to the nature of the impacts there is not a chance for re-vegetation in wetlands areas within the Project.

*One commenter stated the Applicant should consider the potential impacts of large storm events in the context of climate change.*

**Response:** The basin progression has been designed to handle large influxes of water as a result of precipitation. The basin is engineered to contain the tails and water and has known seep points that alleviate pressure on dam walls. The known seep points have a seep management system that pumps seepage back into the basin which allows the water to be treated and released through the wastewater treatment plant (WTP). This Project will not result in any increase to the discharge rates at the outlet according to the Applicant. Precipitation from large storm events will reside in the basin until discharged through the wastewater treatment plant. The dams at the project site are regulated and monitored by the DNR on an annual basis. The Applicant is required to submit 5-year operational plans to the DNR which document future

construction work on the dams. As the dam heights increase, DNR will continue to provide oversight and review to ensure the safety and suitability of the dams.

### 4.3 SECOND PUBLIC NOTICE COMMENTS AND RESPONSES

The project was placed on a second 30-day PN starting on July 28, 2020 and ending on August 27, 2020. During the course of the public comment period a request was made to extend the PN to October 16, 2020. The Corps considered the extension request and granted an additional 30-day extension to September 26, 2020 for a total comment period of 60 days. That is the maximum time allowed under Corps regulations. The PN was sent to adjacent landowners, interested parties, and placed on the Corps' public website for review and comment.

*One commenter requested a PN extension and one commenter requested a public meeting.*

**Response:** The Corps granted an extension of the second public notice from August 27, 2020 to September 26, 2020. The Corps felt the extension was appropriate given the scale of the Project. A public meeting was also requested. The Corps has considered the request but determined that additional public involvement would not provide information that has not already been considered.

*Several commenters stated that the 1977 EIS was inadequate or that the proposed impacts associated with the project are significant and should be reviewed under an EIS. One commenter stated the original 1977 EIS did not address the dam enlargement by 50 feet in elevation. Another commented that the state EIS did not support the Mile Post 7 project location. Additional comments said the proposed project has the potential for significant adverse impacts on water quality and also could pose a risk to Lake Superior given its proximity to the project. Another commenter said an EIS is required to consider other less environmentally damaging alternatives.*

**Response:** As stated above, the Corps has completed an EA to help inform whether the new impacts associated with the discharge of dredged and fill material into WOTUS from the Project as proposed now are significant. The Corps has evaluated construction related impacts associated with the tailings basin expansion and the height of the dam; however, dam safety implications are governed and regulated by the Minnesota DNR under their permit to mine. The Applicant has submitted an amendment to their existing permit to mine in order to obtain approval from the DNR and there are no plans to raise the pond or dam elevation beyond 1315'. The DNR is charged with administering dam safety and provides the necessary oversight of the dam construction process. The DNR's review of the Applicant's 5-year dam safety operational plan allows them to ensure dam safety. Water Quality issues are regulated by the MPCA who has issued a 401 WQC on June 29, 2021. The MPCA has determined the project is compliant with state water quality standards. The Applicant has considered a wide range of alternatives and the Corps' LEDPA determination can be found in Section 5 and 6.1. The comment stating the EIS did not support the Project location may be a reference to the state EIS where the preferred alternative was not the Mile Post 7 site. While the Corps does not regulate or control the pond elevation in the basin the Corps considered jurisdictional aquatic resource impacts associated with each elevation (1315' and 1365') to better understand what effects, if any, would result to resources regulated by the Corps. The Corps determined the jurisdictional aquatic resource impacts associated with a 1315' and 1365' elevation both result in the same amount of jurisdictional aquatic resource impacts. From the Corps perspective, increasing the pond elevation will not have any additional construction related impacts to WOTUS.

*One commenter stated the Corps should consider the historic change in wetland type within the HUC 10 watershed.*

**Response:** The Applicant has adequately documented the historic wetland acreages within the watershed, documented the existing functions being lost as a result of the project and has proposed adequate mitigation to offset those losses. Sections 6, 7, 8 and 9 of this document provide greater details on the stream and wetland impacts, including both direct and indirect effects as well as compensatory mitigation proposed to offset those losses.

*Several commenters raised issues with the proposed compensatory mitigation for both stream and wetland impacts.*

**Response:** There has been considerable amount of work with the Applicant to refine stream and wetland compensatory mitigation. Section 8 in this document provides more details on the final stream and wetland compensatory mitigation. Mitigation will only be required for those jurisdictional impacts regulated by the Corps.

*Two commenters stated the project must comply with the Section 404(b)(1) Guidelines. They noted there are other practicable alternatives that would have less adverse impacts. One of the commenters stated the project would cause violations of state water quality standards which is prohibited under the Guidelines. They also noted the project would have significant degradation of WOTUS.*

**Response:** The Applicant has supplied sufficient information to demonstrate its project is in compliance with the 404(b)(1) Guidelines. Please see Section 6 of this document for more details regarding the compliance with the 404(b)(1) Guidelines. The MPCA has also issued its 401 WQC on June 29, 2021, documenting the project is in compliance with state water quality standards.

*One commenter noted that a dry stack tailings alternative should be considered. Another commenter noted that their previous comments on the first PN were still outstanding regarding the Applicant's LEDPA determination.*

**Response:** Section 5 and 6.1 of this document details the alternatives that were considered, including a dry stack alternative.

*One commenter noted that the project may significantly affect public health and safety due to the potential impacts from hazardous asbestiform fibers.*

**Response:** The Applicant has received the required air permit and water quality permit from MPCA. Please see Section 7.5 for more details on the air permit.

*One commenter stated there are new circumstances and new information regarding climate change.*

**Response:** Please see Section 7.5 of this document for more details on climate change.

*Several comments were concerned about the increased dam height and the potential for dam failure. One commenter noted there have been recent catastrophic upstream dam failures that call into question the dams and construction methods at the project site. A commenter*

*suggested an EIS is needed because of the potential for dam failure and the potential for adverse environmental effects.*

**Response:** The Corps has prepared an EA to assess the environmental effects of the Project. The Corps is evaluating construction related impacts associated with the tailings basin progression. The height of the dam and dam safety implications are governed and regulated by the DNR under its permit to mine. The DNR has confirmed in its June 28, 2021 Environmental Review Needs Determination that the ultimate dam height is 1315'. There is no indication at this time that the Applicant is approved for anything above 1315'. The DNR will be ensuring the dams are built safely to the 1315' elevation through its review of the Applicant's 5-year dam safety operational plan. The DNR also addressed concerns regarding dam failure associated with upstream dam construction. The Corps defers to DNR's review of the adequacy of the dams and the manner in which they are constructed because that is something the DNR regulates. The DNR has acknowledged that the dams were originally planned to be constructed with the downstream method but have changed to what it calls a modified centerline or offset upstream method which is a combination of the upstream and centerline methods. The DNR requires a Five Year Operation Plan for the construction of the dams at the Project site. The DNR has concluded that the dams most recent safety inspection indicated, "...the dams are well maintained and in good condition, with no major safety issues being noted." The Corps believes DNR has provided adequate information on the safety of the dams and the process in which they are to be constructed.

*Two commenters stated the Corps must consult with the USFWS regarding endangered and threatened species.*

**Response:** The Corps has consulted with the USFWS. Please see Section 6.4.1 for more details on compliance with Section 7 of the ESA.

*One commenter stated an EIS is needed to evaluate the potential environmental impacts from increased hydraulic head resulting from the expansion of the basin and the potential effects on seepage from through the dam walls.*

**Response:** The Corps has considered the effect of the project on seepage. The Applicant was requested to provide additional information on the implications of the hydraulic head associated with increasing the height of the pool elevation. The Applicant presented information from the state's 1975 Draft EIS which documented the permeability of the subsurface layer below the dams. The results of the original analysis when the basin was constructed showed the permeability of the subsurface layer is generally low. The Applicant asserts the existing seepage recovery ponds, coupled with the seepage relief wells and trenches presently constructed in the main dams serve as a pressure relief system that limits the head pressure delivered to the localized aquifer as a result of increased vertical tailings storage. The Applicant believes it can account for any increase in seepage associated with the pool elevation raise because it believes any such seepage will be slow enough to quantify and then manage with the existing pumping stations that maintain the seepage recovery pond elevations. The pumps in the seepage recovery system have additional capacity and the rate at which they pump can be increased if necessary. The DNR confirmed its analysis of available data from the Mile Post 7 site supports the Applicant's rationale that there will not be an increase in hydraulic head as a result of the project.

*One commenter stated that regardless of the Navigable Waters Protection Rule the Corps must consider the full scope of the aquatic resource impacts associated with the Project.*

**Response:** The Corps only has legal authority over the aspects of the project within its jurisdictional authority. An AJD has been completed under the Navigable Waters Protection Rule and those waters that have been determined to be non-jurisdictional are not within the Corps' authority. The Project will result in the following jurisdictional and non-jurisdictional aquatic resource impacts: 243.51 acres of direct wetland impacts, 45.49 acres of indirect wetland impacts, 29.57 acres of deepwater habitat, 9,960 linear feet of ditch impact, and 8,570 linear feet of stream impacts. As a result of the June 22, 2020, AJD completed by the Corps, the aquatic resources subject to Corps review under Section 404 of the CWA is limited to the following aquatic resources: 163.43 acres of wetland impact (direct and indirect), 29.57 acres of deepwater habitat, and 8,570 linear feet of stream impact. In addition to the jurisdictional impacts, there will be an additional 116.81 acres of non-jurisdictional wetlands impacted that are regulated by the MPCA and DNR. All jurisdictional and non-jurisdictional wetland and deepwater habitat impacts will be mitigated for between the state and federal agencies.

*One commenter noted that since the original project from the 1980s there has been a change from a closed-circuit system to a point source discharge.*

**Response:** The MPCA has authority under the NPDES program. The Corps defers to the state for the Applicant's compliance with the NPDES permit.

*One commenter noted the project must be in compliance with the Public Interest.*

**Response:** The Corps' analysis of the Public Interest Review can be found in Section 7 of this document.

*One commenter stated that additional information must be disclosed to the public to allow for informed comments.*

**Response:** The Corps has fulfilled its obligation under federal regulations for public involvement through the public notice procedures. The Corps has solicited comments from the public on two occasions, allowing for extensions on both PNs.

*One commenter requested a public meeting.*

**Response:** The Corps does not have a formal public meeting process. There is a public hearing process, and the Corps has already determined a public hearing would not likely yield additional information that was not already provided. The Applicant has retained a qualified consultant and several resource agencies have been involved with the project for several years. Since a public hearing was not granted there will be no public meeting.

*Several comments were raised regarding water quality. One commenter recommended the Corps verify monitoring of water quality and quantity of impacts to streams and wetlands during construction and operation of the basin. Another commenter stated an EIS is needed due to the potential adverse impacts on water quality. Another commenter stated there are significant new circumstances and information present on water quality including the Beaver River Water Quality TMDL.*

**Response:** During construction the Applicant will be required to have appropriate BMPs in place to ensure the safety of adjacent aquatic resources. Section 10 of this document includes special conditions related to construction activities. The Applicant will also have an NPDES

permit and SWPPP to comply with that will further address construction related BPMs. The MPCA has authority over water quality and has issued the applicable permits. The MPCA granted 401 WQC on June 29, 2021. The Beaver River TMDL as well as several other publicly available data from local, state, and federal resource agencies have been reviewed by the Corps as well as other regulatory agencies. MPCA is requiring post-construction monitoring for water quality through its 401 WQC.

## **4.4 ISSUES IDENTIFIED BY THE CORPS**

Several substantive issues were raised by the Corps during the permit review process. Those issues included:

- Additional information was requested regarding the size, scale, and intensity of impacts within the Beaver River watershed. The Corps requested a watershed assessment from the Applicant to include cumulative impacts and information on flooding, current patterns and water circulation, and stream length.
- The need for baseline conditions on all aquatic resources and accurately identifying stream and wetland resources.
- Monitoring data on surface water, ground water, stream biota, and air quality.
- Potential for monitoring of indirect or secondary effects.
- Lack of satisfactory compensatory mitigation for wetlands, streams, and deepwater habitat.
- Water quality data regarding NPDES permit and Section 401 WQC.
- Land uses within the project area.
- Potential effects on aesthetics as well as potential impacts to the Superior National Forest Scenic Byway.
- After the second PN the Applicant's stream mitigation proposal was still lacking several necessary components including several parts of the Mitigation Rule (33 CFR 332).
- Ability of seepage recovery system to hold additional capacity with an increase in pool elevation.
- The need for a permit to mine amendment with the DNR to accommodate a raise to the 1365' elevation.

## **4.5 APPLICANT RESPONSES TO ISSUES/COMMENTS**

The Applicant has addressed the requested PN comments as well as all Corps requests for additional information. The Applicant's April 2020 Watershed Assessment covered a significant amount of the comments identified by the Corps including information on the potential effects within the HUC 10 watershed, information on the aquatic resources within the watershed and Project area, monitoring data on water quality and air quality, as well as information on potential indirect monitoring of wetlands. Its June 2020 Stream Mitigation Proposal and subsequent November 4, 24, and December 9, 2020 updates included the necessary information to complete its stream mitigation proposal. The Applicant was also able to clarify its wetland mitigation plan which includes the purchase of wetland credits. The Applicant responded to PN comments regarding the second PN on December 8, 2020. The Applicant's responses to the PN comments as well as the issues identified by the Corps have been addressed and are incorporated in this document.

The DNR has confirmed in its June 28, 2021 document that the ultimate dam height approved for the Mile Post 7 site is 1315' with a pool elevation of 1305'. This is an important point



because the Applicant's original Corps application indicated an ultimate pond elevation of 1355'; however, the DNR has not authorized a pond elevation over 1305'. As noted in the introduction and background section of this document, the Applicant amended its application with the Corps to revise the dam and pond elevation to be consistent with what the DNR has authorized, 1315' and 1305' elevations respectively.

## **4.6 COMMENTS OUTSIDE THE CORPS PURVIEW**

Several comments raised during the PN period have been determined to be outside of the Corps authority to control. The Corps has the authority and responsibility to evaluate the direct, indirect, and cumulative effects caused by the discharge of dredged and fill materials into jurisdictional waters. The following is a brief discussion of activities and effects that are outside the Corps' purview.

Effects from operation, including but not limited to ore spillage from rail cars traveling to the tailings basin, dam failure, vehicle collisions (with people or wildlife), fugitive dust from operation of equipment, climate change, leaks or spills from the transportation or storage of hazardous material, water withdrawals necessary for basin operation, health concerns associated with operation, and effluent discharged to receiving waters are outside of the Corps' responsibility and control. To the extent these operational effects are controlled by the appropriate state agencies, the Applicant must comply with all applicable laws and regulations related to operational activities. With respect to the design and construction of facilities, these aspects of the project are also not subject to the Corps regulatory authority and the Applicant must meet all applicable safety standards established by the state. While operational aspects and design/construction standards are not within the Corps' purview, they are discussed as appropriate in the context of the Corps evaluation of the project on the public interest in Section 7 of the document.

## **5.0 ALTERNATIVES**

An evaluation of alternatives is required under NEPA for all jurisdictional activities. An evaluation of alternatives is required under the Section 404(b)(1) Guidelines for projects that include the discharge of dredged or fill material. NEPA requires discussion of a reasonable range of alternatives, including the no action alternative, and the effects of those alternatives; under the Guidelines, practicability of alternatives is taken into consideration and no alternative may be authorized by a DA permit if there is a less environmentally damaging practicable alternative.

### **5.1 OVERVIEW**

The Corps completed a review of alternatives commensurate with the impacts for the Project as proposed by the Applicant. During the review process the Corps asked the Applicant to update its original alternatives analysis. The updates included additional offsite alternative locations as well as a different onsite storage method known as dry stacking. The Applicant considered several alternative configurations and locations for the Project. The remainder of this section details the range of alternatives considered.

### **5.2 SITE SELECTION CRITERIA**

In order to be practicable, an alternative must be available, achieve the overall project purpose (as defined by the Corps), and be feasible when considering cost, logistics and existing technology.

The Applicant has provided the Corps with information determined to be substantive and relevant to the analysis of alternatives associated with the Project. (Reference document entitled "Revised Alternatives Analysis," dated November 2019, for more details on the Applicant's taconite production and disposal process). This information is necessary to understand some of the constraints that surround the process of disposing of the waste material. The Corps has reviewed the Applicant's stated site selection criteria. The final Corps approved site selection criteria are listed below.

Project Specific Site Selection Criteria:

1. Geographic area of review. The geographic area considered for the alternatives analysis includes the area around the Applicant's Peter Mitchell Mine near Babbitt, MN and in close proximity to its existing railroad between the Peter Mitchell Mine and its existing Mile Post 7 taconite processing facility in Silver Bay, MN. The evaluation criteria were determined to be appropriate given the location of the existing mine and taconite processing facility. Alternatives that are not located along the existing railroad corridor would not be practicable because of the cost and logistics associated with a new rail corridor.
2. Size of storage necessary to handle the waste produced from mined material coming from the Peter Mitchell Mine. The Applicant was required to detail the estimated amount of material to be mined from the Peter Mitchell Mine to inform the appropriate size of the tailings basin. This is critical to the review of alternatives because the Corps needs to ensure the basin is not oversized and unnecessarily impacting aquatic resources as a result. The Applicant identified a need to have adequate storage for approximately 735 million cubic yards (MCY) of total tailings. That cumulative number includes a need of 543 MCY of storage for fine tailings and 192 MCY of storage for plant aggregate. The storage of plant aggregate is accomplished through the construction of dams to contain the fine tailings. The Corps has reviewed the Applicant's documentation for determining its tailings storage needs on remaining ore reserves at its Peter Mitchell Mine and has determined that the estimated storage amount is reasonable.
3. Logistical needs for an operational tailings storage facility.
  - a. Safety concerns associated with dam construction.
  - b. Safety constraint with railroad track curvature and vertical gradient (horizontal track curvature must not exceed three degrees and vertical gradient must not exceed 1.5%).
  - c. Adequate aggregate source for dam construction. Current operations supply what the Applicant needs to construct all dams.
  - d. Tailings generation facilities which include crusher and concentrating facilities which generate the tailings and transportation facilities to move concentrate to the processing facility;

- e. Water management infrastructure, which includes pipeline and pumping systems to transport recovered water back to the crusher and concentrator facilities; seepage collection facilities, as may be necessary to recover seepage from the dam toe into the basin; wastewater treatment and a nearby waterway to accept the discharge, as may be necessary to discharge excess water from the system at rates and qualities that can achieve applicable water quality standards; availability of makeup water supply sufficient for basin design and operation in accordance with Minnesota's Water Appropriations Permit Program; and
  - f. Support infrastructure, which includes facilities (truck, rail or conveyor) to transport Plant Aggregate to the basin and redundant pipelines and associated redundant pumping systems to transport fine tailings to the basin; and other associated support infrastructure including electrical power, access roads, and water supply.
4. Aquatic resource impacts. Under the 404(b)(1) Guidelines only the least environmentally damaging practicable alternative can be authorized by the Corps. The applicant is required to consider the amount and severity of aquatic resource impacts associated with alternatives.

## **FINAL SITE SELECTION/SCREENING CRITERIA**

Criteria for alternatives as evaluated and determined by the Corps: land access or availability, costs, logistics, continuity of service, safety, and impacts to WOTUS.

### **5.3 NO ACTION ALTERNATIVE**

The No Action Alternative would result from the Corps not issuing a DA permit for the discharges of dredged and fill material into WOTUS. There would be no additional jurisdictional wetland or stream impacts as a result of this alternative. The Applicant could discharge dredged or fill material into non-jurisdictional resources without a permit; however, it likely would not be able to construct a viable tailings basin without impacts to jurisdictional waters. The existing tailings basin would continue to operate until the storage capacity is reached within the basin. At that time the tailings basin would be put into reclamation and would adhere to DNR and MPCA state permits. The Applicant would be forced to shut down operations at its Peter Mitchell Mine in Babbitt until a new tailings basin could be created to dispose of the taconite waste. This could result in the loss of 600+ jobs. This alternative is not practicable due to the effects of continuity of service if the basin has to shut down; from the costs associated with establishing a new taconite waste area; and logistics and land availability associated with finding a new site.

### **5.4 ON-SITE ALTERNATIVES**

The range of on-site alternatives is limited to the area directly adjacent and surrounding the existing tailings basin. On-site alternatives focused on avoiding and minimizing impacts as well as reconfiguring the basin to accommodate the size needed for its projected waste needs.

### **5.4.1 MILE POST 7 SITE – APPLICANT’S PREFERRED ALTERNATIVE**

The proposed project area encompasses approximately 1,200 acres, which contains the tailings storage area and supporting infrastructure, and is located about 6 miles west of Silver Bay, in Lake County, Minnesota. Some of the project area consists of lands disturbed by past activities, including depleted borrow pits and access roads. The proposed project area utilizes the existing tailings storage facility footprint and land adjacent to it, progressing westerly as disclosed in the 1977 Federal EIS and original state and federal permits. Tailings would be stored over the existing, approximately 2,100-acre tailings storage area an additional 113 feet in height above the existing permitted basin and a total height of about 233 feet at its highest point. In addition, tailings would be stored within an approximately 850 acre area to an elevation of 1315 feet (this area is separate from the 1,100 acres of the basin previously evaluated in the Federal EIS and already permitted). The geographic configuration of the proposed project, in consideration with the surrounding topography, achieves the required long-term storage needs for 543 MCY of fine tailings and using the 192 MCY of long-term generated plant aggregate for dam construction with no need to import additional aggregate.

The embankment which currently supports the existing railroad would be relocated approximately 4,000 feet to the northwest. Portions of the proposed new embankment would become the dam defining the ultimate limit of the tailings basin and some sections of the dam would be constructed separately from the railroad embankment. The embankment will allow tailings deposition to progress to the northwest. Tailings would be deposited into the basin for the remaining life of the operation, which is approved by the DNR up to 1305’ for the pond and 1315’ for the top of the dam.

The Applicant presently operates three dams to contain the existing tailings basin. Dam 1 is on the south side of the basin, Dam 2 is on the north side, and Dam 5 is on the east side. The dams are constructed using coarse tailings that are delivered to the basin via rail. As the tailings basin rises due to tailings deposition, the dams must be raised. In order to continue delivery of coarse tailings to the dams, the railroad must periodically be raised as well. Rather than make smaller, incremental changes to the diversion ditches and railroad, the proposed railroad relocation represents the final raise for the tailings basin to serve the final dam construction and progression of tailings deposition. Preliminary designs have been completed to relocate the railroad to the far western extent of the basin at elevations that will allow rail service onto the dams until basin closure. The railroad will also be located inside of existing diversion ditches that were designed and constructed at the western limit of the tailings basin boundary.

The proposed Project would also include an extension to Dam 1 to be constructed beginning at the west end of Dam 1 to prevent tailings deposition and water infiltration into the existing coal ash landfill. In addition, an embankment supporting a rail switchback from Dam 1 (allowing access for coarse tailings delivery to Dam 1) would be constructed near the southern end of the relocated primary railroad embankment.

The jurisdictional aquatic resource impacts associated with this alternative would result in the loss of 163.44 acres of wetland, 29.57 acres of deepwater habitat and 8,570 linear feet of stream. This alternative will be carried forward for consideration of compliance with the 404(b)(1) Guidelines.

