



**US Army Corps
of Engineers®**

St. Paul District

Enbridge Line 5 Wisconsin Segment Relocation Project

Department of the Army

ENBRIDGE LINE 5 WISCONSIN SEGMENT RELOCATION PROJECT

**DRAFT ENVIRONMENTAL ASSESSMENT, CLEAN WATER ACT
SECTION 404(b)(1) GUIDELINES EVALUATION, AND PUBLIC
INTEREST REVIEW**

Date: 20 May 2024



**US Army Corps
of Engineers**®

St. Paul District

Subject:

This document constitutes the draft Environmental Assessment, Clean Water Act Section 404(b)(1) Guidelines Evaluation, and Public Interest Review prepared by the St. Paul District Corps of Engineers Regulatory program (Corps) for the proposed Enbridge Line 5 Wisconsin segment relocation project. This document is being circulated for public review to solicit feedback useful for the Corps evaluation and decision on the applicant's permit application.

This document includes consideration of information the Corps has collected since 2020 as part of its review of regulated construction activities proposed by the applicant as part of the partial relocation of Line 5 in Wisconsin. This document includes preliminary assessments for various factors the Corps must consider based on the information obtained to date. These preliminary assessment reflect the evaluation to date and are intended to inform comment from interested parties during review. These preliminary assessments do not represent final Corps determinations or forecast final Corps findings. Final findings and determinations related to the Corps' statutory authorities will be completed after considering public comments received in response to publication of this draft, and after conclusion of the Section 401 Clean Water Act Water Quality Certification process.

Lead Federal Agency:	U.S. Army Corps of Engineers, St. Paul District
Applicant:	Enbridge Energy, Limited Partnership
Applicant Reference Number:	MVP-2020-00260-WMS
Additional Reference Information:	www.mvp.usace.army.mil/Enbridge_Line5-WI/
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TABLE OF CONTENTS

SUBJECT

- 1.0 INTRODUCTION AND OVERVIEW**
 - 1.1 Applicant Name**
 - 1.2 Activity Location**
 - 1.3 Project Description**
 - 1.4 Proposed Avoidance and Minimization Measures**
 - 1.5 Jurisdictional Determination**
 - 1.6 Proposed Compensatory Mitigation**
 - 1.7 Existing Conditions and Applicable Project History**
 - 1.8 Permit Authority**

- 2.0 SCOPE OF REVIEW**
 - 2.1 Determination of Scope of Analysis for National Environmental Policy Act (NEPA)**
 - 2.2 Determination of the Corps' Action Area for Section 7 of the Endangered Species Act (ESA)**
 - 2.3 Determination of the Corps' Permit Area for Section 106 of the National Historic Preservation Act (NHPA)**

- 3.0 PURPOSE AND NEED**
 - 3.1 Purpose and Need for the Project as Provided by the Applicant**
 - 3.2 Purpose and Need for the Project as Defined by the Corps**
 - 3.3 Basic Project Purpose, as Determined by the Corps**
 - 3.4 Water Dependency Determination**
 - 3.5 Overall Project Purpose, as Determined by the Corps**


- 4.0 PUBLIC INVOLVEMENT**
 - 4.1 Overview of Public Involvement**
 - 4.2 Additional Issues Raised by the Corps**
 - 4.3 Comments Regarding Activities and/or Effects Outside of the Corps' Scope of Review**

- 5.0 ALTERNATIVES ANALYSIS**
 - 5.1 Overview**
 - 5.2 Site Selection/Screening Criteria**

- 5.3 **No Action Alternatives**
 - 5.3.1 **Pipeline System Alternatives**
 - 5.3.2 **Alternative Transport Modes**
 - 5.3.2.1 **Transportation by Rail**
 - 5.3.2.2 **Transportation via Truck**
 - 5.4 **Action Alternative**
 - 5.4.1 **Route Alternative RA-01**
 - 5.4.1.1 **Alternative RA-01 Variants**
 - 5.4.2 **Route Alternative RA-02**
 - 5.4.3 **Route Alternative RA-03**
 - 5.4.4 **Applicant's Preferred Alternative**
 - 5.5 **Summary of Corps Alternatives Analysis**
 - 5.6 **Least Environmentally Damaging Practicable Alternative**
 - 5.7 **Additional LEDPA Avoidance and Minimization Sequencing**
 - 5.7.1 **Crossing Method Alternatives**
 - 5.7.2 **Alternative White River Crossing Methods**
 - 5.7.3 **Alternative White River Crossing Locations**
-
- 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))**
 - 6.2 **Candidate Disposal Site (40 CFR 230.11(f))**
 - 6.3 **Potential Impacts on the Physical and Chemical Characteristics of the Non-Living Environment (Subpart C, 40 CFR Part 230)**
 - 6.3.1 **Substrate**
 - 6.3.2 **Suspended Particulates/Turbidity**
 - 6.3.3 **Water**
 - 6.3.4 **Current Patterns and Water Circulation**
 - 6.3.5 **Normal Water Fluctuations**
 - 6.3.6 **Salinity Gradients**
 - 6.4 **Potential Impacts on the Biological Characteristics of the Aquatic Ecosystem (Subpart B 40 CFR 230.30-230.32)**
 - 6.4.1 **Threatened and Endangered Species**
 - 6.4.2 **Fish, Crustaceans, Mollusk, and other Aquatic Organisms**
 - 6.4.3 **Other Wildlife**
 - 6.5 **Potential Impacts on Special Aquatic Sites (Subpart E, 40 CFR Section 230)**
 - 6.5.1 **Sanctuaries and Refuges**
 - 6.5.2 **Wetlands**
 - 6.5.3 **Mud Flats**
 - 6.5.4 **Vegetated Shallows**
 - 6.5.5 **Coral Reefs**
 - 6.5.6 **Riffle and Pool Complexes**
 - 6.6 **Potential Effects on Human Use Characteristics (Subpart F, 40 CFR Section 230)**

- 6.6.1 Municipal and Private Water Supplies
- 6.6.2 Recreational and Commercial Fisheries
- 6.6.3 Water-Related Recreation
- 6.6.4 Aesthetics
- 6.6.5 Parks, National and Historical Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves
- 6.7 Evaluation and Testing (Subpart G, 40 CFR 230)
- 6.8 Actions to Minimize Adverse Effects (Subpart H 40 CFR 230)
- 6.9 Factual Determinations (40 CFR 230.11)
- 6.10 Determination of Compliance with the Section 404(B)(1) Guidelines (40 CFR 230.10(a-d) and 40 CFR 230.12)
- 7.0 PUBLIC INTEREST REVIEW (33 CFR 320.4)
 - 7.1 Evaluation of General Criteria
 - 7.2 Conservation (33 CFR 320.4(m) and 320.4(p))
 - 7.3 Economics (33 CFR 320.4(q))
 - 7.4 Aesthetics (33 CFR 320.4(a))
 - 7.5 General Environmental Concerns (33 CFR 320.4(a))
 - 7.6 Wetlands (33 CFR 320.4(b))
 - 7.7 Historic Properties (33 CFR 320.4(e))
 - 7.8 Cultural Values (33 CFR 320.4(e))
 - 7.9 Scenic/Recreational Values (33 CFR 320.4(e))
 - 7.10 Fish and Wildlife (33 CFR 320.4(c))
 - 7.11 Flood Hazards (33 CFR 320.4(l))
 - 7.12 Floodplain Values (33 CFR 320.4(l))
 - 7.13 Land Use (33 CFR 320.4(a)(1))
 - 7.14 Navigation (33 CFR 320.4(o))
 - 7.15 Shoreline Erosion and Accretion (33 CFR 320.4(a)(1))
 - 7.16 Water Supply and Conservation (33 CFR 320.4(m))
 - 7.17 Water Quality (33 CFR 320.4(d))
 - 7.18 Energy Needs (33 CFR 320.4(n))
 - 7.19 Safety of Impoundment Structures (33 CFR 320.4(k))
 - 7.20 Food and Fiber Production (33 CFR 320.4(a)(1))
 - 7.21 Mineral Needs (33 CFR 320.4(a)(1))
 - 7.22 Consideration of Property Ownership (33 CFR 320.4(g))
 - 7.23 Needs and Welfare of the People (33 CFR 320.4(a)(1))
 - 7.24 Public and Private Need
- 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)
- 9.0 CONSIDERATION OF CUMULATIVE AND SECONDARY EFFECTS
 - 9.1 Direct, Indirect, & Secondary Effects
 - 9.2 Geographic and Temporal Scope
 - 9.3 Affected Environment

- 9.4 Environmental Consequences
 - 9.5 Mitigation to Avoid, Minimize or Compensate for Cumulative Effects
 - 9.6 Conclusions Regarding Cumulative Impacts
- 10.0 COMPLIANCE WITH ENVIRONMENTAL LAWS AND POLICIES**
- 10.1 Section 401 of the Clean Water Act (33 USC Section 1342)
Water Quality Certification (33 CFR 320.4(d))
 - 10.2 Endangered Species Act of 1973 (16 USC 1531)
 - 10.3 Section 106 of the National Historic Preservation Act (NHPA)
(16 USC 470 et seq.)
 - 10.3.1 Summary of Effect Findings
 - 10.3.2 Rationale for Effect Findings
 - 10.4 Tribal Trust Responsibilities
 - 10.5 Fish and Wildlife Coordination Act (FWCA) (16 USC 661)
 - 10.6 National Environmental Policy Act of 1969 (42 USC 4321 – 4347)
 - 10.7 Section 176(C) of the Clean Air Act (CAA) General Conformity Rule
Review (42 USC 7401 – 7671 Section 176(c))
 - 10.5 Magnuson-Stevens Fishery Conservation and Management Act
(Magnuson-Stevens Act), Essential Fish Habitat (EFH)
 - 10.9 Coastal Zone Management Act (CZMA)
 - 10.10 Wild and Scenic Rivers Act
 - 10.11 Effects on Corps Civil Works Projects (33 USC 408)
 - 10.12 Corps Wetland Policy (33 CFR 320.4(b))
 - 10.13 Executive Order 13175: Consultation and Coordination with
Indian Tribal Governments
 - 10.13.1 Government to Government/Nation to Nation Consultation
 - 10.13.2 Section 106 NHPA Consultation
 - 10.13.3 Technical Meetings Between Corps Staff, Tribal Staff, and
GLIFWC Staff
 - 10.14 Executive Order 11988: Floodplain Management
 - 10.15 Executive Order 12898: Environmental Justice
 - 10.16 Executive Order 13112, as Amended by Executive Order 13751,
Invasive Species
- 11.0 CONCEPTUAL SPECIAL CONDITIONS**
- 12.0 FINDINGS AND DETERMINATIONS - RESERVED**
- 13.0 APPENDICES:**
- 1. Environmental Protection Plan (EPP)
 - 2. Pipeline Minimization Design
 - 3. Wetland and Waterbody Restoration and Post Construction Monitoring
Plan
 - 4. Wetland Mitigation Plan
 - 5. Specific Drawings for Channel Restoration
 - 6. General Blasting Plan

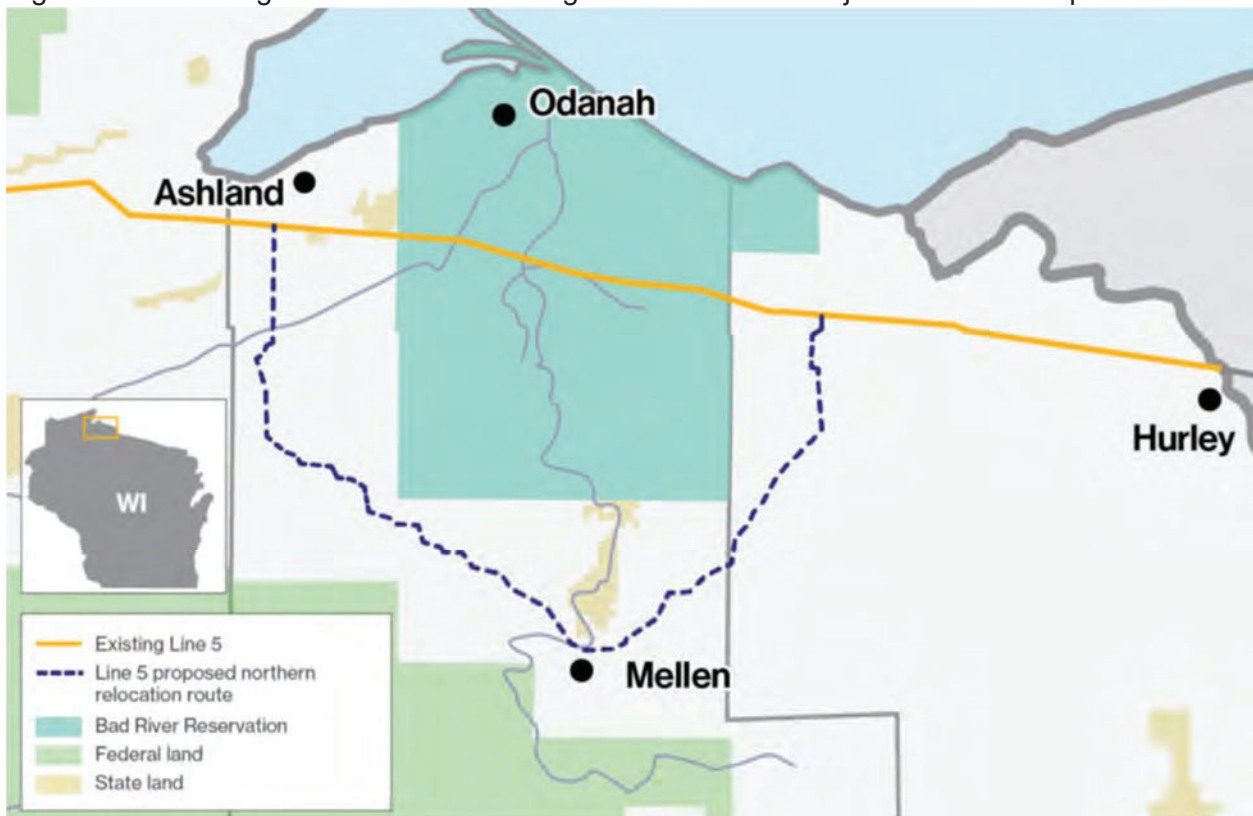
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- 7. Sediment Discharge Modeling Report**
 - 8. Water Quality Monitoring Plan**
 - 9. Water Quality Monitoring Report**
 - 10. Mussel Survey Report**
 - 11. High Quality Wetland Avoidance and Minimization Evaluation**
 - 12. Environmental Justice Commitment Plan**
 - 13. Invasive and Noxious Species (INS) Management Plan**
 - 14. USACE Permit Area Maps Set**
 - 15. Wetland and Waterbody Crossing Table**
 - 16. Chronology to support National Historic Preservation Act (NHPA), Tribal Trust, and Government to Government Consultation and Coordination**
 - 17. List of Ojibwe Plant Names**
 - 18. Aquifer Analysis and HDD Design**

1.0 INTRODUCTION AND OVERVIEW

Information about the proposal, subject to one or more Corps regulatory authorities, is provided in Section 1. Detailed information is found in Sections 2 through 11.

The applicant, Enbridge Energy Limited Partnership (Enbridge), seeks a Department of the Army (DA) permit for construction-related activities in waters of the U.S. (WOTUS) to replace approximately 20 miles of the existing Line 5 pipeline, including approximately 12 miles of pipeline within the exterior boundaries of the Bad River Band of Lake Superior Chippewa (Bad River Band) Reservation, with approximately 41 miles of a new, 30-inch outside diameter pipeline located entirely outside the boundaries of the Bad River Band Reservation. The Corps review is pursuant to its authorities under Section 10 of the Rivers and Harbors Act of 1899 (Section 10) for work under a navigable water of the United States and Section 404 of the Clean Water Act (Section 404) for discharges of dredged or fill material into WOTUS. The Corps does not regulate the overall construction or operation of pipelines, nor does it regulate the siting of any type of pipeline, or any substance being transported within a pipeline.

Figure 1.2.1 Enbridge Line 5 Wisconsin Segment Relocation Project Overview Map



1.1 Applicant Name

Enbridge Energy
11 East Superior Street, Suite 125
Duluth, Minnesota 55802

1.2 Activity Location

The proposed Enbridge Line 5 Wisconsin Segment Relocation project (WI L5R) is in parts of Bayfield, Ashland and Iron Counties, Wisconsin. Mapping showing the proposed Line 5 relocation route is available in Appendix 14. The proposed project is in the following Public Land Survey System (PLSS) locations:

Table 1.2.1 Township, Range, and Sections crossed by the proposed WI L5R project.

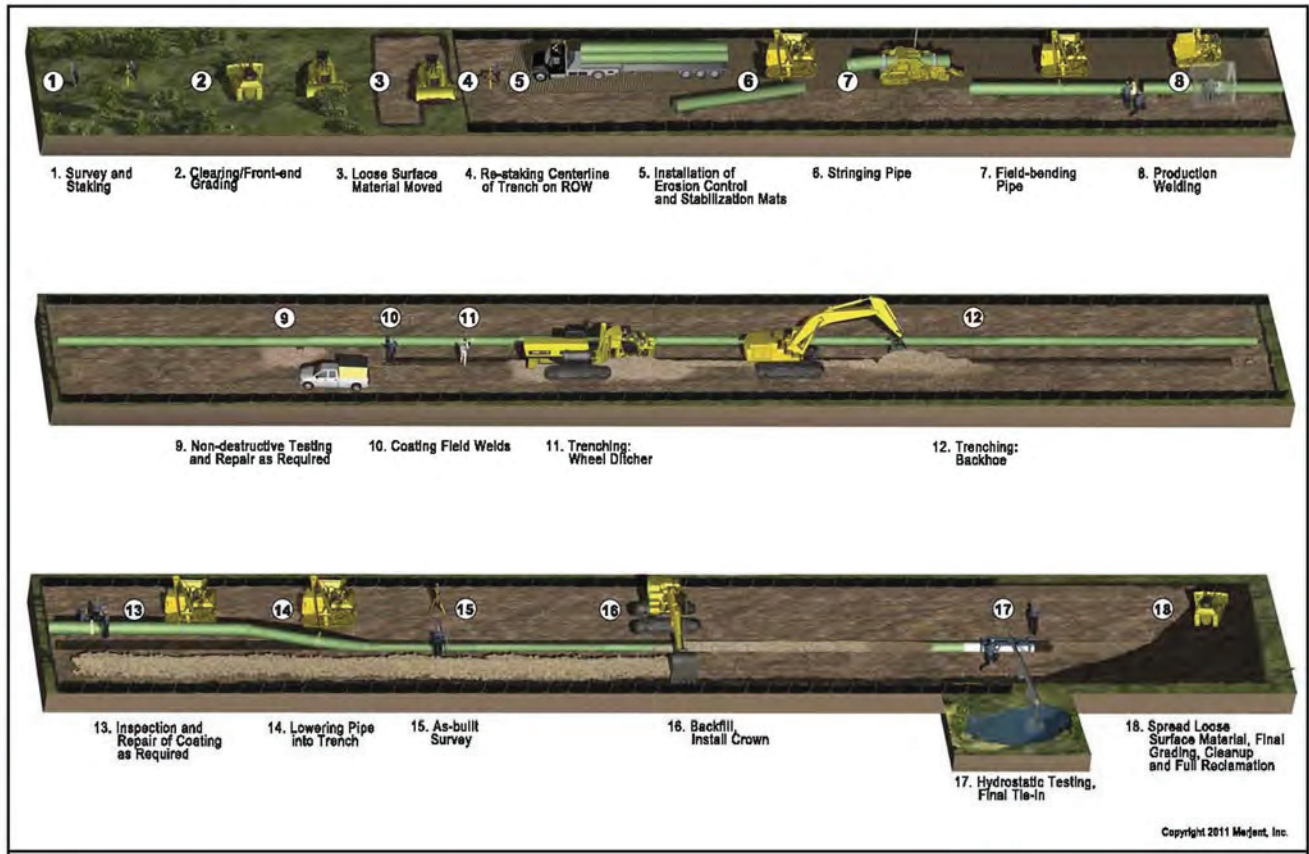
Township	Range	Section
T45N	R1W	5, 6, 7, 8, 18
T45N	R2W	1, 2, 13, 14, 22, 23, 27, 28, 29, 30, 31, 32, 33
T45N	R3W	6, 7, 8, 9, 14, 15, 16, 22, 23, 24, 25, 36
T45N	R4W	1, 2
T46N	R1W	3, 4, 10, 15, 16, 17, 20, 21, 22, 27, 28, 29, 32, 33
T46N	R4W	5, 6, 7, 8, 17, 18, 20, 27, 28, 29, 34, 35
T47N	R1W	33, 34, 35
T47N	R4W	3, 8, 17, 20, 29, 32
T47N	R5W	8, 10
T48N	R4W	34

1.3 Project Description

In Wisconsin, the existing Line 5 pipeline crosses Douglas, Bayfield, Ashland, and Iron Counties. Within Ashland County, the existing Line 5 pipeline crosses through approximately 12 miles of the Bad River Band Reservation. A federal lawsuit was filed by Bad River Band against Enbridge for operating its pipeline on allotment parcels within the Bad River Reservation without a valid easement. Enbridge proposes the Line 5 Wisconsin Segment Relocation (WI L5R) project to replace approximately 20 miles of the existing Line 5 pipeline, including the approximate 12 miles of pipeline within the Bad River Band Reservation, with approximately 41 miles of a new, 30-inch outside diameter pipeline located entirely outside the boundaries of the Bad River Band Reservation in Ashland and Iron Counties, Wisconsin.

The proposed WI L5R project described herein includes refinements proposed after, or because of, comments received during the Corps 2022 public notice process. As currently proposed, the WI L5R project would include the construction of a new, 30-inch outside diameter pipeline segment, and the installation of 10 additional mainline block valves, including one new mainline block valve on the existing Line 5 in Bayfield County, upstream (west) from where the proposed relocated pipeline segment begins. The proposed WI L5R project would be constructed using typical industry-accepted pipeline construction methods, following a sequential process which includes survey and staking, clearing and site preparation, pipe stringing, bending, welding, coating, trenching, lowering-in, backfilling, hydrostatic testing, cleanup, and restoration. In most areas, these construction processes would proceed in an assembly-line fashion with construction crews moving along the construction right-of-way.

Figure 1.3.1: Typical Pipeline Construction Sequence



In addition to standard pipeline construction methods, Enbridge would use special construction techniques when constructing across waterbodies and wetlands. For waterbodies, instream disturbance may take as little as eight hours to excavate, install, and backfill the pipeline trench or as long as approximately 72 hours for larger waterbodies being crossed using a dry crossing-trenching technique (for non-horizontal directional drill or direct pipe crossings). Enbridge would minimize this time to the extent practical by having the pipeline segment assembled and ready for installation prior to beginning instream excavation. In wetlands, temporary disturbance would include clearing, installation of timber mats, trenching; lowering-in and backfilling, and cleanup. Once the pipe is installed, the contours would be restored as near as practicable to original elevations unless a crown is required to account for minor subsidence. Similar to upland areas, access through wetlands may be needed for several months; therefore, timber mats may remain in place until access through the wetland is no longer needed. Construction of the project is anticipated to take 12-14 months to complete. However, the anticipated construction timeframe could vary depending on construction timing restrictions that may be imposed to minimize impacts to environmental resources, such as in-stream crossing timing windows, and any state-approved timing restriction waivers to avoid sensitive spawning periods, and timing restrictions for tree clearing to comply with the federal Endangered Species Act and the Migratory Bird Treaty Act. Timing restrictions may require construction activities to occur at discrete locations simultaneously throughout the proposed pipeline corridor. Restoration activities would generally begin immediately following construction as conditions allow, except restoration would be delayed during frozen soil conditions. Other specific procedures that would be employed during frozen soil conditions are provided in Appendix H of the Environmental Protection Plan, or EPP

(Appendix 1). Construction of the proposed WI L5R project would require installation of the pipeline across wetlands and waterways that would result in discharges of dredged or fill material, or both, into WOTUS requiring authorization under Section 404. The applicant also proposes to install a segment of the pipeline under the White River, a navigable water of the United States, requiring authorization under Section 10.

In uplands, the applicant generally proposes to use a 120-foot-wide construction workspace to allow for temporary storage of topsoil and spoil as well as accommodate safe operation of construction equipment. In wetlands, the applicant proposes to reduce the construction workspace to 95-foot-wide to minimize wetland disturbance. An exception to the 95-foot workspace reduction are areas where additional temporary workspace (ATWS) is needed in wetland areas, such as where the construction workspace coincides with a stream crossing that requires ATWS in wetlands to complete the crossing. The proposed pipeline construction workspace consists of a spoil side (area used to store topsoil and excavated materials) and a working side, (equipment work area and travel lane). Figures illustrating typical construction workspaces and typical wetland crossing methods are shown in the EPP (Appendix 1). Upon completion of proposed pipeline construction activities, the applicant would maintain a permanent 50-foot-wide maintenance corridor free of woody vegetation throughout the length of the pipeline. An exception is that a 30-foot-wide corridor would be maintained free of woody vegetation over the centerline of the pipeline at horizontal directional drill (HDD) crossings.

Activities which require Corps authorization

At the request of the applicant, the Corps presumes that all wetlands and non-wetland waters are jurisdictional under Section 404 (see Section 1.5 below for additional information). As such, regulated construction activities proposed by the applicant include temporary and permanent discharges of dredged or fill material in WOTUS. This includes the permanent discharge of fill material into 998 square feet (0.02 acre) of wetlands, and temporary discharges into 101.1 acres of wetlands and 0.20 acre of non-wetland waters (i.e., streams, swales, and ditches) to construct the proposed WI L5R pipeline. The permanent discharges of fill material include: approximately 371 square feet of fill in of wetlands for the construction of a permanent access road to mainline block valve #1 within a portion of the existing Line 5 pipeline in Bayfield County, west from where the proposed relocated segment begins; approximately 409 square feet of a swale delineated as wetlands for an access road crossing to mainline block valve #4; and, 217 square feet of wetlands for the construction of an access road to mainline block valve #5. Once construction activities resulting in temporary discharges into wetlands are completed, 33.92 acres of wetlands would be permanently maintained clear of woody vegetation within the 50-foot-wide permanent maintenance corridor and within the 30-foot-wide corridor over the centerline of the pipeline at HDD crossings for operational maintenance and aerial inspection purposes. The remainder of the 67.18 acres of wetlands within the temporary construction workspace areas would be allowed to naturally revert to pre-construction wetland type once construction of the WI L5R is complete. The applicant proposes to use existing public and private roads to access the construction workspace to the extent possible to limit impacts on wetlands and waterways. The applicant has identified areas along the project where the placement of temporary construction matting may be needed for access roads. The placement of temporary matting in wetlands for access roads accounts for 12.53 acres of the 101.1 acres of temporary discharges noted above. The placement of temporary matting between proposed HDD entrance and exit locations accounts for 6.24 acres of the 101.1 acres of temporary

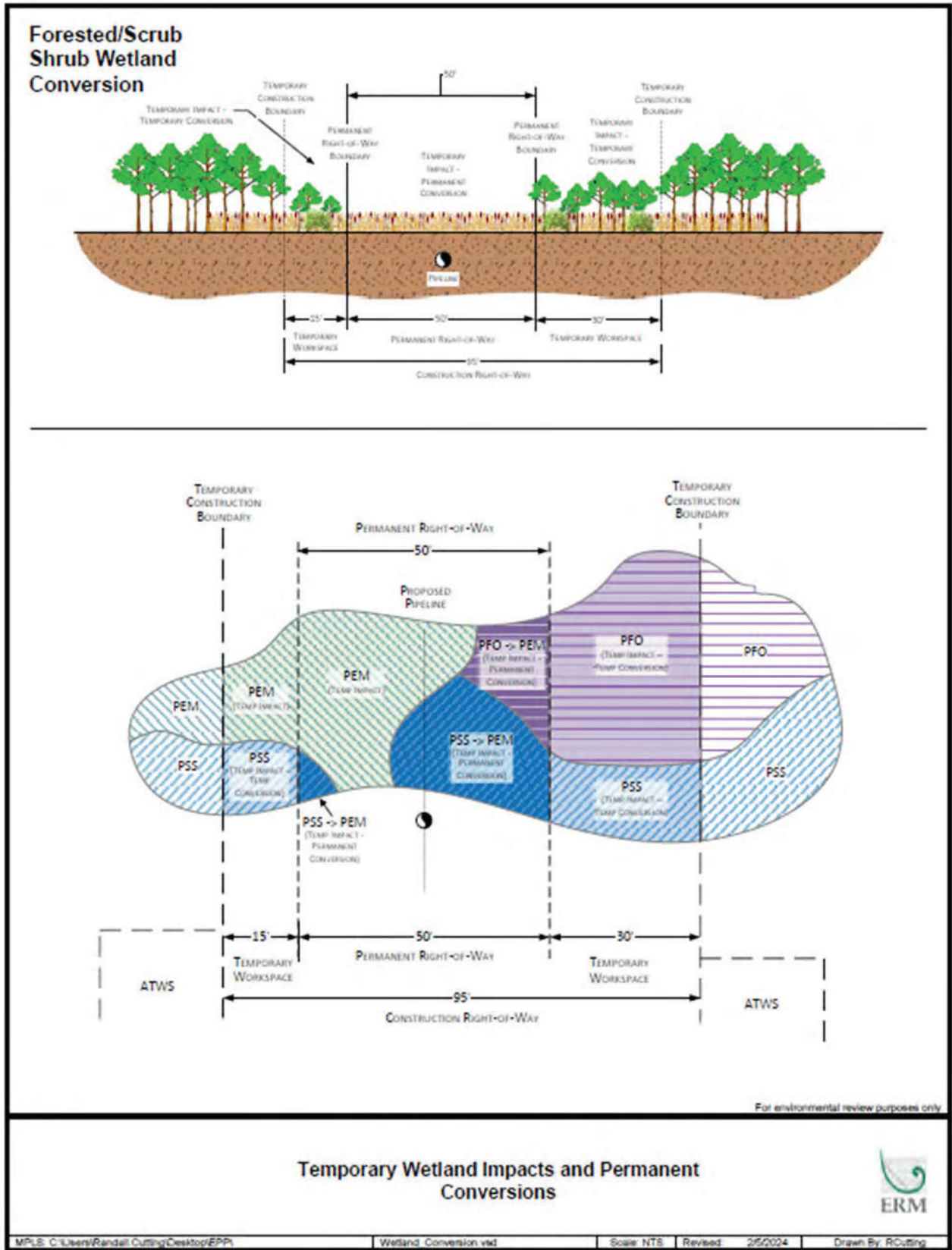
discharges noted above. Matting between proposed HDD entrance and exits locations would only be installed as needed for (1) clearing support or (2) inadvertent return containment and clean-up support. The acreages provided for matting between the HDDs and access roads are based on all wetlands located with these workspace areas and is likely an overestimation of actual matting that would be used based on actual site conditions during construction. While the temporary placement of construction matting in wetlands is considered “fill material,” the use of construction matting is a mitigative measure that minimizes adverse construction related effects in wetlands, such as rutting in soils. A summary of proposed construction related discharges of dredged or fill material, or both, in wetlands by wetland type is shown on table 1.3.1 below:

Table 1.3.1 Summary of WI L5R Regulated Wetland Impacts by Acreage

Wetland Type (based on Cowardin, 1979)	Temporary Discharge Areas (Allowed to Revert to Pre-construction Wetland Type)	Temporary Discharge Areas (Converted to Emergent Wetland)	Permanent Discharge
Emergent/Wet Meadow (PEM)	28.11	0	0.02
Forested (PFO)	32.76	30.06	0
Scrub/Shrub (PSS)	6.31	3.86	0
TOTAL	67.18	33.92	0.02

Figure 1.3.2 illustrates the temporary discharge areas allowed to revert to pre-construction wetland type and areas converted from forested or shrub wetland types to emergent wetlands.

Figure 1.3.2: Temporary Wetland Impacts and Wetland Conversion



Of the proposed WI L5R construction activities resulting in temporary discharges into 0.20-acre of non-wetland waterbodies, 13 crossings are perennial tributaries, 30 crossings are intermittent tributaries, 13 crossings are ephemeral tributaries, 14 crossings are ditches, and two crossings are proposed in swales (that were not delineated as wetlands). The area of non-wetland waters proposed for discharge is the footprint of the waterway that would be excavated for the placement of the pipeline and backfilled after the pipe is installed. Enbridge estimated the area of impact for each waterbody crossing based on a standard trench width of 18 feet wide at the top, six feet wide at the bottom, and extends across the width of the channel. The actual width of the trench in waterbodies is dependent on several factors including, depth of the trench, soil type, soil saturation. Minor variations in the geometry of the excavation area for each stream crossing would not result in more than minimal effects individually or cumulatively. Based on information included in Appendix 1, the anticipated duration for pipe installation through water bodies would typically range from 24 to 48 hours.

Table 1.3.3 WI L5R Regulated* Discharges for Waterbody Crossings by Flow Regime

Waterbody Regime	Number
Delineated Waterbodies	
Perennial**	13
Intermittent	30
Ephemeral	13
Ditches	14
Swales	2
PROJECT TOTAL	72
Notes:	
NHD – National Hydrography Dataset	
WDH – Wisconsin Department of Natural Resources 24k Hydrography Dataset	
*Other waterbodies proposed to be crossed that do not involve a USACE regulated activity (e.g., they are not navigable waters of the United States, and no discharge of dredged or fill material is proposed) are not included in this table.	
** Perennial waterbodies do not include the HDD crossing of the White River, a federally navigable water of the United States, because this crossing method does not result in a discharge of dredged or fill material, or both.	

Activities proposed that do not require Corps authorization:

The Corps does not regulate work in uplands, which comprise approximately 82% of the route.

The proposed WI L5R project would involve crossings of many other non-wetland waterbodies by methods that are not subject to the Corps regulatory authority. This is because the waterbody crossing does not include a discharge regulated under Section 404 and because the waterbody is not considered a navigable water of the United States subject to Section 10 authority.

Specifically, there are 191 bridge crossings proposed that are not regulated by the Corps because the waters are not designated Section 10 waters and the bridge proposed does not result in discharges regulated under Section 404. Of these bridges, 125 waterways would be crossed by bridges during mainline construction activities (including bridges adjacent to trenched crossings), 62 waterways would be crossed by bridges for access roads, three waterways would be crossed by bridges for yards, and one waterway would be crossed for the installation of a mainline valve.

Additionally, 29 non-Section 10 waterways would be crossed using HDD or direct pipe methods of pipeline construction. These crossings do not require Corps authorization because the activities proposed do not include discharges of dredged or fill material, or both, into WOTUS. Those non-regulated crossings are identified here to avoid confusion as it relates to the number of waterways “crossed” in other reference documents, including the state of Wisconsin Department of Natural Resources (WDNR) Environmental Impact Statement (EIS) for the proposed WI L5R project.

1.4 Proposed Avoidance and Minimization Measures

Since 2022, the Corps has been requesting and considering additional information to evaluate the sufficiency of the avoidance and minimization measures proposed by the applicant. Some of the information received since that time is generally applicable to a broad range of alternatives, while other avoidance and minimization information requested was specific to individual crossings or types of aquatic resources. Avoidance and minimization measures that are generally applicable to all wetland and waterway crossings are described below and in Appendix 1. Other measures proposed to minimize wetland and waterway impacts from construction activities are detailed throughout this document in Sections 5.7, 6.3, 6.4, and 6.5.

In general, the applicant proposes to minimize impacts to wetlands and waterbodies along the west side of the proposed WI L5R project route by collocating portions of the project with other existing utility corridors and using open farmed areas as opposed to impacting additional undeveloped greenspace area.

Specialized Construction in Waterbodies

The proposed WI L5R project would cross 72 ephemeral, intermittent, and perennial waterbodies using open-cut (wet-trench) or dry crossing (flume or dam-and-pump) methods. The applicant identified the proposed crossing methods based on the characteristics of the waterbody to be crossed and the suitability and advantages and disadvantages of each of the waterbody crossing method. For open-cut or dry crossing methods, the width of the trench in waterbodies is dependent on several factors including depth of the trench, soil type, and soil saturation. The applicant estimates that the width at the bottom of the trench would be a minimum of 42 inches up to approximately 72 inches. The width at the top of the trench would be approximately 15 to 20 feet in width (average 18 feet). The applicant completed a comparative assessment of the suitability and impacts of proposed trench and trenchless crossing methods and explained the process to select a crossing method proposed for WI L5R in their document titled Pipeline Minimization Design (Appendix 2). To minimize temporary impacts at waterbody crossings, herbaceous vegetation on all stream banks would be maintained undisturbed within a 20-foot buffer from the ordinary high-water mark (OHWM) during initial clearing, except where grading is necessary for bridge installation. Woody vegetation may be removed within this buffer during clearing, leaving the stumps and root structure intact. Non-woody vegetation and the soil profile would be left intact until trenching for the stream crossing. Sediment control measures would be installed and maintained at the 20-foot buffer line adjacent to streams immediately after clearing and prior to initial ground disturbance. All stream bed and banks would be restored as near as possible to preconstruction

contours and elevations upon completion of each stream crossing proposed as part of the WI L5R project.

Specialized Construction in Wetlands

The Corps reviewed route adjustments to avoid wetlands or to cross wetlands at the narrowest crossing point where possible while considering other site constraints. Construction of the proposed WI L5R project in wetlands would occur in a sequential manner and consists of clearing, pipe stringing, trenching, dewatering, installation, backfilling, final cleanup, and revegetation activities. The applicant proposes to reduce the temporary construction workspace where possible based on site-specific conditions to minimize wetland disturbance. Additional special construction methods would be used to minimize impacts to wetlands including use of low-ground-pressure equipment and using timber construction mats for moving equipment. When clearing in wetlands, the following restrictions would apply:

- Grading activities would be confined to the area of the trench.
- Clearing extra workspaces would be minimized in forested wetlands by reducing the construction workspace from 120 feet to 95 feet.
- Vegetation and trees in wetlands within the temporary construction areas and ATWS areas would be cut off at ground level, leaving existing root systems intact to allow for re-vegetation post construction.
- Staging areas, additional spoil storage areas, and other ATWS areas would be in upland areas at least 50 feet away from wetland boundaries, where safe work practices or site conditions allow. Where site conditions do not allow for a 50-foot setback, these areas would be located as far away from wetlands as practicable.

Additional mitigative measures proposed to be implemented to minimize impacts in wetlands are specified in Appendix 1, including:

- Use of construction mats to facilitate equipment access and pipeline installation.
- Installation of temporary erosion control devices after clearing activities.
- Segregating up to one foot of topsoil over the trench line in unsaturated wetlands.
- Maintaining wetland hydrology using trench breakers when necessary.

All temporarily filled wetlands would be restored as near as possible to preconstruction contours and elevations after completion of the proposed WI L5R project. Restoration activities that would occur immediately after construction to stabilize and seed the disturbed construction workspace are described in Appendix 1. Post-construction monitoring would begin during the first growing season after the restoration work is complete in accordance with the Wetland and Waterbody Post-Construction Monitoring Plan (Appendix 3).

1.5 Jurisdictional Determination

The Corps completed an approved jurisdictional determination on June 22, 2020, under the Navigable Waters Protection Rule (NWPR) for all waters within the proposed WI L5R construction corridor, including proposed access roads. The NWPR was vacated on August 30, 2021, and implementation of the NWPR was halted thereafter. On November 21, 2021, the

applicant requested the Corps consider all waters jurisdictional. The Corps agreed to this request and has presumed jurisdiction over all aquatic resources where regulated activities are proposed. Throughout this document, we consider all aquatic resources with regulated activities to be WOTUS absent a formal evaluation. This decision increased the area within the Corps regulatory authority from approximately 11% based on the NWPR approved jurisdictional determination to 18% of the overall 41.1-mile-long proposed project.

1.6 Proposed Compensatory Mitigation

As described in Section 1.3, proposed WI L5R construction activities would result in the permanent discharge of fill material into 998 square feet (0.02 acre) of wetlands, and temporary discharges into 101.1 acres of wetlands and 0.20 acre of non-wetland waters (i.e., streams, swales, and ditches). Of the 101.1 acres of temporary discharges proposed, 67.18 acres would be allowed to revert to its original cover type after construction; and 33.91 acres of forested and scrub-shrub wetland would be converted to emergent wetland habitat in the permanent maintenance corridor. The applicant proposes to compensate for unavoidable construction-related permanent wetland fill, conversion of scrub-shrub and forested wetlands to emergent wetlands and associated temporal loss of wetland functions. Specific details of the applicant's proposed compensatory mitigation are provided in the applicant's proposed Wetland Mitigation Plan in Appendix 4. Based on the functional value ratings for the affected wetlands, the applicant calculated functional losses would occur in approximately 25.95 acres of wetlands with a high assessed functional value, approximately 57.05 acres of wetlands with a medium assessed functional value, and approximately 18.12 acres of wetlands with a low or low-invasive assessed functional value.

The applicant proposes to provide wetland compensation by purchasing wetland credits from a Corps approved wetland mitigation bank in the Lake Superior Bank Service Area (BSA). The applicant stated that their proposed compensation ratios in Table 1.6.1 are based in part upon past permit requirements. Ratios proposed by the applicant have been developed to compensate for permanent wetland fill, conversion of scrub-shrub and forested wetlands to emergent wetlands, and temporal loss of wetland functions.

Additional compensatory mitigation considerations by the applicant include the type of wetland impacted, the regulated activity proposed, the duration of the activity effect, and the anticipated effect to habitat, biodiversity, and hydrology. Proposed wetland replacement ratios are shown in the table below:

Table 1.6.1 Proposed Mitigation Ratios for Line 5

Wetland Type	Mitigation Ratio Proposed for High Value Wetlands	Mitigation Ratio Proposed for Low or Low-invasive & Medium Value Wetlands
Emergent		
Temporal loss during construction	0.06	0.03
Permanent loss: wetland converted to non-wetland	1.5	1.2
Scrub-shrub ^a		
Temporal loss during construction	0.25	0.06
Permanent conversion of wetland type (maintained corridor)	0.60	0.5
Permanent loss: wetland converted to non-wetland	1.5	1.5
Forested		
Temporal loss during construction	0.5	0.25
Permanent conversion of wetland type (maintained corridor)	0.70	0.6
Permanent loss: wetland converted to non-wetland	2.0	2.0
^a includes open bog wetland type		

Proposed mitigation ratios and calculated credits are identified in the table below:

Table 1.6.2 Compensatory Wetland Mitigation Category and Associated Ratios

Wetland Type	Functional Value	Temporary Impact (ac)	Permanent Conversion (ac)	Permanent Fill (ac)	Proposed L5R Mitigation Ratio	Credits Needed
Palustrine Emergent (PEM)						
Fresh (Wet) Meadow	Low/Medium	22.34			0.03	0.67
Fresh (Wet) Meadow	Low/Medium			0.02	1.2	0.02
Fresh (Wet) Meadow	High	2.39			0.06	0.14
Seasonally Flooded Basin	Low/Medium	0.23			0.03	0.01
Sedge Meadow	Low/Medium	2.31			0.03	0.07
Sedge Meadow	High	0.51			0.06	0.03
Shallow Marsh	Low/Medium	0.11			0.03	0.01
Shallow Marsh	High	0.25			0.06	0.02
Subtotal PEM		28.14	0.0	0.02		0.97
Palustrine Scrub-Shrub (PSS)						
Alder Thicket	Low/Medium	1.79			0.06	0.11
Alder Thicket	Low/Medium		0.60		0.5	0.30
Alder Thicket	High	0.30			0.25	0.08
Alder Thicket	High		0.31		0.60	0.19
Shrub-Carr	Low/Medium	4.11			0.06	0.25
Shrub-Carr	Low/Medium		2.77		0.5	1.39

Shrub-Carr	High	0.05			0.25	0.01
Shrub-Carr	High		0.07		0.6	0.04
Open Bog	High		0.06		0.25	0.02
Open Bog	Low/Medium	0.06			0.06	0.01
Open Bog	Low/Medium		0.05		0.5	0.03
<i>Subtotal PSS</i>		<i>6.31</i>	<i>3.86</i>	<i>0.0</i>		<i>2.43</i>
Palustrine Forested (PFO)						
Coniferous Bog	High		0.40		0.70	0.28
Coniferous Swamp	Low/Medium	0.33			0.25	0.08
Coniferous Swamp	Low/Medium		0.41		0.60	0.25
Floodplain Forest	Low/Medium	0.40			0.25	0.10
Floodplain Forest	Low/Medium		0.42		0.60	0.25
Floodplain Forest	High	0.09			0.50	0.05
Floodplain Forest	High		1.80		0.70	1.26
Hardwood Swamp	Low/Medium	22.46			0.25	5.62
Hardwood Swamp	Low/Medium		16.70		0.60	10.02
Hardwood Swamp	High	9.42			0.50	4.71
Hardwood Swamp	High		10.30		0.70	7.21
Hardwood Swamp – Vernal Pool	Low/Medium	0.06			0.25	0.02
Hardwood Swamp – Vernal Pool	Low/Medium		0.03		0.60	0.02
<i>Subtotal PFO</i>		<i>32.76</i>	<i>30.06</i>	<i>0.0</i>		<i>29.87</i>

Based on a review of the anticipated wetland impacts and the available wetland banks within the mitigation service area, the applicant believes that there are potential mitigation bank credits available at the Poplar River Mitigation Bank, located within the Lake Superior HUC 8 watershed, which could potentially satisfy the amount of wetland credits that may be needed. Enbridge proposes to secure a total of 33.27 Corps-approved wetland mitigation bank mitigation credits apportioned as 0.97 credit for PEM wetland impacts, 2.43 credits for PSS wetland impacts, and 29.87 credits for PFO wetland conversion.

