

## Route Comparisons

At the request of the U.S. Army Corps of Engineers (“USACE”), Enbridge completed a desktop analysis (using publicly available information) of two potential variations to Route Alternative 01 (“RA-01”) that would avoid Copper Falls State Park, while potentially reducing the overall length of the Line 5 Wisconsin Segment Relocation Project (“Project”) route and the associated environmental disturbance. Enbridge evaluated the two variations of RA-01 that use portions of the RA-01 route and portions of the Proposed route (“RA-01A” and “RA-01B”). These two RA-01 route variations are shown on Figure 1.

As discussed in Enbridge’s August 2020 Environmental Impact Report as well as in supplemental information submitted to the USACE and/or Wisconsin Department of Natural Resources (“WDNR”) during the permitting process, Enbridge originally identified route alternative (“RA-01”) to minimize the overall pipeline length. Route Alternative RA-01 would be located outside of, but near to, the exterior boundary of the Bad River Reservation and is the shortest identified route that would avoid the Bad River Reservation. Although shorter than the Proposed Route, RA-01 was not selected as the Proposed Route. RA-01 would potentially disturb more wetlands, increase forested clearing, and require crossing the Copper Falls State Park, with portions of the park, including Copper Falls (a section of the Bad River) which has been designated as an Area of Special Natural Resource Interest (“ASNRI”) and a State Natural Area (“SNA”). Additionally, RA-01 would potentially cross through a portion of the Copper Falls State Park that is listed on the National Register of Historic Places and Wisconsin State Register (NRHP # 05001425).

Although RA-01 would be technically feasible and meet the Project objective, Enbridge determined that RA-01 would not convey a significant environmental advantage over the Proposed Route and would introduce significant additional environmental impacts to state-owned lands that the Proposed Route would avoid as well as placing the pipeline closer to the Bad River Reservation border, reducing the opportunity to implement spill mitigation measures in the unlikely event of a pipeline release. Therefore, Enbridge rejected this alternative as the proposed Project route.

### **3.1.4.2 Route Variant RA-01A**

Enbridge identified a route variant based on RA-01 that deviates from RA-01 (“RA-01A”) and joins the Proposed Route at approximately Proposed Route milepost (“MP”) 15.5. This modification of RA-01 then follows the Proposed Route to approximately MP 30 (Ashland-Iron County border), before turning north and rejoining RA-01. Route Variant RA-01A avoids the Copper Falls State Park by following the Proposed Route south on the State Park. A comparison of environmental resources potentially impacted by Route Variant RA-01A is presented in Table 1.

As shown in Table 1, 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 right-of-way width of 120 feet, Route Variant 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 (broad leaved deciduous, coniferous, or mixed deciduous-coniferous forest) or about 11.5 acres more than the Proposed Route and about 85.7 acres more than RA-01. Route Variant RA-01A would cross 42 mapped waterbodies (based on WDNR 24k Hydrography Dataset information), including 14 trout streams, and temporarily disturb approximately 74.6 acres of Wisconsin Wetland Inventory (“WWI”) mapped wetlands including about 58.5 acres of WWI forested wetland. This route variant would cross 14 fewer waterbodies than the Proposed Route including two fewer trout streams; however, Route Variant RA-01A would affect approximately 15.4 additional acres of WWI-mapped wetlands including approximately 4.6 additional acres of forested wetland as compared to the Proposed Route. Route Variant RA-01A would cross one fewer waterbody than RA-01, but four additional trout streams, and would affect approximately 2.7 additional acres of WWI-mapped wetlands including approximately 2.4 additional acres of forested wetland as compared to RA-01. Comparing the routes using National Wetlands Inventory<sup>1</sup> (“NWI”) data shows the RA-01A would cross approximately 104.5 acres of NWI-mapped wetlands, or approximately 4.4 additional acres of NWI-mapped wetlands as compared to the Proposed Route and approximately 16.2 more acres than RA-01. However, the types of wetland impacts would change with RA-01A affecting approximately 5.1 fewer forested wetland acres and approximately 5.7 more scrub-shrub wetland acres than the Proposed Route (approximately 16.2 more acres of forested wetland than RA-01).

