7.0 Conclusion: Final Macro-Corridors and River Crossing Scenarios

This MCS was prepared in accordance with the RUS guidance regarding MCS development (RUS 2002). The study accomplished several intermediate steps in the overall transmission line routing process, including the following:

- Identified a study area from the end points and the Proposal's purpose and need
- Identified the macro-corridors
- Described how the macro-corridors were selected based on environmental, engineering, economic, land use, and permitting considerations
- Addressed the use of existing rights-of-way or collocation of facilities with existing transmission lines

The final macro-corridors are shown in Figure 7-1, color-coded by section. Each section contains multiple route options that can be linked to connect endpoints via one of the three river crossing options. Sections of the macro-corridor that would be used for the proposed project vary between the Alma, Winona, and La Crescent/La Crosse river crossing scenarios as shown in Figures 7-2, 7-3, and 7-4, respectively.

The alternative routes within each corridor section are discussed in detail below.

7.1 Hampton to North Rochester Substation

Section A (green) shows two corridor alternatives for the proposed 345 kV transmission line between the proposed Hampton Substation and the proposed North Rochester Substation. One corridor alternative follows the US-52 transportation corridor, and the other corridor alternative follows the MN-56 and MN-60 transportation corridors. The Hampton to North Rochester segment of the proposed 345 kV transmission line would be approximately 40 to 50 circuit miles long and, depending on the route chosen, may pass through Dakota, Rice, Goodhue, Dodge, and Olmsted counties in Minnesota.

A wider corridor was designated east of the Hampton Substation siting area to provide alternatives for transmission line from the substation towards the Rochester area. This flexibility is needed, in part, to coordinate siting with the proposed Brookings County–Twin Cities 345 kV Transmission Line Project. The Brookings Project would begin at the Brookings County Substation in South Dakota and terminate at the proposed Hampton Substation, entering from the west.

7.2 North Rochester Substation to Alma Crossing Option and Chester Substation

Corridor alternatives in Section B (purple) for the proposed 345 kV transmission line would connect the proposed North Rochester Substation to either the Alma Mississippi River Crossing or to the Chester Substation east of Rochester (and eventually to the Winona or La Crescent/La Crosse River crossing option). If the Alma crossing were selected, the length of the 345 kV transmission line in Section B would be approximately 40 circuit miles long. If the North Rochester Substation to Chester Substation corridor were selected for the 345 kV transmission line, the length of the 345 kV transmission line in Section B it would be approximately 30 circuit miles long.

Section B also contains the proposed 161 kV transmission line corridors, shown in Figure 7-1. One proposed 161 kV transmission line would connect the proposed North Rochester Substation with the

Northern Hills Substation in northwestern Rochester and be 10 to 15 circuit miles long. The other proposed 161 kV transmission line would connect the North Rochester Substation with the Chester Substation on the eastern side of the city of Rochester and be 20 to 30 circuit miles long. A portion of the Chester 161 kV transmission line may be collocated on the same structures as the proposed 345 kV transmission line. Section B contains portions of Dodge, Wabasha, and Olmsted counties in Minnesota.

If the proposed transmission line crosses at Alma, the new 345 kV transmission line and a portion of the existing Rochester-Alma 161 kV transmission line may be placed on double-circuit compatible structures.

The proposed North Rochester substation is planned to be sited between Zumbrota and Pine Island. The wide, square corridor in the substation siting area allows consideration of alternative locations for the proposed substation, and accommodates multiple potential routes for the proposed 345 kV transmission line. The corridor is also wider at this location to accommodate the two proposed 161 kV transmission lines that would connect the proposed North Rochester Substation with the Northern Hills and Chester substations.

7.3 Wisconsin

Section C (orange) shows the macro-corridors in Wisconsin that would be considered under the Alma or Winona river crossing scenarios. Section C contains portions of Buffalo, Trempealeau, and La Crosse counties. The segment of the proposed 345 kV transmission line between the proposed North Rochester Substation and the end point in Wisconsin may be 80 to 100 circuit miles long, depending on the crossing selected.

From the Alma crossing option, a 3-mile-wide corridor alternative along WI-35 includes the Dairyland Q-1 161 kV transmission line and a route option east of the Dairyland Q-1 transmission line. A second corridor alternative follows a 161-kV transmission line east of the Alma crossing, leading to corridor alternatives through Arcadia and Blair. The Arcadia corridor alternative follows a 69-kV transmission line south to terminate at either the proposed Galesville or Holmen substations, or the North La Crosse Substation. The Blair corridor alternative continues to follow a 161-kV transmission corridor (the Xcel Energy Tremvel 161 kV line) to the North La Crosse Substation.