Should the Corps decide to proffer a DA permit to the applicant, final decisions regarding compensatory mitigation will be developed by the Corps and incorporated as special conditions to any authorization granted. Refer to Section 11.

1.7 Existing Conditions and Applicable Project History

The existing Line 5 pipeline became operational in 1953. Line 5 is a 645-mile-long, 30-inch outside diameter pipeline that originates at Enbridge's Superior Terminal, located in Superior, Wisconsin. From Superior, Line 5 traverses northern Wisconsin through the Bad River Reservation; Douglas, Bayfield, Ashland, and Iron Counties; the Upper Peninsula of Michigan to Rapid River; across the Straits of Mackinac; through the Lower Peninsula to Marysville, Michigan; across the St. Clair River to Ontario, and eventually terminating at Sarnia, Ontario.

Line 5 transports approximately 540,000 barrels per day (bpd) of petroleum products including 460,000 bpd of crude oil and 80,000 bpd of natural gas liquids (NGLs) from Superior, Wisconsin to Sarnia, Ontario, with deliveries in the Upper Peninsula of Michigan and injection and deliveries in the Lower Peninsula of Michigan.

In July 2019, the Bad River Band filed a lawsuit in federal court against Enbridge for operating its Line 5 pipeline on allotment parcels within the Bad River Reservation without a valid easement. Enbridge has proposed the WI L5R project to replace approximately 20 miles of the existing Line 5 pipeline, including the 12 miles of pipeline within the Bad River Band Reservation, with approximately 41 miles of a new, 30-inch outside diameter pipeline located entirely outside the boundaries of the Bad River Band Reservation.

Enbridge submitted a permit application to the Corps on February 10, 2020. The Corps' initial review indicated the proposed regulated activities may be eligible for authorization under a Regional General Permit (RGP). On November 19, 2021, the Corps determined a Standard Individual Permit review that includes an environmental assessment (EA) was appropriate to fully consider potential effects of the regulated activity, including tribal treaty rights and tribal resources in the ceded territory. The history of the environmental review process for Corps regulated activities proposed to construct WI L5R project is summarized below.

- The permit application was submitted to the Corps on February 10, 2020. Initial review indicated regulated activities may be eligible for authorization under an RGP.
- Applicant submitted revised permit application materials on April 1, 2020.
- Corps completed an Approved Jurisdictional Determination (AJD) under the Navigable Waters Protection Rule (NWPR) on June 22, 2020.
- Corps determined a standard individual permit review is required on November 19, 2021.
- Applicant requested the Corps consider all waters jurisdictional on November 21, 2021.
- The Corps issued a 30-day Public Notice for the DA permit application on January 6, 2022, and established a webpage (https://www.mvp.usace.army.mil/Enbridge_Line5-WI/) to share information regarding the federal action.
- The Corps extended the public notice comment period 30 days, from February 5, 2022, to March 7, 2022.
- The Corps extended the public comment period an additional 15 days, from March 7, 2022, to March 22, 2022, and posted a revised waterbody table to WI L5 website.
- The Corps requested additional information from the applicant on December 9, 2022. The Corps coordinated the request for additional information with the Bad River Natural Resources Department and the EPA to ensure the Corps request for additional information adequately captured comments raised.

In addition to the milestones listed above, the Corps has received additional information, some of which prompted additional questions and clarifications. For the past few years, the Corps has met with and shared information with various Tribes, the Great Lakes Indian Fish and Wildlife Commission (GLIFWC), the WDNR and the United States Environmental Protection Agency (EPA), including multiple field reviews with these stakeholders. See Chapters 4, 10, and Appendix 16 for additional information.

1.8 PERMIT AUTHORITY

Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. § 403), Section 404 of the Clean Water Act (33 U.S.C. § 1344).

2.0 SCOPE OF REVIEW

2.1 Determination of scope of analysis for National Environmental Policy Act (NEPA)

The Corps is preparing this draft EA in compliance with the NEPA (85 Federal Register 43304 (July 16, 2020)) for the federal action, which is the proposed authorization of discharges of dredged and fill material in WOTUS under Section 404 and structures and work affecting navigable waters of the U.S. under Section 10.

NEPA Scope Considerations Broader than the WI L5R proposal:

In response to the Corps 2020 public notice for the WI L5R project, the Corps received comments suggesting that for NEPA purposes, the Corps must or should consider either the whole of Line 5 or the WI L5R proposal together with the proposed Line 5 tunnel project several hundred miles away at the Straits of Mackinac ("Straits" project, under evaluation by the Corps Detroit District). The Corps Detroit District is preparing an Environmental Impact Statement to evaluate the regulated activities for the tunnel project. Based on existing information, the Corps has concluded that the Straits and WI L5R actions are not "related to each other closely enough to be, in effect, a single course of action" that would require evaluation in a single NEPA document. In consideration of NEPA regulations addressing connected actions, the Corps finds that neither action would automatically trigger the other, issuance of a permit for one project would not cause or require the applicant to undertake the other, and neither project requires the other to occur simultaneously or in advance to proceed. Although both activities are proposed by the applicant to allow it to replace discrete segments of Line 5, each project addresses its own independent purpose and the specific situation that precipitated it (namely, for the WI L5R, the applicant's desire to route Line 5 around the Bad River Reservation in Wisconsin, and for the Straits project, agreements between the State of Michigan and Enbridge to seek alternatives to the existing pipelines on the lakebed). These projects are not proposed as a coordinated effort to upgrade or expand the entire Line 5 pipeline. Line 5 itself is a privately owned pipeline and not a federal action. The two actions are not interdependent parts of a larger federal action that depend on the larger action for their justification. The two actions are more than several hundred miles apart, and each action could and would proceed in the absence of the other. Each action is independently justified and has a separate origin and purpose. The Corps has determined that the action subject to evaluation in this EA does not include the Straits project nor the whole of Line 5 and is therefore limited to the regulated activities within the WI L5R segment. We further analyze the Corps NEPA scope for the proposed WI L5R project below.

NEPA Scope Considerations for WI L5R proposal:

The scope of analysis for NEPA includes WOTUS where regulated activities are proposed, as well as uplands where there is sufficient federal control and responsibility to warrant Corps review. When determining whether there is sufficient control and responsibility to include

portions of the project beyond the regulated activities in WOTUS, the Corps considered the following factors from Appendix B of 33 Code of Federal Regulations (CFR) part 325.

First, almost all regulated activities associated with the WI L5R project comprise separate crossings that are “merely links” in a corridor type project. In this case, the regulated activities are proposed along approximately 18% of the overall 41-mile proposed pipeline route. In other words, much of the project corridor is in uplands and does not involve regulated work in WOTUS.

Second, the Corps considered the extent to which there are aspects of work in uplands in the immediate vicinity of the regulated activity that affect the location and configuration of the regulated activity. For linear crossings, the distance from each waterbody crossing location to a point in uplands where the pipe can be configured to follow a different alignment reflects the area that affects the location and configuration of the regulated activity.

Third, the Corps considered the extent to which the entire project would be within Corps jurisdiction. As described above, approximately 18% percent of the overall project comprises regulated activities in presumed WOTUS, refer to Section 1.5 above.

Final description of scope of analysis:

Based on the above considerations, the Corps concludes that the WI L5R NEPA scope of analysis includes the proposed regulated activities in WOTUS associated with linear crossings as well as uplands adjacent to, and in some cases between, waterbodies along the WI L5R corridor where the Corps has sufficient control and responsibility to expand its analysis. For waters with regulated activities that are distant from one another, the scope extends on either side of those waters to the points in uplands where the pipe could be configured to follow a different alignment. Some waterbody crossings are near one another such that alternative alignments could not be configured in the narrow uplands in between those waters. In these instances, the scope extends to include those waterbody crossings and adjacent uplands to the point where alternative alignments can be configured.

The Corps scope does not extend to include the entire proposed 41-mile WI L5R pipeline construction, or pipeline operation, because the Corps does not have sufficient control and responsibility over the entire WI L5R project to warrant an expanded analysis.

EAs are typically prepared when the effects of the federal action on the human environment are not likely to be significant or are unknown. Preparation of an EA for this federal action is consistent and commensurate with the Corps NEPA analysis undertaken for similar and more extensive impacts to WOTUS for pipeline construction. Should the Corps determine, from the EA process, that the environmental impacts of the federal action would be significant and cannot be mitigated below significance, the Corps would prepare an EIS. The type of NEPA document prepared does not affect the Corps’ determination of its scope of analysis. The scope of analysis of the affected environment and environmental consequences is tethered to the federal action and is not considered differently in an EA compared to an EIS.

2.2 Determination of the Corps' action area for Section 7 of the Endangered Species Act (ESA)

For the purposes of Section 7 of the ESA, the “action area” means all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action (50 CFR 402.02). The federal action being considered is issuance of a permit for activities regulated under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. The term “effects of the action” is defined as “all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action. The Corps considered the extent to which the entire project is within the Corps regulatory authority. As described above, the Corps federal action represents approximately 18% percent of the proposed WI L5R relocation project. Based on these factors, the Corps' action area does not extend to the entire pipeline construction, or operation, because the Corps does not have sufficient control and responsibility over the entire project.

Final description of the action area:

The action area for the proposed WI L5R project is coincident with the areas described above for the NEPA scope of analysis. The Corps action area includes the proposed regulated activities in WOTUS associated with linear crossings as well as uplands adjacent to, and in some cases between, waterbodies along the WI L5R corridor where the Corps has sufficient control and responsibility to expand its analysis. For waters with regulated activities that are distant from one another, the action area extends on either side of those waters to the points in uplands where the pipe could be configured to follow a different alignment. Some waterbody crossings are near one another such that alternative alignments could not be configured in the narrow uplands in between those waters. In these instances, the action area extends to include those waterbody crossings that are adjacent to or between narrow uplands to the point where alternative alignments can be configured.

2.3 Determination of the Corps' permit area for Section 106 of the National Historic Preservation Act (NHPA)

The permit area is defined in 33 CFR 325, Appendix C and means those areas comprising waters of the United States that will be directly affected by the proposed work or structures and uplands directly affected because of authorizing the work or structures. The following three tests in Appendix C (1)(g)(1) must all be satisfied for an activity undertaken outside of waters of the United States to be included within the “permit area”:

- 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 installation of the pipeline and access roads, the upland activities immediately adjacent to these regulated

activities (discharge for permanent or temporary dredge or fill material) to a point where alternative configurations could be proposed would not occur.

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 regulated work in WOTUS associated with the installation of the WI L5R pipeline and temporary access roads is essential to activities in uplands to a point where alternative configurations could be proposed.

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

The activities in uplands to a point where alternative configurations could be proposed are directly associated with the work in WOTUS to be authorized.

Final description of the permit area:

The WI L5R permit area includes the proposed regulated activities in WOTUS associated with linear crossings as well as uplands adjacent to, and in some cases between, waterbodies where the Corps have sufficient control and responsibility to expand its analysis. For waters with proposed regulated activities that are distant from one another, the permit area extends on either side of those waters to the points in uplands where the pipe could be configured to follow a different alignment. Some waterbody crossings are in proximity to one another such that alternative alignments cannot be configured in the narrow uplands in between those waters. In these instances, the permit area extends to include those waterbody crossings that are adjacent to or between narrow uplands to the point where alternative alignments can be configured.

To determine the area of potential effects (APE), the Corps considered the nature of the activities in the permit area, which are proposed to primarily include temporary construction work in waters of the U.S. and adjacent uplands, such as vegetation clearing, excavation and filling. The APE is the area where an undertaking may directly or indirectly alter the character or use of an historic property if such properties exist. The APE for regulatory undertakings is based on the direct and indirect effects that may result from the regulated activities in the permit area. The permit area is the direct effect portion of the APE. In some cases, indirect effects, such as a change to setting, may occur because of the authorized activities in the permit area. Therefore, the APE was defined to include all areas within a 100-meter radius of the permit area to account for potential indirect effects, such as visual, audible, and atmospheric effects, of the undertaking on historic properties.

In August 2020, the Corps consulted with the Wisconsin State Historic Preservation Office (WI SHPO) on an appropriate APE for the proposed Federal undertaking. The permit areas and APE are described in a letter to the WI SHPO dated June 3, 2021. The permit areas and APE were revised because of the Corps' treatment of all waters as jurisdictional for regulatory review and revised maps sets were provided to the WI SHPO on April 18, 2022. The permit areas and APE are shown in Appendix 14.

3.0 PURPOSE AND NEED

3.1 Purpose and Need for the Project as Provided by the Applicant

Enbridge owns and operates the 645-mile-long, 30-inch outside diameter Line 5 pipeline, originally installed in 1953, as part of its U.S. mainline system. The pipeline originates at Enbridge's Superior Terminal, located in Superior, Wisconsin, traverses northern Wisconsin, the Upper and Lower Peninsulas of Michigan, and terminates in Sarnia, Canada. Line 5 has an annual average capacity of 540,000 barrels per day (bpd) of petroleum products including 460,000 bpd of crude oil and 80,000 bpd of natural gas liquids (NGLs).

In Wisconsin, the existing Line 5 pipeline crosses Douglas, Bayfield, Ashland, and Iron Counties. The existing Line 5 pipeline crosses through approximately 12 miles of the Bad River Band Reservation. In 2019, the Bad River Band filed a federal lawsuit against Enbridge for operating its pipeline on allotment parcels within the Bad River Reservation without valid easements. In response to the relief requested by the Bad River Band, Enbridge has proposed the WI L5R project to replace approximately 20 miles of the existing Line 5 pipeline, including the 12 miles of pipeline within the Reservation, with approximately 41 miles of a new, 30-inch outside diameter pipeline located entirely outside the boundaries of the Reservation. Enbridge's stated purpose for its WI L5R project is to continue transporting crude oil and NGLs through its Line 5 pipeline, a portion of which would be relocated around the Bad River Reservation.

3.2 Purpose and Need for the Project as Defined by the Corps

The Corps is preparing this document in compliance with the NEPA for the federal action, which is the evaluation of the DA permit application for discharges of dredged and fill material in WOTUS pursuant to Section 404 and structures and work affecting navigable waters of the U.S. pursuant to Section 10. The document also serves to support decision making for determinations of public interest and compliance with the 404(b)(1) Guidelines. Corps regulations specify that when the applicant is a private enterprise, the Corps generally assumes that appropriate economic evaluations have been completed, and that the proposal is economically viable, and needed in the marketplace.

The Corps' defined purpose and need for the proposed WI L5R project is to transport crude oil and NGLs entirely outside the Bad River Reservation at approximately the same capacities provided by Enbridge's existing Line 5 pipeline. Reasonable alternatives are those that are technically and economically feasible and meet the purpose and need of the proposed action (40 CFR 1507.4 (ff)).

3.3 Basic Project Purpose, as Determined by the Corps

Transportation of crude oil and NGLs.

3.4 Water Dependency Determination

Where the activity associated with a Section 404 discharge is proposed for a special aquatic site (e.g., wetlands) and does not require access or proximity to or siting within the special aquatic site in question to fulfill its basic purpose (i.e., is not "water dependent"), practicable alternatives that do not involve special aquatic sites are presumed to be available, unless clearly demonstrated otherwise. In addition, where a discharge is proposed for a special aquatic site, all

practicable alternatives to the proposed discharge which do not involve a discharge into a special aquatic site are presumed to have less adverse impact on the aquatic ecosystem, unless clearly demonstrated otherwise.

The WI L5R proposal 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. The Corps' determination that the activity is not water dependent recognizes that linear projects such as pipelines must, in many instances, cross WOTUS, including special aquatic sites, to achieve their project purpose.

3.5 Overall Project Purpose, as Determined by the Corps

After careful consideration of the applicant's stated purpose and need, the Corps has determined the overall project purpose is to relocate approximately 12 miles of the existing Line 5 pipeline within the Bad River Band Reservation with new pipeline located entirely outside the boundaries of the Reservation at approximately the same capacities provided by Enbridge's existing Line 5 pipeline. This defined purpose allows for the consideration of a meaningful range of alternatives under the 404(b)(1) Guidelines, while also considering the needs of the applicant.

To be practicable, an alternative must be available and capable of being done after taking into consideration cost, logistics and existing technology considering the overall project purpose (40 CFR 230.3(l)).

4.0 PUBLIC INVOLVEMENT

4.1 Overview of Public Involvement

The Corps determined the DA application for the proposed WI L5R project complete on November 19, 2021, in accordance with 33 CFR 325 which includes specific information that is necessary to consider an application complete for public posting. A 30-day public notice was published on January 6, 2022. The public notice comment period was extended twice to March 7 and March 22, 2022, to afford the public, tribes, and other agencies additional time to provide comments to the Corps. Concurrent with the public notice, the Corps developed a dedicated public webpage to include additional information, details, and figures of the proposed WI L5R project (https://www.mvp.usace.army.mil/Enbridge_Line5-WI/).

The Corps received many comments in response to the public notice and all comments were forwarded to the applicant. The Corps' administrative record contains all the official comments received. Because the information required to determine a permit application complete and publish a public notice is less than the information needed for the Corps decision-making, many comments received requested the Corps to obtain and consider additional information prior to making a DA permit decision. Comments included the following topics, which have been aggregated here, and have been considered and addressed throughout this Draft CDD. The reference locations for relevant information provided below are not exclusive.

- Direct, indirect, and cumulative effects: Comments indicated the Corps should consider the effects of the entire pipeline. The Corps analysis evaluates direct, indirect, and cumulative effects of the federal action. When analyzing effects, the Corps focuses on those with a reasonably close causal relationship to the regulated activities. This

document includes information regarding potential effects related to the public interest (Section 7), NEPA (Sections 5, 7 and 9), and as part of our 404(b)(1) guidelines analysis (Section 6). The Corps scope of analysis does not extend to the entire pipeline or its operation, including consideration of substances transported within it. See Section 2 for additional information.

- Purpose and Need/Overall Project Purpose. Comments expressed concern with the applicant's stated purpose and need included in the Public Notice, indicating it was unreasonably narrow and would result in excluding potentially reasonable and feasible alternatives if adopted by the Corps. Comments indicated that the overall project purpose must not be drawn so narrowly as to make practicable alternatives appear impracticable. In establishing the purpose and need and overall project purpose for the project, the Corps performs an independent review considering both the needs of the applicant and the public interest. The overall project purpose must be defined to allow for consideration of a meaningful range of alternatives. The Corps' purpose and need (pursuant to NEPA), basic and overall project purpose (pursuant to the Section 404(b)(1) guidelines) are in Section 3.0.
- Alternatives to pipeline and system/route alternatives: Comments indicated alternatives provided by the applicant, both for non-pipeline transport and for route alternatives, were unreasonably narrow and lacked sufficient information for evaluation. Other comments stated potential feasibility, cost, logistics, and emissions concerns with non-pipeline alternatives, and emphasized avoidance/minimization measures proposed by the applicant. As part of the Corps responsibilities pursuant to NEPA and the 404(b)(1) guidelines, the Corps requested additional information about the use of existing pipelines in alone or in combination with one another, as well as rail and truck, and additional comparative information between the four pipeline alternatives originally submitted. The Corps has considered a variety of alternatives to the proposed action, including "no action" alternatives including alternatives to pipeline, and a variety of alternative pipeline routes. See Section 5.
- Less damaging crossing methods: Comments requested the Corps require, on a site-specific basis for each WOTUS crossing, a comparison of crossing methods to identify the least damaging construction method, including those with and without discharges. The Corps December 2022 request for information specifically requested additional information regarding the location and installation method for the proposed White River crossing (see Section 5). The Corps additionally requested the applicant to evaluate trenchless pipeline installation methods for trout streams and perennial tributaries to them, 303(d) listed waters, areas of special natural resource interest streams (ASNRIs), and waters that flow downstream to the Bad River Reservation and are listed as exceptional and outstanding resource waters. The Corps also requested avoidance and minimization measures for wetlands considered distinguished by their quality, groundwater interactions, or size. See Sections 5, 6, and 7 for information related to the Corps analysis of this information, as well as Appendices 2, 5, and 11.
- Mitigation: Comments questioned whether proposed compensatory mitigation adequately addresses changes in functions and duration of impacts. Section 1.6 describes the compensatory mitigation proposed by the applicant to offset functional losses associated with the proposed Corps regulated activities. The Corps has determined that the proposed compensatory mitigation would be a special condition if a

DA permit is granted. The Corps will consider public comments in advance of deciding what may be appropriate and sufficient compensatory mitigation. Additional information regarding the applicants proposed compensatory mitigation is in Section 8.0.

- **Water quality:** Many commenters raised concerns regarding water quality effects, including effects with potential to reach the Bad River Band Reservation waters, the Bad River, the Kakagon and Bad River Sloughs, and Lake Superior. The WDNR has primary responsibility to regulate potential adverse effects to water quality. The WDNR evaluates compliance with state water quality standards under Section 401 of the CWA. The Corps reviewed the WDNR draft EIS in advance of preparing this document. By regulation, the Section 401 process must be concluded prior to any Corps decision. See Section 10.1. Additionally, the EPA holds responsibility to assess whether any certification granted may result in water quality concerns to neighboring jurisdictions as part of the Section 401(a)(2) process. The Corps anticipates that the Bad River Band would be considered a neighboring jurisdiction by EPA. The Bad River Band has expressed concern that the proposed project would impact the water quality within the Reservation and requested additional analysis of water quality impacts. See Sections 7.17 and 10.1. In addition to considering potential effects to neighboring jurisdictions, EPA has invoked special procedures for review because EPA identified potential for substantial and unacceptable impacts to aquatic resources of national importance (ARNIs). In response to the Corps' public notice, the EPA, pursuant to the MOA between the EPA and Department of the Army for Clean Water Act Section 404(q), indicated that the proposed project "may result in substantial and unacceptable impacts" to the Bad River and the Kakagon-Bad River Sloughs wetland complex, which EPA identified as ARNIs. The EPA notified the Corps on April 14, 2022, that the proposed project would result in substantial and unacceptable impacts to ARNIs. The EPA's comments indicated there was inadequate information to conclude the applicant's proposed alternative was the least environmentally damaging practicable alternative and focused on further avoidance and minimization of pipeline construction related discharges to WOTUS, recommendations to address water quality and significant degradation concerns, and options for improving mitigation for unavoidable impacts.

The National Park Service (NPS) requested the Corps consider potential threats to Apostle Islands National Lakeshore and the Kakagon Sloughs and ensure that needed assessments are completed. Specifically, the NPS requested the Corps provide site-specific description describing current conditions of Apostle Islands surface waters, important public lands attributes of Apostle Islands, potential effects on Apostle Islands surface water and potential effect of the project on the public lands of Apostle Islands; site-specific oil spill analysis developed specifically for Apostle Islands to effectively understand the potential impacts of the project; and, to note of any readily foreseeable actions, such as the need to construct staging areas, build temporary roads, construct new compressor stations, or maintenance facilities for activities within the watershed(s) of the Kakagon Sloughs and Apostle Islands. See Section 6.6.5 for Corps discussion of the NPSs comments.

Based on these considerations, the Corps requested the applicant provide additional information related to potential effects to water quality, including, but not limited to information regarding potential to disrupt life stages of aquatic life, fish spawning, and wildlife dependent on aquatic systems. The Corps also required the applicant to provide a plan for monitoring construction-related risks that may impair perennial waterways, particularly when the potential for fine-grain substrates suspended may have the

potential to affect benthic macroinvertebrate communities when settling out of the water column. The Corps also requested information describing how the applicant proposes to meet the Bad River Band's narrative and numeric water quality standards. Information provided in response to this request is included in Appendices 3, 7, 8, and 9. Refer to sections 6 and 7.17 for analysis of anticipated effects of the discharge on water quality, including sedimentation.

- **Blasting:** Comments requested site specific identification and analysis of where blasting is proposed in wetlands and non-wetland waters. In December of 2022, the Corps formally requested the applicant to provide additional information and analysis on potential adverse effects of blasting in wetlands and waterbodies, and measures that would be implemented to minimize risks, including measures to use baseline and post-construction monitoring used to inform the need for corrective or mitigative measures. Finally, the Corps required the applicant to identify the locations of all aquatic resources where blasting was proposed. In response, the applicant provided the information in Appendix 6. See Section 6.3.1., 6.4.2, and 6.5.2 for additional information regarding the Corps analysis.
- **Other direct and indirect effects to aquatic resources:** Comments requested detailed consideration of potential effects including changes in hydrology attributable to placement of pipeline and other discharges (see Sections 6.5.2 and 6.3.5), soil compaction (see section 6.3.1); impacts to groundwater including drinking water from construction and operation and desire for pre- and post-construction monitoring (see Section 6.6.1), habitat fragmentation and loss of shading (see Sections 6.3.5 and 9), and effects on high quality waters and trout streams (see Sections 6.4.2).
- **Tribal Treaty Rights and effects on resources important to tribes:** Activities subject to Corps regulation are proposed within ceded territory. Several tribes identified concerns related to treaty rights and effects on resources significant to tribes. This information was used to support the Corps decision to proceed with a more robust Standard Individual permit process in November 2021. The Corps will continue to consider the proposed federal action's potential effects to tribal treaty rights, including any additional information and analysis that may be provided by tribes subsequent to review of this draft CDD. The Corps has consulted extensively with tribes on a Government-to-Government basis as well as pursuant to Section 106 of the NHPA. During these meetings, the Corps committed to listen to and understand their stated concerns regarding resources of concern, water quality, cultural practices, climate change and potential for disproportionate effects on EJ communities. In addition, concerns were raised regarding enforcement of a state trespass law restricting tribal access to lands used for hunting, fishing, and gathering natural resources. The Corps requested information relevant to these concerns in December of 2022 to address these concerns. See Section 10 for additional information, including anticipated effects to tribal uses and cultural practices.
- **Environmental Justice:** The Corps is considering the environmental and human health effects of its proposed federal action 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, have been an integral part of the Corps analysis of regulated activities associated with the proposed WI L5R project to ensure that concerns of all people are considered as

part of the Corps decision-making process. Further information on the Corps consideration of Environmental Justice is in Section 10.15.

- **Use of HDDs and aquifer breaches:** Many comments expressed concern regarding potential inadvertent releases. Inadvertent releases occur when drilling fluid is released during HDD. The Corps may regulate inadvertent releases when a release meets the criteria to be considered a discharge of fill material. When considering drilling mud from an inadvertent release, 33 Code of Federal regulations part 323.2(e) specifies that the material must effectively change the bottom elevation of a WOTUS or replace a WOTUS with dry land. While the Corps recognizes that inadvertent releases may occur, inadvertent releases are not foreseeable activities in the Corps authority to consider. Further, the Corps does not have regulatory authority over HDDs unless they are across a Section 10 water. For the proposed WI L5R project, the White River is the only Section 10 water proposed to be crossed via HDD. While only one proposed HDD is regulated by the Corps, the Corps requested the applicant affirm that the geology of the other proposed HDD locations is conducive to that pipeline installation method. See Section 6.3 for additional information. In addition to inadvertent releases, multiple commenters requested specific information on aquatic locations to further assess where aquifer breaches may occur if a confined aquifer is pierced. Even though aquifer discharges are not regulated by the Corps, the Corps provided these comments to the applicant for voluntary response. The applicant provided an assessment of aquifer conditions in relation to its proposed crossing methods. See Sections 4.3 and 6.6 for additional information.
- **Endangered and Threatened Species.** Comments requested additional consideration of information on state and federally listed species. Specifically, attention was given to the gray wolf, two bat species, and several state-listed species including Braun's Holly Fern, Arrow-leaved Sweet Colt's-foot, Wood Turtle, Canada Lynx, Bald Eagle, Loggerhead Shrike, Kirtland's Warbler, Yellow Rail, Spruce Grouse, Incurvate Emerald, and Extra-striped Snaketail. The Corps is responsible for consulting on federally listed species which include the gray wolf, the northern long-eared Bat, and Canada lynx, when the proposed action may affect them. See Section 10 of this document for additional information regarding the Corps review pursuant to the Endangered Species Act. It is the applicant's responsibility to coordinate with the WDNR for compliance with state laws regarding state-listed threatened or endangered species. The Corps analysis and preliminary findings related to its public interest review are available in Section 7.
- **Climate change:** Comments expressed the need for analysis of climate change effects of continued reliance on the burning of fossil fuels for energy. The Corps scope does not extend to consider the effects of using the transported material. Rather, the Corps scope is relegated to considering climate change effects resulting from the potential issuance of a DA permit for construction-related activities proposed in waters of the U.S. The issuance of a DA permit would have no effect on consumer demands for fossil fuels. The use and burning of crude oil and NGLs transported by pipelines is outside the Corps scope to consider. See Section 7.5 for climate change and 9 for cumulative effects.
- **Oil spills:** Comments expressed concern regarding potential for oil spills, leaks, and other damage during pipeline operation to other properties and downstream waters including Lake Superior, Kakagon and Bad River Sloughs, and their sensitive resources including manoomin (wild rice) and fish species. Oil spills are typically associated with

pipeline operation, which is outside the Corps purview to consider. The contents transported within a pipeline are outside the Corps purview to consider. Pipeline safety is within the purview of the U.S. Pipeline and Hazardous Materials Safety Administration (PHMSA). While outside the Corps scope, in December 2022 the Corps recommended that the applicant consider spill modelling as a way to address public concerns regarding risk and potential effects of a spill. While outside the Corps authority to require, the applicant voluntarily used modeling to assess the risk associated with a spill, including the likelihood of a spill reaching the boundary of the Bad River Reservation. This model assessed a variety of scenarios. An overview of the model approach, including “worst case discharge” calculations was attended by the Corps and PHMSA in July 2022. Additional sessions were made available to WDNR, EPA, GLIFWC, and other Tribal staff in 2023.

- Human trafficking: Comments indicated the Corps should consider human trafficking, particularly disproportionate targeting of indigenous women and children. Please see Section 10.15 regarding environmental justice. The Corps provided these comments to the applicant for their voluntary response.
- Economic concerns (ex .jobs, housing): Comments identified potential beneficial and adverse effects related to construction activities considering jobs and employment and indicated the Corps should consider effects of pipeline construction on housing availability. The anticipated increase in population from outside areas associated with regulated construction activities would temporarily affect socioeconomics, lodging availability, transportation systems, and crime risk. See sections 7.3 and 10.15.
- Decommissioning or shutting down Line 5 in the Bad River Reservation: Comments indicated decommissioning the line should be evaluated, either as the No Action alternative or as a connected action. The Corps has no authority to determine the fate of the existing pipeline within the Bad River Reservation. Refer to Section 4.3. Regulated activities associated with removal of pipeline in the existing corridor would be a separate action from the proposed WI L5R. See Section 9 for more information.
- Environmental Impact Statement (EIS): Comments requested the Corps prepare an EIS rather than an EA. In Section 2.1 of this document, the Corps explains why it has prepared an EA. Should the Final EA conclude that the federal action would cause significant environmental effects which cannot be mitigated below significance, an EIS would be prepared.

4.2 Additional Issues Raised by the Corps:

Since the posting of the public notice, the Corps has continued its evaluation of information provided by the applicant and has coordinated with other federal and state agencies and tribes and the public to identify additional information needs as part of the environmental review. Section 4.1 outlines major comment themes raised by the public and Corps responses. When the comments were consistent with the Corps scope, the Corps requested additional information as described above. The following issues were additionally raised to the applicant for response as part of the Corps continuing review.

The Corps requested additional information that describes the restoration method proposed for each Corps-regulated waterway crossing. The Corps requested site-specific crossing plans for

waterways that illustrates the baseline condition of each waterway (bank height, bank width, water depth) to inform how the stream bed and banks would be restored post-construction. The Corps requested information which indicates whether riprap or other fill material would be permanently discharged below the ordinary high-water mark of waterways for post-construction restoration as such discharges require permit authorization. Additional information is provided in Appendices 3 and 8, and consideration of this information is considered throughout this document.

Over the course of the Corps meetings with Tribes (See Section 10 and Appendix 17), the Corps received information about important locations and resources which may be present within the proposed WI L5R corridor. Many of the locations and species identified are outside the Corps ability to control. Regardless, the Corps asked the applicant to voluntarily protect these locations and resources wherever possible. As a result, a draft Cultural Resources Protection Plan (CRPP) was developed. This plan has been shared with interested Tribes for review. Portions of the CRPP that cover locations within the Corps authority would become a condition of any DA permit, if granted, for the WI L5R project. The Corps considers locations outside its authority to be voluntary action taken by the applicant. The CRPP provides the site-specific avoidance, minimization, and protection measures at locations of significant and sensitive resources identified during the Corps investigations for the proposed WI L5R project. The CRPP also outlines plans and processes for new discoveries and provides the framework for the monitoring teams, to include tribal indigenous monitors and archaeological monitors, and monitoring plans during construction.

The Corps requested the applicant provide measures that would be employed to monitor and address potential sedimentation and other water quality impairments to these waters which may result from construction-related activities. To evaluate the potential to impact water quality, and to inform the need for monitoring and where the monitoring should take place, a quantitative assessment of sediment dispersion from planned waterbody crossing activities was prepared and provided to the Corps. Based on this coordination, the applicant has provided a substantial amount of additional information that address many concerns and issues raised within the Corps' scope of authority and is referenced throughout the remainder of this document. See Section 6 of this document for additional information.

The Corps also requested the applicant to explore additional alternatives beyond the four route alternatives originally provided. These alternatives are further discussed in Section 5 below.

4.3 Comments Regarding Activities and/or Effects Outside of the Corps' Scope of Review:

Many of the comments received are outside the Corps scope to evaluate. The Corps decision is whether to authorize activities associated with the federal action. The Corps' federal action is the evaluation of an application for DA authorization for proposed discharges of dredged and fill material in WOTUS and work under a navigable WOTUS.

Further, many comments requested the Corps to consider pipeline operations or other potential operational effects which the Corps has no authority to control and are outside the Corps scope to consider. The Corps received many comments expressing concern about the potential for

inadvertent releases of drilling fluid associated with horizontal directional drilling, aquifer breaches resulting from pipeline construction activities, and concerns about operational issues such as oil spills, reliance on fossil fuels, and climate change. Comments received regarding activities and effects outside of the Corps' scope of review are addressed in Section 4.1 above and throughout this document.

Several commenters, citing the 2019 case of Bad River Band of the Lake Superior Tribe of Chippewa Indians v. Enbridge (Case No. 3:19-cv-602), requested the Corps to assess impacts associated with the fate of the existing Line 5 pipeline within and outside the Reservation as a connected action or effect of the action. At this time, the Corps has no proposal from the applicant to conduct regulated activities associated with removal or decommissioning of the existing pipeline within the Reservation. The Corps has determined the potential fate of the existing Line 5 pipeline to be outside of the Corps scope of review for the proposed WI L5R project. The Corps decision regarding the federal action does not determine the fate of the existing pipeline, including how long it may operate. The Corps has no authority over the decommissioning of a pipeline or over the operation of a pipeline. Regulated activities which may be associated with a future proposal to remove all or portions of the pipeline within the existing corridor within the Reservation would be a separate federal action (see Section 9).

Several commenters suggest the Corps evaluate the proposed L5R project together with the proposed L5 tunnel project at the Straits of the Mackinac ("Straits" project, under evaluation by the Corps Detroit District). The Corps does not find the two actions appropriate to consider together. See Section 2.1 for additional information.

5.0 ALTERNATIVES ANALYSIS

An evaluation of alternatives is required under NEPA for proposed federal actions. NEPA requires discussion of a reasonable range of alternatives, including the no action alternative, and the effects of those alternatives. When used within Section 5, the word reasonable is specifically applicable to the Corps analysis pursuant to NEPA.

An evaluation of alternatives is also required under the Section 404(b)(1) Guidelines of the Clean Water Act for projects that include a discharge of dredged or fill material, or both, in WOTUS. Under the Section 404(b)(1) Guidelines, alternatives are practicable if they are available and capable of being done in light of cost, logistics, and existing technology. Under the Guidelines, no alternative may be permitted if there is a less environmentally damaging practicable alternative. When used within Section 5, the word practicable is specifically applicable to the Corps analysis pursuant to Section 404(b)(1).

5.1 Overview

The Corps prepared an alternatives analysis of the proposed WI L5R project based on available information, including information provided by the applicant and the public. The applicant provided consideration of several alternatives to their proposed route, as described in Sections 5.3 - 5.7 below. The Corps has considered this information to support decision making, including the preliminary determination of the least environmentally damaging practicable alternative (LEDPA).

5.2 Site Selection/Screening Criteria

The Corps' array of reasonable alternatives must be technically and economically feasible and meet the purpose and need for the proposed action. Practicable alternatives must be available and capable of being done after taking into consideration cost, logistics, and existing technology in light of the overall project purpose as defined by the Corps. The Corps analysis does not include alternatives outside the purpose and need or overall project purpose, such as alternate sources of energy for public consumption.

The Corps has determined that the following considerations are appropriate to screen alternatives: capacity to transport crude oil and NGLs at approximate capacities provided by Enbridge's existing Line 5 to reach identified delivery/receipt points, safety, land access or availability, costs, logistics, technology, and environmental impacts, including impacts to WOTUS.

5.3 No Action Alternative

The No Action Alternative would result from the Corps not issuing a DA permit to the applicant for the discharges of dredged and fill material into waters of the United States or for work in, over, or under a Section 10 water. If a permit were denied or the applicant modified its proposal to avoid all regulated activities, there would be no authorized wetland or stream impacts as a result of this alternative. No-action alternatives considered include leaving the existing Line 5 in place or utilizing other alternatives to transport crude oil and NGLs without incorporating any Corps regulated activities. No action alternatives considered are listed below in Sections 5.3.1 and 5.3.2.

5.3.1 Pipeline System Alternatives

Pipeline system alternatives are those that would make use of the existing Line 5 or other existing pipelines, including modifications to other pipeline systems, to meet the purpose and need of the proposed WI L5R project. A pipeline system alternative would make it unnecessary to construct all or part of the proposed project, although it may require some modifications or additions to other existing pipeline systems. To meet the purpose and need, these pipelines would either need to interconnect to Enbridge's system at or near Enbridge's Superior Terminal to transport products being delivered to receipt points provided by Line 5.

Corps analysis of Pipeline System Alternatives:

The No action pipeline system alternatives include use of the current Line 5 or re-purposing a different existing pipeline. Continued use of the existing Line 5 pipeline within the Reservation would not meet the purpose and need or overall project purpose because it would not be located outside the Bad River Reservation. Therefore, it is not a reasonable nor practicable alternative to be considered further. Alternately, shutting down or terminating use of Line 5 within the Reservation, without a replacement means of transport would not meet the purpose and need or overall project purpose.

Based on information provided by the applicant, there is no existing pipeline system designed to transport both crude oil and NGL products from Enbridge's Superior Terminal to delivery and receipt points provided by the existing Line 5 system. Therefore, existing system alternatives

are not reasonable. The transportation of products currently delivered to receipt points by Enbridge's existing Line 5 from other markets does not meet the purpose and need or overall project purpose and is not practicable. Construction of any new pipeline to transport the products delivered by the existing Line 5 would most likely result in impacts to WOTUS and is not a no action alternative. A variety of pipeline route action alternatives are discussed in Section 5.4 below.

5.3.2 Alternative Transport Modes

As an alternative to pipeline rerouting outside the Bad River Band Reservation, the Corps reviewed information provided by the applicant to assess the feasibility of utilizing rail and truck to transport the quantities of crude oil and NGLs currently transported to receipt points by Line 5.

5.3.2.1 Transportation by Rail

North American railroads transport crude oil and NGLs in specialized tank cars that hold 658 barrels of crude oil or 802 barrels of NGLs. Approximately 669 rail tank cars would be required daily to transport the Line 5 daily crude volume of 460,000 bpd, and approximately 112 rail tank cars would be required daily to transport the Line 5 daily NGL volume of 80,000 bpd. Currently, there are no existing railroad systems or routes that connect Enbridge's Superior Terminal to the main delivery and receipt points, the Plains Midstream Depropanization Facility in Rapid River, Michigan, and the facility in Lewiston, Michigan. Rail support to existing delivery points would require additional rail lines and siding facilities at each location. Construction of new lateral rail service lines would be required and would pose additional risk and impact to landowners and the public. This alternative would also require the construction of rail car loading and off-loading facilities near Enbridge's Superior Terminal and at other receipt/delivery locations along the Line 5 pipeline system. While rail tanker cars are a vital part of the short-haul distribution network for crude oil, pipelines are a safer and more economic transportation alternative for long-haul distribution networks because the estimated cost of shipping the volume of crude oil transported by rail cars in lieu of pipeline (incorporating operation and maintenance costs along with fuel costs) would be in the range of hundreds of millions of dollars per year, which is significantly greater than the cost of transporting the oil by pipeline. According to the U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration, pipelines remain to be the most efficient (for volume and distance) and safest means to transport oil and NGLs compared to truck and rail. During the Line 3 State of Minnesota proceedings, a general management consulting firm serving the transportation and logistics sectors explained that pipelines are highly efficient at moving large volumes of crude oil and offer "superior" economics compared to rail transportation because: (1) pipeline transport is two to three times less expensive per barrel of oil than rail transport; and (2) pipelines are not subject to certain external factors that impact rail traffic, such as extreme weather or congestion.

Corps analysis of Transportation by Rail:

Transportation by rail would be economically infeasible. There is currently no rail system available to directly connect existing Line 5 origin and delivery points. New rail service or updates would be likely to require a DA permit and would be an action alternative (see Section 5.4). As a no-action alternative, transportation by rail is not reasonable, nor would it be practicable.

5.3.2.2 Transportation via Truck

North American tank trucks designed to transport hazardous liquids have the capacity to transport 172 barrels of crude oil or 218 barrels of NGLs. To achieve the continuous daily (24-hour) transport of Line 5 volumes 540,000 bpd of crude oil and NGLs, a total of 3,000 loaded tanker trucks and an additional 3,000 empty tanker trucks would be required to travel on highways and roads each day. A dedicated fleet would need to be acquired to provide the necessary quantity of tanker trucks and terminal points would need to be constructed at locations west and east of the Reservation. Tanker trucks are generally used to move oil from wellhead locations not served by pipeline gathering systems to aggregation points and storage facilities. They are not typically used to transport the volumes currently transported by Line 5. A trucking alternative may also overburden current public road capacity and increase GHG emissions. Data from other states impacted by development in the Bakken Formation suggest that the use of trucking negatively impacts communities and roadways, and that additional pipeline infrastructure would alleviate transportation concerns. Like the rail transport option, Enbridge or its shippers would need to construct truck loading/unloading facilities at suitable locations near the Superior Terminal and other receipt/delivery points along Line 5. The estimated cost of trucking the volume of crude oil transported by truck in lieu of pipeline (incorporating operation and maintenance costs along with fuel costs) would be in the range of hundreds of millions of dollars per year, which is significantly greater than the cost of transporting the oil by pipeline.

