Line 5 Wisconsin Segment Relocation Project

Ashland, Bayfield, and Iron Counties, Wisconsin

Water Resources Application for Project Permits
Supplemental Information

February 2020

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List of Acronyms

Name	Description
ATWS	additional temporary workspace
Bad River Band	Bad River Band of Lake Superior Chippewa Tribe
bpd	barrels per day
Company	Enbridge Energy, Limited Partnership
Enbridge	Enbridge Energy, Limited Partnership
EPP	Environmental Protection Plan
NGL	Natural Gas Liquid
NHI	Natural Heritage Inventory
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
PEM	Palustrine Emergent
PFO	Palustrine Forest
PSS	Palustrine Scrub-Shrub
Project	Line 5 Wisconsin Segment Relocation Project
Reservation	Bad River Reservation
SSURGO	Soil Survey Geographic Database
TCR	Traditional Cultural Resource
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
WDNR	Wisconsin Department of Natural Resources
WWI	Wisconsin Wetland Inventory

State of Wisconsin
Department of Natural Resources
dnr.wi.gov

Water Resources Application for Project Permits

Form 3500-053 (R 3/14)

Notice: Pursuant to chs. 30 and 31, Wis. Stats., ch. 281, Wis. Stats, and s. 283.33, Wis. Stats., this form is used to apply for coverage under the state construction site storm water runoff general permit, and to apply for a state or federal permit or certification for waterway and wetland projects or dam projects. This form and any required attachments constitute the permit application. Failure to complete and submit this application form may result in a fine and/or imprisonment or forfeiture under the provisions of applicable laws including s. 283.91, Wis. Stats. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Public Records Laws (ss. 19.31-19.39, Wis. Stats.).

Use this form for (select all that apply):

- ☐ Waterway General Permit
- ☒ Waterway Individual Permit
- ☐ Wetland General Permit
- ☒ Wetland Individual Permit
- ☐ Storm water NOI - New land disturbing construction activity
- ☐ Storm water NOI - Renewal FIN # _____
- ☒ Work in waters of the U.S. (Army Corps of Engineers)
- ☐ Dam projects (DNR-ch. 31, Wis. Stats., or Army Corps of Engineers)

Read all instructions provided before completing. If additional space is needed, attach additional pages.

Section 1: Landowner Information

Landowner Name (first and last name, org. or entity)	Authorized Representative		
Refer to Supplemental Information	Cathryn Hanson		
Mailing Address	City	State	ZIP Code
11 East Superior Street, Suite 125	Duluth	MN	55802
Email Address	Phone Number (include area code)	Alternate Phone Number	
Cathryn.Hanson@enbridge.com	(218) 522-4701	(715) 817-8732	

Section 2: Applicant Information ☐ Select if same as landowner

Applicant Name (first and last name, org. or entity)	Contact Person		
Enbridge	Cathryn Hanson		
Mailing Address	City	State	ZIP Code
11 East Superior Street, Suite 125	Duluth	MN	55802
Email Address	Phone Number (include area code)	Alternate Phone Number	
Cathryn.Hanson@enbridge.com	(218) 522-4701	(715) 817-8732	

Section 3: Primary Project Contact ☐ Select if same as landowner

◉ Consultant ○ Contractor ○ Other – Specify: _____

Name (Ind., Org. or Entity)	Contact Person (first and last name)		
Environmental Resources Management (ERM)	Tim Drake		
Mailing Address	City	State	ZIP Code
1000 IDS Center, 80 South Eighth Street	Minneapolis	MN	55402
Email Address	Phone Number (include area code)	Alternate Phone Number	
tim.drake@erm.com	(612) 337-3365	(612) 840-9160	

Section 4: Project or Site Location

Project Name	County	○ City ○ Town ○ Village
Line 5 Wisconsin Segment Relocation Project		of

Location Address/Description

Please see Supplemental Information

Public Land Survey System (PLSS) – Provide the section, range, township information and latitude and longitude in decimal degrees, if available.

_____ ¼ of _____ ¼ of Section _____, Township _____ N, Range _____ ○ E ○ W _____ Latitude _____ Longitude

If this site is not wholly contained in the quarter-quarter section, more description:
Please see Supplemental Information.

Section 5: Pre-Application Resource Screening

Screening your project site for the presence of sensitive natural or cultural resources before applying for a permit can assist you in planning and designing your project to avoid or minimize impacts to these resources. Please identify any screening you have already completed and attach any supporting documentation to your application. If sensitive resources are identified during the permit review, it may result in delays in processing your application and/or project re-design.

Waterways: Provide the name(s) of closest waterbodies:

Wetlands: Has the project site been assessed for the presence of wetlands? (●) Yes ( ) No

If yes, select all sources of information used and attach supporting report or documentation:

- [x] Wisconsin Wetland Inventory
- [x] Wetland Locator Tool - http://dnr.wi.gov/topic/wetlands/locating.html
- [x] Wetland Delineation by consultant
- [x] NRCS Soils Map
- [ ] DNR Wetland Identification letter - http://dnr.wi.gov/topic/wetlands/identification.html
- [ ] DNR Wetland Confirmation letter - http://dnr.wi.gov/topic/wetlands/identification.html
- [ ] Army Corps of Engineers Concurrence letter
- [ ] Other: _____

Are wetlands proposed to be filled, excavated or disturbed during construction or as part of this project? (●) Yes ( ) No

Endangered or Threatened Resources:

Has the presence of endangered or threatened resources been evaluated according to the protocols developed by the DNR Bureau of Natural Heritage Conservation (BNHC)? dnr.wi.gov/topic/ERReview/ (●) Yes ( ) No

If yes, select how evaluation was completed and attach supporting report or documentation:

- [x] DNR BNHC ER Review Letter
- [ ] Certified ER Review Letter
- [ ] Broad Incidental Take Permit/Authorization - specify (e.g. No/Low Impact Activities, Grassland and Savanna Management, etc.)

_____

- [ ] Other: _____

Section 6: Project Information (attach additional sheets as necessary)

Duration: 01/01/2021 (Anticipated Project Start Date (mm/dd/yyyy)) 09/30/2021 (Anticipated Project End Date (mm/dd/yyyy))

Photos: Provide photographs of the "before" condition. Refer to Supplement Information - Appendix C (Date of Photographs)

Project Purpose and Need: Provide a one to two paragraph description of the proposed project, including land and water alterations and intended use(s) of the project.

Please see Supplemental Information.

Section 7: Certification and Permission

Certification: I hereby certify that I am the owner or authorized representative of the owner of the property which is the subject of this Permit Application. I certify that the information contained in this form and attachments is true and accurate. I certify that the project will be in compliance with all permit conditions. I understand that failure to comply with any or all of the provisions of the permit may result in permit revocation and a fine and/or imprisonment or forfeiture under the provisions of applicable laws.

Permission: I hereby give the Department permission to enter and inspect the property at reasonable times, to evaluate this notice and application, and to determine compliance with any resulting permit coverage.

