

DRAFT ENVIRONMENTAL IMPACT STATEMENT
FINANCING ASSISTANCE FOR
PROPOSED HAMPTON – ROCHESTER – LA CROSSE 345 KV TRANSMISSION
SYSTEM IMPROVEMENT PROJECT

RURAL UTILITIES SERVICE



DAIRYLAND POWER COOPERATIVE

Prepared by
URS Corporation
St. Louis, Missouri

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Draft Environmental Impact Statement (EIS)

Hampton – Rochester – La Crosse

Transmission System Improvement Project

Submitted by the Department of Agriculture (USDA), Rural Utilities Service (RUS)

ABSTRACT: Dairyland Power Cooperative (Dairyland) may apply for financing assistance from RUS for its share in the construction of an approximately 124 to 148 mile, 345 kilovolt (kV) transmission line and related facilities between Hampton, Minnesota and La Crosse, Wisconsin (the Proposal). The Proposal also includes two connecting 161 kV lines in the Rochester area, with a total length of 44 to 49 miles. Dairyland is participating in the Proposal with four other utilities. The purpose of the Proposal is to: (1) improve community reliability of the transmission system in Rochester and Winona, Minnesota; La Crosse, Wisconsin and the surrounding areas, which include areas served by Dairyland; (2) improve the regional reliability of the transmission system; and (3) increase generation outlet capacity.

This Draft EIS also considers the impacts of rebuilding Dairyland's North La Crosse – Alma 161 kV line (Q1), which may be at least partly co-located with the Proposal. This EIS considers other alternatives to meet the identified purpose and need for action. Alternatives were evaluated in terms of cost-effectiveness, technical feasibility, and environmental issues. Alternatives evaluated in detail in the EIS include several alternative alignments for the Proposal and the no action alternative. Adverse impacts of the Proposal are primarily those on visual, biological, wetlands, and socioeconomic resources. This EIS identifies measures incorporated into the Proposal to minimize these impacts and considers additional potential mitigation measures that would further reduce adverse impacts.

The U.S. Army Corps of Engineers (USACE) and the U.S. Fish and Wildlife Service (USFWS) are participating in the EIS as cooperating agencies, with RUS as the lead federal agency.

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Written comments on this Draft EIS will be accepted for a period of 45 days following the publication of the U.S. Environmental Protection Agency's notice of receipt of the Draft EIS in the *Federal Register* (estimated close of comment period is January 30, 2012).

EXECUTIVE SUMMARY

Introduction

Dairyland Power Cooperative (Dairyland) anticipates applying for financing assistance from RUS for its anticipated 11 percent ownership interest in the construction of a proposed transmission project between Hampton, Minnesota (southeast of the Twin Cities) and La Crosse, Wisconsin (the Proposal). Dairyland is participating in the Proposal with four other utilities (Applicants). Dairyland also anticipates that RUS financing will be requested for the rebuild of its North La Crosse – Alma 161 kV line (Q1 Rebuild), which is located in the Proposal area. If the new 345 kV line can be co-located with a portion of the Q1 on the existing route, the costs of rebuilding the affected portion of the Q1 will be included in the Proposal costs. Dairyland's costs to participate in the Proposal will be approximately \$40 to \$50 million depending on the route selected. If the facilities are not co-located, Dairyland will need to seek an additional approximately \$34 million from RUS to finance the standalone Q1 Rebuild in the 2014-2015 time frame.

RUS is the agency that administers the U.S. Department of Agriculture's (USDA) Rural Development Utilities Programs. To fulfill its obligations under the National Environmental Policy Act (NEPA), RUS is completing this Environmental Impact Statement (EIS). According to RUS guidance,¹ the Proposal requires an Environmental Assessment with scoping. However, due to the potential for significant impacts, RUS is preparing an EIS. This Draft EIS discusses Dairyland's Proposal and alternatives and analyzes the potential effects of the Proposal (and alternatives) to the environment. In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, and as part of its broad environmental review process, RUS must take into account the effect of the Proposal on historic properties. Pursuant to those regulations, RUS is using its procedures for public involvement under NEPA to meet its responsibilities to solicit and consider the views of the public during Section 106 review.

¹ Title 7 of the Code of Federal Regulations (7 CFR) §1794.24(b)(1)

The U.S. Army Corps of Engineers (USACE) and the U.S. Fish and Wildlife Service (USFWS) are participating in the EIS as cooperating agencies, with RUS as the lead federal agency.

Dairyland is a not for profit electric generation and transmission cooperative owned by its members with its headquarters in La Crosse, Wisconsin. As such, it provides wholesale electricity and related services to 25 electric distribution cooperatives and 16 municipal utilities, which collectively provide electricity to approximately 600,000 consumer members in parts of Wisconsin, Minnesota, Iowa and Illinois. Dairyland delivers electricity via more than 3,100 miles of transmission lines and nearly 300 substations. Dairyland identified participation in the Hampton – Rochester – La Crosse transmission line project as its best course of action to meet future needs for reliable electric service in the Rochester and La Crosse areas.

Dairyland is a participant within the CapX 2020 group of utilities that are jointly proposing the Hampton-Rochester-La Crosse 345 kV Transmission System Improvement Project (Proposal). The others are Northern States Power Company, a Minnesota corporation (NSPM), and Northern States Power Company, a Wisconsin Corporation (NSPW) (collectively, Xcel Energy), Southern Minnesota Municipal Power Agency (SMMPA), Rochester Public Utilities (RPU) and WPPI Energy, Inc. (WPPI).

RUS has established procedures for determining if a proposed project for which a loan or loan guarantee is sought is both technically and financially feasible. Following RUS' procedures, Dairyland prepared several studies prior to this EIS, including an Alternatives Evaluation Study (AES) and a Macro-Corridor Study (MCS), which were subject to RUS' review and approval prior to release to the public and other agencies for comment. Those reports and RUS' notice of intent to prepare an EIS are available to the public on RUS' website at: <http://www.rurdev.usda.gov/UWP-CapX2020-Hampton-Rochester-LaCrosse.html>. The information and analyses from the AES and the MCS are incorporated into this Draft EIS. Changes from the results and conclusions of the AES and the MCS are detailed in this EIS.

Construction of the Proposal requires a Certificate of Need (CON) and a route permit (MRP) from the State of Minnesota and a Certificate of Public Convenience and

Necessity (CPCN) from the State of Wisconsin.² Xcel Energy, one of the participants in the Proposal, submitted the applications for the CON, the MRP and the CPCN, on behalf of all the CapX 2020 participants. Information from these applications is used and referenced in this EIS. RUS has verified the information used in this Draft EIS. Both states require preparation of an EIS as part of this process.³ Due to differences in the environmental review processes between the two states, a joint EIS was not agreed upon among the three agencies. The Minnesota Draft EIS was published in March 2011 and the Final EIS was published in August 2011. The Wisconsin Draft EIS was published in November 2011. To minimize duplication of effort, and for consistency with the States' approaches, RUS has verified and used information directly from the Minnesota EIS and the Wisconsin Draft EIS in preparing this EIS, to the extent the information is relevant to RUS' process. RUS has also incorporated comments on the Minnesota Draft EIS to the extent those comments are applicable to the process.⁴

The public and various governmental agencies have had opportunity to provide input and comment on the purpose and need, the AES, the MCS, and other Proposal elements through the scoping process. These activities were summarized in a scoping report, which is included as Appendix B of this EIS, and is also available at the RUS' website (noted above). Appendix C of this Draft EIS summarizes RUS' responses to the several hundred comments received during public scoping. In addition, through the Minnesota Draft EIS scoping process the public had the opportunity to propose additional alternative routes. Those additional routes identified through the Minnesota scoping process and included in the Minnesota EIS are also included in this Draft EIS.

Description of the Proposal

The Proposal consists of the following:

- A new 345 kV transmission line from the Hampton Substation near Hampton, Minnesota, to a proposed North Rochester Substation to be located between Zumbrota and Pine Island, Minnesota.

² CON: Minnesota Statute 216B.2425; Minnesota route permit: Minnesota Administrative Rules (Minn. Rules) 7850.1900 Subpart 2; Wisconsin CPCN: PSC 111.55.

³ Minn. Rules 7850.2500; Wisconsin PCS 4.10

⁴ Comments on the Wisconsin Draft EIS were not yet available.

- A new 345 kV transmission line from the proposed North Rochester Substation across the Mississippi River near Alma, Wisconsin.
- A new 345 kV line from Alma, Wisconsin to a new substation proposed in the north La Crosse, Wisconsin area (Briggs Road Substation).
- A new 161 kV transmission line between the proposed North Rochester Substation and the existing Northern Hills Substation, located in northwest Rochester, Minnesota.
- A new 161-kV transmission line between the proposed North Rochester Substation and the existing Chester Substation, located east of Rochester.

The total length of the proposed 345 kV transmission line is approximately 124 to 148 miles, depending on the route, and the approximate length of the 161 kV lines is 44 to 49 miles, depending on the routes. Substation construction and modification is also included as part of the Proposal. The alternatives evaluated in detail in this Draft EIS are shown in Figure ES-1.

Dairyland's existing 39-mile long North La Crosse-Alma (Q1) 161 kV line parallels the Mississippi River from Alma to just north of La Crosse, Wisconsin. This Draft EIS evaluates rebuilding the Q1 line.

Purpose and Need for the Proposed Action

The Proposal is focused on meeting identified needs for transmission system reliability and efficiency. A reliable transmission system delivers electricity where it is needed even when some lines or generators are out of service. An efficient system reduces the need for new generating facilities. In an inefficient system, electricity can become trapped within the transmission network (grid) because of congestion or outages and can't be delivered to all the places where the energy is needed in an efficient system. Thus, these needs to deliver energy must be met alternatively by operating generating facilities that would otherwise not be operated but for the inefficiency of the transmission system.