## 5.4.2 RAILROAD AVOIDANCE ALTERNATIVES

The Applicant considered several on-site configurations for its railroad track location (see Figure 2 below). In the south part of the site, the figure below shows alternative locations 2, 3, 4, and the Applicant's preferred alternative in purple in that location. The aquatic resource impacts associated with locations 2, 3, and 4 all would result in one to three more acres of wetland impact. Locations 2, 3, and 4 would also require up to sixty-five feet of excavation (including bedrock excavation) creating additional costs. For the reasons listed above, these alternative rail line locations (2, 3, 4) have been determined to not be practicable.

In the north part of the site, the figure below shows alternative locations A and D (Applicant's preferred location) for the rail line track. Alignment A has the potential to result in less aquatic resource impacts (impacts would be to non-jurisdictional waters); however, the rail curvature with that design is not feasible from an engineering and safety standpoint. For the reason above this alternative rail line configuration (A) is not practicable.

The Applicant also considered a railroad alignment that would avoid wetland impacts in the areas that are outside of the boundary of the original 1977 EIS (See Figure 3 below). The alignments identified in the figure as "Avoidance Alignment" pose potential safety issues and increase costs associated with the rail line construction. The south avoidance alignment would cut through two hills and the bedrock in certain parts of that area are very shallow and in order to meet the track gradient guidelines up to 40 feet of excavation through bedrock would be needed in some areas which would increase costs substantially. The Applicant has also stated there are engineering and safety concerns with constructing a rail line on bedrock. The north avoidance alignment represents a track curvature that does not meet safety standards. For the reasons state above, the two track line avoidance alignments are not practicable.

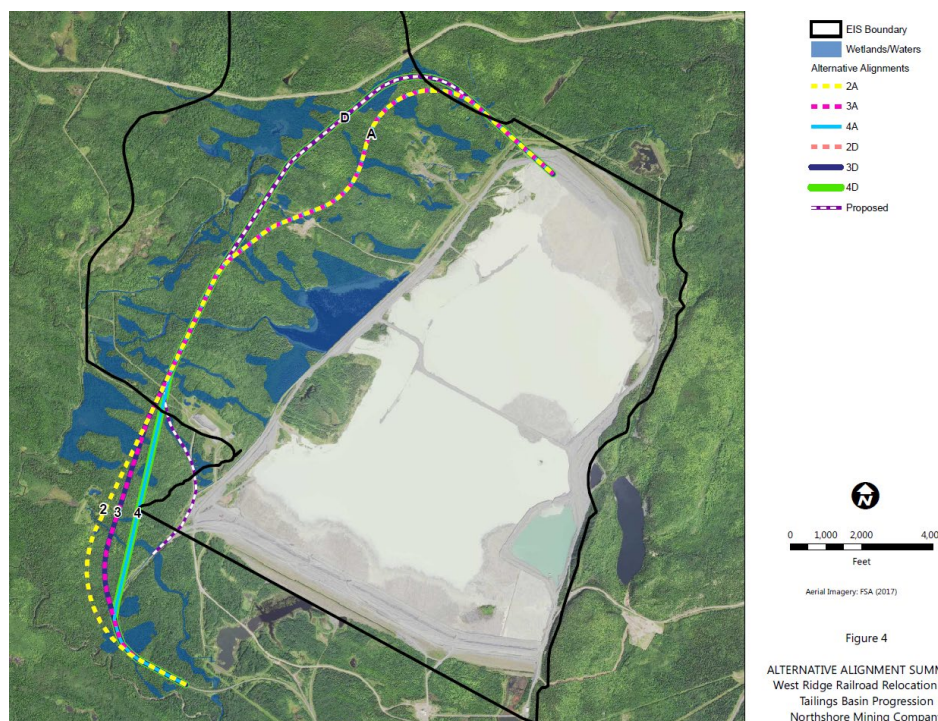


Figure 2. Railroad Alternatives

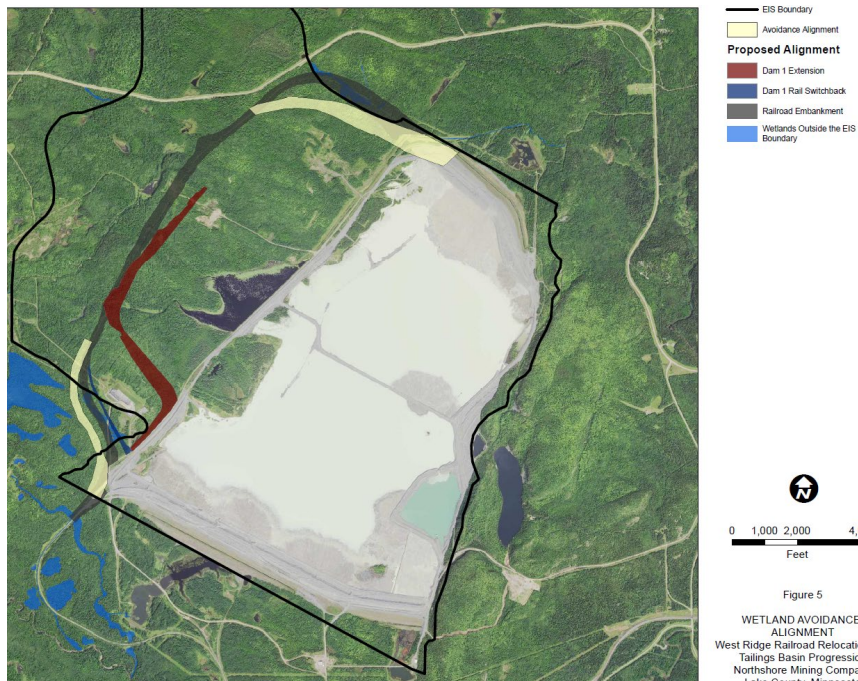


Figure 3. Railroad Embankment Alternatives

### 5.4.3 VERTICAL RAISE WITHIN PERMITTED FOOTPRINT ALTERNATIVE

This alternative would utilize the approximately 2,100-acre existing fine tailings storage area only and tailings would be stored vertically within that footprint. In order to accommodate the required 543 MCY of fine tailings storage, the basin would need to be raised 143 feet from the elevation currently authorized by permit 2005-2628-TWP, which is 1252 feet, to an approximate elevation of 1395 feet with a total height of about 263 feet at the highest point. The planned height of the basin assumes the use of splitter dikes to accommodate flatter tailings storage, otherwise the height would increase. In order to accomplish that, approximately an additional 4.0 miles of dams would need to be constructed along the east and west sides of the basin, doubling the length of dams from what has been constructed to-date. The footprint of the new dams would be constrained by the current tailings storage area and the stability of the existing dams would be compromised, because the original basin design did not plan for this type of raise. Dams 1 and 2 were not originally designed to add an additional 80 feet of height above the planned elevation of 1315 feet, so a design that could ensure adequate short- and long-term stability of the dams would need to be thoroughly assessed prior to consideration of such vertical development. Design tools like buttresses, if applicable, would result in the requirement to relocate downstream seepage collection facilities. Another dam safety consideration is that the stability of the dams would be compromised by more rapid vertical construction due to the constrained size of the basin. With the doubling of dam length, there would not be adequate Plant Aggregate (projected generation at 192 MCY) to allow for dam construction, so additional borrow material would need to be located and transported onsite with appropriate characteristics for dam construction. Appropriate dam construction materials include clay for the core and sands and gravels for the outer shell.

The Applicant has supplied a memo on safety considerations at its existing Mile Post 7 site. For more details on this please see Appendix A located within the Applicant's November 2019



Revised Alternatives Analysis document in the administrative record. The Applicant has concluded a dam allowing a pond elevation over 1355' represents a higher risk than the proposed alternative and is not recommended by the Applicant's engineers for safety risks. The DNR has indicated the dams at the site are known as Class 1 hazard dams meaning they have the potential for loss of life and/or property from a catastrophic failure. The DNR is unable to forecast because it is looking at the dam in 5-year increments and the suitability is determined in real time as construction is happening. The DNR's PTM also only authorizes the applicant to progress the dam to a height of 1315' elevation and any higher elevation would require a PTM amendment. In light of the Class 1 designation the Corps has no reason to refute the Applicant's safety concerns after a dam height of 1365'.

This alternative was considered but has been rejected as the LEDPA. This alternative has the potential to put the public's safety in jeopardy with the possibility of dam failure due to the rapid rise in height. According to the Applicant's safety engineer, a dam that is 263 feet tall presents numerous engineering challenges and would not be practical or safe. There are also other logistical constraints that do not make this alternative practicable. The additional aggregate the company would need for the dam wall construction would no longer be covered by what it can supply from the plant. The Applicant would need to start importing material which would create more logistical issues such as, improved roads for increased trucking, effects associated with increased trucking on local population, and cost of hauling all the material to the Applicant. For these reasons, this alternative is not practicable.

#### **5.4.4 NORTHERN EXTENSION ALTERNATIVE**

This alternative would shift the tailings basin alignment to the north resulting in 256 acres of wetland impact and would eliminate any stream loss. This alternative could provide adequate storage for the tailings basin. However, due to topographic constraints the tailings would be stored over a smaller area which would necessitate higher dam walls in order to achieve the necessary storage volume. The dam walls would need to reach an elevation of 1392' in order to safely store the necessary material. There could be impoundment effects that would be abated by the construction of a one-mile long diversion ditch with depths of the ditch being up to 15 feet high. Without the ditch the Applicant has estimated an additional 337 acres of wetland that would be impounded. The Applicant would also need to avoid impacting the existing onsite landfill which would be accomplished by constructing another diversion ditch approximately 1.6 miles long. There are MN Rules constraining a vertical separation from groundwater so the impounding water would need to be moved elsewhere. Due to existing topography the 1.6-mile-long diversion would need to be approximately 95 feet deep according to the applicant in order to convey water. Bedrock is near the surface in that location and would require of 80 feet of bedrock blasting in order to construct the diversion ditch. While not insurmountable, the costs will increase with the construction of both diversion ditches.

The Applicant has supplied a memo on safety considerations at its existing Mile Post 7 site. For more details on this refer to Appendix A in the Applicant's November 2019 Revised Alternatives Analysis document. The Applicant has concluded a dam over 1365' in elevation represents a higher risk than the proposed alternative and is not recommended by the Applicant's engineers for safety risks. The proposed dam elevation for this alternative is 1392'.

This alternative was considered but has been rejected as it is not practicable to increase the risk of dam failure to reduce aquatic resource impacts and dam safety issues is an important public interest review factor. This alternative has the potential to put the public's safety in jeopardy

because of the possibility of dam failure due to the rapid rise in height. A dam at proposed elevation of 1392' presents numerous engineering challenges and would not be practical or safe. There are also several logistical constraints that do not make this alternative practicable. The additional aggregate the company would need for the dam wall construction would no longer be covered by what it can supply from the plant. The Applicant would need to start importing material which would create more logistical issues such as, improved roads for increased trucking, effects associated with increased trucking on local population, and cost of hauling all the material to the Applicant. For these reasons, this alternative is not practicable.

#### **5.4.5 DRY STACKING ALTERNATIVE**

This alternative refers to the process of filtered tailings disposal and is also known as “dry stacking”. This is the process of creating filtered tailings with ~80% or more solids by weight. The material would be transported through the use of trucks or a conveyor system and subsequent “stacking” within a tailings storage facility.

Current operations at the tailings facility transport fine tailings in a water slurry via pipeline. In order to shift to a dry stacking alternative, it would require the Applicant to use a new transportation system of conveyors or trucks/rail from the plant to the tailings storage facility. If the Applicant were to switch to truck transportation, based on the volume of material moved each day, the Applicant would require over 1,100 one-way truck hauls per day to move the ~17,000 cubic yards of fine tailings per day. Another potential problem with the trucking method is in the winter the fine tailings would be susceptible to freezing in the trucks and some kind of thawing process would be needed to ensure the material is compacted appropriately. If the fine tailings are not appropriately stacked and compacted the “stacks” are susceptible to failure. Utilizing conveyors would require a new set of infrastructure with an estimated 7-10 miles of conveyors traversing over 700 feet of elevation. The fine tailings on the conveyors would also be susceptible to freezing during transportation in the winter. If the Applicant were to utilize rail transport, it would need to purchase a fleet of new rail cars suitable to transporting the fine tailings. The new cars would be needed to ensure the fine tailings cannot be windblown out of the cars and to protect the material from freezing. The number of rail cars needed to move the 17,000 cubic yards of material would result in a 250% increase in rail traffic and would likely result in the need for additional tracks.

As noted above, compaction of the “stacks” during the winter months can be problematic. When stacking and compacting layers it is important that the stacks be free of frozen zones which can occur between two layers and results in weak zones that could be susceptible to failing. During the winter months, snow removal would be required to maintain the exposed material and to prevent frozen zones. The Applicant also cited literature that suggests the use of covered sheds or something similar over the tailings during the winter to prevent freezing. Due to the amount of material at this site it is not practical to have a shed or cover facility large enough to cover the filtered tailings.

Another issue with the dry stacking method in the current location is that the Applicant has been placing the slurry of tailings in the storage facility for 40+ years. The slurry is an unsuitable substrate to top with “stacks”. The Applicant would not be able to have stacks of suitable size to meet the anticipated demand for fine tailing storage.

The Applicant provided additional environmental considerations with the dry stacking method. Currently a majority of the tailings are stored sub-aqueously which prevents the tailings from



being susceptible to being wind-blown. If the dry stacking method were used additional considerations would need to be given to the control of fugitive dust generated from the stacks. In the current climate of NE Minnesota, the stacks would be prone to precipitation in either the summer or winter months and some kind of drying process or large cover would be needed to prevent the wetting of the tailings. The last consideration would be the increase in truck traffic if the Applicant were to transport the material via trucks. The local infrastructure would not be able to support the amount of truck traffic and the weight from all the loads. Upgrades would be necessary, and residents would see a large increase in truck traffic.

The Applicant also considered this method in other locations but due to the location of the processing facility, any storage facility elsewhere would require more infrastructure that would make this alternative not financially feasible. For these reasons, this alternative is not practicable.

## **5.5 OFF-SITE ALTERNATIVES**

### **5.5.1 COLVIN ALTERNATIVE**

The Colvin site is located approximately 12 rail miles to the south of the Peter Mitchell Mine. While there is existing track in the area, the Applicant has stated it would still need to construct approximately 1.5 miles of new rail. In order to use the Colvin site, the Applicant would also need to construct a new tailings processing facility to be able to produce the iron concentrate. The iron concentrate would then be shipped approximately 40 rail miles in insulated rail cars (to prevent the material from freezing) to the Silver Bay plant where the concentrate can be made into its final product. The tailings basin at the Colvin site would need new dams constructed along with all the other infrastructure to make the facility work (dams, ditches, seepage collection system, pumping system, wastewater treatment plant, rail lines, rail spurs, rail car dumping facility, fine crushing, etc.). The Applicant would also need a new electrical transmission line as well as a new water supply. The cost of the logistical items to make the Colvin site operational are not feasible for the Applicant. For these reasons, this alternative is not practicable.

### **5.5.2 EMBARRASS ALTERNATIVE**

The Embarrass site is located about 4 rail miles northwest of the Peter Mitchell Mine and would require a new rail line. As it was documented above in the Colvin site, this alternative would require a new tailings facility as well as all the supporting infrastructure. The material would then be shipped approximately 57 rail miles to the Silver Bay plant. The cost of the logistical items to make the Embarrass site operational are not feasible for the Applicant. For these reasons, this alternative is not practicable.

### **5.5.3 SNOWSHOE ALTERNATIVE**

The Snowshoe site is located about 8 rail miles southeast of the Peter Mitchell Mine and would require approximately 1.5 miles of new rail line. As it was documented above in the Colvin site, this alternative would require a new tailings facility as well as all the supporting infrastructure. The material would then be shipped approximately 43 rail miles to the Silver Bay plant. The cost of the logistical items to make the Embarrass site operational are not feasible for the Applicant. For these reasons, this alternative is not practicable.

## **5.5.4 MIDWAY ALTERNATIVE**

The Midway site is located about 30 rail miles southeast of the Peter Mitchell Mine and would require approximately 2.5 miles of new rail line. As it was documented above in the Colvin site, this alternative would require a new tailings facility as well as all the supporting infrastructure. The material would then be shipped approximately 26 rail miles to the Silver Bay plant. The cost of the logistical items to make the Midway site operational are not feasible for the Applicant. For these reasons, this alternative is not practicable.

## **5.6 SUMMARY OF PRACTICABLE ALTERNATIVES**

Of the alternatives described above, the only practicable alternative is the Applicant's preferred alternative.

### **5.6.1 CORPS DETERMINATION OF THE ENVIRONMENTALLY PREFERABLE AND LEAST ENVIRONMENTALLY DAMAGING PRACTICABLE ALTERNATIVE**

For purposes of the 404(b)(1) Guidelines, the LEDPA must be identified. The LEDPA is usually the alternative with the least aquatic resource impact but could be an alternative with more aquatic resource impact if the alternative with less aquatic impact has other more damaging environmental consequences. The Applicant's preferred alternative (described in Section 5.4.1) and the No Action alternative (described in Section 5.3) were carried forward in the LEDPA analysis.

As detailed in Section 5 above, the Applicant's preferred site (Section 5.4.1) is the LEDPA. This is not a determination of compliance with the 404(b)(1) Guidelines, which is addressed in Section 6.0, but rather a determination that there are no other less damaging practicable alternatives. The remainder of this decision document explains whether this alternative is compliant with the 404(b)(1) Guidelines, whether it is or is not contrary to the public interest and whether it is compliant with all other applicable laws, regulations, and policy.

## **6.0 EVALUATION OF THE DISCHARGE OF DREDGED AND FILL MATERIAL IN ACCORDANCE WITH THE SECTION 404(B)(1) GUIDELINES**

### **6.1 FINDING OF PRACTICABLE ALTERNATIVES AND LEAST ENVIRONMENTALLY DAMAGING PRACTICABLE ALTERNATIVE (40 CFR 230.10(a))**

Practicable alternatives to the proposed discharge consistent with 40 CFR 230.5(c) are evaluated in Section 5. In summary, based on the analysis in Section 5 above, the no-action alternative, which would not involve discharges into waters, is not practicable. For those alternatives that would discharge into a special aquatic site and are not water dependent, the applicant has demonstrated there are no practicable alternatives that do not involve special aquatic sites. It has been determined that there are no alternatives to the proposed discharge that would be less environmentally damaging. (Subpart B, 40 CFR 230.10(a)). The Applicant's

preferred alternative is the practicable alternative with the least adverse impact on the aquatic ecosystem, and it does not have other significant environmental consequences. This alternative meets the overall project purpose, and is practicable in consideration of costs, logistics, and existing technology.

## **6.2 CANDIDATE DISPOSAL SITE (40 CFR 230.11(f))**

The “disposal site” is the waters where a discharge is proposed. Depth of water, current velocity, direction, and variability at the disposal site are considered.

As a result of the project a total of 163.43 acres of wetland, 29.57 acres of deepwater habitat and 8,570 linear feet of tributary would be impacted directly and indirectly by the discharge of dredged and fill material.

Wetlands impacted by type include 33.20 acres of hardwood swamp, 32.33 acres of alder thicket, 21.56 acres of coniferous swamp, and 42.98 acres of shallow marsh wetland communities. Wetlands indirectly impacted through inundation and fragmentation include 33.37 acres of hard wood swamp wetland community. The wetlands range in overall quality as demonstrated in an abbreviated MnRAM assessment completed by the Applicant, dated February 2020, and as originally disclosed in the Federal EIS. The majority of the wetland communities are rated as overall high-quality wetlands.

Deepwater impacts are to a resource known locally as Murphy’s Pond. This aquatic resource was created as a result of an impoundment of surface runoff against the existing railroad embankment which is fed in part by Little and Big Thirtynine Creeks. Impacts include 29.57 acres.

The stream impacts associated with the Project include the loss of 3,420 linear feet of Little Thirtynine Creek and 5,150 linear feet of Big Thirtynine Creek. The direct effects include 2,455 linear feet of impact to Big Thirtynine Creek and 2,588 linear feet of Little Thirtynine Creek. The indirect effects from inundation include 832 linear feet of Little Thirtynine Creek and 2,695 linear feet of Big Thirtynine Creek.

Little Thirtynine and Big Thirtynine Creeks historically flowed southeasterly across the project area. However, flow in the lower portions of these creeks was diverted to the Beaver River by diversion ditches as part of the original construction of the tailings basin in the late 1970s. The diversion was mostly effective, but water still enters the portions below the diversion and has sustained the stream flows in those sections. The remnant water courses of Little Thirtynine and Big Thirtynine Creeks remain, crossing the project area roughly from the northwest to the southeast. Overland runoff from the contributing drainage areas downstream of the diversion ditches continues to reach the remnant water courses of Little and Big Thirtynine Creeks. The Applicant conducted an assessment on both Big and Little Thirtynine Creeks utilizing the Stream Quantification Tool (SQT) to identify the amount of functional feet that would be lost as a result of the Project. The SQT assessment looked at several parameters including hydrology, hydraulics, geomorphology, physicochemical, and biology/connectivity. The SQT debit tool calculated a functional loss of 5,208.2 linear feet. The Corps has reviewed this assessment and determined it was properly conducted and accepts the results.

## **6.3 POTENTIAL IMPACTS ON THE PHYSICAL AND CHEMICAL CHARACTERISTICS OF THE NON-LIVING ENVIRONMENT (40 CFR Part 230)**

### **6.3.1 SUBSTRATE**

The proposed discharge would adversely impact the physical substrate of 163.43 acres of wetland, 29.57 acres of deepwater habitat and 8,570 linear feet of streams through filling activities. Dredged and fill material would be discharged into wetlands, deepwater habitat and streams that would then be filled as a result of the tailings basin operation. Impacts include direct fill as a result of the railroad and embankment as well as the gradual fillings with tailings material. The discharges would remove or permanently affect the bottom contours and elevations of the substrate in wetlands and streams at the Project site. Additional information on the substrate of the wetlands, deepwater habitat, and streams can be found in the April 2020 Watershed Assessment and the June 30, 2020 Stream Mitigation Proposal. The Project would comply with this factor of the Guidelines. Negative effects to the substrate are expected; however, as a result of compensatory mitigation for the stream and wetland impacts the adverse effects are anticipated to be minor in the long-term.

### **6.3.2 SUSPENDED PARTICULATES/TURBIDITY**

An important component to this project is that all the water that enters the tailings basin is treated prior to discharging back into the natural ecosystem. The Project has a permitted NPDES/SDS outlet at its WTP (SD1-S010). Operation of the Project adjacent to remaining wetlands will be conducted with best management practices that will be established in accordance with Minnesota's stormwater construction permitting program to prevent erosion and sedimentation to those remaining wetlands. Further, all watershed flows interior to the project area will be captured in the tailings basin and treated in the WTP prior to discharge to the Beaver River. The project will not increase discharge rates to the Beaver River, which is the primary trigger for elevated TSS loads according to information supplied by the Applicant. The project will reduce the watershed area of the East Branch Beaver River by 4.1 percent from current conditions and will reduce streamflows to the East Branch Beaver River by 1 percent for the 100-year event and 3 percent for the 1.5-year recurrence intervals. The reduced flows are anticipated to have at least a neutral effect on TSS concentrations in the East Branch Beaver River by slightly reducing peak flow rates in the river. The reduction in peak flow rates reduces the erosive force of the water in that area.