Cathryn Hanson — 2/7/2020

Signature of Landowner / Authorized Representative – **For Stormwater applications, signature of landowner is required. Authorized representative is not sufficient.** — Date Signed

Cathryn Hanson
Printed Name of Landowner / Authorized Representative

Supervisor
Title

1.0 INTRODUCTION

Enbridge Energy, Limited Partnership ("Enbridge" or "Company") owns the U.S. portion of the world's longest liquid petroleum pipeline system. Combined with the Canadian portion, the operationally integrated pipeline system spans approximately 3,200 miles across North America and has been in operation since 1950. Detailed information on Company ownership and structure is included on the Company's website at www.enbridgepartners.com or www.enbridge.com. Enbridge's pipeline system transports crude petroleum to serve refineries in the Midwestern states. Enbridge also transports smaller volumes of crude oil from the western U.S. through an interconnection with Enbridge Pipelines (North Dakota) LLC and from the Gulf of Mexico coast via interconnections with other pipeline systems.

In 1953, Enbridge's existing Line 5 pipeline became operational. The existing Line 5 pipeline is a 645-mile-long, 30-inch outside diameter interstate pipeline that originates at Enbridge's Superior Terminal, located in Superior, Wisconsin, traverses northern Wisconsin and the Upper and Lower Peninsulas of Michigan, and terminates near Sarnia, Canada. Line 5 is vital energy infrastructure, with an annual average capacity of 540,000 barrels per day ("bpd"), which transports light crude, including light synthetic, light sweet crude oil, and natural gas liquids ("NGL")[1]. Line 5 is a critical conduit for refineries in the region, delivering essential feedstock that is refined into propane, gas, diesel, jet fuel, and other products. Line 5 delivers NGLs to the Plains Midstream Depropanization Facility at Rapid River, Michigan. At the Rapid River facility, much of the NGLs deliveries are converted to propane which is then distributed to heat homes and power industry in the region. The non-propane NGLs are then re-injected back into Line 5 for further downstream processing. In the Lower Peninsula of Michigan, Line 5 accepts light crude oil production at Lewiston, where Line 5 interconnects with the MarkWest Michigan Crude Pipeline System. In the Lower Peninsula of Michigan, Line 5 also delivers crude to the Marysville Crude Terminal that interconnects with the Sunoco Eastern System pipeline, which then transports crude from the Marysville terminal to refineries in Detroit and Toledo. These refineries then produce petroleum products, including gasoline and aviation fuels used by consumers in the surrounding regions. Line 5 throughput is also delivered to the Sarnia terminal where the crude is then delivered to refineries in Ontario, New York State, and Quebec. Line 5 also delivers NGLs to the Plains Fractionation Facility in Sarnia, where it is converted to propane.

2.0 PROJECT PURPOSE AND NEED

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 Reservation ("Reservation") of the Bad River Band of Lake Superior Chippewa Tribe ("Bad River Band"). Enbridge and the Bad River Band have been in discussions for several years regarding renewal of pipeline easement on 15 parcels of land through the Reservation. In January of 2017, the Bad River Tribal Council announced their decision to deny renewal of Enbridge's easements on Allottee Lands (lands held in trust by the U.S. Government for the benefit of Individual Indian Allottee Landowners established through the General Allotment Act of 1887; also known as the Dawes Act) crossed by the existing Line 5. Enbridge subsequently entered into confidential mediation with the Bad River Band.

In July 2019, the Bad River Band terminated mediation discussions with Enbridge and filed a lawsuit in federal court seeking an order requiring Enbridge to remove its Line 5 pipeline from the Reservation among other claims. In response to this litigation and discussions with the Bad River Band regarding its preferences for Line 5 to be removed from the Reservation, Enbridge developed the Line 5 Wisconsin Segment Relocation Project ("Project") to reroute the existing Line 5 pipeline around the external boundaries of the Reservation while still maintaining current deliveries. The proposed Project will replace approximately 20 miles of the existing Line 5 pipeline,

[1] Natural gas liquids are hydrocarbons, in the same family of molecules as natural gas and crude oil, composed exclusively of carbon and hydrogen (examples include ethane, propane, and butane).

including the approximate 12 miles of pipeline within the Reservation, with approximately 41.1 miles of a new, 30-inch outside diameter pipeline segment that will be located entirely outside the exterior boundaries of the Reservation (see Figure 2.0-1). Additionally, the Project will include the installation of cathodic protections and AC mitigation facilities, five mainline block valves, and minor modifications to the existing Ino Pump Station.

The Project will allow Enbridge to continue uninterrupted deliveries of propane to the Upper Peninsula of Michigan, as well as to maintain reliable, economic, and secure committed transportation services for its's shipping customers. The propane extracted at Rapid River provides propane to both Wisconsin and Michigan residents. After the Project is in service, the pipeline would no longer operate within the Reservation.

Enbridge is submitting this Water Resources Application for Project Permits and requests authorization from the Wisconsin Department of Natural Resources ("WDNR") and the U.S. Army Corps of Engineers ("USACE") for permits to construct its Project. Additionally, Enbridge has prepared an Environmental Impact Report for the proposed Project, which provides supplemental information in support of environmental permits and approvals required from the WDNR and the USACE. Enbridge is submitting the Environmental Impact Report as a separate enclosure.

3.0 PROJECT LOCATION AND LAND REQUIREMENTS

The Project is located in Ashland, Bayfield, and Iron County, Wisconsin. Figure 2.0-1 provides a general location map depicting the Project route. The route is located within the USACE – St. Paul District and the WDNR Northern Region. Topographic and aerial-based route maps are included in Attachment A and B, respectively. Table 3.0-1 includes a list of township, range, and sections crossed by the Project.

Table 3.0-1: Township, Range, and Sections Crossed

Township	Range	Section
T45N	R1W	5, 6, 7, 8, 18
T45N	R2W	1, 2, 11, 12, 13, 14, 22, 23, 27, 28, 30, 31, 32, 33
T45N	R3W	6, 7, 8, 9, 14, 15, 16, 17, 22, 23, 24, 25, 36
T45N	R4W	1, 2, 12
T46N	R1W	3, 4, 8, 9, 10, 15, 16, 17, 20, 21, 22, 27, 28, 29, 30, 32, 33
T46N	R4W	5, 6, 7, 8, 17, 18, 19, 20, 26, 27, 28, 29, 34, 35, 36
T47N	R1W	33, 34
T47N	R4W	7, 17, 18, 20, 29, 32
T47N	R5W	10

3.1.1 Construction Right-of-Way

Enbridge generally proposes to use a 120-foot-wide construction right-of-way for the new 30-inch outside diameter pipeline segment, which will allow for temporary storage of topsoil and spoil as well as accommodate safe operation of construction equipment. To minimize wetland disturbance, Enbridge proposes to reduce the construction right-of-way to 95-feet-wide in wetlands where practicable based on site-specific conditions. The construction right-of-way includes permanently maintained right-of-way and temporary workspaces. The construction right-of-way consists of the spoil side (area used to store topsoil and excavated materials) and the working side (equipment work area and travel lane) (see Figures 3.1.1-1 and 3.1.1-2).