Corps analysis of Transportation by Truck:

Use of existing roadways to transport products by truck to Enbridge's customers would not be reasonable or practicable due to cost, public traffic safety, and logistics. Transportation by truck and would not meet the overall project purpose.

Hybrid No-Action alternatives:

The Corps considered combinations of pipeline and rail, rail and truck, and pipeline and truck to address the purpose and need. Splitting the product delivery to a hybrid of pipeline with either rail or truck, or rail and truck without pipeline, would not eliminate the cost and logistical issues identified above with either truck or rail as identified above. Further, it would not improve safety. A partial pipeline, partial rail or truck alternative is not reasonable. While this type of alternative may be technically feasible, it would not be economically feasible. Hybrid no-action alternatives would not meet the overall project purpose.

5.4 Action Alternatives

To meet the purpose and need of the project, reasonable alternatives must transport crude oil and NGLs entirely outside the Bad River Reservation at approximately the same capacities provided by the existing Line 5 pipeline. The Corps considered new rail lines and associated infrastructure to transport the volumes described in Section 5.2 (screening criteria). New rail is not reasonable or practicable based on cost and logistics and would likely have substantially greater anticipated environmental impact. Therefore, the Corps has preliminarily determined that there are no economically feasible transportation alternatives other than rerouting the existing pipeline outside of the boundaries of the Bad River Reservation. To meet the purpose and need of the project and the overall project purpose, pipeline route alternatives are limited to those that would connect the existing L5 pipeline west and east of the Bad River Band

Reservation because the Corps finds that other pipelines were not reasonable or practicable based on the analysis above.

Northern Wisconsin supports many waters and wetlands interspersed throughout the landscape. Because Ashland County is approximately 32 percent wetlands and Iron County is approximately 31 percent wetlands, it is exceedingly unlikely that all wetlands would be avoided based on the linear nature of pipelines and the extent and prevalence of many aquatic resources. In general, increasing the length of pipeline under the premise of avoiding and minimizing WOTUS crossings would infeasibly increase cost and/or result in other greater environmental impacts. The search for less damaging practicable alternative routes focused on minimizing the length of the pipeline to the extent practicable, while also minimizing the environmental impacts. For context, each mile of the project would generally affect approximately 15 acres of land during construction (exact acreage is dependent on construction methods, workspaces, access roads, etc.). The location of the Bad River Reservation influenced consideration of potential alternative corridors. The Corps considered potential routes that would avoid the Reservation and lessen the length of the pipeline segment and associated impacts on environmental resources. Routes that extended north of the Reservation were screened out due to presumptions of considerably greater environmental impacts to Lake Superior.

Four route alternatives were initially provided by the applicant and evaluated by the Corps using publicly available environmental data to compare a variety of environmental factors. After initial submittal, the Corps requested the applicant supply additional information on two additional route variants to potentially further minimize impacts on public resources. The alternative routes evaluated include the proposed route, route alternatives RA-01 and RA-01 variants RA-01A & RA-01B, RA-02 and RA-03, as shown on Figures 5.4.1 and 5.4.1.1 (RA-01 variants figure). The route alternatives provide a meaningful range to consider limiting environmental damages and impacts to the human environment. A comparison of environmental resources potentially impacted by the route alternatives, are presented in Tables 5.4.1 and 5.4.1.1 (RA-01 variants table). Please note that impacts to aquatic resources provided for the proposed route as the applicant's preferred alternative in Section 5.5 are based on actual on-site delineated conditions and differ from those impacts provided in Table 5.4.1. The wetland impacts provided in this analysis are based on off-site wetland mapping which generally underrepresents actual site conditions but are nonetheless useful for alternative comparison purposes by using equivalent information. While the precise quantities may differ from on-site values, the comparable values would be expected to remain valid. The Corps considered Wisconsin Wetland Inventory (WWI) data to be more reliable than NWI data because of the increased level of ground truthing.

Route alternatives longer than RA-03 may be reasonable and practicable in some cases but are anticipated to result in greater impacts to the environment including the aquatic environment and would not be a less environmentally damaging alternative to the routes considered in detail below. For these reasons, longer route variations have not been considered further.

Figure 5.4.1: Overview of Route Alternatives

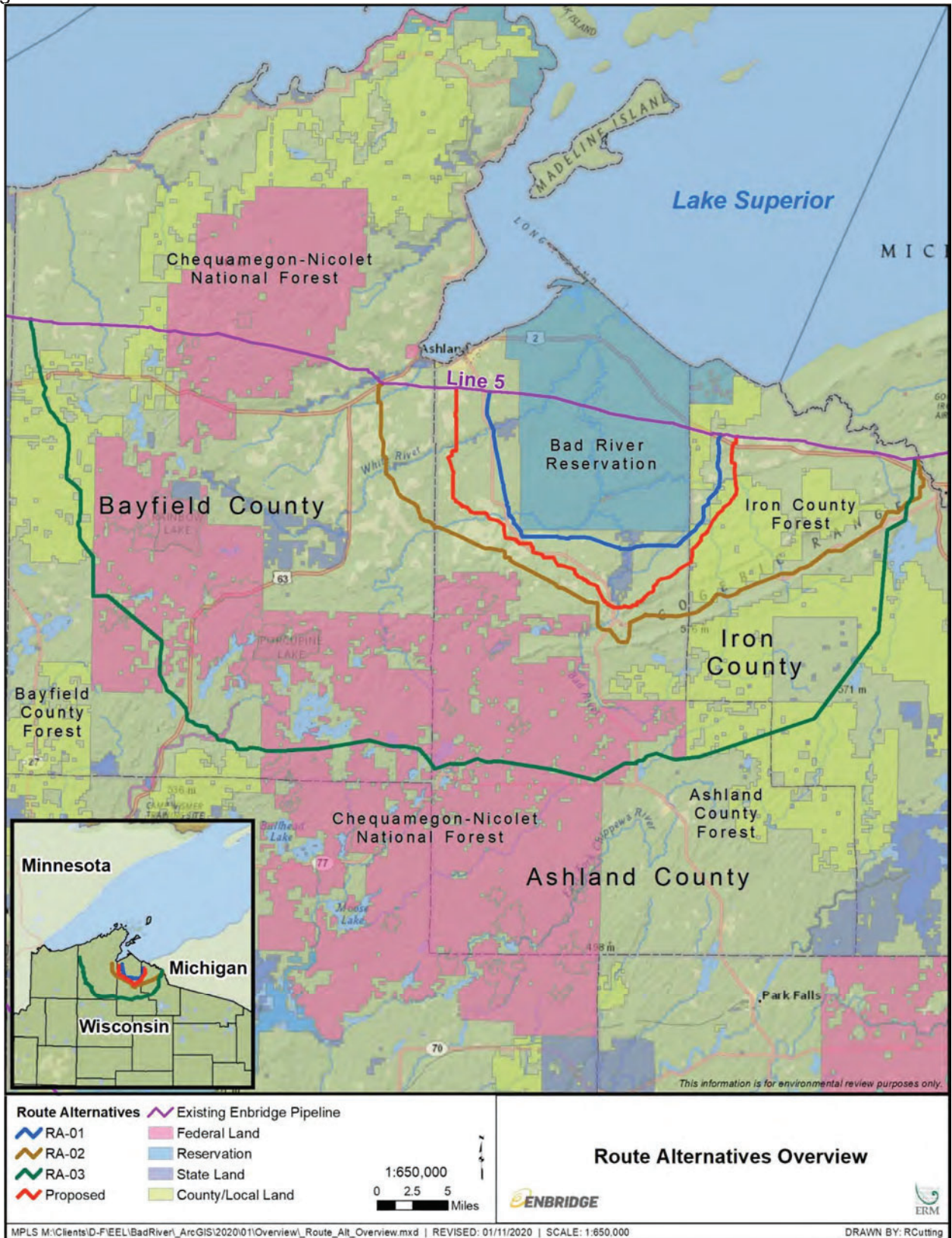


Table 5.4.1: Environmental Features Comparison of Route Alternatives

Environmental Features	Unit	Proposed Route Length ^a : 41.1 miles Route Corridor ^b : 598.0 acres	Route Alternative RA-01	Route Alternative RA-02	Route Alternative RA-03
			Route Length ^a : 29.3 miles Route Corridor ^b : 456.5 acres	Route Length ^a : 57.6 miles Route Corridor ^b : 843.6 acres	Route Length ^a : 100.5 miles Route Corridor ^b : 1,476.9 acres
Wetland Crossing Length—WWI	miles	4.2	5.3	6.5	26.2
Wetland Crossed—NWI					
PEM	acres	2.0	1.7	1.1	7.7
PSS	acres	2.0	2.1	9.7	51
PFO	acres	26.1	22.3	40.2	304.5
Wetland Crossed—WWI					
emergent/wet meadow	acres	2.7	7.8	8.7	7.2
scrub/shrub	acres	2.7	8.0	12.3	45.6
forested	acres	53.9	56.1	72	326.2
State-Listed Species Occurrences ^c	number	27	14	87	85
Migratory Bird Concentration Areas	number	1	1	0	0
Agricultural Land ^d	acres	84.1	29.8	55.1	2.4
Coniferous Forest ^d	acres	56.5	56.5	69.0	387.4
Broad-leaved Deciduous Forest ^d	acres	297.7	222.8	488.2	655.7
Mixed Deciduous/Coniferous Forest	acres	3.5	3.6	8.1	25.8
Prime and Statewide Importance Farmland Soils	miles	11.5	13.9	15.1	16.6
Hydic Soils	miles	2.2	1.6	5.0	25.4
Highly Wind Erodible Soils	miles	7.4	4.3	2.7	28.5
Intermittent / Fluctuating Waterbody Crossings—WDH	number	38	29	38	9
Perennial Waterbody Crossings—WDH	number	17	13	36	38
Designated Trout Stream Crossings	number	15	12	20	25
WDNR Priority Navigable Waterways Crossings	number	15	15	21	17
Wild and Scenic Rivers	number	0	0	0	1
Wild Rice Production Areas	number	0	0	0	0
Areas of Special Natural Resource Interest Crossings (WDNR owned)	number	0	1	0	1
Federal, County, and State-Owned Lands	acres	107.8	34.7	21.3	875.7
WDNR-Owned Lands	miles	0	1.5	0	0.1
County Forest Land	miles	7.4	1.0.	1.0	9.8

Railroad Crossings	number	4	2	1	1
Road Crossings °	number	39	37	50	98

Notes:

a. Centerline length.

b. A standard 120-foot corridor was used for each route comparison.

c. Based on NHI data review, includes state threatened and endangered species.

d. Wisland 2 Land Cover Data (WDNR 2019s).

e. Includes county and local roads, and state and U.S. highways.

NLCD2011 = National Land Cover Database 2011; WDH – Wisconsin 24k Hydrography Dataset; NHI = Natural Heritage Inventory; NWI = National Wetlands Inventory; PEM = Palustrine Emergent; PFO = Palustrine Forested; PSS = Palustrine Scrub-Shrub; WDNR = Wisconsin Department of Natural Resources; WWI = Wisconsin Wetland Inventory

5.4.1 Route Alternative RA-01:

Route RA-01 would be located outside of the exterior boundary of the Bad River Band Reservation and is the shortest identified route that would avoid the Reservation. RA-01 is approximately 31.4 miles in length, or approximately 9.7 miles shorter than the proposed route. Due to its shorter length, RA-01 would cost approximately \$95.8 million less to construct than the proposed WI L5R route. Based on a standard construction workspace width of 120 feet, RA-01 has the potential to impact approximately 141.5 fewer acres of land during construction, cross approximately 73.1 fewer acres of Federal, State-owned land. RA-01 would cross 6.4 acres less of public Iron County Forest land and would need to cross more private land. RA-01 would cross 13 fewer waterbodies (based on WDNR 24k Hydrography Dataset information) than the proposed route. RA-01 would cross approximately 0.5 mile of the Copper Falls State Park. RA-01 would potentially cross through a portion of Copper Falls State Park that is listed on the National Register of Historic Places and is identified as a place of cultural significance to tribes. Based on off-site mapping, RA-01 would potentially cross approximately 12.6 acres more WWI mapped wetlands (71.9 acres) than the applicant’s proposed route (59.3 acres). Although Table 5.4.1 above indicates this alternative would have less impact to NWI mapped wetlands than the applicant’s proposed route, WWI mapping is generally more reliable in this area.

Corps analysis of Route Alternative RA-01:

Based on the more accurate WWI mapping, route RA-01 would result in greater impacts to aquatic resources than the applicant’s proposed route. RA-01 would result in 6.4 acres less impact to Iron County Forest lands than the applicant’s preferred alternative but would affect Copper Falls State Park and potentially affect historic properties within a portion of the park. RA-01 is closer to the Bad River Reservation. RA-01 is closer to the Reservation, and crossing waters that flow downstream to the Reservation. RA-01 is reasonable and practicable and meets the overall project purpose but would result in greater impacts to aquatic resources than the applicant’s proposed alternative and does not convey an environmental advantage over the proposed route considering other natural resources.

5.4.1.1 Alternative RA-01 Variants

The Corps requested the applicant to evaluate alternative Route RA-01 variants that would avoid Copper Falls State Park. Enbridge provided a desktop analysis of two potential variations to RA-01 that would avoid Copper Falls State Park, while potentially reducing the overall length of the Line 5 Wisconsin Segment Relocation Project route and the associated environmental

disturbance. The Corps evaluated the two variations of RA-01 that use portions of the RA-01 route and portions of the proposed route. The two RA-01 route variants, RA-01A and RA-01B, are shown on Figure 5.4.1.1 and a comparison of environmental resources potentially impacted by the RA-01 route variants are shown in Table 5.4.1.1.

Route Variant RA-01A:

Route variant RA-01A deviates from RA-01 and joins the proposed route at approximately milepost (MP) 15.5 and follows the proposed route to approximately MP 30 near the Ashland-Iron County border, before turning north and rejoining RA-01. RA-01A avoids the Copper Falls State Park by following the proposed route south of the state park.

RA-01A is approximately 36.8 miles in length, or approximately 4.3 miles shorter than the proposed route and 5.4 miles longer than RA-01. Based on a standard construction workspace width of 120 feet, RA-01A has the potential to temporarily impact approximately 535.6 acres for construction or about 62.2 acres less than the proposed route and approximately 79.1 acres more than RA-01. Route Variant RA-01A would require clearing approximately 368.6 acres of forest or about 11.5 acres more than the proposed route and about 85.7 acres more than RA-01. RA-01A would cross 42 mapped waterbodies (based on WDNR 24k Hydrography Dataset information) and temporarily disturb approximately 74.6 acres of Wisconsin Wetland Inventory (WWI) mapped wetlands including about 58.5 acres of mapped forested wetlands.

Corps analysis of Route Alternative RA-01A:

RA-01A would result in greater impacts to wetlands (15.4 acres), including approximately 4.6 additional acres of mapped forested wetlands, than the proposed route. RA-01A would affect 4.5 less acres of public Iron County Forest lands than the applicant's proposed route. RA-01A is closer to the Reservation and crossing waters that flow downstream to the Reservation. RA-01A is reasonable and practicable and meets the overall project purpose but would result in greater impacts to aquatic resources than the applicant's proposed alternative and does not convey an environmental advantage over the proposed route considering other natural resources.

Route Variant RA-01B:

Route variant RA-01B would deviate from RA-01 and join the proposed route at approximately MP 22 and then branch north from the proposed route at approximately MP 28 to rejoin RA-01. RA-01B is approximately 38.0 miles in length, or approximately 3.1 miles shorter than the proposed route. Based on a standard construction workspace width of 120 feet, RA-01B has the potential to impact approximately 552 acres for construction, including approximately 339.4 acres of coniferous, deciduous, and mixed forest clearing or approximately 17.7 acres less than the proposed route. RA-01B would disturb approximately 87.3 acres of WWI mapped wetlands, of which approximately 70.6 acres are mapped as forested wetlands. This is approximately 28.1 acres more than the proposed route. Route variant RA-01B has the potential to cross nine fewer waterbodies (based on WDNR 24k Hydrography Dataset information) than the proposed route.

Corps analysis of Route Alternative RA-01B:

Alternative Route Variant RA-01B would be reasonable and practicable and meets the overall project purpose. However, RA-01B would impact more WWI mapped wetlands (28 acres) than the proposed route. RA-01B would affect 6.4 acres less Iron County Forest lands than the applicant's preferred alternative. RA-01B is closer to the Reservation and crossing waters that flow downstream to the Reservation. RA-01B is reasonable and practicable and meets the

overall project purpose but would result in greater impacts to aquatic resources than the applicant's proposed alternative and does not convey an environmental advantage over the proposed route considering other natural resources.

Figure 5.4.1.1

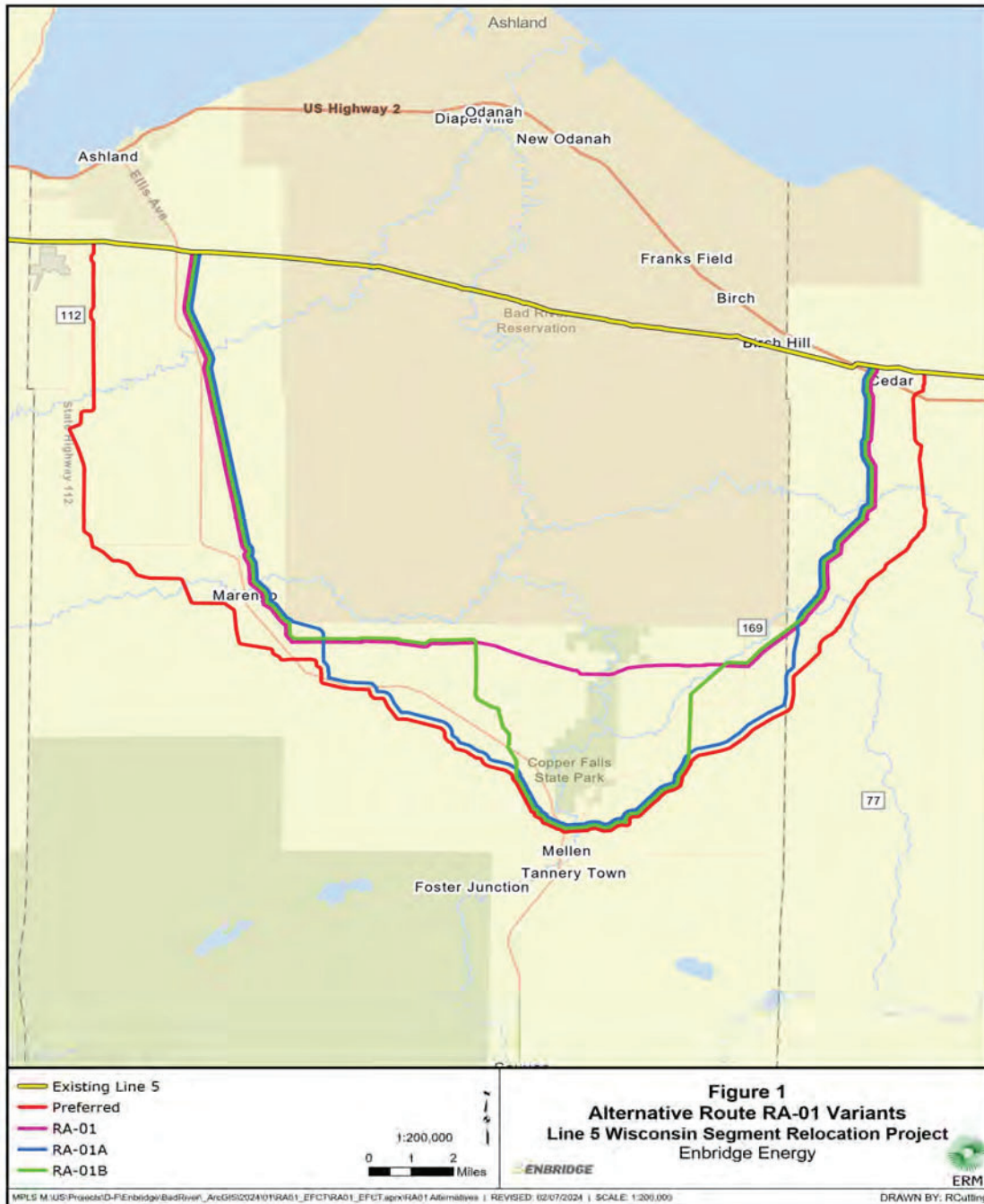


Table 5.4.1.1

	Unit	Proposed Route Length ^a : 41.1 miles Route Corridor ^b : 598.0 acres	Route Alternative RA-01	Route Variant RA-01A	Route Variant RA-01B
			Route Length ^a : 31.4 miles Route Corridor ^b : 456.5 acres	Route Length ^a : 36.8 miles Route Corridor ^b : 535.6 acres	Route Length ^a : 38 miles Route Corridor ^b : 552 acres
Environmental Features					
Wetland Crossing Length—WWI	miles	4.2	5.3	5.4	6.3
Wetland Crossed—WWI Emergent/wet meadow	acres	2.7	7.8	7.0	8.2
Scrub/shrub	acres	2.7	8.0	9.1	8.4
Forested	acres	53.9	56.1	58.5	70.6
Environmental Features					
Wetland Crossing Length—NWI		6.9	6.2	7.3	7.8
Wetland Crossed—NWI					
PEM	acres	5.3	9.6	9.1	10.8
PSS	acres	2.7	7.9	8.4	8.3
PFO	acres	92.0	70.7	86.9	92.5
Broad-leaved Deciduous Forest ^c	acres	297.2	222.8	310.4	273.4
Mixed Deciduous/Coniferous Forest ^c	acres	3.5	3.6	2.0	2.8
Open Land ^c	acres	112.0	89.2	95.0	106.3
Developed Land ^c	acres	9.1	16.2	16.9	16.7
Prime and Statewide Importance Farmland Soils	miles	11.4	13.2	10.4	13.7
Hydric Soils	miles	2.2	1.9	1.8	2.7
Intermittent / Fluctuating Waterbody Crossings—WDH	number	38	30	24	33
Perennial Waterbody Crossings—WDH	number	18	13	18	14
Designated Trout Stream Crossings	number	16	10	14	12
Wild and Scenic Rivers	number	0	0	0	0
County Forest Land	miles	7.4	1.0	2.9	1.0
Railroad Crossings	number	4	2	4	4
Road Crossings ^d	number	39	37	35	43

5.4.2 Route Alternative RA-02:

Route Alternative RA-02 is located farther from the Reservation boundary and avoids Copper Falls State Park. A comparison of environmental resources potentially impacted by RA-02 and the proposed route is presented in Table 5.4. RA-02 is approximately 58 miles in length, or approximately 16.9 miles longer than the proposed route. RA-02 would cost approximately \$134 million more to construct due to its longer length. Based on a standard construction workspace width of 120 feet, RA-02 has the potential to impact approximately 245.7 additional acres for construction, require clearing approximately 207.6 additional acres of forest, cross 19 additional waterbodies (based on WDNR 24k Hydrography Dataset information), and affect approximately 33.7 more Wisconsin Wetland Inventory (WWI) mapped wetlands than the applicant's proposed route. Alternative RA-02 would have more impacts on forested habitats, including forested wetlands.

Corps analysis of Route Alternative RA-02:

Alternative RA-02 is reasonable and practicable and would meet the overall project purpose. Construction of RA-02 would affect approximately 33.7 acres more of Wisconsin Wetland Inventory (WWI) mapped wetlands (93 acres) than the applicant's preferred route (59.3 acres) and cross 19 more perennial waterbodies. Based on available information, the Corps has preliminarily determined that RA-02 would result in greater environmental damages, including aquatic resources, compared to the applicant's proposed alternative.

5.4.3 Route Alternative RA-03:

Route Alternative RA-03 remains within the Lake Superior basin but would be located outside the 10-digit hydrologic unit codes (HUCs) directly contributing surface flow and hydrologic connectivity into the Reservation. A comparison of environmental resources potentially impacted by RA-03 and the proposed route is presented in Table 5.4. Potential environmental impacts associated with RA-03 are generally greater than the proposed route because it is more than double the length of the proposed route. RA-03 is approximately 100 miles in length, or approximately 60.5 miles longer than the proposed route. RA-03 would cost approximately \$479.1 million more to construct due to its longer length. Based on a standard construction workspace width of 120 feet, RA-03 has the potential to impact approximately 878.9 additional acres for construction, including approximately 711 acres of additional coniferous, deciduous, and mixed forest clearing. RA-03 would disturb approximately 319.7 additional acres of WWI-mapped wetlands, of which approximately 326.2 acres are forested wetland. The route would also affect approximately 767.9 additional acres of Federal, State, or County-owned public land, including crossing potentially 28 miles of the Chequamegon-Nicolet National Forest. RA-03 has the potential to cross the Island Lake Hemlocks Area of Special Natural Resource Interest and the Namekagon River, which is a Wild and Scenic River. RA-03 has the potential to cross 21 more waterbodies (based on WDNR 24k Hydrography Dataset information), there would likely be a significant increase in impacts on wetlands, forested habitats, sensitive species, perennial waterbody crossings, designated trout streams, and road crossings as compared to the proposed route, causing an overall greater environmental impact from the project.

Corps analysis of Route Alternative RA-03:

Based on off-site mapping, construction of RA-03 would affect approximately 319.7 more acres of WWI-mapped wetlands, including 326.2 acres of forested wetlands, and would cross 21 more perennial waterbodies than the applicant's preferred route. Based on available information on

RA-03, the Corps has preliminarily determined that RA-03 would result in greater environmental damages, including aquatic resources, over that of the applicant's proposed alternative.

5.4.4 Applicant's Preferred Alternative

The applicant's preferred alternative is the proposed route described in Section 1.2.

The proposed WI L5R route would result in the permanent discharge of fill material into 998 square feet (0.02 acre) of wetlands, and temporary discharges of dredged or fill material into 101.1 acres of wetlands and 0.20 acre of non-wetland waters (i.e., streams, swales, and ditches) to construct the pipeline, including associated temporary construction workspace and the placement of construction matting for access. This permanent discharge of fill material into 0.02-acre of wetlands is for the construction of access roads to three mainline block valves, including mainline block valve #1 in Bayfield County, upstream from the proposed re-route begins. Once construction activities resulting in temporary discharges into wetlands are completed, 33.92 acres of wetlands would be permanently maintained clear of woody vegetation within the 50-foot-wide permanent corridor for pipeline installed by trench and within the 30-foot-wide visual corridor over the centerline of the pipeline at HDD crossings. The remainder of the project workspace in 67.17 acres of wetlands within the temporary construction workspace areas would be allowed to naturally revert to pre-project wetland types. The applicant proposes to use existing public and private roads to access the construction workspace and facilities to the extent practicable to limit impacts on wetlands and waterways. The applicant has identified areas along the project where the placement of temporary construction matting may be needed in wetlands for access roads. The placement of temporary matting in wetlands for access roads accounts for 12.53 acres of the 101.1 acres of temporary discharges noted above. The placement of temporary matting between proposed HDD entrance and exit locations accounts for 6.24 acres of the 101.1 acres of temporary discharges noted above. Matting between proposed HDD entrance and exit locations would only be installed as needed for (1) clearing support or (2) inadvertent return containment and clean-up support. The acreages provided for matting is based on all wetlands located with the workspace areas. It is anticipated to be an over-estimation of the amount of actual matting that would be used in wetlands based on actual site conditions during construction.

Additional waterway crossing information has been provided by Enbridge and reviewed during interagency coordination that summarizes and compares the constructability advantages and disadvantages associated with each type of crossing method for specific waterbodies, along with site-specific waterway crossing and remediation plans.

Appendix 3 describes procedures to evaluate and determine the success of wetland and waterbody restoration within the affected workspace following construction of the project.

Appendix 4 describes proposed compensatory wetland mitigation for unavoidable project-related permanent fill of wetland, conversion of scrub-shrub and forested wetlands to emergent wetlands, and the temporal loss of wetland functions.

Corps Analysis of the Applicant's Preferred Alternative:

The applicant's proposed route is both reasonable under NEPA and practicable under the Guidelines. While WWI mapping is more reliable than NWI in this area, the applicant's proposed

route appears to result in lesser environmental impacts to aquatic resources than route RA-01 and its variants, RA-02, and RA-03. RA-01 would affect Copper Falls State Park and potentially affect historic properties within a portion of the park. RA-01 and its two variants are closer to the Bad River Band Reservation. Sediment discharge modeling conducted for the proposed route predicts any releases of sediment during construction would not cause an exceedance of the Bad River Band's water quality standards. The applicant's proposed route meets the overall project purpose and appears to convey an environmental advantage over the other action alternatives.

5.5 Summary of Corps Alternatives Analysis

NEPA requires an evaluation of a reasonable range of alternatives, including the no action alternative, and the effects of those alternatives. To meet the purpose and need of the project, reasonable alternatives must transport crude oil and NGLs that originate at the Superior Terminal to existing receipt points at the approximately the same capacities provided by the existing Line 5 pipeline, entirely outside the Bad River Band Reservation. An evaluation of alternatives is also required under the Section 404(b)(1) Guidelines for projects that include the discharge of dredged or fill material into WOTUS. Under the Section 404(b)(1) Guidelines, practicability of alternatives is taken into consideration and no alternative may be permitted if there is a less environmentally damaging practicable alternative.

The no-action alternatives include options which do not involve regulated activities or issuance of a DA permit. The no action alternatives would result in no discharges of dredged or fill material, or both, into WOTUS, including wetlands, for the relocation of the existing Line 5 pipeline. No-action alternatives include leaving the existing Line 5 in place or utilizing other alternative modes to transport crude oil and NGLs. Reasonable alternatives must be technically and economically feasible and meet the purpose and need for the proposed action. Practicable alternatives must be available and capable of being done after taking into consideration cost, logistics, and existing technology in light of the overall project purpose as defined by the Corps.

The no-action alternative of leaving the operating existing Line 5 pipeline would not meet the purpose and need under NEPA or the overall project purpose under the Clean Water Act because it would not be entirely outside the Bad River Band Reservation.

The no-action alternative of using other existing pipelines to transport crude oil and NGLs is not reasonable or practicable because of logistical and technological limitations. There is no existing pipeline available which could be used to transport both commodities, particularly NGLs.

The no-action alternative of using other modes to transport crude oil and NGLs is not reasonable or practicable given cost and logistics of transporting approximately the same capacities provided by Enbridge's existing Line 5 pipeline. Other modes of transport include rail, truck, rail and pipeline, and truck and pipeline alternatives.

The applicant's proposed route alternatives RA-01, RA-01A and RA-01B, are reasonable and practicable and would result in greater impacts to WOTUS, including wetlands. RA-01 would cross Copper Falls State Park and potentially affect historic properties. RA-01 and variants RA-01A and RA-01B would potentially temporarily affect slightly more WWI mapped wetlands, including forested wetlands, than the proposed route. Route alternatives RA-01, RA-01A and RA-01B would affect less public Iron County Forest land but would not provide other environmental advantages over the applicant's proposed route. Route alternatives RA-01 and

variants RA-01 and RA-02 would all cross the Potato River, but on private lands and affect residences. Additionally, access for construction of these alternatives would affect a cultural resource the applicant sought to avoid during routing. Route alternatives RA-02 and RA-03 may be feasible to construct and practicable considering the overall project purpose but are not less environmentally damaging to the aquatic environment.

5.6 Least Environmentally Damaging Practicable Alternative

Under the Section 404(b)(1) Guidelines, the Corps may only authorize the least environmentally damaging practicable alternative (LEDPA). The LEDPA is usually the alternative with the least impacts to aquatic resources, usually calculated based on acreage of impact, but could be an alternative with more aquatic resource impact if the alternative with less aquatic impact has other significant environmental impacts.

Based on available information, the Corps has preliminarily determined that route alternatives RA-01, RA-01A and RA-01B would result in greater impacts to aquatic resources and would not reduce other overriding environmental damages over that of the applicant's proposed route alternative. Therefore, the Corps has preliminarily determined that RA-01, RA-01A and RA-01B are not the LEDPA. Additionally, RA-02 and RA-03 would both result in greater environmental damages compared to the applicant's proposed route alternative and would not constitute the LEDPA. Therefore, the Corps has preliminarily determined the applicant's proposed route (described in Section 1.2) is the LEDPA.

The remainder of this document addresses additional avoidance and minimization measures to reduce impacts associated with the LEDPA from the estimates above. It further provides a draft analysis regarding compliance with the Section 404(b)(1) Guidelines, whether it is or is not contrary to the public interest, and whether it is in compliance with other applicable laws, regulations, and policy.

5.7 Additional LEDPA Avoidance and Minimization Sequencing

Additional refinement of the LEDPA focuses on avoiding and minimizing impacts to WOTUS. The Corps requested the applicant provide additional information to support the Corps' analysis of siting the proposed route to avoid and minimize impacts to aquatic resources to the extent practicable. Those measures are described below.

5.7.1 Crossing Method Alternatives

In response to the Corps request, Enbridge provided a comparative assessment of the suitability and impacts of the proposed trench and trenchless stream crossing methods. Appendix 2 explains the process followed to select a crossing method.

The HDD method may provide environmental advantages over open cut methods because an HDD crossing does not disturb stream bed or banks which may avoid or reduce sedimentation during construction. Because an HDD does not disturb stream channel or banks, no streamflow or fish passage effects are anticipated with this crossing method. Lastly, use of an HDD can reduce the amount of cleanup and restoration necessary between the HDD entrance and exit points.

Because of these benefits, the applicant has proposed to use trenchless crossings at 30 locations to minimize impacts to waterbodies and adjacent riparian areas. Most of these crossings are not regulated by the Corps, with the exception the water is designated as a Section 10 water (e.g., the White River, additional information below), or involves Section 404 regulated activities along with the HDD. The use of HDD to cross every stream along the route is not always feasible or preferred. While the HDD method avoids cutting the bed and banks of a waterbody, this method has specific requirements that limit HDD feasibility, including additional workspace and access. For these reasons, there are locations where HDDs may result in greater environmental impacts, such as where forested wetlands would need to be cleared for temporary workspace to accommodate an HDD.

Logistical concerns for use of HDD crossings relate to geotechnical conditions and the location considered. Specifically, use of HDD is not preferred when geotechnical investigations reveal there may be a high likelihood of inadvertent return of drilling fluid. Attempting an HDD through fractured or unconsolidated substrates can increase risk of inadvertent returns and/or failure to successfully complete the HDD. Other site constraints or limitations to the HDD method are associated with the location. For example, HDD crossings require additional large clearings and temporary workspace on either end of the bore, as well as potentially larger access corridors to move specialized equipment. HDDs must be long enough to accommodate drilling radius limitations, which make short drills infeasible. HDDs also require a long flat or gently sloped staging area the same length as the crossing to fabricate the pipe string and allow continuous pullback of the pipe. A 1,300-foot HDD and associated workspace, including pipe assembly workspace, can require 1,500 feet of additional disturbance or more. Locating HDDs where the pull back pipeline string does not cross roadways is also a site constraint based on the duration to complete an HDD. Access for the HDD equipment to reach the drill site and the construction footprint needed for the pull back string increases the construction footprint, which is a consideration in forested areas requiring tree clearing and additional temporary impact in wetlands compared to installing the pipeline by trenched methods. HDD requires additional water to formulate the drilling fluid as well as hydrostatic testing the HDD pipe segment. Lastly, HDD can increase the overall duration of construction activities. For example, the drilled installation length of 1,300 feet takes a minimum of approximately 8 weeks to complete. The same 1,300 feet of pipeline installation by open cut construction would take 2 to 3 weeks to complete and restore. Over the eight-week period, when the HDD is being completed, the ROW cannot be restored on either side of the HDD because construction crews need to maintain access to each side of the HDD.

Use of HDD also include economic constraints. Installing the pipeline by HDD is approximately two to three times more expensive than installing the pipeline by trenched construction methods. Costs tend to be more economical when the site possesses near ideal subsurface formations for the HDD process. The cost range of two to three times more expensive, does not include the extra engineering, the additional geotechnical investigations required, the drilling material and mud disposal, the thicker wall pipe required for HDDs, or the cost associated with mainline trenching crew move arounds. HDDs result in a mainline trenching crew move-around because the crews typically cannot travel down the ROW along the HDD path to minimize disturbance. The mainline trenching crew move-around requires loading all the equipment, materials and personnel and transporting them around the HDD. Once equipment, material, and personnel are transported around the HDD they are then unloaded and travel back to the ROW on the other side of the HDD. Mainline crew move-around costs up to several hundred thousand dollars and takes a substantial amount of time to complete which adds time to the construction schedule and the duration of ROW disturbance. The cost of these additional items

would increase the cost factor range per drill to over three times the cost of conventional trenched methods of installation.

5.7.2 Alternative Crossing Locations for High Quality Wetlands

The Corps requested Enbridge further evaluate potential minor route modifications to avoid and minimize construction activities in high quality wetlands. The Corps has reviewed an analysis of potential opportunities to reduce disturbance in wetlands with a WRAM high functional value rating. This analysis focused on 20 high quality wetlands with 100 or more linear feet in the centerline of the proposed WI L5R route. The Corps considered the 100 linear foot or more crossing length appropriate for this analysis because the logistics of pipeline construction (severe bends are typically not recommended) make it impractical to make pipeline route adjustments to avoid many smaller individual wetlands within the proposed pipeline corridor. A detailed analysis of the High-Quality Wetlands Avoidance and Minimization evaluation is provided in Appendix 11. The Corps has reviewed this additional information and preliminarily determined that the proposed avoidance and minimization measures are sufficient (See Sections 1.4 and 6.8).

5.7.3 Alternative White River Crossing Methods

The proposed installation of the pipeline under the White River, a navigable water of the United States, is regulated by the Corps under Section 10 of the Rivers and Harbors Act of 1899. The proposed method of pipe installation is by HDD. The Corps requested Enbridge provide information to evaluate alternative crossing methods for the proposed pipeline alignment at the White River.

The Corps has reviewed the available information considered alternative methods to cross the White River other than HDD. Specifically, crossing alternatives using either an open cut dry crossing with a dam and pump method or the flume method. Both methods temporarily isolate the construction workspace from flow of the waterbody and require excavation of the bed and banks to create the trench into which the pipe is installed. Based on information provided by the applicant, the Corps understands that the White River is too wide, and the flow is too great to effectively isolate the flow for a dry crossing using either the dam and pump or flume pipe methods. For these reasons, the Corps concurs a dry crossing method would not be practicable. The Corps further compared HDD to an open-cut (wet trench) crossing of the river. An open cut (wet trench) crossing would require not only the excavation of the bed and banks of the river but also would result in much higher concentrations of suspended sediments in the waterway than HDD crossing methods, both in terms of total amount of sediment suspended and transported as well as the duration of the sedimentation event. Additionally, any trenched crossing method would require trenching through the bed and banks of the river and require significantly more workspace for the placement of construction matting within the forested floodplain wetlands to accommodate equipment, materials, and spoil storage. Although temporary, this work would result in greater environmental disturbance than the proposed HDD.

The Corps has preliminarily determined that the proposed HDD crossing method would have the least environmental impact on the White River and associated wetlands compared to other crossing methods.

5.7.4 Alternative White River Crossing Locations

In addition to crossing method analysis, the Corps also requested additional information about White River crossing locations. The applicant provided an analysis of three alternative crossing locations of the White River, shown on Figure 5.7.4 below. The first alternative location considered by the Corps would have placed the pipeline beneath the White River Flowage reservoir, upstream of the hydroelectric dam on the White River located on State Highway 112. Although technically feasible as an HDD crossing, this location would place the pipeline near the dam. Crossing the reservoir at this location would also require approval from the Federal Energy Regulatory Commission (FERC) because the location falls within the federally permitted hydroelectric project regulated by FERC. Inspection and maintenance of the pipeline located beneath the White River Flowage would also be prohibitive. The location of this alternative crossing is further bound by Northland College's Mabel Cora Maxwell Nature Study Area to the west near the upstream end of the White River Flowage.

The Corps has also considered a crossing of the White River further upstream of the proposed location along proposed Route Alternative RA-02 (see Section 5.4). River crossing locations between RA-02 and the proposed crossing location would have the potential to impact the White River Fishery Area, which is managed as a multiple use area for trout fishing, hunting, canoeing, and similar outdoor recreational and educational opportunities.

Lastly, the Corps considered, but did not evaluate in detail, a crossing location between Highway 112 and Highway 13. Crossings in this area were not considered further because alternative locations between these highways failed to take advantage of collocating a portion of the proposed route adjacent to an existing utility corridor to minimize environmental impact. This area would also place the route closer to the Bad River Band Reservation and would be more difficult to access portions of the route due to its remoteness. A crossing of the White River was considered east of Highway 13, presented as Route Alternative RA-01 in Section 5.4.1. Although RA-01 follows an existing utility line and therefore benefits from co-location with an existing maintained utility corridor, analysis of the White River crossing along the RA-01 alignment places the pipeline route closer to the Bad River Band Reservation and would require crossing of the state of Wisconsin's Wild River Wildlife Area.

The Corps has preliminarily determined that the proposed crossing location of the White River would result in fewer environmental impacts compared to other White River crossing locations.

6.2 Candidate Disposal Site (40 CFR 230.11(f))

The “disposal site(s)” are the WOTUS, including wetlands, where a discharge is proposed as described in Section 1.2 of this document. The Corps is considering depth of water, current velocity, direction, and variability at the disposal sites.

6.3 Potential Impacts on the Physical and Chemical Characteristics of the Non-Living Environment (Subpart C, 40 CFR Part 230)

6.3.1 Substrate

The proposed discharge would permanently affect the physical substrate in 998 square feet (0.02-acre) of wetlands for the construction of three access roads, and temporarily affect the physical substrate in 101.1 acres of wetlands and 0.20-acre of non-wetland waters (i.e., streams, swales, and ditches) to construct the pipeline, including associated temporary side-casting of dredged material and construction access and workspace matting. Temporary discharges in wetlands include the placement of construction matting, a minimization measure used when the ground is not frozen to minimize rutting and disperse compaction pressure from heavy equipment. Temporary grading activities would be confined to the area of the trench during construction and within the construction workspace for restoration activities once construction is complete. Subsoils excavated for the pipe trench would be segregated from the topsoil and temporarily side cast (stockpiled) adjacent to the trench prior to the installation of the pipe. Once the pipe is installed, soils would then be returned to the trench in the reverse order it was excavated with the segregated topsoil being returned last.

Waterway surveys conducted in 2019 and 2020 by the applicant documented stream characteristics, including the dominant substrate present (bedrock, boulder, cobble, gravel, sand, silt/clay, organic). During proposed open cut pipeline installation, material excavated from the stream bed would be segregated from other material (e.g., stream bank material, approach upland material) and would be used to backfill the trench once the proposed pipeline is installed. Where stream conditions allow, the first excavated material (stream surface substrate) would also be segregated and will be replaced last to cap the excavation. Where detritus or fine silts are displaced over the trench line during backfilling, natural deposition would be anticipated to restore this layer. The applicant would visually assess the area disturbed by excavation and compare surface substrate to adjacent, undisturbed substrate for adaptive management of restoration. Large cobble/boulders removed from the trench line (if present) would be placed back on the stream following backfilling of the trench and installation of the pipe. Similarly, large woody debris (i.e., logs) would also be replaced if removed during construction of the temporary dams and/or excavation of the trench.