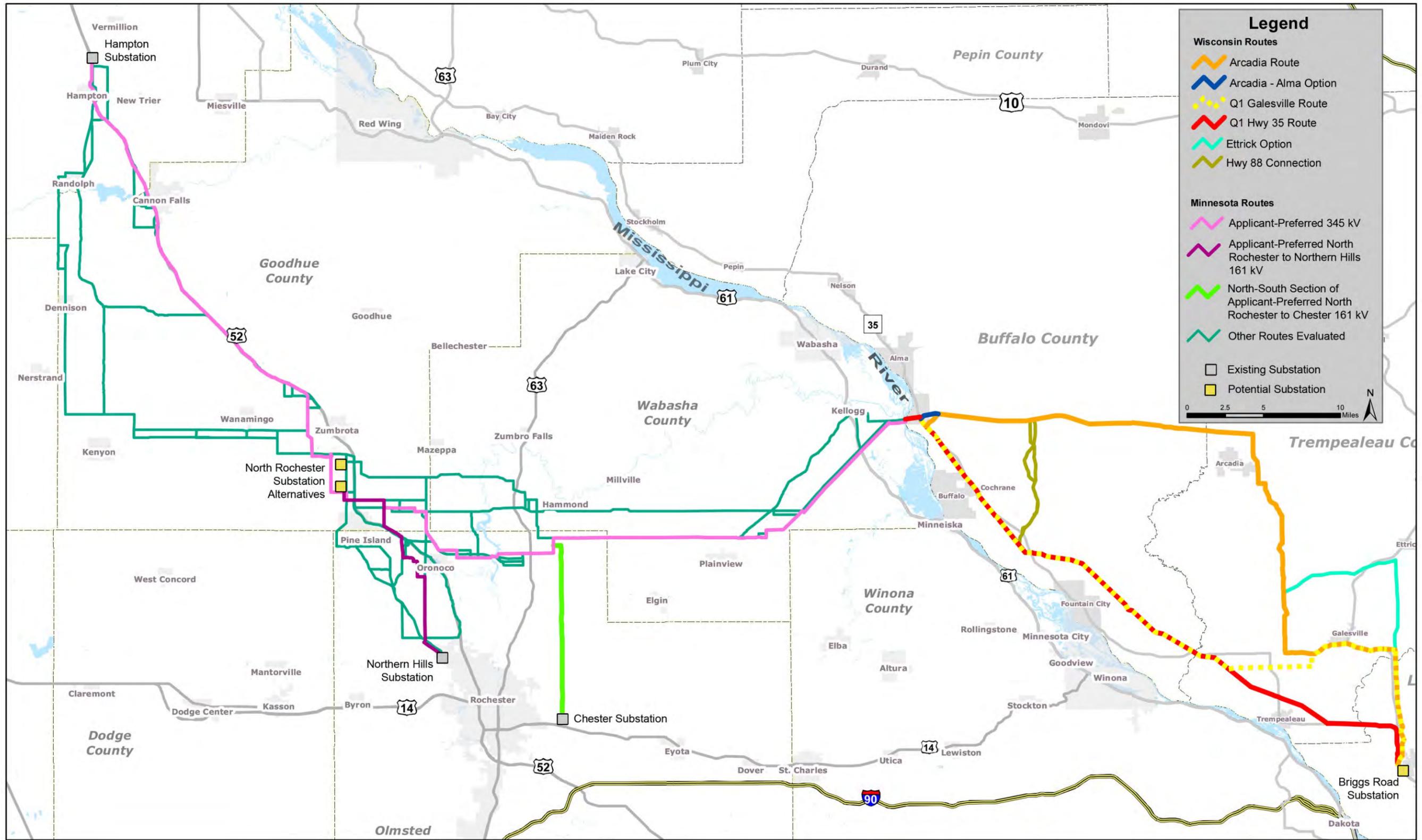


Figure ES-1: Alternatives Evaluated in Detail.

The purpose of the Proposal is to: (1) improve community reliability of the transmission system in Rochester, Winona, La Crosse, and the surrounding areas, which includes areas served by Dairyland; (2) improve the regional reliability of the transmission system; and (3) increase generation outlet capacity. Increasing generation outlet increases grid efficiency by allowing the electricity to move from where it is generated to where it is needed, resulting in lower cost energy to consumers.

The Q1 Rebuild is needed because the line is over 60 years old and is reaching the end of its service life. The rebuild is needed to address the age and degraded condition of the transmission structures and conductors.

The utilities behind the Proposal identified its need through planning studies conducted over the last several years. These planning studies are described in the AES. In addition to the utilities, a number of other entities have responsibility for planning to ensure reliability of the electric transmission system and to help maximize system efficiency. The Minnesota Public Utilities Commission and the Wisconsin Public Service Commission are responsible for ensuring that utilities plan for adequate transmission system improvements in Minnesota and Wisconsin, respectively. Both commissions require the preparation of periodic planning documents from utilities. Utilities, state governments and other planning entities work with regional planning organizations, whose authority is derived through national energy policy legislation. In the U.S., regional and national corporations responsible for ensuring the reliability of the electricity system operate under the Department of Energy's Federal Energy Regulatory Commission (FERC) and have the authority to develop and enforce reliability standards. The North American Electric Reliability Corporation (NERC) maintains a set of detailed reliability standards, including standards for transmission that are enforced through regional entities. The Midwest Independent System Operator (Midwest ISO) Regional Transmission Organization (RTO) has primary responsibility and authority for maintaining the reliability and efficiency of the transmission system over a large part of the Midwest, including the Proposal area. The Midwest ISO's authority includes planning for transmission expansions and approving or rejecting projects proposed by utilities. The Midwest ISO presents the results of its planning in annual transmission expansion plans (MTEPs).

The Midwest ISO classifies transmission projects under consideration as follows:

- Projects in review and conceptual projects (Appendix C in the MTEP).
- Projects with documented need and effectiveness (MTEP Appendix B).
- Projects approved by the Midwest ISO Board of Directors, or recommended for approval (MTEP Appendix A).

The Midwest ISO discussed the Hampton – Rochester – La Crosse (HRL, the Proposal) project in its 2006 MTEP and noted that it worked closely with the CapX 2020 group during the development of the CapX 2020 plans “to meet the longer term load serving needs of the area and to coordinate these plans with other expansion concepts in Wisconsin and Iowa” (Midwest ISO 2006, p. 13). In its 2007 MTEP, the Midwest ISO identified the HRL project as an “Appendix B” project (one with documented need and effectiveness) based on community reliability. According to the 2007 MTEP, the HRL project is needed to resolve NERC Standard issues in Rochester and La Crosse (Midwest ISO 2007, p. 10).

The HRL project was included in Appendix A in the 2008 MTEP (Midwest ISO 2008, p. 25). In that report, the Midwest ISO discussed the need for the HRL project for regional reliability. It identified the Proposal as one of nine needed to reduce the Midwest ISO’s “top 10 binding constraints.” Binding constraints are paths of transmission congestion that limit the overall usefulness of the system. The Midwest ISO reported that without relieving these constraints, “limited benefits can be achieved by the Midwest ISO” (Midwest ISO 2008, p. 254).

In its 2010 MTEP, the Midwest ISO discussed the HRL project in terms of generation outlet and included modeling results that showed how the HRL and another project are expected to relieve trapped generation that is projected to be present throughout most of Minnesota by 2014 (Midwest ISO 2010, p. 180).

Alternatives Eliminated From Detailed Consideration

Mississippi River Crossings

The MCS identified corridors within which routes alignments could be developed to meet the purpose and need, and also identified specific route options within those corridors. The biggest change from the final macro-corridors to this EIS is the

elimination of two of the original three Mississippi River crossing alternatives: the crossing at Winona (the middle option) and the crossing at La Crescent (the southern option).

The three crossing alternatives included in the MCR are compared in Table ES-1. All three alternatives cross the Mississippi River at an existing transmission line crossing - that was the basis for identifying these alternatives. However, on the Minnesota side, the existing transmission corridors at Winona and La Crescent are not available to the west for many miles. Furthermore, there are no major roadways within the MCS final corridors at either Winona or La Crescent on the Minnesota side. On the Wisconsin side at La Crescent/La Crosse, alignment options are limited to heavily developed land or wetlands.

The existing right-of-way (ROW) at all three crossings is at least partially on USFWS Wildlife Refuges; however, the Winona crossing requires a much greater length through Refuge property, and crosses large areas of marshland (Table ES-1). Winona and La Crescent have much smaller available existing ROWs than Alma. Only the Alma crossing is feasible with minimal additional ROW. The Alma crossing is also located at Dairyland's existing Alma generating station. While the Alma crossing has nearby eagles' nests, the crossing is not located near known bird concentration points. The Winona crossing is located near bird concentration points, and the La Crescent crossing is located near a very large active rookery.

Additionally, due to extensive wetlands, development, and topography (steep bluffs), substation locations may not be feasible for the La Crescent crossing.

Table ES-1: Comparison of Preliminary River Crossing Alternatives

Alma Crossing	Winona Crossing	La Crescent Crossing
Use of Existing Corridors, MN		
No new corridor required.	10 miles new corridor required.	15 miles new corridor required.
Use of Existing Corridors, WI		
Two feasible route options that follow existing transmission lines.	Two feasible route options: 1) an existing transmission line and 2) property boundaries/roads.	Route options may not be feasible due to potentially unpermissible wetland impacts and/or displacement of business
Length in Floodplain		
1.4 miles	3.25 miles	2.5 miles
Information on ROW within Refuge Land (USFWS 2009a)		
Existing 125 feet, permitted 180 feet, established 12/23/1948; indefinite, general stipulations.	Existing < 100 feet, permitted 100 feet. New metal poles installed 2003.	Existing < 100 feet, permitted width 100 feet, issued 6/6/1967 and expires 6/5/2017; general stipulations.
Length through Refuge Property		
2,900 feet	13,540 feet	2,790 feet
Area of Refuge Open Water/Marsh within 150 ft. of Centerline (USFWS 2009a)		
10 acres open water/1.9 acres marsh. Marshes: silver maple and green ash with Eastern cottonwood and swamp white oak.	45.7 acres. No description.	15.5 acres. No description.
Forested Refuge Area within 150 ft. of Centerline (USFWS 2009a).		
9.6 acres. Mature floodplain forest dominated by silver maple and green ash with Eastern cottonwood and swamp white oak.	7.8 acres. No description.	19.9 acres. No description.
Estimated Number of Poles in Wetlands⁵		
7	28	15
Estimated Permanent Wetland Impacts, Acres (80 sq ft per pole)		
0.01	0.05	0.03

⁵ 600-foot spacing on USFWS property, 1,000-foot elsewhere, plus accommodations for crossing open water.

Alma Crossing	Winona Crossing	La Crescent Crossing
Nearby Biological Features (USFWS 1008a, 2009b)		
Two active eagle nests on the Minnesota side: one adjacent to the existing line and one 1,800 ft. from the corridor.	Large numbers of migratory birds that use the open water/marsh area.	Active eagle nest 0.5 mile from line; active rookery with hundreds of great blue heron, great egret, and double-crested cormorant nests is located 0.3 mile upriver on the WI side.
USFWS Position (USFWS 2008a, 2009a)		
Alma crossing may pose least environmental impact because of existing ROWs and because it is least likely to impact migratory birds since it is some distance from known bird concentration points.	Due to the predominantly wetland habitat crossing and the importance of the refuge to migratory birds, this alternate is opposed by the USFWS.	Route is of concern due to proximity of eagle nest and the rookery.
Engineering Considerations		
Narrowest river crossing.	Widest river crossing, requiring multiple poles to be located in Mississippi River backwaters.	New corridor required in blufflands, limited access. Narrow ROW through refuge property results in tall structures causing greater potential impacts to birds and aesthetics.
Route follows existing transmission corridor through blufflands. Wider ROW through refuge property allows flexibility to design lower structures to mitigate potential impacts to birds and aesthetics.	New corridor required in blufflands, limited access. Narrow ROW through refuge property results in tall structures causing greater potential impacts to birds and aesthetics.	
Feasible Substation Locations		
Three potential substation sites.		Wetlands make La Crosse Substation not feasible; other alternatives require business displacement or an upgraded line in the La Crosse Marsh.