From the Winona river crossing, corridor alternatives offer multiple options for crossing the Black River. A corridor option along WI-93 through Galesville connects with the Blair corridor, and would offer the opportunity to cross the Black River without crossing the Van Loon Wildlife Area. Corridor options that pass through the Van Loon Wildlife Area follow a 69-kV transmission line along the Seven Bridges Trail, WI-35, and the existing Dairyland Q-1 161 kV transmission corridor.

Double circuit structures may be used where the new 345 kV transmission line is collocated with existing transmission The Dairyland Q-1 transmission line is scheduled to be rebuilt due to age and condition. If the proposed 345-kV transmission line is not collocated with the existing Dairyland Q-1 transmission line for any portion of its length, the remainder of the Q-1 line would be rebuilt as a separate project.

New substations near Holmen and Galesville are also being considered inside the Section C corridor. Voltage of the proposed transmission lines between Galesveille and the North La Crosse substation may be 161 kV, 345 kV, or 345/161 kV depending upon the final substation configuration.

7.4 Chester Substation to Mississippi River, and La Crosse Crossing

Section D (blue) shows the portion of the macro-corridor that connects the Chester Substation east of Rochester with the Winona and La Crosse Mississippi River crossing options. The portion of the macro-corridor along I-90 contains routing options along the highway in the southern portion of the corridor, and along field and property lines along the northern portion of the corridor. Macro-corridor alternatives diverge near the river, running south to the La Crescent/La Crosse Mississippi River crossing and north to the Winona Mississippi River Crossing. The corridor alternative between the Chester Substation and Winona would be approximately 45 circuit miles in length. The corridor alternative between the Chester Substation and the La Crosse Substation area would be approximately 60 circuit miles length.

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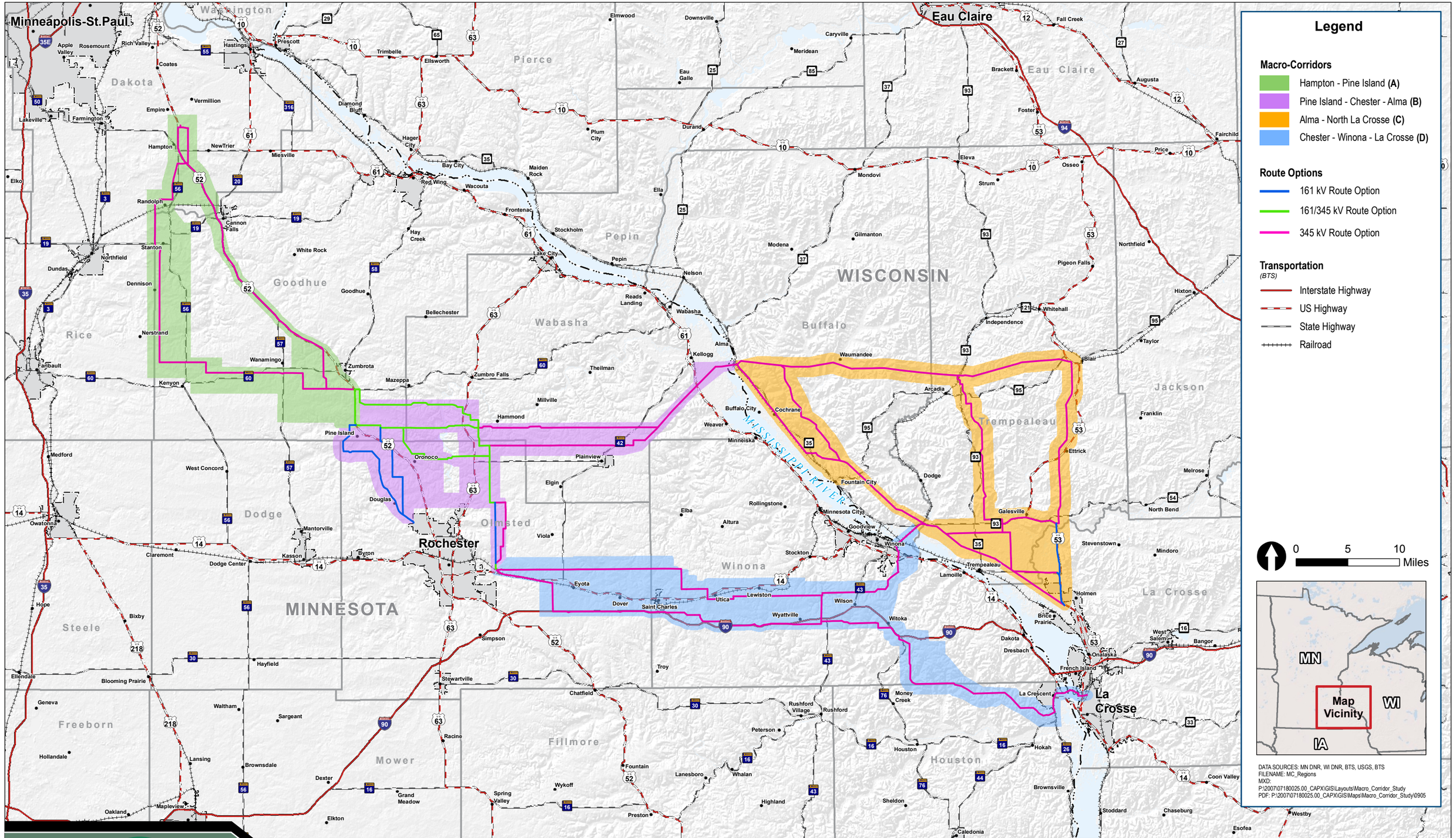