In addition to the composition of waterway substrate, bank stability of waterways was also identified and recorded. Observed physical indications of potential bank instability included: existing erosion/undercutting, bank sloughing/landslides, tree tips, and streambank/groundwater discharges. As part of the Corps analysis, the Corps requested and reviewed engineering and constructability assessments of each waterbody crossing to assess which crossing techniques would be appropriate to propose, to verify that the crossing could be successfully completed,

and to identify any site-specific challenges or considerations that should be accounted for such as shallow bedrock, visual indicators of existing bank instability, and/or other constructability factors. The Corps included review of supplemental engineering reviews to evaluate areas along the construction workspace with steep slopes of twenty percent or greater to assess constructability and restoration methods. This information was used to evaluate locations where site-specific restoration of stream banks may be needed. Of the 72 waterways that would be crossed using a trenching method (excavation of bed and bank), eight were initially identified as potentially needing site-specific restoration plans to address stabilization and restoration solutions. Site specific remediation plans have been developed for these waterways (Appendix 5).

Based on Enbridge's review of the geologic conditions present along the route, in-stream blasting may be required for mainline pipeline construction in approximately 17 streams. Enbridge's Blasting Plan (Appendix 6) identifies stream crossings along the applicant's preferred route that may require in-stream blasting. In-stream blasting locations are subject to change based on on-site geotechnical investigation. The blasting contractor(s) would create a site-specific blasting plan for any area determined to require blasting. Each site-specific blasting plan would include details and calculations regarding environmental variables that would be recorded closer to the time of the blast. The site-specific blasting plan would consider environmental and site-specific conditions that exist, as well as methods, materials, and locations of all explosives to be used for blasting. In-stream blasting would be conducted under no flow conditions. If flow is present, the dry-crossing method would be used where dams are installed and upstream and downstream and the area proposed to be blasted is isolated. Enbridge would also utilize matting to minimize noise and vibration and would adhere to state time of year restrictions and waivers where applicable. Following blasting activities, stream channels would be restored to near pre-construction contours, alignment, and conditions through post-construction restoration activities and monitoring would follow in accordance with Appendix 3.

Appendix 3 documents how the applicant would evaluate each trenched crossing and visually compare stream conditions to preconstruction, including stream banks, streambed elevations of the pipeline location within the stream, compare the backfilled area to adjacent undisturbed areas of the stream for sediment composition. This would be required during the first year of post-construction monitoring. Post-construction monitoring reports would be provided to the Corps. Should any deficiencies be identified, corrective actions may be taken.

Based on these factors, the Corps has preliminarily determined construction related effects to substrate would be minor and short term.

6.3.2 Suspended Particulates/Turbidity

Discharges of dredge and/or fill material in waterways for the installation of the proposed WI L5R pipeline would result in short term increases in sedimentation and turbidity. Sedimentation and increased turbidity can occur because of in-stream construction activities including blasting, trench dewatering, and stormwater runoff from construction areas and access roads. In slow moving waters, increases in suspended sediments (turbidity) may increase the biochemical oxygen demand and reduce levels of dissolved oxygen in localized areas during construction.

Suspended sediments also may alter the chemical and physical characteristics (e.g., color and clarity) of the water column on a temporary basis. Herbaceous vegetation within a 20-foot buffer from the ordinary high-water mark (OHWM) would be left undisturbed on all stream banks during initial clearing, except where grading is necessary for bridge installation. Non-woody vegetation and the soil profile are proposed to be left intact until construction of the stream crossing. Sediment control measures are proposed to be installed at the 20-foot buffer line adjacent to streams immediately after clearing and prior to initial ground disturbance to minimize the potential for soil erosion and sedimentation. Additional temporary workspaces used to accommodate additional equipment and materials associated with waterbody crossings are proposed to be at least 50 feet away from the ordinary high-water mark (OHWM) if topographic or other physical conditions allow. Section 23 of the EPP (Appendix 1) includes additional details regarding the applicant's proposed erosion control Best Management Practices (BMPs), proposed construction procedures and mitigative measures for each crossing method and proposed procedures for temporary and permanent site stabilization to minimize suspended particulates and turbidity.

Temporary aquadams or other barriers are proposed to be used to isolate the construction area for waterways proposed to be crossed by the dry crossing method of installation, to minimize the potential for downstream sedimentation during construction. The Corps anticipates that there would be minor temporary increases of sedimentation and turbidity during the proposed installation of aquadams or other barriers on the stream bed and again after stream flow is restored upon completion of the crossing. Instream trenching and backfilling is proposed to typically be completed within 24 hours or less on minor waterbodies (less than 10 feet wide) and 48 hours or less on intermediate waterbodies (over 10 feet wide). Use of proposed dry crossing techniques are expected to require additional time for the construction and removal of temporary dams. Successful HDD crossing methods are not anticipated to have sedimentation impacts since there would not be in-stream disturbance.

The applicant completed sediment discharge modeling in 2023 to provide a quantitative assessment of sediment dispersion from proposed non-wetland waterbody crossing activities. The Sediment Discharge Modeling Report (Appendix 7) assessed the potential concentrations of Total Suspended Solids (TSS) within the water column in exceedance of background values, the downstream extent of elevated concentrations, and the depositional footprint of sediments that may be caused by both planned and accidental discharges of sediment due to proposed installation techniques of the relocated WI L5R pipeline as it crosses the range of water bodies within the proposed project area.

The results of the modeling indicate that increased TSS concentrations in the water column, from either the construction of the dry crossing method or an unexpected inadvertent return of drilling fluid during HDD, would be localized and limited in duration at the site of the crossing and downstream. Additional discussion is included in Section 7.17 below. The dry crossing method is anticipated to temporarily increase the suspension and downstream transport of sediment. As provided in the model, proposed crossings in minor and intermediate watercourses are expected to actively release sediment for about 4 hours for minor waterbody crossings and 10 hours for intermediate waterbody crossings. Associated increases in TSS concentrations would generally follow the same timing for proposed installation and removal activities, quickly attenuating after the sediment disturbances cease. The sediment loads in the

watercourses produced initially larger TSS concentrations near the installation site (up to 132 mg/L) due to the conservatively large, assumed amount of sediment that was resuspended and the shallow watercourse depths (1-3 ft deep). However, TSS concentrations predicted downstream of the trenched installations (e.g., 500-1,000 m) were on the order of <1 to 30 mg/L for the small watercourses and <1 to 10 mg/L for the medium watercourses. These levels are consistently below background conditions for the anticipated construction period of June - August and would be expected to have a lesser magnitude and more brief effect on TSS in the water column than storm related events. As compared to storm related events that can cause TSS values to exceed hundreds to thousands of mg/L over long periods of time, waters crossed by the proposed project would be expected to have TSS concentrations near the installation site up to 132 mg/L, which would decrease below 19 mg/L approximately 1,000 meters downstream of the crossing and last only 4-10 hours per crossing. By 1,000 meters downstream, the TSS predictions were below the more conservative representative calculated threshold of 19 mg/L.

Horizontal directional drill (HDD) methods are not anticipated to result in stream bed or bank disturbance and would not result in sedimentation or turbidity impacts. The Corps does not have authority under Section 404 of the Clean Water Act to regulate the HDD installation of a pipeline in WOTUS when there is no discharge of dredged or fill material. The Corps only has authority to regulate installation in Section 10 navigable waters. However, TSS concentrations resulting from hypothetical inadvertent drilling fluid returns were modeled by the applicant in all waters proposed to be crossed by HDD. TSS concentrations near the HDD release site would be expected to be high (more than 20,000 mg/L) but would decrease to 10-300 mg/L at a point 500-1,000 meters downstream, which is less or of similar magnitude to background conditions and less than TSS levels typically caused by storm-related events. Nearly all the discharged drilling fluid resulting from an unexpected inadvertent return eventually settles within the model domain, regardless of river flow rate. The greatest deposition is expected to occur near the release location, as well as toward the center of the river channel. Based on the modeling, the distance and area covered by deposition above 5-10 mm thickness would be greatest for an inadvertent return release during the final reaming pass under low flow conditions. The model predicted deposition at this level would extend up to 40 meters downstream of the release location. While the model predicted very large areas of deposition less than the 0.1 mm reporting threshold, no deposition above that threshold was predicted past 400m downstream and no modeling scenario resulted in TSS levels exceeding 19 mg/L at farther downstream locations.

Corps analysis of the Sediment Discharge Modeling Report:

St. Paul District Regulatory requested direct technical assistance from the U.S. Army Engineer Research and Development Center (ERDC), Water Quality and Contaminant Water Quality and Contaminant Modeling Branch, to review the Sediment Discharge Modeling Report (Feb 13, 2023) and provide an assessment of the report's methods and findings. Special attention was devoted to reviewing the way potential sediment releases directly resulting from construction may impact waters were modeled. In summary, ERDC's review indicated the study presented in the report is a well-planned, comprehensive assessment of a short-term transient event associated with proposed pipeline construction. ERDC found that the study results are based upon the use of best available data, the authors have taken steps to provide insight to the process used to design the study parameters and approaches, and the approach and assumptions were conservative. The models employed in determining the flow are appropriate

for determining flow conditions in the waterbodies investigated. Movement, distribution, and fate of material suspended by pipeline crossing placement was required for the various streams and conditions encountered. The model SSFATE is an appropriate tool and was used to determine the extent and magnitude of TSS resulting from planned construction activities.

While the Corps' regulatory authority over HDD crossings is limited to the White River HDD because it is a Section 10 navigable water, an inadvertent release of drilling fluid may be a regulated discharge subject to regulation by the Corps under Section 404 of the Clean Water Act. The Corps may regulate inadvertent releases when a release meets the criteria to be considered a discharge of fill material. When considering drilling mud from an inadvertent release, 33 Code of Federal regulations part 323.2(e) specifies that the material must effectively change the bottom elevation of a WOTUS or replace a WOTUS with dry land. However, it is inappropriate for the Corps to anticipate these discharges as a foreseeable action. Enbridge would implement Inadvertent Release Response Plans to reduce the potential and impact for inadvertent returns at all HDD crossings. The Inadvertent Release Response Plans provide site-specific information regarding features crossed by each HDD and containment and recovery response measures tailored to site-specific conditions.

Based on the considerations evaluated above, the Corps has preliminarily determined effects resulting from suspended particulates and turbidity from proposed discharges or dredged or fill material, or both, would be minor and short term.

6.3.3 Water

Discharges of dredge and/or fill material in waterways for the installation of the proposed WI L5 pipeline and the placement of temporary construction matting needed for access may result in temporary water quality impacts. Sedimentation and increased turbidity can occur because of in-stream construction activities including blasting, trench dewatering, or stormwater runoff from construction areas and access roads. In slow moving waters, increases in suspended sediments (turbidity) may increase the biochemical oxygen demand and reduce levels of dissolved oxygen in localized areas during construction. Suspended sediments also may alter the chemical and physical characteristics (e.g., color and clarity) of the water column. To minimize temporary impacts to water quality, all waterbodies that are flowing or have greater than six inches of standing (non-flowing) water present at the time of construction would be crossed using a dry crossing technique (dam and pump or flume methods) or a trenchless method (horizontal directional drill or direct pipe). The typical open cut (wet trench) method of pipeline installation would be used to cross waterbodies that are dry or has standing (nonflowing) water less than six inches present in the channel at the time of construction. For waterbodies with standing water, but no perceptible flow, sediment curtains would be installed downstream to minimize the potential for migration of suspended sediments downstream. Additional measures that would be implemented to avoid and minimize impacts on water quality are included in Appendix 1.

The applicant has proposed to implement a Water Quality Monitoring Plan (Appendix 8) to document water quality prior to construction, during active construction, and following construction. As provided in the plan, baseline water quality data would be collected in streams

and wetlands along the project route, including wetlands and waterbodies within the construction workspace, additional temporary workspaces, and/or access roads, that have water present in sufficient quantity/depth to allow sample collection without fouling at the time of site visit. Physical and biological data would be collected regardless of water presence at the time of sampling. Table 1 in the Water Quality Monitoring Plan lists the chemical, physical, and biological parameters that would be collected. Enbridge completed baseline water quality sampling in 2023 and provided a Water Quality Monitoring Report (Appendix 9). This data was collected to establish baseline water quality to assist in comparing associated water quality parameters during active construction and following construction. In the event that the Corps determines to grant DA authorization for regulated activities associated with the proposed WI L5R project, the procedures outlined in Appendix 8 would be conditioned in any permit granted.

For those waterbodies crossed by the proposed project centerline (i.e., crossed by the pipeline), the applicant has proposed to collect water quality samples for analysis at the same sampling locations established during the 2023 sampling event, approximately 100 feet upstream of the construction workspace and approximately 100 feet downstream of the construction workspace during instream construction activities. Active construction water quality sample parameters to be tested are listed in Table 2 of the Water Quality Monitoring Plan. The applicant has not proposed to collect data on waterbodies within the construction workspace, but not crossed by the pipeline centerline, waterbodies crossed by temporary access roads, or waterbodies located within staging areas, construction yards, or valve sites workspace. These locations are proposed to be protected with erosion and sediment controls in accordance with Appendix 1, a Stormwater Pollution Prevention Plan required by the Department of Natural Resources, and any other applicable permit requirements. Following completion of instream construction activities, the applicant would restore and stabilize the streambank and reestablish natural stream flow through the proposed construction workspace. After restoration activities are completed, the applicant proposes to collect daily water quality samples for three additional days upstream of the crossing location and downstream of the crossing location at the established sampling locations. Additional samples would be collected one week post construction and one month post construction. One year after completion of the proposed WI L5R project, the applicant proposes to revisit each waterbody and collect water quality parameters at the established paired upstream and downstream sampling locations.

As part of the proposed testing, the applicant would collect pre-construction and post-construction chemical water quality parameters and select physical water quality parameters (i.e., temperature, turbidity, presence of oil and grease) from wetlands that have standing and/or flowing water in sufficient quantity/depth at the time of site visit to allow for sample collection without fouling at the time of sampling. Samples are proposed to be collected from locations approximately 50 feet on either side of the construction workspace, provided the landowner grants access permission. Since water levels in wetlands are not predictable, mapping wetland sample locations is equally unpredictable. The applicant has proposed to select sample sites in the field based on standing or flowing water conditions at the time of sample collection. If standing water is present, the applicant has proposed to collect water quality parameters from the respective locations.

In the event of an in-stream inadvertent return, the applicant has proposed to collect water samples upstream of the crossing location and 100 feet downstream of the inadvertent return

location unless prohibited by the landowner. The applicant proposes to collect the first water sample within the identified plume (well mixed area) within 30 minutes of an identified inadvertent release that results in a discharge to a waterbody. Sampling will continue every two hours until the in-stream inadvertent return has been successfully stopped or contained and downstream turbidity levels (NTUs) are at or below five NTU above upstream levels when upstream levels are 50 NTUs or less, or when downstream NTU readings are no greater than 10 percent above upstream NTU levels when the upstream levels are greater than 50 NTUs. Water quality samples are proposed to be collected from each location daily for an additional five days at each sampling location described above. Collected samples will be analyzed for DO, pH, conductivity, temperature, COD, turbidity (field measurement), and TSS. All waterways would be restored upon completion of each crossing in accordance with Appendix 3. Appendix 3 indicates that each waterbody is proposed to be monitored annually for a period of five years post construction to identify potential additional corrective measures; including but not limited to: sparse bank vegetation, unstable banks or observed erosion of stream banks, and differences in stream elevations compared to baseline data collected prior to construction. The applicant has also developed site specific drawings for channel remediation for seven waterways where restoration efforts are proposed to address existing (preconstruction) streambank erosion conditions.

Pursuant to the Section 404(q) MOA between EPA and the DA, EPA notified the Corps in March 2022 that the applicant's proposal "may result in substantial and unacceptable adverse impacts" to the Bad River and the Kakagon-Bad River Sloughs wetland complex, which EPA has identified as aquatic resources of national importance (ARNIs). In April of 2022, the EPA indicated that the proposed action "will affect" the ARNI's identified above. EPA's primary concerns were over potential discharges of sediments, fuel, lubricants, drilling fluids, and blasting contaminants. EPA also recommended robust water quality monitoring before and following construction. The Corps has been meeting with the EPA and the applicant regularly to address EPA concerns.

Most potential project impacts to water quality would be temporary and short-term in duration, including a short-term increase in suspended sediments during the beginning and end of instream construction activities. Proposed sampling protocols are robust and are anticipated to ensure that water quality impacts are Based on these factors, the Corps has preliminarily determined effects to water resulting from proposed discharges or dredged or fill material, or both, would be minor and temporary.

Aquifer Analysis

The Corps requested the applicant provide information that assesses the potential for shallow confined aquifers within the project area and develop considerations and actions to minimize potential impacts to aquifers. Confined aquifer breaches can occur during construction where construction activities extend deep enough to penetrate the confining layer above an aquifer, such as during an HDD or when sheet piling is installed to facilitate trench excavation. See Section 6.6.1 Municipal and Private Water Supplies for additional information regarding aquifers.

6.3.4 Current Patterns and Water Circulation

Construction activities for the installation of the proposed WI L5R pipeline across waterways is anticipated to temporarily alter stream channel morphology (width & depth) and could affect stream current patterns. The applicant proposes to utilize a dry crossing method of installation for any waterways that are flowing at the time of construction. The use of temporary aquadams or other barriers used to isolate the construction area of the waterway for the dry crossing may temporarily affect current patterns and water circulation in the vicinity of the crossing. Instream trenching and backfilling is proposed to typically be completed within 24 hours or less on minor waterbodies (less than 10 feet wide) and 48 hours or less on intermediate waterbodies (greater than 10 feet wide). Stream bed and banks would be restored to pre-construction elevations and contours and stream flow are proposed to resume upon completion of each waterway crossing. The applicant has proposed to conduct post-construction monitoring to evaluate the success of stream bed and bank restoration, see Appendix 3.

Based on these factors, the Corps has preliminarily determined effects to current patterns and water circulation are anticipated to be minor and short term and would be restored upon completion of the crossing.

6.3.5 Normal Water Fluctuations

Proposed construction activities for the installation of the WI L5R pipeline may temporarily affect normal water fluctuations in wetlands and waterbodies. The applicant proposes to utilize a dry crossing method of installation for any waterways that are flowing at the time of construction. Temporary aquadams or other barriers proposed to isolate the construction area of the waterway for the dry crossing may result in temporary water fluctuations in the vicinity of the crossing as flow is temporarily blocked and pumped around the crossing area. Use of dry crossing techniques generally require additional time to construct and remove temporary dams. In-stream trenching and backfilling is anticipated to typically be completed within 24 hours or less on minor waterbodies (less than 10 feet wide) and 48 hours or less on intermediate waterbodies (over 10 wide). Trenching activities, including trench dewatering, would temporarily affect wetland hydrology in the immediate area surrounding the trench due to lateral drainage and dewatering to remove water from within the trench during construction. Effects to normal water fluctuations are expected to minor and temporary and would return to normal condition upon completion of the crossing. Hydrologic monitoring in wetlands as described in in the Wetland and Waterbody Restoration and Post-construction Monitoring Plan would ensure water levels are restored in wetlands.

Based on these factors, the Corps has preliminarily determined effects on water levels resulting from discharges of dredged and fill material would be minor and short term.

6.3.6 Salinity Gradients

The project is not expected to influence 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 (Subpart D, 40 CFR 230.30)

6.4.1 Threatened and Endangered Species

The Corps review and consultation history with the U.S. Fish and Wildlife Service (USFWS) pursuant to the Endangered Species Act (ESA), along with a summary of the basis for its effects determinations, is described in Section 10.2. of this document. A summary of the Corps determination of effects to federally listed threatened and endangered species is provided below.

The Corps initiated informal ESA consultation with the USFWS for the project on October 22, 2020. On February 23, 2021, the USFWS provided concurrence regarding the Corps effects determinations for federally listed threatened and endangered species. The USFWS concurred with the Corps determination of *"may affect, not likely to adversely affect"* for the Canada lynx and gray wolf; and *"may affect, incidental take not prohibited"* under the 4(d) rule for the northern long-eared bat. The Corps made *"no effect"* determinations for the piping plover, rufa red knot, and Fossett's locoweed.

On March 31, 2023, the listing status of the northern long-eared bat changed from "threatened" to "endangered". Due to this change, the Corps reinitiated informal consultation with the USFWS in accordance with 50 CFR 402.16. On April 23, 2024, the USFWS shared new draft guidance that replaces the Interim Consultation Framework for the NLEB, and recommended the Corps initiate formal Section 7 ESA consultation. Based on the recommended approach, the Corps initiated formal Section 7 ESA consultation on May 10, 2024, for these species. The Corps also provided a revised Biological Assessment (BA) to address the potential effects of the proposed action on the NLEB or the TCB. The revised BA includes the Minimum Conservation Measures, as described in the 2024 USFWS Draft Consultation Guidance, that the applicant would implement during construction of the project. The Corp also requested the USFWS reaffirm concurrence with the Corps' October 22, 2020, effect determination for gray wolf.

6.4.2 Fish, Crustaceans, Mollusk, and other Aquatic Organisms

Aquatic organisms in the food web include, but are not limited to, finfish, crustaceans, mollusks, insects, annelids, planktonic organisms, and the plants and animals on which they feed and depend upon for their needs. All forms and life stages of an organism, throughout its geographic range, are included in this category.

The proposed WI L5R project would result in temporary discharges of dredged or fill material into 0.20-acre of non-wetland waters, which includes 13 perennial tributaries, 30 intermittent tributaries, 13 ephemeral tributaries, 14 ditches, and 2 swales presumed to be WOTUS. This includes proposed discharges of dredged or fill material into two trout streams during mainline construction, Feldcher Creek, and Camp Four Creek, which are proposed to be crossed by an open cut dry crossing. All other trout streams would be crossed by HDD method or by bridges and do not involve a discharge. The White River and the Bad River support Lake Sturgeon, a sensitive fish species. Both waters are proposed to be crossed by HDD to reduce the potential

for in-stream disturbance.

The proposed removal of vegetation at waterbody crossings has the potential to affect aquatic resources by reducing shade and cover. Thirteen of the proposed HDD and direct bore crossings are proposed at trout streams. The proposed width of the maintained corridor at these crossings is proposed to be reduced to 30 feet, except for Tyler's Forks, where site conditions require 50 feet. The maintained corridor width at the two trout streams proposed for open cut crossings is also proposed to be 50 feet. The loss of overhead stream cover in a relatively narrow corridor cover is not likely to result in a measurable increase in water temperatures or adversely affect aquatic species present in the rivers and streams proposed to be crossed by the project.

Effects to aquatic organisms associated with the proposed WI L5R pipeline construction activities may result from instream construction and the erosion associated with runoff of disturbed soils. Construction related activities within or adjacent to streams and adjacent wetlands could increase turbidity and sedimentation, alter stream channels or substrate composition, alter, or remove cover, increase erosion, or degrade habitat. The installation of aqua dams or other barriers for the proposed construction of a trenched crossing would create a short-term barrier for fish passage. The effect on migrating fish would be minor due to the short duration of in-stream work. Habitat alterations can reduce juvenile fish survival, spawning habitat, and benthic community diversity and health. Increased turbidity and sedimentation may temporarily affect sensitive fish eggs, fish fry, and invertebrates inhabiting the downstream area. Turbid conditions can also reduce the ability for biota to find food sources or avoid prey and cause physiological effects in fish. The extent of impacts from sedimentation and turbidity would depend on sediment loads, stream flows, stream bank and streambed composition, sediment particle size, and the duration of the disturbances. Sediment dispersion modeling completed indicates elevated turbidity levels would be short term and occur over short distances downstream of each crossing.

Open cut crossing methods are proposed to be used only at waterbodies that are dry or have no perceptible flow at the time of crossing. Fish and other aquatic organisms are not anticipated to be present under dry stream conditions, except for organisms that may be living in the interstitial space between substrate material (hyporheic zone). Should the project proceed, the applicant would be required to adhere to state in-stream crossing timing windows, and any state-approved timing restriction waivers, for proposed pipe installation to avoid sensitive spawning periods. These restrictions prohibit in-stream activity between September 25 and May 15 in trout streams and their perennial tributaries; and prohibit in-stream activity between March 1 and June 15 in all other waterbodies.

If there is perceptible flow identified before construction, the applicant proposes to use a dry crossing technique, which would temporarily isolate the construction workspace from stream flow. This is proposed to limit both the duration and area of disturbance and the potential for downstream sedimentation. This could also minimize harm to aquatic organisms. However, some mortality of less motile organisms, such as small fish and invertebrates, may occur within the trench and possibly the rest of the workspace between the upstream and downstream dams where a dry crossing construction method is used. However, the Corps believes that the affected area within any one stream would be small, with the top width of the trench being

approximately 18 feet wide.

In-stream blasting is anticipated for mainline pipeline construction in approximately 17 streams. The effects of blasting on aquatic biota varies by species, but generally small motile organisms and those close to the blast or near the sediment surface are expected to experience higher mortality. The applicant has prepared a Blasting Plan (Appendix 6) which they propose to implement as a measure to minimize impacts on aquatic species. See Section 6.3.1 for additional information.

Thirteen waterbodies would be crossed using an HDD, which is anticipated to minimize potential impacts on fisheries and fish habitat within these waterbodies. An inadvertent release of drilling fluid into a stream would affect water quality and could smother fish eggs and degrade spawning habitat. The applicant has conducted additional geotechnical investigations at HDD locations to better understand and minimize the risk of an inadvertent release. Sediment Discharge Modeling indicated TSS concentrations near an inadvertent HDD release site would be expected to be high (more than 20,000 mg/L) but would decrease to 10-300 mg/L at a point 500-1,000 meters downstream. As a comparison, TSS levels of 10-300 mg/L are lower than, or similar in magnitude to background conditions, and less than TSS levels typically caused by storm-related events.

The applicant provided the Corps mussel surveys which were completed within 13 perennial waterbodies proposed to be crossed by the project. Survey work followed the methodology listed in "WDNR Guidelines for Sampling Freshwater Mussels in Wadable Streams". The results of the surveys reported in the Mussel Survey Report (Appendix 10) did not find evidence of any current or historical mussel communities in the 13 surveyed waterbodies. Therefore, it is unlikely the proposed construction activities at these sites would impact mussels within these stream reaches.

Based on these factors, the Corps has preliminarily determined effects to fish and other aquatic organisms resulting from proposed discharges or dredged or fill material would be minor and temporary.

6.4.3 Other Wildlife

Many wildlife species use wetland habitat to varying degrees. Some wetland-dependent species only live in wetland habitat, some use or require wetland habitat for at least part of their life cycle, and some use wetlands more or less frequently for food, water, cover, and space.

Proposed construction activities are expected to cause temporary disturbances to wildlife because of increased human presence, noise, pollution, sedimentation, increased traffic, and dust. The magnitude of the affect to wildlife resulting from proposed construction activities depends on the species and the time of year when a species is found in wetlands. Motile (exhibiting or capable of movement) mammalian and avian species are likely to leave wetland areas during construction activities, while other less motile herptile species may experience mortality. Once construction activities are completed, the conversion of forested and shrub habitat within the proposed permanent pipeline corridor may alter movement, migration, and

increase exposure and predation for some species.

If authorized, proposed crossing methods and mitigation measures in aquatic resources, including the restoration of streambed and banks, would be required to minimize the area and duration of riparian habitat fragmentation. The clearing of woody wetland vegetation for the proposed new pipeline right-of-way would permanently fragment forested, shrub and riparian habitats. Along the western part of the proposed WI L5R route, fragmentation of forested and shrub wetlands is lower because a portion of the proposed corridor is collocated with an existing utility corridor and more of the route is sited in or adjacent to roadways and existing farm fields. Fragmentation in forested and shrub wetlands is anticipated to be greater along the eastern end of the proposed corridor where the pipeline route is proposed through larger blocks of intact and contiguous forested and shrub wetlands. Effects to wildlife associated with fragmentation of forested and shrub wetlands vary depending on the species. Some species require large tracts of similar habitats (low interspersion), whereas others use a variety of habitats at different stages in their life cycle and require multiple habitat types near one another (high interspersion). For example, many avian species, such as neo-tropical migrants, have low interspersion and feed and reproduce in continuous tracts of mature forest habitat. Other avian species have high interspersion and use a variety of different habitats for food, cover, and reproduction, such as ruffed grouse. The creation of a new proposed pipeline corridor creates more edge and “edge effect”, where changes in community structures occur at the boundary of two or more habitats. As the edge effects increase, the boundary habitat allows for greater biodiversity and benefits species with high interspersion preferences. Whitetail deer and wild canines frequently use utility corridors for travel and in search of food. Iron County Forest is comprised of over 170,000 acres and is the fourth largest county forest in the state of Wisconsin. According to Iron County Forestry, the county holds two public timber sale bids per year to harvest over 3,000 acres annually. Ongoing forest management activities involving timber harvest and the construction and maintenance of forest roads has influenced forest composition and structure on the Iron County Forest lands to a larger extent than the proposed pipeline corridor. The project would cross 7.4 miles and 107.7 acres of Iron County Forest, of which 95.3 acres is forested, including forested wetlands. Impacts from vegetation clearing in forested and shrub wetlands within the proposed corridor is not anticipated to adversely affect wildlife species with low interspersion preferences that require larger tracts of similar habitat since much that habitat would remain available intact and unaltered. The applicant has proposed measures to avoid and minimize impacts, such as clearing outside of the migratory and nesting season (April 1–July 15) and implementing activity buffers around active bald eagle nests.

The project is proposed to cross two wetlands that have been identified as seeps. Seeps are small upwellings of fresh water from beneath the surface of the ground that provides important benefits to wildlife. Seeps may be particularly important during the winter as a source of fresh water when other sources of water are frozen and in the spring as a food source when vegetation often begins to grow first. Impacts to wildlife around the seeps are anticipated to be temporary due to the temporary nature of construction activities. If authorized, the applicant would be required to restore the wetland hydrology in seep areas upon completion of construction activities as outlined in Appendix 3.

Based on these factors, the Corps has preliminarily determined effects to wildlife resulting from proposed discharges or dredged or fill material, or both, would be minor and temporary for some

wildlife species and be minor and longer lasting for other wildlife species.

6.5 Potential Impacts on Special Aquatic Sites (Subpart E, 40 CFR Section 230)

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 will be considered before making the final 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. While there are no designated sanctuaries or refuges in the vicinity of proposed WI L5R project, Wisconsin's designated State Natural Areas (SNAs) protect outstanding examples of Wisconsin's native landscape of natural communities, significant geological formations, and archeological sites. These areas are significant for scientific research, education, preservation of genetic and biological diversity, and also provide some of the last refuges for rare plants and animals. The proposed route corridor would be located over one-half mile south of the Copper Falls State Natural Area (SNA). The White River Boreal Forest SNA is located approximately 2.8 miles east of the proposed route and the White River Breaks SNA is located approximately 3.0 miles west of the proposed route. The proposed regulated activities are located a sufficient distance from the SNAs and are not anticipated to have any effect on these resources. The Corps has preliminarily determined the proposed regulated activities would not affect sanctuaries or refuges.

6.5.2 Wetlands

Wetlands consist of areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

The discharge of dredged or fill material in wetlands may damage or destroy habitat and adversely affect the biological productivity of wetlands ecosystems. The addition of dredged or fill material may destroy wetland vegetation or result in advancement of succession to dry land species. It may reduce or eliminate nutrient exchange by a reduction of the system's productivity, or by altering current patterns and velocities. Disruption or elimination of the wetland system can degrade water quality by interfering with the filtration function of wetlands, or by changing the aquifer recharge capability of a wetland. Discharges of dredged and fill material can also change the wetland habitat value for fish and wildlife.

Section 6.2 of this document discloses the construction related wetland impacts associated with the proposed WI L5R project. The applicant conducted wetland surveys within the survey corridor during the 2019 and 2020 field seasons and provided wetland delineation reports and to the Corps as part of the permit review process. A total of 733 wetlands were identified in the survey corridor. During field delineations, each wetland was assessed based on the WDNR

Wetland Rapid Assessment Method (WRAM) wetland functions including Floristic Integrity; Human Use Values; Wildlife Habitat; and Fish and Aquatic Life Habitat. The findings of the WRAM analysis were used to assign an overall functional value rating of: Low, Low-invasive, Medium, or High to each wetland. The highest potential overall general functional value was given to each wetland. For example, if the WRAM assessed functions for a particular wetland were determined to be Medium for both Floristic Integrity and Wildlife Habitat and Low for Human Use Values and Aquatic Life Habitat, the overall general wetland rating was determined to be Medium (versus Low). Based on the functional value ratings, it was determined that losses of aquatic resource functions would occur in approximately 25.95 acres of wetlands with a High assessed functional value, approximately 57.05 acres of wetlands with a Medium assessed functional value, and approximately 18.12 acres of wetlands with a Low or Low-invasive assessed functional value.

Wetland Timed Meander Surveys were also conducted during the 2022 field season to expand the assessment of floristic integrity in wetlands that were assessed to be medium and high quality based on the WRAM data collected during the initial wetland delineation field efforts (2019–2020). The Corps completed numerous field visits between 2020-2023 to review the accuracy of wetland delineations that were completed by the applicant, independently assess wetland functions and quality, and gather information to inform potential project related effects to wetlands. The Corps often coordinated joint field reviews with other federal, state, and tribal staff. Based on these field reviews the Corps finds that the aquatic resources proposed for Corps regulated activities have been accurately identified and delineated and the quality and functions appropriately assessed to inform decision-making.

Wetlands provide many wetlands functions, such as, wildlife habitat, flood protection, and maintain water quality. Wetland functions are defined as the normal activities or actions that take place in an ecosystem, such as the maintenance of habitat for flora and fauna, detention of floodwater and the biogeochemical cycling of nutrients and other compounds to maintain water quality. These functions result from complex interactions between the structural components in an ecosystem (e.g., plants, animals, soil, water, and the atmosphere), the surrounding watershed and landscape (e.g., geomorphic setting), and the processes linking these structural components such as overbank flooding, evapotranspiration, chemical transformations, predation, and primary productivity. In general, ecological functions can be grouped into three broad categories (physical, biogeochemical, and habitat functions) based upon the underlying processes driving the function. These functions work together to maintain ecosystem integrity and sustainability. The specific functions provided by individual wetlands or wetland complexes and the extent those functions are provided vary by location, setting, size and type. Project related impacts on wetland functions also vary depending on the functions each wetland provides and the extent and duration of the project activity. The primary effects on ecological wetland functions resulting from the proposed discharges of dredged and fill material would be include clearing, installation of timber mats, trenching; lowering-in and backfilling, and cleanup. The duration of temporary construction activities in wetlands may vary due to the length of each individual wetland or wetland complex crossed. Similar to upland areas, access through wetlands may be needed for several months; therefore, timber mats may remain in place until access through the wetland is no longer needed. In this situation, the duration of temporary wetland is attenuated. Restoration activities are proposed to occur immediately after construction to stabilize and seed the disturbed construction workspace as described in

Appendices 1 and 3. Once construction activities in wetlands are complete, the Corps estimates that approximately 30.06 acres of forested and 6.31 shrub wetlands would be permanently converted to emergent (non-woody) cover which would be maintained clear of woody vegetation. Wetlands in the temporary workspace areas, which includes 28.11 acres of emergent, 32.76 acres of forested and 6.31 acres of shrubs wetlands, would be allowed to naturally revert to pre-project wetland types. The proposed permanent conversion of 30.06 acres of forested and 3.86 acres of shrub wetlands, and the temporary conversion of 32.76 acres forested and 6.31 acres of shrub wetlands, to emergent (non-woody) wetland types, is anticipated to result in functional losses of habitat provided by the forested and shrub components. Wetland surveys completed by the applicant, and field data gathered by the Corps, tribes, and other agencies, identified several high-quality wetlands with diverse assemblages of plant species and mature forest within some portions of the project. Several wetlands have shallow bedrock and high groundwater and seeps. Temporary discharges of dredged or fill material have the potential to effect wetland hydrology, compact wetland soils and alter existing microtopography. Proposed clearing for the project and the associated removal of the tree canopy may cause desiccation in affected ephemeral forested wetlands. The applicant has proposed blasting in wetlands where necessary for portions of the proposed WI L5R pipeline route where bedrock is present at or within the trench depth. Blasting in wetlands would not result in more or less regulated discharges of dredged or fill material because the dimensions and area proposed to be trenched would not change as a result of blasting. Blasting depth is typically approximately one foot below the bottom of the pipe to allow for clean granular fill (padding) to prevent direct contact between the pipe and rock. Because blasting in wetlands with shallow bedrock has potential to alter wetland hydrology, trench breakers would be installed at the wetland-upland boundaries to slow the potential flow of subsurface water along the pipeline following backfill. If authorized, the applicant would be required to ensure that a site-specific blasting plan is developed for all areas determined to require blasting. Each site-specific blasting plan would consider environmental/site-specific conditions that exist, as well as methods, materials, and locations of all explosives to be used for blasting. In addition, hydrological monitoring would be conducted in wetlands proposed for blasting to ensure hydrology is restored to baseline conditions after construction, see Appendix 3. Appendix 3 would be incorporated as a special condition if a DA permit is granted (See Section 11).

The construction of three access roads to mainline valves, including mainline valve #1 upstream from the beginning of the proposed relocated segment of WI L5R pipeline, would result in permanent discharge into a total of 998 square feet (0.02-acre) of wetlands. This includes approximately 371 square feet of fill in of wetlands for the construction of a permanent access road to mainline block valve #1 within a portion of the existing Line 5 pipeline in Bayfield County; approximately 409 square feet of a swale delineated as wetlands for an access road crossing to mainline block valve # 4; and 217 square feet of wetlands for the construction of an access road to mainline block valve #5. The wetland proposed for 371 square feet of permanent fill for access to MLV#1 is assessed as low quality with invasive species present. The wetland proposed for 409 square feet of permanent fill for access to MLV #4 is assessed as low quality. The wetland proposed for 217 square feet of permanent fill for access to MLV#5 is assessed as medium quality. Due to the lower quality of two of the wetlands and the small individual areas proposed for permanent discharge, the Corps has preliminarily determined the permanent loss of wetland functions resulting from the permanent discharge of fill material in in a combined total of 998 square feet of wetlands at these three locations for the construction of access roads

would result in no more than a minimal loss of wetland functions individually. The applicant also proposes to provide mitigation credits at a 1.2:1 ratio to compensate for the permanent loss. If authorized, post-construction monitoring would begin during the first growing season after the restoration work is complete (see Appendix 3). This data collection would be reported to the Corps to evaluate and determine the success of wetland restoration. Monitoring wells would be installed prior to construction to collect hydrological data in high quality wetlands, wetlands with shallow bedrock and high groundwater and seeps, and wetlands proposed for blasting, to ensure wetland hydrology is restored compared to baseline conditions. If authorized, the Corps would require that monitoring continue until all wetlands are successfully restored in accordance with established performance standards. Compensatory mitigation for unavoidable conversion of scrub-shrub and forested wetlands to emergent wetlands, and temporal loss of wetland functions has been proposed by the applicant (refer to Section 1.4 and Section 8).

The Corps requested Enbridge further evaluate potential minor route modifications to avoid and minimize construction activities in high quality wetlands (see Section 5). The Corps has reviewed an analysis of potential opportunities to reduce disturbance in wetlands with a WRAM high functional value rating. This analysis focused on 20 high quality wetlands with 100 or more linear feet in the centerline of the proposed WI L5R route. A detailed analysis of the High-Quality Wetlands Avoidance and Minimization evaluation is provided in Appendix 11. The Corps has preliminarily determined that the proposed avoidance and minimization measures are sufficient as originally proposed (See Sections 1.4 and 6.8).

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 includes several types of wetland habitat, these inland features do not generally develop mud flats. The Corps confirmed 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. While the project does cross perennial streams, a review of field surveys waterway data forms and site evaluations by the Corps did not document the presence of vegetated shallows. Therefore, the project is not anticipated to impact vegetated shallows.

6.5.5 Coral Reefs

There are no coral reefs in the project area.

6.5.6 Riffle and Pool Complexes

Steep gradient sections of streams are sometimes characterized by riffle and pool complexes. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a coarse substrate in riffles results in a rough flow, a turbulent surface, and high

dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. Pools are characterized by a slower stream velocity, a streaming flow, a smooth surface, and a finer substrate. Riffle and pool complexes are particularly valuable habitat for fish and wildlife.

Discharges of dredged or fill material can eliminate riffle and pool areas by displacement, hydrologic modification, or sedimentation. Activities which affect riffle and pool areas and especially riffle/pool ratios, may reduce the aeration and filtration capabilities at the discharge site and downstream, may reduce stream habitat diversity, and may retard repopulation of the disposal site and downstream waters through sedimentation and the creation of unsuitable habitat. The discharge of dredged or fill material which alters stream hydrology may cause scouring or sedimentation of riffles and pools. Sedimentation induced through hydrological modification or as a direct result of the deposition of unconsolidated dredged or fill material may clog riffle and pool areas, destroy habitats, and create anaerobic conditions. Eliminating pools and meanders by the discharge of dredged or fill material can reduce water holding capacity of streams and cause rapid runoff from a watershed. Rapid runoff can deliver large quantities of flood water in a short time to downstream areas resulting in the destruction of natural habitat, high property loss, and the need for further hydraulic modification.

Waterway delineation surveys conducted in 2019 and 2020 documented stream characteristics, including: water appearance (no water, clear, turbid, sheen on surface, surface scum, algal mats, other), existing conditions (highly functional, moderately functional, functionally impaired), feature description (natural, artificial man-made, manipulated), flow regime (ephemeral, intermittent, perennial, connecting swale), sinuosity within survey corridor (straight, meandering), general observational notes, depth of water, water's edge to water's edge distance, ordinary high water mark (OHWM) width, OHWM indicator (clear line on bank, shelving, wrested vegetation, scouring, water staining, bent/matted or missing vegetation, wrack line, litter and debris, abrupt plant community change, soil characteristic change), dominant substrate (bedrock, boulder, cobble, gravel, sand, silt/clay, organic), riparian zone presence, vegetation layers present (trees, saplings, shrubs, herbs), dominant bank vegetation (list), aquatic habitats present, aquatic organisms observed (list), observed disturbances, and general observation notes. Of the proposed WI L5R activities resulting in temporary discharges of dredged or fill material into non-wetland waters, 13 waterways have been identified as having perennial flow that may support riffles and pools (13 other perennial streams would be crossed by trenchless methods and would not affect waterbodies that support riffles and pools).

Dry crossing of waterways is proposed to include temporary dams for dry crossings using sandbags, inflatable dams, aqua-dams, sheet piling, and/or steel plates both upstream and downstream of the proposed trench line to isolate the work area from the stream flow. The proposed dams would extend across the entire streambed and will be built to a height to withstand the highest water levels anticipated at the time of construction. Water is proposed to either be pumped around the isolated work zone or will be directed into flume pipes extending through the temporary dams and across the isolated area to maintain downstream flow throughout the construction process. Water within the isolated section of the waterway is proposed to be pumped into a filtering structure. The construction work area is proposed to remain isolated from stream flow throughout the stream crossing duration, minimizing the potential for downstream sedimentation, or lowering of downstream water quality. To minimize temporary impacts for stream crossings, herbaceous vegetation on all stream banks is

proposed to be maintained undisturbed within a 20-foot buffer from the OHWM during initial clearing, except where grading is necessary for bridge installation. Woody vegetation may be removed within proposed buffers during clearing, leaving the stumps and root structure intact. Non-woody vegetation and the soil profile are proposed to be left intact at each stream crossing until trenching would occur. Sediment control measures are proposed to be installed and maintained at the 20-foot buffer line adjacent to streams immediately after clearing and prior to initial ground disturbance. All stream bed and banks proposed to be disturbed would be restored to pre-construction elevations and contours and stream flow would resume upon completion of each proposed waterway crossing. Post-construction monitoring would be conducted to evaluate the success of stream bed and bank restoration and any changes to channel morphology that are observed would be rectified. Because of these factors, the Corps has preliminarily determined that the effects to riffle and pools complexes are anticipated to be minor and temporary.

6.6 Potential Effects on Human Use Characteristics (Subpart F, 40 CFR Section 230)

6.6.1 Municipal and Private Water Supplies

Portions of the project route are within 1,200 feet of 167 wells, none of which are known municipal wells. The project is within 1,200 feet of one transient non-community well (wells that serve locations such as taverns, motels, restaurants, churches, campgrounds, or parks). The project is within 150 feet of 32 private water wells. Prior to construction, the applicant proposes to consult with landowners to determine the location of any water wells within approximately 400 feet of the proposed WI L5R workspace. The applicant has proposed to conduct pre- and post-construction water testing of these private wells, at the request of each individual landowner. Refueling, maintenance, lubricating operations, and concrete coating activities would be prohibited within 100 feet of water supply wells. If construction or operations of the proposed WI L5R pipeline would affect a private well (e.g., water quality or flow), the applicant would work with the landowner to restore the well to the pre-construction conditions or better.