The Applicants also considered placing the 345-kV line underground at the Mississippi River crossing. The Applicants found that underground construction: (1) requires a wide ROW, (2) adds approximately \$90 million to the Proposal cost to construct 1.3 miles of the proposed 345 kV underground length, (3) has specific environmental impacts of its own, and (4) does not eliminate the existing overhead transmission line facilities. RUS concurs with the Applicants' conclusion that undergrounding is not feasible.

Other Alternatives Eliminated

In the Wisconsin part of the Proposal area, the changes from the MCS final corridors and route alternatives center on avoidance options for potential impacts from using the Q1 route, which is Dairyland's existing 161 kV line that extends along a corridor that is generally parallel to the Mississippi River. The Bluff Route was studied to avoid the Great River Road/WI-35 south of Alma, and was included in the MCS. The route was eliminated from detailed consideration primarily because it did not meet the Wisconsin criterion of following an existing linear corridor. The Blair Route, which is an upland route that passed near the town of Blair, and which was included in the MCS, was eliminated prior to the Applicants' submittal of the MRP. The Applicants eliminated the Blair Route because it would require additional length and would result in additional impacts and increased cost compared to the Arcadia and Q1 routes. The Blair Route when compared to the Arcadia Route would add approximately 5 miles of line length and cost an additional \$13 million. While the Blair Route is not evaluated in detail in this Draft EIS, the USFWS has indicated that it believes the Blair Route, in addition to the Arcadia Route, is a reasonable and prudent alternative and should be evaluated as part of the NEPA process. The Arcadia Route was retained since it accomplished the same purpose of avoiding the existing Q1 corridor so the Blair Route was eliminated. A portion of the Q1Route through the Black River Bottoms of the Upper Mississippi River National Wildlife and Fish Refuge was eliminated from detailed consideration for the 345 kV line because of the potential impacts to high quality resources. In addition, the U.S. Fish and Wildlife Service will not consider permitting this route.

Alternatives Evaluated in Detail

In the Minnesota part of the Proposal area, a utility-preferred and an alternate route were identified in the AES. During the scoping process for the Minnesota Draft EIS a

large number of alternatives were added, including two that were identified in the AES but were, at that time, eliminated from detailed consideration. All the alternatives that were included in the Minnesota Draft EIS are evaluated in detail in this EIS.

In keeping with the naming convention used in the Minnesota EIS, the Minnesota part of the Proposal area is evaluated in three segments and the route segments are named based on the respective segment numbers and alternative. For example, Route 1P is the MRP Applicants' preferred route in Segment 1 and Route 3A is the MRP Applicants' alternate route in Segment 3. For most of the other alternatives, each is numbered based on whether it is an alternative to the MRP Applicants' preferred route (e.g., Route 1P-003), alternate route (e.g., Route 1A-002), or both (e.g., Route 1B-005). Some routes that are applicable to both Segment 2 and 3 are designated with "C." Route 3P Kellogg was developed to avoid impacts to McCarthy Wildlife Management Area and Route 3P Zumbro is a third alternative for crossing the Zumbro River.

Wisconsin

The Q1 route is the most direct and shortest of the Wisconsin routes that meet the State's criterion of following an existing transmission line. The Q1 also has some potential impacts and governmental agency concerns. The northern 8 miles of this Q1 corridor is near Wisconsin Highway 35 (WI-35), which, in this area, is designated as the Great River Road National Scenic Byway (GRRNSB). The Wisconsin Department of Transportation (WisDOT) acquired and holds scenic easements that pre-date the National Scenic Byway designation. The existing Q1 corridor was established prior to the acquisition of the scenic easements by WisDOT. Use of WI-88 avoids this section of the Q1 route while still allowing use of the southern part of the Q1 alignment. Two variations along WI-88 (Option A and Option B) are evaluated in detail.

At the southern part of the Q1 line the existing Q1 route passes through the Upper Mississippi River National Wildlife and Fish Refuge; as noted above, this route has been eliminated for the 345 kV line. The next shortest alternative is to follow WI-35 (still the GRRNSB), then US-53. This route avoids the Refuge; however, it crosses the Van Loon State Wildlife Area. The other option for the Q1 route at the southern part of the route area is an alignment that passes by the City of Galesville and follows US-53 south. The

alternatives that do not use any part of the Q1 alignment include the Arcadia Route, which passes near the City of Arcadia, and, at the southern end, follows the Galesville-US-53 corridor; the Arcadia-Alma alternative, which is the same as Arcadia except for a very short section near the Mississippi River; and the Arcadia-Ettrick alternative, which is longest but avoids the City of Galesville.

Comparison of Alternatives

Minnesota

Routes 1P and 1A are compared by resource area in Table ES-2. Detailed comparison tables for the other route alternatives in Minnesota are included in Appendix R of the Draft EIS.

Segment 1. At 49 miles in length compared with Route 1P's 36 miles, Route 1A is 36 percent longer than Route 1P. Minnesota's two major criteria are siting on an existing transmission line or roadway. Eighty-two percent of the Route 1P follows a transmission line or roadway, compared to 8 percent for Route 1A. In addition, the roadway that Route 1P follows is a major highway, US-52, and Route 1P also follows 16 miles of 69-kV transmission line along US 52. Route 1A has 44 miles that do not follow a transmission line or road, which is 8 miles more than the total length of Route 1P. Route 1A is estimated to cost 15 percent more than Route 1P.

There are a number of sites designated by MDNR as biodiversity sites of medium, high or outstanding significance and/or Natural Heritage Sites (NHS) within or near the Route 1A 1,000-foot route width. Most of these are associated with stream crossings or areas of remnant prairie.

Route 1A has an estimated 4.7 acres of forested wetland that would be converted to emergent wetlands, and Route 1P has none. Neither Route 1P nor 1A would have other permanent wetland impacts. Route 1P would require 223 acres of forest removed, while Route 1A requires 74.

For Route 1P, the most notable impact to natural communities occurs south of Butler Creek where Route 1P crosses approximately 3,000 feet of a BSHS maple-basswood forest.

Segment 2. Route 2P has a 1,000-foot floodplain crossing of the Middle Fork of the Zumbro River, along an existing roadway. Five hundred feet of the floodplain crossing is forested. Route 2A parallels the Douglas Trail and crosses multiple forested floodplains. However, wetland conversions and forest impacts would be similar for both. Route 2P has more nearby residences.

Segment 3. The main differences between Routes 3P and 3A are at the crossing of the Zumbro River. Route 3P crosses the Zumbro River at the existing crossing of White Bridge Road. Route 3A crosses the Zumbro River north (downstream) of Zumbro Lake, at a location where there is no existing road or transmission line. The floodplain crossing at Route 3A is 2,000 feet long, includes 400 feet of floodplain forest wetlands.

Other Route Alternatives. The other Minnesota alternatives are discussed in detail in Section 2. In general, the comparative analysis shows that most of these alternatives do not meet the Minnesota siting criteria as well as Route P does and/or they have more impact than the sections of Route P or A they would replace. However, a few of these alternatives appear to result in reductions in impacts compared to the corresponding sections of Route P or A. Most notably, Route 3B-003 is an option for both Route 3P and 3A just west of the Mississippi River that avoids the McCarthy Lake Wildlife Management Area, the associated Biodiversity Sites of High Significance (as designated by the State of Minnesota), and several thousand feet of wetland crossing. It follows MN-42 instead of the existing transmission corridor. However, it has several more residences within 300 feet of the centerline of the alignment than the comparable section of Routes 3P/3A.

Other routes that may represent overall reductions in impacts while reasonably complying with Minnesota criteria are summarized below:

- Route 1P-006 and -007 would avoid potential impacts to a quarry. However, both are longer, both have long floodplain crossings, and Route 1P-007 has more residences close by.
- Route 2P-001 has fewer nearby residences; however, it does not follow an existing roadway or transmission line.
- Routes 3P-001 and -002 appear to meet the Minnesota criteria for following existing transmission lines or roads better than Route 3P.
- Route 3P-004 follows more roadway than the comparable section of Route 3P and also avoids tree clearing.
- Routes 3P-006, -007 and -011 are just east of the Zumbro River and all avoid the tree clearing that would be needed with the comparable section of Route 3P. Both 3P-006 and 3P-011 would have more nearby residences.
- Routes 3A-003 and -004 follow roadway ROW more close than does Route 3A and both would result in less tree clearing than the comparable section of Route 3A.

Wisconsin

Wisconsin route alternatives are compared in Table ES-3. The primary trade-offs in the Wisconsin part of the Proposal are between the longer and costlier routes with greater impacts on agriculture and homes versus the potential impacts to the Great River Road National Scenic Byway and the Van Loon Wildlife Area, including forested wetland impacts and potential impacts to important species.

The Q1/Highway 35 alignment is offset approximately 300 feet from WI-35 to avoid the scenic easements associated with WI-35 and is routed through a forested floodplain, part of which is located within the Van Loon State Wildlife Area. The Wisconsin Department of Natural Resources (WDNR) has stated that it does not believe a permit for the Van Loon State Wildlife Area crossing could be permitted by the WDNR.

Table ES-2: Comparison of Minnesota Routes 1P & 1A

Resource Category	Hampton – North Rochester 345 kV		North Rochester – Northern Hills 161 kV		North Rochester – Mississippi River 345 kV	
	Route 1P	Route 1A	Route 2P	Route 2A	Route 3P	Route 3A
Soils and Geology						
Some short-term impacts will occur during construction; however, construction stormwater permits will be required, which will include storm water pollution prevention plans (SWPPPs) and construction best management practices (BMPs) to minimize soil disturbance and erosion. The only potential post-construction impacts would be related to line repair and maintenance, which would result in minimal, if any, soil disturbance. Steep slopes, erodible soil and exposed soil contribute to erosion potential. Land cover, which can affect soil impacts, is summarized below under land resources.						
Slopes (Figure 3-1)	Mostly gently rolling farmland.		Mostly gently rolling farmland. Steeper slopes at Zumbro River.		Steeper slopes on 3P at Zumbro River tributaries. Both have steep slopes at approach to Mississippi River.	
Erosion Potential (Figure 3-2)	Relatively low except for localized high potential areas.				Relatively high.	
Water Resources⁶						
Minimal impacts to water resources are expected with any alternative. Some short-term impacts to surface water bodies from runoff from disturbed areas may occur during construction; however, the required SWPPPs and BMPs will minimize these impacts. All water bodies will be spanned, and construction equipment will not enter water bodies. The only potential post-construction impacts would be related to line repair and maintenance, which would not result in any direct impacts to water bodies, but could result in minor soil disturbance that could have short-term and minor impacts on surface water runoff. Some very minor, localized and short-term impacts to groundwater could occur in areas with very shallow groundwater if tower foundations require dewatering. Post-construction impact on groundwater would not be expected, as no discharges or pumping would be expected.						
Stream crossings	35	44	18	18	95	87
Permanent impacts to floodplains (acres)	<1	<1	<1	<1	<1	<1
Section 10 Permit required?	No				Yes	
Air Resources						
Minimal impacts to air resources are expected with any alternative. Some short-term air impacts will occur during construction as a result of exhaust emissions from construction equipment; there is also the potential for minor, short-term fugitive dust emissions from areas of disturbed soil during construction. Post-construction air quality impact would be minimal, as transmission lines release negligible air emissions.						