Overall, impacts of suspended particulates and turbidity are not expected to exceed regulatory limits. Discharges from the tailings basin are subject to the MPCA NPDES/SDS permitting. The NPDES/SDS permit contains limits on the amount of total suspended solids. Considering the consistently low TSS concentration in the WTP discharge, and no planned increase to discharge rates above what is currently permitted, the project is expected to result in negligible effects in the short and long term due to suspended particulates and turbidity. The MPCA has authority for assessing and issuing a water quality certification. The project is expected to result in negligible effects in the short and long term due to suspended particulates and turbidity. Please see Section 6.3.3 of this document for additional information on water quality.

### 6.3.3 WATER

The Project has the potential to affect water quality within the project area as well as upstream and downstream of the Project. The Corps has considered effects to water temperature, dissolved oxygen, pH, and nutrients. Section 9 of Appendix A of this document provides greater details on potential effects to water.

According to information supplied by the Applicant the MPCA has concluded that the tailings basin may have a cooling effect on the Beaver River. The MPCA reported that while monitoring the Mile Post 7 discharge site it found that the temperatures coming from the tailings basin were often several degrees cooler during the daylight hours than observations upstream of the discharge point. The other receiving stream from the tailings basin is the East Branch Beaver River. As a result of the Project, discharges from Murphy's Pond will no longer be directed there. Given Murphy's Pond's size and being that it was open water and exposed to solar radiation it has the potential to increase water temperatures within the East Branch Beaver River. The Corps has considered the information submitted by the Applicant regarding water temperature and the Project is anticipated to have minor effects on water temperature in the long term.

The Applicant has supplied information that documents the monitoring history of dissolved oxygen in the Beaver River upstream and downstream of the Project. The information demonstrates that the WTP discharge actually dampens daily DO fluxes by about 2 micrograms per liter which according to the MPCA is beneficial to aquatic organisms. The Corps has considered the information submitted by the Applicant regarding dissolved oxygen monitoring and determined that the Project will continue to operate similar to its current operations, including the WTP. The effects on dissolved oxygen are anticipated to be minor in the long term and the Project would comply with this factor of the Guidelines.

Within the vicinity of the Project there are several monitoring stations that document pH. The pH measured downstream of the Project has complied with pH standards in its NPDES permit. There are no changes proposed to the WTP operation, so no additional adverse effects associated with pH are expected.

The Applicant has included information that indicates phosphorus values in the Beaver River are consistently below levels prescribed by the water quality standards for the river. With no changes expected to the WTP there should be no appreciable changes expected in phosphorus levels.

The Corps has considered information submitted by the Applicant and determined that effects to water temperature, dissolved oxygen, pH, nutrients, and water quality from the discharge of dredged and fill material are anticipated to be temporary and minor in the short (during construction) and negligible long term.

### **6.3.4 CURRENT PATTERNS AND WATER CIRCULATION**

(please see Section 4 of the Applicant's Watershed Assessment, Appendix A of this document, for more details on current patterns and water circulation)

#### **History on Current Conditions**

Original construction and operation of the tailings basin required diverting the upper portions of Big and Little Thirtynine Creeks into the Beaver River, diverting a lower portion of the Thirtynine Creek subwatersheds to the East Branch Beaver River, while Thirtynine Creek no longer exists due to the permitted placement of the existing tailings basin. The upper 97.6 percent of the Big Thirtynine Creek subwatershed and the upper 94.6 percent of the Little Thirtynine Creek subwatershed remain unchanged from historic conditions (a 2.4% and 5.4% change, respectively), but are now routed into the Beaver River approximately 3.2 river miles upstream from the natural confluence. The diversion increased the cumulative watershed area to that reach of the Beaver River (Subwatershed 11) by 97.6 percent. However, at the confluence with the former Thirtynine Creek into Subwatershed 12, the watershed area contributing to the Beaver River has been reduced by 12.9 percent from historic conditions. The lower 7.7 square miles of the Thirtynine Creek subwatershed has been split between the East Branch Beaver River subwatershed and the existing tailings basin (Subwatershed 14), which encompasses 5.0 square miles that discharges farther downstream through the Applicant's WTP. Within the tailings basin watershed (Subwatershed 14), an outlet from Bear Lake was recently put into service diverting the 197-acre Bear Lake subwatershed away from the tailings basin and into Subwatershed 16 of the Beaver River as was envisioned during the original project EIS from the 1970s. Therefore, there remains currently 5 square miles of drainage area to the tailings basin from which rainfall and runoff is either utilized in the operation or discharged to the Beaver River through the WTP. By the time the Beaver River meets the confluence with the WTP discharge out of Subwatershed 15 into Subwatershed, there is a 3.2 percent reduction in drainage area contributing to the Beaver River from historic conditions.

#### **Conditions after Project Implementation**

With the Project, there will be additional watershed changes. Approximately 2.13 square miles of drainage area that was previously diverted to the East Branch Beaver River at the onset of the tailings basin construction in the late-1970s (Murphy's Pond Diversion Ditch and the 2005 Diversion Ditch) will become part of the tailings basin subwatershed (Subwatershed 14), where its flow will ultimately be routed by way of the WTP to the Beaver River, the receiving water for this subwatershed in pre-settlement conditions. Rainfall and runoff within the 7.13 square mile tailings basin Subwatershed 14 will be utilized in the Applicant's operations or will be discharged through the WTP, as is currently the case. The watershed area draining to the East Branch Beaver River will be reduced to 48.4 square miles, which is a 0.2 percent decrease from historic conditions and a 4.1 percent decrease from existing conditions. The Big and Little Thirtynine Creek diversion channel will not be altered under proposed conditions. The June 2020 Watershed Assessment provides greater details on the watershed changes expected. The post project conditions will represent a 7% change from historic watershed conditions within the East Branch Beaver River.

#### **Effects**

The watershed area within the project area and including approximately 0.4 square miles outside of the project area will drain into the tailings basin and all rainfall will be managed as

part of the tailings basin operation. Therefore, approximately 2.1 square miles of watershed that currently drains to the East Branch Beaver River will be utilized in the Applicant's operation and any discharge to the Beaver River will occur through the WTP following the current operating procedures. Included in that area are small drainage areas of the remnant Big and Little Thirtynine Creeks, including 0.46 square miles draining to Big Thirtynine Creek and 0.11 square miles draining to Little Thirtynine Creek, which drain to the constructed 2005 Diversion Ditch. None of those channels will remain as a result of the project. The loss of drainage area to the East Branch Beaver River represents 4.1 percent of the current watershed area and 0.2 percent of the historic watershed. Watershed changes to the Beaver River as a result of the project include a 3.0 percent increase in watershed area draining through Subwatershed 15 into Subwatershed 16. The WTP discharge will continue to operate within the current water quantity limits in the existing permit. The Applicant's project has manipulated the watershed by rerouting some of the water with diversion ditches from its original watersheds to new watersheds as described above. The Project will return some of the water back to its original watershed that was diverted as a part of the original tailings basin construction.

While the Project will result in watershed drainage changes the adverse effects are anticipated to be minor in the long term.

### **6.3.5 NORMAL WATER FLUCTUATIONS**

The Project would result in further changes to the Project area's landscape and topographic features that could potentially affect water fluctuations. The forested uplands and wetland would be permanently impacted by the new dam and railroad alignment as well as the impoundment and fragmentation impacts as a result of the Project. The project would eliminate 8,570 linear feet of stream. The flood storage and water flow would be permanently impacted by the large open water tailings basin. The tailings basin would provide a net increase in storage capacity in the Project area. The Applicant has demonstrated that its WTP outfall discharge rate will not increase as a result of the Project and it will operate within the existing limits specified in the NPDES/SDS permit from the MPCA.

The Applicant has provided a thorough analysis on the streamflow impacts. Refer to the Applicant's April 2020 Watershed Analysis, Pages 11-23 provide greater detail on the Applicant's modeling methods, direct and indirect effects on stream flow, and cumulative effects within the HUC 10 watershed.

Water fluctuation within the Project site would be impacted due to ground disturbance; however, the water fluctuation would not be appreciably impacted outside the project site. The adverse effects are anticipated to be minor in the long term.

### **6.3.6 SALINITY GRADIENTS**

The Project is not expected to have an appreciable effect on salinity gradients as there are no tidal influenced waters in the Project area.

## **6.4 POTENTIAL IMPACTS ON THE BIOLOGICAL CHARACTERISTICS OF THE AQUATIC ECOSYSTEM (40 CFR 230.30-230.32)**

### **6.4.1 THREATENED AND ENDANGERED SPECIES**

Refer to Section 3.5.2 of this document for a description of the Corps action area. The Corps is responsible for ESA Section 7 compliance.

The following species and designated critical habitat are present in the Corps action area: the US Fish and Wildlife Service Information and Planning Tool listed the following species as potentially being present within the project area: Canada Lynx (threatened), Gray Wolf (threatened), Northern Long-eared Bat (threatened), Piping Plover (endangered), and the following critical habitats as being wholly or partially within the project area: Canada Lynx and Gray Wolf.

Effect determinations, including no effect, for all known species/habitat, and basis for determinations:

**Piping Plover:** Piping plovers primarily occupy open, sandy, sparsely vegetated areas (Peterson 2008). The primary constituent elements (PCEs) required to sustain the Great Lakes breeding populations of piping plover are found on Great Lakes islands and mainland shorelines that support open, sparsely vegetated sandy habitats, such as sand spits or sand beaches, that are associated with wide, unforested systems of dunes or inter-dune wetlands (66 Federal Register 22938-22969). No suitable piping plover habitat is present in the proposed Project area, and the known populations of this species are located along the shores of Lake Superior in St. Louis County. As a result of the lack of suitable habitat within the project area, it has been determined that the authorized activities of this permit would have no effect on the Piping Plover.

**Canada Lynx Habitat:** The primary constituent elements specific to Canada lynx inhabiting the contiguous U.S. is boreal forest landscapes supporting a mosaic of differing successional forest stages containing: presence of snowshoe hare (their preferred prey) and their habitat; winter conditions, that provide and maintain deep fluffy snow for extended periods of time; sites for denning that have abundant coarse woody debris; and matrix habitat (e.g., hardwood forest, dry forest, non-forest). In the Great Lakes states, Canada lynx records predominantly occur in boreal, coniferous, and mixed coniferous/deciduous vegetation types dominated by pine, balsam fir, black and white spruce, northern white cedar, tamarack, aspen, paper birch, conifer bogs and shrub swamps. Canada lynx denning habitat appears to be associated more with the availability of structural components of forests, such as blowdown, deadfalls and root wads, rather than forest cover type. The lynx is physically adapted for hunting in deep snow and its predominant prey are snowshoe hare and red squirrels. Northern forested areas are ideal habitat for the lynx and their prey. The similarity of habitat type to the designated critical habitat of the lynx and the continuity in the undeveloped, forested area of the project suggest that the lynx and their prey are likely found within the project area. Due to the alteration and elimination over time of 1,200 acres of habitat in the project footprint used by all the Canada lynx, and because the project will not increase the likelihood or result in the take of the species, the Corps has concluded that the project described may affect, but is not likely to adversely affect the Canada lynx habitat.



Gray Wolf Habitat: Gray wolves are habitat generalists that depend on distribution of their prey, rather than the type, age, or structure of vegetation present. Gray wolves occupy a diversity of habitats, including forests, prairies, and swamps, reflecting their adaptability as a species. Wolf territory size is highly variable; in Minnesota, territory sizes range between 25 and 150 square miles, per the DNR. The gray wolf and common wolf prey such as deer, moose, beaver, snowshoe hare, and muskrats are likely present within and around the project area due to its undeveloped contiguous forested nature. Due to the alteration and elimination over time of 1,200 acres of habitat used by all the gray wolf, and because the project will not increase the likelihood or result in the take of the species, the Corps has concluded that the project described may affect, but is not likely to adversely affect the gray wolf habitat.

Northern Long-eared Bat Habitat: Hibernates in caves and mines - swarming in surrounding wooded areas in autumn. Roosts and forages in upland forests during spring and summer. The Northern-long eared bat is found within Lake County, Minnesota, and the project area provides suitable habitat for hibernating and roosting. While there are no known roost trees or hibernacula within the specific ranges of the project, there is a known hibernaculum within Township 56 North, Range 7 West, and other known hibernacula and roost trees within the county. The project area is therefore suitable for the use of the bat and likely to contain the species. Due to the alteration and elimination over time of 1,200 acres of habitat used by all the Northern-long eared bat, and because the project will not increase the likelihood or result in the take of the species, the Corps has concluded that the project described may affect, but is not likely to adversely affect the Northern-long eared bat habitat.

Canada lynx, gray wolf, and northern long-eared bat: Due to the alteration and elimination over time of 1,200 acres of habitat used by all three species, and because the project will not increase the likelihood or result in the take of any of the species, the Corps concludes that the project described may affect, but is not likely to adversely affect the Canada lynx, gray wolf, and Northern Long-eared Bat.

Please see the Informal Consultation Letter to the USFWS dated March 7, 2018, in the administrative record for further details on these determinations as well as the Service's concurrence with the Corps determination date August 12, 2019.

Based on a review of the above information, the Corps has determined that it has fulfilled its responsibilities under Section 7(a)(2) of the ESA.

## **6.4.2 FISH, CRUSTACEANS, MOLLUSK, AND OTHER AQUATIC ORGANISMS**

Potential effects on fish and aquatic macroinvertebrate communities includes changes in physical habitat (including flow), riparian and aquatic connectivity, and water quality. The Applicant has reviewed recent literature from MPCA regarding the status of fish and aquatic organisms within the Project area. The Applicant also conducted its own in-stream sampling. It found the fish indices of biological integrity (F-IBI) score for the remnant Big Thirtynine Creek is 19 and the F-IBI score for the remnant Little Thirtynine Creek is 16, both nearly 50 percent lower than any other documented fishery in the watershed. Four species were documented within each reach and 26-46 individual fish were found, which is 6-10 percent of the average 472 specimens found in other common era fish surveys within the watershed. The macroinvertebrate indices of biological integrity (M-IBI) scores also indicated communities below

applicable biologic criteria with a score of 30.6 in Big Thirtynine Creek and a score of 25 in Little Thirtynine Creek. Both remnant streams had an abundance of tolerant and very tolerant macroinvertebrate species with few to no long-lived species. These fish and macroinvertebrates found in the Project area would be permanently affected. While there are permanent effects to their habitat, given the low scores for F-IBI and M-IBI the effects in the long term are anticipated to be minor.

### **6.4.3 OTHER WILDLIFE**

The discharge of dredged and fill material will result in the loss or change of breeding and nesting areas, escape cover, travel corridors, and preferred food sources for resident and transient wildlife species associated with the aquatic ecosystem.

For terrestrial wildlife during all phases of the Project the adverse impacts upon wildlife habitat will result from habitat alteration, behavioral disturbance from noise, vehicles and human presence, barriers to movement from Project activities, fluctuations in water levels, water flow and circulation, salinity, chemical content, and substrate characteristics and elevation.

For birds, effects during construction and operations include habitat alteration or fragmentation from vegetation removal (in most places permanent) including potential nest site loss or disturbance, behavioral disturbance from noise, and from vehicles and human presence.

In some locations changes in behavior as a result of the Project activity may not be noticeable because some animals would be expected to remain in the vicinity. However, the Project may disrupt specific movement habits that could result in noticeable changes to movement patterns. While injury or mortality may occur, population level effects are not expected to be detectable given the surrounding landscape and other suitable habitat in close proximity to the Project. There are thousands of surrounding acres of similar or suitable habitat to the Project area and wildlife is expected to shift habitat and movement locations as a result of the Project. The Project is also similar to existing operations that have been on-going since the 1980s. The types of impacts (human presence, filling activities, dam construction, vehicles, etc.) as a result of the Project have been on-going for decades and there are no increased or additional effects anticipated beyond what has been occurring out there. Effects are anticipated but they would be minor in the long term.

## **6.5 POTENTIAL IMPACTS ON SPECIAL AQUATIC SITES (40 CFR SECTION 230 SUBPART E)**

The technical evaluation factors discussed in this section address potential impacts on the special aquatic sites (Guidelines Subpart E). The effects described in this subpart were considered in making the factual determinations and the findings of compliance or noncompliance in Subpart B.

### **6.5.1 SANCTUARIES AND REFUGES**

Sanctuaries and refuges are designated under state and federal laws to be managed principally for the preservation and use of wildlife and fish. There are no sanctuaries or refuges in the Project area.

## **6.5.2 WETLANDS**

Section 6.2 of this document discloses the wetland impacts associated with the Project. Discharges would have minor long-term regional effects in the Beaver River Watershed. Direct wetland impacts within the Beaver River Watershed constitute about 0.006% of wetlands within that watershed. The indirect wetland impacts within the Beaver River Watershed constitute about 0.002% of the wetlands within that watershed.

While the direct and indirect loss of 163.43 acres of wetland is a more than minimal amount locally, when viewed in the context of the watershed the impacts are not a significant loss. The watershed is wetland rich and the development pressure is minimal as historically there have not been a lot of wetland impacts within the watershed from pre-settlement wetland numbers (See Table 2 from Appendix A of this document for more details on wetland acreages pre and post settlement).

Discharges in wetlands would have a minor long-term effect.

## **6.5.3 MUD FLATS**

Mud flats are broad flat areas along the seacoast and in coastal rivers to the head of tidal influence and in inland lakes, ponds, and riverine systems. While the Project area has deepwater habitat, that feature is continuously covered in several feet of water which has prohibited mud flats from being present. Therefore, there are no mud flats in the Project area.

## **6.5.4 VEGETATED SHALLOWS**

Vegetated shallows are permanently inundated areas that under normal circumstances support communities of rooted aquatic vegetation in freshwater rivers and lakes. The Project does include Big and Little Thirtynine Creeks that contain vegetated shallows. Impacts to vegetated shallows would be permanent but would have a minor long-term effect.

## **6.5.5 CORAL REEFS**

There are no coral reefs in the Project area.

## **6.5.6 RIFFLE AND POOL COMPLEXES**

The Project area has two streams totaling 8,570 linear feet. The Applicant completed an SQT assessment on the existing functions within the streams which includes an assessment of any riffle and pool complexes. The documentation for the existing streams is not characterized by this special aquatic site.

## **6.6 POTENTIAL EFFECTS ON HUMAN USE CHARACTERISTICS (40 CFR SECTION 230, SUBPART F)**

### **6.6.1 MUNICIPAL AND PRIVATE WATER SUPPLIES**

Minnesota Department of Health website was checked for known wells in proximity to the Project area. There are several sealed and unsealed wells located on the Applicant's property in vicinity of the Project. The nearest wells not owned by the Applicant are two private resident wells located to the SE of the Project and the closest well is over 3,000 linear feet away. There have been no reports that the private wells have been contaminated or that changes in well levels have been affected by the existing tailings basin. Operationally the tailings basin will continue to operate as it has since the 1980s and the seepage collection ponds will continue to recirculate ground water and the WTP will continue to treat water prior to re-entry into the natural ecosystem. The Applicant has stated the seepage recovery system can accommodate the increased pool elevation in the tailings basin and should not have any additional impacts on the surrounding groundwater. The Project effects would be negligible.

### **6.6.2 RECREATIONAL AND COMMERCIAL FISHERIES**

While there are streams in the Project location, the Applicant has previously diverted a large portion of those streams in the 1980's which reduced their flow. The diversion and reduction in flow has likely resulted in lower fish numbers in the streams. The streams are on private property owned by the Applicant and are not accessible to recreational or commercial fishing by the public. The MPCA has documented the surrounding streams have suitable habitat and large numbers of fish. While the stream habitat in the Project area will be gone there are still substantial fisheries in the area and fish populations would have adequate space to continue spawning. See Section 3.2 for more details on affects to hydrology within the watershed as a result of the Project. The impacts are anticipated to be minor in the long term.

### **6.6.3 WATER-RELATED RECREATION**

Water related recreation does not occur in or in close proximity to the project area because of the surrounding private property.

### **6.6.4 AESTHETICS**

The Project is located in an area that had a long mining history dating back to the 1950's. See Section 7.4 of this document for additional justification. The effects to aesthetics are expected to be negligible.

### **6.6.5 PARKS, NATIONAL AND HISTORICAL MONUMENTS, NATIONAL SEASHORES, WILDERNESS AREAS, RESEARCH SITES, AND SIMILAR PRESERVES**

There are no parks, national and historical monuments, national seashores, wilderness areas or research sites in the Project area. The Project would comply with this factor of the Guidelines.

## **6.7 EVALUATION AND TESTING**

The following evaluation was conducted to assess the biological availability of possible contaminants in the dredged and fill material.

**PHYSICAL CHARACTERISTICS** – Material to be discharged into WOTUS at the Project site is made up of coarse and fine tailings that are a byproduct of the taconite process. The material is transported from the Peter Mitchell Mine to its Silver Bay processing plant where the material is crushed and magnetically separated into taconite. During the taconite process there are two byproducts that are shipped and stored in the tailings basin. That includes both coarse and fine tailings. Coarse tailings will be used to construct the dams and railroad embankment. The coarse tailings are shipped to the tailings basin via rail and used to continually raise the dam walls and railroad embankment. The fine tailings are shipped to the tailings basin in slurry form via a pipeline and that is what will fill in a majority of the WOTUS at issue.

The intent of the tailings basin is to store waste byproduct material. While the material to be discharged into WOTUS contains contaminants, the basin itself is used to treat the contaminants. The WTP at the outlet of the tailings basin provides the final treatment process and ensures the water entering the natural ecosystem is clean and meets state and federal water quality standards.

The Applicant provided correspondence from the MPCA which documented the MPCA's approval of using the coarse material for fill and railroad bed aggregate under the NPDES/SDS permit.

## **6.8 ACTIONS TO MINIMIZE ADVERSE EFFECTS (40 CFR 230.70-230.77, SUBPART H)**

Total avoidance of all water and wetlands is not a practicable alternative consistent with the Project's purpose. The site includes numerous interspersed waters and wetlands. This makes total aquatic ecosystem avoidance impractical as described in Section 5 above.

The Applicant has identified numerous measures to minimize adverse impacts. These measures are outlined throughout this EA. Additionally, the Applicant has developed a Compensatory Mitigation Plan that identifies proposed compensatory mitigation for unavoidable wetland and stream impacts. Minimization measures described below are the key measures that relate to the discharge of fill material.

The Corps, as well as the MPCA, have reviewed the minimization measures proposed by the Applicant and additional minimization measures identified by the agencies and accepted by the Applicant. In addition to the Applicant's proposed mitigation measures, and BMPs, the Corps is requiring additional conditions and stipulations to further minimize impacts. These conditions are described in Section 10 of this document.

### **ACTIONS CONCERNING THE LOCATION OF THE DISCHARGE**

- The railroad and dam embankment have been designed and located to avoid WOTUS to the maximum extent practicable. The Applicant evaluated several alternatives for the

location and design of the Project with the intent to avoid and minimize impacts while allowing development of a feasible project.

- The Applicant utilized as much existing infrastructure located at the Project site as possible in order to reduce the amount of WOTUS impact.
- The Applicant has also sized the tailings basin to what is minimally necessary based on the projected amount of ore reserve left in its Peter Mitchell Mine Site.