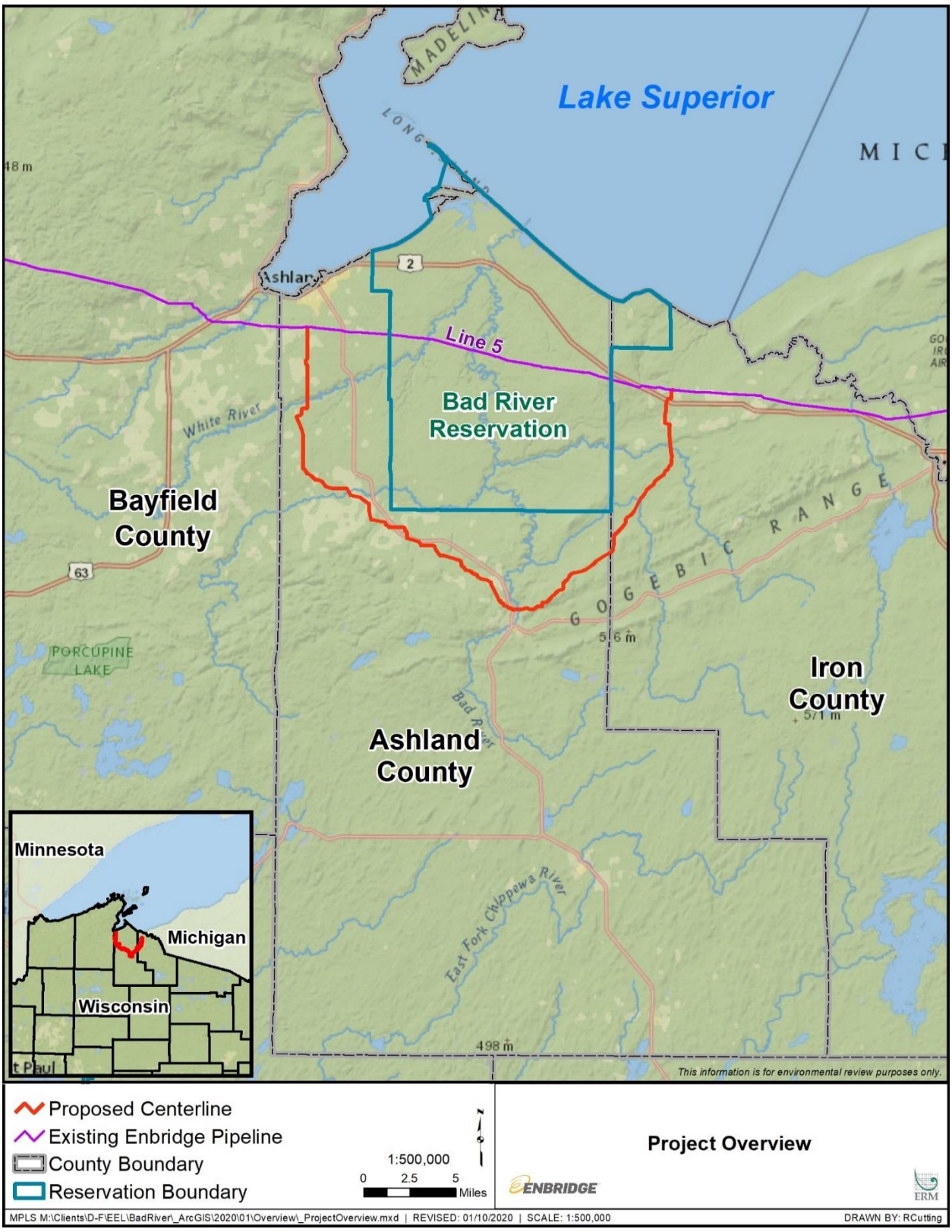

Figure 2.0-1: Project Overview Map

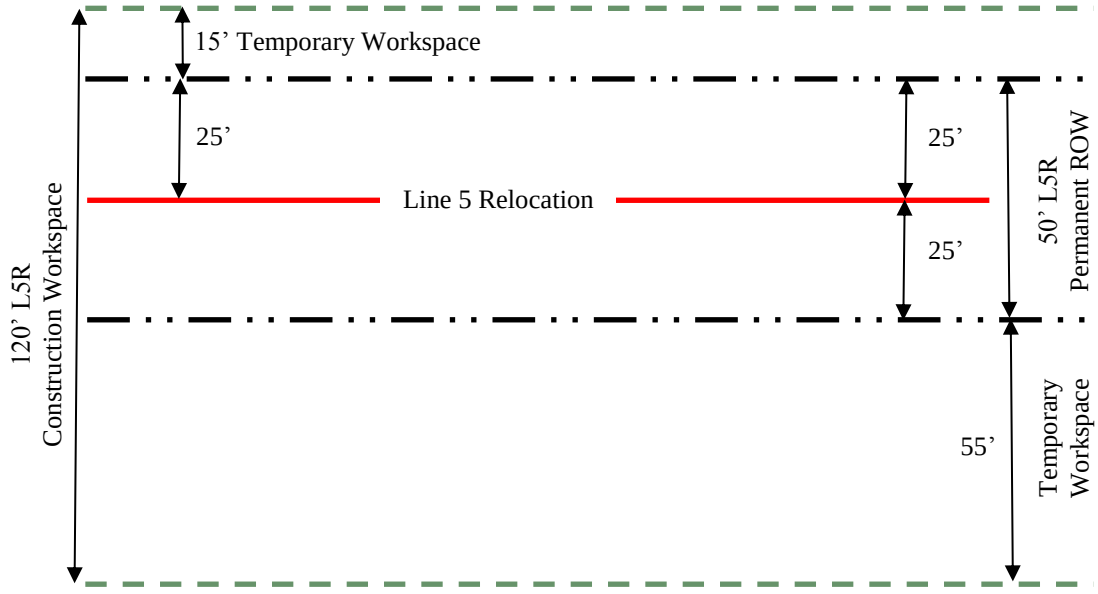

Figure 3.1.1-1: Typical Construction Workspace—Uplands

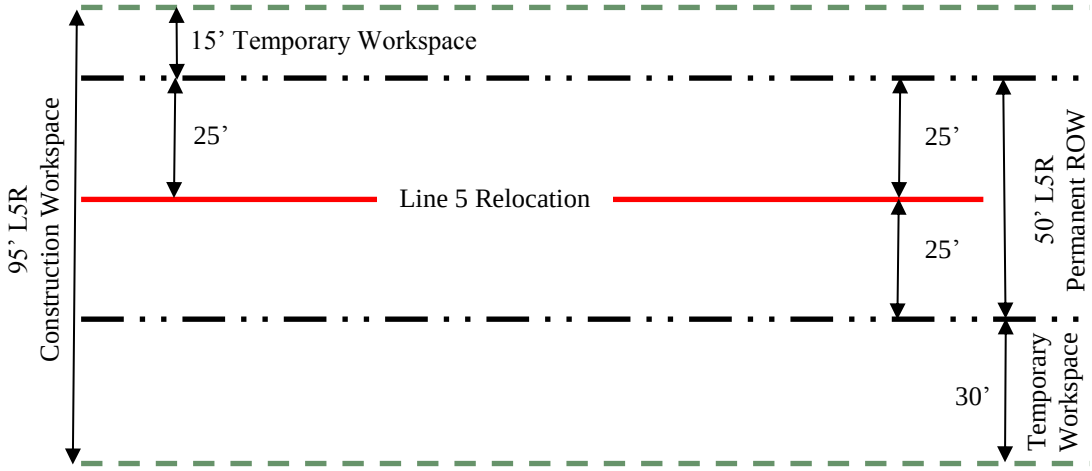

Figure 3.1.1-2: Typical Construction Workspace—Wetlands

3.1.2 Additional Temporary Workspace Areas

Additional temporary workspace ("ATWS") areas are generally necessary where the proposed route crosses features such as waterbodies, wetlands, roads, railroads, and existing pipelines and utilities. These ATWS areas are construction areas that are temporarily necessary outside the typical construction right-of-way to stage equipment, stockpile spoil material, and conduct material fabrication and assembly. Table 3.1.2-1 below provides the typical dimensions used for ATWS. Enbridge identified known ATWS areas on its Project route maps (refer to Attachment A and B). In some cases, due to site-specific conditions, ATWS may be sited within wetland boundaries.