⁶ Xcel et al 2010, pg. 5-27, 7-70, 8-49.

Resource Category	Hampton – North Rochester 345 kV		North Rochester – Northern Hills 161 kV		North Rochester – Mississippi River 345 kV	
	Route 1P	Route 1A	Route 2P	Route 2A	Route 3P	Route 3A
Acoustic Environment						
Minimal noise impacts are expected with any alternative. There will be some short-term noise from construction equipment. Post-construction noise levels are expected to be minimal as transmission lines produce only very low levels of noise.						
Biological Resources^{7,8}						
Bird collisions with power lines are a potential impact with all routes.						
The following species and designated habitat areas are known to occur within the proposed ROWs. However, the presence of a species or habitat area does not mean it will be impacted. For example, since water bodies will be spanned, impacts to aquatic species are not expected. Surveys for threatened or endangered species would be conducted in suitable habitat within the permitted route corridor as directed by state agencies. If impacts to protected species are unavoidable, a Takings Permit from the MDNR and potentially the USFWS may be required along with other conditions.						
<i>Species⁹</i>						
Federal-listed threatened species within ROW	None	Prairie bush clover	None			
Federal-listed endangered species in ROW	None					
State-listed threatened species within ROW	Loggerhead shrike		Tuberous Indian-plantain	Blanding's turtle		
	Paddlefish	Mucket	Elktoe		Paddlefish	
		Prairie bush clover	None	None	Timber rattlesnake	
					Tuberous Indian-plantain	
State-listed endangered species within ROW	None				Rock pocketbook	
					Sheepnose	
<i>Notable habitat areas</i>						
Length crossed (miles)						
Important Bird Areas	0	0	0	0	1.9	1.9
Grassland Bird Conservation Areas	1.1	3.9	0	2.6	0	0
Outstanding Biodiversity Sites	0	0.3	0	0	0.5	0.5
High Biodiversity Sites	0.5	0.1	0	0.7	0.9	0.9

⁷ MDC 2011b, listed species obtained from pg. 87, 126, and 160.

⁸ Xcel et al 2010, notable habitat areas and wetland data obtained from pg. 5-26 - 5-28, 7-69 - 7-70, 8-49 - 8-50.

⁹ Scientific names are included in the discussion in the Draft EIS text.

Resource Category	Hampton – North Rochester 345 kV		North Rochester – Northern Hills 161 kV		North Rochester – Mississippi River 345 kV	
	Route 1P	Route 1A	Route 2P	Route 2A	Route 3P	Route 3A
<i>Wetlands</i>						
Permanent wetlands impacts (acres)	0	0	0	0	0.02	0.02
Temporary wetlands impacts (acres)	0	0	2	3	7	7
Wetland Acres Permanently Changed from Forested to Emergent (acres) ¹⁰	0	4.7	1.3	1.7	13.1	15.2
Area of Forest Removed (acres) ¹¹	223	74	103	109	621	873
Land Resources¹²						
<i>Land cover¹³</i>						
Percent cropland	63	87	70	74	63	58
Percent grassland	20	11	22	20	22	21
Percent shrubland	<1	<1	<1	<1	2	2
Percent forested land	5	1	5	5	11	17
Percent aquatic	<1	<1	<1	0	<1	<1
Percent marsh	<1	<1	<1	<1	1	1
Percent developed	10	<1	2	<1	<1	<1
<i>Agriculture</i>						
Permanent impact (acres)	42.6	45.1	42.4	42.6	44.4	44.1
Temporary impact (acres)	200	270	139	161	338	323
Conservation Reserve Prog. Lands crossed	51	31	4	2	33	25
Forestry	No impacts to economically important forestry areas are anticipated.					
Mining	No impacts to mines are anticipated.					

¹⁰ Water Resources summary table from Minnesota EIS (MDC 2011b) Appendices H-J.

¹¹ GAP data from Minnesota EIS (MDC 2011b) Appendices H-J. Forty acres of cropland attributed to the North Rochester substation for all routes.

¹² Xcel et al 2010, land resource data obtained from pg. 5-26 - 5-28, 7-69 - 7-70, 8-49 - 8-50. Forty acres of permanent impact to agricultural cropland for all routes attributed to the North Rochester substation.

¹³ For Routes 3P and 3A, does not include Chester 161 kV north-south section, which is primarily agricultural; results are the same for both routes.

Resource Category	Hampton – North Rochester 345 kV		North Rochester – Northern Hills 161 kV		North Rochester – Mississippi River 345 kV	
	Route 1P	Route 1A	Route 2P	Route 2A	Route 3P	Route 3A
<i>Formally Classified Lands</i>						
Upper Mississippi National Wildlife crossed	0				0.5	0.5
McCarthy WMA crossed (miles)	0				0.9	0.9
RJD State Forest crossed (miles)	0				2.1	2.4
Visual Resources						
The transmission line as a visual intrusion will have the greatest impact on those living near the ROW. The 3A and 3P Routes are joined at the crossing of the Great River Road National Scenic Byway (GRRNSB).						
Residences near ROW	See Socioeconomics below		See Socioeconomics below		See Socioeconomics below	
Crossing of GRRNSB?	No				Yes	
Cultural Resources (within ½ mile of each alternative; except for Chester North-South, within 1 mile of route centerline)¹⁴						
Archaeological	4	5	6	4	7	8
Architectural						
National Register of Historic Places	7	1	0	3	0	0
Other	54	38	26	26	12	9
Chester North-South - Archaeological	NA	NA	NA	NA	1	1
Chester North-South - Architectural						
National Register of Historic Places	NA	NA	NA	NA	0	0
Other	NA	NA	NA	NA	10	10
Socioeconomics						
<i>Number of residences within 300 feet of route centerline¹⁵</i>						
Hampton - North Rochester (345kV) and North Rochester - Mississippi River (345kV)						
0-75 feet from route centerline	1	4	N/A	N/A	0	0
76-150 feet from route centerline	12	7	N/A	N/A	0	0
151-300 feet from route centerline	23	29	N/A	N/A	5	4
North Rochester – Northern Hills (161kV)						
0-40 feet from route centerline	N/A	N/A	0	0	N/A	N/A

¹⁴ MDC 2011c, pp. 100 and 141; MDC 2011b, p. 170; with revisions. Northern States Power Company 2011 Table 27.

¹⁵ MDC 2011c, pp. 86, 128, and 164.

Resource Category	Hampton – North Rochester 345 kV		North Rochester – Northern Hills 161 kV		North Rochester – Mississippi River 345 kV	
	Route 1P	Route 1A	Route 2P	Route 2A	Route 3P	Route 3A
41-100 feet from route centerline	N/A	N/A	7	1	N/A	N/A
101-300 feet from route centerline	N/A	N/A	51	27	N/A	N/A
Chester North-South Section (161kV)						
0-40 feet from route centerline	N/A	N/A	N/A	N/A	0	0
41-150 feet from route centerline	N/A	N/A	N/A	N/A	8	8
151-300 feet from route centerline	N/A	N/A	N/A	N/A	11	11
State Criteria: Use or Paralleling of Existing Right-of-Way (ROW) and Property Lines¹⁶						
Total length of route (miles)	36	49	15	18	57	54
<i>Following transmission line</i>						
Length (miles)	15	1.4	1.9	7.2	18	16.2
Total percentage	41.5%	2.8%	12%	40.2%	31.6%	30.0%
<i>Following road but not transmission line</i>						
Length (miles)	14.6	2.7	12.1	6	7.5	6.7
Total percentage	40.5%	5.5%	78.6%	33.2%	13.2%	12.4%
<i>Following property line but not transmission line or roads</i>						
Length (miles)	5.8	41.5	0.95	3.1	27.6	24.6
Total percentage	16%	85.2%	6.2%	17.1%	48.4%	45.6%
<i>Following transmission line, roads, or property lines</i>						
Length (miles)	35.4	45.6	14.9	16.3	53.1	47.5
Total percentage	98%	93.5%	96.8%	90.5%	93.2%	88.0%
<i>Not following transmission line, roads, or property lines</i>						
Length (miles)	0.7	3.2	0.5	1.7	3.7	6.67
Total percentage	2%	6.5%	3.2%	9.5%	6.5%	12.4%
Estimated Cost (million)						
Cost ¹⁷	\$88	\$101	\$16	\$17	\$131	\$126

¹⁶ MDC 2011c, pp. 66, 67, 110, 113, 148 and 149. Northern States Power Company 2011, Table 27.

¹⁷ MDC 2011c, pg. 8. Northern States Power Company p. 3-2.

Table ES-3: Comparison of Wisconsin Route Alternatives

Resource Category	Q1-Highway 35 Route	Arcadia Route	Arcadia-Alma Option	Q1-Galesville Route	WI-88 Option A Connector		WI-88 Option B Connector		Arcadia-Etrick Connector (Arcadia Route)
					(Q1-Highway 35 Route)	(Q1-Galesville Route)	(Q1-Highway 35 Route)	(Q1-Galesville Route)	
Soils and Geology									
Some short-term impacts will occur during construction; however, construction stormwater permits will be required, which will include storm water pollution prevention plans (SWPPPs) and construction best management practices (BMPs) to minimize soil disturbance and erosion. The only potential post-construction impacts would be related to line repair and maintenance, which would result in minimal, if any, soil disturbance. Steep slopes, erodible soil and exposed soil contribute to erosion potential. Land cover, which can affect soil impacts, is summarized below under land resources. Note									
Slopes (Figure 3-1)	Lower slopes except for middle third	Steeper slopes for much of route	Lower slopes except for middle third	Lower slopes except for middle third	Mostly steeper except for southern third.				Steeper slopes for much of route
Erosion Potential (Figure 3-2)	Mostly low except for middle third	Moderate, but would increase with exposure.	Mostly low except for middle third	Mostly low except for middle third	Moderate (but would increase with exposure) for northern two-thirds and low for southern third.				Moderate.
Water Resources									
Minimal impacts to water resources are expected with any alternative. Some short-term impacts to surface water bodies from runoff from disturbed areas may occur during construction; however, the required SWPPPs and BMPs will minimize these impacts. All water bodies will be spanned, and construction equipment will not enter water bodies. The only potential post-construction impacts would be related to line repair and maintenance, which would not result in any direct impacts to water bodies, but could result in minor soil disturbance that could have short-term and minor impacts on surface water runoff. Some very minor, localized and short-term impacts to groundwater could occur in areas with very shallow groundwater if tower foundations require dewatering. Post-construction impact on groundwater would not be expected, as no discharges or pumping is expected.									
Line stream crossings ¹⁸	38	45	44	25	47	36	47	36	65
Permanent impacts to floodplains (acres)	<1	<1	<1	<1	<1	<1	<1	<1	<1
Air Resources									
Minimal impacts to air resources are expected with any alternative. Some short-term air impacts will occur during construction as a result of exhaust emissions from construction equipment; there is also the potential for minor, short-term fugitive dust emissions from areas of disturbed soil during construction. Post-construction air quality impact would be minimal, as transmission lines release negligible air emissions.									