While pipeline operations are outside the Corps scope, the applicant has shared their proposal to clean and flush the well system or replacement of the well by installing a new well should operations result in an impact to water supplies. Enbridge offered to test each private well within 400 feet of the proposed WI L5R project route prior to construction and again following construction to verify no changes in water quality or flow have occurred because of construction. If an operational failure results in a release of petroleum product that affects a private well, Enbridge would work directly with the landowner to provide initial access to clean water while the extent of the release and potential impacts to water quality of the well are evaluated. Based on the results of the analysis, Enbridge would work with the landowner to either replace the well or provide a water filtration system that addresses associated water quality changes. If remediation and/or replacement of the well is not possible, Enbridge has reported that they would work directly with the landowner to evaluate further alternatives, which may include purchase of the property.

Aquifers:

The Corps requested information on geotechnical and hydrotechnical evaluations along the proposed WI L5R project route to identify potential risks to aquifers due to construction activities. The two primary types of aquifers are confined aquifers and unconfined aquifers. A confined aquifer is characterized by a confining layer of impervious material such as clay or rock which can cause pressurized conditions and potentially artesian wells. An unconfined aquifer lies below permeable soils and is not pressurized.

Enbridge conducted geotechnical investigations beginning in 2020 as part of its project-specific engineering and constructability analysis. The geotechnical investigations were primarily targeted towards proposed HDD and direct pipe crossings and valve settings. Groundwater levels were estimated based on the moisture level observed within geotechnical boring samples and were measured at the end of each boring where possible. These investigations documented multiple areas where shallow unconfined groundwater was encountered. Further aquifer analysis studies were completed by two different consulting firms (Appendix 18). The studies analyzed publicly available aquifer information and well records in the project area, as well as geologic, hydrologic, and topographic settings. One of the consulting firms also conducted studies on the Line 3 project in Minnesota to investigate aquifer breaches and utilized their experience and professional knowledge to identify the probability of encountering confined aquifers on the proposed WI L5R project.

Confined aquifer breaches during construction are most likely to occur where the construction activities extend deep enough to penetrate the confining layer above an aquifer. While both individual studies showed similar results, one of the studies classified the probability of encountering a shallow confined aquifer into four categories: unlikely, potential, medium, and high. Most of the proposed WI L5R project alignment was categorized as having a “low likelihood” of encountering shallow aquifers with artesian conditions. Nine areas totaling approximately 3.1 miles were identified as having “Moderate likelihood” for encountering artesian conditions. There were no areas identified as having “High Likelihood” of encountering artesian conditions along the project route. The rankings are not intended to imply artesian conditions are present or would be encountered during construction, rather, it is provided to inform contributing conditions present in the areas proposed for construction activities. The aquifer analyses identified the approximate depth at which artesian conditions may be encountered. The locations of potential artesian aquifers were then evaluated using information on the maximum depth of construction activities anticipated along the proposed route. When the confined aquifer “risk areas” were compared to the maximum construction depth figures, very few, areas where the confined aquifer “risk areas” and the maximum construction depth areas overlap.

Additional subsurface investigations were conducted along the proposed WI L5R route to verify areas that may require sheet-pile, identify rock depth, and to assess the potential for confined aquifer conditions in the “Moderate Likelihood” ranking areas. These additional subsurface investigations indicated artesian conditions will not be encountered at the planned construction depths.

The Corps requested additional geotechnical and HDD design information to ensure that appropriate measures were considered to reduce the risk of potential inadvertent releases associated with HDD and direct pipe designs for the proposed WI L5R project. As part of this

review, Enbridge and the consulting team reviewed locations and conditions where inadvertent returns occurred for the Line 3 project in Minnesota. Based on information gathered from Line 3, the applicant assessed the proposed HDDs to determine areas where the HDD design profile should be changed to further reduce risk of an inadvertent release. As a result, design modifications were completed on two of the proposed HDDs, at the White River and Silver Creek HDDs. The design modifications included increasing the proposed bore lengths (Silver Creek) or bore entry angles changed (White River) to provide for deeper depths and more soil confining capacity to increase the safety factor and minimize the likelihood for an inadvertent return.

Site-specific HDD designs, including a hydrofracture analysis, have been developed for each proposed HDD and direct pipe crossing (Appendix 18). Based on the information collected, the Corps has preliminarily determined that the effects to private and municipal water supplies are unlikely.

6.6.2 Recreational and Commercial Fisheries

The project would cross the White River via HDD method at MP 4.0. The White River is a popular fishing destination for trout, smallmouth bass and other warmwater fish species. The proposed White River HDD crossing location is outside of the White River Fishery Area State Natural Areas. Other waters proposed to be crossed by the WI L5R project may also support recreational fishing. Fishing is an important part of subsistence for local tribal members. Please see Section 10 of this document for more information regarding the Corps considerations of usufructuary rights. Impacts to recreational fishing associated with construction activities include temporary restricted or reduced access during construction. There are no known commercial fisheries in the project area. The Corps has preliminarily determined that impacts to recreational and commercial fishing would be minor and short-term.

6.6.3 Water-Related Recreation

Water-related recreation encompasses activities undertaken for amusement and relaxation. Activities encompass two broad categories of use: consumptive, e.g., harvesting resources by hunting and fishing; and non-consumptive, e.g., canoeing and sight-seeing.

The project would cross waterbodies and wetlands that support water-related recreational activities such as hunting, fishing, canoeing/kayaking, birdwatching, as well as other activities. Additional information related to usufructuary rights is included in Section 10 of this document. As described throughout this document, all wetlands and waterways would be restored upon completion of the crossing and post-construction monitoring would ensure compliance. No permanent barriers to water related recreation would be constructed. Impacts to water-related recreation have been preliminarily determined to be minor and short term during the construction and, clean-up and restoration activities.

6.6.4 Aesthetics

Aesthetics associated with the aquatic ecosystem consist of the perception of beauty by one or a combination of the senses of sight, hearing, touch, and smell. Aesthetics of aquatic ecosystems apply to the quality of life enjoyed by the public and property owners. The discharge of dredged or fill material can mar the beauty of natural aquatic ecosystems by degrading water quality, creating distracting disposal sites, inducing inappropriate development, encouraging

unplanned and incompatible human access, and by destroying vital elements that contribute to the compositional harmony or unity, visual distinctiveness, or diversity of an area. The discharge of dredged or fill material can adversely affect the features, traits, or characteristics of an aquatic area which make it valuable to property owners. Activities which degrade water quality, disrupt natural substrate and vegetational characteristics, deny access to or visibility of the resource, or result in changes in odor, air quality, or noise levels may reduce the value of an aquatic area.

Approximately 3.6 miles, or 8.7% of the project route parallels an overhead electrical transmission line. The remaining 37.5 miles (91.3%) of the proposed WI L5R project total length would not be collocated with other infrastructure. Habitat crossed in this area includes primarily forested and shrub habitats.

The duration of potential project effects on visual resources along the pipeline rights-of way could range from a couple of days during active construction to permanent (e.g., aboveground facilities or a new cleared corridor through forested areas). During construction, the greatest effects are anticipated to be caused by clearing of vegetation, as well as the presence of workers and construction equipment. Trenchless pipeline crossings would reduce any potential impacts to aesthetics in the area after the construction is complete. However, affects to aesthetics would not be eliminated because a 30-foot-wide cleared corridor would remain over the centerline of the proposed HDD. The Corps has preliminarily determined that effects to aesthetics are expected to be minor.

6.6.5 Parks, National and Historical Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves

A portion of the proposed WI L5R project is located within on-half mile of Copper Falls State Park located north of the city of Mellen. The proposed project route would not directly impact the park, but visitors may experience traffic related impacts in the vicinity of the park during construction activities.

Based on mapping by the National Park Service and the North Country Scenic Trail Association, the proposed WI L5R project would cross the North Country National Trail (NCT) in three locations in Iron County. The first crossing is at the proposed HDD of the Bad River, where the HDD would cross under a wooden boardwalk section of NCT in wetlands adjacent to the east side of Bad River on property owned by Enbridge. The second crossing is at County Line Road. The NCT in this location is within the Iron County Forest and is used for forest management activities and has been cleared, graded, and includes several small equalization culverts. The applicant proposes to use a portion of this segment of trail for access during construction and would place construction matting on the trail where there are delineated wetlands within and adjacent to the trail. A portion of the NCT in the proposed project area is planned to be vacated and relocated as a new segment of NCT is developed. Likewise, a segment of NCT east of HWY 169 this is proposed for access during construction would be relocated upon development of another new planned section of trail. Use of the North Country National Scenic Trail would be temporarily restricted within the project areas during construction activities. Use of the trail would resume to normal upon completion of construction activities.

The Corps has preliminarily determined that effects to Copper Falls State Park and the North Country National Scenic Trail would be expected to be minor and temporary.

The National Park Service (NPS) requested the Corps consider potential threats to Apostle Islands National Lakeshore and the Kakagon Sloughs and ensure that needed assessments are completed. Specifically, the NPS requested the Corps provide site-specific description describing current conditions of Apostle Islands surface waters, important public lands attributes of Apostle Islands, potential effects on Apostle Islands surface water and potential effect of the project on the public lands of Apostle Islands; site-specific oil spill analysis developed specifically for Apostle Islands to effectively understand the potential impacts of the project; and, to note of any readily foreseeable actions, such as the need to construct staging areas, build temporary roads, construct new compressor stations, or maintenance facilities for activities within the watershed(s) of the Kakagon Sloughs and Apostle Islands. Based on sediment discharge modeling to assess sedimentation and turbidity predicted to result from Corps regulated stream crossings, turbidity and sedimentation would be localized and limited in duration at the site of the crossing and downstream. By 1,000 meters downstream, the modeling predicted total suspended solids would be near background levels. Because construction activities in waters proposed to be crossed are located many miles distant from the Kakagon Sloughs and the Apostle Islands, Corps regulated activities are not anticipated to affect these resources. Oil spills are typically associated with pipeline operation, which is outside the Corps purview to consider. Pipeline safety is within the purview of the U.S. Pipeline and Hazardous Materials Safety Administration (PHMSA).

6.7 Evaluation and Testing (Subpart G, 40 CFR 230)

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

Material to be discharged into WOTUS at the proposed WI L5R project site would either be material that was excavated from the trench and backfilled, construction matting, or clean fill material from a commercial source where needed. The Corps has preliminarily determined that testing is not required because the discharge and extraction sites are adjacent and subject to the same sources of contaminants and have substantially similar materials. Fill material obtained from a commercial source is not likely to be a carrier of contaminants because it is comprised of sand, gravel or other naturally occurring inert material. Construction mats would also be placed in waters of the U.S. temporarily to facilitate construction. The likelihood of contamination by contaminants is in construction matting acceptably low. The Corps evaluation preliminarily indicates that the proposed discharge material meets the testing exclusion criteria for reasons described above.

6.8 Actions to Minimize Adverse Effects (Subpart H, 40 CFR 230)

Total avoidance of all water and wetlands is not a practicable alternative to meet the overall project purpose. The proposed WI L5R corridor includes numerous interspersed waters and wetlands that makes total aquatic ecosystem avoidance impractical. The proposed WI L5R route has been preliminarily determined to avoid and minimize impacts to aquatic resources to the extent practicable (See Section 5). While considered a regulated discharge in aquatic sites, the Corps believes that the proposed use of construction matting will minimize adverse effects that may otherwise occur within wetlands, such as rutting. The Corps has compared waterway crossing methods and believes that the crossing methods proposed are appropriate to minimize impacts to waterbodies and adjacent riparian areas. Other measures to minimize adverse construction related impacts include water quality monitoring and post construction restoration and monitoring. Should a DA permit be granted, compensation would be required for

unavoidable permanent wetland fill, conversion of scrub-shrub and forested wetlands to emergent wetlands, and temporal loss of wetland functions.

6.9 Factual Determinations (Subpart B, 40 CFR 230.11)

The preliminary 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 effects and consideration for contaminants.

Preliminary Physical Substrate Determinations:

Based on consideration of the information evaluated in Subpart C (Section 6.3.1 of this document), and incorporation of the actions to minimize effects, the Corps has preliminarily determined that proposed regulated activities associated with the WI L5R project would have a minor short-term effect on physical substrate.

Preliminary Water Circulation, Fluctuation and Salinity Determinations:

Based on consideration of the information evaluated in Subpart C (Sections 6.3.3, 6.3.4, 6.3.5, and 6.3.6. of this document), and incorporation of the actions to minimize effects, the Corps has preliminarily determined that proposed regulated WI L5R activities would have a minor short-term effect on water circulation, fluctuation and have no impact on salinity.

Preliminary Suspended Particulates/Turbidity Determinations:

Based on consideration of the information evaluated in Subpart C (Section 6.3.2 of this document), and incorporation of the actions to minimize effects, the Corps has preliminarily determined that regulated activities associated with the proposed WI L5R project would have minor short-term effects on suspended particulates and turbidity.

Preliminary Contaminant Determinations:

Based on consideration of the information in Subpart G (Section 6.7 of this document), the Corps has determined levels of contamination at the project would be like what is already occurring along the corridor since most of the project would discharge dredged material that has been excavated from the trench.

Preliminary Aquatic Ecosystem and Organism Determinations:

Based on consideration of the information in Subpart D. (Sections 6.4 and 6.5 of this document), and incorporation of actions to minimize effects, the Corps has preliminarily determined that regulated activities associated with the proposed WI L5R project would have a minor short-term effect on the aquatic ecosystem and organisms.

Preliminary Proposed Disposal Site Determination:

Based on consideration of the information above in Section 6.2 of this document, incorporation of actions to minimize effects, the Corps has preliminarily determined that regulated activities associated with the proposed WI L5R project would have a minor short-term effect on the proposed disposal sites.

Preliminary Determination of Cumulative Effects on the Aquatic Ecosystem:

Based on consideration of the information above and in Section 9 of this document, including actions to minimize effects, the Corps has preliminarily determined that regulated activities

associated with the WI L5R proposed project would have a minor long-term effect on the aquatic ecosystem.

Preliminary Determination of Secondary Effects on the Aquatic Ecosystem:

Based on consideration of the information above and in Section 9 of this document, including actions to minimize effects, the Corps has preliminarily determined that the regulated activities proposed as part of the WI L5R project would have a minor, long-term effect on the aquatic ecosystem.

6.10 Determination of Compliance with the Section 404(b)(1) Guidelines (40 CFR 230.10(a-d) AND 40 CFR 230.12)

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

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 waters of the U.S. (40 CFR 230.10(c)).

Findings of significant degradation related to the proposed discharges shall be based upon appropriate factual determinations, evaluations, and tests are required by the Section 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 above.
- (4) Causes significant adverse effects through pollutants on recreational, aesthetic, and economic values. These factors for the proposed project have been thoroughly evaluated above.

Based on available data reviewed thus far, the Corps has preliminarily determined no significant adverse effects from pollutants would occur on the resources described in (1)-(4) above and the regulated activities associated with the WI L5R project would be compliant with the Section 404(b)(1) Guidelines.

7.0 PUBLIC INTEREST REVIEW (33 CFR 320.4)

The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed regulated activity and its intended use on the public interest as stated at 33 CFR 320.4(a). To the extent appropriate, the public interest review below also includes consideration of additional policies as described in 33 CFR 320.4(b) through (r). The benefits which reasonably may be expected to accrue from the proposal are balanced against its reasonably foreseeable detriments.

7.1 Evaluation of General Criteria

The Corps evaluation includes the direct, indirect, and cumulative effects of the activity on public interest factors below, including any avoidance, minimization, and mitigation measures taken for the proposed project.

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 the Corps preliminary findings that conservation of natural resources would be accomplished by the proposed regulatory action. The proposed regulatory action would impact land, streams and wetlands, wildlife, aquatic species, vegetation, and substrate. The effects on these resources are discussed throughout this document.

Conservation measures have been considered and incorporated into the proposed WI L5R project to minimize impacts, including, minimizing construction and additional workspace, minimizing vegetative clearing, and incorporating the use of trenchless crossings where practicable. For those wetland resources that would be impacted, either temporarily or permanently, the applicant has proposed to provide compensatory mitigation.

The Corps has preliminarily determined that the proposed regulated activities associated with the WI L5R project would have no adverse impacts on conservation because the compensatory mitigation replaces the lost functions and values of the wetlands proposed to be impacted and all watercourses crossed would be restored upon project completion. See additional information in Section 8 regarding compensatory mitigation.

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. In this case, the applicant is a private enterprise, and the Corps is able to assume that appropriate economic evaluations have been completed.

Construction of the project would temporarily impact the local economy. During construction, there would be temporary increases in local population, demand for short-term housing, use of transportation systems, and expenditures in local economies for goods and services. Supply of

housing and other goods may not meet the short-term demand in the local area. Direct economic effects of the proposed WI L5R project would include labor, capital, and contractor expenses. It is estimated that this proposal would require approximately 700 workers, with labor income of \$27.5 million and total output of \$71.5 million.

Construction of the proposed WI L5R project is also projected to result in impacts to local taxing jurisdictions. Payroll and income tax revenues would accrue to the State of Wisconsin because of labor expenditures, with ad valorem taxes generating additional funds. The taxing jurisdictions in which the proposed project is located would receive an increase in property tax revenues. The state sales tax of 5 percent, county sales tax of 0.5 percent, fuel taxes, and various excise taxes would also be collected on expenditures made by workers during construction of the proposed WI L5R project. The applicant has estimated that the construction of the WI L5R project's proposed route would generate more than \$2 million in sales tax revenues. Based on current property tax rates, the WI L5R project's proposed construction could generate more than \$2 million in incremental annual property taxes. Longer routes than the proposed route alternative would be expected to generate higher sales tax and property tax revenues as the project would require more materials and cross more land. While anticipated to be a net gain in revenue, the Corps anticipates that a portion of these dollars will be used to offset added temporary costs associated with increased need for local emergency and other public support services.

Based on these factors, the Corps has preliminarily determined that the proposed regulated activities associated with the WI L5R project are expected to have a beneficial effect on the regional economy.

7.4 Aesthetics (33 CFR 320.4(a))

Proposed WI L5R pipeline construction activities would temporarily affect aesthetics in areas that are visible from residences, roads, and trails. The duration of impacts on aesthetics along the pipeline corridor range from a couple of days during active construction to permanent for a new cleared corridor through forested areas. During construction, the greatest aesthetic impact is anticipated to be caused by woody vegetation clearing, as well as the presence of workers and construction equipment. The visual impact of the proposed WI L5R construction corridor would improve quickly after grass and other vegetation becomes established. Permanent visual impacts would be less on the western portion of the proposed project when portions of the proposed corridor would be collocated with an aerial transmission line or within agricultural lands. Visual impacts may be more pronounced along the eastern portion of the proposed project when a new corridor would be introduced in primarily undeveloped forested and woody wetland habitats. The Corps has preliminarily determined that appropriate measures have been taken to minimize the construction workspace in WOTUS to reduce environmental impacts, including scenic values in this area. Changes in viewshed are anticipated to decrease over time from revegetation of temporary construction workspace areas and to a lesser degree within the permanently maintained corridor.

The Corps has preliminarily determined the regulated activities in WOTUS proposed as part of the WI L5R project would have minor long-term adverse impacts on aesthetics.

7.5 General Environmental Concerns (33 CFR 320.4(a))

General environmental concerns resulting from the proposed regulated activities associated with WI L5R construction are evaluated throughout this document, and more specifically in Sections 6.3 thru 6.6 above. Other general environmental concerns that are outside of the Corps scope of authority are also discussed where the applicant has provided measures to address those concerns.

Greenhouse Gas:

Greenhouse gas (GHG) emissions associated with the discharges would primarily result from the combustion of fossil fuels from construction equipment. Effects on emissions resulting from construction equipment activities would be temporary during construction and would cease upon completion of construction. Equipment and emissions standards are subject to federal regulations under the Clean Air Act and/or the Corporate Average Fuel Economy (CAFE) program. GHG effects arising from pipeline operation and transportation of oil and NGL and/or associated with the downstream uses of the natural gas liquids or crude oil are outside the Corps limited authority. Further, these effects are not anticipated to change because of the Corps regulatory action.

Air Quality:

Air quality impacts associated with Corps regulated WI L5R construction activities include emissions from construction equipment, vehicle traffic, and fugitive dust. Such air quality impacts would be temporary, short-term, and localized. Construction equipment, vehicles, and other mobile sources may be powered by ultralow sulfur diesel or gasoline engines that are sources of combustion-related emissions, including nitrous oxide, carbon monoxide, volatile organic compounds, sulfur dioxide, and minimal amounts of Hazardous Air Pollutants. Emissions from equipment in any given area will be short-term and localized as most equipment and activities will move along the route, and the use of more stationary equipment (e.g., drilling equipment) will be for a relatively short duration. Construction equipment will be operated on an as-needed basis. Fugitive dust emissions may result from vehicular traffic and from soil disruption from excavation and backfilling activities. Fugitive dust emissions are expected to be minimal based on the short duration of the construction activities. The amount of fugitive dust generated would depend on a variety of factors, including duration and type of construction activity, moisture content and type of soils that will be disturbed, wind speed and frequency of precipitation, area of disturbance, and the number and types of vehicles traveling over the construction areas. Nuisance fugitive dust emissions would be controlled as needed by application of water on the surface of disturbed soils and limiting the speed of equipment on access roads and the construction workspace. Enbridge's EPP (Appendix 1) specifies that contractors take reasonable steps to control construction-related dust near residential areas and other areas as directed by Enbridge. No construction areas would occur in a nonattainment area (area that exceeds pollution limits). Air quality effects related to continued reliance upon fossil fuels for energy are outside the Corps scope of analysis to consider.

Noise:

Noise is generally defined as unwanted sound and is most commonly measured in decibels ("dB") on the A-weighted scale, which is the scale most similar to the range of sounds audible to the human ear. The Day-Night Average Sound Level ("DNL") is an average measure of sound. The DNL descriptor is accepted by federal agencies as a standard for estimating sound impacts and establishing guidelines for compatible land uses. USEPA guidelines, and those of many other federal agencies, state that outdoor sound levels in excess of 55 dB DNL are "normally

unacceptable” for noise sensitive land uses such as residences, schools, or hospitals. Construction of the project would temporarily increase noise levels in the areas near the proposed project, and the noise levels would vary depending on the construction phase. Estimated maximum noise levels of construction equipment commonly used during pipeline construction, such as excavators, dump trucks, bulldozers are 85 dBA. The project area is comprised of mostly forested, grassland and agricultural use types with occasional residences located throughout. Because the project crosses primarily rural and undeveloped areas, the general public would experience only limited nuisance noises. Enbridge’s EIR describes measures to minimize noise related impacts. These would include using equipment fitted with standard muffler systems, working to complete construction near homes quickly, and minimizing idling times near residences for equipment that is not in active use. In addition, construction activities with high-decibel noise levels would be limited in residential and developed areas for most activities. Nighttime noise levels would not be impacted because construction activities would not occur at night (9 pm until 6 am) except for HDDs, time restricted waterbody crossings, and road crossings. With these measures, construction of the project would have a short-term impact on noise levels in the vicinity of the construction workspace. The equipment noise would be localized and limited in duration to the period of construction.

Hazardous materials:

Accidental release of hazardous materials during transportation, storage, handling, and/or use at the project could impact air, water, soil, and ecological resources. Appendix 1 provides that storage of petroleum products, refueling, maintenance, and lubricating operations take place in upland areas that are more than 100 feet from wetlands, streams, and waterbodies (including drainage ditches), and water supply wells. In addition, the contractors would store hazardous materials, chemicals, fuel, and lubricating oils, and perform concrete coating activities outside these areas. The EPP also outlines spill prevention, containment and control measures that would be implemented to minimize impacts resulting from spills of fuels, petroleum products, or other regulated substances as a result of construction. Adherence to these would limit the potential for hazardous material effects on the general environment. The HDD drilling fluids/mud consists primarily of water mixed with inert bentonite clay. Any additives that would be mixed with the drilling fluids/mud for viscosity or lubricating purposes would be in accordance with the list of additives approved for use by the WDNR. Enbridge’s Water Quality Monitoring plan lists the chemical, physical and biological parameters that would be collected before, during and after proposed construction. Chemical parameters include sampling for Polycyclic Aromatic Hydrocarbons (PAHs), Total Petroleum Hydrocarbons (TPH) and Perfluoroalkyl and polyfluoroalkyl substances (PFAS).

Oil spills:

Oil spills and leaks are a general environmental concern regarding the transportation of crude oil and natural gas liquids by pipeline. The Corps authority is limited to construction related discharges of dredged and fill material into waters of the United States. The Corps does not regulate the operation, or any substance transported in the pipeline. Concerns regarding oil spills related to the entire 645 miles of existing Line 5 are not within the scope of the Corps action.

While outside the Corps scope, we have reviewed information about measures to mitigate the risk of spills from the project. The Environmental Impact Report references Enbridge’s Integrity Management Program that describes measures employed to prevent, monitor, and mitigate pipeline system integrity threats. Enbridge also conducted Intelligent Valve Placement to identify optimal valve locations to protect major water crossings and high consequence areas in the

event of a pipeline rupture. Additionally, PHMSA regulations require placement of valves in certain proximity to a water crossing.

To further address operational concerns of an oil spill for the proposed WI L5R project, the applicant prepared an Operations Assessment, also known as an oil spill report, that assesses the potential likelihood and consequence of oil spills. The report was prepared to: (i) provide a probability assessment to quantify the likelihood of different release volumes that could occur on each of the proposed routes; (ii) model the hydrocarbon trajectory, fate, and effects from a suite of release scenarios at certain crossing locations; and (iii) to simulate hypothetical releases along each pipeline route being studied to allow for a comparison of receptors. For this assessment, a total of 13,665 hydrocarbon releases were modeled for the proposed WI L5R pipeline and route alternatives, spanning a wide range of locations, environmental conditions, seasonality, type and volume of release, and emergency response mitigative measures. Together, the spill probability and consequence assessments convey the overall risk associated with the pipeline and allow for comparisons between route alternatives and an understanding of the range of potential effects from the project's operation. The assessment concluded that the probability of an oil release for the proposed re-location project is extremely remote. The overall probability of failure for any release at a waterbody crossed by the project is extremely remote, in all cases less than 1 in 6,990,000 in any given year. Second, the assessment concluded that downstream movement and potential for effects following a release are substantially reduced by emergency response activities; and finally that the proposed route is considered to be the most favorable route based upon the relatively low number of receptors with the potential for impact following a release, a relatively shorter construction length, and a reduced potential to impact key receptors including the Bad River Band Reservation, wild rice or manoomin, Lake Superior, and populated areas.

7.6 Wetlands (33 CFR 320.4(b))

Information on anticipated permanent and temporary losses of wetlands, minimization measures, and compensatory mitigation of unavoidable WOTUS losses associated with the proposed WI L5R project is described in Sections: 1.2, 1.3, 1.4, 1.6, 6.5.2, and 6.8. The proposed WI L5R project would result in a minimal permanent loss of 0.02-acre of wetlands, permanently convert 33.92 acres of forested and scrub shrub wetlands into emergent wetlands, and temporarily affect 101.1 acres of wetlands during construction. Overall, with the proposed minimization measures, restoration, and compensation, the Corps has preliminarily determined that the Corps permit action involving discharges of dredged and fill material would have minor long-term effect on wetlands from a public interest perspective.

7.7 Historic Properties (33 CFR 320.4(e))

The proposed WI L5R activities requiring Corps authorization are the federal undertaking as defined in 36 CFR Part 800, the regulation implementing Section 106 of the National Historic Preservation Act (NHPA) and 33 CFR 325 Appendix C. The intent of Section 106 is for federal agencies to take into account the effects of a proposed undertaking on historic properties and to consult with the Advisory Council on Historic Preservation (ACHP), State Historic Preservation Offices (SHPOs), federally recognized tribes, other federal agencies with concurrent undertakings in connection with the proposed project, local governments, and any other parties with a demonstrated interest in the proposed federal undertaking and its potential effects on historic properties.

As the lead federal agency, the Corps consulted with numerous tribes (see Appendix 16) and Wisconsin SHPO regarding determinations of National Register of Historic Places (NRHP) eligibility of identified cultural resources in the APE (refer to Section 2), and on the effects of the proposed WI L5R project on historic properties.

The Corps has preliminarily determined the undertaking would have no adverse effect on historic properties. See Sections 10.3 and 10.13 for details of compliance with Section 106 of NHPA, and Tribal coordination and consultation.

7.8 Cultural Values (33 CFR 320.4(e))

Besides the proposed WI L5R Potato River crossing discussed in Section 10.3, the Corps could not conclude that other resources of concern identified by tribes are eligible for listing in the NRHP. However, the Corps carefully considered effects of the proposed WI L5R regulated activities on all identified resources (locations and species) of concern to tribes, and that analysis is provided in Section 10.13. To address concerns, the applicant has prepared a draft revised Cultural Resources Protection Plan (CRPP). The CRPP provides the site-specific avoidance, minimization, and protection measures at locations of resources that are ineligible for listing on the NRHP but are significant and sensitive resources tribes identified during investigations for the proposed WI L5R Project. The CRPP provides measures that came because of tribal consultation discussions, it outlines and details discoveries plans and processes, and provides the framework for construction monitoring teams to include tribal/Indigenous monitors and archaeological monitors along with construction monitoring plans. The Corps anticipates that it would include a requirement for the applicant to comply with this CRPP as a special condition of any DA permit issued for regulated activities associated with the WI L5R project.

7.9 Scenic/Recreational Values (33 CFR 320.4(e))

Scenic values include aesthetics (visual resources) are described in Section 7.4. Recreational values are described in Section 6.6.2 and 6.6.3. The Corps has preliminarily determined the regulated activities associated with the WI L5R proposal would have minor short and long term affects to scenic values and minor and short term affects to recreational values.

7.10 Fish and Wildlife (33 CFR 320.4(c))

Fish and wildlife values are described in Sections 6.4.2 and 6.4.3 above. The Corps has preliminarily determined the regulated activities associated with the proposed WI L5R project would have minor adverse impacts on fish and wildlife.

7.11 Flood Hazards (33 CFR 320.4(l))

Wetlands provide floodwater attenuation, which can reduce peak flows and downstream flooding. Since the proposed regulated activities associated with the proposed WI L5R project are primarily temporary, the wetlands within the Corps scope would continue to provide these functions once they are restored to pre-construction conditions. The Corps has preliminarily determined the proposed regulated activities do not pose a flood hazard and do not involve elements that would increase the potential for flooding long term.

7.12 Floodplain Values (33 CFR 320.4(l))

The proposed regulated activities associated with the WI L5R project includes crossing rivers and streams with mapped floodplains. Rivers and streams such as Bay City Creek, Brunsweller River, Silver Creek, Beartrap Creek, Krause Creek, and unnamed tributaries have unnumbered Zone A floodplains. An unnumbered Zone A floodplain means the floodplain does not have an actual floodplain elevation assigned, but they do have a mapped boundary. Rivers like the White River, Marengo River, and portions of the Bad River and Bay City Creek have detailed studies completed with defined floodplain elevations in addition to the floodplain boundary. These floodplains would be crossed by HDD as part of the proposed WI L5R project. The Corps has preliminarily determined here would be a minor temporary impact to floodplains crossed by HDD when matting is used.

7.13 Land Use (33 CFR 320.4(a)(1))

The proposed WI L5R pipeline corridor would cross land owned by multiple landowners along the route, including private and public landowners. It is expected that some portion of the area along the proposed corridor would be cleared, regardless of proposed pipeline installation method. The permanent and temporary ROW would be returned to pre-project contours after the project is completed. The permanent ROW would be maintained free of trees and woody scrub-shrub species and the remaining temporary ROW would be allowed to re-vegetate or would be replanted. The proposed WI L5R pipeline corridor would maintain its wetland designation; however, wooded habitat would be lost in some areas of the permanently maintained corridor.

In addition, the Corps has received information from GLIFWC communicating concerns that tribal access would be removed or reduced on Iron County Forest lands where tribal members exercise usufructuary rights. The GLIFWC cited Wisconsin Bill SB 386/AB 426, which was signed into law in 2019. According to GLIFWC, the “Felony Trespass Bill” expanded the definition of an energy provider’s property to include lands in which oil pipeline companies operate. See Section 10.4 for additional information. The law also makes it a felony to trespass on the right-of-way pipelines use to cross through public and private lands and removes the requirement for posting of notification regarding the status of the land. The GLIFWC indicates the establishment of a permanent right-of-way will remove or reduce tribal access to treaty protected resources from public land. GLIFWC also identified effects of the trespass law on access time to the Potato River TCP discussed in 10.3.

The Corps understands the concerns raised regarding tribal access to public land and the state law identified by GLIFWC. However, any DA permit granted by the Corps would not convey or alter property rights. The Corps does not have regulatory control over the conveyance or grant of property rights for the proposed WI L5R, nor does it have any jurisdiction over the applicability or enforcement of state laws. The Corps has preliminarily determined that the effects of the Corps regulated activities associated with the proposed WI L5R project on land use would be negligible.

7.14 Navigation (33 CFR 320.4(o))

The proposed WI L5R project would cross one Navigable Water of the United States, the White River. The navigability determination for the White River is based on its historical use to support

commerce. Currently, the White River does not support commercial navigation. The proposed work does not involve creating any barriers to navigation, commercial or recreational. The Corps has preliminarily determined that there would be no adverse effects to navigation because of authorized activities proposed as part of the WI L5R project.

7.15 Shoreline Erosion and Accretion (33 CFR 320.4(a)(1))

The proposed WI L5R project is not located in a lacustrine environment to affect littoral drift. However, regulated activities would have minor changes on the flow and dynamics of streams during installation of the pipeline. The applicant has proposed to implement Best Management Practices (BMPs) to reduce potential for erosion during proposed pipeline installation. After installation is complete, streambanks are proposed to be restored to preconstruction conditions and additional BMPs, such as coir logs or erosion control blankets are proposed to be used to ensure stabilization of the streambanks and reduce the potential for erosion. Other bank stabilization techniques may be used on a case specific basis. Site specific remediation plans have been developed for seven waterbody crossings to repair existing unstable banks at proposed crossing locations. If authorized by the Corps, the applicant would be required to monitor all waterway crossings after construction as described in the Wetland and Waterbody Restoration and Post Construction Monitoring Plan to ensure stream bed and banks are adequately restored to pre-construction conditions. Monitoring is intended to ensure that stream bank areas are adequately stabilized at proposed crossing locations.

The Corps has preliminarily determined the proposed regulated activities are not expected to have appreciable impacts on bank erosion or sediment and would have no effect on shoreline erosion and accretion.

7.16 Water 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 to minimize new supply requirements. The applicant has completed an aquifer analysis (see Section 6) to help ensure that the potential for an aquifer breach is minimized during proposed WI L5R construction.

In response to concerns about water withdrawals during the construction of Line 3 in Minnesota, the Corps requested information from the applicant to identify the water sources to be used during trenchless crossings associated with the proposed WI L5R project. For HDD stream crossings, the applicant proposes to haul in municipal water sources for pre-testing and drill operations. The water would later be hauled out and discharged into local wastewater treatment facilities. To minimize water consumption, the applicant proposes to reuse hydrostatic test water for all HDD crossing segments to the extent practicable. Estimated water volumes (gallons) for the proposed HDD crossings are depicted in table 7.16.1. With proposed measures to monitor during and after construction, the Corps has preliminarily determined regulated activities associated with the proposed WI L5R project are not likely to result in an adverse effect to water conservation.

Table 7.16.1

Name	Milepost	Length	Estimated Water-Pretest	Estimated Water-HDD Operations
HDD White River	4	4,469	153,331	1,129,687
HDD Deer Creek	7	1,790	61,415	450,867
DP Marengo River	11	2,000	68,620	500,000
HDD Brunswweiler River	14	2,809	96,377	1,212,916
HDD Hwy 13/CN	15	2,007	68,860	377,591
HDD Trout Brook	16	2,356	80,834	593,432
HDD Billy Creek	17	1,788	61,346	772,052
HDD Silver Creek	19	3,634	124,683	1,586,419
HDD Krause Creek	22	2,092	71,777	903,318
HDD Bad River	24	1,788	61,346	450,363
HDD Tyler Forks River	34	1,851	63,508	799,255
HDD Potato River	38	3,495	119,913	1,509,560
HDD Vaughn Creek	39	2,072	71,090	521,898
			1,103,101	10,807,358

7.17 Water Quality (33 CFR 320.4(d))

The regulated activities proposed during construction of the WI L5R project includes disturbance to wetlands and streams that has the potential for affect water quality during construction. In Section 4.1, the Corps identifies the WDNR and EPA as agencies responsible to ensure water quality. The state of Wisconsin is the certifying authority for Clean Water Act Section 401 Water Quality Certification (WQC). The Corps has reviewed the WDNR draft EIS prior to drafting this DCDD. State WQC decisions have not been completed. The Corps will not make a final DA permit decision unless and until the Section 401 Clean Water Act process has concluded.

Potential impacts, as well as measures to minimize and monitor potential impacts to water quality, have been addressed throughout this document in Sections 6.3.2 (Suspended Particulates/Turbidity) and 6.3.3 (Water). Adherence of proposed minimization measures and monitoring have been preliminarily determined to be appropriate to minimize any impacts to water quality associated with proposed discharges of dredged and fill material into WOTUS.

Pursuant to the Section 404(q) MOA between EPA and the DA, EPA notified the Corps in March 2022 that the applicant's proposal "may result in substantial and unacceptable adverse impacts" to the Bad River and the Kakagon-Bad River Sloughs wetland complex, which EPA has identified as aquatic resources of national importance (ARNIs). In April of 2022, the EPA indicated that the proposed action "will affect" the ARNI's identified above. EPA's primary concerns were over potential discharges of sediments, fuel, lubricants, drilling fluids, and blasting contaminants. EPA also recommended robust water quality monitoring before and following construction. The Corps has been meeting with the EPA and the applicant regularly to address EPA concerns.

As part of its continued review of the proposed project, the Corps requested the applicant provide measures that would be employed to monitor and address potential sedimentation and

other water quality impairments to these waters which may result from construction-related activities. To evaluate the potential to impact water quality, and to inform the need for monitoring and where the monitoring should take place, a quantitative assessment of sediment dispersion from planned waterbody crossing activities was prepared and provided to the Corps. This assessment analyzed the potential effects of sediment using SSFATE, a computational sediment dispersion modeling tool to simulate sediment resuspension and deposition. The SSFATE model provided information to assess the potential concentrations of sediment within the water column (TSS) in exceedance of background values, the downstream extent of elevated concentrations, and the depositional footprint of sediments that may be caused by both planned and accidental discharges of sediment due to installation techniques of the relocated WI L5R pipeline as it crosses the range of water bodies within the proposed project area. Eighteen hypothetical sediment release scenarios were modeled in SSFATE to assess the magnitude and timing of potential concentrations of TSS on top of background values (referred to as “in exceedance of”) and the depositional footprint of sediments that may be caused by discharged sediment from planned construction and accidental discharges as it crosses the range of waterbodies.

The analysis modeled: (1) potential sediment releases associated with proposed instream construction using dry trenching methods in small to intermediate watercourses; and (2) sedimentation resulting from the release of drilling fluid during an HDD that results in an unexpected inadvertent return into large watercourse crossings being crossing using the HDD technique. Specifically, a potential inadvertent release occurring at the Bad River was modeled to address EPA’s concerns regarding the identified ARNIs. The results of the modeling indicate all TSS concentrations would be less than TSS levels resulting from storm-related events and are less than or like background TSS levels in the waterbodies crossed by pipe installation activities. The modeling also predicted in the unexpected inadvertent release of drilling fluid (bentonite) into the Bad River would be temporary, isolated, and be less than the conservative representative calculated threshold of 19 mg/L before reaching the Bad River Band Reservation boundary. Based on the modeling completed, sedimentation impacts resulting from pipe installation (whether via dry crossing methods or HDD) are expected to have no impact on the Kakagon-Bad River Sloughs, which are located many more miles downstream within the Bad River Band Reservation.

Should DA authorization for regulated WI L5R activities be granted, the Corps would require the permittee to implement a Water Quality Monitoring Plan (Appendix 8) to confirm the predicted modeling results and ensure that the ARNIs identified are not adversely affected by the federal action, and that Bad River Band water quality standards are maintained within the Reservation. As provided in the plan, water quality would be monitored before, during and after construction. The results of the water quality sampling would be summarized in an annual report and be submitted to the Corps and other agencies by the end of the calendar year for the respective sampling periods.

Effects to water quality are expected during construction; however, sediment dispersion modeling indicates these effects are anticipated to be minor, localized, and temporary. Water quality is anticipated to return to normal after WI L5R construction and restoration of the impacted areas. The Corps has preliminarily determined that the regulated activities would have minor short-term adverse effects on water quality.

7.18 Energy Needs (33 CFR 320.4(n))

The United States uses and produces many different types and sources of energy, which can be grouped into general categories such as primary and secondary and renewable. Primary energy sources include fossil fuels (petroleum, natural gas, and coal), nuclear energy, and renewable sources of energy. Electricity is a secondary energy source that is generated (produced) from primary energy sources. According to the U.S. Energy Information Administration (EIA), petroleum products comprised about 36 percent of total U.S. energy consumption and natural gas comprised about 33 percent of total U.S. energy consumption in 2022.

Enbridge owns and operates the 645-mile-long, 30-inch outside diameter Line 5 pipeline, originally installed in 1953, as part of its U.S. mainline system. The pipeline originates at Enbridge's Superior Terminal, located in Superior, Wisconsin, traverses northern Wisconsin and the Upper and Lower Peninsulas of Michigan, and terminates in Sarnia, Canada. Line 5 has an annual average capacity of 540,000 barrels per day of light crude, including light synthetic, light sweet crude oil, and NGL volumes. The project would allow for the continued transportation of NGLs and light crude oil to its customers while avoiding the Reservation.

Comments received during the 2022 public notice requested the Corps evaluate continued reliance on fossil fuels, specifically challenging the need for the materials transported by Line 5. Corps regulations specify that when the applicant is a private enterprise, the Corps generally assumes that appropriate economic evaluations have been completed, and that the proposal is economically viable, and needed in the marketplace. Lastly, questions regarding the fate of products transported by Line 5 are operational in nature and are outside the Corps scope to consider.

The construction of regulated activities associated with the proposed WI L5R project are expected to use petroleum products, such as fuels, oils and lubricants for equipment and machinery. The Corps has determined the demand would be relatively short-term during construction and restoration activities.

7.19 Safety of Impoundment Structures (33 CFR 320.4(k))

No permanent impoundment structures would be constructed as part of the proposed WI L5R project. Small dams would be temporarily constructed at some stream crossing locations to facilitate a dry crossing. There are no anticipated safety issues with the temporary dams.

The Corps has preliminarily determined that the regulated activities associated with the construction of Line 5 would have no effect on the safety of impoundment structures.

7.20 Food and Fiber Production (33 CFR 320.4(a)(1))

The proposed WI L5R project is not of a type that would increase or decrease the production of agricultural crops, forest products, or livestock. The project would cross private lands that are in agricultural use that may be temporarily impacted due to installation of the pipeline or access roads. Impacts to agricultural crops would be minimized because construction is proposed to

occur predominantly outside of the growing season. The use of private property and effects to private property from the proposed pipeline would be accounted for in easement negotiations between Enbridge and landowners along the proposed reroute. Enbridge has developed an Agricultural Protection Plan that identifies measures that would be implemented to avoid, mitigate, or provide compensation for adverse agricultural impacts that may result from proposed pipeline construction. The proposed regulated activities would maintain a cleared corridor that would remove trees and shrubs over approximately 33.9 acres.