#### **ACTIONS CONCERNING THE MATERIAL TO BE DISCHARGED**

- The fill material for the dam and railroad embankment will be comprised of coarse tailings and the fine tailings will be used to incrementally fill in the tailings basin. This material will be handled in accordance with the Applicant's NPDES/SDS permit.
- The WTP was added to the tailings basin in order to provide the final treatment of the water leaving the tailings basin. The WTP ensures that the water re-entering the natural ecosystem meets state water quality standards.

#### **ACTIONS CONTROLLING THE MATERIAL AFTER DISCHARGE**

- The design of the tailings basin impoundment dam complies with industry standards for stability and safety.
- Seepage collection systems are currently in place and additional ones will be installed if deemed necessary.
- Dam embankment and railroad slopes would be designed to minimize erosion to the extent practicable.
- Best management practices (BMPs) would be used to minimize erosion and sedimentation to wetlands and WOTUS for all Project components from construction through operation and eventual closure. BMPs are actions that relate to the method of dispersion and control the material after discharge. Water within the tailings basin would be managed in accordance with the MPCA NPDES/SDS permit, which would include a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP would identify and describe BMPs for the Project to minimize the discharge of potential pollutants in non-contact stormwater runoff.
- Disturbed areas would be stabilized and seeded as soon as possible as necessary to reduce sediment runoff.

#### **ACTIONS AFFECTING THE METHOD OF DISPERSION**

- Nothing in addition to other actions listed in this section.

#### **ACTIONS RELATED TO TECHNOLOGY**

- The Project design at the Mine Site includes water management strategies that would maintain flow and storage within the design capacity of structures, provide flexibility for extra storage in high precipitation years, and sufficient water supplies for processing in low precipitation years.

#### **ACTIONS AFFECTING PLANT AND ANIMAL POPULATIONS**

- Impacts to federally listed species and critical habitat have been addressed in Section 6.4.1 above.

- Winter clearing and grubbing will be conducted where possible to limit disturbance to any Northern long-eared bats in the Project Area.
- Seed mixes and methodologies would be designed to minimize the introduction of invasive species.

## **ACTIONS AFFECTING HUMAN USE**

- Using rail cars as well as an aqueous solution to transport coarse and fine tails to the Silver Bay plant and basin. If trucks were used the increase in traffic could pose additional traffic related safety issues to the public.
- No other impact reducing measures that would affect human use were identified in addition to the measures discussed above.

## **OTHER ACTIONS**

- No impact reducing measures that would be classified as Other Actions are proposed.

## **6.9 FACTUAL DETERMINATIONS (40 CFR 230.11)**

The determinations of potential short or long-term effects of proposed discharges of dredged or fill material on the physical, chemical and biological components of the aquatic environment are discussed below. Determinations are based on the information above, including actions to minimize and consideration for contaminants. These “factual determinations” are used to evaluate compliance with Restrictions on Discharges – see Section 6.10 below.

### **PHYSICAL SUBSTRATE DETERMINATION**

Based on consideration of the information above in Section 6.3.1 of this document, incorporation of actions to minimize effects and the applicant’s compliance with special conditions in Section 10 of this document, the Project would have a minor long-term effect on physical substrate.

### **WATER CIRCULATION, FLUCTUATION AND SALINITY DETERMINATIONS**

Based on consideration of the information above in Section 6.3.3, 6.3.4, 6.3.5, and 6.3.6 of this document, incorporation of actions to minimize effects and the applicant’s compliance with special conditions in Section 10 of this document, the Project would have a minor long-term effect on water circulation, fluctuation and salinity.

### **SUSPENDED PARTICULATES/TURBIDITY DETERMINATIONS**

Based on consideration of the information above in Section 6.3.2 of this document, incorporation of the actions to minimize effects and the Applicant’s compliance with special conditions in Section 10 of this document, and the Applicant’s compliance with the NPDES/SDS permit, the Project would have negligible short and long term effects on suspended particulates and turbidity.

## **CONTAMINANT DETERMINATION**

Based on consideration of the information above in Section 6.7 of this document, incorporation of actions to minimize effects and the applicant's compliance with special conditions in Section 10 of this document, and the Applicant's compliance with the 401 and 402 (National Pollutant Discharge Elimination System) CWA permits, contaminants would not have more than a minor adverse impact. The levels of contamination at the Project would be similar to what is already occurring in the existing tailings basin and the discharge is not likely to result in degradation of the disposal site and pollutants will not be transported to less contaminated areas due to the existing WTP.

## **AQUATIC ECOSYSTEM AND ORGANISM DETERMINATIONS**

Based on consideration of the information above in Section 6.4 and 6.5 of this document, incorporation of actions to minimize effects and the applicant's compliance with special conditions in Section 10 of this document, the Project would have a minor long-term effect on the aquatic ecosystem and organisms.

## **PROPOSED DISPOSAL SITE DETERMINATION**

Based on consideration of the information above in Section 6.2 of this document, incorporation of actions to minimize effects and the applicant's compliance with special conditions in Section 10 of this document, the Project would have a minor long-term effect on the disposal site.

## **DETERMINATION OF CUMULATIVE EFFECTS ON THE AQUATIC ECOSYSTEM**

The Applicant has considered the cumulative effects of the Project on the aquatic ecosystem within the Beaver River watershed. The contributing past, present, and reasonably foreseeable actions were considered within this watershed. The cumulative effects considered include subwatershed and drainage patterns (See Section 6.3.4 in this EA); streams, rivers, ditches, streamflow, and floodplains (See below); wetland resources (See below); lakes and deepwater habitat (See below); biological resources (See below); and water quality (See below). The Applicant's April 2020 Watershed Assessment provides a thorough discussion on the cumulative effects of the items noted above and is where this data is derived from.

The Project in combination with the present and reasonably foreseeable future projects would likely result in the following cumulative wetland and lakes and deepwater habitat effects in the Beaver River watershed: Approximately 22,749 acres of wetlands are projected to be present in the watershed in the foreseeable future. The change in wetlands over existing to future circumstances is a reduction of 0.1% of wetlands in the watershed. This would represent a total of a 1.2% reduction from pre-settlement wetlands within the watershed.

The Project in combination with the present and reasonably foreseeable future projects would likely result in the following cumulative stream effects in the Beaver River watershed: Approximately 186.6 stream miles were present pre-settlement, at this time there are approximately 182.2 linear miles of streams. Cumulative impacts in the foreseeable future will result in a total of 181.8 linear feet of streams left in the watershed. The project will result in a reduction of 0.9% of total stream miles within the watershed. This will also result in a cumulative loss of 3.2% when compared to pre-settlement conditions. This determination is consistent with the Federal EIS which similarly concluded that on the regional scale, the cumulative impacts



associated with filling 800 acres of wetlands would not be significant as these wetland types are common to the region.

Lakes and deepwater habitat currently comprise 0.6 percent of the land area in the watershed. The existing deepwater habitat that will be impacted by the proposed Project is Murphy's Pond. The rest of the existing lakes in the project area will not be affected by the proposed Project or other foreseeable future development. Compared to pre-settlement conditions, there will be a net increase in lake and deepwater habitat resources under future conditions with all foreseeable future projects in the watershed of approximately 87 acres or 17 percent of the pre-settlement lakes and deepwater habitat. Most of the change is due to the Applicant's operations and all of the changes are due to human-induced deepwater habitats. Compared to existing conditions, the net increase in lake and deepwater habitat resources associated with all foreseeable future projects in the project area, would be approximately 51 acres, of which the proposed Project would contribute 100 percent (25.97 acres removed; 80.29 acres created). The net change of lakes and deepwater habitat associated with all foreseeable future projects represents about a 9 percent increase from the existing lake and deepwater habitat resources within the project area. Therefore, with an increase in deepwater habitat area from historic conditions, deepwater habitat functions are not expected to be negatively affected.

The cumulative effects to biological resources within the Beaver River subwatershed are minimal. Indices of biological integrity show that the upper Beaver River generally meets or exceeds the established fish and macroinvertebrate IBI biocriteria thresholds. While the Beaver River is listed as impaired for fish bioassessments and related pH and turbidity; these impairments are largely localized to the lower Beaver River where there is a higher impact from land use development and naturally occurring geomorphological limitations. Related to the Beaver River impairments, the MPCA identified poor habitat, elevated water temperature, and elevated turbidity/total suspended solids as confirmed stressors. One fish survey was completed in 1975 on the Beaver River prior to construction of the basin. The monitoring location (R-8) is Stations 94LS003 and 15LS060 at approximately river mile 3.9 (See April 2020 Watershed Assessment for more details). The F-IBI score was 45, right at the upper confidence limit and lower or comparable to scores at neighboring stations from recent surveys. No coldwater species were identified in the pre-project survey. Based on one pre-project survey, F-IBI scores are the same or higher within the Beaver River than before basin construction, so no adverse cumulative effects to the fishery are apparent. The Mile Post 7 WTP (SD1-S010) discharge promotes lower temperature, which is beneficial for the coldwater community, and of the stations sampled for temperature on the lower Beaver River by the MPCA, SD1-S010 was the only location that did not have temperature values exceeding the threshold for coldwater taxa. The MPCA concluded that the Mile Post 7 WTP discharge does not appear to have a direct impact on fish taxa richness immediately below the discharge point, as taxa are very similar just above and below that point (Stations 15LS061 and 15LS060). They also concluded that the Mile Post 7 WTP discharge does not appear to have a direct impact on the macroinvertebrate community as evidenced by the station below the discharge (15LS060) meeting the exceptional use standard with a score of 56 and the station above the discharge (15LS061) being slightly lower with a score of 47. The Mile Post 7 WTP discharge occasionally contributes approximately 50 percent of the baseflow to the lower Beaver River, minimizing critical habitat reductions and providing beneficial biological support. There is no apparent adverse cumulative effect on biological communities from the Mile Post 7 WTP discharge.

The cumulative effects to biological resources within the East Branch Beaver River subwatershed are expected to be minimal. Biological data has identified that coldwater biological communities are present in the East Branch Beaver River. The second highest F-IBI

rating measured within the East Branch Beaver River since tailings basin operations started is at the outlet from the 2005 Diversion Ditch at monitoring Station 14LS005 with an FIBI of 60 at approximately river mile 3.8. This indicates that the discharge water quality and volume is conducive to supporting a coldwater fishery. One fish survey was completed in 1975 on the East Branch Beaver River prior to construction of the basin. The pre-project F-IBI score was 88, which is slightly higher than the score at Station 14LS006 just upstream of 75. Two coldwater species were identified, including 10 brook trout and one mottled sculpin. Macroinvertebrate communities within the East Branch Beaver River are functioning below applicable biocriteria, both in the relatively undisturbed headwaters as well as in the lower reaches. With only two data points, it is difficult to draw conclusions on the entire river. No specific causes for diminished macroinvertebrate communities within the East Branch Beaver River have been specifically suggested by MPCA. The project will reduce the drainage area to the East Branch Beaver River by about 2 square miles, resulting in a 0.25-inch change in water level for the 7Q10 flow, a 3 percent reduction in channel forming flow, and a 1 percent reduction in 100-year peak flow. Reduced peak flows reduce the likelihood of bank erosion and downstream sedimentation. Sedimentation has been listed as a significant stressor on the macroinvertebrate and fishery. Reduced sedimentation should then have a positive or neutral impact on the availability of habitat for macroinvertebrates and fish.

Cumulative effects to water quality are expected to be minimal as there are no operational changes to the WTP or outlet as a result of the Project. Operation of the tailings basin and WTP has resulted in a relatively constant discharge rates to the Beaver River, which has maintained baseflow during periods of naturally low flows that has resulted in beneficial effects on stream temperature and DO. Beaver River water temperatures have been shown to fluctuate less and not exceed the lethal threshold immediately downstream of the WTP. Because low DO concentrations typically occur during baseflow periods when stream temperatures are the highest, the presence of the WTP discharge helps minimize the potential for low DO in the Beaver River, resulting in a beneficial effect. Water quality data for TSS shows that there is no adverse effect from the WTP discharge because TSS concentrations in the discharge are typically lower than in the Beaver River. With no apparent increase in TSS concentrations in the watershed since before construction of the tailings basin, no cumulative effects are apparent. Data on Beaver River pH have shown an exceedance of water quality standards just above downstream of the WTP discharge, but pH in the WTP discharge has only been outside the water quality limits one time in the last 19 years according to the Applicant.

The Project in combination with the present and reasonably foreseeable future projects would likely result in the following cumulative effects to subwatershed and drainage patterns. Within the Upper Middle Beaver River subwatershed (subwatershed 11), there has been a cumulative increase in drainage area to-date by about 97.6 percent from pre-settlement to present conditions and will be a 97.4 percent increase with the project compared to pre-settlement conditions. Specific, potential cumulative effects of that Beaver River watershed alteration are evaluated in Sections 5.4, 6.3, 7.4, 8.6.2, and 9.6 of the Applicant's April 2020 Watershed Assessment. Cumulatively, the project will reduce the East Branch Beaver River subwatershed (Subwatershed 7) area by 0.2 percent from its historic drainage area prior to development of the tailings basin. The watershed area contributing to the West Unnamed Creek (Subwatershed 4) will decrease by 68.5 percent from existing to future conditions (Table 1); wetlands as a percent of the West Unnamed Creek subwatershed will decrease by 26 percent, and ponds as a percent of the subwatershed will decrease by 42 percent. The watershed area contributing flow into the Lower East Branch Beaver River subwatershed (#7) at the confluence with West Unnamed Creek includes subwatersheds 1-4, which will decrease by 6.9 percent from existing to future conditions.

## **DETERMINATION OF SECONDARY EFFECTS ON THE AQUATIC ECOSYSTEM**

Based on the information above and the compensatory mitigation proposed in Section 8, the Corps has determined that secondary effects will be minimal. The main secondary effects include stream and wetland impacts. The Applicant has proposed a wetland monitoring plan to monitor and evaluate post-project impacts on surface and groundwater fluctuations. The monitoring plan is for potential impacts to non-jurisdictional wetlands; therefore, the Corps is not making the monitoring of those potential impacts a special condition to the permit. The MPCA and DNR are requiring wetland and stream monitoring and will advise the Corps of any potential post-project impacts identified through its 401 WQC and Wetland Conservation Act permit. If additional post Project wetland or stream impacts are identified, the Applicant will may be required to provide compensatory mitigation or an adaptive management for those impacts to jurisdictional wetlands. The Applicant has also proposed compensatory mitigation for all direct and indirect effects to streams and wetlands.

### **6.10 DETERMINATION OF COMPLIANCE WITH THE SECTION 404(B)(1) GUIDELINES (40 CFR 230.10(A-D) AND 40 CFR 230.12)**

This determination of compliance is based on the conclusions of factual determinations and technical evaluation factors of this analysis and takes into account the detailed analysis of impacts on specific physical, chemical, biological and human characteristics of the aquatic ecosystem conducted as part of the EA. Additionally, Subpart H of the 404(B)(1) Guidelines (see Section 6.8 above) summarizes key measures that relate to the discharge of fill material into WOTUS to minimize adverse effects.

Based on consideration of the above, it has been determined that the proposed discharge of dredged and fill material would not:

- (1) Violate any applicable State water quality standard. The State water quality agency, MPCA, issued its conditioned 401 Water Quality Certification on June 29, 2021, for the discharge of fill material into waters in association with the Applicant's proposed Project as described in Section 2.
- (2) Cause or contribute to violations of any applicable water quality standards and would not violate any toxic effluent standards under section 307 of the CWA.
- (3) Jeopardize the continued existence of any species listed as endangered or threatened species under the ESA of 1973 or their critical habitat. See Section 6.4.1 for species effects determinations.
- (4) Violate any requirement imposed by the Department of Commerce to protect marine sanctuaries under Title III of the Marine Protection, Research, and Sanctuaries Act of 1972. This is not applicable as there are no marine sanctuaries in the Project area.

Except as provided under section 404(b)(2), no discharge of dredged or fill material shall be permitted which will cause or contribute to significant degradation of WOTUS. [40 CFR 230.10(c)].

Findings of significant degradation related to the proposed discharge shall be based upon appropriate factual determinations, evaluations, and tests are required by the 404(B)(1) Guidelines under subparts B and C, after consideration of subparts C through F. The discharge shall not be permitted if it:

- (1) Causes significant adverse effects through pollutants on human health or welfare, municipal water supplies, plankton, fish, shellfish, wildlife, and special aquatic sites. These factors for the proposed Project have been thoroughly evaluated above.
- (2) Causes significant adverse effects through pollutants on life stages of aquatic life and other wildlife dependent on aquatic ecosystems. These factors for the proposed Project have been thoroughly evaluated above.
- (3) Causes significant adverse effects through pollutants on aquatic ecosystem diversity, productivity, and stability to the loss of fish and wildlife habitat or loss of the capacity of a wetland to assimilate nutrients, purify water, or reduce wave energy. These factors for the proposed Project have been thoroughly evaluated.
- (4) Causes significant adverse effects through pollutants on recreational, aesthetic, and economic values. These factors for the proposed Project have been thoroughly evaluated above.

No significant adverse effects from pollutants would occur on the resources described in (1)-(4) above provided the Applicant complies with all approved permits including general and special conditions of those permits. The Project is compliant with the Section 404(b)(1) Guidelines.

## **7.0 PUBLIC INTEREST REVIEW**

### **7.1 EVALUATION OF GENERAL CRITERIA**

The Project includes all practicable measures to minimize impacts to important resources of concern including air, water, fish, and wildlife, historic properties, and cultural resources. The Corps has determined, after evaluation of the following general criteria (i – iii below) and the factors listed below, that the proposed Project will not be contrary to the public interest, as long as all measures identified in Section 10 of this EA, including permit special conditions, are implemented.

- i. The relative extent of the public and private need for the proposed work:

The Applicant's stated need for the proposed Project is to meet demand for iron ore. This need is driven by domestic and global demand for this product. The demand for iron ore is steady. Based on the number of people currently employed at the Mile Post 7 site (approximately 600), there is a need to continue progressing the tailings basin in order to continue providing employment for those 600 people in and around Silver Bay, MN as well as supplying the public to fulfill the demand they have for the product.

- ii. The practicability of using reasonable alternative locations and/or methods to accomplish the objective of the proposed structure or work:

Overall, the Corps finds that practicable alternatives that do not impact WOTUS and/or special aquatic sites do not exist as a result of geographical and technological constraints of the Project. An analysis of practicable alternatives and the Corps' LEDPA determination is presented in Section 5 of this document.

- iii. The extent and permanence of the beneficial and/or detrimental effects that the proposed structures or work may have on the public and private uses which the area is suited:

The Project location is primarily characterized as undeveloped uplands, wetland of varying quality, streams, and an active tailings basin. The site is suited for hunting, fishing and gathering and other traditional uses by the Bands under the 1854 Treaty. However, the site is bound by private land and permission for access has generally not been provided. The Project would have minor impacts on traditional uses by the Bands, loss of WOTUS, recreational opportunities, habitat for fish and wildlife, and streams and wetlands that provide watershed functions. These impacts range in intensity and are described in greater detail throughout this document. Many impacts would be minimized through measures to be implemented by the Applicant, through compliance with required state and federal regulations, and by specific permit conditions imposed by the respective permits. The relative extent and permanence of the impact will be for the life of the Peter Mitchell Mine. The basin will be in operation until it reaches its capacity. At which time the basin would cease to take on new tailings and would follow the appropriate state reclamation procedures identified by the DNR.

The beneficial effects would be the continued employment of approximately 600 people in an area where jobs are limited based on the geographic location of the Town of Silver Bay. This project will benefit the community (from continuing to employ local residents) as well as others in the US and around the world who will be able to use the byproducts of iron ore.

The Corps has determined the Applicant's Project adequately compensates for the aquatic resource functions that would be lost as a result of the Project. Furthermore, the Corps concludes the Project would not have detrimental effects on the public and private uses for which the area is suited.

## **7.2 CONSERVATION (33 CFR 320.4(m) and 320.4 (p))**

Federal laws, executive orders, and agency regulations and policy guidance frequently address the need for conservation of natural resources. The Corps Regulatory Program, by authority, is focused on conservation of WOTUS, including wetlands. As described throughout the other subsections in Section 7, this evaluation discloses that conservation of natural resources would be accomplished by the proposed action. The proposed action would impact land, streams and wetlands, wildlife, aquatic species, vegetation, soils, and air. The effects on these resources are discussed throughout this document.

Conservation measures have been considered and incorporated into the Project to minimize impacts, including for example, using a rail alignment that minimizes aquatic resource impacts while also meeting the safety requirements for rail transportation. Also, progressing the existing tailings basin instead of constructing a new tailings basin and supporting infrastructure at a new site has reduced aquatic resource impacts. If the Applicant were to build the tailings basin and supporting infrastructure on a new site, there would likely be a considerable amount of aquatic resource impacts given the distribution of wetlands and streams in northeastern Minnesota. The

Applicant is also conserving water by pumping clean water from the outlet of the WTP at the tailings basin back to the plant to account for water losses during the production process at the plant. By recycling the water, the Applicant is decreasing the amount of water they need to pull from Lake Superior for its processing plant operations.

The Corps has determined the Project would have no adverse impacts on conservation because the compensatory mitigation replaces the lost functions and values of the stream and wetland impacts.

### **7.3 ECONOMICS (33 CFR 320.4(q))**

Corps regulations specify that when the applicant is a private enterprise, it is generally assumed that appropriate economic evaluations have been completed, and that the proposal is economically viable, and needed in the marketplace (33 CFR 320.4(q)).

According to the Applicant, the Project would continue to keep approximately 600 current employees of Northshore Mine employed for 40+ more years. Those 600 jobs also result in additional indirect jobs from industries that support the Applicant's operation. The Applicant is one of the biggest employers in the Babbitt and Silver Bay communities and those communities would be negatively impacted if the Applicant could not complete its Project. This also means that Silver Bay and several communities in the commuting area see tax revenue benefits in labor income, sales tax on the purchase of goods locally, and property taxes.

The Corps has determined that the Project is generally expected to have a beneficial effect on the local and regional economies.

### **7.4 AESTHETICS (33 CFR 320.4(a))**

The Applicant conducted a viewshed analysis and determined that the Project would have visibility up to four miles away. The progression of the footprint of the tailings basin and height increase of the dam structures and elevation of the tailings basin pond will occur gradually. Between 1989 and 2017, the tailings basin pond increased in elevation from 1,180 to 1,221 feet, an increase of less than 1.5 foot per year. For long-range planning purposes, a water level rise in the basin based on a historical rate of 2.3 feet per year was assumed. To correspond with this gradual rise in the basin level, the dams and railroad embankment would also be gradually increased. This gradual change will be an almost indiscernible height differential from the existing tailings structures. Visibility of the proposed Project will also be minimized by distance and intervening existing vegetation.

The topography of the land surrounding the Project area varies greatly, although the vast majority is heavily vegetated. To the south of Mile Post 7 Tailings Basin the land is generally at an elevation between 1,050 and 1,200 feet. This is lower than the ultimate maximum proposed elevation of the dams at 1,365 feet, thereby increasing its potential for visibility. Directly east of Mile Post 7 Tailings Basin, and around Bear Lake, the land has many variations in topography but is generally at elevations between 1,300 to 1,450 feet. Therefore, the ultimate elevation of the basin at an elevation 1,365 feet will have minimal visibility to the east. To the north, south, and southwest of Mile Post 7 Tailings Basin, the land is generally at an elevation between 1,200 and 1,350 feet. The greatest area for potential visibility is from CSAH 15 to the north of the Project area, which according to the proposed Project area will be sited in very close proximity to the tailings basin progression. To the northwest, the land is generally at an elevation between

1,350 and 1,400 feet. The ultimate elevation of the basin at 1,365 feet will have minimal visibility to the northwest.