¹⁸ CPCN June 2011, Appendix T, Table 3

Resource Category	Q1-Highway 35 Route	Arcadia Route	Arcadia-Alma Option	Q1-Galesville Route	WI-88 Option A Connector		WI-88 Option B Connector		Arcadia-Etrick Connector (Arcadia Route)
					(Q1-Highway 35 Route)	(Q1-Galesville Route)	(Q1-Highway 35 Route)	(Q1-Galesville Route)	
Acoustical Environment									
Minimal noise impacts are expected with any alternative. There will be some short-term noise from construction equipment. Post-construction noise levels are expected to be minimal as transmission lines produce only very low levels of noise.									
Biological Resources									
Bird collisions with transmission lines are a potential impact for all routes.									
As shown below, threatened, endangered or special concern species are known to occur within two miles of the routes. Surveys for threatened or endangered species would be conducted in suitable habitat within the permitted route corridor as directed by state agencies. If impacts to rare species are unavoidable, a Takings Permit from the DNR may be required along with other conditions.									
<i>Species</i> ¹⁹									
Threatened, endangered or special concern species within two miles of the route									
Non-historic occurrences	129	69	69	124	117	103	117	103	66
Historic occurrences	40	23	23	29	40	42	40	42	16
Natural communities within two miles of the route	34	2	2	31	34	31	34	31	21
<i>Notable habitat areas</i>									
Does the route cross Important Bird Areas and/or large areas of forested wetlands?	Black River Bottoms	No	No	No	Black River Bottoms	No	Black River Bottoms	No	No
Does route potentially impact the WI-GRRNSB?	Yes	No	No	No	Yes	No	Yes	No	No
<i>Wetlands:</i>									
Perm. wetland impact, acres ²²	0.13	0.14	0.14	0.10	0.09	0.06	0.06	0.06	0.13
Temp. wetland impact, acres ²⁰	6.3	4.8	4.8	6.1	N/A	N/A	N/A	N/A	4.7

¹⁹ Species information presented based on a two mile radius search, per compliance with WDNR reporting guidelines. Species in the proximity of the Arcadia-Alma Option Route assumed to be identical to the Arcadia Route.

²⁰ CPCN June 2011, Appendix T, Table 1, and route maps included in this Draft EIS Appendix G.

Resource Category	Q1-Highway 35 Route	Arcadia Route	Arcadia-Alma Option	Q1-Galesville Route	WI-88 Option A Connector		WI-88 Option B Connector		Arcadia-Etrick Connector (Arcadia Route)
					(Q1-Highway 35 Route)	(Q1-Galesville Route)	(Q1-Highway 35 Route)	(Q1-Galesville Route)	
Wetland acres changed from forested to emergent ²¹	48.5 / 55.1	37.9 / 38.8	37.9 / 38.8	33.9 / 34.9	NA / 69.1	NA / 48.9	NA / 67.9	NA / 47.8	33.8 / 56.9
Upland forest impact, acres	186	267	252	218	227	261	225	259	305
Total forest impact, acres ²²	241	305	291	253	296	310	293	306	362
<i>Land cover</i> ²³									
Percent cropland	51	47	48	52	49	50	51	52	45
Percent pasture	1	4	4	<1	3	2	2	2	4
Percent specialty (tree farm)	0	1	1	<1	0	<1	0	<1	<1
Percent prairie/grassland	4	5	5	4	3	3	4	3	5
Percent upland shrub	<1	0	0	<1	<1	<1	<1	<1	<1
Percent upland forest	26	28	27	28	27	29	26	28	29
Percent forested wetland	8	4	4	5	8	5	8	5	5
Percent non-forested wetland	4	6	6	4	5	4	5	5	8
Percent residential	4	2	2	4	3	3	2	3	1
% commercial/industrial	2	2	2	3	1	2	1	2	2
Land Resources									
<i>Agriculture</i>									
Permanent impact (acres) ²⁴	41.0	41.3	41.3	41.2	41.2	41.4	41.2	41.4	41.3
Temporary impact (acres) ²⁵	325 / 116	445 / 150	455 / 153	367 / 133	399 / 136	442 / 154	418 / 137	460 / 155	468 / 146

²¹ CPCN June 2011, Supplemental Connector Information, Appendix T, Summary of Wetland Impacts / Total forested wetland within ROW from Appendix A, Table 2

²² CPCN June 2011, Appendix A, Table 2, Sum of upland forest and wetland forest

²³ Includes 40 acres of cropland for the Briggs Road West substation

²⁴ Assumes permanent impact of 200 sq ft/pole with 500-ft span. Includes 40 acres of cropland for the Briggs Road West substation.

²⁵ CPCN June 2011, pg. 2-167 and ROW totals in Appendix A, Table 2 for a maximum estimated impact/Estimate assuming 0.2 acre/mile for staging areas, 1600 ft² per 2 miles for spooling locations, and 0.5 acre/pole with a 500-ft span between poles within agricultural areas of the route.

Resource Category	Q1-Highway 35 Route	Arcadia Route	Arcadia-Alma Option	Q1-Galesville Route	WI-88 Option A Connector		WI-88 Option B Connector		Arcadia-Etrick Connector (Arcadia Route)
					(Q1-Highway 35 Route)	(Q1-Galesville Route)	(Q1-Highway 35 Route)	(Q1-Galesville Route)	
<i>Great River Road (GRR)</i>									
Current miles of transmission line in the GRR National Scenic Easement along Q1-Highway 35	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
Post project miles of transmission line within the GRR National Scenic Easement along Q1-Highway 35	2.7	8.1	8.1	2.7	8.1	8.1	8.1	8.1	8.1
Cultural Resources									
Archaeological sites near route ²⁶	13	8	8	15	10	12	11	13	4
Socioeconomics									
<i>Number of residences within 300 feet of route centerline²⁷</i>									
Total	74	102	102	109	79	114	67	102	57
0-100 feet from centerline	14	9	9	14	13	13	12	12	8
101-150 feet from centerline	8	15	15	11	13	16	7	10	7
151-300 feet from centerline	52	78	78	84	53	85	48	80	42
State Criteria: Use or Paralleling of Existing Right-of-Way (ROW) and Property Lines²⁸									
Total length of route (miles)	43.0	54.8	54.4	48.4	49.7	55.0	49.0	54.4	57.0

²⁶ CPCN June 2011, pg. 2-143, Table 2.4-7 and CPCN June 2011, Supplemental Connector Information, pg. 2-45, Table 2.4-1

²⁷ CPCN June 2011, Supplemental Connector Information, pg. 2-5, Table 2.1-2

²⁸ CPCN June 2011, Supplemental Connector Information, pg. 2-5, Table 2.1-2

Resource Category	Q1-Highway 35 Route	Arcadia Route	Arcadia-Alma Option	Q1-Galesville Route	WI-88 Option A Connector		WI-88 Option B Connector		Arcadia-Etrick Connector (Arcadia Route)
					(Q1-Highway 35 Route)	(Q1-Galesville Route)	(Q1-Highway 35 Route)	(Q1-Galesville Route)	
<i>Following transmission line</i>									
Length (miles)	30.6	39.6	39.0	28.2	29.4	27.1	29.2	26.8	47.2
Total percentage	71.2%	72.3%	71.7%	58.3%	59.1%	49.3%	59.6%	49.3%	82.8%
<i>Following road but not transmission line</i>									
Length (miles)	6.5	9.7	9.7	6.8	14.9	15.1	8.7	9.0	2.9
Total percentage	15.1%	17.7%	17.7%	14.0%	30.0%	27.4%	17.8%	16.5%	5.1%
<i>Following railroads but not transmission line or roads</i>									
Length (miles)	3.1	0.0	0.0	3.1	0.6	0.6	0.6	0.6	0.0
Total percentage	7.2%	0%	0%	6.4%	1.2%	1.1%	1.2%	1.1%	0%
<i>Following transmission line, roads, or railroads</i>									
Length (miles)	40.2	49.3	48.7	38.1	44.9	42.8	38.5	36.4	50.1
Total percentage	93.5%	90.0%	89.5%	78.7%	90.3%	77.8%	78.6%	66.9%	87.9%
<i>Not following transmission line, roads or railroads</i>									
Length (miles)	2.8	5.5	5.7	10.3	4.8	12.2	10.5	18.0	6.9
Total percentage	6.5%	10%	10.5%	21.3%	9.7%	22.2%	21.4%	33.1%	12.1%
Add'l ROW required (acres)	366	497	497	456	487	577	515	605	519
Estimated Cost (million)									
Cost	\$195	\$224	\$224	\$202	\$213	\$221	\$208	\$215	\$234

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ACRONYMS AND ABBREVIATIONS

AES	Alternative Evaluation Study
AIMP	Agricultural Impact Mitigation Plan
ALJ	Administrative Law Judge
APE	Area of Potential Effect
APLIC	Edison Electric Institute's Avian Power Line Interaction Committee
APHIS	USDA Animal and Plant Health Inspection Service
APP	Avian Protection Plan
ATF	Advisory Task Force
BMP	Best Management Practice
BSHS	Biodiversity Site of High Significance (MDNR)
BSMS	Biodiversity Site of Medium Significance (MDNR)
BSOS	Biodiversity Site of Outstanding Significance (OSBS)
BWSR	Minnesota Board of Water and Soil Resources
CapX2020	CapX2020 Transmission Expansion Initiative (Capital Expenditures by the Year 2020)
CCP	Comprehensive Conservation Plan
CDC	U.S. Department of Health and Human Services Centers for Disease Control and Prevention
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CON	Certificate of Need (Minnesota)
CPCN	Certificate of Public Convenience and Necessity (Wisconsin)
CREP	Conservation Reserve Enhancement Program
CRP	Conservation Reserve Program
CWA	Federal Clean Water Act
CWCS	Comprehensive Wildlife Conservation Strategy
CWD	Chronic wasting disease
Dairyland	Dairyland Power Cooperative
dB	Decibels
dBA	"A-weighted" sound scale (human hearing) recorded in dB
DOE	U.S. Department of Energy
DRG	Dispersed Renewable Generation
ECS	Ecological Classification System
EIA	Energy Information Administration
EIS	Environmental Impact Statement
EMF	electric and magnetic fields
EMI	Electromagnetic interference
EMFRAPID	Electric and Magnetic Fields Research and Public Information Dissemination