Table 3.1.2-1: Typical Dimensions of Additional Temporary Workspaces

Feature	Dimensions on Each Side of Feature [a]
Open-Cut Road Crossings	150 feet by 50 feet
Bored Road and Railroad Crossings	150 feet by 50 feet
Foreign Pipeline and Utility Crossings	150 feet by 50 feet
Horizontal Directional Drill	200 feet by 100 feet
Waterbody Crossings	150 feet by 50 feet
Wetland Crossings	150 feet by 50 feet

Notes:
[a] Areas are in addition to the typical 120-foot-wide construction right-of-way.

3.1.3 Access Roads

Enbridge typically uses existing public and private roads to access the right-of-way and facilities to the extent practicable to limit impacts attributed to construction of new temporary roads. However, Enbridge identified areas where new temporary access roads will be necessary for equipment, material deliveries, and personnel access. In these areas, Enbridge will obtain applicable landowner and regulatory approvals prior to using the new access road. Table 3.1.3-1 includes a list of currently proposed access roads.

Table 3.1.3-1: Proposed Access Roads

Access Road ID	County (ies)	Approximate Milepost (Intersects with Pipelines)	Length (miles)	Temporary/ Permanent	Public/Private Road	Improvements
001	Ashland	0.0	0.4	Temporary	Both	Existing, Improvements needed
002	Ashland	0.3	0.6	Temporary	Private	Existing, Improvements needed
RSV2	Ashland	2.5	<0.1	Permanent	Both	Improvements needed
201	Ashland	2.7	0.3	Temporary	Private	Existing, Improvements needed
201.01	Ashland	3.7	0.2	Temporary	Private	Existing, Improvements needed
201.02	Ashland	3.9	0.5	Temporary	Both	Existing, Improvements needed
204	Ashland	4.7	0.8	Temporary	Private	Existing, Improvements needed
203	Ashland	4.8	0.4	Temporary	Private	Existing, Improvements needed
202	Ashland	5.0	0.4	Temporary	Private	Existing, Improvements needed
013	Ashland	6.0	0.3	Temporary	Both	Existing, Improvements needed
014	Ashland	6.9	0.4	Temporary	Private	Existing, Improvements needed
015	Ashland	7.6	0.2	Temporary	Private	Existing, Improvements needed
016	Ashland	8.0	0.2	Temporary	Both	Existing, Improvements needed
017	Ashland	8.5	0.1	Temporary	Private	Existing, Improvements needed
018	Ashland	8.8	0.1	Temporary	Private	Existing Approach, Improvements needed
019	Ashland	9.3	0.1	Temporary	Private	Existing Approach, Improvements needed
020	Ashland	10.3	0.2	Temporary	Private	Existing Improvements needed

Access Road ID	County (ies)	Approximate Milepost (Intersects with Pipelines)	Length (miles)	Temporary/ Permanent	Public/Private Road	Improvements
RSV3	Ashland	10.5	<0.1	Permanent	Both	Improvements needed
021	Ashland	11.1	0.4	Temporary	Private	Existing, Improvements needed
021.01	Ashland	11.3	<0.1	Temporary	Private	New, Improvements needed
022	Ashland	11.4	<0.1	Temporary	Private	Existing Approach, Improvements needed
023	Ashland	12.3	0.5	Temporary	Private	Existing, Improvements needed
024	Ashland	12.7	0.2	Temporary	Private	Existing Approach, Improvements needed
025	Ashland	13.3	0.1	Temporary	Private	Existing, Improvements needed
026	Ashland	13.8	0.1	Temporary	Private	Existing, Improvements needed
027	Ashland	14.3	<0.1	Temporary	Private	Existing, No Improvements needed
028	Ashland	14.5	0.1	Temporary	Private	Existing Approach, Improvements needed
RSV4	Ashland	15.3	<0.1	Permanent	Both	Improvements needed
029	Ashland	15.8	0.1	Temporary	Private	Existing, No Improvements needed
030	Ashland	16.6	0.1	Temporary	Private	Existing, Improvements needed
031	Ashland	16.9	0.1	Temporary	Private	Existing, Improvements needed
032	Ashland	17.1	<0.1	Temporary	Private	New, Improvements needed
034	Ashland	18.5	0.2	Temporary	Private	Existing, Improvements needed
040.01	Ashland	19.4	0.6	Temporary	Both	Existing, Improvements needed
042	Ashland	19.8	0.8	Temporary	Both	Existing, Improvements needed
039	Ashland	20.3	1.2	Temporary	Both	Existing, Improvements needed
043	Ashland	20.5	0.2	Temporary	Private	Existing, Improvements needed
044	Ashland	20.5	<0.1	Temporary	Private	Existing, Improvements needed
045	Ashland	20.6	0.5	Temporary	Private	Existing, Improvements needed
046	Ashland	21.2	0.2	Temporary	Private	Existing, Improvements needed
047	Ashland	21.7	0.2	Temporary	Both	Existing, Improvements needed
048	Ashland	21.9	0.2	Temporary	Private	Existing, Improvements needed
049	Ashland	22.4	0.2	Temporary	Private	Existing, Improvements needed
050	Ashland	22.7	0.1	Temporary	Private	Existing, Improvements needed
050.01	Ashland	23.0	0.1	Temporary	Private	Existing, Improvements needed
050.02	Ashland	23.4	0.5	Temporary	Both	Existing, Improvements needed
050.03	Ashland	23.6	0.1	Temporary	Private	Existing, Improvements needed
051.01	Ashland	23.7	0.3	Temporary	Both	Existing, Improvements needed
052	Ashland	23.9	0.1	Temporary	Private	Existing, Improvements needed
053	Ashland	24.0	0.1	Temporary	Private	Existing, Improvements needed
054	Ashland	24.0	0.1	Temporary	Private	Existing, Improvements needed
055	Ashland	24.2	0.1	Temporary	Private	Existing, Improvements needed
056	Ashland	24.5	0.1	Temporary	Both	Existing, Improvements needed
057	Ashland	24.5	<0.1	Temporary	Both	Existing, Improvements needed
058	Ashland	24.8	0.1	Temporary	Both	Existing, Improvements needed
060	Ashland	25.5	0.3	Temporary	Private	Existing, Improvements needed
061	Ashland	25.8	0.2	Temporary	Private	Existing, Improvements needed
062	Ashland	26.0	0.1	Temporary	Private	Existing, Improvements needed
063	Ashland	27.0	0.3	Temporary	Private	Existing, Improvements needed
064	Ashland	27.5	<0.1	Temporary	Private	Existing, Improvements needed
065	Ashland	27.8	0.1	Temporary	Private	Existing Approach, Improvements needed
066	Ashland	28.0	<0.1	Temporary	Private	Existing, Improvements needed
067	Ashland	28.1	0.1	Temporary	Private	Existing, Improvements needed
068	Ashland	28.5	0.3	Temporary	Private	Existing, Improvements needed
069	Ashland	28.7	0.4	Temporary	Private	Existing, Improvements needed