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Macro-Corridor Study

Figure 7-1: Final Macro-Corridors

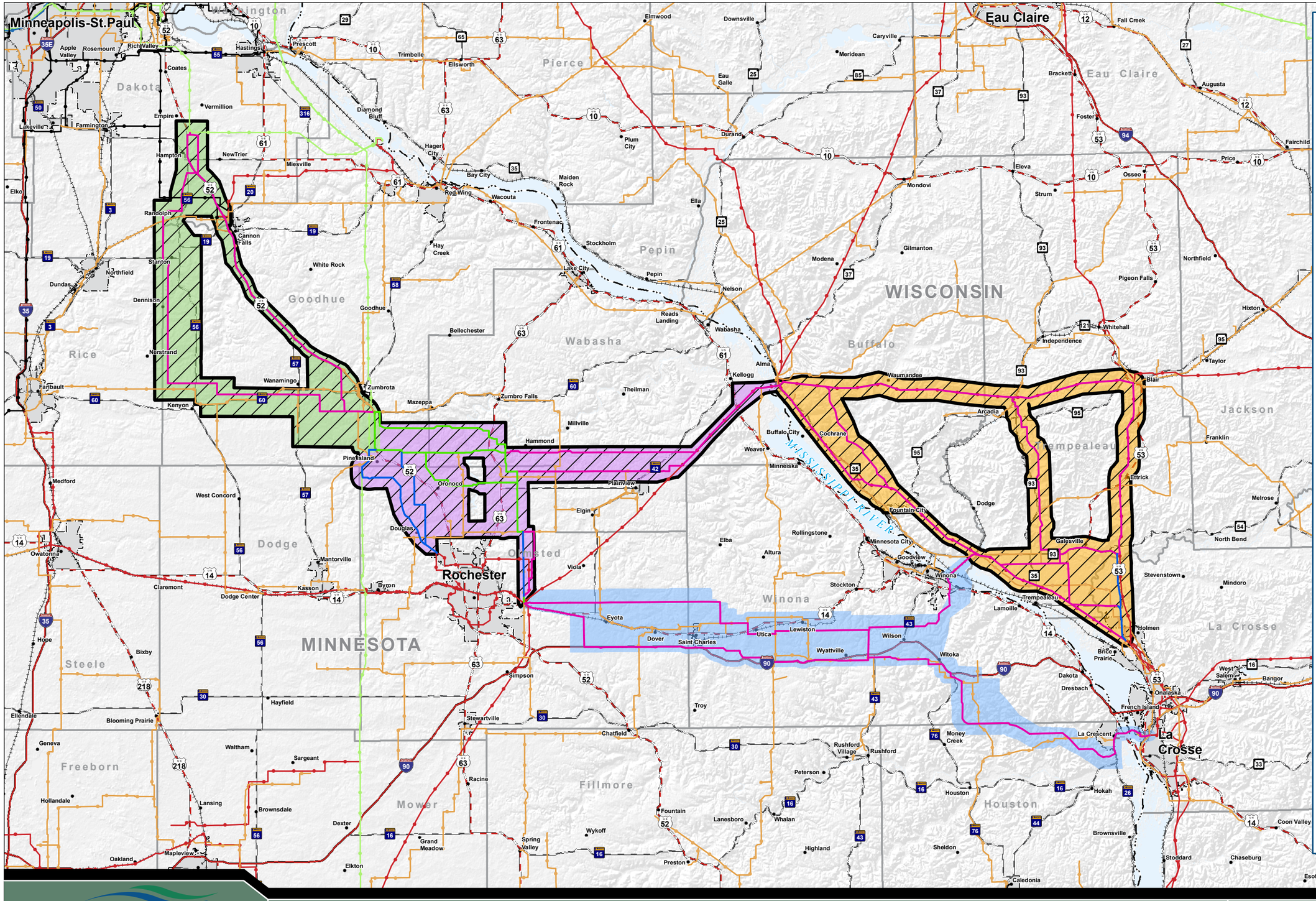

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Figure 