EPAct 2005	Energy Policy Act of 2005
EPRI	Electric Power Research Institute
ERS	Economic Research Service (USDA)
ESA	Endangered Species Act
FNAP	Farmland and Natural Areas Project
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FHA	Federal Housing Administration
GIS	Geographic Information System
GP	General Permit
GPS	Global Positioning System
GRE	Great River Energy
GRRNSB	Great River Road National Scenic Byway
HUD	U.S. Department of Housing and Urban Development
HRL	Hampton – Rochester – La Crosse
HUC	Hydrologic Unit Code
HVTL	High Voltage Transmission Line
HUD	U.S. Department of Housing and Urban Development
Hz	Hertz
IARC	International Agency for Research on Cancer
IBA	Important Bird Area
ICD	Implantable cardioverter defibrillator
ICNIRP	International Commission on Non-Ionizing Radiation Protection
IEEE	Institute of Electrical and Electronics Engineers
IRP	Integrated Resource Plan
kV	Kilovolt
LOP	Letter of permission
MAPP	Mid-Continent Area Power Pool
MBTA	Migratory Bird Treaty Act
MCBS	Minnesota County Biological Survey
MCS	Macro-Corridor Study
MDA	Minnesota Department of Agriculture
MDNR	Minnesota Department of Natural Resources
Midwest ISO	Midwest Independent Transmission System Operator
MnDOT	Minnesota Department of Transportation
MnGeo	Minnesota Geospatial Information Office
MN PUC	Minnesota Public Utilities Commission

MPCA	Minnesota Pollution Control Agency
MRO	Midwest Reliability Organization
MRP	Minnesota Route Permit
MRPC	Mississippi River Parkway Commission of Minnesota
MSIWG	Minnesota State Interagency Working Group
MTEP	Midwest ISO Transmission Expansion Plan
MTO	Minnesota Transmission Owners
MVA	Megavolt-ampere
MVAC	Mississippi Valley Archaeological Center
MW	Megawatt
MWh	Megawatt-hour
NAAQS	Natural Ambient Air Quality Standards
NAGPRA	Native American Graves Protection Repatriation Act
NAS	National Academy of Sciences
NEPA	National Environmental Policy Act
NERC	North American Electric Reliability Corporation
NHIS	National Heritage Information System
NHS	Natural Heritage Site
NIEHS	National Institute of Environmental Health Sciences (NIEHS)
NOA	Notice of Availability
NOI	Notice of Intent
NOP	USDA National Organic Program
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	National Resource Conservation Service
NRHP	National Register of Historic Places
NRI	National Rivers Inventory
NSB	National Scenic Byway
NSPM	Northern States Power Company, a Minnesota Company
NSPW	Northern States Power Company, a Wisconsin Company
NWI	National Wetlands Inventory
OLA	Minnesota Office of the Legislative Auditor
PA	Programmatic Agreement
PSC	Wisconsin Public Service Commission
PUC	Minnesota Public Utilities Commission
PWI	Public Water Inventory
RC	Reliability Coordinator
RD	Rural Development

RE Act	Rural Electrification Act
RES	Renewable Energy Standard
RFI	Request For Information
RIM	Reinvest in Minnesota
ROD	Record of Decision
ROW	Right-of-Way
RPA	Route Permit Application
RPS	Renewable Portfolio Standard
RPU	Rochester Public Utilities
RTO	Regional Transmission Organization
RUS	Rural Utilities Service
SBS	Sites of Biodiversity Significance
SEA	Strategic Energy Assessment (PSC)
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SMMPA	Southern Minnesota Municipal Power Agency
SPCC	Spill Prevention, Control and Countermeasure
SWG	State Wildlife Grants
SWPPP	Stormwater Pollution Prevention Plan
TCP	Traditional Cultural Property
THPO	Tribal Historic Preservation Officer
UNT	Unnamed Tributary
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USDA	U.S. Department of Agriculture
USDA ERS	USDA Economic Research Service
USDA NASS	USDA National Agriculture Statistical Service
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WCA	Wetland Conservation Act
WDNR	Wisconsin DNR
WGCC	Wisconsin Groundwater Coordinating Council
WHS	Wisconsin Historic Society
WHPD	Wisconsin Historic Preservation Database
WGNHS	Wisconsin Geological and Natural History Survey
WHO	World Health Organization
WHS	Wisconsin Historical Society
WisDOT	Wisconsin Department of Transportation

WMA	Wildlife Management Area
WPDES	Wisconsin Pollution Discharge Elimination System
WPPI	Wisconsin Public Power, Inc.
WRP	Wetland Reserve Program

1.0 INTRODUCTION

1.1 PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1.1 Description of Project Area and Proposed Action

Dairyland Power Cooperative (Dairyland) is a not-for-profit generation and transmission cooperative headquartered in La Crosse, Wisconsin, that may request financial assistance from the U.S. Department of Agriculture (USDA) Rural Utilities Service (RUS) for its anticipated 11 percent ownership interest in the construction of a proposed transmission project in southeastern Minnesota and southwestern Wisconsin (Proposal). The Proposal is one of several transmission projects in the Upper Midwest, collectively known as CapX2020, which have been proposed by a group of utilities. Dairyland is participating in the Proposal with other CapX utilities: Northern States Power Company, a Minnesota corporation (NSPM), and Northern States Power Company, a Wisconsin Corporation (NSPW) (collectively, Xcel Energy), Southern Minnesota Municipal Power Agency (SMMPA), Rochester Public Utilities (RPU) and WPPI Energy, Inc. (WPPI).

Dairyland anticipates that RUS financing will also be requested to rebuild its North La Crosse – Alma 161 kV line (Q1) which is located in the Proposal area (Q1 Rebuild). If the new 345 kV line can be co-located with a portion of the Q1 on the existing route, the costs of rebuilding the Q1 will be included in the Proposal costs. Dairyland's costs to participate in the Proposal will be approximately \$40 to \$50 million depending on the route selected. If the facilities are not co-located, Dairyland will need to seek an additional approximately \$34 million from RUS to finance the standalone Q1 Rebuild in the 2014-2015 time frame.

The alternatives evaluated in detail in this Draft EIS are shown in Figure 1-1.

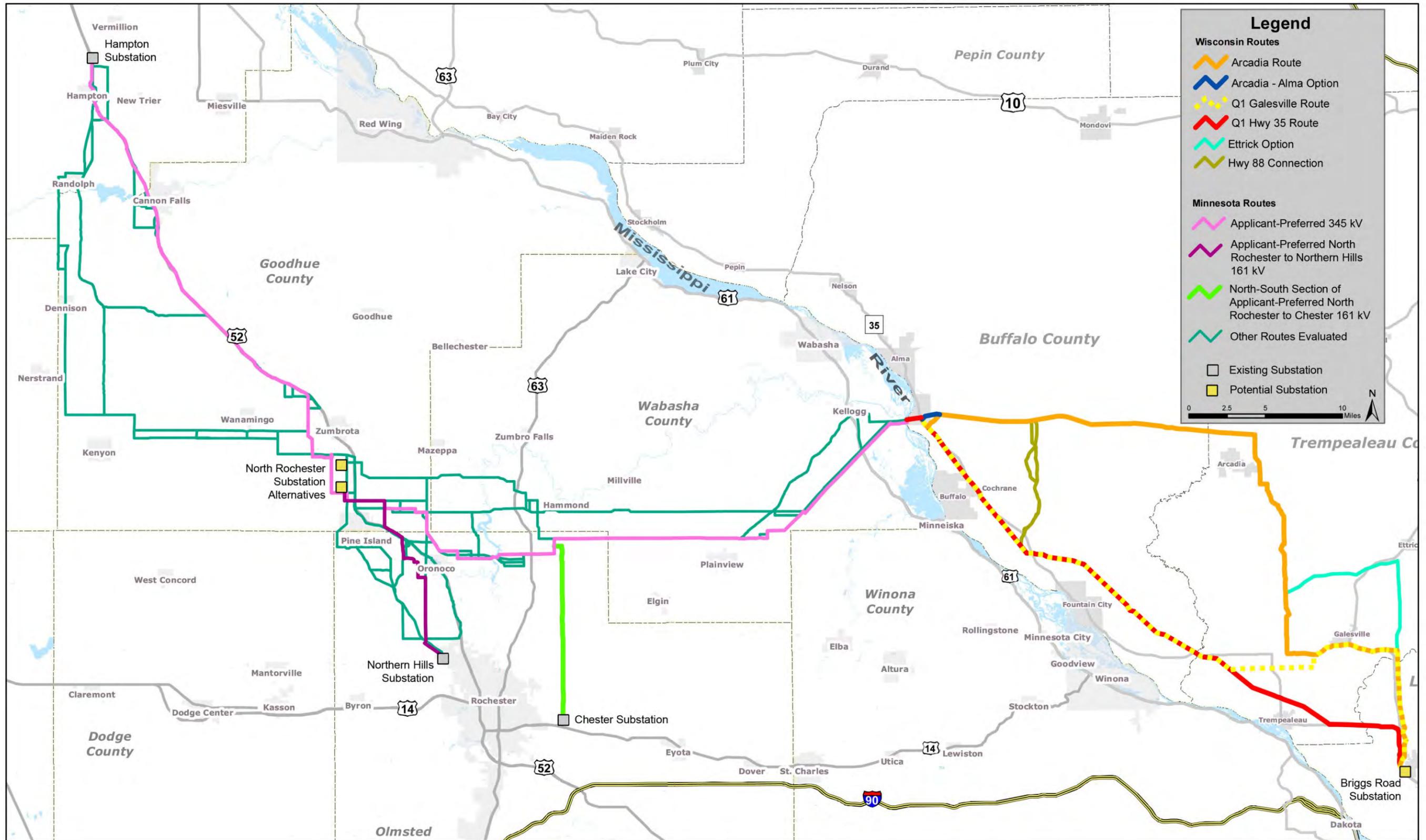


Figure 1-1: Alternatives Evaluated in Detail.