Access Road ID	County (ies)	Approximate Milepost (Intersects with Pipelines)	Length (miles)	Temporary/ Permanent	Public/Private Road	Improvements
070	Ashland	29.3	0.3	Temporary	Private	Existing, Improvements needed
071	Ashland	29.8	0.5	Temporary	Private	Existing, Improvements needed
072	Ashland	29.9	0.5	Temporary	Private	Existing, Improvements needed
073	Iron	30.7	0.1	Temporary	Public	Existing, Improvements needed
075	Iron	31.9	0.3	Temporary	Public	Existing, Improvements needed
076	Ashland, Iron	32.3	1.6	Temporary	Both	Existing, Improvements needed
074	Iron	32.3	1.9	Temporary	Public	Existing, Improvements needed
078	Iron	32.4	0.3	Temporary	Public	Existing, Improvements needed
077	Iron	32.5	0.4	Temporary	Public	Existing, Improvements needed
079	Ashland, Iron	32.6	1.2	Temporary	Both	Existing, Improvements needed
080	Iron	32.9	1.0	Temporary	Public	Existing, Improvements needed
081	Ashland, Iron	32.9	0.1	Temporary	Public	Existing, Improvements needed
RSV5	Iron	33.1	0.3	Temporary	Both	Improvements needed
082	Ashland, Iron	33.1	2.4	Temporary	Both	Existing, Improvements needed
083	Iron	33.7	0.7	Temporary	Public	Existing, Improvements needed
084	Iron	34.2	1.3	Temporary	Both	Existing, Improvements needed
086	Iron	34.9	1.3	Temporary	Both	Existing, Improvements needed
085	Iron	35.0	2.5	Temporary	Both	Existing, Improvements needed
085.01	Iron	36.3	1.1	Temporary	Public	Existing, Improvements needed
088	Iron	36.3	1.1	Temporary	Public	Existing, Improvements needed
087	Iron	36.4	0.2	Temporary	Public	Existing, Improvements needed
089	Iron	36.7	1.6	Temporary	Both	Existing, Improvements needed
091	Iron	36.9	0.1	Temporary	Public	Existing, Improvements needed
090	Iron	37.0	0.6	Temporary	Public	Existing, Improvements needed
092	Iron	37.5	1.5	Temporary	Both	Existing, Improvements needed
093	Iron	37.9	0.3	Temporary	Both	New, Improvements needed
094	Iron	37.9	<0.1	Temporary	Both	Existing, Improvements needed
095	Iron	38.6	0.2	Temporary	Private	New, Improvements needed
096	Iron	39.1	0.5	Temporary	Both	Existing, Improvements needed
097	Iron	39.2	1.2	Temporary	Both	Existing, Improvements needed
098	Iron	39.3	0.6	Temporary	Private	Existing, Improvements needed
099	Iron	39.8	0.3	Temporary	Private	Existing, Improvements needed
100	Iron	39.9	0.2	Temporary	Private	Existing, Improvements needed
101	Iron	40.3	0.1	Temporary	Private	Existing, Improvements needed
102	Iron	40.8	0.3	Temporary	Both	Existing, Improvements needed
103	Iron	40.9	0.1	Temporary	Private	Existing, Improvements needed
104	Iron	41.0	0.3	Temporary	Private	Existing, Improvements needed
RSV1	Bayfield	N/A	0.1	Permanent	Both	Improvements needed

Enbridge may leave newly constructed temporary roads and existing private roads upgraded for use by the Project intact through mutual agreement with the landowner unless otherwise restricted by federal, state, or local regulations. Where temporary access roads are removed, the area will be restored as near as practicable to the original conditions and seeded and stabilized pursuant to the Project's Environmental Protection Plan ("EPP"). Enbridge's EPP outlines construction-related environmental policies, procedures,

and protection measures Enbridge developed as a baseline for construction. Enbridge developed this EPP based on its experience implementing best management practices during construction, as well as the Federal Energy Regulatory Commission's Upland Erosion Control, Revegetation, and Maintenance Plan (May 2013 Version) and Wetland and Waterbody Construction and Mitigation Procedures (May 2013 Version). It is intended to meet or exceed federal, state, and local environmental protection and erosion control requirements, specifications, and practices. The EPP addresses typical circumstances that may occur along the Project. Project-specific permit conditions and/or landowner agreements may supersede the general practices described in the EPP. Enbridge's EPP is included in the Environmental Information Report as Attachment D (the Environmental Information Report has been included as a separate enclosure).

Enbridge will coordinate the use of private roads with the landowners and the use of public roads with the appropriate county or state road authority.

3.1.4 Pipe Storage and Contractor Yards

During construction, Enbridge will temporarily use off-right-of-way areas for pipe and materials storage. In addition, construction contractors will require off-right-of-way contractor yards to park equipment and stage construction activities.

Enbridge has identified two pipe yards or contractor yards (refer to Attachment A and B). Enbridge may identify additional pipe yards and contractor yards as the Project planning and engineering progresses. Enbridge considers sensitive environmental features when planning the placement and use of these pipe yards to prevent impacts. Enbridge and/or the Contractor will lease the sites and will restore them upon the completion of the Project unless the landowner and applicable agencies otherwise permit or authorize.

3.1.5 Aboveground Facilities

Enbridge proposes to install five mainline block valves as part of the Project. Each proposed mainline block valve site will be approximately 0.13 acre in size and will include an associated access road. Preliminary mainline valve locations are shown on the Project route maps (refer to Attachment A and B)

Additionally, Enbridge will make minor modifications to the Ino Pump Station at the existing facility. These modifications will include installation of a new 20-foot by 8-foot skid containing two new drag reducing agent storage tanks, tank mixers, and associated appurtenances. No other aboveground facilities are required for the Project.

3.1.6 Cathodic Protection and AC Mitigation

Enbridge proposes to install a cathodic protection and AC mitigation system on the new pipeline segment. This cathodic protection system would apply a small electric current to the pipeline, which would induce corrosion of a remote, sacrificial anode and inhibit corrosion of the steel comprising the pipeline. AC Mitigation protects the pipeline from potential stray voltage associated with overhead powerlines. Workspace associated with installation of cathodic protection and AC mitigation system is shown on the Project route maps (refer to Attachment A and B).

4.0 ALTERNATIVES

While NR 150.03(2) defines "alternatives" as "other actions or activities which may be reasonably available to achieve the same or altered purpose of the proposed action or project, including the alternative of no action," a "practicable alternative" is defined in Wisconsin Administrative Code § NR 103.07(2) and § NR

350.03(23) as one "available and capable of being implemented after taking into consideration cost, available technology and logistics in light of overall project purpose." Accordingly, Enbridge evaluated practicable alternatives to determine whether the Project would avoid or minimize impacts on natural resources, reduce or eliminate engineering and constructability concerns, and avoid or minimize conflicts with existing or proposed residential and agricultural land uses.

Enbridge identified and evaluated alternatives to the Project to determine whether the alternatives would be available, reasonable, environmentally preferable, and still fulfill the purpose of the Project. These alternatives include the No-Action Alternative, system alternatives, and route alternatives. Enbridge used the following criteria for considering alternatives:

- Ability to meet the Project purpose and need;
- Significant environmental advantages over the Project; and
- Technical and economic feasibility.

Not all conceivable alternatives have the ability to meet the Project purpose and need. Enbridge will not pursue an alternative that does not meet the Project purpose and need. In addition, not all conceivable alternatives are technically or economically feasible. Some alternatives may be impractical because they are unavailable and/or cannot be implemented after taking into consideration costs and logistics in light of the overall Project purpose. Enbridge focused its analysis on those alternatives that may reduce impacts and/or offer substantial environmental advantages without merely transferring impacts from one area or group of landowners to another.