7-2: Alma River Crossing Scenario

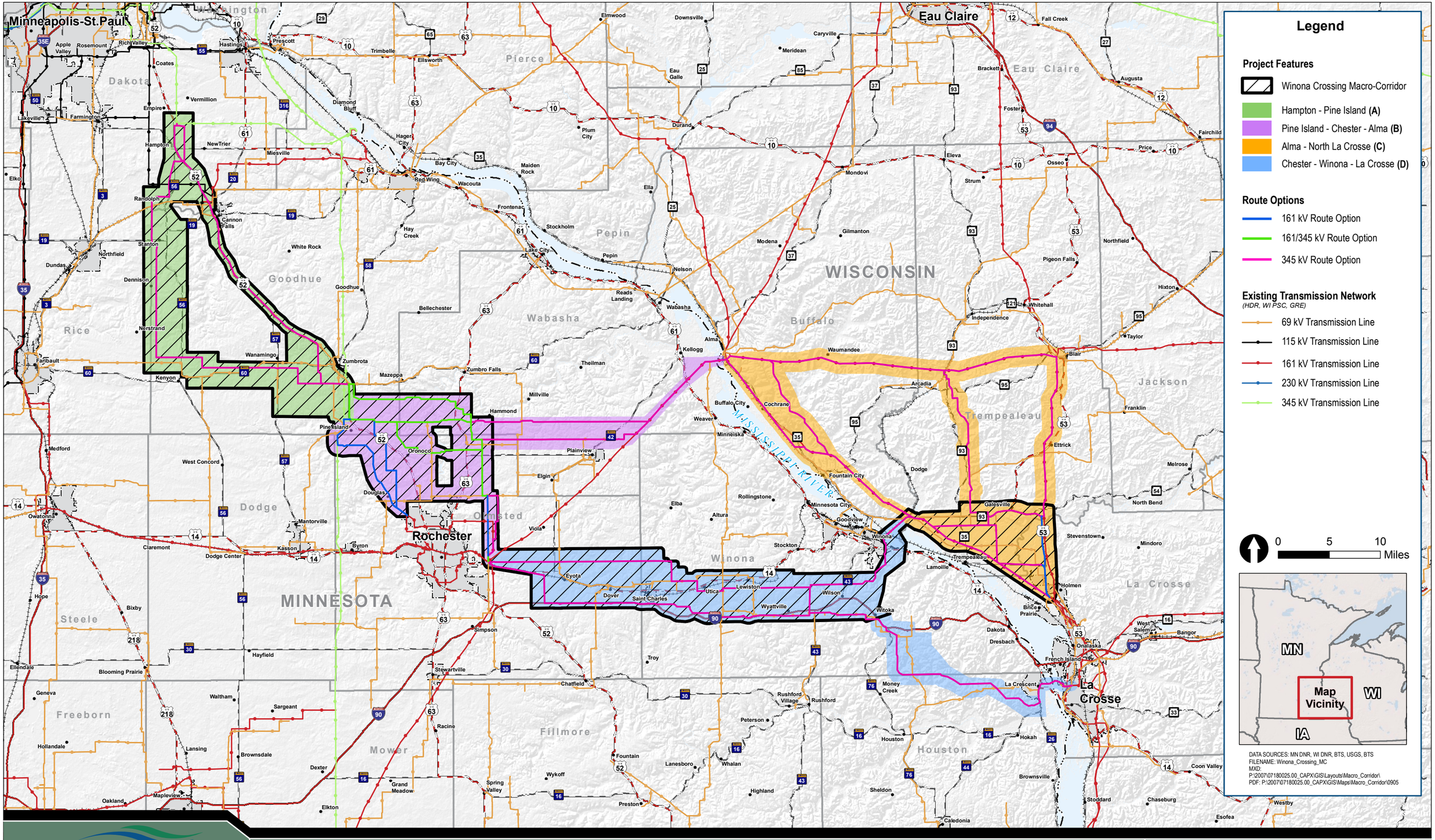

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Figure 7-3: Winona River Crossing Scenario