The Proposal consists of the following (Figure 1-1):

- A new 345 kV transmission line from the Hampton Substation near Hampton, Minnesota, to a proposed North Rochester Substation to be located between Zumbrota and Pine Island, Minnesota.
- A new 345 kV transmission line from the proposed North Rochester Substation across the Mississippi River near Alma, Wisconsin.
- A new 345 kV line from Alma, Wisconsin to a new substation proposed in the north La Crosse, Wisconsin area (Briggs Road Substation).
- A new 161 kV transmission line between the proposed North Rochester Substation and the existing Northern Hills Substation, located in northwest Rochester, Minnesota.
- A new 161-kV transmission line between the proposed North Rochester Substation and the existing Chester Substation, located east of Rochester.

The total length of the proposed 345 kV transmission line is approximately 124 to 148 miles, depending on the route, and the approximate length of the 161 kV lines is 44 to 49 miles, depending on the routes. Substation construction and modification is also included as part of the Proposal.

Dairyland's existing 39-mile long North La Crosse-Alma (Q1) 161 kV line parallels the Mississippi River from Alma to just north of La Crosse, Wisconsin.

Xcel Energy has been granted a CON for the 161 kV line between North Rochester and Chester (Chester Line). Xcel Energy (as Northern States Power Company) filed a permit application for the Chester Line in September 2011 (Northern States Power Company 2011).

The 345 kV transmission line is proposed to be built on single shaft steel poles to reduce land use impacts. The poles are proposed to have a brown weathering-steel finish and to be placed approximately 700 to 1,000 feet apart. In limited circumstances multiple pole specialty structures may be used. Typically, a 150-foot-wide right-of-way (ROW) will be needed for the 345-kV line.

1.1.2 Purpose of and Need for Dairyland's Action

The purpose of the Proposal is to: (1) Improve community reliability of the transmission system in Rochester, Winona, La Crosse, and the surrounding areas, which includes areas served by Dairyland; (2) Improve the regional reliability of the transmission system; and (3) Increase generation outlet capacity (including renewable generation sources).

This section discusses each of these purposes for the Proposal, following a discussion of electric system reliability and planning, including responsible parties and Dairyland's responsibilities and resources.

The Q1 Rebuild is needed because the line is over 60 years old and is reaching the end of its service life. The rebuild is needed to address the age and degraded condition of the transmission structures and conductors.

1.1.2.1 Electric System Reliability and Planning

Electricity is critical in modern-day North America. Our jobs, transportation, healthcare system, schools – essentially our entire economy and social system depend on it reliably being readily available every day. Electricity is a highly perishable commodity; except for as-yet small-scale batteries, it can't be stored like water or gas, so it must be generated as needed, and supply must be kept in balance with demand. Additionally, unlike water or gas, electricity follows the path of least resistance and can't be routed in a specific direction. Thus, getting electricity as needed to 334 million people on some 211,000 miles of transmission lines (plus millions of miles of low-voltage distribution lines that lead to customers) requires enormous planning, cooperation, coordination and 24-hour per day real-time monitoring and control (NERC 2011a).

Over the last several years in the U.S., changes in federal policy have resulted in a shift of responsibility for transmission reliability toward large regional planning organizations.

The intended result of this shift is more efficient use of electric energy resources.

Utilities, state governments and other planning entities work with the regional planning organizations, whose authority is derived through national energy policy legislation.

Reliability Corporations

In the U.S., regional and national corporations responsible for ensuring the reliability of the electricity system operate under the Department of Energy's (DOE) Federal Energy Regulatory Commission (FERC) and have the authority to develop and enforce reliability standards. These standards are in place to ensure system reliability, which is defined by the DOE's Energy Information Administration (EIA) as "a measure of the ability of the system to continue operation while some lines or generators are out of service. Reliability deals with the performance of the system under stress" (EIA 2011a). The "system" as it is used here refers to the Bulk-Power System, which consists of both generation and transmission components. It does not, however, include the low-voltage distribution lines that deliver electricity to consumers.²⁹

Before the passage of the Energy Policy Act of 2005 (EPAct2005³⁰), reliability organizations and standards existed; however, they were strictly voluntary. EPAct2005 Section 215 required the creation of an Electric Reliability Organization (ERO) with authority to establish, approve and enforce mandatory electricity reliability standards, subject to review and approval by the FERC. In 2006, the FERC established rules for certification of the ERO and procedures for establishment, approval and enforcement of reliability standards.³¹ Enforceable standards are intended to increase reliability over the previous voluntary standards – in announcing issuance of the final rules, the then-FERC chairman Joseph Kelliner noted that the last three major regional blackouts "were all caused in part by violations of voluntary, unenforceable reliability standards" (FERC 2006a).

In 2006, the North American Electric Reliability Corporation (NERC), a pre-existing voluntary reliability organization, was certified as the ERO in the United States. The

²⁹ FERC regulations (18 CFR 39.1) define "Bulk Power System" and "reliable operation." **Reliable Operation** means "operating the elements of the Bulk-Power System within equipment and electric system thermal, voltage, and stability limits so that instability, uncontrolled separation, or cascading failures of such a system will not occur as a result of a sudden disturbance, including a Cybersecurity incident, or unanticipated failure of system elements. The **Bulk-Power System** means the "facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof), and electric energy from generating facilities needed to maintain transmission system reliability. The term does not include facilities used in the local distribution of electric energy."

³⁰ Pub. L. 109-58

³¹ 18 CFR 39 (Docket No. RM05-30-000; Order No. 672)

authority and certification granted to the NERC also included a provision for the newly-certified ERO to delegate certain authority to regional entities for the purpose of proposing and enforcing reliability standards in particular regions of the country (FERC 2006b). Regional entities with FERC-delegated authority, which had also been existing voluntary reliability organizations, are shown in Figure 1-2. These formerly-voluntary organizations now have authority, under FERC regulations, to enforce the standards established in the EAct2005.

NERC Reliability Standards. NERC reliability standards apply to all owners, users and operators of the bulk power system, which includes the electric generation and transmission system in North America. The reliability standards are developed by NERC and approved by FERC.³² Any state may take action to ensure the “safety, adequacy and reliability of electric service within that state, as long as such action is not inconsistent with any Reliability Standard.”³³ Among the many reliability standards NERC has developed are sets of standards for transmission operations and transmission planning.³⁴

The Midwest Reliability Organization (MRO). The MRO’s current primary function is to monitor and enforce the NERC Reliability Standards. The MRO has delegated much of its transmission reliability responsibility to two Reliability Coordinators (RCs). NERC guidelines require that each regional reliability organization establish one or more RCs to “continuously assess transmission reliability and coordinate emergency operations among the operating entities within the region and across the regional boundaries” (MRO 2010, p. 3). The designated RCs within the MRO are the Midwest Independent Transmission System Operator (Midwest ISO) for the U.S. and SaskPower for Canada (MRO 2010, p. 3). Thus, the bulk of the responsibility regarding transmission within the U.S. portion of the MRO lies with the Midwest ISO.

³² 18 CFR 40.2

³³ 18 CFR 39.12

³⁴ These standards are available at: <http://www.nerc.com/page.php?cid=2%7C20>

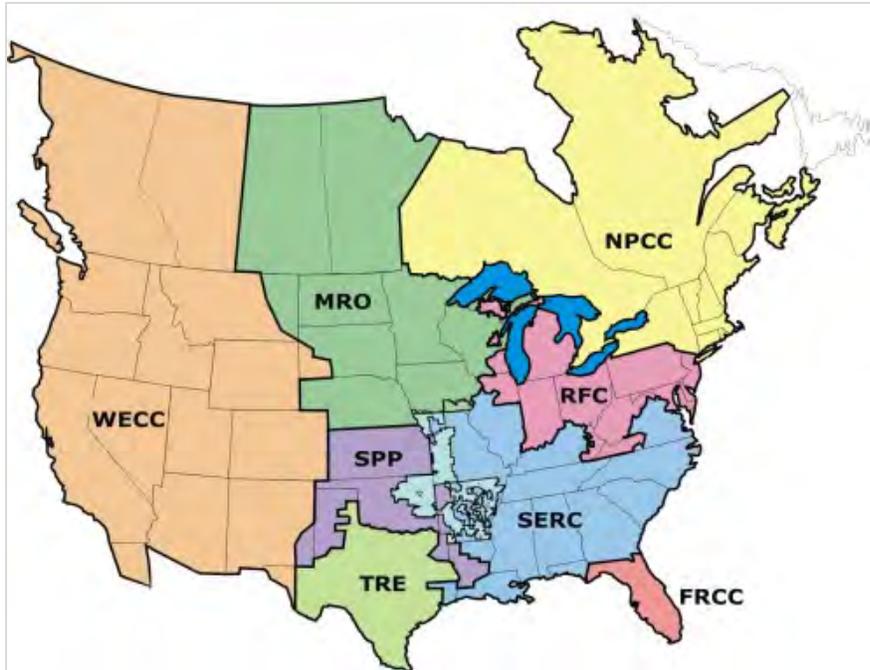


Figure 1-2: NERC Reliability Regions

Source: NERC 2010.

Midwest ISO. As the RC for the MRO within the U.S., the Midwest ISO is responsible for developing the procedures, processes and practices for electric reliability within the MRO’s U.S. jurisdiction (MRO 2010, p. 3). The Midwest ISO’s role as an RC means that it is responsible for producing and maintaining an updated Reliability Plan – a document that describes how the Midwest ISO meets the requirements of NERC Transmission Operating Standards (Midwest ISO 2011a).

In addition to its RC responsibility under the MRO, the Midwest ISO is a FERC-approved Regional Transmission Organization (RTO), the first and largest in the U.S. and one of the largest in the world (Midwest ISO 2011a, 2011b, INFORMS 2011).^{35,36} FERC establishes RTOs for the purpose of “promoting efficiency and reliability in the operation and planning of the electric transmission grid and ensuring non-discrimination in the provision of electric transmission services.”³⁷ RTOs are essentially responsible for the transmission systems within their areas (Figure 1-3). RTO responsibility includes pricing, reliability assurance, and determining when and how new generators can have

³⁵ INFORMS: Institute for Operations Research and the Management of Science

³⁶ FERC regulations for RTOs are at 18 CFR 35.34

³⁷ 18 CFR 35.34(a)

access to the system.³⁸ Each individual RTO is responsible for coordinating with the adjacent RTOs. RTOs are also responsible for designing and administering a FERC-approved tariff, which is a published volume of rate schedules and general terms and conditions under which a product or service will be supplied (EIA 2011a).