The Corps has preliminarily determined that the regulated activities associated with the proposed WI L5R project would have negligible effects on food and fiber production.

7.21 Mineral Needs (33 CFR 320.4(a)(1))

The proposed WI L5R project is not one that would provide minerals or affect the availability of minerals. However, construction of the project would require a minor amount of granular fill material that would be obtained from a commercial source. The Corps has preliminarily determined that the proposed regulated activities associated with the proposed WI L5R project would have negligible effects on mineral needs.

7.22 Consideration of Property Ownership (33 CFR 320.4(g))

Authorization of work in WOTUS granted by a DA permit does not convey a property right, nor authorize any injury to property or invasion or infringement of other rights, nor does it authorize any infringement of the Federal and state constitutions or Federal, state, or local laws or regulations. The applicant's signature on an application is an affirmation that the applicant possesses or will possess the requisite property interest to undertake the activities proposed in the application. Lands along the project corridor are in public and private ownership. The use of private property and effects to the private property for a pipeline would be accounted for in easement negotiations between Enbridge and the landowners. Several aspects of the project have the potential to impact adjacent or nearby property ownership as described throughout the public interest evaluation, however, many of these impacts would be temporary and occur only during construction and restoration.

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, air quality, fish and wildlife resources, and cultural resources. The Corps has preliminarily determined that regulated activities associated with the proposed WI L5R project would have negligible impacts on property ownership.

7.23 Needs and Welfare of the People (33 CFR 320.4(a)(1))

Line 5 transports approximately 80,000 bpd of NGLs, composed primarily of propane and butane, and approximately 460,000 bpd of light crude oil between Superior, Wisconsin, Rapid River, Michigan and Sarnia, Ontario and to points in between. The DA permit, if issued, would authorize the crossing of the White River by HDD, and discharges of dredged and fill material in WOTUS associated with the construction of the proposed WI L5R pipeline. The DA permit, if issued, would not authorize the operation, content, or amount of what is transported in the pipeline. With adherence to the minimization and mitigative measures described throughout this document, the Corps has preliminarily determined that regulated activities would not be contrary to the needs and welfare of the people.

7.24 Public and Private Need

The Corps has preliminarily determined that the proposed WI L5R project includes all practicable measures to minimize impacts to important resources of concern including, water, fish and wildlife, historic properties, and cultural resources. The Corps has preliminarily determined, after evaluation of the following general criteria (i-iii below) and factors listed below, that the authorized activities associated with the proposed WI L5R project would not be contrary to the public interest.

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 continue the transportation of approximately 80,000 bpd of NGLs and approximately 460,000 bpd of light crude oil between Superior, Wisconsin and Sarnia, Ontario, through its existing Line 5 pipeline routed outside of the Bad River Band Reservation. The Corps concurs with the applicant's need to continue the transportation of petroleum products to its customers.

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

Overall, the Corps has preliminarily determined that there is no practicable alternative which would fully avoid impacts to WOTUS, including wetlands based on the geographical constraints of the project. An analysis of practicable alternatives and the Corps' preliminary LEDPA determination is presented in Section 5 of this document. The Corps has preliminarily determined that there are no other locations and/or methods that would be less environmentally damaging.

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 proposed WI L5R project would cross numerous land types and various landownerships and would have temporary impacts on many factors due to the pipeline installation process. After the proposed WI L5R project would be constructed, disturbed areas would be restored to preconstruction conditions except where woody vegetation would need to be maintained to facilitate inspection of the pipe. Adverse effects of the proposed project would include conversion of wetland types, habitat fragmentation, loss of wetland functions temporarily during construction, and a minor permanent loss of 998 square feet (0.02-acre) of wetlands. Temporary and permanent impacts, including wetland type conversion, are discussed throughout this EA. Loss of wetland functions associated with the proposed WI L5R project would be compensated for through the purchase of wetland mitigation bank credits. See Section 8.0 below for detailed discussion of compensatory mitigation. Many potential adverse impacts associated with the proposed WI L5R project would be minimized through measures proposed to be implemented by the applicant.

As described in Sections 4.1, 7.13, and Section 10, the Corps understands that the proposed WI L5R relocation would cross Iron County Forest land. Any detrimental effects associated with the "Trespass Law" would not be attributable to the Corps decision.

The beneficial effects of the proposed WI L5R project include the transport of petroleum products outside the Bad River Band Reservation to those that use and rely on crude oil and

natural gas liquids. Construction of the proposed project would also be beneficial by resulting in additional employment opportunities and increased tax revenue generated during construction of the project.

The Corps preliminarily concludes that regulated activities associated with the proposed WI L5R project would not have more than minimal detrimental effects on the public and private uses for which the area is suited.

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)

As part of the Corps evaluation, compensatory mitigation requirements are determined based upon what is available and capable of compensating for the aquatic resource functions lost because of an activity authorized by a Department of the Army permit. Compensatory mitigation requirements must be commensurate with the amount and type of impact associated with the authorized activity (§ 332.3(a)). Further, all compensation must be directly related to the impacts of the authorized project (33 CFR § 320.4(r)). Section 1.2 of this document describes proposed direct impacts to wetlands/aquatic resources. Refer to Appendix 4 and Section 1.4 for a summary of the proposed compensatory mitigation.

The final 2008 Mitigation Rule specifies the required compensatory mitigation should generally be in the same watershed as the impact site and should be located where it is most likely to successfully replace lost wetland/aquatic functions (§ 332.3(b)). A preference for in-kind (similar wetland/aquatic resource type) compensation is stated (§ 332.3(e)). Compensatory mitigation requirements determined through a watershed approach should not focus exclusively on specific functions (e.g., water quality or habitat for certain species), but should provide, where practicable, the suite of functions typically provided by the affected resource (§ 332.3(c)).

Compensatory Mitigation for Wetlands:

The Wisconsin Rapid Assessment Methodology (WRAM) was used to assess wetland functions of the wetlands proposed to be affected within the project corridor. The WRAM is a qualitative, rather than quantitative, assessment. For this reason, an acreage surrogate is applied to determine appropriate wetland compensation requirements. The WRAM was used to generate a general condition rating (e.g., high, medium, low quality) score for each wetland, which was used as a basis for the applicant's proposed compensatory mitigation ratios shown in Section 1.4. The proposed compensatory mitigation ratios also consider the duration of the proposed effects on wetlands. The proposed permanent discharge of fill material in 998 square feet (0.02 acre) of emergent wetlands for the construction of three access roads to mainline block valves are the only areas of permanent wetland loss. The applicant is proposing to provide compensation at a 1.2:1 ratio for the permanent wetland loss proposed. The conversion of forested and shrub wetlands within the permanently maintained corridor are assigned higher compensation ratios to compensate for the loss of functions provided by the wooded forested and shrubs component of these wetland types, which is primarily wildlife habitat. Many of the other functions would remain upon restoration of wetlands after construction is complete. Restoration, including final grading, topsoil replacement, seeding, and installation of permanent erosion control structures would generally be completed within 20 days after backfilling the trench. If construction or restoration continues into the winter season and would result in frozen

backfill placement into the trench, topsoil restoration will be delayed until soils thaw to allow for any subsidence of the trench to be mitigated with grading of subsoils. Once grading of subsoil occurs, full topsoil restoration can occur. Post-construction monitoring would begin during the first growing season after the restoration work is complete. The timing for monitoring will allow for most natural soil subsidence to be complete to more accurately assess restoration. The applicant proposes to compensate for all impacts within the limits of disturbance, including the placement of construction matting, which the Corps does not require compensation for because it is a mitigative measure to minimize wetland impacts. The Corps has considered the duration of the regulated activities effect on wetlands that are proposed to be impacted and has preliminarily determined the applicant's proposed compensatory mitigation would adequately replace anticipated functional losses.

The Corps has preliminarily determined the applicant's proposed compensatory mitigation, to purchase wetland credits from a Corps approved wetland mitigation bank in the same HUC 8 watershed where proposed impacts would occur, would replace a representative suite of the functions typically provided by the affected resource. Based on monitoring reports the Corps has reviewed for the Poplar River Mitigation Bank and confirmed in annual site reviews, the bank site provides substantial water quality and wildlife habitat functions in the watershed.

The Corps has reviewed the proposed mitigation plan and has preliminarily determined it complies with the Corps and EPA Final Rule regarding Compensatory Mitigation for Losses of Aquatic Resources 33 CFR Parts 325 and 332 and 40 CFR Part 230, 33 CFR Part 332 (2008) (Mitigation Rule). In addition to compensatory mitigation, the applicant would provide financial assurances to ensure restoration of wetlands and waters would be successfully completed in accordance with the performance standards in Appendix 3. These assurances would likely be a permit requirement should the Corps determine that authorization of proposed regulated activities for construction of WI L5R be granted.

Compensatory Mitigation for Streams:

The proposed WI L5R project includes temporary impacts to waterbodies during the duration of trenching, pipe installation, backfilling, and initial restoration. Based on information included in Enbridge's EPP (Appendix 1), the anticipated duration for pipe installation through water bodies would typically range from 24 to 48 hours. As identified in Appendix 3, Enbridge would restore the stream bed and banks that had been disturbed by construction to as near as possible to pre-construction contours and elevations immediately upon installation of the pipeline crossing. The bed elevations would be matched to adjacent bed elevations to avoid impediments to normal water flow. Enbridge has identified areas where site-specific restoration methods would be used based on pre-construction bank conditions, such as existing unstable or eroding banks. Restoration of the area impacted by the stream crossing should return any functions lost during the relatively short construction period. Post construction monitoring would reduce the potential for any long-term effects at waterbody crossing sites. Financial assurances would be required of the applicant to ensure waterbody crossings are satisfactorily restored to pre-construction contours and elevations, and the streambanks seeded and stabilized. Based on these factors and the relatively narrow area of waterway proposed to be temporarily affected, the Corps has preliminarily determined stream mitigation is not required.

9.0 CONSIDERATION OF CUMULATIVE AND SECONDARY EFFECTS

(40 CFR 230.11(g) and 40 CFR 1501.5, RGL 84-9) Cumulative effects are effects on the environment which results from the incremental effects of the action when added to other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from actions with individually minor but collectively significant effects 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. This analysis focuses on the effects on wetlands and waterbodies.

9.1 Direct, Indirect and Secondary Effects

The purpose of this analysis is to consider the aquatic 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 wetlands and waterbodies. Information on the direct and indirect wetland and stream impacts associated with the project can be found throughout this document.

Direct Effects:

Direct effects are those that occur at the same time and place of the regulated activities. Direct effects to WOTUS because of the proposed regulated activities include the permanent discharge of fill material into 998 square feet (0.02 acre) of wetlands, temporary discharges into 101.1 acres of wetlands and 0.20 acre of non-wetland waters (i.e., streams, swales, and ditches) to construct the proposed WI L5R pipeline to construct the proposed WI L5R pipeline, including associated temporary construction workspace and the placement of construction matting for access. The permanent discharge of fill material into 0.02-acre (998 square feet) of wetlands is for the construction of three access roads to mainline block valves. Once construction activities resulting in temporary discharges into wetlands are completed, 33.91 acres of wetlands are proposed to be permanently maintained clear of woody vegetation within the 50-foot-wide permanent easement corridor and within the 30-foot-wide visual corridor over the centerline of the pipeline at HDD crossings. The remainder of the project workspace in 67.18 acres of wetlands within the temporary construction workspace areas would be allowed to naturally revert to pre-project wetland types. The applicant proposes to use existing public and private roads to access the right-of-way and facilities to the extent practicable to limit impacts on wetlands and waterways. The applicant has identified areas along the project where the placement of temporary construction matting may be needed for access roads. The placement of temporary matting in wetlands for access roads accounts for 12.53 acres of the 101.1 acres of temporary discharges noted above. The placement of temporary matting between proposed HDD entrance and exits locations accounts for 6.24 acres of the 101.1 acres of temporary discharges noted above. Streams banks and beds that would be disturbed by construction would be restored as near as possible to pre-construction contours and elevations. Restoration of areas impacted by stream crossings are expected to return any functions lost during the relatively short construction period. All wetlands and non-wetland waters temporarily affected are proposed to be restored upon completion of the authorized work, with the exception of the maintained cleared pipeline corridor devoid of woody or shrub vegetation, in accordance with Appendix 3.

The No Action Alternative would result in no direct effects to WOTUS.

Indirect and Secondary Effects:

Indirect and secondary effects are effects that are caused by the action but occur later in time or distant location from the direct effects but are still reasonably foreseeable. Secondary effects may include induced changes in development, land use, population, and the associated effects on the natural and human environment.

Secondary effects of the regulated activities in WOTUS include the potential for vegetative and hydrologic changes in wetlands that are maintained in the cleared corridor and adjacent to the proposed wetland crossings. The cleared corridor would result in habitat segmentation, especially in forested wetlands. The maintenance of a cleared pipeline corridor may provide new off-road recreational opportunities where access would have previously been limited. Off road vehicles can create rutting and scarring of the herbaceous layer across the landscape. The extent to which this ground disturbance may occur and the effects to aquatic resources are not definitively known but there is no information available that would indicate that the effects would be more than minimal cumulatively. It is not anticipated that the proposed rerouting of a segment of the existing pipeline would induce either an increase or decrease in development patterns in the region. Rerouting the existing pipeline segment would not be expected to create new development needs for supportive infrastructure, changes to market demands, or creation of new development opportunities.

Indirect effects include increased temporary turbidity and sediment transport downstream, erosion, and changes to stream bed and bank profiles during and following stream crossing construction and before stabilization of the disturbed bed and banks. The magnitude and duration of these effects depends on the crossing method, topography, and soils at the crossing location. Onsite mitigation measures would be employed to minimize these indirect effects to the maximum extent practicable and disturbed areas would be restored and stabilized as soon as practicable following pipeline installation. Increases in total suspended solid loads compared to ambient conditions from construction activities are anticipated to be negligible and suspended sediments are anticipated to settle within hundreds of meters of the proposed crossing locations. Water quality exceedances from increased turbidity during construction is anticipated to be temporary and localized (See Sections 6.3.1 and 6.3.2). Stabilization and restoration of stream channel geometry would be a requirement of the DA permit, if issued. Additionally, the DA permit, if issued, would be conditioned to require implementation of procedures to prevent, contain, control spills and procedures for drilling mud containment, response, and notification during regulated construction activities. The applicant would also be required by the Corps, should any DA authorization be granted, to follow all stipulations included in Appendix 3. Erosion and runoff from stockpiled soil before pipeline placement and disturbed soil following placement could result in sedimentation of adjacent wetlands. Erosion control measures and revegetation would be a requirement of the DA permit, if issued.

The No Action Alternative would result in none of the aforementioned secondary and indirect effects to WOTUS.

Other Present and Reasonably Foreseeable Future Actions:

Ongoing projects in the region include transportation related maintenance and improvement projects, and other utility maintenance type projects. The present and ongoing projects in the area have and are not resulting in more than minimal impacts to WOTUS in their respective

watersheds. Reasonably foreseeable actions include residential and commercial developments and public infrastructure improvements in the study area comparable to historical growth in the region. The extent to which the forecasted projects would affect WOTUS, including wetlands, is not definitively known. One reasonably foreseeable future action involves a proposed electrical transmission line project. Xcel Energy is proposing to relocate and rebuild two electrical transmission lines that run between the Gingles Substation southeast of Ashland, Wisconsin, and the Ironwood Substation in Ironwood, Michigan. Each line is approximately 35 miles long and is currently located within the Reservation of the Bad River Band of Lake Superior Chippewa Indians (Bad River Band). Instead of rebuilding the existing two transmission lines, designated as W3351 and W3316, along the current existing corridor, the proposed project would rebuild both lines following the existing corridor of the W3606 and W3607 lines. On April 15, 2022, the Wisconsin Public Service Commission issued for a Certificate of Public Convenience and Necessity (CPCN) for the project. Based on information available on the WPSC Wisconsin Public Service Commission's website, anticipated wetland impacts on the approved route include temporary wetland fill of 92.74 acres due to the placement of construction matting for vehicle access and staging; permanent wetland fill in 0.18 acres due to the installation of pole structures; and wetland conversion of 192.16 acres. For laydown yards, temporary wetland fill is anticipated to be 34.00 acres due to the placement of construction matting for vehicle access and staging. For helicopter landing zones, temporary wetland fill is anticipated to be 48.16 acres due to the placement of construction matting for vehicle access and staging. The Corps has not received a DA permit application for any required permit approvals to date.

Routine maintenance of the proposed WI L5R cleared easement corridor as well as sporadic integrity digs and spot pipeline maintenance is also reasonably foreseeable. The extent to which this maintenance work would involve regulated activities in WOTUS, including wetlands, is not foreseeable. However, based on previous regulatory actions, the Corps anticipates that pipeline maintenance activities typically involve no more than minimal temporary adverse effects at discrete locations. It is anticipated that the maintenance requirements on a new pipeline segment would be less than what would be required on the aging 70-year-old existing segment.

Another reasonably foreseeable action is the decommissioning of the existing Line 5 segment that crosses the Bad River Band Reservation. It is not known if, when, or how the pipeline would be decommissioned. Ceasing use of the existing segment that crosses the Reservation would have no effect to WOTUS. If, however, there is a future proposal that involves the removal and disposal of the pipeline, the anticipated work may include the incremental installation of access and workspace matting followed by the excavation, side casting and backfilling of 12 to 20 miles of trench. The extent to which this work would involve regulated activities in WOTUS including wetlands, is not known at this time. However, the direct and indirect effects of these activities are expected to be temporary, and the area of the trench work would be expected to be restored to pre-project conditions.

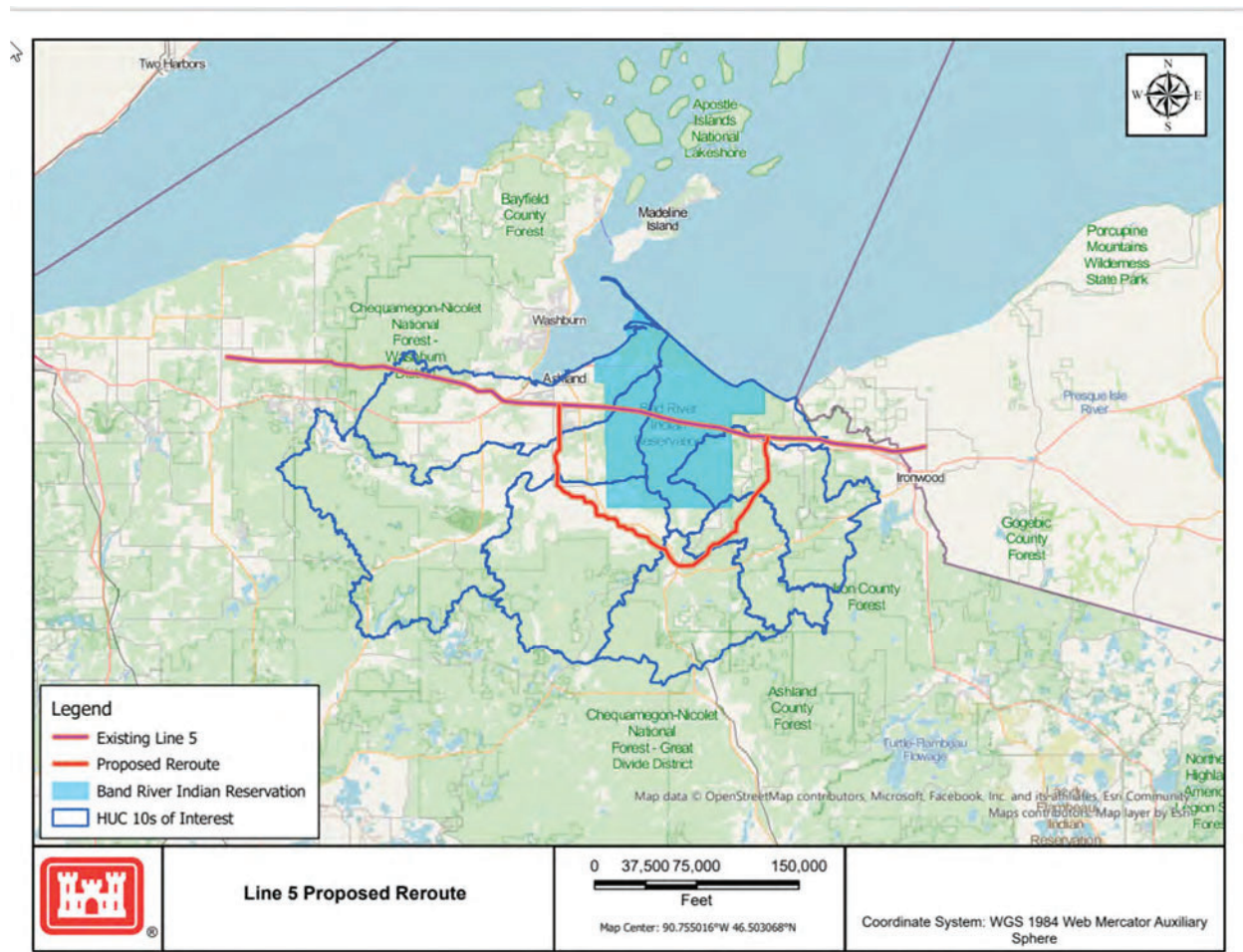
9.2 Geographic and Temporal Scope

The geographic scope for assessing the cumulative and secondary impacts of the proposed action includes all of the seven 10-digit HUC watersheds that the proposed action would cross as depicted in Figure 9.2.1, which would include the following: Fish Creek – Frontal Chequamegon Bay (HUC 10-0401030111, approximately 127,110 acres), White River (10-

0401030206, approximately 214,126 acres), Marengo River (10-0401030204, approximately 139,235 acres), Bad River – Frontal Lake Superior (10-0401030207, approximately 81,857 acres), Tyler Forks (10-0401030202, approximately 49,989 acres), Potato River (10-0401030205, approximately 88,530 acres), and Headwaters Bad River (10-0401030203, approximately 86,345 acres). Cumulatively, the geographic scope of the analysis includes approximately 787,192 acres of land surrounding the proposed reroute alignment, of which approximately 280,398 acres are WOTUS, including 153,502 acres of wetlands, presumed to be jurisdictional for this analysis. A watershed approach analysis is the standard by which the Corps and the EPA measure degradation and appropriate compensatory mitigation to restore and maintain the chemical, physical, and biological integrity of WOTUS.

The information used for the analysis is historically dated back 13 years to 2011 from the Corps' Operations & Maintenance Business Information Link Regulatory Module database and back 23 years to 2001 from the National Land Cover Database. This historical scope is based on available reliable data. The future forecast includes the actions that are reasonably foreseeable.

Figure 9.2.1 Proposed Reroute Geographic Scope of Analysis



9.3 Affected Environment

Wetlands along the proposed WI L5R project corridor provide multiple functions and benefits. The wetlands within the proposed project area provide benefits to the hydrologic regime, flood storage capacity, wildlife habitat, and protection of downstream water quality. The following describes the existing watershed conditions including past impacts to wetland resources across the seven 10-digit HUC watersheds. As of 2016, according to the National Land Cover Database (NLCD), the seven watersheds that would be crossed are predominantly dominated by forested lands (53%), wetlands (19.5%), and open water (16.2%) with approximately 3.1% developed land to date. Individually, all seven of the watersheds are predominately dominated by forested, wetland, and open water areas with relatively minor development. The NLCD depicts an increase in wetlands and a decrease in developed lands since 2001 for the watersheds both individually and cumulatively. Cumulatively, wetlands coverage increased from 14.4% to 19.5% and developed land decreased from 3.7% to 3.1%. This is likely the result of increased compensatory mitigation for authorized unavoidable losses of aquatic resources. Since 2011, the Corps has authorized permanent discharges of fill material (cumulatively across the seven watersheds) into approximately 42.8 acres of WOTUS, including wetlands (predominantly wetlands at 35.8 acres), reducing the overall waters coverage by 0.015% and wetland coverage by 0.023% (see Figure 9.3.1 for authorized action areas since 2011). Table 9.3.1 summarizes the historical authorized permanent fill and percentage of wetland/developed land coverage by individual watershed.

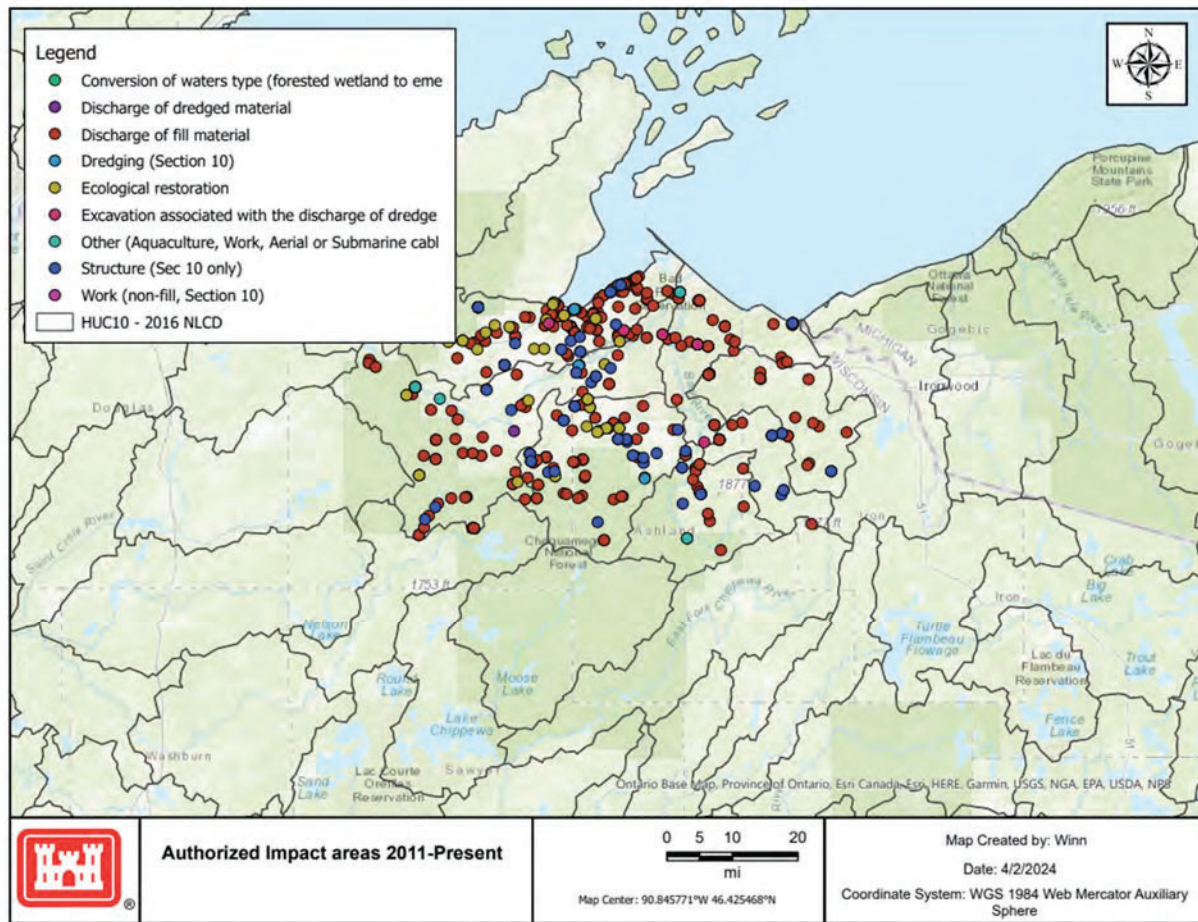
Most of the authorized permanent fills occurred in the Fish Creek watershed with 19.4 acres (predominately wetlands at 16.6 acres). The Fish Creek watershed is comprised of approximately 127,110 acres of land, of which approximately 18,685 acres are wetlands. As of 2016, the Fish Creek watershed was predominately covered with forest (50.4%), open water (25.3%) and wetlands (14.7%), with 2.8% developed land to date.

Since 2011, the Corps has authorized temporary discharges of fill material into approximately 53.6 acres of waters of the U.S. (predominantly wetlands at 52.3 acres). Most of the authorized temporary fills occurred in the Fish Creek watershed with 21.2 acres (predominantly wetlands at 20.9 acres).

Table 9.3.1 Historically authorized Fill and NLCD wetland and developed land coverage.

Watershed	Size (acre)	Fill Authorized since 2011 (acre)	2001 NLCD Wet%/Dev%	2016 NLCD Wet%/Dev%
Fish Creek Frontal	127,110	19.4	9.1/7.4	10.9/7.0
White River	214,125	3	11.5/3.2	13.1/2.8
Marengo River	139,235	5.8	10.4/4.0	13.3/3.3
Bad River Frontal	81,857	5.4	11.6/2.2	12.7/1.7
Headwaters Bad River	86,345	8.2	23.2/3.9	34.4/2.6
Tyler Forks	49,989	0.04	17.9/2.5	30.0/1.8
Potato River	88,529	0.85	10.8/3.1	18.2/2.6

Figure 9.3.1 Authorized action areas since 2011



9.4 Environmental Consequences

The proposed permanent loss would occur based on three separate discharges proposed for valve access roads, resulting in a permanent loss of 0.02 acre of wetlands in the Fish Creek watershed, reducing the wetland coverage by 0.0001%. The proposed permanent loss of wetlands would be negligible in both the Fish Creek watershed and cumulatively across the seven crossed watersheds. The DA permit, if issued, would require compensatory mitigation for the unavoidable permanent loss of wetlands.

The primary direct, indirect, and secondary effects associated with the regulated activities would be from temporary impacts. The proposed project would result in temporary impacts to 101.1 acres of WOTUS, including wetlands, associated with temporary timber matting for access roads and workspace pads and the temporary side casting and backfilling of excavated material for the trenching of the pipeline. The applicant would be required to follow all stipulations included in Appendix 3 as a condition of any DA permit proffered. The primary long-term adverse effect of the proposed action would be the maintenance of the cleared corridor for the pipeline. Woody vegetation would be cleared and maintained as herbaceous communities across 33.9 acres of forested and scrub shrub wetlands throughout the proposed 41 miles of rerouted pipeline. The clearing would result in permanent fragmentation of land cover type habitat, most notably forested areas. While still maintaining wetland classification,

the functions would be permanently altered. Overall, 0.066% of the wetlands across the watersheds would be temporarily affected and 0.022% would have relatively permanent altered functions. The foreseeable trails, transmission lines, and broadband projects would contribute to this habitat fragmentation, although to what extent is not definitively known. Based on the magnitude of undeveloped forested and scrub shrub wetland habitats and the lack of information to suggest more than minimal cumulative functional losses, it is preliminarily not anticipated that either the wetland type conversion or the habitat fragmentation associated with the corridor clearing would result in significant cumulative adverse environmental effects in the individual or collective watersheds. The DA permit, if issued, would require compensatory mitigation to offset the temporary and long-term loss of aquatic resource functions. Details on overall wetland and conversion impacts, including compensation for the temporary and permanent loss of wetland functions are included in Section 1.4 and Section 8 of this document.

Wetlands and streams are affected by changes in spring peak flow timing and volumes and the increases in drought, heat, severe storms, and flooding that are predicted to occur from climate change. Greenhouse gas (GHG) emissions have been shown to contribute to climate change. GHG emissions associated with the regulated activities (federal action) would occur from the operation of construction equipment and other combustion engines during construction activities in WOTUS. The regulated activities within the Corps' federal control and responsibility likely would result in a negligible release of greenhouse gases into the atmosphere when compared to global greenhouse gas emissions. For additional information on GHG emissions and air quality See Section 7.5.

Future development is anticipated to be comparable to the past 13 years, with approximately 43 acres of permanent fill over WOTUS, predominately wetlands, scattered across 7 watersheds, associated with pipeline maintenance and residential, commercial, and public infrastructure growth and improvements. On a watershed level, considering the abundance of wetlands and undeveloped lands coupled with anticipated compensatory mitigation requirements, the Corps has preliminarily determined that the cumulative effects of the proposed action along with past, present, and reasonably foreseeable developments are not expected to be significant.

9.5 Mitigation to Avoid, Minimize or Compensate for Cumulative Effects:

Measures that would be taken to minimize wetland and waterbody impacts are included in Section 6.8. If authorized by a DA permit, compensatory mitigation would be required for the loss of wetland functions anticipated during the construction of the proposed WI L5R project. The mitigation required would ensure that the cumulative effects authorized as part of any DA permit are appropriately mitigated and the environmental consequences of the loss of those resources are offset. Proposed compensatory mitigation is discussed in Section 1.4 of this document.

9.6 Conclusions Regarding Cumulative Impacts

When considering the overall impacts that would result from the proposed Corps regulated activity, in relation to the overall impacts from past, present, and reasonably foreseeable future activities, the incremental contribution of the proposed regulated WI L5R activity to cumulative

impacts in the area on both an individual and cumulative watershed level of analysis, as described in Section 9.3, have been preliminarily determined to be less than significant.

10.0 COMPLIANCE WITH ENVIRONMENTAL LAWS AND POLICIES

10.1 Section 401 of the Clean Water Act (33 USC Section 1342) Water Quality Certification (33 CFR 320.4(d))

The state of Wisconsin is the certifying authority for Clean Water Act Section 401 Water Quality Certification (WQC). A WQC has not been granted to date. No Corps authorization pursuant to Section 404 of the Clean Water Act may be granted unless and until a WQC is granted by the state, and the neighboring jurisdiction process under Section 401(a)(2) of the Clean Water Act is concluded.

10.2 Endangered Species Act of 1973 (16 USC 1531)

An Official Species List (OSL) for Federally listed threatened or endangered species was generated through the US Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) tool. The OSL identified the following threatened or endangered species that could occur within the Action Area:

- Gray wolf (*Canis lupus*) – Endangered*
- Northern long-eared bat (*Myotis septentrionalis*) – Endangered*
- Tricolored Bat (*Perimyotis subflavus*) - Proposed Endangered*
- Piping plover (*Charadrius melodus*) – Endangered
- Rufa red knot (*Calidris canutus rufa*) – Threatened
- Canada lynx (*Lynx canadensis*) – Threatened
- Fassett's locoweed (*Oxytropis campestris var. chartacea*) – Threatened

**Denotes species whose listing status has changed over the Corps review timeline. Status shown above is current as of the date of publication for this document. See below for additional information.*

The Corps originally initiated informal Endangered Species Act Section 7 (Section 7) consultation with the U.S Fish and Wildlife Service (USFWS) for the project on October 22, 2020. On February 23, 2021, the USFWS provided concurrence regarding the Corps effect determinations for federally listed threatened and endangered species. The USFWS concurred with the Corps determination of "may affect, not likely to adversely affect" for the Canada lynx and gray wolf and "may affect, incidental take not prohibited" under the 4(d) rule for the northern long-eared bat, which was at that time listed as threatened. In addition, the Corps made a "no effect" determination for the piping plover, rufa red knot, and Fassett's locoweed. "No effect" determinations do not require consultation with the USFWS.

On March 31, 2023, the listing status of the northern long-eared bat (NLEB) changed from "threatened" to "endangered." Due to this change, the Corps re-initiated informal Section 7 consultation on January 11, 2024, for the northern long-eared bat; and while not required, initiated consultation for the tricolored bat (TCB) due to the proposal for listing this species as endangered.

On April 23, 2024, the USFWS shared new draft guidance that replaces the Interim Consultation Framework for the NLEB, and recommended the Corps initiate formal Section 7 ESA consultation. Based on the recommended approach provided in the guidance, the Corps evaluated the proposed project impacts using a new combined species, range-wide determination keys (DKey). The results of our evaluation revealed the proposed project “may affect” the NLEB and/or the tricolored bat (TCB).

The Corps initiated formal Section 7 consultation with the USFWS for these species on May 10, 2024. A revised Biological Assessment (BA) was provided that evaluates potential effects of the proposed action on the NLEB and TCB. As indicated in the BA, the applicant proposes to implement the Minimum Conservation Measures, as described in the 2024 USFWS Draft Consultation Guidance, during construction of the project. Formal Section 7 ESA consultation is ongoing at the time of this publication.

In November 2020, the USWS published a final rule delisting the gray wolf, effective January 2021. In February 2022, the final delisting rule was vacated. As a result, gray wolves in the lower 48 states outside of the Rocky Mountains are protected under the ESA. While the gray wolf was listed as an endangered species during the Corps’ October 22, 2020, effects determination, the Corps re-evaluated potential project related impacts to the gray wolf after the final delisting rule was vacated. The Corps sought additional information from other federal, state, and tribal species experts about the location of known gray wolf packs in the vicinity of the proposed project, and the feasibility and guidance for conducting surveys for den and/or rendezvous sites and inform potential project related effects on the gray wolf. A review of the Bad River Natural Resources Department’s Wolf Plan indicated the Potato River pack may be in the vicinity of a portion of the proposed project route. The WDNR no longer maintains maps of wolf territories and recommended the Corps review state depredation maps to identify potential wolf territories. The Corps’ review of the WDNR wolf depredation mapping database from 2013 to 2023 revealed there was one probable wolf depredation in the vicinity of the proposed pipeline route over the 10-year period in 2020 (2020-Iron County Investigation Report Number: RHL 123-2020 Status: Probable Wolf Depredation). A tribal wildlife expert indicated that locating and mapping potential wolf dens in the absence of collared wolves to pinpoint potential den locations is extremely difficult. Monitoring of gray wolves during the construction of Line 3 in Minnesota revealed construction activities had no apparent impact on wolves, including two packs that had dens within ¼-mile of the pipeline corridor (one was next to the construction workspace and had pups). Wolves also regularly use the existing pipeline and powerline corridors, roads, and trails as travel routes.

Based on these considerations, the Corps requested the USFWS reaffirm their February 23, 2021, concurrence with the Corps “may affect, not likely to adversely affect” determination for the gray wolf. Concurrence with the Corps finding remains pending as of the date of this publication.

10.3 Section 106 of the National Historic Preservation Act (NHPA) (16 USC 470 et seq.)

10.3.1 Summary of Effect Findings

The Corps' finding of effect summarized below is based on its review of reports submitted from 2020 to 2023, and consultation and coordination with consulting tribes and the Wisconsin State Historic Preservation Office (WI SHPO).

In August 2020, the Corps consulted with the WI SHPO on an appropriate area of potential effects (APE) for the proposed federal undertaking. Over the next three years, the Corps consulted with the WI SHPO in letters dated June 3, 2021, April 18, 2022, and May 3, 2024, and with consulting tribes as further described below and in detail in Section 10.13 (a Tribal Engagement Summary is also included in Appendix 16).

Table 10.3.1, also information provided in the Corps' letter to the WI SHPO requesting concurrence with the Corps' eligibility determination and finding of effect, provides titles and dates of final reports considered by the Corps. These reports provided comprehensive and multi-disciplinary historic property identification approaches consistent with 36 CFR 800.4(b)1. The reports submitted by the applicant were updated to address review comments from the WI SHPO and consulting tribes, and as such, the date of the report below reflects the most current and final versions.

Table 10.3.1 L5R Cultural Resources Investigations

Report title	Investigation type	Company	Year
<i>Phase I Archaeological Survey Final Report, Enbridge Line 5 Pipeline Relocation Project, Ashland, Bayfield, Douglas, and Iron Counties, Wisconsin</i>	Archaeology	ERM	APRIL 2022
<i>Tribal Cultural Resources Survey, Enbridge Line 5 Wisconsin Segment Relocation, Ashland and Iron Counties, Wisconsin</i>	Cultural (tribal, traditional) resources	DDCRM	APRIL 2022
<i>Historic Architectural Reconnaissance Survey, Enbridge Line 5 Wisconsin Segment Relocation Project, Ashland, Bayfield, Douglas, and Iron Counties, Wisconsin</i>	Architectural, above-ground	ERM	APRIL 2022
<i>Oral History Report on History, Culture, and Subsistence Pertaining to the Area to be Affected by the Proposed Reroute of Line 5, University of Michigan (reviewed by Bad River Band of Lake Superior Chippewa Mashkiziibii)</i>	Oral-history interviews	Bad River Band THPO; U of MI	JAN 2023

Based on information provided in the Tribal Cultural Resources Survey (TCRS) and the Bad River Band Oral History reports, the Corps determined the Potato River crossing location eligible for listing in the National Register of Historic Places (NRHP), under Criterion A, events making significant contributions to broad patterns of history, as a Traditional Cultural Property (TCP). Due to avoidance and minimization measures and the limited and temporary nature of regulated activities at this location, the property would not be adversely affected by the federal undertaking and the Corps' finding of effect for the Potato River crossing is *no adverse effect to historic properties*.

The Corps could not conclude that other resources of concern to tribes are eligible for listing in the NRHP, based on all information submitted. However, the Corps carefully considered effects of the regulated activities on all identified resources of concern to tribes, and that analysis is further described in Section 10.13. In summary, avoidance or minimization efforts led to complete avoidance of some resources (*no effect*). A total of 19 archaeological resources identified in the Phase I are within the Corps' APE. Of the 19 resources, four are considered potentially eligible for inclusion in the NRHP; however, these four resources are located outside

of the project limits of disturbance (LOD) and would not be impacted by proposed WI L5R project activities. Therefore, the Corps required no further evaluation. The Corps determined that the 15 archaeological resources located within the proposed LOD are not eligible for inclusion in the NRHP. Additionally, the Corps determined the 12 architectural resources identified in the Historic Architectural Survey within the APE are not eligible for listing in the NRHP; therefore, there would be no effect to archaeological or architectural historic properties caused by the undertaking.

In support of the Corps' no adverse effect to historic properties finding, pursuant 36 CFR 800.13(a)(2), the Corps provided to the WI SHPO a draft Cultural Resources Protection Plan (CRPP) prepared by the Principal Investigators of the Phase I archaeological survey and the TCRS investigations. The CRPP provides the site-specific avoidance, minimization, and protection measures for the eligible historic property, which have been shared with the consulting parties. It also provides the applicant's proposed avoidance, minimization, and protection measures at locations of other resources of concern to tribes that were identified during the archaeological and TCRS investigations. The CRPP includes all water crossings and locations of historic trails, recommendations from the TCRS report, as well as resources identified during the tribal consultation process. The CRPP outlines and details inadvertent discovery plans and processes, and provides the framework for the monitoring teams, to include tribal and Indigenous monitors and archaeological monitors among other monitor teams, and construction monitoring plans. The Corps would include a requirement for the applicant to comply with this CRPP as a special condition of the DA permit, if issued, for regulated activities associated with the WI L5R project.

10.3.2 Rationale for Effect Findings

Overview:

The Corps identified areas of the overall project that are within the APE, as described above in Section 2. The applicant prepared and submitted the results of a multi-disciplinary investigation approach to identify historic properties that included Phase I archaeological survey, tribal cultural resources survey (TCRS), architectural survey, geomorphological desktop analysis, and provided funding for the oral-history interviews conducted by the Bad River Band. These reports presented information on areas within the Corps' APE as well as outside of the Corps' APE.

Phase I archaeological survey (Phase I investigation), architectural reconnaissance survey, and tribal cultural survey investigations began in 2019 and continued into 2020. In January 2021, the Corps invited consulting tribes to conduct oral-history interviews to further inform on the identification of potential historic properties. The Bad River Band conducted oral-history interviews in late 2022. Areas surveyed by (conventional) archaeologists during the Phase I investigation coincided with areas surveyed by tribal cultural specialists during the TCRS investigation and accounted for over 99 percent survey coverage of the entire project area. The Corps determined the level of effort for this project surpasses the "reasonable and good faith" identification standard per 36 CFR Part 800 Protection of Historic Properties, Implementing Regulations of Section 106 of the NHPA.

Following the Corps' prior consultation with the WI SHPO in letters dated June 3, 2021, and April 18, 2022, on May 3, 2024, the Corps requested concurrence with its eligibility

determination and effect finding by the WI SHPO, including the draft CRPP to further support the no adverse effect finding. This treatment plan is further described below and in Section 10.13. Like the two earlier submittals, the Corps provided the May 2024 coordination to consulting THPOs and tribal staff for their concurrent review.