Enbridge conducted a detailed quantitative analysis of environmental impacts for each of the route alternatives in accordance with Wisconsin Administrative Code §NR 103.07(2) and Wisconsin Administrative Code §NR 350.03(23). Figure 4.0-1 depicts the route alternatives that Enbridge evaluated. A summary of the route alternative comparisons are presented in Table 4.0-1. The full alternatives analysis is presented in the Section 3.0 of the Environmental Information Report. The analysis uses sources of publicly available environmental data to compare a variety of factors, including:

- Wetlands;
- Forested areas;
- Highly wind erodible soils;
- Agricultural land;
- Perennial waterbodies;
- State, County, or Municipal Forest;
- Sensitive species;
- Area of Special Natural Resource Interest; and
- Roads and railroads crossed.

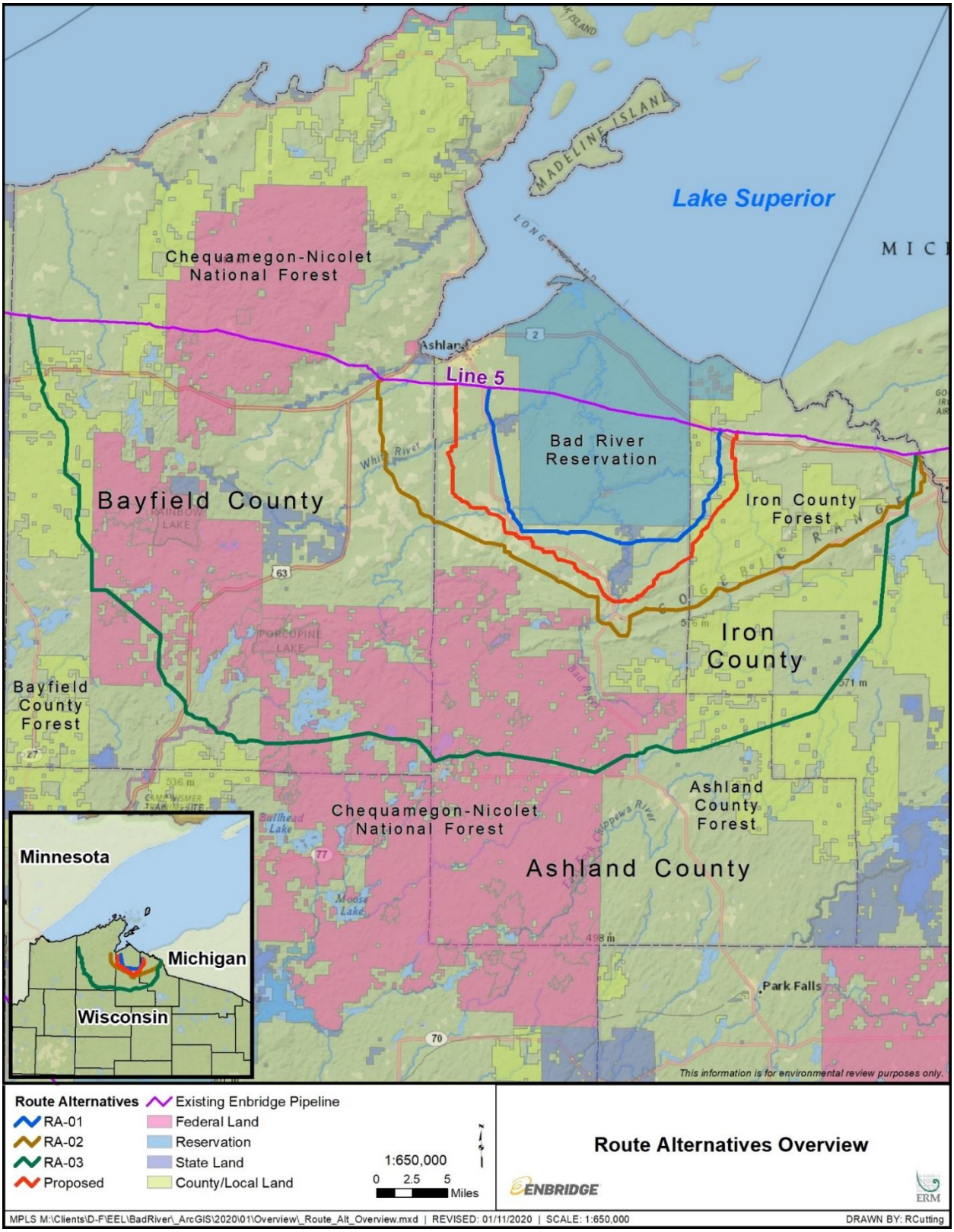

Figure 4.0-1: Overview of Route Alternatives

Table 4.0-1: Environmental Features Comparison—Route Alternatives [a]

Environmental Features	Unit	Proposed Route[a]: 41.1 miles Route Corridor[b]: 597.7 acres	Route Alternative RA-01 Route Length: 29.3 miles Route Corridor[b]: 456.5 acres	Route Alternative RA-02[a] Route Length: 57.6 miles Route Corridor[b]: 843.6 acres	Route Alternative RA-03[a] Route Length: 100.5 miles Route Corridor[b]: 1,476.9 acres
Wetland Crossing Length—WWI	miles	4.1	5.3	6.5	26.2
Wetland Crossed—NWI					
PEM	acres	2.1	1.7	1.1	7.7
PSS	acres	2.0	2.1	9.9	50.6
PFO	acres	25.6	22.3	40.2	304.5
Wetland Crossed—WWI					
emergent/wet meadow	acres	2.5	7.8	8.7	7.0
scrub/shrub	acres	2.6	2.0	2.0	21.7
forested	acres	49.4	46.4	57.4	260.8
State-Listed Species Occurrences [c]	number	25	14	87	85
Migratory Bird Concentration Areas	number	2	1	0	0
Agricultural Land [d]	acres	196.2	29.8	55.1	2.4
Coniferous Forest [d]	acres	54.1	56.5	69.0	387.4
Broad-leaved Deciduous Forest [d]	acres	305.3	222.8	488.2	655.7
Prime and Statewide Importance Farmland Soils	miles	11.7	13.9	15.1	16.6
Hydric Soils	miles	2.4	1.6	5.0	25.4
Highly Wind Erodible Soils	miles	6.2	4.3	2.7	28.5
Intermittent Waterbody Crossings—WDH	number	41	29	38	9
Perennial Waterbody Crossings—WDH	number	17	13	36	38
Designated Trout Stream Crossings	number	17	12	20	25
WDNR Priority Navigable Waterways Crossings	number	16	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	108.6	34.7	21.3	875.7
WDNR-Owned Lands	miles	0	0.7	0	0.1
County Forest Land	miles	7.4	<0.1	0	4.1
Railroad Crossings	number	4	2	1	1
Road Crossings [e]	number	35	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] Wiscland 2 Land Cover Data (WDNR 2019a).

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

NLCD2011 = National Land Cover Database 2011; WDH = Wisconsin 24K Hydrography; 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

5.0 WATERBODIES AND WETLANDS

The Project will require installation of the pipeline across wetlands and waterbodies. Project activities will also include the installation of temporary bridge crossings over waterbodies for the purpose of moving construction equipment across the feature and the installation of the pipeline beneath the bed of the waterbody. Temporary bridges may also be needed for select access roads.