Although Route Variant RA-01A would be technically feasible to construct and meet the Project objective, Enbridge has determined that Route Variant RA-01A did not convey a significant environmental advantage over the Proposed Route and would place the pipeline closer to the Bad River Reservation border. Additionally, placing the Project closer to the Bad River Reservation border is deemed not beneficial for two reasons. First, placing the Project closer to the Bad River Reservation boundary reduces the opportunity to implement spill mitigation measures in the unlikely event of a pipeline release. Second, sediment modeling conducted for the Proposed Route has shown that any release of sediment during construction of the Project would not cause an exceedance of the Bad River Band’s water quality standards. Moving the Project closer to the border of the Bad River Reservation could potentially change the outcome of that modeling. Based on the overall environmental impacts of this alternative, Enbridge rejects this alternative as the proposed Project Route.

### **3.1.4.3 Route Variant RA-01B**

Enbridge also analyzed a second route variant to RA-01 that 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 (see Figure 1).

As listed in Table 1, RA-01B is approximately 38.0 miles in length, or approximately 3.1 miles shorter than the Proposed Route and approximately 6.6 miles longer than RA-01.

---

<sup>1</sup> National Wetlands Inventory data was updated in 2023; therefore, acreages reported in this comparison do not match previous NWI totals listed in the Environmental Impact Report.

Based on a standard construction right-of-way 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 and approximately 56.5 acres more than RA-01. RA-01B would disturb approximately 87.3 acres of WWI-mapped wetlands, of which approximately 70.6 acres are WWI-mapped forested wetlands. This is approximately 28.1 acres more than the Proposed Route and approximately 15.4 acres more than RA-01.

Comparing the routes using NWI data shows the RA-01B would cross approximately 111.6 acres of NWI-mapped wetlands, or approximately 11.6 additional acres of NWI-mapped wetlands as compared to the Proposed Route and approximately 23.4 acres more than RA-01. As with RA-01A, the types of wetland impacts would change with RA-01B affecting approximately 0.5 additional forested wetland acres and approximately 5.6 additional scrub-shrub wetland acres and approximately 5.5 more acres of emergent wetland than the Proposed Route (approximately 21.7 more acres of forested wetland than RA-01).

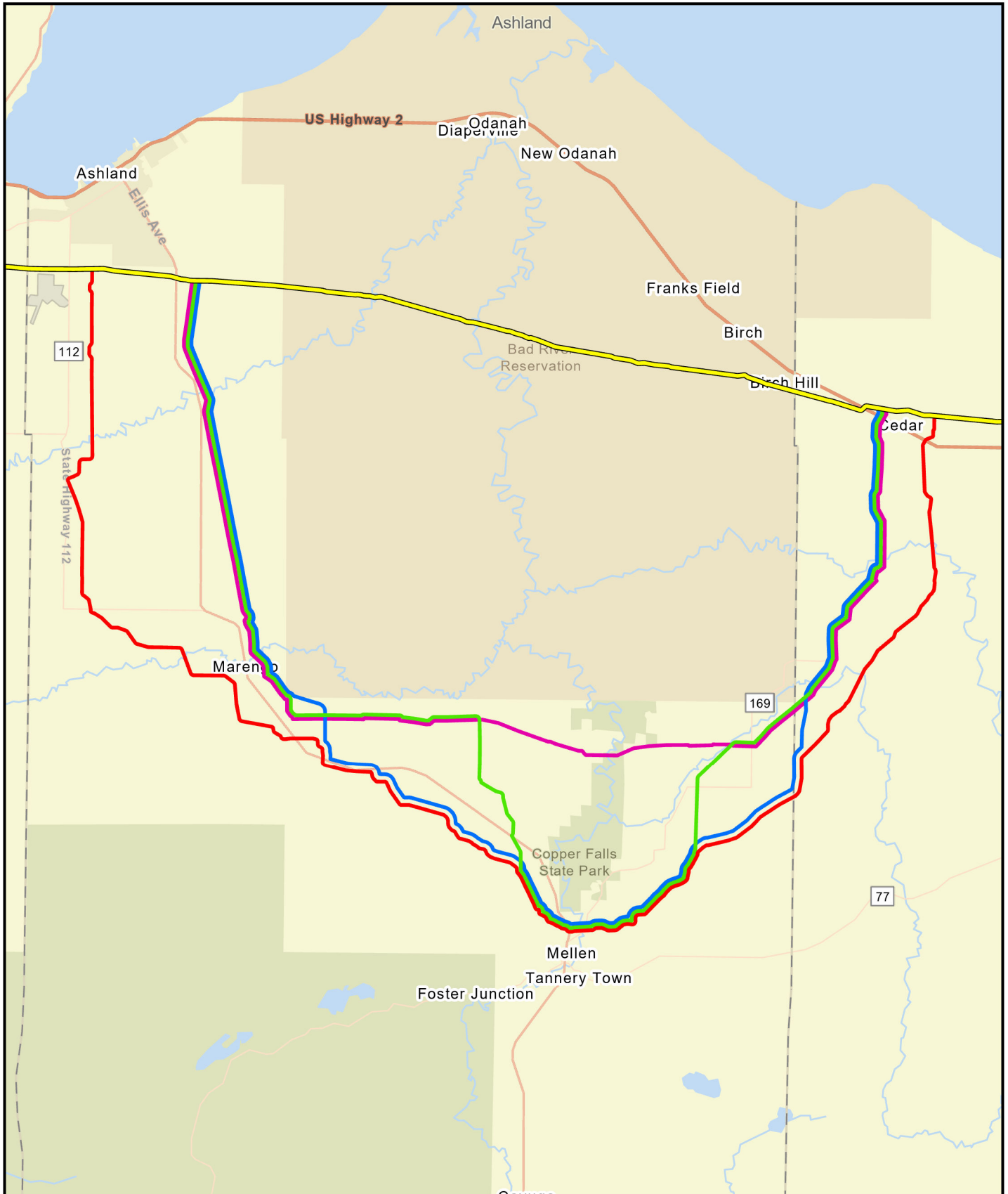
Route variant RA-01B has the potential to cross nine fewer waterbodies (based on WDNR 24k Hydrography Dataset information) than the Proposed Route and four waterbodies fewer than RA-01.