Details of Rationale for Effect Findings:

The Corps considered all the investigations and information gathered in consultation to make an informed effect finding for the proposed federal undertaking on historic properties if present. Table 10.3.1, above, lists the investigation types and reports conducted for this undertaking, demonstrating the robust level of effort (800.4(b)(1)) to identify historic properties, including those that may be of religious and cultural significance to tribes, which includes Phase I archaeological survey, architectural reconnaissance survey, tribal cultural resources survey (TCRS), and oral-history interviews. To summarize the reports and consultation and coordination efforts, on June 3, 2021, the Corps provided draft reports of the cultural resource investigations conducted for the proposed 41-mile WI L5R corridor, conducted in 2019 and 2020, to the WI SHPO and consulting tribes for review. All comments the Corps received were addressed and incorporated into the revised reports, which were provided on April 18, 2022. Table 10.3.2 lists the comments the Corps received from the WI SHPO’s review of the Phase I report, and how these questions and clarifications were addressed and incorporated into the revised and final report. (The comments the Corps received from consulting tribes and how those comments were addressed and incorporated into the revised and final report are provided in Section 10.13.) On January 27, 2023, the Bad River Band of Lake Superior Chippewa (Bad River Band) submitted their report of the oral-history interviews to the Corps.

Table 10.3.2 WI SHPO comments on Phase I report

SHPO comment on Phase I	Comment addressed
Information for site AS-0417 suggests possible presence of two graves, but only one photo provided in report (pg. # Figure 5.3-50). Elevation over area in photo appears fairly recent, request photo of second possible burial. Understand fencing will be erected around site prior to construction, but important to assess whether, or not, represents uncatalogued burial site.	Site 47AS0417 will be completely avoided by the proposed LOD. The 47AS0417 site narrative (start page #, final report) was amended to reflect the fact that field documentation suggestive of "graves" is reflective of historic structural components related to the primary rectangular stone foundation indicated in the site sketch map (page #, final report).
Other potentially eligible sites as described in both the 2019 and 2020 reports will either be avoided or may require Phase II testing (IR-0052, AS-0425, BAS-0041, AS-0442, AS-0443) if they cannot be avoided.	All sites mentioned will be avoided. (Appendix maps, indicating avoidance, in final report.)
For site AS-0427, Figure 5.3-89 (p. # of the 2019 report) depicts an area with six locations identified as 'markers.' Are they grave markers, or something else not identified in the legend?	Site 47AS0427 will be completely avoided. The “markers” were crude wooden crosses made of scrap milled fencepost wood with a single letter carved into each one. Based on their form, location in association with agricultural buildings, and spacing, interpreted as livestock or pet burials. A photo of the markers is included within the site narrative, in final report (page #). This site is no longer on the Project maps because it is over one mile away from the current proposed LOD.
For site IR-0054, the three isolated finds representing two secondary and one tertiary flakes, should be added to the map.	None of the isolated finds are associated with site 47IR0054. Appendix maps show locations, provided in final report. Map pages for each: 47AS0429 #/58; 47IR0055 #/58; and 47IR0056 #/58. (Site 47IR0054 is on page #/58.)

Is there a plan to test access roads that fall within the visual APE even if not within the USACE permit areas?	All project access roads, regardless of inclusion within USACE APE, were surveyed for cultural resources, and the appropriate visual buffer in the Architectural Report was also surveyed. Appendix maps show archaeological survey coverage methods applied to all access roads. Survey coverage of access roads is 100 percent. (Appendix maps in final report show survey coverage of access roads.)
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The following provides a summary of each investigation type with the number/type of resources identified within the APE, the Corps' eligibility determinations, and if considered eligible for listing, the effect (finding) of the undertaking on historic properties, if present.

The Phase I archaeological survey investigated a total of 44 archaeological resources. The applicant proposed alignment shifts and other design changes to avoid resources identified during field surveys, resulting in a total of 13 resources remaining within the limits of disturbance (LOD) and within the Corps' permit area, and 19 resources within the Corps' APE. Table 10.3.3 lists the 19 resources and eligibility determinations. Of the 19 resources, four are considered potentially eligible for inclusion in the NRHP; these four resources are located outside of the permit area and would not be impacted by project activities. Due to the temporary nature and scope of proposed construction-related regulated activities, there were no visual, audible, or atmospheric effects that required further consideration by the Corps. Because these resources are avoided, the Corps required no further evaluation. The Corps determined that all archaeological resources located within the permit area are not eligible for inclusion in the NRHP. In addition, the draft Cultural Resources Protection Plan (CRPP) provides voluntary minimization and protection measures for several of these resources.

Table 10.3.3 Phase I Archaeological Resources within the APE, Eligibility Determinations, & Treatment Measures

Site No. Resource Type	Temporal Component, Resource Description	Eligibility Determination	CRPP: Treatment Measures
47AS0415 Site	Historic Historic surface midden	Not Eligible	No
47AS0417 Site	Historic Stone foundation, stone walls, rectangular	Unevaluated *outside LOD	Exclusion fence, monitoring
47AS0420 Site	Historic Logging/Mining camp or homestead with cellar and foundation depressions, partially standing log walls, several small pit depressions. Probably contemporary related to site 47AS0421	Not Eligible	Exclusion fence
47AS0421 Site	Historic Collapsed historic log cabin, likely associated with 47AS0420	Not Eligible	Exclusion fence
47AS0425 Site	Historic Three structures, rock boundary wall, caved-in cellar, stone-lined canal	Potentially Eligible *outside LOD	Exclusion fence, monitoring
47AS0430 Site	Historic Railroad grade and submerged bridge pilings in Bad River. Spur line servicing black granite quarries south of Loon Lake	Not Eligible	No
47AS0431 Site	Historic Historic artifact scatter; surface, subsurface; boundary expanded on 6/13/2020	Not Eligible	No

47AS0433 Site	Historic Historic scatter; farm machinery, truck frame, wood/soil push piles; surface	Not Eligible	No
47AS0434 Isolate	Historic Isolate single two-person hand saw blade; surface	Not Eligible	No
47AS0439 Isolate	Historic Isolate; 20th century metal flatbed wagon; surface	Not Eligible	No
47AS0440 Site	Historic Historic scatter; can/trash scatter, some modern (1950s-1970s); surface	Not Eligible	No
47AS0441 Site	Historic Historic scatter; small trash scatter of nonflammable cans, bottles, other metals (late 1940s, early 50s, to the 70s); surface	Not Eligible	No
47AS0442 Site	Prehistoric Lithic scatter; ppt, 2 debitage; subsurface	Potentially Eligible *outside LOD	Exclusion fence
47AS0443 Site	Historic Historic features, artifact scatter (early 20th century); house site w/ low earthen foundation walls, cellar pit, possible privy; surface	Potentially Eligible *outside LOD	Exclusion fence, monitoring
47AS0444 Site	Historic Historic scatter; architectural, brick and mortar fragments; surface, subsurface	Not Eligible	No
47AS0445 Site	Historic Historic features; remnants of outbuildings, depression; surface	Not Eligible	No
47IR0052 Site	Historic 19th/20th century mining	Potentially Eligible *outside LOD	Exclusion fence, monitoring
47IR0055 Isolate	Prehistoric Single piece of debitage	Not Eligible	No
47IR0057 Site	Historic Historic feature; cased well in dirt-covered metal well house	Unevaluated— outside survey corridor; *outside LOD	No

On April 18, 2022, the Corps coordinated the final eligibility determinations and effect finding for architectural resources with the WI SHPO. The Corps determined the 12 architectural resources within the APE are not eligible for listing in the NRHP, and therefore, there would be no effect to (architectural) historic properties caused by the undertaking. The WI SHPO concurred with the eligibility determination and effect finding for architectural properties on April 19, 2022. On May 24, 2022, the WI SHPO provided its review of all the submitted investigation reports and information, concluding there will be no effect to standing structures or archaeological sites within the APE.

The tribal cultural resources survey (TCRS) was conducted by Dirt Divers Cultural Resource Management, LLC (DDCRM), a tribally owned and managed cultural resources company. To summarize, the tribal survey identified a total of 11 cultural resources within the project corridor, 10 of which are within or at least partially within the APE. The types of cultural resources identified include maple sugar harvest areas, rock overlooks, an eagle tree site, locations with historic artifacts, and one location at the Potato River identified as a hunting, fishing, and gathering location. The DDCRM report recommended avoidance and minimization efforts necessary to avoid impacting the identified resource locations and recommended tribal monitoring during construction at all sensitive areas, to include all water crossings, locations of

ancient and historic trails, and locations of identified archaeological sites (from the Phase I archaeological investigation). Based on the Corps' review and comments received from consulting tribes, the applicant's consultants made additions and clarifications within the TCRS report and provided updated reports in April 2022 (see Section 10.13 for additional details). Notable additions to the final report included expanded discussion of tribes within the project area and region, a list of tribal citizens that participated in the tribal survey, shovel testing and methodology sections expanded to include discussion of the archaeological and geomorphological investigations for the project, a table within the report (also added as Appendix D: copies of field notes) of the plant species identified during the TCRS, and Appendix E with the TCRS Team Lead and Principal Investigator résumés and Wisconsin Field archaeology permit (refer to Section 10.13 for additional details). All the TCRS report recommendations for avoidance, minimization, and protection measures of identified resources, and tribal monitoring during construction, are incorporated into the draft CRPP. The applicant has voluntarily provided construction-related monitoring and treatment and discovery plans for the proposed corridor including areas outside of federal control. For those areas under federal control, the Corps would require implementation of the CRPP as a condition of any proffered permit.

Table 10.3.4 provides the site number (Exhibit Number) and site type (resource description) of the ten TCRS-identified resources within the APE, the Corps' eligibility determinations, and treatment measures to minimize, avoid, protect the identified cultural resources and incorporation of these efforts into the draft CRPP. Of the ten resources, the Corps determined one, Exhibit Number 12 Potato River, eligible for listing in the NRHP.

Table 10.3.4 TCRS Cultural Resources within the APE, Eligibility Determinations, & Treatment Measures

Exhibit No. (Site No.)	Cultural Resource Description	Eligibility Determination	CRPP: Treatment Measures
3	Eagle roosting/ hunting trees	Not Eligible *outside LOD; partially in APE	HDD ¹ , minimized clearing and monitoring
4	Active maple sugaring	Not Eligible	Minimized clearing and monitoring
5	Active maple sugaring	Not Eligible *partially in APE	Minimized clearing and monitoring
6	Historic metal and field stone	Not Eligible *partially in APE	Monitoring
7	Historic metal and field stone	Not Eligible	Monitoring
8	Rock Outcrop Overlook	Not Eligible	Discuss clearing/construction activities; monitoring
10	Rock Outcrop Overlook	Not Eligible *partially in LOD	Boundary expanded north during THPO field visit; minimized clearing, exclusion fencing and monitoring
11	Historical metal debris (metal/cans)	Not Eligible *partially in APE	Monitoring
12	Traditional cultural resource place for hunting, fishing gathering Potato River	Eligible	HDD ¹ , minimized clearing, use existing access roads, monitoring; Preservation of mature cedar trees within 30' corridor
13	Active maple sugaring	Not Eligible	Minimized clearing and monitoring

¹ HDD = Horizontal Directional Drill

The Bad River Band conducted oral-history interviews in local communities. The report identified 10 waterways and waters as locations of “historic and cultural properties and resources” identified during interviews. During the June 2023 consultation meeting, Bad River Band staff provided another location to consider, Silver Creek, and requested that the upper portion of the Bad River be included within the Bad River Falls Location, bringing the total number to 12 locations. Five of the 12 resource locations are far removed from proposed regulated activities and are outside the APE, ranging from 3.5 miles to 15 miles away. These five locations were no longer considered in the Corps’ ongoing review: Bad River Falls, Kakagon, Copper Falls, Penokee area, and Wood Creek area. The remaining seven locations are shown in Table 10.3.5.

The Corps considered the information gathered and shared within the interview report to further the identification of potential historic properties within the proposed project corridor, including those of traditional and cultural significance to tribes. The Corps acknowledges the importance of these natural and cultural resources, these waterways and waters, and acknowledges the views expressed during consultation meetings by the tribes that all these waterways are important cultural resources. Excepting the Potato River location, the Corps has no information to conclude the waterway locations met eligibility criteria for listing in the NRHP. While the Corps did not receive information to conclude that these waterway locations are eligible for listing in the NRHP, in consultation with tribes, the Corps continued the review and evaluation of these resources consistent with its NEPA review and tribal trust responsibilities. The Corps considered effects of the undertaking on all resources of concern and evaluated practical measures to minimize and avoid adverse impacts associated with the regulated activities (see Section 10.13 for detailed information).

Table 10.3.5 Bad River Band Interviews Report Locations within the APE, Eligibility Determinations, & Treatment Measures

Location (ordered as listed in report)	Cultural Resource Description	Eligibility Determination	CRPP: Treatment Measures
1	Bad River	Not Eligible	HDD ¹ , minimized clearing, monitoring (CRPP); no blasting proposed
3	Potato River	Eligible	HDD ¹ , minimized clearing, monitoring (CRPP); preservation of mature cedar trees within 30’ corridor; no blasting proposed
4	Bear Trap Creek	Not Eligible	Dry crossing, no blasting proposed; monitoring (CRPP)
7	Tyler Forks	Not Eligible	HDD ¹ , minimized clearing, monitoring (CRPP); no blasting proposed
8	Marengo River	Not Eligible	HDD ¹ , minimized clearing, monitoring (CRPP); no blasting proposed
9	White River	Not Eligible	HDD ¹ , minimized clearing, monitoring (CRPP); no blasting proposed
11	Silver Creek	Not Eligible	HDD ¹ , minimized clearing, monitoring (CRPP); blasting likely at MP 19.78-19.90

¹HDD = Horizontal Directional Drill

The Potato River crossing location was identified both within Bad River Band's report and in the TCRS report, and the Corps determined the Potato River site is eligible for listing in the National Register, under Criterion A, events making significant contributions to broad patterns of history. The Potato River site is eligible because (1) it is significant to a living community because of its association with beliefs, customs, or practices that are rooted in the community's history and that are important in maintaining the community's cultural identity and (2) it retains its ability—its integrity—to convey its significance. In summary, the Potato River site is eligible for listing for its significance to a living community because of its association with traditional and cultural practices that are rooted in the community's history. The regulated activities at the crossing of the Potato River include the placement of temporary matting in 0.94-acre of wetlands to support clearing trees in a 30-foot-wide visual corridor for the installation of the pipeline under the Potato River via the horizontal directional drill (HDD) method. There is no blasting proposed for this location. During consultation discussions assessing effect of the undertaking on the Potato River crossing, consulting tribal staff stated that during the August 2023 field visit they observed a stand of mature cedar trees that would be removed within the proposed 30-foot corridor. Spatial data of the cedar trees at the Potato River were provided to the Corps by the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) in January 2024. The Corps coordinated with the applicant to assess the potential to avoid removal of select cedar trees within the 30-foot cleared corridor to the extent possible while still allowing for visual inspection. This mitigation and minimization measure, to preserve mature cedar trees within the cleared corridor, was added to the Treatment Plan of this resource location within the draft CRPP.

Based on the scope and nature of the proposed regulated activities at this location, the temporary impacts associated with placement of matting materials as described above, and the efforts to minimize impacts to the current setting demonstrated in the preservation of a stand of mature cedar trees, the use of the HDD versus an open-trench cut across the river, minimization measures demonstrated by the reduced corridor of 30 feet to be cleared of woody vegetation (less mature cedar trees), and requiring monitoring during construction activities, the proposed federal undertaking would not alter or change the characteristics of the property that qualify it for inclusion in the NRHP, and therefore the federal undertaking would not adversely affect the Potato River site.

10.4 Tribal Treaty Rights and Tribal Resources

The Corps sought additional information and expertise from tribes through various means, including tribal consultation and coordination with tribal natural resources staff to further inform on resources that could potential be affected by Corps regulated activities. These meetings frequently included the Great Lakes Indian Fish and Wildlife Commission (GLIFWC), an intertribal, co-management agency committed to the exercise of treaty rights on behalf of its eleven-member tribes. GLIFWC has authority specifically delegated by its member tribes to help ensure successful off-reservation harvests while protecting the resources for generations to come.

Tribes shared concerns related to impacts to water and water quality, wetlands, wildlife, plants, and other natural and cultural resources of importance to tribes. The Corps' analysis of water quality, wetlands, and wildlife are included in Sections 7.17, 6.52, and 6.4.3. Appendix 16 documents the various meetings the Corps has held to seek tribal viewpoints regarding the

proposed federal action. Additional tribal coordination information is available in Sections 10.3 and 10.13. Tribal staff have indicated additional information is pending, and the Corps will continue to evaluate all information and analysis provided by tribes related to treaty rights and effects on tribal resources. The Corps will offer to meet with the Bad River Band and any other tribes after they have opportunity to review the assessment of regulated activities in this draft combined decision document and prior to preparing a final document.

Over the last nearly four years of consultation and meetings, including during field visits, THPOs have repeatedly expressed the significance of water (nibi) as a historic property and an important cultural resource. The Corps has heard that from a tribal perspective, water fits the Anishinaabe definition of a historic resource or historic property and that should be recognized. The Corps recognizes it is frustrating for tribes to hear that water itself does not meet the criteria to be eligible as a historic property under the National Historic Preservation Act. The Corps recognizes the cultural importance of water to the Anishinaabe peoples and have worked diligently to ensure proposed regulated impacts to waters are considered and minimized to the extent possible. If authorized, post-construction monitoring would be required by special conditions to ensure temporary impacts to waters are satisfactorily restored, see Section 11, and refer to Appendices 3, 5, 8 and 9.

The GLIFWC communicated concerns to the Corps that because of the applicant's proposed reroute project, tribal access would be removed or reduced on Iron County Forest lands where tribal members exercise usufructuary rights. The GLIFWC cited Wisconsin Bill SB 386/AB 426, which was signed into law in 2019. According to GLIFWC, the "Felony Trespass Bill" expanded the definition of an energy provider's property to include lands in which oil pipeline companies operate. The law also makes it a felony to trespass on the corridor pipelines use to cross through public and private lands and removes the requirement for posting of notification regarding the status of the land. The GLIFWC indicates the establishment of a permanent corridor will remove or reduce tribal access to treaty protected resources from public land. The GLIFWC provided information on their analysis that indicates during construction and once completed, the corridor for the proposed WI L5R re-route will eliminate tribal access to 43.4 acres of Iron County Forest land within the permanent 50-foot ROW and create a 7.29-mile barrier to tribal access across Iron County Forest lands. According to GLIFWC's analysis, Vogues Road, a county road, would be the only route for crossing the 7.29-mile Line 5 pipeline corridor through the Iron County Forest. In addition to eliminating access, travel times to portions of 1,700 acres of Iron County Forest increased by between 1 and 86 minutes. The table below shows GLIFWC's analysis of increased travel time to acreages of Iron County Forest lands due to the reroute corridor, which includes areas both within and outside the Corps' scope of analysis. GLIFWC also identified effects of the trespass law on access time to the Potato River TCP discussed in 10.3.

Table 10.4.1 Increase in Travel Time to Iron County Forest Lands

Increase in minutes	acres affected
1-15	1421
16-30	650
31-45	1311
46-60	405
61-86	68

In addition to the information provided by GLIFWC, Red Cliff Band provided related concerns that the law and presence of Line 5 if rerouted would reduce access to Iron County Forest black ash swamps, important for making cradleboards, baskets, and other culturally significant items, and stated these impacts should be considered along with other impacts to ash trees in cumulative effects analysis.

The Corps understands the concerns raised regarding tribal access to public land and the state law identified by GLIFWC. However, any DA permit granted by the Corps would not convey or alter property rights. The Corps does not have regulatory control over the conveyance or grant of property rights for the proposed WI L5R, nor does it have any jurisdiction over the applicability or enforcement of state laws related to “energy provider property.” A DA permit, if granted, would have no effect on the conveyance or establishment of property rights by others or cause the cited state law to apply or be enforced by state officials. While outside the Corps authority to influence or control, the applicant’s Environmental Justice Commitment Plan (Revised July 2023) states, “Enbridge will not impede and is committed to the lawful exercise of the right to hunt, fish, or gather on property open to the public. For example, in areas where the rerouted Line 5 crosses public land members of the Signatory Tribes and public can lawfully hunt, fish, or gather; however, to ensure public safety, access to the right-of-way will be temporarily restricted during active pipeline construction.” In a December 2022 response to the Corps request for additional information on impairment of access, Enbridge indicated it would work with any tribal members to facilitate access to public lands during construction and would not otherwise restrict access. During active construction, Enbridge indicated it would temporarily restrict access for safety during excavation and trenching but would make best efforts to facilitate access to public lands requiring a crossing of the corridor for exercise of treaty rights and would identify a point of contact to facilitate that safe access. Bad River Band has indicated that regardless of implementation of the “Felony Trespass Law,” the existence of the law has had a “chilling effect,” and tribal members are not likely to attempt access by crossing the easement area.

GLIFWC also identified sugar camps, important to Ojibwe lifeways, along Bear Trap Creek and noted presence of other sugaring locations in the watershed. The Corps recognizes the presence of maple sugar camps, and their importance to the Ojibwe lifeways. The TCRS investigation documented three active maple sugaring locations along the proposed corridor identified in the report as Exhibits 4, 5, and 11. All three locations are on private lands. The TCRS report recommended tribal and Indigenous monitoring during construction activities and minimized vegetation clearing of an access route. These recommendations are incorporated

into the draft revised CRPP. The active maple sugaring exhibits were discussed during the NHPA consultation meetings with THPOs, GLIFWC members, and other tribal staff.

Tribal staff expressed to the Corps that an ethnobotanical survey is necessary to identify plant species present along the entire proposed project footprint to better understand the proposed project's potential impacts on natural resources, cultural resources, and treaty rights. The Corps has considered information that had been collected on culturally important plants and their uses through various surveys already completed. Sources include:

- The Tribal Cultural Resources Survey report identifies culturally important plants and their locations on the photos of the field books throughout the survey of the entire proposed corridor.
- Numerous plants are identified in the survey corridor in the wetland delineation data sheets as well the wetland timed meander surveys. All of these sources have been made available to tribal natural resources staff as part of technical meetings.
- Bad River Band's July 8, 2021, letter to the Corps provides common and Ojibwa names of 50 plants and their uses (included as Appendix 17).
- The Corps participated in four field reviews with THPOs where the THPOs and tribal natural resources staff collected information on cultural plants on private and public land in uplands and wetlands.
- Bad River natural resources and GLIFWC field crews have gathered information on vegetation on many parcels of land during field reviews with the Corps, WDNR or other agencies.
- GLIFWC data on plant species present at the Potato River site (over 250 species listed).

Based on the available data collected to date, the Corps believes that there is sufficient information available to understand the range of plant species which may be encountered in areas of Corps authority. The Corps has reviewed the plant data provided in the sources described above, much of which is available as part of the wetland delineation information available on the Corps website: https://www.mvp.usace.army.mil/Enbridge_Line5-WI/. The Corps agrees that there may be a loss of culturally important plants within the Corps scope that may result from construction of the project, on public and private lands. Many culturally important plant species are ubiquitous throughout the ceded territory and would remain available for harvest and use. Tribal staff have shared concerns over loss of culturally important plants within public Iron County Forest land. The project would cross 7.4 miles of publicly available Iron County Forest land and would affect existing vegetation in 107.7 acres. Of this area, 43.4 acres of Iron County Forest land within the permanent 50-foot corridor that would be maintained clear of woody vegetation (trees and shrubs) The remainder would be allowed to revert back to pre-project cover type. Publicly available Iron County Forest land is over 170,000 acres, the fourth largest county forest in the state of Wisconsin. The acreage of Iron County Forest land proposed to be temporarily affected within the proposed project corridor is comprised of 107.7 acres, or 0.06% of Iron County Forest. The acreage of land within the permanently maintained corridor is 43.4 acres, or 0.03% of Iron County Forest land. The acreage of Iron County Forest land affected by Corps regulated construction activities in WOTUS, including forested and shrub wetland conversion, is 27.89 acres, or 0.01 percent of Iron County Forest land. These acreages resulting from Corps regulated construction activities

in WOTUS are very small compared to the nearly 170,000 acres of Iron County Forest that remains unaltered and available to support culturally important plant species.

The Corps continues to welcome additional information and expertise from tribes through various means, including tribal consultation and coordination with tribal natural resources staff to further inform on resources that could potentially be affected by Corps regulated activities.

10.5 Fish and Wildlife Coordination Act (FWCA) (16 USC 661)

The proposed action follows the Fish and Wildlife Coordination Act. Sections 6.4.1, 6.4.2, and 6.4.3 of this draft document identify the impacts of the proposed project on fish and wildlife species. The Corps coordinated with the USFWS on the regulated activities proposed as part of its continuing evaluation of regulated construction activities associated with the proposed WI L5R project, including working closely with their designated State counterpart, Wisconsin DNR, during interagency coordination.

10.6 National Environmental Policy Act of 1969 (42 USC 4321 – 4347)

This draft document includes an environmental assessment (EA) to comply with NEPA and includes a draft evaluation of a reasonable range of alternatives and the direct, indirect, and cumulative effects of the proposed action. The purpose of this draft EA is to disclose to the public draft anticipated environmental impacts of the proposed action and provide an opportunity for the public to provide comments. The Corps will review all comments received to support a final EA and make a permit decision on the proposed project.

10.7 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 preliminarily 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, the Corps does not currently believe a conformity determination is required for this action. Please see Sections 7.5 and 9.4 for additional information.

10.8 Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), Essential Fish Habitat (EFH)

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

10.9 Coastal Zone Management Act (CZMA)

The Coastal Zone is defined in Section 304 of the Coastal Zone Management Act (CZMA) of 1972. Coastal zones are defined as coastal waters (including the lands therein and

thereunder) and the adjacent shorelands, strongly influenced by each other and in proximity to the shorelines of the coastal states. Designated coastal zones include islands, transitional and intertidal areas, wetlands, salt marshes, and beaches. The coastal zone does extend and apply to Great Lakes states (CZMA Section 304.1). CZMA is effective in protecting coastal areas and the surrounding habitat by defining inland coastal areas and the protection of these buffer zones within CZMA (Section 304.2).

The Coastal Zone Management Act of 1972 requires that a federal agency provide the State of Wisconsin with a Consistency Determination when a federal agency proposes any activity inside or outside of the coastal zone that will have any reasonably foreseeable impact on any coastal resources or uses within the coastal zone.

The United States Army Corps of Engineers, St. Paul District, has requested a federal consistency determination from the Wisconsin Coastal Management Program (WCMP), State of Wisconsin, Department of Administration, on activities associated with the construction of the proposed WI L5R project. The proposed activities are subject to review for consistency under the policies of the Wisconsin Coastal Management Program (WCMP). Comments should be received by the WCMP within 21 days after notice is issued.

Comments should be submitted to the Wisconsin Coastal Management Program at: <https://wi.accessgov.com/doa-wi/Forms/Page/intergov/federal-consistency-public-comment/>
Further information may be obtained from: <http://coastal.wisconsin.gov>.

10.10 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 proposed WI L5R project is not in a river officially designated by Congress as a “study river” for possible inclusion in the system.

10.11 Effects on Corps Civil Works Projects (33 USC 408)

The project is not in the vicinity of a Corps Civil Works Project and would have no effect on such projects.

10.12 Corps Wetland Policy (33 CFR 320.4(b))

The proposed WI L5R project would result in Corps regulated wetland impacts. Based on the public interest review herein, the Corps has preliminarily determined that the beneficial effects of the proposed project outweigh the detrimental impacts of the proposed project.

10.13 Executive Order 13175: Consultation and Coordination with Indian Tribal Governments

This Executive Order (EO) was designed to establish regular and meaningful consultation and collaboration with tribal officials in the development of federal policies that have tribal implications and to strengthen the U.S. government-to-government relationships with Indian tribes. The Corps has and continues to consult and coordinate with tribes on the proposed

regulated activities proposed as part of the WI L5R relocation project. Recurring consultations include government-to-government consultations between senior leadership, Section 106 of the National Historic Preservation Act consultations, and technical meetings with consulting tribal natural resources staff and their representative from the Great Lakes Indian Fish and Wildlife Commission (GLIFWC). This section addresses substantive input, discussion, and outcomes from government-to-government consultations between leadership (Section 10.13.1), Section 106 NHPA consultations held at the staff level (Section 10.13.2), and technical meetings held between the Corps, consulting tribes, and GLIFWC staff (Section 10.13.3). See Appendix 16 for a chronology of all meetings and consultations to date, and further the administrative record for the project contains detailed summaries of discussions held during government-to-government consultation meetings, staff level NHPA consultation meetings and staff level technical meetings.

10.13.1 Government to Government/Nation to Nation Consultation

Starting in 2020, the Corps and the Bad River Band committed to government-to-government engagements to consult on the proposed WI L5R project. Over the course of the next three years, the Corps and the Bad River Band held six government-to-government meetings. Starting on June 14, 2021, the Corps St. Paul District Commander, Colonel Jansen, consulted government-to-government with Bad River Band Chairman Wiggins, Tribal Council members, tribal attorneys, and other tribal staff for the Bad River Band. In addition to the Colonel, Corps Regulatory leadership included the Regulatory Division Chief, Deputy Chief, Tribal Liaison, and Lead Project Manager. Discussion focused on jurisdiction, what the Chairman views as consultation, the Corps' area of potential effects and the limits of the federal undertaking and closed with an appreciation of the candor of the discussion and future partnering and field visits.

On October 14, 2021, a government-to-government meeting occurred between Corps leadership and Bad River Band leadership. Attendees of the virtual meeting included the Chairman, other tribal leaders, and tribal staff, and the St. Paul District's Colonel Jansen, Regulatory leadership, and Counsel.

The next meeting was in person, at Bad River Band tribal headquarters in Odanah, Wisconsin on January 11, 2022. At this meeting, Colonel Jansen met with Chairman Wiggins to continue the government-to-government/Nation-to-Nation consultation discussion. At the same time, the Corps PM met with the Band's natural resources staff to continue the technical consultation discussions.

On July 12, 2022, the St. Paul District's outgoing Commander, Colonel Jansen, and the incoming Commander, Colonel Swenson, with the Regulatory Chief, Tribal Liaison, and Project Manager, met with the Bad River Band Chairman, Tribal Historic Preservation Officer (THPO), and Natural Resources Director at the Bad River Band Reservation. The Corps' intent was to continue to strengthen and foster the relationship by introducing the new Commander of the district to Bad River Band leadership and staff. The day included a boat tour on the Bad River and into Lake Superior, and candid discussion on the history of the Band, resources, and the WI L5R pipeline proposal.

On February 3, 2023, Colonel Swenson met with Chairman Wiggins in Odanah, Wisconsin, to continue the government-to-government/Nation-to-Nation consultation and discussion. Discussion focused on Environmental Assessments (EA) and Environmental Impact Statements (EIS).

The next leadership level government-to-government meeting was held on May 1, 2023, at the Band's Lodge and Casino in Odanah, Wisconsin. The Corps' St. Paul District Commander Colonel Swenson, Regulatory Division Chief and Deputy Chief, Tribal Liaison, Project Manager, and an Office of Counsel representative attended for the Corps, and present for the Band were the Chairman, Natural Resources Director, tribal attorney, and tribal staff. Discussion focused on the Corps' NEPA process for the proposed WI L5R project.

10.13.2 Section 106 NHPA Consultation

Identification of Historic Properties through Consulting Tribes' Review of Cultural Resources Surveys, Review Comments Shared with the Corps:

The applicant prepared and submitted a Phase I archaeological survey, a tribal cultural resource survey (TCRS), and an architectural survey for the proposed undertaking. Details of these investigations and findings is provided in Section 10.3. The Corps requested consulting tribal historic preservation staff review these investigation reports, seeking their expertise and knowledge on the inventory and identification of historic properties and cultural resources. Consulting Tribal Historic Preservation Officers (THPOs) reviewed and submitted comments on these investigations and the Corps considered all input; summaries of THPO comments and Corps responses are below. The Corps required revisions to the draft reports to address the comments provided by consulting THPOs. Notable additions to the final TCRS report included expanded discussion of tribes within the project area and region, a list of tribal citizens that participated in the tribal survey, shovel testing and methodology sections expanded to include discussion of the archaeological and geomorphological investigations for the project, a table within the report (also added as Appendix D: copies of field notes) of the plant species identified during the TCRS, and Appendix E with the TCRS Team Lead and Principal Investigator résumés and Wisconsin Field archaeology permit. Notable additions to the final Phase I archaeological report because of THPO comments included clarifying language of the testing methodology and survey coverage, inclusion of the aerial and topographic map sets as appendices, additional archival research including full archival title searches for seven historic sites and the data incorporated into the site-specific sections and the summary section of the final report, and removal of select language to describe historic-aged resources. During fall 2023, several of the resources identified during the TCRS investigation were visited by consulting tribal staff and will be discussed in more detail in the next section.

On February 24, 2021, the Forest County Potawatomi Community THPO (FCPC THPO) submitted comments on the draft Phase I archaeological survey report. The Corps provided additional information in subsequent NHPA tribal consultation meetings and discussions, and the Corps required revisions to the draft Phase I report in response to comments. The following summarizes comments provided by the FCPC THPO, and the Corps response.

The FCPC THPO stated concerns with shovel testing coverage and overall project coverage of the corridor and requested clarification of the extent of shovel testing on the project maps.

Map sets provided in May 2021 indicated the survey coverage types: pedestrian, shovel test at 15-m interval, wet/inundated, slope, and disturbed. The Corps reviewed the survey coverage. Over 99 percent of the corridor was surveyed, and all survey methods complied with WAS Guidelines. Due to the overall low percentage of cultivated agricultural land in the project corridor, pedestrian survey was a minor component of this project. In many cases, judgmental shovel tests were used to sample smaller, isolated, dry, flat, or intact areas within larger blocks of wet/inundated, slope, or disturbed areas. In addition to the survey coverage, the May 2021 map sets included the judgmental shovel test locations within the survey coverage areas coded as wet, slope, or disturbed. The reports and map sets demonstrated appropriate effort was made to test within all areas of the survey corridor, and particularly in association with waterbody crossings. The map sets with aerial and topographic backgrounds were also included in the final report as appendices.

The FCPC THPO stated there was a suspiciously low number of pre-contact sites despite water crossings.

The Corps requested additional information based on this comment, and the Phase I archaeologists augmented their initial examination of regional/local literature (that may bear on the overall low density of pre-contact settlement observed) along the project corridor, consulting the WI SHPO ASI, other regional cultural resource management survey reports, and other professional literature. The results were highly consistent with a relatively low percentage of prehistoric sites reported within nearby previously surveyed areas in general, and in association with waterbodies. These new data were incorporated into the final report section summarizing survey results.

The FCPC THPO stated concerns with post-field archival documentation not capturing more robust ownership history that may be provided by conducting a thorough search of deeds, mortgages, wills, and records associated with the property, requested complete deeds research for each post-contact period site, and questioned the compartmentalization of related post-contact sites and features.

The Phase I archaeologists completed full archival title searches for seven historic sites located within the survey corridor. Historical sites were subjected to full archival title searches if they predated the 1950s. The information obtained from the title searches for each of these sites, addressing the THPO comments, was integrated into the final report.

The THPO stated concerns with the use of prejudicial descriptive terminology (e.g., historic scatter, farm dump, trash dump, etc.) and eligibility recommendations and requested removal of this language.

The Phase I archaeologists addressed usage of terms for the various types of pre-contact and post-contact cultural depositional contexts. Deference was given to terms commonly used by the WI SHPO to classify, catalog, and describe sites in the Archaeological Sites Index (ASI).

The THPO noted two sites of special concern: 47AS0417 and 41AS0428, requesting additional documentation, avoidance, and monitoring. In addition, the THPO requested geophysical survey to establish cemetery boundary of site 47BAS-0041, Ashland Poor Farm Cemetery.

Both sites 47AS0417 and 41AS0428 are avoided. The applicant shifted the project corridor south to avoid 47AS0417, and the draft CRPP incorporates additional protection and avoidance measures that include installation of exclusion fencing and monitoring during construction

activities, and site 41AS0428 is no longer within the project corridor. Site 47BAS-0041 is also avoided. Because the cemetery is located within an active modern trash dump and construction area, it was difficult to define clear boundaries following a second investigation of the site in 2020. The consulting archaeologists recommended complete avoidance and the cemetery is now 400 feet from the nearest project corridor.

The FCPC THPO concurred with the potentially eligible recommendation of site 47AS-0442 and recommended avoidance. If that is not possible, FCPC THPO requests further consultation on data recovery and mitigation.

Site 47AS-0442, defined by shovel-testing, is avoided. Consistent with the draft CRPP, additional protection and avoidance measures would be implemented through installation of exclusion fencing along the entire site boundary.

On October 28, 2022, the Bad River Band Vice-chairman provided a letter to Colonel Swenson with two attachments: the THPO's review of the Phase I archaeological survey report and a second review of the Phase I archaeological survey report produced by an outside archaeologist. The Corps addressed the comments and provided additional information in subsequent NHPA tribal consultation meetings and discussions in response to the comments shared within this correspondence. The following questions and comments (summarized) were provided within the Bad River Band's THPO comments on the Phase I archaeological survey final report and how the Corps considered and addressed each comment is provided.

The THPO states these comments complement those prepared by the independent archaeologist and that both comment letters are a part of the Bad River Band's review. The THPO notes "both reviews raise multiple concerns" with the Phase I report commissioned by Enbridge.

The Corps acknowledges the submittal of review comments from both the THPO and an outside archaeologist on behalf of the Band; however, the statement that both the independent archaeologist and the THPO's reviews raise multiple concerns is not accurate. The Corps reviewed the outside archaeologist's review and comments, and notes this archaeologist agreed with the Phase I report methods, documentation, and concurred with 42 of 44 eligibility recommendations. At both those sites, he recommended additional work and concluded it was possible that both sites would remain not eligible for listing in the NRHP. The outside archaeologist's review is addressed in more detail, following this THPO comment section. The THPO's review and comments state multiple concerns and questions, and each is summarized and addressed, below.

THPO comment: Highlight two sites that need further consideration: 47AS0428 and 47AS0442. Site 47AS0428, stone cairn, potentially associated with Indigenous practices, will be entirely avoided, NRHP unassessed. But what about impacts from nearby pipeline construction and operation, impacts to viewshed or from noise, vibration from blasting, were these considered?

The Corps considered the THPO's comments and the potential for impacts to site 47AS0428 caused during pipeline construction including potential impacts to viewshed or impacts from noise or vibration during blasting. Site 47AS0428 is located approximately 1.3-miles south of the project LOD (Limits of Disturbance). Because the site is over a mile away from the nearest

proposed pipeline construction and far removed from the APE, the Corps determined there was no potential for the regulated activities to cause direct or indirect effects to site 47AS0428, and no further investigation was required.

THPO comment: Similarly, site 47AS0442, it will be avoided but what about potential impacts from nearby construction and operation of Line 5?

The Corps considered the THPO's comments and the potential for impacts to site 47AS0442 caused during pipeline construction, or potential impacts to viewshed from noise or vibration during blasting. Site 47AS0442 is entirely avoided by the LOD and is outside the permit area, and there is no blasting proposed or anticipated for this area. An HDD bore will pass approximately 55 m (180 feet) south of the site and because of this, site 47AS0442 is listed in the draft Cultural Resources Protection Plan (CRPP). The treatment plan proposed is to proactively fence the entire site boundary to avoid any potential impacts to the site during any response to an inadvertent release. Because the site is outside of the LOD, there is no blasting proposed, and the temporary nature of proposed regulated activities to install the pipe underground via an HDD, the Corps determined there was no potential for the regulated activities to cause direct or indirect effects to site 47AS0442.

THPO general comments on the report: The Principal Investigator and Project Archaeologist are primarily from the state of Georgia, their familiarity with the area is uncertain, most of the assessment by them is based on a desktop evaluation. This is shown in poor descriptions of Sections 2 and 3, especially 3.8 and 3.9, Environmental Setting and Cultural Perspective, "roughshod approach to archaeological investigation...and the Corps' reliance on a remote review prepared by unregistered archaeologists gives little assurance that tribal artifacts and historic sites will be left undisturbed by this undertaking."

The Corps considered these comments and offers the following clarifications. The Corps requested the professional experience and credentials for the Phase I investigators. Both the Project Archaeologist and Principal Investigator are not primarily from the state of Georgia, and both are SOI-qualified professionals. ERM's Cultural Field Services is organized through ERM's Duluth, Georgia office, but neither the two lead project personnel nor most of the field crew were from Georgia. The Project Archaeologist, the primary author and manager of field work, is an SOI-qualified archaeologist, worked many years in the Wisconsin Historical Society Museum Archaeology Program and Great Lakes Archaeological Research Center (now associated with UW-Milwaukee) among other midwestern CRM companies, and has worked throughout the Midwest and western Great Lakes regions. The Project Archaeologist is affiliated with ERM's Minneapolis office, lives in Duluth, Minnesota, and demonstrated significant experience in Wisconsin. The Principal Investigator was born in Ohio, is SOI-qualified and a Registered Professional Archaeologist and has worked on and supervised the management of numerous projects throughout the Midwest, including Wisconsin. The Corps requested copies of the curriculum vitae of the project's principal personnel. The Corps further clarifies that the assessment was not a desktop evaluation nor a remote review, it was a Phase I archaeological field survey conducted by qualified professionals with local and regional experience and adhered to WAS methods and standards. The Corps reviewed and determined Sections 2 and 3 of the Phase I report provided appropriate context for the project area and interpretation of identified historic and cultural resources.

THPO comment: The Bad River Reservation and tribal lands in the region are historically significant. The proposed pipeline is within ceded territory that is also of historic significance. The Corps should consider this history in identifying sites and interpreting significance of discoveries.

The Corps acknowledges the significance and history of the Reservation and ceded territory, and the Corps understands the proposed pipeline would be within the ceded territory. The ceded territory is not considered an historic property, it is not listed or considered eligible for listing in the NRHP. Within the Corps' NHPA and NEPA review and trust responsibility, the Corps continued to consider the potential impacts of the federal action, the regulated activities, where the Corps had control and responsibility. The Corps worked with tribes and the applicant to address concerns through avoidance and minimization. As the Bad River Band THPO requests, the Corps considered this history as it sought expertise and information from consulting tribes on the identification of historic properties, including those of traditional and cultural significance, that may be affected by the federal undertaking. Multiple lines of investigation were conducted to identify potential historic and cultural properties within the proposed corridor, including oral-history interviews, and the Corps extensively sought tribal input to further inform on those identification efforts and in seeking ways to avoid and minimize potential impacts to significant resources.

THPO comment: The project route is close to numerous tribal allotments important to the tribe, many of which still have the markers, these are "unique historic objects." Despite proximity to the federal undertaking, the Corps has not investigated whether a Dakota Tribe may have an interest in the undertaking, nor has the Corps provided any analysis of possible impacts to historic lands.

The Corps reviewed the provided map of allotments and determined that one allotment parcel would be crossed at Mile Post 18.9, and within the Corps' APE. The proposed corridor was surveyed by archaeologists and cultural resource specialists during the cultural resource investigations. The Corps is always open to consult with any tribe that requests to consult on a proposed undertaking. The Corps extended consultation invitations to those tribes with interest in the region and counties of Iron and Ashland, Wisconsin. In considering the THPO's comment on the lack of analysis of possible impacts to historic lands, the Corps initiated in 2020 its review process pursuant its responsibilities under Section 106 of the NHPA for precisely the reason of evaluating and considering potential direct and indirect effects of the federal undertaking on historic properties if present.

THPO comment: The Bad River Reservation and allotment areas were omitted from the report as historically significant places with potential to be impacted by the undertaking, these meet criteria for listing on the NRHP and are not mentioned within 1-mile of the proposed undertaking and were not included within the APE.

The Corps understands the significance of the Reservation and allotment parcels to the Bad River Band. However, the Reservation is outside the APE. The Corps had no specific information to support eligibility for the allotment parcel within the APE. Therefore, these were not included as historic properties within the literature review undertaken for the Phase I report.