Due to the varying topographic changes and dense vegetation surrounding the Project area; the slow vertical expansion within the Project area, which will be indiscernible in many areas from the existing Mile Post 7 Tailings Basin; and the diminishing visual effects with distance, the potential for indirect visual effects during construction and operation of the proposed Project is likely limited to within a one-mile buffer of the Project area, with the following exceptions. Areas to the east and northwest of the Project area where the topography exceeds the ultimate height of the basin (1,365 feet), visual effects are likely limited and would not extend beyond these topographic high points.

Visually the basin will be larger but will not have any more detrimental impacts than what the basin has already had since the early 1980s when it was constructed. For that reason, the progression of the basin to the northwest would have a negligible effect in the long term.

The Corps has determined the Project would have negligible to minor impacts on aesthetics.

## **7.5 GENERAL ENVIRONMENTAL CONCERNS (33 CFR 320.4(a))**

General environmental concerns that were identified and are not standard public interest topics include noise and vibration, air quality, hazardous materials and greenhouse gas emissions including contribution to climate change.

The Project is not expected to have any short or long term increases in noise or vibration levels above current levels because the existing site is active and generates noise. There is no expected increase or new activities that will occur that do not already happen at the site. Construction is ongoing at the Project site as the dam walls are continuously raised with heavy machinery and equipment. The Applicant is also expected to comply with the noise standards set forth in Minnesota R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement.

The Applicant has stated, and the Corps has confirmed, the existing operation has a Title V Air Permit 07500003 issued by MPCA. The MPCA was contacted to discuss the status of the Applicant's air permit. The MPCA said the permit expired some time in 2008 but that the Applicant was still meeting the terms and conditions of the permit; therefore, it is considered administratively extended. The MPCA confirmed the Applicant is in compliance and no new permit is required as a result of the Project. The Applicant is required to maintain an agency-approved Fugitive Dust Control Plan and comply with the requirements within the plan. That plan covers operations at the tailings basin and the processing plan in Silver Bay. The Applicant is planning to continue to implement its existing fugitive dust management programs in compliance with the Air Permit. Additionally, Northshore is regulated by Minnesota Rules Chapter 6130, which contains vegetation and air pollution control requirements for ferrous metallic mining operations. According to the Applicant reclamation inspections of the tailings basin have been and will continue to be conducted annually by the DNR.

**Climate Change.** The proposed activities within the Corps federal control and responsibility likely will result in a negligible release of greenhouse gases into the atmosphere when compared to global greenhouse gas emissions. Greenhouse gas emissions have been shown to contribute to climate change. Aquatic resources can be sources and/or sinks of greenhouse

gases. For instance, some aquatic resources sequester carbon dioxide whereas others release methane; therefore, authorized impacts to aquatic resources can result in either an increase or decrease in atmospheric greenhouse gas. These impacts are considered de minimis and are negated through compensatory mitigation. Greenhouse gas emissions associated with the Corps federal action may also occur from the combustion of fossil fuels associated with the operation of construction equipment, rail traffic, etc. The Corps has no authority to regulate emissions that result from the combustion of fossil fuels. These are subject to federal regulations under the Clean Air Act and/or the Corporate Average Fuel Economy (CAFÉ) Program. Greenhouse gas emissions from the Corps action have been weighed against national goals of energy independence, national security, and economic development and determined not contrary to the public interest.

With respect to hazardous materials, accidental release of these materials during transportation, storage, handling, and/or use at the Project could impact air, water, soil, and ecological resources. Materials defined as hazardous are a routine part of mining and ore processing. Their handling, storage, and disposal are regulated by a number of state and federal laws. Adherence to these would limit the potential for off-site effects to the transport of large quantities of hazardous material. Given overall Project design and operational commitments, there would be no significant adverse effects from the proposed use or generation of hazardous wastes by the Project.

In summary, the Corps has determined noise, air, greenhouse gas emissions and hazardous materials associated with the Project would have negligible to minor impacts on general environmental concerns.

## **7.6 WETLANDS (33 CFR 320.4(b))**

The Applicant conducted a delineation of aquatic resources within the project to identify the wetlands and streams that would be affected during Project construction. Wetlands were identified and mapped in accordance with the Northcentral and Northeast Supplement of the 1987 Corps of Engineers Wetland Delineation Manual. As described in earlier sections of this document, the Project will result in the permanent loss of 163.43 acres of jurisdictional wetlands as a result of the discharge of dredged and fill material. The Project will also result in the permanent loss an additional 116.81 acres of non-jurisdictional wetlands. There are no temporary wetland impacts proposed.

To offset unavoidable losses of wetlands and streams associated with the Project, the Applicant has purchased wetland mitigation credits from the EIP Lake Superior Mitigation Bank located in the Bank Service Area 1. These bank credits provide stormwater storage as well as high quality habitat within Bank Service Area 1. Wetlands to be impacted by the Project are located in the Beaver River Watershed, which is a sub-watershed of Bank Service Area 1; therefore, impacts and compensation are located in the same major watershed. More information on the amount of compensatory mitigation and other details are provided in Section 8 of this document. Section 10 of this document contains the special condition and rationale related to the need to purchase compensatory mitigation for wetland impacts. While not required by the Corps, the Applicant will also be purchasing wetland bank credits to offset the permanent impacts to 116.81 acres of non-jurisdictional wetland. The MPCA and DNR are requiring mitigation for those non-jurisdictional impacts.



Based on avoidance, minimization and compensation measures to offset impacts to wetland in association with the Project, impacts to wetlands would be minor.

## **7.7 HISTORIC PROPERTIES (33 CFR 320.4(e))**

In summary, the Corps determined historic properties are present (above-ground properties: Reserve Milepost 7 Tailings Basin, LA-SVB-012, and the Reserve Mainline Railroad, Silver Bay to Peter Mitchell Mine, XX-RRD-047). The Corps determined these properties would not be adversely affected by the proposed undertaking. The SHPO concurred with our finding of no historic properties affected on January 15, 2021. The Corps' responsibilities and compliance under Section 106 of the NHPA and the implementing regulations for the Protection of Historic Properties at 36 CFR Part 800, as amended, are complete.

Please see Sections 11.3, 11.3.1, and 11.13 for additional information on the historic properties review and tribal consultation completed for the Project.

## **7.8 CULTURAL VALUES (33 CFR 320.4(e))**

The Project area falls within the territory ceded as part of the 1854 Treaty between the U.S. Government and the Chippewa of the Mississippi and Lake Superior. The Chippewa of Lake Superior who reside in the 1854 Ceded Territory are the Fond du Lac, Grand Portage, and Bois Forte Bands of the Minnesota Chippewa Tribe. The rights to hunt and fish (gather or take) subsistence resources within the 1854 Ceded Territory were retained by the Bands on a usufruct basis.

The Project would result in direct and indirect environmental effects due to ground-disturbing activities. Natural resources and the lands on which they are gathered are important to the Bands for a number of reasons, including cultural, spiritual, and/or historical meanings. The Corps consulted with the Bands to understand how the proposed federal action may impinge on or abrogate treaty rights. A tribal cultural resource survey was completed, to include field investigation and elder interviews. During the survey, plants of Tribal cultural significance and that have known traditional uses were identified in the Project area. However, no evidence was identified related to historic trails in the project area and Band members' use of the Project area did not emerge through interviews.

Lack of information likely reflects limited present day or recent past subsistence gathering in the Project area due to general inaccessibility because the Project area is surrounded by private land and cannot be easily accessed due to private roads. A good faith effort was made by the Corps to identify use areas in or adjacent to the Project area

Construction and operation of the Project is not likely to significantly reduce overall availability of 1854 Treaty resources that are typically part of subsistence activities in the 1854 Ceded Territory. Some individuals and localized populations may be affected, but overall species populations are expected to remain available. The water released from the WTP on the Project site is especially important because there are waters supporting the production of wild rice downstream from the Project. Effluent from the WTP is regulated under an existing NPDES/SDS permit from the MPCA.

The Corps has determined the Project would have minor adverse impacts on cultural resources.

## **7.9 SCENIC/RECREATIONAL VALUES (33 CFR 320.4(e))**

Impacts to scenic values includes aesthetic (visual resources) which are described above in Section 7.4. The project is also in close proximity to the Superior National Forest Scenic Byway (Scenic Byway). The Scenic Byway is a 61-mile paved, two-lane road that connects Lake Superior's North Shore and historic Iron Range communities. Coordination was initiated with the USFS to identify what impacts the Project may have on the Scenic Byway. The Corps was informed by the USFS that since the Project was not on federal land Lake County and the DNR should be contacted for coordination. The Corps coordinated with both Lake County and the DNR regarding potential impacts to the Scenic Byway. The DNR provided comments in a letter dated August 24, 2020, that the Project, in its opinion, would be consistent with the purpose and management of the Scenic Byway. Lake County did not have any additional concerns.

Recreational opportunities are discussed in Section 6.6.2, 6.6.3, and 6.6.5. The Project area is located on private property with no access to the public.

The Corps has determined effects of the proposal on scenic and recreational values are negligible.

## **7.10 FISH AND WILDLIFE (33 CFR 320.4(c))**

Section 6.4.1, 6.4.2 and 6.4.3 provide more detail on impacts to fish and wildlife. There are no federal or state-listed threatened or endangered fish or macroinvertebrate species known to occur in the Project area. There are other common fish and macroinvertebrate species found in Big and Little Thirtynine Creeks. The Project would include the loss of habitat for those species, specifically from a reduction in habitat size since the streams will be filled in. The Project may result in potential impacts to the following federally listed species: Canada Lynx (threatened), Gray Wolf (threatened), Northern Long-eared Bat (threatened), Piping Plover (endangered), and the following critical habitats as being wholly or partially within the project area: Canada Lynx and Gray Wolf. The impacts are discussed in detail in Section 6.4.1.

Human activity would displace many mobile individuals. While similar habitat is available in surrounding areas and could absorb displaced wildlife, displaced individuals could increase the competition for resources in their new habitat. Less mobile species would be expected to have higher mortality rates due to their reduced capacity to adapt to losses in habitat. In regard to species that use or depend on riverine systems, the remnant reaches of Big and Little Thirtynine Creek that will be filled in have been altered over the course of the previous 40 years and reduced the number of species present. There are other streams in the area that could provide habitat for riverine bound species.

Effects from noise on wildlife are largely unknown; however, the effects from noise will not be any greater than they already are as the tailings basin is continuously under construction even today. Dam walls need to be continually raised and the railroad bed has been moved and raised several times in the past. Sensitivity thresholds to noise are generally lower for animals than humans and effects from noises could cause animals to startle and could interrupt forage or nesting activities.

There is unlikely to be a noticeable change in animal population character or quantity as a result of the Project.

The Corps has determined the Project would have minor adverse impacts on fish and wildlife.

### **7.11 FLOOD HAZARDS (33 CFR 320.4(I))**

The proposed Project is located in an area where the Federal Emergency Management Agency (FEMA) has not mapped the 100-year flood plain of the Beaver River. The Applicant has modeled flow as a result of the Project and flows downstream of the Project in the Beaver River are not expected to change. Flows in the East Branch Beaver River and West Unnamed Creek according to the applicant are not expected to result in additional flooding hazards.

The Corps has determined the Project would have negligible effects on flooding hazards.

### **7.12 FLOODPLAIN VALUES (33 CFR 320.4(I))**

Streams in the vicinity of the Project have well-developed floodplains. At the Project site water would be directed off-site via historic flow paths and the water would be treated and would supplement stream flow as necessary to maintain flow. Based on modeling, stream flows would remain within +/- 2-3 percent of historic rates. Maintenance of hydrologic input will ensure that streams remain connected to their floodplains.

The Corps has determined the Project would have negligible impacts on floodplain values.

### **7.13 LAND USE (33 CFR 320.4(a)(1))**

The current zoning of the Applicant's property is FR-1 Forest Recreation District. Section 9.03 b) authorizes such uses as what the Applicant has proposed so long as a conditional use permit is issued. The Applicant provided the conditional use permit which authorizes the construction, maintenance and operation of a taconite tailings disposal basin and all necessary facilities related thereto. The tailings basin has been there since the late 1970's or early 1980's. The Project will not result in anything materially different than what has been there for 40+ years.

The Corps has determined the effects of the Project on land use are negligible.

### **7.14 NAVIGATION (33 CFR 320.4(o))**

There are no Section 10 waters or traditionally navigable waters within the Project site. There will be no effects to navigation as a result of the Project.

### **7.15 SHORELINE EROSION AND ACCRETION (33 CFR 320.4(a))**

As described above, the Project would have negligible or minor changes on the flow and dynamics of streams outside the Project area.

The Corps has determined the Project is not expected to have appreciable impacts on bank erosion or sedimentation and would have negligible impact on shoreline erosion and accretion.

## **7.16 WATER SUPPLY AND CONSERVATION (33 CFR 320.4(m))**

Consistent with Corps policy at 33 CFR 320.4(m), water conservation requires the efficient use of water resources in all actions which involve the significant use of water or that significantly affect the availability of water for alternative uses including opportunities to reduce demand and improve efficiency in order to minimize new supply requirements. See Section 7.2 for more on water conservation. By reusing treated water from the waste treatment plant, the Applicant is conserving and using water efficiently while also reducing what they need to pull from Lake Superior for its water needs.

The Corps has determined the Project would have negligible impacts on water supplies.

## **7.17 WATER QUALITY (33 CFR 320.4(d))**

The Project includes progressing an existing tailings basin and has the potential to affect water quality within the Beaver River watershed. See Section 6.3.2 and Section 6.3.3 of this document for discussion regarding water quality impacts during construction.

The Applicant's continued practice of treating water from the tailings basin in its WTP will ensure the water returning to the natural ecosystem meets state water quality standards. While there is additional potential for increases in seepage the existing seepage infrastructure can handle the additional hydraulic head associated with increasing the pool elevation in the basin. Any additional seepage as a result of the Project would continue to be pumped back into the basin and treated through the WTP. The Applicant must also adhere to the Section 401 and 402 CWA permits from the MPCA.

With respect to the discharge of dredged and fill material into WOTUS, measures to minimize effects from activities regulated by the Corps are described in earlier sections of this document. These measures would ensure that discharges of dredged and fill material do not adversely impact water quality. On June 29, 2021, the MPCA issued a Section 401 WQC for the discharge of dredged and fill material into waters. Overall, impacts to water quality are not expected to exceed regulatory limits. Discharges from the WTP are subject to the MPCA NPDES permit.

The Project could have the potential to affect groundwater; however, seepage recovery ponds are an integral component of the tailings basin and ensure that any water that leaves the tailings basin is recaptured and treated prior to leaving the WTP outlet pipe.

The Corps has determined the Project would have minor adverse effects on water quality.

## **7.18 ENERGY NEEDS (33 CFR 320.4(n))**

The Project is not an energy production facility. Energy needs for the tailings basin operation include the necessary infrastructure to operate the basin. The future energy needs are not expected to increase over current needs other than temporarily during construction. There will be an increase in construction related equipment which will consume energy to operate.

The Corps has determined the Project would have minimal effects to energy needs.

## **7.19 SAFETY OF IMPOUNDMENT STRUCTURES (33 CFR 320.4(k))**

In the state of Minnesota, the DNR reviews dam design through its Dam Safety Permit and Permit to Mine review. While the Corps regulatory program does not regulate the operation of dams or dam safety, any Corps permit issued would regulate discharges of dredged and fill material into WOTUS associated with tailings basin dam construction and disposal. The dams are reviewed by qualified staff at DNR through the Applicant's 5-year operational plans that are tied to its permit to mine. The tailings basin is also inspected regularly by DNR either by the Lands and Mineral Division or through DNR's Dam Safety Department. The dams are built in small incremental lifts (two to three feet a year) and reviewed for safety by the DNR. The Applicant is currently authorized to raise the dam embankments to an elevation of 1315'.

Concerns have been raised about the dam construction method changing over time from the original method of downstream construction to the currently used modified centerline or offset upstream method. The Applicant provided information stating that the original Reserve Mining company changed the construction method to the modified centerline or offset upstream method as a result of a reduction in production rates which resulted in a proportional reduction in coarse tailings generation. The DNR has authorized the modified centerline or offset upstream method and continues to provide oversight of the safety of the dams as they are raised.

Consistent with Corps regulations at 33 CFR 320.4(k), the Applicant has demonstrated that the structures comply with established state dam safety criteria, have been designed by qualified persons and the design has been independently reviewed. The Corps also acknowledges the DNR will be overseeing future dam lifts through the Applicant's 5-year operational plan. Safety concerns with regard to dam design have been adequately addressed and the impoundment structure does not appear to impair safety.

The impoundment structure would serve the public interest identified under Section 7.3 (economic benefits) by functioning as necessary and integral parts of the tailings basin operation.

The Corps has determined the impoundment structure would have negligible adverse effects on public safety.

## **7.20 FOOD SUPPLY (33 CFR 320.4(a))**

The Project is not one that would increase or decrease the production of agricultural crops, forest products, or livestock. The project will affect the habitat for certain wildlife species; however, the property is private and is not open or subject to hunting or gathering.

The Corps has determined the Project would have negligible effects on food and fiber production.

## **7.21 MINERAL NEEDS (33 CFR 320.4(a)(1))**

The tailings that will be stored in the basin come from the most eastern side of the Mesabi Iron Range across the Biwabik Iron Formation. The mineral Magnetite is the second most abundant mineral in the Biwabik Iron Formation and is the ore mineral of interest to produce taconite pellets.

The steel that can be produced from the taconite pellets would be used widely in the construction of roads, railways, other infrastructure, appliances, and buildings. Most large modern structures, such as stadiums and skyscrapers, bridges, and airports, are supported by a steel skeleton. Even those with a concrete structure will employ steel for reinforcing. In addition, it sees widespread use in major appliances and cars. The steel is used in a variety of other construction materials, such as bolts, nails, and screws. Other common applications include shipbuilding, pipeline transport, mining, offshore construction, aerospace, white goods (e.g. washing machines), heavy equipment such as bulldozers, office furniture, steel wool, tools, and armor in the form of personal vests or vehicle armor.

The Corps has determined the Project would have a beneficial effect on mineral needs as it will help meet the demand for the public and private need for iron ore.

## **7.22 CONSIDERATION OF PROPERTY OWNERSHIP (33 CFR 320.4(g))**

Authorization of work in WOTUS under a Corps permit does not convey a property right, nor authorize any injury to property or invasion or infringement of other rights. The Applicant's signature on an application is an affirmation that the Applicant possesses or will possess the requisite property interest to undertake the activity proposed in the application. All lands within the Project area are privately owned.

Several aspects of the Project have the potential to impact adjacent or nearby property ownership as described throughout the public interest evaluation. The Project would be consistent with local zoning and land use plans and would be similar in nature to other activities in the region. As described throughout this section, the Applicant has incorporated measures into the Project to reduce effects on resources of concern including wetlands, streams, water quality and quantity, air quality, fish and wildlife resources, and cultural resources. The Project's compliance with all state and federal permits would ensure that there are no appreciable impacts on adjacent properties.

The Corps has determined the project would have negligible impacts on property ownership.

## **7.23 NEEDS AND WELFARE OF THE PEOPLE (33 CFR 320.4(a))**

The iron ore at the Project site would be processed and sold for use in a variety of industries that would meet specific public needs, such as transportation, manufacturing, communication, electrical generation and transmission, and healthcare. The activities associated with the Project are compatible with the existing land uses and would take advantage of the existing tailings basin and supporting infrastructure. Engineering controls would ensure that environmental standards are met during mining operations and in mine closure.

## **7.24 Public Interest Review Determination**

The Project has been modified to incorporate all practicable measures to minimize impacts to important resources of concern including air, water, fish and wildlife, historic properties and cultural resources. Based on the Applicant's compliance with all state and federal authorizations, including compliance with all general and special permit conditions, the Corps has determined the Project would not be contrary to the public interest.

## **8.0 MITIGATION (33 CFR 320.4(r), 33 CFR Part 332, 40 CFR 230.70-77, 40 CFR 1508.20 and 40 CFR 1502.14)**

Based on the Corps' analysis of the Project and impacts to WOTUS, the Corps has determined compensatory mitigation is required for unavoidable impacts to 163.43 acres of wetlands, 29.57 acres of deepwater habitat, and 8,570 linear feet of streams. Avoidance and minimization measures are detailed in Section 6.8 of this document. The remainder of this section addresses the basis and rationale for the compensatory mitigation for aquatic resource impacts.

### **Wetland Compensatory Mitigation**

Compensatory mitigation is required for direct wetland impacts to 130.06 acres of wetlands, indirect impacts to 33.37 acres of wetlands and direct impacts to 29.57 acres of deepwater habitat. Both direct and indirect impacts will result in the permanent loss of wetlands and deepwater habitat and their associated functions. During the permit review process the Corps concurred with the Applicant's plan to replace deepwater habitat with wetland credits because the area, prior to impoundment, was similar to the existing wetland communities adjacent to the deepwater habitat. The Corps has determined, based on the needs of the watershed, it would be appropriate in this case for the Applicant to replace the artificially created deepwater habitat with wetland compensatory mitigation.

*Is the impact in the service area of an approved mitigation bank?* Yes, there are several federally approved wetland banks within BSA 1. However, based on the mitigation credit demands of this project there is only 1 bank that can supply the necessary number of credits. The Applicant is proposing to use the EIP Wetland Bank (Account #1609) located in BSA 1.

*Does the mitigation bank have the appropriate number and resource type of credits available?* Yes and No. The EIP mitigation bank has the appropriate number of credits available; however, the credits are mostly out-of-kind from the wetlands being impacted by the Project.

*Is the impact in the service area of an approved in-lieu fee project?* Not applicable.

*Does the in-lieu fee project have appropriate number and resource type of credits available?* Not applicable.

Compensatory mitigation option(s):

☒ mitigation bank credits

The Applicant has proposed to purchase 193 credits of open bog/coniferous bog wetland type from the EIP Lake Superior Bank (Account 1609) in BSA 1. When the EIP bank was approved it was recognized that the bank had a tremendous functional lift on the larger watershed (BSA 1) and landscape beyond the typical onsite functional lift to wetlands. The bank was recognized for its watershed values and presented the following benefits to BSA 1: reduction of flood potential, carbon sequestration, mercury sequestration, habitat defragmentation, improved water purification capacity, and the reduced potential for the spread of invasive species.

Although the credits from the EIP bank proposed for the Project are not all in-kind, the EIP bank was approved based on a watershed approach that demonstrated its long-term benefits to the entire BSA. The Applicant has proposed to purchase mitigation bank credits at a ratio of 1:1 from the EIP bank. Corps' policy on mitigation credits in this part of state where the Project is

located is generally 1.5:1 and can be reduced for incentives like purchasing bank credits, purchasing in-kind credits, and purchasing in-place credits. The Applicant has proposed to purchase bank credits that are considered in-place (in the same BSA) and in-advance since the wetland bank is already established. Although the proposed credits are not in-kind, the St. Paul District's 2009 Mitigation Policy states one exception to out-of-kind mitigation is in instances where the mitigation was established based on the benefits of the mitigation site to the watershed. The proposed EIP bank was approved because of its advantageous benefits to the watershed. Therefore, the Corps has determined the Applicant will be required to purchase wetland credits at a ratio of 1:1 (reduced from 1.5:1 to 1:1) for the 193 acres of wetland and deepwater habitat loss. The Corps has determined the credits from the EIP bank will offset the proposed impacts associated with the Project and will continue to meet the no net loss criteria of the Regulatory program.