Although Route Variant RA-01B would be technically feasible to construct and meet the Project objective, Enbridge determined that Route Variant RA-01A did not convey a significant environmental advantage over the Proposed Route. Additionally, placing the Project closer to the Bad River Reservation border is deemed not beneficial for two reasons. First, placing the Project closer to the Bad River Reservation boundary reduces the opportunity to implement spill mitigation measures in the unlikely event of a pipeline release. Second, sediment modeling conducted for the Proposed Route has shown the Project would not exceed the Bad River Band's water quality standards. Moving the Project closer to the border of the Bad River Reservation could potentially change the outcome of that modeling. Based on the overall environmental impacts of this alternative, Enbridge rejects this alternative as the proposed Project Route.

**Table 1: Environmental Features Comparison—Route Alternatives**

Environmental Features	Unit	Proposed Route Length <sup>a</sup> : 41.1 miles Route Corridor <sup>b</sup> : 598.0 acres	Route Alternative RA-01	Route Variant RA-01A	Route Variant RA-01B
			Route Length <sup>a</sup> : 31.4 miles Route Corridor <sup>b</sup> : 456.5 acres	Route Length <sup>a</sup> : 36.8 miles Route Corridor <sup>b</sup> : 535.6 acres	Route Length <sup>a</sup> : 38 miles Route Corridor <sup>b</sup> : 552 acres
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	Unit	Proposed Route Length <sup>a</sup> : 41.1 miles Route Corridor <sup>b</sup> : 598.0 acres	Route Alternative RA-01	Route Variant RA-01A	Route Variant RA-01B
			Route Length <sup>a</sup> : 31.4 miles Route Corridor <sup>b</sup> : 456.5 acres	Route Length <sup>a</sup> : 36.8 miles Route Corridor <sup>b</sup> : 535.6 acres	Route Length <sup>a</sup> : 38 miles Route Corridor <sup>b</sup> : 552 acres
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
Agricultural Land <sup>c</sup>	acres	84.1	29.8	18.1	35.7
Coniferous Forest <sup>c</sup>	acres	56.5	56.5	56.2	63.2
Broad-leaved Deciduous Forest <sup>c</sup>	acres	297.2	222.8	310.4	273.4
Mixed Deciduous/Coniferous Forest <sup>c</sup>	acres	3.5	3.6	2.0	2.8
Open Land <sup>c</sup>	acres	112.0	89.2	95.0	106.3
Developed Land <sup>c</sup>	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 <sup>d</sup>	number	39	37	35	43
Notes: <sup>a</sup> Centerline length. <sup>b</sup> A standard 120-foot-wide corridor was used for each route comparison. <sup>c</sup> Wisland 2 Land Cover Data (WDNR 2019s). <sup>d</sup> Includes county and local roads, and state and U.S. highways. 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					



- Existing Line 5
- Preferred
- RA-01
- RA-01A
- RA-01B

1:200,000  
0 1 2 Miles



**Figure 1**  
**Alternative Route RA-01 Variants**  
**Line 5 Wisconsin Segment Relocation Project**  
Enbridge Energy