Enbridge requests the following permits and approvals for the Project:

- Section 404 Clean Water Act / National Environmental Policy Act review
- Temporary Bridges (Wis. Stat.§30.123);
- Grading (Wis. Stat. §30.19);
- Utility Crossing (Wis. Stat. § 30.20 and 30.12);
- Individual Wetland Permit (Wis. Stat. § 281.36); and
- Water Quality Certifications (NR 103 and 299).

Enbridge completed wetland and waterbody surveys on approximately 70 percent of the proposed Project work areas during fall of 2019. Enbridge used Wisconsin Wetland Inventory, National Hydrography Dataset , and WDNR 24K Hydrography data in areas where surveys were not completed in 2019. Enbridge will complete remaining surveys in the spring of 2020 and will provide agency updates as the information is available. The waterbody and wetland delineation report for the 2019 surveys is provided as Attachment C.

5.1 WATERBODY CROSSINGS

Field investigators classified each waterbody (perennial, intermittent, or ephemeral) on-site, including a review of topographic maps, and other published data. A summary of waterbodies crossed by the Project is provided in Table 5.1-1. Attachment D includes a waterbody crossing table with the specific crossing methods Enbridge proposes to implement. Waterbody locations based on either field delineated information or WDNR 24K hydrography data are shown on the aerial maps provided as Attachment B. WDNR 24K Hydrography waterbodies was used where surveys are pending.

Table 5.1-1: Summary of Waterbodies Crossed by the Project

Waterbody Regime	Number
Delineated Waterbodies	
Perennial	31
Intermittent	36
Ephemeral	62
WDNR 24K Waterbodies	
Perennial	17
Intermittent	36
Ephemeral	0
PROJECT TOTAL	182

Notes: WDNR 24K Hydrography data

5.1.1 General Impacts and Mitigation

Pipeline construction across waterbodies could result in short-term or long-term impacts. Installation of a pipeline across a stream or river can temporarily displace stream bottom sediments and increase erosion of soils adjacent to the waterbody. The magnitude and duration of these effects depends on the soils and topography of the site, and the proposed crossing method. Construction (including instream blasting, where necessary) could also change the stream bottom profile, resulting in increased siltation or erosion at the site or further downstream. Enbridge developed the measures outlined in the EPP to minimize short- and long-term impacts on the waterbodies during and following pipeline construction.

Long-term impacts on water quality could result from alteration of stream banks and removal of riparian vegetation. Soil erosion associated with surface runoff and stream bank sloughing could also result in the deposition of sediments in waterbodies. Removal of riparian vegetation could lead to increased light penetration into the waterbody, causing increased water temperature which could potentially impact fisheries.

Enbridge would avoid and minimize impacts on waterbodies by implementing measures described in its EPP. Enbridge would also limit the duration of construction equipment operation within waterbodies to the area necessary to complete the crossing. Enbridge will restore and stabilize disturbed areas at crossings as soon as practical after pipeline installation.

Operation and maintenance of the Project would not be expected to result in long-term effects on water quality. Enbridge would periodically inspect the pipeline right-of-way and perform routine removal of brush and trees; however, little disturbance is expected within the permanent right-of-way.

5.2 WETLAND CROSSINGS

Enbridge based the wetland delineations on the criteria and methods outlined in:

- the *United States Army Corps of Engineers Wetlands Delineation Manual*, Technical Report Y-87-1 (1987) and subsequent guidance documents (COE 1991, 1992);
- Guidelines for Submitting Wetland Delineations in Wisconsin to the St. Paul District Corps of Engineers (COE 1996);
- the *Basic Guide to Wisconsin's Wetlands and their Boundaries* (Wisconsin Department of Administration Coastal Management Program 1995); and,
- Applicable Regional Supplements to the Corps of Engineers Wetland Delineation Manual.

The Project will cross Palustrine Emergent ("PEM") wetlands, Palustrine Scrub-Shrub ("PSS") wetlands, and Palustrine Forested ("PFO") wetlands. PEM wetlands within the proposed Project area typically include vegetation species such as sedges, Canada bluejoint grass (*Calamagrostis canadensis*), orange jewelweed (*Impatiens capensis*), asters (*Asteraceae* spp.), boneset (*Eupatorium perfoliatum*), rough bedstraw (*Galium asprellum*), marsh fern (*Thelypteris palustris*), arrow-leaved tearthumb (*Persicaria sagittata*), and sensitive fern (*Onoclea sensibilis*).

PSS wetlands in the Project area typically include speckled alder (*Alnus incana*), red-osier dogwood (*Cornus sericea*), willows (*Salix spp*.), and several minor shrub components. Herbaceous vegetation consists of a mix of sedges, cattails, or other hydrophytic species common to emergent wetlands. Widely scattered small, ephemeral pools support a variety of emergent hydrophytes.

PFO wetlands in the Project area are primarily black ash *(Fraxinus nigra)* dominated depressions within the hardwood uplands, discrete aspen groves within shrub-carr wetlands, or isolated hardwoods and conifers in better drained areas adjacent to incised drainageways. Black ash also occurs as a fringe or minor component to larger wetland complexes or as isolated stunted specimens within some wetlands.

Enbridge has completed wetland delineations during the 2019 survey season on approximately 70 percent of the Project route. Wetland delineations will be completed on the remaining locations in 2020. Wetland locations are shown on the aerial maps provided as Attachment B. Wetland locations are based on either field delineated information or Wisconsin Wetland Inventory ("WWI") data. WWI data was used where surveys are pending due to access permission or other constraints.

Enbridge is submitting a delineation report including representative photographs, data sheets, and maps as Attachment C, and has begun wetland consultation with the WDNR (see Attachment E). Attachment F includes a wetland crossing table identifying Project impacts. Attachment G provides soil survey information for the Project route using the Soil Survey Geographic Database ("SSURGO"). The SSURGO database is a digital version of the original county soil surveys developed by the Natural Resources Conservation Service for use with GIS.

The Project will require permanent fill of less than 0.1 acre of PEM wetland associated with the installation of two mainline block valves near MP 33.09 and MP 2.53, respectively. A summary of wetlands crossed by the Project is provided in Table 5.2-1.

Table 5.2-1: Summary of Project Wetland Impacts

Wetland Type [a]	Temporary Impacts (acres) [b]	Permanent Conversion (acres) [c]	Permanent Fill (acres) [d]
Delineated Wetlands			
PEM	25.6	0	<0.1
PFO	47.1	20.2	0
PSS	8.5	1.7	0
WWI Wetlands			
PEM	4.1	0	0
PFO	22.2	7.4	0
PSS	1.2	0.3	0
Open Water	0.3	0	0
PROJECT TOTAL [e]	**109.0**	**29.6**	**<0.1**

Notes:

[a] Delineated wetlands are based on 2019 field surveys, and where surveys were unable to be completed, WWI wetland data was used for calculations.

[b] Includes temporary impacts associated with pipeline workspace, access roads, and pipe yards.

[c] Permanent conversion impacts include acreage within PFO and PSS wetlands that will be maintained as PEM within the permanent right-of-way.

[d] Permanent fill impacts include wetland acreage that will be impacted by construction of permanent aboveground structures and an associated access road.

[e] The sum of the addends may not equal the totals in all cases due to rounding.

PEM = Palustrine Emergent; PSS=Palustrine Scrub Shrub; PFO = Palustrine Forested; Cowardin et al. 1979.