Purchasing wetland mitigation bank credits complies with the order of options presented in 33 CFR 332.3(b)(2)-(6).

☐ in-lieu fee program credits

There are no available in-lieu fee programs in the St. Paul District.

☐ permittee-responsible mitigation under a watershed approach

The Applicant evaluated mitigation options within the same bank service area identified in the preference hierarchy of purchasing wetland mitigation bank credits outline in the Federal Mitigation Rule.

☐ permittee-responsible mitigation, on-site and in-kind

The Applicant did not evaluate on-site mitigation options and wetland mitigation bank credits were available. Mitigation banks typically involve larger tracts of wetlands/uplands/riparian areas that are more ecologically diverse and resilient than multiple smaller permittee responsible mitigation Projects.

☐ permittee-responsible mitigation, off-site and in-kind

NA

☐ permittee-responsible mitigation, off-site and out-of-kind

NA

### **Stream Compensatory Mitigation**

Overall, the Project will impact 8,570 linear feet of tributary, including 5,150 linear feet of Big Thirtynine Creek and 3,420 linear feet of Little Thirtynine Creek. The Corps required the Applicant to use the Minnesota Stream Quantification Tool (MNSQT) Debit Option #2, to calculate the total functional loss or stream debits associated with the Project. Overall, the proposed project will impact 8,570 linear feet of tributary, including 5,150 linear feet of Big Thirtynine Creek and 3,420 linear feet of Little Thirtynine Creek. The functional feet (FF) of loss within both tributaries, as calculated using Debit Option #2 within the MNSQT Debit Calculator, resulted in 5,208.2 functional feet of stream debits.

MNSQT Overview: MNSQT are spreadsheet-based tools designed to inform permitting and compensatory mitigation decisions for Section 404 of the CWA and Section 10 of the Rivers and



Harbors Act programs. These Microsoft Excel Workbooks have been developed to characterize stream ecosystem functions by evaluating a suite of indicators that represent structural or compositional attributes of a stream and its underlying processes. The MNSQT is an application of the Stream Functions Pyramid Framework and uses function-based parameters and metrics to assess five functional categories: Hydrology, Hydraulics, Geomorphology, Physicochemical, and Biology. The MNSQT integrates multiple indicators from these functional categories into a reach-based condition score that is used to calculate the change in condition before and after impact or restoration activities are implemented. Assessment data are input into the MNSQT, where data for each metric are translated into index values via a set of reference curves, thus converting a variety of units into a standardized unitless score. Reference curves have been derived for each metric that relate site-specific data to degrees of departure from reference standard.

*Is the impact in the service area of an approved mitigation bank?* No.

*Does the mitigation bank have the appropriate number and resource type of credits available?*  
Not applicable as there are no banks with stream mitigation credits available in MN.

*Is the impact in the service area of an approved in-lieu fee project?* Not applicable.

*Does the in-lieu fee project have appropriate number and resource type of credits available?*  
Not applicable.

Compensatory mitigation option(s):

☐ mitigation bank credits

There are no mitigation banks that have stream credits in MN.

☐ in-lieu fee program credits

There are no available in-lieu fee programs in the St. Paul District.

☒ permittee-responsible mitigation under a watershed approach

The Applicant evaluated mitigation options within the same HUC 10 watershed as the Project and all stream mitigation sites are within the same HUC 10 watershed. The Applicant utilized the MPCA's 2018 WRAPS report for the larger HUC 8 and were targeting stream restoration opportunities within the HUC 10.

☐ permittee-responsible mitigation, on-site and in-kind

☐ permittee-responsible mitigation, off-site and in-kind

NA

☐ permittee-responsible mitigation, off-site and out-of-kind

NA

Stream Mitigation Rationale:

The Corps recognizes that the MNSQT is a new tool, and the Corps has not released formal procedures or training for the public on how to maximize the use of the tool. This Project was one of the first for the St. Paul District to require the use of the MNSQT. While this stream

mitigation plan is suitable and acceptable for the Project, it is noted that once the Corps releases final procedures on the use of the MNSQT the Applicant and other applicants will need to follow the official guidance on the use of the MNSQT.

Based on the Project and the complete removal of stream functions, a Tier 5 impact severity tier was selected within the MNSQT Debit Calculator and the loss of functional feet was calculated for the two reaches in both Big and Little Thirtynine Creeks. The “Big Thirtynine Beaver Dam Areas” reach resulted in 2512 FF of loss, while the “Big Thirtynine Channel Areas” reach resulted in 673.8 FF of loss. Both reaches in Big Thirtynine Creek resulted in 3185.8 FF of loss. The “Little Thirtynine Beaver Dam Areas” reach resulted in 857.6 FF of loss, while the “Little Thirtynine Channel Areas” reach resulted in 1164.8 FF of loss. Both reaches in Little Thirtynine Creek resulted in 2022.4 FF of loss.

Overall, the proposed project will impact 8,570 linear feet of tributary, including 5,150 linear feet of Big 39 Creek and 3,420 linear feet of Little Thirtynine Creek. The functional feet of loss within both tributaries, as calculated using Debit Option #2 within the MNSQT Debit Calculator, resulted in 5,208.2 FF of stream debits.

There are no approved mitigation banks or in-lieu fee projects with stream credits available within the state of Minnesota. Therefore, in order to compensate for the 5,208.2 FF of stream loss within Big and Little Thirtynine Creeks, the Applicant is proposing to conduct permittee-responsible mitigation by restoring six tributaries located near the Project site and Silver Bay, Minnesota. Four of the six sites are wholly owned by the Applicant and the fifth site is majority owned by the Applicant. The sixth site (White Rock Creek) has a combination of City of Silver Bay, Lake County, and private ownership. The functional feet of lift to compensate for the unavoidable loss of 5,208.2 FF of tributary was calculated using the MNSQT. The Existing Condition Scores were calculated for each site with field data collected for required parameters within the Hydrology, Hydraulics, and Geomorphology categories. The Applicant calculated Proposed Condition Scores by entering estimated field values based on the proposed restoration design, calculations, and drawings. The change in FF between the Existing Condition Scores and Proposed Condition Scores was calculated in the MNSQT and the overall restoration proposal yielded a total of 4,845 FF of stream credits. In order to generate the proposed 4,845 FF the Applicant’s stream restoration will be restoring approximately 21,522 linear feet of streams.

While there is still a deficit of 363.2 FF of stream credits (Impacting 5,208.2 FF, restoring 4,845 FF) necessary to offset the lost functional feet, there are several substantive benefits beyond the proposed stream restoration work that will offset this deficit. Many of the alterations within the restoration reaches have been designed to increase or improve stream function downstream of the physical restoration work. These alterations benefit the overall watershed but are outside the scope of scoring within the MNSQT. Examples include reducing sediment load in downstream reaches by stabilizing streambanks and floodplain benches in restored reaches, enhancing riparian wetlands by increasing floodplain connectivity, and providing connectivity for amphibians, fish, and other aquatic species by culvert repositioning, berm removal, and increasing base flows.

Therefore, the Corps has determined that the 4,854 functional feet of stream credits determined by the MNSQT, as well as the additional non-MNSQT calculated lift, will adequately offset the unavoidable loss of 5,208.2 functional feet of stream.

The following is a summary of the existing conditions and proposed restoration work for each of the 6 sites:

- 1) The proposed restoration for Little Thirtynine Diversion site was calculated to result in 1449 FF of stream credits. This 5700' long diversion is an excavated ditch designed to efficiently move water away from the Milepost 7 tailings basin. The diversion lacks sinuosity, large woody debris, bedform diversity and habitat diversity, but the riparian vegetation is mostly native and functioning. The restoration design will add a bankfull bench, add large woody debris, include planting to create native riparian forest community, and increase bedform diversity through the addition of gravel riffles and deep pools with wood and rock habitat features.
- 2) The proposed restoration for the Big Thirtynine Diversion site was calculated to result in 582 FF of stream credits. This 1700' long excavated channel directed flow from the remnant channel Southwest to the Beaver River as part of Reserve Mining Company's MP7 tailings basin construction in the 1970s. The excavated channel includes remnants of a weir that was used to temporarily divert flow back into the basin via a water supply culvert. The diversion lacks sinuosity, a connection to its floodplain, large woody debris, bedform diversity, and habitat diversity. The riparian vegetation is mostly reed canary grass with stretch of overhanging shrubs. The restoration design will create an accessible floodplain by excavating material adjacent to the existing channel, add large woody debris, enhance floodplain and riparian forest communities, and create meandered pattern, gravel riffles, and deep pools with the wood and rock habitat features.
- 3) The proposed restoration for the East Branch Beaver River and Culvert Replacement was calculated to result in 344 FF of stream credits. This reach starts at a culvert installed on a MP7 Basin access road and goes downstream ~3000' to a set of box culverts installed under Lake County Highway 4. The reach was identified in the Lake Superior South WRAPS Report as a Targeted Restoration Area due to erosion and lateral migration. The increased erosion may be attributed to a poorly placed (perched) culvert and increased watershed area due to the diversion of the Big/Little 39 Creek remnants to the East Branch Beaver River as part of Reserve Mining Company's MP7 tailings basin construction in the 1970s. The restoration design will reposition a set of perched culverts, make the floodplain accessible, move channel away from eroding banks, add large woody debris, and improve bedform diversity by creating meandered pattern, gravel riffles, and deep pools with wood and rock habitat features.
- 4) The proposed restoration for the East Branch Tributaries was calculated to be 276 FF (B) and 914 FF (F), resulting in 1190 FF of stream credits. The East Branch Tributaries starts at the base of the proposed MP7 Dam 2 and goes east towards the East Branch Beaver River. This area was identified in the Lake Superior South WRAPS Report as a Targeted Restoration Area. It was targeted due to historical alternations and changes related to added watershed area to the East Branch Beaver River. The tributaries are split into two reaches but will be one continuous 4855' long site. The upper portion of the site is ditched and currently receives the Big/Little 39 Remnant Creek flows, which is then directed to an unaltered portion of the stream. The 1200' long upper portion is called the ditched channel (B channel), while the 3655' long lower altered portion is referred to as the East Branch Tributary-F channel. The ditched channel has less flow and has created a small floodplain within the ditch. It also has poor riparian vegetative diversity/cover. The F-channel has poor connection to its floodplain. The restoration design for the F-channel will include adding bedform diversity, large woody debris, native tree and shrub plantings, and a floodplain that

is accessible in the anticipated flow conditions. The restoration design for the ditched or B channel includes a similar plan to create floodplain inside the channel, while also adding bedform diversity, large woody debris, and native tree and shrub plantings.

- 5) The proposed restoration for the Berm Removal site was calculated to be 332 FF of stream credits. The Berm Removal site extends from a pond created by a diversion constructed in approximately 1987 downstream approximately 2.766' to where it enters the East Branch Tributary Ditch Channel referred to in section 4.2.4. The berm was used to divert water to the East Branch Beaver River approximately 1.5 river miles upstream of where it would have naturally entered the same stream. The origin of this diversion is not evident from available records but is not required for Northshore operations under the current basin progression design. This area was identified in the Lake Superior South WRAPS Report as a Targeted Restoration Area due to historical alterations and changes related to added watershed area to the Est Branch Beaver River. The adjacent plant community is native and mature, but the riparian vegetation parameter field values have not yet been collected. The applicant plans to collect this information for the Existing Condition Score, prior to construction. The restoration design includes the removal of the berm and reestablishment of the full watershed area, which will increase flow volume to the existing channel. The added volume will reconnect flow to the floodplain and address the low hydraulic existing condition score of 0.50.
- 6) The proposed restoration for the White Rock Creek Site was calculated to be 948 FF of stream credits. The White Rock Creek Site is within the City of Silver Bay and is the only restoration site that is not predominately on Northshore property. The reach extends 3501' from the intersection of Penn and Edison Blvd to an area south of the Rukavina Arena (Silver Bay Hockey Arena). The valley and stream have been altered for city development, and there are several concentrated flow points from parking lots, stream drainage and ditching. Stream crossings within the reach are noted to have scour and/or bank erosion in the Lake Superior South WRAPS report. The reach has a lack of pools and large woody debris and has a high rate of erosion. The flows are typically low but can be very high after precipitation events due to the amount of impervious surface and concentrated flow points. The restoration design will create a floodplain within the confines of the narrowed valley, improve bedform diversity, add large woody debris, and include native tree and shrubs planting to reestablish a forest community. An accessible floodplain will help maintain baseflow and reduce peak flows.

All sites will be monitored and scored for each metric within the MNSQT for a minimum of 5 years. Performance standards are based on a progression towards the Proposed Condition Score in the MNSQT, but invasive species will also be monitored. The Applicant has not collected baseline conditions of the presence and density of invasive species but will conduct baseline monitoring prior to construction activities. The presence and density will also be monitored for a minimum of 5 years and at no time will the presence or density of invasive increase. Should an increase occur, a corrective action will be completed and discussed in that year's annual monitoring report. Metrics within the Riparian Vegetation parameter may take longer than 5 years to achieve the Proposed Condition Score. If that is the case, the Applicant will be required to propose additional monitoring but may reduce monitoring frequency beyond the 5 years (potentially every 3 years). Based on the applicant's proposed adaptive management plan, if metrics within Hydrology, Hydraulics, or Geomorphology (except Riparian Vegetation) deviate by more than 10% of the Proposed Condition Score for each category, corrective action will be described in the annual report following the deviation.

The Applicant's stream mitigation plan and subsequent updates (Appendix C), once implemented, will satisfy the compensatory mitigation requirements for the stream impacts associated with the Project.

The Corps is aware that several other local and state permits will be needed for each of the six stream restoration sites. The Corps will be requiring the Applicant to communicate any changes in its stream mitigation plan that may result from obtaining other regulatory agency approvals.

## **9.0 CONSIDERATION OF CUMULATIVE AND SECONDARY IMPACTS**

(40 CFR 230.11(g) and 40 CFR 1508.7, RGL 84-9) Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor direct and indirect but collectively significant actions taking place over a period of time. A cumulative effects assessment should consider how the direct and indirect environmental effects caused by the proposed activity requiring DA authorization (i.e., the incremental impact of the action) contribute to cumulative effects, and whether that incremental contribution is significant or not.

### **9.1 IDENTIFY/DESCRIBE THE DIRECT AND INDIRECT EFFECTS CAUSED BY THE PROPOSED ACTIVITY**

The purpose of this analysis is to consider the aquatic and forest resources available in the past compared to those present currently, and the effects of reasonably foreseeable future actions. The results of this analysis will provide a context for assessing the cumulative effects on wetland, lake and deepwater habitat, stream, hydrology and forest resources.

Information on the direct and indirect wetland, stream, and deepwater habitat impacts associated with the Project can be found in Section 6.9 of this document.

The construction of the outer limits of the tailings basin and the railroad embankment will result in the loss of 235 acres of forest. There will be an additional 613 acres of forest that will be inundated by the tailings storage over many years resulting in a cumulative loss of 848 acres of forest. Of the 848 acres of forest, 120.46 acres are wetland forested community and the remaining 727.54 acres are upland forest community.

With the Project, there will be additional direct watershed impacts. See Section 6.3.4 for more details on the direct and indirect effects to hydrology and watershed impacts. Approximately 2.13 square miles of drainage area that was previously diverted to the East Branch Beaver River at the onset of the tailings basin construction in the late-1970s (Murphy's Pond Diversion Ditch and the 2005 Diversion Ditch) will become part of the tailings basin subwatershed (Subwatershed 14), where its flow will ultimately be routed by way of the WTP to the Beaver River. Rainfall and runoff within the 7.13 square mile tailings basin Subwatershed 14 will be utilized in the Applicant's operations or will be discharged through the WTP, as is currently the case. The watershed area draining to the East Branch Beaver River will be reduced to 48.4 square miles, which is a 0.2 percent decrease from historic conditions and a 4.1 percent decrease from existing conditions. The Big and Little Thirtynine Creek diversion channel will not be altered under proposed conditions.

## **9.2 THE GEOGRAPHIC SCOPE FOR THE CUMULATIVE EFFECTS ASSESSMENT**

The Corps worked with the Applicant during the pre-application phase to identify the appropriate scale for them to consider the impacts of the Project and communicated to the Applicant that they should evaluate impacts within the Hydrologic Unit Code (HUC) 10. The rationale for that decision is given below.

A detailed Memorandum for Record was completed on June 13, 2017, identifying the scope of the watershed assessment size for NEPA purposes. The Corps is also using that same geographic size for the assessment of cumulative impacts.

The project site is located in NE Minnesota in Lake County west of the shores of Lake Superior. Watersheds range in size from small Hydrologic Unit Code (HUC) 12s (thousands of acres) to large HUC 4s (millions of acres). The Corps needs to ensure the selected watershed size is large enough to document the probable impacts in a reasonably sized watershed but not so large that the analysis becomes meaningless (i.e., if the watershed is too small, a single project could be said to have significant impacts, whereas if the watershed is too large, even large projects could be said to have minor impacts).

In this case the project will result in the final tailings basin progressing into approximately 1,200 acres of land not currently serving as a tailings basin. The original 1977 Federal EIS was reviewed to understand what watershed scale was evaluated at that time.

The Corps reviewed the HUC scales from HUC 8, HUC 10, and HUC 12. The Corps found that the project crosses 3 HUC 12s (040101020102, 040101020103, and 040101020104). These HUCs comprise three of the five HUC 12s within a HUC 10 (0401010201). The project is approximately 1,200 acres in size while the HUC 10 covers 96,322 acres. Therefore, the Project represents 1.56% of the HUC 10 watershed. The Corps determined that this HUC 10 scale is the appropriate size watershed to evaluate direct, indirect, and cumulative effects. This is also consistent with the watershed size used in the Federal EIS.

The proposed Project is located within portions of three subwatersheds including: East Branch Beaver River (30.2 square miles), Beaver River (11.1 square miles), and Thirtynine Creek (9.8 square miles), although less than 50 acres of the proposed Project lies within the Thirtynine Creek subwatershed.

The Corps required the Applicant to conduct a watershed assessment within the Beaver River Watershed (HUC 10 0401010201).

## **9.3 AFFECTED ENVIRONMENT**

The affected environment includes wetland, lake and deepwater habitat, stream, hydrology and forest resources. Appendix A of this document provides greater details on the affected environment regarding wetland, lake and deepwater habitat, stream, hydrology and forest resources and should be referenced for more details. Within Appendix A the applicant also provided a Cumulative Effects Analysis which provides past, present, and future cumulative impacts which the Corps has determined to adequately document the cumulative effects with the inclusion of data pulled directly from the Corps' national database ORM. The Corps is

including information on past and future projects within the HUC 10 watershed that have been authorized (past actions) or that are currently under review (reasonably foreseeable actions)

## **Past**

The Applicant has provided a review of resources present in the pre-settlement time period and compared that to what is present today within the watershed to depict what past impacts have occurred in the watershed.

Approximately 24,051 acres of pre-settlement wetlands existed in this watershed. There has been a historic loss of approximately 1,004 acres of wetlands associated with projects within the watershed. This represents a loss of 1.1% of the historic wetlands within the watershed. The historic impact to jurisdictional wetlands was identified using the five-year time period of CY 2015-2019 and data was pulled from the national database ORM. Data entry methods were standardized over this period and the Corps has determined they are the most reliable and suitable numbers to use for analysis. There were 20.30 acres of jurisdictional wetland loss and impacted during that time. There was also 2.54 acres of wetland mitigation that was required (Appendix J).

Approximately 186.6 miles of stream existed in this watershed. There has been a historic loss of approximately 4.4 miles of stream associated with all projects within the watershed area. This represents a loss of 2.4% of the historic pre-settlement streams from past activities. The historic impact to jurisdictional streams was identified using the five-year time period of CY 2015-2019 and data was pulled from the national database ORM. Data entry methods were standardized over this period and the Corps has determined they are the most reliable and suitable numbers to use for analysis. There was 2,720 linear feet of jurisdictional stream loss. There was no stream mitigation required for those authorized discharges.

The Corps has authorized previous activities associated with the Mile Post 7 site which have affected the watershed in the immediate vicinity of the Project. This section will detail those watershed impacts that resulted from Corps authorized projects. (1) Construction and operation of the original tailings basin required diverting the upper portions of Big and Little Thirtynine Creeks into the Beaver River; diverting a lower portion of the Thirtynine Creek subwatersheds to the East Branch Beaver River; and Thirtynine Creek no longer exists due to the permitted placement of the existing tailings basin. (2) One other watershed diversion that has since been abandoned and now lies within the existing basin footprint was put in place during construction of the tailings basin in the 1970s along the northwest side of the basin. This diversion ditch was relocated to its current location subsequent to the permit authorized by the USACE in 2005. The Murphy's Pond Diversion Ditch and subsequently, the 2005 Diversion Ditch resulted in approximately 2 square miles of the Thirtynine Creek subwatersheds to be routed to Subwatershed 7 of the East Branch Beaver River. The Murphy's Pond diversion added 2 square miles to the East Branch Beaver River watershed, which now has a total drainage area of 50.5 square miles. (3) The last action associated with the Mile Post 7 tailings basin is the Bear Lake Diversion project (Corps project 2007-00841-TWP). In 2009 the Corps issued a permit to the Applicant to discharge dredged and fill material into 4.33 acres of wetlands abutting an unnamed tributary of the West Branch of the Beaver River for the purpose of permanently diverting the outlet of Bear Lake. Prior to the permitted work, Bear Lake overflowed out of the northwest corner of the lake into a seepage recovery pond adjacent to Dam 5. Water that accumulated in the seepage recovery pond was pumped into the main tailings basin water pond. Water was released from the tailings pond to a tributary of the West Branch of the Beaver River via a permanent discharge. The Dam 5 seepage recovery pond needed to be modified as

the tailings dam continued to be constructed wider and higher. As a result, a new outlet was needed for Bear Lake that would divert the overflow away from the tailings dam. The new outlet directs Bear Lake overflow to the West Branch of the Beaver River.

Forest resources historically made up 95,518 acres of the watershed comprising 99.5% of it. Based on past activities there has been a reduction in 8,166 acres of forest resources as a result of past human disturbance resulting in 87,352 acres of forest currently present. That loss represents a decrease in forest resources by 8.7%.

## **Present**

Section 6 of this document provides more detail on the wetland, deepwater habitat, stream, and hydrology and forest resources that will be affected as a result of the Project.

As a result of the Project a total of 163.43 acres of wetland, 29.57 acres of deepwater habitat, 8,570 linear feet of tributary, and 848 acres of wetland and upland forest will be impacted directly and indirectly by the discharge of dredged and fill material.

Wetlands impacted by type include 33.20 acres of hardwood swamp, 32.33 acres of alder thicket, 21.56 acres of coniferous swamp, and 42.98 acres of shallow marsh wetland communities. Wetlands indirectly impacted through inundation and fragmentation include 33.37 acres of hard wood swamp wetland community. The Project will result in a 0.2% reduction in total wetlands within the watershed. When the Project impacts are added with past actions there have been a total reduction in 1.3% of historic wetlands within the watershed.