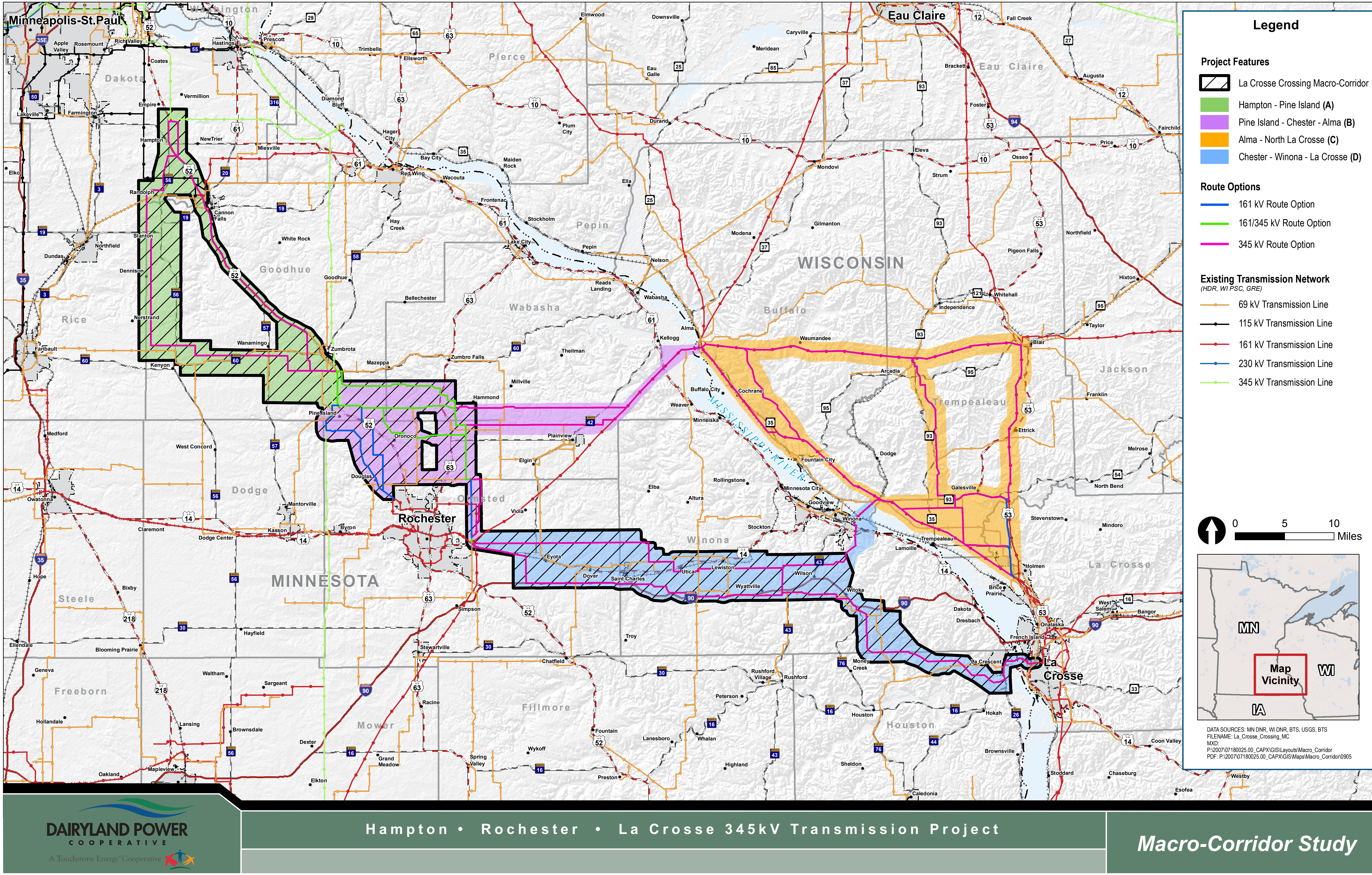

Figure 7-4: La Crescent/La Crosse River Crossing Scenario

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