THPO comment: Tribal Monitors: report notes two tribal monitors with each archaeologist, no details about these monitors and the Band was not consulted in selecting them; hired by Enbridge; Corps does not explain if tribal monitors assisted in identification efforts; no discussion on how tribal monitors were selected or if possessed special experience or any training provided.

The Phase I report states one tribal monitor was present with every two field archaeologists, and the Corps confirmed. The Corps confirmed the applicant hired tribal monitors, and *Section 4.3 Tribal Engagement and Monitoring of Field Work*, page 57 of the Phase I report, provided the role and responsibilities of tribal monitors and provided a list of the Tribal Nations whose members participated. The Corps had no authority or oversight in the selection of tribal monitors for the Phase I archaeological field survey.

THPO comment: The report does not discuss how tribal nations or THPOs were involved, in tribal monitoring or the archaeological survey. One vague statement of the topic, but no discussion. The Corps denied the Band's request for review by an independent archaeologist. Because no monitoring of the survey done by an independent entity or the Corps, high potential for "archaeological survey to be seriously skewed by applicant, and underappreciative of important tribal resources and interests."

The Corps had no authority or oversight of the tribal monitoring aspect for the Phase I archaeological field survey, conducted by the applicant. As addressed above, Section 4.3 of the report provided information and details on this effort. The Corps did not deny the Band's request for review of the Phase I report by an independent archaeologist. Corps staff independently review information and data generated from an applicant provided with a permit application. The Corps' SOI-qualified archaeologist reviewed the Phase I report and provided her own information requests, needed edits, clarifications, and additions. The Corps' requested edits were addressed by the applicant, and like the addressed comments from consulting tribes and the WI SHPO, the Corps required this information be incorporated into the revised (final) Phase I report. Monitoring of the Phase I field investigation was not required by the Corps.

THPO Comment: Section 110 of the NHPA and the Native American Graves Protection and Repatriation Act (NAGPRA). Project costs of this federal undertaking are eligible costs the Corps can assume. The Corps has chosen to burden the Tribes and applicant with those expenses. No indication the Corps considered other important historic preservation programs it administers, for example, a responsibility to ensure remains subject to NAGPRA are not disturbed, no assessment of potential to disturb remains or access to burial sites. The Corps has done nothing to show "that its review of historic properties considered its federal trust responsibility."

Costs associated with historic property identification investigations are not eligible costs the Corps can assume. Consistent with the Corps' regulatory authorities under the Clean Water Act and the Rivers and Harbors Act, the Corps is neither a proponent nor opponent of any proposal requesting a DA permit, but rather the Corps is charged with evaluating proposals for compliance with applicable regulatory authorities, implementing regulations, and applicable policies. The Corps is not proposing to conduct this project, but rather the Corps is objectively evaluating a project proposed by a company and requiring that the company take all necessary

steps to adequately evaluate resources they propose to impact, and requiring the company implement all practical avoidance and minimization measures to reduce impacts to important resources. Section 110 of the NHPA “declares that the costs of preservation activities are eligible project costs in all undertakings *conducted* or *assisted* by a Federal agency [emphasis added].” Standards and Guidelines of Section 110 detail that the Federal agency is responsible for the preservation of historic properties owned or controlled by the agency (Standards 1 and 6). Further, under Section 110 Guidelines Agency Programs (c.3) “where an agency’s historic preservation activities are limited to considering the impact of federally licensed, or permitted activities initiated by non-federal entities on non-federally owned historic properties, the agency’s preservation responsibility may be more narrowly cast as seeking to avoid or minimize any adverse effects to such properties that might otherwise occur as a result of such activities.” Lastly, “where preservation activity is a condition of obtaining a federal license or permit, or Federal approval..., the recipient may be expected to incur reasonable costs” (Guidelines Agency Programs (i)). The Native American Graves Protection and Repatriation Act (NAGPRA) applies to federal lands and tribal lands (the NAGPRA definition of tribal lands is those lands within the exterior boundary of Reservations and dependent Indian communities). For this undertaking, there are no remains subject to NAGPRA. For burial sites or remains, known or unknown, the Wisconsin Burial Law (157.70) would be applicable. The Corps is fulfilling its trust responsibility in part through seeking tribal involvement in the identification of historic and cultural properties and more than three years of tribal consultation collaborating with tribes on the identification of historic properties, including the Band’s oral-history interview report and providing opportunities for field visits to resources identified within the TCRS report and the Band’s report, and working together and with the applicant to identify avoidance and minimization of impacts to those significant resources identified where the Corps had sufficient control and responsibility. The Corps further demonstrated carrying out its trust responsibility through meeting numerous times with the Bad River Band at the staff level during NHPA and technical consultations, and government-to-government/Nation-to-Nation consultations at the leadership level (see Summary of Nation-to-Nation meetings at the start of this section).

THPO comment: The APE: the Corps should consider the entire landscape that the project will impact, should consider the impacts “in a more holistic fashion that takes account of the Band’s unique cultural interests in the entire landscape that this project will affect.”

The Corps acknowledges the Band’s connections to the entire landscape it identifies; however, including consideration of the entire landscape within the APE for the Corps’ NHPA review is not appropriate and outside of the Corps’ authorities and responsibilities. The Corps based its area of potential effects (APE) on the scope and nature of its federal undertaking (36 CFR 800.16(d)). The Corps defined the APE as approximately 100 meters (328 feet) in all directions from the permit area extent to account for potential indirect effects of the regulated activities to historic properties, if present, and consulted and coordinated this APE with the WI SHPO. Following early tribal consultation meetings discussing the APE, the Corps considered whether it could expand the APE to a greater geographic extent. For the following reasons, the Corps concluded it could not expand the APE outside of the potential direct and indirect effects of the regulated activities as it had originally defined. The Corps’ involvement, the federal undertaking, is based on the locations of the regulated actions. These activities are the proposed discharge of material into waters of the U.S. and the crossing beneath the White River. Of the proposed 101 acres of fill into waters, over 100 acres are proposed temporary impacts that would be

restored, and only 0.02-acre is proposed to be permanent. In many instances, the regulated actions include temporary placement of matting during construction and pipe installation activities as a best management practice (BMP). Through its tribal trust responsibilities and under NEPA, the Corps continued efforts to evaluate effects to resources within its control and responsibility that are significant to tribes but did not meet NRHP eligibility criteria. Although outside the scope of the Corps' review, the applicant investigated the entire corridor including staging areas and access routes in a multidisciplinary, holistic fashion by multiple lines of investigation and research, and all this information was shared with the consulting tribes.

The following comments were provided within the independent ("outside") archaeologist's review on the Phase I archaeological survey final report. *Generally, the investigation and report were well presented and sufficiently clear. The APE, survey corridor, and associated mapping were all well presented. Section 2, Environmental Setting, was good and detailed. Section 3, Cultural Perspective, "is detailed but broadly general." The reviewing archaeologist recommended additional research in this area may provide more support to interpretation of the resources. More importantly he noted "insufficient discussion regarding the importance of over four centuries of regional occupation by the Anishinaabe." He assumes the tribal cultural resources report provided more of this information of which he was not provided an opportunity to review. Section 4, Archaeological Methods, complied with Wisconsin state standards. The reviewer found no inconsistencies. He found it noteworthy that archaeologists in the field were accompanied by tribal monitors, with one tribal monitor for every two archaeologists. His review focused on the 44 archaeological properties that were presented in the report and he provided a table of those resources. The archaeologist agreed with all but two of the consultants' site treatment recommendations (see table): site 47AS0420, within the limits of disturbance (LOD), and site 47AS0421, outside the LOD. He recommended additional field and archival research to confirm the relationship of the two sites and potentially other activities in the area. He acknowledged it was still possible that both sites would remain not eligible for the National Register.*

The Corps Tribal Liaison as a SOI-qualified archaeologist reviewed the outside archaeologist's comments and considered the recommendations. Overall, the outside archaeologist concurred with the investigations, finding no inconsistencies or errors, and concurred with 42 of 44 eligibility recommendations. Site 47AS0421 is entirely outside the LOD so it will be completely avoided by the project. Site 47AS0420, although it is within the limits of the LOD only because the LOD follows an existing logging road for use as an access route, all structural features of the site will be avoided. As a proposed protection measure, the applicant would place exclusion fencing along the western and eastern edges of the LOD of the access route at the two sites locations/vicinity. The Corps did not require any additional archaeological investigation or archival research to be conducted for the Phase I investigation. The WI SHPO reviewed the archaeological report(s) and concurred with the Corps' preliminary eligibility recommendations and *no effect* finding on May 24, 2022.

On November 14, 2022, the Bad River Band's Natural Resources Director emailed comments to the Corps PM. Under the category of *Other*, related to NHPA consultation, two comments: *request for a marine archaeological survey to be required (taken from the THPO's statement during the November 9-10, 2022, consultation meeting) and request for a botanical survey.*

The Corps considered the request to require a marine archaeological survey. In summary, the Corps considered that the following types of cultural resource surveys were conducted in association with this project: conventional Phase I archaeological survey, architectural survey, tribal cultural resource survey, oral-history interviews in local tribal communities, as well as extensive and robust tribal consultation for the proposed undertaking. The Corps considered that many of the water body crossings are proposed horizontal directional drill (HDD), for those waterways big enough to consider for potential marine survey, for example, at the White River and the Bad River, and therefore there is no in-water river work at those locations indicating no disturbance to the waterway. The entry and exit pits are outside and removed from the river and stream banks, the HDD would be well below any potentially buried Holocene deposits that may contain former living surfaces. Further, with respect to regulated wetland impacts, in many cases the regulated activity is the use and placement of temporary matting to protect and minimize ground disturbance. The Corps determined it will not require a marine survey because this would exceed a reasonable and good faith effort for the identification of historic properties pursuant 36 CFR Part 800 given the multiple investigations conducted and would be unnecessary given the nature and extent of regulated activities, the proposed crossing method, and the Corps' scope of review under the NHPA.

The Corps considered the request for a botanical survey. After much consideration, the Corps will not require a botanical survey. This decision is based on several data-collection efforts of plant species identified within the proposed corridor. Plant identification data are listed and provided within the wetland delineation data sheets and the wetland-timed meander surveys, plant species are listed and photo copies of field notes were added to an appendix in the TCRS report, the Bad River Band's July 8, 2021, letter provides 50 plants with common and Ojibwe name and plant uses, during the four field visits in the fall of 2023 plant identification efforts were undertaken and shared with the Corps during the November and December 2023 consultation meetings, Bad River and GLIFWC field staff have collected plant information during technical field reviews with the Corps and other agencies, and GLIFWC staff provided a species list of over 250 plants in vegetation data gathered from 2021 – 2023 at the Potato River. Based on the above, the Corps concluded that the variety of data-collection efforts completed to date is adequate to understand the plant communities proposed to be impacted as part of the proposed WI L5R project. The Corps has determined that it will not require additional botanical survey and data collection.

Identification of Historic Properties through Oral History Interviews:

Consistent with 36 CFR 800.4, interviews are one method for identification of historic properties. Given the applicant has prepared and submitted several investigations along the proposed corridor to identify potentially affected resources, the Corps discussed with consulting tribes that interviews could expand on that information or clarify or provide new information for the Corps to consider in its NHPA review. In early 2021, through consultation discussions between the Corps and consulting tribes, the Corps offered all consulting tribes the opportunity to conduct oral-history interviews that would be funded by the applicant, and the Bad River Band, the Red Cliff Band, and the Forest County Potawatomi Community (FCPC) THPOs confirmed interest in conducting oral-history interviews within their communities to aid in the identification of potential historic properties within the proposed pipeline corridor. Over the course of many months, the Corps discussed oral history efforts with the consulting tribes and provided feedback on the THPOs' concerns related to funding of the oral history effort. Ultimately, the Red Cliff Band and

the FCPC THPOs did not conduct interviews. On January 27, 2023, the Corps received an oral-history interview report from the Bad River Band that identified locations with resources of concern. During subsequent consultation meetings in June, November, and December 2023, Corps staff and tribal staff discussed the locations identified in Bad River's oral-history interview report.

During fall 2023, the following locations from the oral-history interview report were visited by consulting tribal staff: Potato River crossing, Bear Trap Creek crossing, White River crossing, Marengo River crossing, Bad River Falls, Copper Falls, and Silver Creek. The crossings at the Potato River, Bad River, Bear Trap Creek, White River, Marengo River, and Silver Creek are within the Corps' APE. Bad River Falls and Copper Falls are not within the Corps' APE. During the fall 2023 field visits, the following locations from the TCRS report were visited by consulting tribal staff: Potato River crossing (Exhibit 12), eagle roosting trees (Exhibit 3) near the White River crossing, active maple sugaring location (Exhibit 5) and archaeological site 47AS0442 near Silver Creek, rock outcrop (Exhibit 8), rock outcrop (Exhibit 9), rock outcrop (Exhibit 10), and historic metal debris (Exhibit 11). Exhibits 12, 11, 10, 8, and 5 are within the Corps' APE, Exhibit 3 partially enters the APE, and Exhibit 9 is not within the APE. For the TCRS-identified resources and the locations identified within the oral-history interview report within the Corps' APE, the Corps worked with the consulting THPOs to evaluate eligibility and avoidance and minimization measures, regardless of eligibility, in consideration of tribal concerns. Examples of proposed avoidance and minimization efforts include utilizing the HDD crossing method, reducing the HDD above-ground (visual) crossing to a 30-foot cleared corridor, use of exclusion fencing to avoid potential impacts to identified resources during construction, and Indigenous/tribal monitoring during construction.

The Potato River crossing location was first identified as Exhibit 12 during the TCRS investigation in 2020, located north and south of the Potato River at the confluence with Lawrence Creek, approximately 52 acres (214,364 sq. m) in size. The TCRS report recommended Exhibit 12 as a potential historic property, described as a traditional cultural place for hunting, fishing, and gathering. The Corps has reviewed sensitive, cultural information provided in the TCRS report, the Bad River Band's oral-history interview report, during a field visit with the Corps and consulting tribes, and by the consulting THPOs and the Great Lakes Indian Fish and Wildlife Commission (GLIFWC). Based on this sensitive information, the Corps determined the Potato River site eligible for listing in the NRHP, under Criterion A, events making significant contributions to broad patterns of history, as a TCP. The Potato River site is eligible because (1) it is significant to a living community because of its association with beliefs, customs, or practices that are rooted in the community's history and that are important in maintaining the community's cultural identity and (2) it retains its ability—its integrity—to convey its significance. In summary, the Potato River site is eligible for listing for its significance to a living community because of its association with traditional and cultural practices that are rooted in the community's history. The other resource locations and Exhibits within the Corps' APE that were evaluated for eligibility do not meet criteria for listing in the NRHP.

Because a historic property is present, the Potato River site, the Corps assessed effect of the federal undertaking, seeking ways to avoid and minimize impacts to avoid adverse effect. The regulated activities at the crossing of the Potato River include the placement of temporary matting in 0.94-acre of wetlands to support clearing trees in a 30-foot-wide visual corridor for the installation of the pipeline under the Potato River via horizontal directional drill (HDD) method.

During the September 2023 field visit, consulting THPOs observed a stand of mature cedar trees south of the Potato River, which the applicant proposed to remove within the proposed 30-foot corridor. Spatial data of the cedar trees at the Potato River were provided to the Corps by the GLIFWC in January 2024. The Corps coordinated with the applicant to assess the potential to avoid removal of select cedar trees within the 30-foot cleared corridor to the extent possible while still allowing for visual inspection. The applicant conducted a follow-up visit to the cedar trees to analyze if preservation of the cedar trees within the corridor proposed for clearing was possible, and to what extent. In April 2024, the applicant confirmed they can preserve all but one cedar tree within the original 30-foot corridor proposed for clearing. There is one other cedar tree that may need to be removed but the preferred option is to avoid cutting. Signage and exclusion fencing would be installed to ensure the twelve remaining cedar trees are not cut. To allow for the movement of equipment, the cedar trees may need pruning of the lower canopy no higher than 14 feet.

Based on the scope and temporary nature of the proposed regulated activities at this location associated with placement of mats during construction, the proposed installation of pipe via the HDD method, and importantly, the additional efforts undertaken to minimize and avoid direct and indirect effects to the sacred, cultural setting of the Potato River site by preserving the mature cedars, the Corps determined the proposed federal undertaking would not adversely affect the Potato River site. There would be a very minimal change with the removal of one cedar tree, and temporary impacts during the movement of construction equipment, but the mature cedar trees will remain ensuring integrity of location, setting, feeling, and association. There would be no adverse change or permanent alteration to the characteristics of the property that qualify it for inclusion in the NRHP.

The measures to avoid and minimize impacts to the mature cedar trees in the corridor at the Potato River site is reflected in the revised CRPP. Additional measures to avoid and minimize effects at the Potato River crossing include Indigenous and tribal monitoring during construction within the Corps' APE, in fact, monitoring during construction within the Corps' APE will occur at all regulated water crossings.

The fall 2023 THPO field visits led to another observation, for which the Corps would seek avoidance and minimization measures. A rock (window rock, land bridge) was identified by THPOs at Mile Post (MP) 24.1, not within the Corps' permit area but within APE 44. The Corps followed up with the applicant to seek ways to avoid or minimize potential impacts to this rock location because the rock was located within the workspace corridor. The applicant has minimized the workspace and the rock is no longer within the workspace and will be avoided. The rock's location was added to the revised draft Cultural Resources Protection Plan (CRPP) map set, identified as "THPO Field Observation 1" and exclusion fencing will be installed to provide a buffer around the rock and the location will be monitoring during construction activities. Because it will be avoided, the Corps required no further evaluation. The draft revised CRPP details the avoidance, minimization, and protection measures, including Indigenous/tribal monitoring, at the locations identified in the oral-history interview and the TCRS reports within the Corps' APE.

The Corps requested the applicant analyze route adjustments at the location of TCRS-identified Exhibit 10, rock outcrop, following the THPOs field visit in August 2023 indicating the rock outcrop may extend farther north. The applicant analyzed four potential route adjustments to avoid or minimize impacts to the rock outcrop, Exhibit 10. Based on the analysis completed, the

applicant has indicated route adjustments are not practicable due to other site constraints, including other rock outcrops and steep slopes, and had potential to impact additional wetlands and waterways and a landowner's home.

10.13.3 Technical Meetings Between Corps Staff, Tribal Staff, and GLIFWC Staff

The Corps participated in over 20 meetings with tribal natural resources staff and representatives from the GLIFWC from 2020 through early 2024 to share information and discuss technical aspects of the proposed project. In early meetings in 2020, the Corps provided information about the Corps' regulatory authorities and jurisdiction, and the Corps' scope of analysis and how permit areas are determined for a proposed project. The Corps also shared information about anticipated construction-related impacts to aquatic resources that may result from construction of the proposed project. Tribal representatives shared concerns about the accuracy of the applicant's data, including wetlands and waterway data provided and shown on maps sets the Corps provided. Tribal staff also shared concerns about the jurisdictional determination the Corps completed in June 2020 under the Navigable Waters Protection Rule that was in effect at the time. Tribal staff shared concerns about the Corps' permitting mechanisms, general permit review versus a standard individual permit review. The GLIFWC and the Red Cliff Band both provided letters to the Corps outlining concerns about using the general permit review. The Corps shared that the project as proposed appeared to meet the criteria for evaluation using the General Permit. Tribes shared concerns over potential project-related effects to treaty rights. The Corps clarified that the tribal consultation process, the Corps' scope of analysis of the project, and the areas over which we have regulatory jurisdiction would not change if the project were reviewed under either the general permit or the individual permit. The Corps provided information about the Corps' consultation with the USFWS under Section 7 of the Endangered Species Act. A follow up meeting was schedule in December 2020 to review map sets of Corps' jurisdictional permit areas. A meeting in early 2021 was related to the Corps' approved jurisdictional determination. The GLIFWC and other tribal staff posed questions about select waterways that were determined non-jurisdictional. The GLIWC and tribal staff provided additional information about tributary flow and snow melt and snow melt sampling efforts. The GLIFWC provided information that suggested size of catchment area may be useful to determine flow regime of tributary waters, and that this information would be helpful in future jurisdictional determinations. The GLIFWC also provided information about the state of Wisconsin "Trespass Bill" in relation to tribal access to resources and exercise of usufructuary rights (Discussed in more detail in Section 10.4, above).

Follow-up meetings with tribal natural resources staff and GLIFWC staff continued through the summer of 2021, primarily to discuss concerns about the Corps' 2020 approved jurisdictional determination. The Corps participated in site visits with GLIFWC staff and Bad River Band staff in September 2021 to review areas that appeared to have wetland indicators on new wetland mapping by the WDNR.

On November 17, 2021, the Corps determined a standard individual permit review is appropriate based on the concerns expressed by tribes that the proposed regulated activities may have more than minimal adverse effects on tribal resources. The Corps communicated this decision to consulting tribes. On November 21, 2021, the applicant requested the Corps

consider all waters jurisdictional. The Corps communicated this decision to the tribal technical group, as well. The Corps provided tribes advance notice of a 30-day Public Notice (PN) for the permit application and issued the PN on January 6, 2022, and established a webpage to share information regarding the federal action.

The Corps continued to meet with the tribal technical group through early 2022 to discuss differences in waters proposed for discharges in the wetland waterway impact tables provided. The Corps clarified the waters included in USACE waterbody crossing table in the public notice lists those waterbodies proposed for discharges of fill material and clarified “discharges” for mainline construction consists of the pipe and backfill stream bed material over the pipe once installed, as well as temporary dam materials for dry crossing methods. Temporary matting is proposed for mainline construction and for temporary access and is considered “fill material” when placed in wetlands. Tribal technical meetings through 2022 included discussions about the Corps’ permit areas, waterways crossing plans, and scope of the Corps’ environmental assessment. Discussions also included environmental baseline monitoring and potential downstream effects to water quality within the Bad River Band Reservation. The Corps also coordinated with the tribes to ensure their concerns were adequately conveyed in the Corps’ formal November 2022 request for information to the applicant. Tribes provided feedback with additional items for the Corps’ consideration.

In January 2023, the Corps participated in presentations provided by the applicant on a Sediment Discharge Modeling Report that focused on assessing impacts to waterways from sediment discharge associated with construction-related activities, and the Oil Spill Report that focused on the potential likelihood and consequence of oil spills related to operation. At the request of the Corps, a second virtual presentation was also provided to tribal staff. The Corps held recurring tribal technical meetings throughout 2023 and included discussions about technical information received from the applicant and provided to the tribes related to wetland functional assessments, vegetation surveys, water quality monitoring and post-construction wetland and waterway restoration, updated wetland and waterbody crossing table, revised map sets, geotechnical reports and hydrofracking curve analysis. Tribal natural resources staff also accompanied the Corps and EPA and WDNR in field reviews of select aquatic resources during the 2023 field season to review wetland delineations and functional value ratings. Bad River Natural Resources Department provided the Corps additional information on their analysis of select wetlands and wetland complexes in the vicinity of the proposed project, including information prepared by consultant for Bad River Band. The Corps used this information to help inform about the quality of wetland resources, assess potential construction related effects, alternatives to minimize Corps regulated impacts, and determine whether proposed compensatory mitigation for unavoidable impacts is appropriate. The Bad River Band and their consultant also provided information concerning possible wetland areas not identified or delineated. Some of the potential wetland areas in question are outside the proposed limits of disturbance. The Corps is reviewing these additional locations and will coordinate with the Bad River Natural Resources Department. The Corps will schedule field reviews early in the 2024 growing season to evaluate select areas in question.

The Corps scheduled a tribal technical meeting in early 2024 to share updates on the Corps’ preparation of an EA and to provide updates on new information received, including an Aquifer Assessment and HDD Analysis, High Quality Wetland Impact Avoidance Evaluation, Evaluation of Alternative RA-01 Variants, Mussel Survey Report, a 2023 Water Quality Monitoring Report, a revised Water Quality Monitoring Plan, and revised Environmental Protection Plan. The Corps

also provided updates on anticipated revisions to the Wetland & Waterway Post Construction Monitoring Plan (Appendix 3). This information was subsequently shared with the tribes.

10.14 EXECUTIVE ORDER 11988: FLOODPLAIN MANAGEMENT

The regulated activities proposed as part of the WI L5R project have been evaluated consistent with the intent of EO 11988. Portions of the proposed project would cross FEMA mapped 100-year floodplains of the White River, Marengo River, and portions of the Bad River and Bay City Creek. The White River, Marengo River and Bad River floodplains would be crossed via HDD method and would have no effect on floodplain values. A portion of the Bay City Creek floodplain would be a trench during pipeline construction. However, the floodplain would be restored to pre-construction contours and elevations once the crossing is completed and the Corps has preliminarily determined that it would have a negligible short-term effect on floodplain values.

10.15 EXECUTIVE ORDER 12898: ENVIRONMENTAL JUSTICE

Executive Order (E.O.) 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 proposed WI L5R project, has been an integral part of planning for this proposal to ensure that concerns of all people are considered in the decision-making process. As informed by CEQ's Environmental Justice (EJ) 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 or 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.

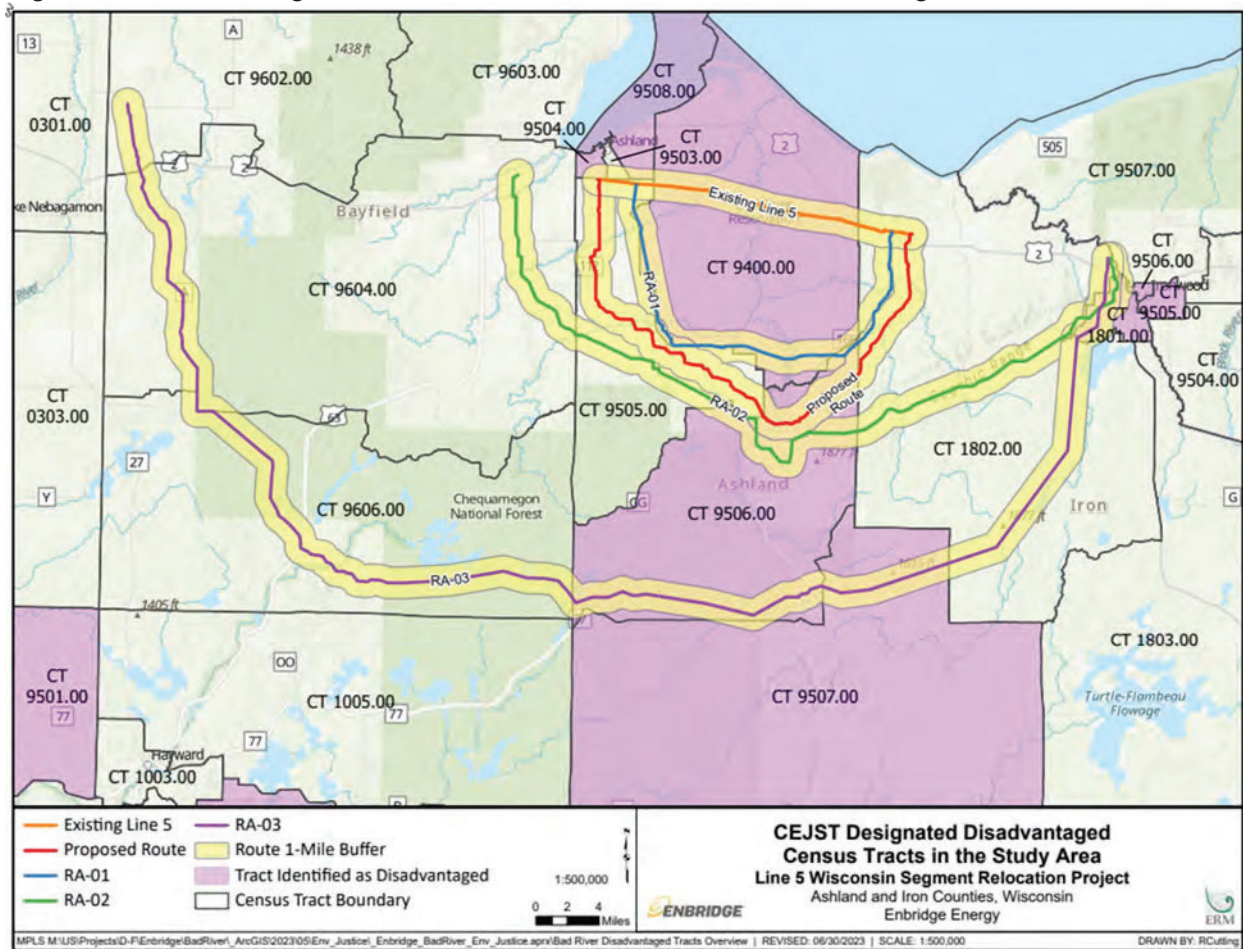
Memo M-23-09 from the Executive Office of the President dated January 27, 2023, directs all Federal agencies to utilize the Council on Environmental Quality (CEQ) Climate and Economic Justice Screening Tool (CEJST) to identify disadvantaged census tracts and characteristics in the project area. A community is highlighted as disadvantaged on the CEJST map if it is in a census tract (CT) that is (1) at or above the threshold for one or more environmental, climate, or other burdens, and (2) at or above the threshold for an associated socioeconomic burden. To be considered disadvantaged, a community must be at or above the threshold for a socioeconomic burden (e.g., 65th percentile for low income) and be at or above the threshold for one or more burden criteria. Low income is defined as people in households where income is less than or equal to twice the federal poverty level. Burden criteria consider several factors under categories of climate change, energy, health, housing, legacy pollution, transportation, water and wastewater, and workforce development. Communities with land that is within the boundaries of Federally Recognized Tribes are also considered disadvantaged.

The existing Line 5 crosses directly across the Bad River Band of Lake Superior Chippewa Reservation, which is within the disadvantaged CT 55003940000, Ashland County. The existing pipeline crosses 13.3 miles of this CT. This CT is considered disadvantaged because it meets one burden criteria and the associated socioeconomic thresholds. The Federally Recognized Tribe Reservation lands that cover 82% of this CT are also considered disadvantaged. American Indians make up 60% of the total population within this tract. The identified burden is health, with asthma at the 94 percent (above the 90 percent threshold). The community income level is at 88 percent (above the 65 percent low-income threshold). It is also noted that people 25 years or older without a high school diploma is at 15%, above the 10% threshold, which has workforce development implications. While the proposed reroute of Line 5 would move the pipeline entirely off Reservation land and this CT, it would remain in close proximity.

A portion of the proposed route would cross disadvantaged CT 55003950600 in Ashland County. This CT is considered disadvantaged because it meets more than one burden criteria and the associated socioeconomic thresholds. The identified burdens are climate change, with an expected population loss rate due to fatalities and injuries resulting from natural hazards each year at 91 percent (above the 90 percent threshold) and energy, with average annual energy costs at 91 percent (above the 90 percent threshold). The community income level is at 74 percent (above the 65 percent low-income threshold). The proposed route would cross 7.7 miles of this CT, which represents 18.7 percent of the total 41.1 miles of the route. Based on a review of the CEJST mapping, the proposed route crosses the narrowest area of a disadvantaged community compared to the existing route and all other reroute alternatives evaluated (See Figure 10.15.1).

Both the existing and the proposed reroute (where it would tie into the existing pipeline on the western side of the Reservation) abut CT 55003950400. This CT is considered disadvantaged because it meets more than 1 burden criteria and the associated socioeconomic thresholds. The identified burdens are health, with a low life expectancy at 96 percent (above the 90 percent threshold) and legacy pollution, with a proximity to superfund sites within 5km at 95 percent (above the 90 percent threshold). The community income level is at 65 percent (equal to 65 percent low-income threshold).

Figure 10.15.1 Existing and route alternatives in relation to disadvantaged communities.



The USEPA EJ Screen Tool identifies various Environmental, Health, Climate change, Socioeconomic, and Demographic indicators to identify potential EJ concerns. The tool uses Census Block Groups (CBG), which is the smallest geographic unit with U.S. Census Bureau demographic data. There are multiple CBGs within a CT. Regarding Minority, Low-Income, Unemployment, and Education (less than high school) indicators, the existing Line 5 crosses CT 9400 BG1, which has Minority, Low-Income, Unemployment, and Education EJ indicators. CT 9503 BG1 (Low-Income and Unemployment indicators) and CT 9508 BG3 (Low-Income) are within a mile radius. The proposed action would cross CT 9506 BG 2 (Low-Income) and is within a mile radius of CT 9400 BG1, CT 9503 BG1. Regarding Environmental and Health Indicators, CT 9506 BG1 and 2 has an exceedingly high percentile of Air Toxics Cancer Risk (97 percent). Both the existing and the proposed action are within a mile radius of CT 9503 BG1 and CT 9504 BG1, which have exceedingly high EJ variable percentiles in Air Toxics Respiratory Hazard Index (98/99) Air Toxics Cancer Risk (97), and Superfund Proximity (97/93) compared to Wisconsin values. Ashland county is above the 90 percent for Superfund Proximity and above the 80 percent for Air Toxics Respiratory Hazard Index compared to state values.

Appendix 12 contains an Environmental Justice Assessment. The assessment used demographic and socioeconomic data from CEQ's CEJST, USEPA's EJ Screen Tool, U.S. Census Bureau, and the Wisconsin Department of Public Health to identify potentially affected EJ communities by the existing line, the proposed reroute, and the three primary reroute

alternatives. The report does not evaluate effects of the proposed action or route alternatives on the potential EJ communities beyond route alternative mileage through the communities, of which the proposed alternative would be the least, using both U.S. Census Bureau data and the CEJST tool.

Adverse effects on disadvantaged communities can result from environmental conditions (e.g., quality of air, water, degradation of aesthetics, loss of open space, and nuisance concerns such as odor, noise, and dust), human health conditions (e.g., exposure to pathogens), public welfare conditions (e.g., reduced access to certain amenities like hospitals, safe drinking water, and public transportation) economic conditions affecting public welfare (e.g., changes in available employment, income, and the cost of housing) and changes in access to and harvest of subsistence resources. The proposed action would result in short term adverse effects from dust, noise, odors, and visual aesthetics during construction activities (12-14 months) from the operation of heavy equipment, staging areas, and crew members. Short term adverse effects to traffic patterns are also anticipated, which may affect small businesses, work commute times, access to public facilities and infrastructure, recreational opportunities, etc. Clearing woody vegetation and maintaining a cleared corridor would have a permanent adverse habitat conversion, segmentation, and visual aesthetic effect. The cleared corridor may result in changes to recreational and cultural practices in the area. The degree to which the cleared corridor would affect subsistence practices is not definitively known but it is not expected to result in a disproportionately high adverse impact to minority or low-income populations due to the abundance of similar forested/shrub habitat in the near vicinity. The proposed project would provide the means for the discontinuance of the historical and existing operations of crude oil and NGLs pipeline transportation across the Bad River Band Reservation by rerouting a new operational pipeline completely outside of the Reservation. It is not known at this time whether or when the existing cleared corridor across the Band River Band Reservation would be allowed to revegetate. As outlined in the Environmental Justice Commitment Plan, to mitigate potential adverse environmental effects, the applicant proposes to implement environmental controls outlined in Appendix 1, spill prevention and response plans, and invasive species control procedures. Additionally, the applicant proposes to employ tribal monitors during project construction as described in the Cultural Resources Protection Plan.

The proposed action would have a short-term positive effect on the local economy during construction (12-14 months). Based on the [Economic Impact Study of Enbridge's Line 5 Wisconsin Relocation Project](#) report dated September 2021, the proposed action would result in the direct need of approximately 700 construction related workers, and indirectly or induce the creation of approximately 400 new associated jobs during construction. The economical beneficial effects to disadvantages communities is not known, however, the applicant in their Environmental Justice Commitment Plan has committed to provide workforce and construction craft training to tribal citizens and descendants, contract with native owned businesses and contractors, and employ at least 10% of the project workforce with Native Americans.

Tribes and members of the public have raised environmental justice concerns over future operations of the pipeline, potential spills, and the resulting adverse effects on water quality within immediate and adjacent watersheds, which EJ communities including tribes rely upon and foster. Operation of the pipeline is outside of the Corps' federal control and responsibility and therefore outside of the scope of the federal action as defined in Section 2. The DA permit,

if issued, would be conditioned to require implementation of procedures to prevent, contain, control spills and procedures for drilling mud containment, response, and notification during regulated construction activities. It is also outside of the Corps' authority to require alternative energy sources or determine whether Line 5 should be shut down. The federal action to issue or deny a DA permit for the regulated activities associated with the proposed pipeline reroute would have no effect on consumer demand for the products that are transported, nor does it include what is transported in the pipeline.

There have also been expressions of concern and uncertainty from tribes over potential limitations to access traditional cultural resources and exercise treaty-reserved usufructuary rights (e.g., fishing, hunting, and gathering) within the applicant's pipeline corridor because of a state trespass law. See section 10.4 above. The applicant's Environmental Justice Commitment Plan dated August 2021 (Revised July 2023) states, "Enbridge will not impede and is committed to the lawful exercise of the right to hunt, fish, or gather on property open to the public. For example, in areas where the rerouted Line 5 crosses public land members of the Signatory Tribes and public can lawfully hunt, fish, or gather; however, to ensure public safety, access to the right-of-way will be temporarily restricted during active pipeline construction." In a December 2022 response to the Corps request for additional information on impairment of access, Enbridge indicated it would work with any tribal members to facilitate access to public lands during construction and would not otherwise restrict access. During active construction, Enbridge indicated it would temporarily restrict access for safety during excavation and trenching but would make best efforts to facilitate access to public lands requiring a crossing of the corridor for exercise of treaty rights and would identify a point of contact to facilitate that safe access. The DA permit, if issued, would have no effect on this issue.

Additionally, tribes and members of the public have raised environmental justice concerns about housing demands. The proposed action would result in a demand of approximately 700 construction related workers and indirectly or induce the creation of approximately 400 new associated jobs during construction. The extent to which these jobs would be locally sourced is not definitively known at this time, however it is anticipated that there would be an influx of workers from outside the immediate area, including workers from the neighboring counties and states, which are within a workday driving distance of the proposed worksite. Housing of the workforce would be accommodated from local sources (i.e., hotels, motels, campgrounds, etc). The sudden increase in population from outside areas associated with regulated construction activities would temporarily affect socioeconomics, lodging availability, transportation systems, and crime risk.

Additional environmental justice concerns have been raised regarding human trafficking. The applicant has established a Human Trafficking Awareness and Prevention Program for this project to "...educate Enbridge employees and contractors working on the Project about human trafficking, murdered and missing indigenous women and children, and raise awareness and reporting of these issues amongst colleagues and the communities where they work."

It is anticipated that there would be temporary adverse impacts to local disadvantaged communities during regulated construction activities from limited lodging, crowded recreational facilities, congested, and altered traffic patterns, and the potential for introduced crime. If a DA permit was issued, the authorization to discharge dredged and fill material into WOTUS,

including wetlands, to trench and backfill a rerouted pipeline, as well as the proposed HDD crossing of White River, is preliminarily not anticipated to have significant adverse effects on human health or environmental effects overall. The Corps has preliminarily determined the proposed regulated activities would not have disproportionately high adverse impacts to disadvantaged communities. Based on the factors outlined above, the Corps has preliminarily determined the Corps action complies with Executive Order 12898.

10.16 EXECUTIVE ORDER 13112, AS AMENDED BY EXECUTIVE ORDER 13751, INVASIVE SPECIES

Executive Order 13112 of February 3, 1999 (Invasive Species), directs federal agencies to take steps to prevent the introduction and spread of invasive species, and to support efforts to eradicate and control invasive species that are established. Executive Order 13751 directs actions to continue coordinated Federal prevention and control efforts related to invasive species.

The applicant developed an Invasive and Noxious Species (INS) Management Plan, (Appendix 13), which identifies management strategies that would be used to minimize the introduction and spread of INS identified within the project. Management strategies would be implemented where applicable and appropriate prior to construction, and during construction, restoration, and post-construction monitoring phases. This plan is complementary to Appendix 1 and 3, which identifies BMPs and measures that would be taken to reduce the potential for the spread of invasive species. Management of invasive species is also included in Appendix 13. With these measures in place, the Corps has preliminarily determined the federal action complies with the EOs for Invasive Species.

11.0 CONCEPTUAL SPECIAL CONDITIONS

The Corps will add special conditions to the DA permit, if proffered, to comply with legal requirements and/or to ensure the action is not contrary to the public interest (33 CFR 325.4). Permit conditions must be directly related to impacts associated with the regulated activities and be reasonably enforceable by the Corps. Legal requirements include the 404(b)(1) guidelines, the Endangered Species Act, and/or the state Section 401 water quality certification. The Corps may also add special conditions at the applicant's request or to clarify the applicant's proposal with respect to their permit application and supportive material.

Should the Corps proffer a DA permit to the applicant, the Corps has considered the inclusion of the following special conditions to any authorization granted:

1. The following special condition is a part of all Corps of Engineers permits that provide authorization under Section 10 of the Rivers and Harbors Act, whether the permit provides such authorization under Section 10 alone, or in combination with authorization under other laws. This condition applies to the installation of WI L5R below the ordinary high-water mark of the White River.

a. Enbridge understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Enbridge is responsible for ensuring that whoever performs, supervises, or oversees any portion of the physical work associated with the construction of the project has a copy of, is familiar with, and complies with all the terms and conditions of this permit.

3. All terms and conditions of the 401 Water Quality Certification issued by the Wisconsin Department of Natural Resources are hereby incorporated as terms and conditions of this permit.

4. Enbridge shall document water quality prior to construction, during active construction, and following completion of construction in accordance with the Water Quality Monitoring Plan in Appendix 8.

5. Enbridge must cross all streams and wetlands using the proposed crossing methods specified in Wetland and Waterbody Crossing Table (Appendix 15). The use of an alternative crossing method requires prior approval from the Corps.

6. Enbridge shall implement procedures to prevent, contain, and control spills and ensure that procedures for drilling mud containment, response, and notification are adhered to while completing regulated activities. Enbridge shall follow the procedures outlined in the Environmental Protection Plan (Appendix 1) and Site-specific Inadvertent Return Mitigation and Contingency Plans dated December 2022.

7. All wetlands and waterways proposed for temporary discharges of dredged and/or fill material within the limits of disturbance of the project shall be restored to their pre-construction contours and elevations and exposed wetland soils must be revegetated as outlined in the Environmental Protection Plan (Appendix 1) and the Wetland and Waterbody Restoration and Post-Construction Monitoring Plan (Appendix 3).

8. All restored wetlands and waterbodies shall meet applicable performance standards outlined in the Wetland and Waterbody Restoration and Post-Construction Monitoring Plan (Appendix 3). Monitoring shall continue until all wetlands are successfully restored in accordance with established performance standards.

9. All wetlands and waterways proposed for temporary discharges of dredged and/or fill material within the limits of disturbance of the project shall be monitored in accordance with Wetland and Waterbody Restoration and Post-Construction Monitoring Plan (Appendix 3). Monitoring reports documenting the findings of post-construction monitoring shall be submitted to the Corps not later than December 31st of the year monitoring occurs.

10. As compensation for the 998 square feet of permanent wetland fill, conversion of shrub and forested wetlands to emergent wetland, and temporal loss of wetland functions resulting from authorized construction activities, Enbridge shall provide 33.27 mitigation credits, apportioned as 0.97 emergent/wet meadow credit, 2.43 shrub wetland credit and 29.87 forested wetland credits. Bank credits shall be secured from a mitigation bank or in-lieu fee within the Lake Superior Bank Service Area as outlined in Appendix 4. Affidavits of credit purchases shall be provided to the Corps prior to commencing any construction activities requiring DA authorization.

11. Financial assurances shall be provided to ensure restoration of temporary impacts to waters of the U.S. is achieved in accordance with performance standards set forth in the November 2020 Post Construction Wetland and Waterbody Monitoring Plan. The instrument in which financial assurances will be provided must be submitted to the Corps prior to commencement of the activities authorized by this permit.

12. To reduce the potential for spread of invasive species, Enbridge shall follow the protocols outlined in Invasive and Noxious Species Management Plan (Appendix 13).

13. In all locations where Corps authorized work will occur, Enbridge shall adhere to measures outlined in the Cultural Resources Protection Plan dated April 13, 2024.

12.0 FINDINGS AND DETERMINATIONS - RESERVED