Deepwater impacts as a result of the Project are to a resource known locally as Murphy's Pond. This aquatic resource was created as a result of an impoundment of surface runoff against the existing railroad embankment which is fed in part by Little and Big 39 Creeks. Impacts include 29.57 acres. The tailings basin itself will create a large open body of water. When the Project is complete the watershed will see a net increase in 9.1% deepwater when you factor in the impacts to Murphy's Pond and the addition of the large tailings basin deepwater.

The stream impacts associated with the Project include the loss of 3,420 linear feet of Little 39 Creek and 5,150 linear feet of Big 39 Creek (total of 1.6 miles of impact). The direct effects include 2,455 linear feet of impact to Big 39 Creek and 2,588 linear feet of Little 39 Creek. The indirect effects from inundation include 832 linear feet of Little 39 Creek and 2,695 linear feet of Big 39 Creek. The project will result in a reduction of 0.9% of total stream miles within the watershed. This will also result in a cumulative loss of 3.2% when compared to pre-settlement conditions.

The construction of the outer limits of the tailings basin and the railroad embankment will result in the loss of 235 acres of forest. There will be an additional 613 acres of forest that will be inundated by the tailings storage over many years resulting in a cumulative loss of 848 acres of forest. This will leave a remaining 86,505 acres of forest representing 89.9% of the watershed. The project will result in a loss of approximately 1% of the forest resources in with watershed. That loss represents a cumulative loss with past actions of 9.4% since pre-settlement time.

## **Future**

This assessment included efforts to identify reasonably foreseeable future actions as described below. Relevant agencies were contacted by the Applicant to identify any reasonably



foreseeable future actions within the project area. Agency officials were asked to identify actual or potential development projects that may occur in the project area. Public officials from city, county, state and federal agencies were contacted by the Applicant and documented below. In addition, the Corps queried its national database (ORM) for any other pending projects in the watershed (0401010201). No projects in addition to the Applicant's Project were identified in the watershed.

The results of the reasonably foreseeable future actions show minimal aquatic resource impacts and minor forest impacts. There are approximately 20 acres of potential wetland impact and minimum additions of forest resources as a result of potential re-plantings as explained in the below anticipated actions.

1. City of Silver Bay
  - a. City Administrator – identified the following projects:
    - i. Sanitary Trunk Line Improvement Project – less than one acre of temporary wetland impact and some tree clearing anticipated.
    - ii. Multimodal Trailhead Center – minor temporary wetland impact and minimal tree clearing anticipated.
    - iii. Silver Bay Business Park – includes water, sewer, utilities, and roadway extension with up to 18 acres of wetland impact and some tree clearing anticipated.
    - iv. DNR forestry grant – planting of 200 trees after summer of 2019 anticipated.
    - v. Ditch maintenance project with minor temporary wetland impacts anticipated.
2. Lake County
  - a. Soil and Water Conservation District (SWCD) – identified the following projects:
    - i. Several restoration projects have been completed or will be in the future, with the East Branch, Beaver River Restoration Project nearing completion in the near future, which, according to the associated Environmental Assessment Worksheet, will have approximately 0.3 acres of wetland impact and a gain in 0.6 acres of forest.
    - ii. The District also mentioned that the Beaver River watershed is a high priority area in the Lake Superior North One Watershed One Plan, which has a reforestation goal of 20 acres of coniferous trees per year in the Lake Superior North watershed  
([https://www.co.lake.mn.us/document\\_center/SWCD\\_Doc\\_Center/One%20Watershed%20One%20Plan%20Lake%20Superior%20North%201.pdf](https://www.co.lake.mn.us/document_center/SWCD_Doc_Center/One%20Watershed%20One%20Plan%20Lake%20Superior%20North%201.pdf)).
3. Minnesota Board of Soil and Water Resources (BWSR)
  - a. Wetland Specialist for Duluth Office – indicated that there are a few projects in the project area and that most are near Lake Superior and mentioned some of the projects noted above that are occurring in Silver Bay.
    - i. Lakeshore Residential Development – a proposed 5-lot residential development within the project area along Lake Superior; indicated that wetland impacts are unlikely but tree clearing may occur.

## **9.4 DETERMINE ENVIRONMENTAL CONSEQUENCES**

Section 6 of this document, along with other sections that follow, provide detailed information on the effects of the wetland, deepwater habitat, stream, hydrology and forest resources effects.

## **9.5 DISCUSS ANY MITIGATION TO AVOID, MINIMIZE OR COMPENSATE FOR CUMULATIVE EFFECTS**

Compensatory mitigation will be required for the loss of wetland, stream, and deepwater habitat as a result of the Project. The mitigation will ensure that the cumulative effects are mitigated and the environmental consequences of the loss of those resources are offset. While the wetland mitigation is not located in the same HUC 10 watershed, it is located within the same larger Bank Service Area which is comprised of the six-digit HUC. The stream mitigation sites are located within the HUC 10 watershed. Other avoidance and minimization efforts are discussed in Section 6.8 of this document. Section 8 of this document provides greater detail on the specifics of the stream and wetland mitigation for the Project.

## **9.6 CONCLUSIONS REGARDING CUMULATIVE IMPACTS**

When considering the overall impacts that will result from the proposed activity, in relation to the overall impacts from past, present, and reasonably foreseeable future activities, the incremental contribution of the proposed activity to cumulative impacts in the area described in Section 6.9 and 9.2, are not considered to be significant.

Compensatory mitigation will be required to help offset the wetland and stream impacts and to eliminate or minimize the proposed activity's incremental contribution to cumulative effects within the geographic area described in Section 9.2. Mitigation required for the proposed activity is discussed in Section 8.0 of this document.

## **10.0 SPECIAL CONDITIONS**

In addition to other mitigative information provided in this document, in order to comply with the 404(b)(1) Guidelines, and to ensure the Project is not contrary to the public interest, the following special conditions will be carried on in the Department of the Army (DA) permit:

### **AUTHORIZED WORK**

1. The Permittee understands and agrees that the DA permit has been issued based upon the Permittee's intended purpose and need for coarse and fine tailings storage. This information includes the DA permit application and all information and analyses submitted by the Permittee to the St. Paul District after the DA permit application to include the April 2020 Watershed Assessment and June 2020 Stream Mitigation Plan, as amended (Stream Mitigation Plan). The Permittee shall conduct work in waters of the United States as described in application materials it submitted and as depicted on the attached figures labeled MVP-2015-02528-RMM Page 1 of 22 through Page 12 of 22 which are hereby incorporated as terms and conditions of this DA permit.
2. The Permittee shall require, as a material condition of its contracts and subcontracts, that all its contractors and their subcontractors at any tier comply with this permit. A copy of the DA permit shall be available at the construction site at all times and the Permittee shall ensure that all contractors and subcontractors are provided a copy of the DA permit and are familiar with the activities that have been authorized and familiar with all parts of the Project area containing waters of the United States that shall be avoided. The

Permittee shall be responsible for ensuring that its contractors and subcontractors at any tier comply with this permit.

3. Should any other agency require and/or approve changes to the work authorized or obligated by this permit, the Permittee is advised a modification to this permit may be required prior to initiation of those changes. It is the Permittee's responsibility to request a modification of this permit. The St. Paul District reserves the right to fully evaluate, amend, and approve or deny the request for modification of this permit.
4. The Permittee shall submit its Five-Year Operations Plan (plan submitted to the Minnesota Department of Natural Resources and Pollution Control Agency) to the Corps starting in 2024 for the five-year operating plan covering 2024-2028 and submitted every 5 years after that through the life of the project. If there are substantive operational changes or changes that may affect the locations of discharges of dredged or fill material in aquatic resources, the Permittee shall coordinate those changes with the Corps. If modifications to the DA permit are necessary, the Permittee shall seek a modification to this permit at least 60 days prior to commencing work.
5. The Permittee shall schedule update meetings with the St. Paul District Regulatory office no later than two years after issuance of the DA permit, and at least every five years thereafter, to review the DA permit along with any proposed changes or modifications to the tailings basin including proposed changes to the dam or pond elevation, or any ancillary features.

*RATIONALE: These special conditions are required to ensure the Permittee understands the Corps' permit decision was based on the information it supplied to the Corps to evaluate, and to ensure compliance with the permit and minimize impacts to adjacent wetlands and other waters as a result of the permitted activities.*

#### **AVOIDANCE AND MINIMIZATION**

6. The Permittee shall clearly identify the permitted limits of disturbance at the Project site with highly visible markers so that boundaries are clearly visible to all equipment operators before any discharge into Waters of the United States on-site. The Permittee shall properly maintain such identification until construction activities are complete and the soils have been stabilized. The Permittee is prohibited from conducting any unauthorized Corps-regulated activity outside of the permitted limits of disturbance (as described in the permit).
7. The Permittee shall not discharge any dredged or fill material, place or stockpile any overburden, waste rock, equipment or other materials, or engage in other ground disturbing activities in waters of the United States that have not been affirmatively authorized under this permit or any other permit for those activities to take place.

*RATIONALE: These conditions are required to minimize impacts to adjacent wetlands and other waters as a result of the permitted activities.*

#### **401 WATER QUALITY CERTIFICATION**

8. All terms and conditions of the enclosed 401 Water Quality Certification issued by the Minnesota Pollution Control Agency are hereby incorporated as terms and conditions of this DA permit (MVP-2015-02528-RMM Page 14 of 22 through Page 22 of 22).

*RATIONALE: This condition is required to ensure the permitted activities in WOTUS comply with Section 401 of the CWA.*

#### **MINIMIZING INDIRECT EFFECTS**

9. Prior to the initiation of any work authorized by this DA permit, the Permittee shall install erosion control measures along the perimeter of all work areas to prevent the displacement of fill material outside the authorized work areas into Waters of the United States. Immediately after completion of the final grading of the land surface, all slopes, land surfaces, and filled areas shall be appropriately stabilized to prevent erosion. The erosion control measures shall remain in place and be maintained until all authorized work is completed and the work areas are stabilized.

*RATIONALE: This condition is required to ensure indirect effects associated with regulated activities in wetlands and streams are minimized.*

#### **INDIRECT EFFECTS ON STREAMS AND WETLANDS**

10. If the St. Paul District makes a determination that additional streams or wetlands outside the permitted boundaries have been adversely impacted, the Permittee shall provide a plan within 60 days for monitoring, implementing adaptive management and/or providing compensatory mitigation for review and approval by the St. Paul District. Upon approval of the proposed plan, the Permittee shall implement the measures described within the approved plan within 60 days of notification of approval from the St. Paul District.
11. If compensatory mitigation to offset indirect effects is deemed necessary by the St. Paul District, the Permittee shall be responsible for submitting a proposed compensation plan to offset the impacted wetlands. This plan shall be submitted to the St. Paul District for review and approval within 60 days of notification that compensation is required. The compensation plan shall provide rationale for the location, type and amount of proposed compensation and shall consider the type and quality of impacted resource, the amount of impacted resource, type of impact (full or partial loss of functions), duration of impacts (short or long term, permanent or temporary) and importance of the affected resource in the watershed. If the St. Paul District notifies the Permittee that the proposed compensation is insufficient to offset documented impacts, the Permittee shall submit a supplemental compensatory mitigation plan to the St. Paul District for review and approval within 60 days of such notification. Once the St. Paul District reviews and approves the mitigation plan, the Permittee shall implement the approved plan within 60 days of notification of approval from the St. Paul District.

*RATIONALE: These conditions are required to ensure adequate protections to unforeseen indirect effects on streams and wetlands.*

## COMPENSATORY MITIGATION FOR AUTHORIZED IMPACTS

12. As compensatory mitigation for the authorized activities, the Permittee shall purchase a minimum of 193 wetland credits comprised of Type 8 open/coniferous bog wetland community from the EIP Lake Superior Wetland Mitigation Bank (Account 1609) to offset authorized impacts. Prior to undertaking the activities authorized by this permit, the Permittee shall ensure that the St. Paul District receives written notification that the Minnesota Board of Water and Soil Resources has initiated the withdrawal transaction. All documentation shall include the file number MVP-2015-02528-RMM, and be submitted to:

U.S. Army Corps of Engineers  
ATTN: Regulatory  
180 Fifth Street East, Suite 700  
St. Paul, MN 55101

13. Prior to initiation of construction activities within Big and Little Thirtynine Creeks, the Permittee shall implement the Stream Mitigation Plan. The Permittee must implement the mitigation in accordance with the schedule identified in the Mitigation Plan and any permit conditions associated with each individual stream mitigation site.
14. Prior to initiation of construction activities at the mitigation sites, the Permittee shall obtain all necessary local and state permits for its six stream mitigation sites: (1) Little Thirtynine Diversion Ditch Site; (2) Big Thirtynine Diversion Site; (3) East Branch Beaver River & Culvert Replacement; (4) East Branch Tributaries; (5) Berm Removal; and (6) White Rock Creek Site. If subsequent changes to the Permittee's Stream Mitigation Plan are a result of other agency permits, those changes must be submitted to the St. Paul District within 60 days and be approved in writing prior to implementing the mitigation projects.
15. Prior to initiation of construction activities within Big and Little Thirtynine Creeks, the Permittee shall ensure all compensatory mitigation parcels are provided long-term protection through a "Declaration of Restrictive Covenant" or other equally protective site protection instrument acceptable to the St. Paul District. The site protection instruments must be approved by the St. Paul District prior to the recording. To obtain this approval, the Permittee shall submit a draft of the restrictive covenant, including all supporting documentation necessary for the review of the restrictive covenant, e.g., title reports, title insurance, any liens or other encumbrances/interests, surveys and legal descriptions, etc. The restrictive covenant shall be in substantial compliance with 33 CFR 332.7(a). After St. Paul District review and approval, the Permittee shall take actions required to record the restrictive covenant with the Registrar of Deeds or other appropriate official charged with the responsibility for maintaining records of title to or interest in real property. The Permittee shall provide a copy of the recorded document to the St. Paul District.
16. Financial Assurances. Prior to initiation of construction activities within Big and Little Thirtynine Creeks, the Permittee shall ensure financial assurances are in place. The Permittee shall:
  - (a) Submit for St. Paul District review and approval detailed cost estimates that include but are not limited to the cost of providing replacement mitigation, including costs for

land acquisition, planning and engineering, legal fees, mobilization, construction, monitoring, and contingencies. These estimates shall be to a sufficient level of detail and take into account the replacement mitigation being conducted by a competent third-party.

(b) Submit for St. Paul District review and approval a draft of the proposed financial assurance. The assurances shall be compliant with 33 CFR 332.3(n) and must be in a form that ensures that the St. Paul District will receive notification at least 120 days in advance of any termination or revocation. For third-party assurance providers, this may take the form of a contractual requirement for the assurance provider to notify the St. Paul District at least 120 days before the assurance is revoked or terminated.

(c) Provide a plan for phasing out required financial assurances once the compensatory mitigation project has been determined by the district engineer to be successful in accordance with its performance standards. The Permittee shall submit for St. Paul District review and approval draft performance standards that shall clearly identify the conditions under which the financial assurances are to be released.

17. The Permittee shall collect and document baseline conditions on the presence and density of invasive species at each of the six stream mitigation sites and submit the findings in the first monitoring report submission, as identified in the Stream Plan. The documentation of the baseline conditions shall occur prior to initiating construction at each stream restoration site.

*RATIONALE: These conditions are required to ensure appropriate compensation to offset losses of wetlands and streams caused by the permitted activities. Due to the amount of proposed stream restoration the Corps believes it is necessary for the Applicant to supply financial assurances in the event one or more of the sites fails to meet performance standards.*

## **10.1 Duration of Permit**

Corps regulations (33 CFR 325.6) specifies that DA permits may authorize both the work and resulting use. The duration of a permit should be established by the Corps and the duration will provide reasonable times based on the scope and nature of the work involved. The Project consists of large and lengthy features (railroad/dams) that take years to construct in a topographically difficult area to construct (limited accessibility and the slope/gradient make getting large equipment there difficult and the steep terrain means they move slower). The Permittee relies on material from its tailings operation to build the railroad and dams. Relying on its mining operations means that during economic downturns, when mining ceases, they are unable to generate enough material to continue building the structures. There was a recent shutdown during the COVID-19 pandemic that limited production for several months.

For this project, the Applicant expects to complete the principle construction related activities in WOTUS within approximately 7 years of starting construction. The principle construction activities for the Project will cut off existing WOTUS within the tailings basin. While additional WOTUS impacts will occur within the basin over time as the tailings basin incrementally fills, the connection to other WOTUS will have been severed after the principle construction activities occurs (construction of railroad/dam).

The Corps has considered the Applicants timeline and factors that could affect the Applicant's construction timeline and determined that the duration of the permit will be for 10 years. This will allow the Permittee adequate time to construct its principle related activities and includes flexibility in the case of its mining operation shutting down for some unforeseen reason. Should the Permittee need additional time past the 10 years to construct the Project they would need to submit a permit extension request no later than 30 days from the expiration of its permit.

## **11.0 COMPLIANCE WITH ENVIRONMENTAL LAWS AND POLICIES**

### **11.1 SECTION 401 OF THE CLEAN WATER ACT (33 USC SECTION 1342) WATER QUALITY CERTIFICATION (33 CFR 320.4(D))**

The Project is in compliance with Section 401 of the CWA. The Water Quality Certification was issued by the MPCA on June 29, 2021, with conditions and is included in Appendix G of this document. Pursuant to 33 U.S.C. 1341(d). Compliance with the Section 401 Water Quality Certification is a special condition of the DA permit.

### **11.2 ENDANGERED SPECIES ACT OF 1973 (16 USC 1531)**

The proposed Project is in compliance with Section 7 of the ESA. The consultation conducted for the Project is described in Section 6.4.1.

### **11.3 SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT (16 USC 470 et seq.)**

The identification of historic properties and assessment of effects is described in this section. A Phase I archaeological survey, a tribal cultural resource survey (TCRS), and an architectural history survey were conducted. The Corps' eligibility determinations and effect findings were coordinated. The Corps determined historic properties are present to include above-ground structural properties: Reserve Milepost 7 Tailings Bain, LA-SVB-012, and the Reserve Mainline Railroad, Silver Bay to Peter Mitchell Mine, XX-RRD-047. No archaeological, cultural historic properties were identified. The Corps' effect finding of no historic properties adversely affected by the proposed undertaking was coordinated with the Minnesota State Historic Preservation Office (SHPO) and consulting Tribes. Consulting Tribes are the Fond du Lac Band of Lake Superior Chippewa, the Bois Forte Band of Chippewa, the Grand Portage Band of Lake Superior Chippewa, and the Bad River Band of Lake Superior Chippewa.

In August 2016, Duluth Archaeology Center (DAC) conducted a Phase I archaeological survey of the proposed progression area northwest of the existing basin (*Phase I Archaeological Survey for the Silver Bay Facility, Northshore Mining, Lake County, Minnesota, September 2016.pdf*). There were no previously recorded archaeological sites or historic properties within the proposed APE. DAC's 2016 Phase I pedestrian survey covered the entire Project area and did not encounter any cultural materials. No subsurface testing was conducted due to the extensive ground disturbance associated with past mining activities, rugged terrain, and wet, saturated terrain. No historic properties were identified.

The Corps' July 29, 2019 letter to the Applicant required that a qualified historian inventory and evaluate potential architectural and mining features within the APE. The architectural history

survey was conducted on November 11, 2019. No previous architectural surveys had been done within the APE. In February 2020, the Corps received the report *Reconnaissance and Intensive Architectural History Survey for the Northshore Mining Tailings Basin Progression and Railroad Relocation Project, Silver Bay, Lake County, Minnesota, January 2020.pdf*. An appropriate APE was determined via a viewshed analysis. Several above-ground resources were inventoried, three resources were evaluated, and two eligibility recommendations were provided. Three properties were identified: LA-SVB-012 Reserve Mining Company Milepost 7 Tailings Basin; LA-XXX-003 Minnesota Power Transmission Line; and XX-RRD-047 Reserve Mining Company Mainline Railroad. Based on the reconnaissance-level investigation, two properties were recommended potentially eligible for listing in the National Register of Historic Places (NRHP) and were evaluated, LA-SVB-012 and XX-RRD-047; the third property, LA-XXX-003, was recommended not eligible for listing and was not further evaluated.

Based on the architectural investigations, the Corps determined that the Reserve Milepost 7 Tailings Basin (LA-SVB-012) and the Reserve Mainline Railroad, Silver Bay to Peter Mitchell Mine (XX-RRD-047) are eligible for listing in the NRHP. The Corps determined that the Minnesota Power Transmission Line (LA-XXX-003) is not eligible for listing. The Corps found that the proposed basin progression (undertaking) has potential to cause effects to the Milepost 7 Tailings Basin; however, the Corps found those effects would not be adverse. The Corps made this finding based on the nature of the basin, expanding as it continually fills and the changes in appearance (dams, splitter dikes, pipelines, buildings) over the last forty years, being in constant change, within a functioning, industrial setting. An expansion to the northwest would not adversely affect the integrity or historic significance of the existing basin or its contributing properties. The northwest progression would not alter or change the use, function, character, or role of the tailings basin. The Railroad Spur (LA-BBT-031), functioning as the western embankment of the existing basin and recommended a contributing resource, has changed over the years as the basin has progressed and reached its current state in 2010. The removal and relocation of the railroad spur is part of the evolution of a functioning tailings basin and a function of the railroad spur, as a dam. The proposed northwest progression would not cause any effects to the Reserve Mainline Railroad; the railroad is over a mile away from the nearest point of the progression, indicating no potential for direct impacts and precluding any potential visible change in setting in consideration of indirect effects. To summarize, the Corps determined that historic properties are present but would not be adversely affected by the proposed undertaking. The Corps coordinated their eligibility determinations and effect finding with the MN SHPO and consulting Tribes on May 5, 2020. Within this coordination, the Corps noted that the tribal investigations, composed of tribal survey and elder interviews, to further identify potential historic and cultural properties, were slated to begin in the spring (2020) and that the Corps would coordinate that with the SHPO and consulting Tribes once completed by the Fond du Lac Band.

On July 2, 2020, the Corps received consensus and concurrence from the MN SHPO on the eligibility determinations and effect finding, that the undertaking would not adversely affect historic properties (Reserve Milepost 7 Tailings Basin, LA-SVB-012, and the Reserve Mainline Railroad, Silver Bay to Peter Mitchell Mine, XX-RRD-047). The MN SHPO requested clarifications, confirmations, additional information, and correction of typos within the architectural report. On September 29, 2020, the Corps provided all the requested information and clarifications, including the revised architectural report and inventory forms, and noted that the tribal survey and elder interviews were currently underway and would be coordinated once submitted to the Corps. This correspondence concluded the Corps' coordination of above-ground resources.



The Corps' July 29, 2019 letter to the NSM Company also required that a tribal cultural survey investigation be conducted to further identify potential historic and cultural properties. The Corps advised the Applicant to contact the Fond du Lac Band tribal historic preservation office (THPO). The Fond du Lac THPO agreed to conduct the investigation, including an elder interview component. The Fond du Lac Band of Lake Superior Chippewa conducted tribal, cultural survey with archaeological support, summer 2020. In November 2020, the Corps received the report *Tribal Cultural Resource Survey of the Northshore Mining Tailings Basin Expansion, Fond du Lac Band of Lake Superior Chippewa Tribal Historic Preservation Office, November 2020.pdf*. Objectives of the tribal cultural resource survey (TCRS) were "to identify and document Traditional Cultural Properties (TCPs), cultural corridors, seasonal activity sites, sites of cultural and religious significance to Tribes, and other Tribal cultural resources potentially eligible or eligible for listing on the National Register of Historic Places (NRHP) within the Project Area of Potential Effect (APE)" (p. 17). A total of five tribal Elders from two tribal communities were interviewed in October 2020. The TCRS did not identify any historic properties, archaeological resources, or evidence of historic trails within the Project area. The Corps determined no (archaeological, tribal) historic properties are present; the effect finding is that no archaeological, cultural historic properties are present or would be affected by the proposed undertaking.