5.2.1 General Impacts and Mitigation

The primary impact of pipeline construction and right-of-way maintenance activities on wetlands will be the temporary removal of wetland vegetation. Construction also will temporarily diminish the recreational

and aesthetic value of the wetlands crossed. These effects will be greatest during and immediately following construction. In emergent wetlands, the impact of construction will be relatively brief, since herbaceous vegetation will typically regenerate within one or two seasons. In forested and shrub-dominated wetlands, the impact will last longer due to the longer recovery period of these vegetation types. Clearing of wetland vegetation will also temporarily remove or alter wetland wildlife habitat.

Typical pipeline construction in most wetlands will be similar to construction in uplands and will consist of clearing, trenching, dewatering, installation, backfilling, cleanup, and revegetation. However, due to the unstable nature of some wetland soils, construction activities may differ somewhat from standard upland procedures. Additional details are provided in the Environmental Information Report and Enbridge's EPP.

5.2.2 Wetland Mitigation

To the maximum extent practicable, Enbridge will restore affected wetlands to preconstruction conditions, which is considered in-place compensation, but not in-kind and not in-advance. Enbridge is proposing to provide compensatory wetland mitigation for unavoidable Project-related wetland type permanent fill and conversion of scrub-shrub and forested wetlands as well as temporal loss. In applying the in-kind and in-advance factors, Enbridge proposes to use baseline compensation ratios for impacts to emergent, forested, and scrub-shrub wetland types used for previous Enbridge pipeline projects. Enbridge will continue to work with the WDNR and the USACE to consider additional factors that may result in adjustment of baseline compensation ratios. The WDNR Mitigation Summary Worksheet has been included in Attachment H.

Enbridge proposes to use USACE/WDNR approved Compensatory Mitigation Banks and potentially the Wisconsin Wetland Conservation Trust in-lieu fee program to compensate for unavoidable Project wetland impacts. Before deciding to propose use of the in-lieu fee program, Enbridge reviewed the USACE Regulatory In-lieu Fee and Bank Information Tracking System for available wetland mitigation bank options. Based on this information, Enbridge determined there are potential wetland mitigation bank credits available in the Poplar River Mitigation Bank that could at least partially satisfy likely Project compensatory mitigation requirements.

The Project will cross the following hydrologic unit codes ("HUC" 8) in the Lake Superior and Chippewa Bank Service Area in Ashland and Iron Counties:

- 04010301; Beartrap-Nemadji
- 04010302; Bad-Montreal

The Lake Superior Service Area and Chippewa Bank Service Area watersheds, as defined in the in-lieu fee program, are consistent with those utilized for mitigation banking and permittee responsible mitigation. By providing compensatory mitigation within the same Bank Service Area, the Project will meet the goal of providing mitigation "in-place."

6.0 PROTECTED SPECIES

Enbridge initiated coordination on the Project with the Green Bay Ecological Services Field Office (Region 3) of the U.S. Fish and Wildlife Service ("USFWS") in September 2019. The USACE will initiate Section 7 informal consultation for the Project. Informal consultations with USACE, USFWS, and Enbridge will continue throughout 2020.

Enbridge conducted preliminary habitat assessments in 2019. Additional surveys will be completed in 2020, pending continued USFWS and WDNR coordination. Enbridge submitted an Environmental Review Request to WDNR on January 15, 2020. The Environmental Review Request and WDNR's response are included as Attachment I.

Enbridge will continue to consult with the USFWS and the WDNR on the status of mitigation strategies for protected species. If Enbridge identifies any of these species in the Project area during surveys, it will work with the respective agencies to develop mitigation plans to avoid or minimize impacts on the potentially affected species.

7.0 CULTURAL RESOURCES

Enbridge has completed cultural resource surveys during the 2019 survey season on approximately 70 percent of the Project route. Enbridge will complete Phase I surveys of the Project area to identify archaeological sites and historic standing structures, to evaluate these sites regarding National Register of Historic Properties ("NRHP") eligibility, and to assess impacts (Attachment J). Enbridge will complete additional surveys in 2020 and evaluate any archaeological sites, standing structure sites and gather sufficient information to make a recommendation regarding NRHP eligibility.

8.0 LAND OWNERSHIP

The Project route predominantly crosses private lands located outside of municipal areas. The Project will not cross federal, state, or Native American Reservation owned/managed land. Currently a proposed temporary access road crosses one parcel owned by the WDNR; however, Enbridge is reconfiguring this road to remove it from WDNR lands. The Project will cross approximately 7 miles of land owned by Iron County and managed for forest products. Enbridge will work with the municipalities to obtain all applicable permits. Construction activities through county forestland could temporarily disrupt recreational uses on and adjacent to the right-of-way. Enbridge will work with local, state, and federal agencies to minimize potential impacts associated with construction across county forestland.
Enbridge conducted a 40-year title history review of properties potentially affected by the Project to identify land restrictions associated with conservation agreements, such as Conservation Reserve Program, Conservation Reserve Enhancement Program, or Wetland Reserve Program. Enbridge is working with the individual landowners regarding these conservation agreements and the potential Project effect to those properties.

As discussed above, Enbridge is committed to working with and providing information to landowners about the Project and keeping them informed throughout all phases of the Project. Enbridge notified affected landowners of the Project by mail. In addition, Enbridge's Land Agents are contacting affected landowners to discuss the Project, acquire survey permission, establish easement options, and document specific concerns they may have. Enbridge will maintain close contact with the landowners along the route before, during, and after construction.

A listing of the landowners along the Project route is provided as Attachment K.

9.0 PERMITTING REQUIREMENTS

Table 7.0-1 provides the status of the required local, state, and federal permits for the Project.

Table 7.0-1: Preliminary List of Government Authorities and Titles of Permits/Approvals

Name of Agency	Title of Permit/Approval	Date of Application / Consultation [a]	Anticipated Date of Decision	Status
United States Army Corps of Engineers—St. Paul District	Clean Water Act Section 404	February 2020		In progress
United States Fish and Wildlife Service	Endangered Species Act Consultation	Summer 2020		In progress
Public Service Commission of Wisconsin	Public Interest Determination	February 2020		In progress
Wisconsin Department of Natural Resources	Chapter 30 Permit / NR 103 Water Quality Certification	February 2020		In progress
	NR 150 Wisconsin Environmental Policy Act Compliance (joint review with the Line 5 Pipeline Project)	February 2020		In progress
	State Endangered Resources Review / Incidental Take Permit (joint review with the Line 5 Pipeline Project)	January 2020		In progress
	Temporary Water Use Permit	Summer 2020		
	Hydrostatic Test Discharge Permit	Summer 2020		
	WPDES General Construction Stormwater Permit—Pipeline Construction	Summer 2020		
Wisconsin Historical Society—State Historic Preservation Officer (Section 106)	Cultural Resources Consultation, NHPA Section 106 Clearance	Fall 2019		In progress
Wisconsin Department of Agriculture	Agricultural Protection Plan	Fall 2019		In progress
Wisconsin Department of Administration	Coastal Zone Management Federal Consistency Review	February 2020		In progress
Wisconsin Department of Transportation	Road Crossing Permits	Summer 2020		

Notes:

[a]

NHPA = National Historic Preservation Act; WPDES = Wisconsin Pollutant Discharge Elimination System

10.0 AGENCY REVIEW

Enbridge understands that the WDNR plans to issue a notice of intent to prepare an Environmental Impact Statement ("EIS") and that the WDNR may request third-party support for development of the EIS. Enbridge will work with the WDNR regarding development of the EIS using third-party support.