On December 3, 2020, the Corps coordinated the TCRS report and its final eligibility determinations and effect finding for the proposed undertaking with the MN SHPO and consulting Tribes. Based on the findings from the tribal investigations and the Phase I archaeological investigation, no archaeological, cultural historic properties were identified within the project area. The Corps determined no archaeological, cultural historic properties are present; the effect finding is that no historic properties are present or would be affected by the undertaking. The MN SHPO responded on January 15, 2021 and concurred with the Corps' determination and effect finding. The Corps received no comment from consulting Tribes on the eligibility determinations and effect findings for the proposed undertaking.

To summarize all determinations and findings of both above-ground and archaeological/cultural properties, the Corps determined historic properties are present (above-ground properties: Reserve Milepost 7 Tailings Basin, LA-SVB-012, and the Reserve Mainline Railroad, Silver Bay to Peter Mitchell Mine, XX-RRD-047). These properties would not be adversely affected by the proposed undertaking. The Corps' responsibilities and its compliance under Section 106 of the NHPA and the implementing regulations for the Protection of Historic Properties at 36 CFR Part 800, as amended, are complete.

The proposed action is in compliance with Section 106 of the NHPA.

### **11.3.1 TRIBAL TRUST RESPONSIBILITIES**

Was government-to-government consultation conducted with Federally recognized Tribes? Yes.

Upon receipt of a draft permit application, formal consultation invitation letters, dated July 25, 2017, were sent to the following Tribes, inviting them to consult on a government-to-government basis regarding the Project.

Bad River Band of Lake Superior Chippewa  
Bois Forte Band of Chippewa

Fond du Lac Band of Lake Superior Chippewa  
Grand Portage Band of Lake Superior Chippewa  
Keweenaw Bay Indian Community  
Lac Courte Oreilles Band of Lake Superior Chippewa  
Lac du Flambeau Band of Lake Superior Chippewa  
Lac Vieux Desert Band of Lake Superior Chippewa  
Red Lake Nation

Of the above tribes, the following responded: Bad River, Bois Forte, and Red Lake.

- Bad River (9/26/2017) had several questions about the project, including concerns about wild rice waters, APE being in treaty reserved areas, updated standards to design and construction of the basin, and suggested planning a face-to-face consultation.
- Bois Forte (8/27/2017) responded noting presence of historic trails within or adjacent to the project area and wished to consult. In response to the public notice, responded (10/24/2018) with concerns about the Beaver Bay to Lake Vermillion Trail occurring within the APE and requesting consultation on the project.
- Red Lake (9/20/2017) responded to initial consultation with concerns about maple sugar camps and a spring in the vicinity of the project and requested not to be a lead on the project but to be kept in the loop, to assist the more local Bands as needed.

On August 14, 2018, the Corps sent an email request to Grand Portage, Bois Forte, and Fond du Lac asking if they were interested in a site visit during the coming fall and provided the 2016 Phase I archaeological report for further background and information. The Corps did not receive any replies to that email, and a follow-up phone call to the recipients occurred on October 25, 2018.

The first public notice was posted October 17, 2018. The following Tribes and tribal agencies provided comments and expressed interest in further consultation: Bois Forte Band, the Great Lakes Indian Fish & Wildlife Commission (GLIFWC), and Fond du Lac. On December 10, 2018, the Fond du Lac Band responded to the public notice with multiple concerns including mitigation for all aquatic resource types and the Beaver Bay to Lake Vermillion Trail and requested consultation on the project. Tribal organizations that provided comment in response to the public notice included the 1854 Treaty Authority and GLIFWC.

On July 25, 2019, the Corps sent a letter to those Tribes that expressed interest in consulting on the proposed undertaking. Recipients included the THPOs (and natural resources staff) of the Bad River Band, Bois Forte, Fond du Lac, Grand Portage, and Red Lake. The Corps' letter provided additional information, project figures and the Phase I archaeological report. The letter proposed an upcoming consultation meeting (via conference call) in August to discuss the identification of historic and cultural properties, the project APE, and the level of effort with a proposed discussion of tribal survey and oral-history interviews. Follow-up efforts were conducted. Representatives from Bad River, Bois Forte, Fond du Lac, and Grand Portage committed to participating in the upcoming meeting and filled out the doodle poll of their availability or provided their availability for an August meeting. The Red Lake THPO stated he would not attend the call and would defer to Fond du Lac.

On August 29, 2019, the Corps conducted a conference call with the following consulting Tribes participating: Bad River Band THPO, Fond du Lac Band THPO and Environmental Program

Manager, and Bois Forte Band Acting THPO and Commissioner of Natural Resources. This was the Corps' initial engagement with Tribes to discuss the project, to provide project information history and the proposed undertaking, opportunity to discuss the Phase I investigation and potential for other investigations appropriate to the undertaking, discuss the APE, and to identify potential tribal concerns. The Corps discussed the potential for an on-site visit to the tailings basin. The Bad River Band requested that a separate in-person consultation meeting be held, which is detailed below.

On October 23, 2019, the Corps conducted an in-person site visit to the project location. Fond du Lac and Bois Forte representatives attended. Corps attendees included the Regulatory Tribal Liaison, the Project Manager, and two Branch Chiefs. Applicant representatives provided an overview of the project site, history, and proposed expansion of the basin. The site was accessed via multi-passenger van with multiple stops to see the area. In consultation with the tribal representatives, the Corps agreed that a TCRS should be performed, with appropriate Elder interviews conducted as well, to inform the identification of potential historic and cultural properties. Fond du Lac agreed to take on the effort of creating a workplan and budget to present to the Company, while coordinating with other consulting Tribes.

On January 10, 2020, an in-person meeting was held in the Duluth Regulatory office with representatives of the Bad River and Bois Forte Bands. Representatives of Fond du Lac and Grand Portage attended the meeting telephonically. Grand Portage discussed dry stack tailings and the need to evaluate this as an alternative that could greatly reduce both immediate impacts and long-term impacts to water due to seepage. Fond du Lac shared that the opportunity to participate in tribal survey and interviews is available to all consulting Tribes. The tribal survey was scheduled to begin spring 2020, following snow melt. The THPOs further discussed details for including different Bands' members within the survey effort and interviews. The Bad River Band expressed concerns about safety of the dam and potential effects of the project to Lake Superior, as well as concerns about air and water quality. The Corps referred the Band to the DNR Wetland Conservation Act contact, as the MN DNR issues the dam safety permit and would have detailed information regarding those questions.

The Fond du Lac Band contracted with the Applicant to conduct the tribal survey and Elder interviews. COVID-19 impacted the project schedule. Fond du Lac continued to engage and coordinate with the other consulting THPOs to encourage their Band members' participation in the field survey and potential interviewees for the oral history interview component. Tribal survey was conducted in September 2020; five Elders from the Fond du Lac and Bois Forte Bands were interviewed in October 2020. The tribal investigations identified no historic or cultural properties within the project area. Several environmental recommendations were provided within the report. Those comments were also submitted to the public notice. A summary of these comments and Corps responses are below.

The TCRS stated the Corps should develop an Environmental Impact Statement to comprehensively evaluate environmental impacts of this major expansion of the Milepost 7 Tailings Basin. The TCRS also stated existing water quality impairments already demonstrate adverse impacts, and the risk of catastrophic dam failure has never been addressed.

Corps response: In addition to the Federal EIS which was prepared in 1977, the Corps has completed this EA to identify the scope and scale of intensity of impacts associated with the Project as proposed in the Section 404 permit application. For reasons explained previously, the Corps has determined that this EA is sufficient in evaluating the project's environmental effects on account of the Corps' permitting action. With respect to water quality concerns, the

Section 401 WQC issued by MPCA and the completion of the Section 401(a)(2) process conducted by EPA document demonstrates that the Project is expected to meet applicable water quality standards. Lastly, the DNR's permit to mine process regulates the safety of the dams at the Project. With the safeguards established by DNR's regulatory program, the Project is expected to be constructed and operated safely. Dam construction methods will continue to be monitored by the DNR ensuring the safety of those structures.

The TCRS provided several additional recommendations to include:

- That Northshore Mining continue to work closely with Tribal Resource Managers in regard to mitigation of 1854 Ceded Territory resources that have been diminished by mining operations.
- That Northshore Mining continue to consult with Tribal Resource Managers and credentialed experts in regard to ensuring protection of irreplaceable water resources and resolution and restoration of hydrological flow.
- That Northshore Mining continue to consult with Tribal Resource Management staff in regard to mitigation efforts to offset forest fragmentation impacts that may lead to reduction of wildlife habitat and animal pattern/migration changes.
- That Northshore Mining partner with Tribal Resource Managers to identify, plan, mitigate and monitor any environmental impacts. This can be done by including members from the Indigenous communities in environmental assessment panels and consulting widely with Indigenous communities to understand their environmental concerns and how these can be addressed, including Indigenous People on environmental monitoring committees, involving them in the collection and analysis of monitoring data (e.g., water samples) and in environmental rehabilitation activities (e.g., gathering native plants for rehabilitation, fire management and wildlife management).
- That a study of eco-system service benefits that could be impacted by Northshore Mining be done by an independent third party.
- That Northshore Mine develop a Historic Context suitable for use in a National Register Multiple Property Documentation Form for the *Trail to Birch Lake to Beaver Bay*, to inform future federal agency, Tribal, and Minnesota State Historic Preservation Office decision-making concerning identification, evaluation, and management of historic overland trail segments and trail-associated features.
- That Northshore Mine consider contributions towards sustainable development in light of mining operation impacts on climate change.

Corps response: The Corps recognizes the importance of these recommendations. While the Corps is limited to enforcing only aspects of the project within its jurisdiction and control, these recommendations have been provided to the Applicant for appropriate consideration.

The TCRS report, findings from the tribal survey managed by Fond du Lac historic preservation office and elder interviews conducted in local tribal communities, was provided to consulting Tribes for their review, concurrent with the MN SHPO's review. Input and information from the consulting Tribes was sought by the Corps throughout the review and evaluation, and by the Fond du Lac Band during the tribal investigation component. No historic or cultural properties were identified. The Corps received no comments from consulting Tribes following coordination of the TCRS report and the final determinations and effect findings on December 3, 2020. The Corps engaged in early, good-faith, information-sharing consultation with those Tribes interested in consulting on the proposed Project, the Corps provided opportunity to visit the project location, and the Corps required a tribal cultural resource survey and elder interviews to

further identify potential resources of importance to Tribes within the Project area. In sum, the Corps has fulfilled its tribal trust responsibilities.

#### **11.4 FISH AND WILDLIFE COORDINATION ACT (FWCA) (16 USC 661)**

The proposed action is in compliance with the FWCA. Sections 6.4.1, 6.4.2, and 6.4.3 of this document identify the impacts of the proposed Project on fish and wildlife species. The Corps coordinated with the USFWS on the proposed action.

#### **11.5 NATIONAL ENVIRONMENTAL POLICY ACT of 1969 (42 USC 4321 – 4347)**

The proposed action is in compliance with NEPA. This EA was completed to evaluate a reasonable range of alternatives and the direct, indirect, and cumulative effects associated with a reasonable range of alternatives. The Corps followed the NEPA process identified in 40 CFR Part 1500 et seq., 33 CFR Part 230, and 33 CFR Part 325 Appendix B, including noticing and timeline requirements, to produce an EA that discloses to the public the environmental impacts of the Project, taking into account mitigation. The EA is being utilized to make a permit decision on the proposed Project. Signature of this decision document by the authorizing official completes the Corps NEPA requirements and responsibilities.

#### **11.6 SECTION 176(c) OF THE CLEAN AIR ACT (CAA) GENERAL CONFORMITY RULE REVIEW (42 USC 7401 – 7671 Section 176[c])**

The proposed action has been analyzed for conformity applicability pursuant to regulations implementing Section 176(c) of the Clean Air Act. The Corps has determined that direct emissions from the proposed activities that require a DA permit will not exceed de minimis levels of a criteria pollutant or its precursors and are exempted by 40 CFR 93.153. Any indirect emissions are generally not within the Corps' continuing program responsibility and generally cannot be practicably controlled by the Corps. For these reasons, a conformity determination is not required for this action.

The MPCA has issued an air quality control permit for operation of the tailings basin site. The Corps finds the issuance of this permit to be conclusive with respect to air quality issues. Completion of the process and analysis contained within this document and signature by the authorizing official completes the Corps' Clean Air Act requirements.

#### **11.7 MAGNUSON-STEVENSON FISHERY CONSERVATION AND MANAGEMENT ACT (MAGNUSON-STEVENSON ACT), ESSENTIAL FISH HABITAT (EFH)**

Not applicable, there is no essential fish habitat in this St. Paul District's area of responsibility.

#### **11.8 COASTAL ZONE MANAGEMENT ACT (CZMA)**

The Project falls within close proximity to Lake Superior and requires a federal consistency determination from the DNR. The Corps coordinated the Project with the DNR and requested a

federal consistency determination from them. The DNR responded to the Corps' November 19, 2020, consistency request on December 8, 2020. The DNR stated they have reviewed the project under the federal Coastal Zone Management Act of 1972, as amended, and determined that the Project is consistent with the Minnesota Lake Superior Coastal Program.

## **11.9 WILD AND SCENIC RIVERS ACT**

The Project is not located in or associated with a component of a National Wild and Scenic River System and the Project is not in a river officially designated by Congress as a "study river" for possible inclusion in the system.

## **11.10 EFFECTS ON CORPS CIVIL WORKS PROJECTS (33 USC 408)**

The Applicant is not required to seek permission under Section 14 of the Rivers and Harbors Act (33 USC 408) because the Project will not, in whole or in part, alter, or occupy or use a Corps Civil Works Project.

## **11.11 CORPS WETLAND POLICY (33 CFR 320.4(b))**

The Project will result in wetland impacts. Based on the public interest review herein, the beneficial effects of the Project outweigh the detrimental impacts of the Project.

## **11.12 OTHERS**

The Project is in close proximity to the Superior National Forest Scenic Byway which is under the purview of the USFS. The Corps has consulted with the USFS, DNR and Lake County regarding potential affects. It has been determined the Project will not negatively affect the Scenic Byway. See Section 7.9 for more details.

## **11.13 EXECUTIVE ORDER 13175: CONSULTATION WITH INDIAN TRIBES, ALASKA NATIVES AND NATIVE HAWAIIANS**

The *U.S. Army Corp of Engineers Tribal Consultation Policy* establishes an accountable process for interaction with Indian tribes in response to the requirements of Executive Order (EO) 13175, *Consultation and Coordination with Indian Tribal Governments* dated November 6, 2000, and Presidential Memorandum, *Tribal Consultation* dated November 5, 2009.

The Corps' *Tribal Consultation Policy* affirms the Corps' responsibility to engage federally-recognized tribes in pre-decisional consultation as an important part of decision making for actions, including permit actions, which may significantly affect protected tribal resources, tribal rights (including treaty rights) or Indian lands. To the extent practicable and permitted by law, this consultation works toward mutual consensus, but at minimum ensures that tribal comments are taken into consideration prior to making a permit decision.

The Project is regulated under various sections of the CWA (401/402/404). The Corps is responsible for issuing permits under Section 404. The lands within the project area were ceded in the 1854 Treaty between the U.S. Government and the Chippewa of the Mississippi

and Lake Superior for the purpose of opening the territory to town site development and mining. Although the Chippewa retain inherent rights to hunt and fish in the territory, the land outside of established reservations is not Indian land. The resources subject to the exercise of usufructuary rights under the 1854 Treaty are not protected tribal resources and the area where the Project is occurring is not known to be used for exercising usufructuary rights based on tribal cultural investigations. The discharge of dredged and fill material associated with the Project would not infringe the Chippewa's rights to hunt and fish in the ceded territory.

Initially, the Corps invited various Chippewa/Ojibwa Bands throughout northern Minnesota, Wisconsin, and portions of Michigan to consult on the Project. The resulting consultation involved primarily the Bands that reside in the ceded territory, which are the Fond du Lac Band, the Bois Forte Band, and the Grand Portage Band, and the Bad River Band in Wisconsin (the Bad River Reservation in Wisconsin was established within the 1854 Treaty), referred to as the Consulting Bands/Tribes in other portions of this document.

Consultation primarily focused on the identification of historic properties, including those properties of religious and cultural significance, pursuant to the National Historic Preservation Act. No protected tribal resources, for example traditional-use areas or gathering locations, were identified within or adjacent to the proposed Project area, nor is the Project located within Reservation or off-Reservation Trust Lands. Additionally, based on the requirements of the DA permit, as well as other state regulatory controls, such as the WQC issued by the MPCA and the permit to mine amendment issued by the DNR, it is not expected that the project would infringe the Consulting Bands/Tribes' ability to exercise treaty rights. Please see Historic Properties NHPA Section 11.3 and Tribal Trust Responsibilities Section 11.3.1 for more information on Corps consultation efforts.

## **11.14 EXECUTIVE ORDER 11988: FLOODPLAIN MANAGEMENT**

The proposed Project has been evaluated consistent with the intent of EO 11988. The proposed Project is not located within a FEMA mapped 100-year floodplain. Our review did not identify any 100-year flood plains in the vicinity of the Project.

## **11.15 EXECUTIVE ORDER 12898: ENVIRONMENTAL JUSTICE**

EO 12898 directs federal agencies to identify and address, as appropriate, any disproportionately high adverse human health or environmental effects of federal actions to minority and/or low-income populations. Its purpose is to focus federal attention on the environmental and human health effects of federal actions on minority and low-income populations with the goal of achieving environmental protection for all communities. Public involvement, via Public Notices, as well as Tribal coordination and consultation concerning the Project, has been an integral part of planning for this Project to ensure that concerns of all people are considered in the decision-making process. As informed by CEQ's Environmental Justice Guidance Under the National Environmental Policy Act (1997), the identification of a disproportionately high and adverse impact on minority and low income populations does not preclude a proposed agency action from going forward, nor does it necessarily compel a conclusion that a proposed action is environmentally unsatisfactory. If an agency determines there is a disproportionately high and adverse impact to minority populations and low-income populations, an agency may wish to consider heightening its focus on meaningful public engagement regarding community preferences, considering an appropriate range of alternatives (including alternative sites), and mitigation and monitoring measures.

The methodology, consistent with EO 12898, to accomplish this Environmental Justice (EJ) analysis includes identifying low-income and minority populations within the Project area using the EJ Screen Mapper Tool (<https://ejscreen.epa.gov/mapper/>) developed by the Environmental Protection Agency.

This project is located in an area of the state that is not widely populated. The area is surrounded by large tracts of forested area and Lake Superior to the East. A buffer of 5 miles was selected to capture an adequate representation of the population (See Appendix F for environmental justice review area and data).

## **AFFECTED COMMUNITIES**

The EPA on-line EJScreen mapping tool (Version 2019) was used to characterize existing conditions for minority and low-income groups. The area used in the analysis is shown in Appendix F. The EJScreen tool estimated an approximate population of 2,101 in the area which included a 5-mile buffer around the Project. The minority and linguistically isolated populations of the area are lower than the state and national averages. The minority population is 6%, while the state is 19% and the national average is 39%. The linguistically isolated population for this area is 0%. The low-income population is 28%, the state average is 25% and the national average is 33%. The population over 64 years of age is 28%, while the state and national averages are both 15%. There were 3 reported Native Americans within the 5-mile buffer area which equated to 0%.

The communities within the buffer area do not include a minority population as described above because the percentage is not greater than 50% and is not meaningfully greater than the general population. In this case the percentage of minorities is 6% which is drastically lower than the national average and slightly lower than the state average.

As defined by the U.S. Census Bureau above, the buffer area for this Project does contain a “poverty area” as the low-income population is 28% which is 8% greater than the standard of 20%. The average in the buffer area is only 3% higher than the state average and 5% less than the national average, not a significant difference between either.

## **ENVIRONMENTAL EFFECTS**

EJ is a national goal and is defined as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. The Project in question here is the progression of an existing tailings basin that has been in operation since the 1980s. The environmental effects of the Project have been detailed in this document and are not expected to result in any short or long-term detrimental impacts to humans. The Project will allow 600+ residents in the area to continue to be employed by the Applicant. Public involvement, via two public notices concerning the proposed project, have been an integral part of this project to ensure that concerns of all people will be fully considered in the decision-making process. Minority groups are a very small component of communities surrounding the project area (6%) and low-income groups make up 28% of the population; however, the project itself would not have any permanent adverse effects on surrounding communities. There would be short-term adverse impacts to aesthetics, and transportation during construction. The project was sited to take advantage of existing infrastructure that is already in place and has been in use since the 1980s. These effects would occur in and adjacent to the tailings basin located on



private property, away from residential neighborhoods. Therefore, the proposed action would not disproportionately impact any individuals of a particular social or economic status.

Based on the information in this EA the Project will not have any long-term negative effects on fish or other aquatic resources either directly or indirectly. The project area is private property and without private landowner permission there is no opportunity for the Bands to exercise usufructuary rights (hunting, fishing, and gathering) on this property. Construction of the Project is not likely to reduce overall availability of 1854 Treaty resources that are typically part of subsistence activities in the 1854 Ceded Territory.

In conclusion, the Project would not have a disproportionately high and adverse human health or environmental effect on minority populations and low-income populations. The proposed action is in compliance with EO 12898.

## **11.16 EXECUTIVE ORDER 13112, AS AMENDED BY EXECUTIVE ORDER 137511, INVASIVE SPECIES**

The Applicant would temporarily vegetate and stabilize disturbed areas during operation to minimize opportunities for invasive species to be established. Seed mixes and methodologies used during reclamation would be designed to minimize the introduction of invasive species.

## 12.0 FINAL CORPS DECISION

Having reviewed the information provided by the Applicant and all interested parties and an assessment of the environmental impacts, I find that this permit action does not constitute a major Federal action significantly affecting the quality of the human environment. Therefore, an environmental impact statement will not be required.

Having completed the evaluation above, I have determined that the proposed discharges comply with the Section 404(b)(1) Guidelines, with the inclusion of the appropriate and practicable special conditions to minimize pollution and adverse effects to the affected ecosystem.

Having reviewed and considered the information above, I find that the Project is not contrary to the public interest.

I find that the issuance of the Corps permit, as described by regulations published in 33 CFR Parts 320 through 332, with the scope of the project as described in this document, is based on a thorough analysis and evaluation of all issues set forth in this environmental assessment and statement of findings. There are no less environmentally damaging, practicable alternatives available to the Applicant to construct the Project. The issuance of this permit is consistent with statutes, regulations, guidance, and policy and on balance, issuance of a Corps' permit to construct the Project is not contrary to the public interest. As explained above, all practicable means to avoid and/or minimize environmental harm from the selected, permitted alternative have been adopted and are required by terms and conditions of this permit.

Approving Official:

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Karl D. Jansen  
Colonel, Corps of Engineers  
District Engineer

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Date