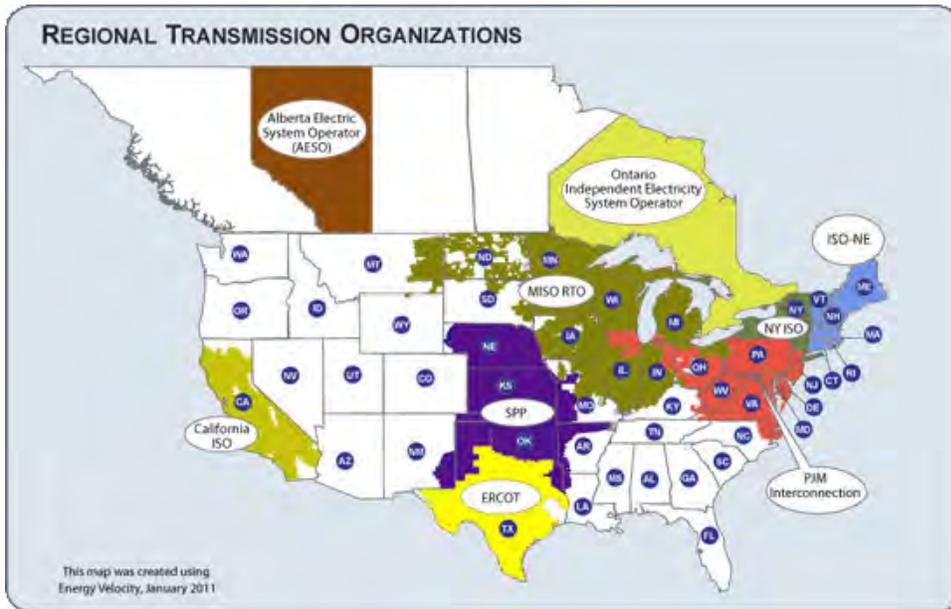


Figure 1-3: Regional Transmission Organizations

Source: FERC 2011.

RTOs are also responsible for “planning, and for directing or arranging, necessary transmission expansions, additions, and upgrades that will enable it to provide efficient, reliable and non-discriminatory transmission services and coordinate such efforts with the appropriate state authorities.”³⁹ The Midwest ISO presents the results of its planning in annual transmission expansion plans (MTEPs). Transmission projects up for consideration are classified as follows:

- Projects in review and conceptual projects (Appendix C in the MTEP).
- Projects with documented need and effectiveness (MTEP Appendix B).
- Projects approved by the Midwest ISO Board of Directors, or recommended for approval (MTEP Appendix A).

In its 2010 *Long-Term Reliability Assessment*, NERC reported that the Midwest ISO 2010 MTEP focuses on reliability and efficient electricity expansion for the next ten

³⁸ 18 CFR 35.34(k)

³⁹ 18 CFR 35.34(k)(7)

years and confirms that the Midwest ISO complies with all NERC Transmission Planning Standards. Their efforts continue to be “focused on identifying issues and opportunities related to the strengthening of the transmission grid, developing alternatives to be considered, and evaluating those options to determine if there is an effective solution among them. The objective is to identify projects that:

- Ensure reliability of the transmission system.
- Provide economic benefit, such as allowing increased efficiency in market operations (i.e., reducing cost of energy production and/or the price paid by the load).
- Enable achievement of public policy objectives such as the integration of renewable resources.
- Address other issues or goals identified through the stakeholder input process.” (NERC 2010, p. 89).

Other Reliability and Planning Parties

Local and regional utility companies are responsible for developing their own plans and coordinating them with the Midwest ISO and other entities.

Minnesota Planning. In Minnesota, utilities are required to periodically submit integrated resource plans (IRPs) that describe their options in meeting customers’ needs over a 15-year period.⁴⁰ Dairyland submitted its most recent IRP in 2008 (Dairyland 2008). The IRP process primarily addresses generation. The Minnesota Public Utilities Commission (PUC) also has a comprehensive transmission planning process. Every other year utilities in Minnesota (Minnesota Transmission Owners [MTOs]) are required to submit a transmission projects report to the PUC that identifies present and reasonably foreseeable future inadequacies in the transmission system, and alternatives for addressing each inadequacy, including non-transmission alternatives.⁴¹ The reports are subject to public review and PUC approval, and are also reviewed by the Minnesota Department of Commerce (MDC 2011a, p. 2). The plan review provides a forum for the PUC and the MDC to help ensure that NERC standards are being met in Minnesota (MDC 2011a, p. 2).

⁴⁰ Minnesota Administrative Rules (Minn. Rules) ch. 7843

⁴¹ Minnesota Statutes (Minn. Stat.) 216B.2425, Minn. Rules ch. 7848

When a party wants to construct new transmission facilities, it must apply to the PUC for a Certificate of Need (CON). The Minnesota CON process is discussed in more detail in Section 1.2.3.1.

Wisconsin Planning. The Public Service Commission of Wisconsin (PSC) is required by state law⁴² to prepare a biennial Strategic Energy Assessment (SEA) that “evaluates the adequacy and reliability of Wisconsin’s current and future electrical capacity and supply” (PSC 2011a, p. 1). In its most recent SEA the PSC notes that “transmission planning is becoming more and more regional, or ‘big picture’ in scope,” and devotes almost all of its transmission discussion to descriptions of regional planning, most notably the Midwest ISO’s planning. The PSC also summarizes the recent DOE National Renewable Energy Laboratory (NREL) *Eastern Wind Integration and Transmission Study* (NREL 2011) and notes that while it does not have a formal position on the NREL report, it is presented “to communicate that significant transmission planning is occurring in response to federal and state energy policy developments” (PSC 2011a).

Regarding reliability, the PSC states that “the ability to deliver power reliably to local substations and the ability to import power from, or export to, other regions, are both important functions in providing adequate, reliable service to customers” (PSC 2011a, p. 22).

1.1.2.2 Dairyland Responsibilities and Resources

Dairyland is a not-for-profit generation and transmission electric cooperative that is owned by, and provides the wholesale power requirements for, 25 separate distribution cooperatives in southern Minnesota, western Wisconsin, northern Iowa, and northern



Figure 1-4: Dairyland Service Area
Sources: Dairyland 2010, NationalAtlas.gov

⁴² Wisconsin Statute (Wis. Stat.) 196.491

Illinois. Dairyland also provides wholesale power requirements for 16 municipal utilities in Wisconsin, Minnesota, and Iowa. Dairyland does not provide retail electric service directly to any consumers; however, its member cooperatives and the municipal utilities it supplies provide service to approximately 600,000 consumer members. Dairyland owns or has under contract generating units totaling approximately 1,192 MW, and it owns approximately 3,144 miles of transmission lines (Dairyland 2010, FERC 2010). The approximate location of Dairyland's service area is shown in Figure 1-4.

1.1.2.3 Purpose of and Need for Dairyland's Action

As stated at the beginning of Section 1.1.2, the Proposal will address community and regional needs in Dairyland's service area and provide generation outlet support.

The purpose for and need of the Proposal was presented in detail in Section 2 of the AES (Dairyland 2009b), which was approved and accepted by RUS. The AES is incorporated by reference into this EIS, with minor changes as noted herein. The AES presents and discusses the detailed engineering studies that have been done, beginning in 2005, which identified the need for the Proposal. The AES was provided to the public and agencies during the federal scoping process; comments on the AES were included in the overall scoping comments, which are in the Scoping Report (Appendix B). Comments received during scoping are summarized, along with responses, in Appendix C.

Since the AES was published in 2009, Dairyland experienced a record peak demand in 2010 of 916 MW and a new record peak in the summer of 2011 of 979 MW (Xcel et al 2011b, p. 29).

The discussion below focuses on the Midwest ISO's evaluation of the Hampton – Rochester – La Crosse (HRL) 345 kV Transmission Line Project (Proposal), which was the result of transmission planning conducted jointly among the CapX participants. As discussed in Section 1.1.2.1, the Midwest ISO is responsible for the reliability of the transmission system in the area where the Proposal is located, and is responsible for planning, and for directing or arranging, transmission expansions to ensure the reliability of the transmission system. However, the Midwest ISO does not construct transmission facilities. That responsibility lies with transmission owners such as Dairyland.

Transmission owners are obligated under their Transmission Owner's Agreement with the Midwest ISO, to "make a good faith effort to design, certify, and build" the facilities included in the MTEP that have been approved by the Midwest ISO Board (Midwest ISO 2008, p. 25). Dairyland is a Midwest ISO Transmission owner (Midwest ISO 2010a, p. 16). The Proposal (HRL Project) was submitted to the Midwest ISO and has been approved by the Midwest ISO Board of Directors (Midwest ISO 2010a, p. 19 and Appendix A). Since the Proposal provides benefits in Dairyland's service area, Dairyland has determined that 11% ownership would be proportion to the benefits it would receive from the Proposal.

Community Reliability

The Midwest ISO discussed the HRL Project in its 2006 MTEP and noted that it worked closely with the CapX 2020 group during the development of the CapX 2020 plans "to meet the longer term load serving needs of the area and to coordinate these plans with other expansion concepts in Wisconsin and Iowa" (Midwest ISO 2006, p. 13). In its 2007 MTEP, the Midwest ISO identified the HRL Project as an "Appendix B" project (one with documented need and effectiveness, as discussed in Section 1.1.2.1) based on community reliability. According to the 2007 MTEP, the HRL Project is needed to resolve NERC Standard issues in Rochester and La Crosse related to "multiple Category B events" and "multiple Category C events" (Midwest ISO 2007, p. 10).

Category A, B, C and D events are defined in the NERC transmission planning standard, TPL-001-1, Table 1 (NERC 2011b). Under Category A conditions, all facilities are in service. Category B refers to an event that results in the loss of a single transmission element, and Category C refers to an event that results in the loss of two or more elements. A Category D event is more serious and can lead to cascading losses, which are the equivalent of the "domino effect" in transmission, and can lead to widespread blackouts. Under the NERC Standard TPL-001-1, the Midwest ISO is required to act to ensure that the network can deliver electricity "at all demand levels over the range of forecast system demands, under the conditions defined in Category A..." (NERC 2011b, p. 1).

Details of the reliability concerns in the Rochester and La Crosse areas are delineated in the direct testimony of Jeffrey Webb on behalf of the Midwest ISO, included in the PUC administrative hearings for the CON proceedings (Webb 2008 pp. 26-31).

Regional Reliability

The HRL Project was included in Appendix A in the 2008 MTEP (Midwest ISO 2008, p. 25). In that report, the Midwest ISO discussed the need for the Proposal for regional reliability. It identified the HRL Project as one of the nine projects needed to reduce what the Midwest ISO calls its “top 10 binding constraints.”

Binding constraints are paths of transmission congestion that limit the overall usefulness of the system. The Midwest ISO reported that without relieving these constraints, “limited benefits can be achieved by the Midwest ISO” (Midwest ISO 2008, p. 254).

Generation Outlet

In its 2010 MTEP, the Midwest ISO discussed generation outlet. Generation outlet refers to the function of a transmission line as the conduit to move energy from the place where it is generated to the place where it is needed. Sometimes congestion in the transmission system diminishes the ability of the system to perform this basic function. The 2010 MTEP included figures that showed the results of transmission system models of congestion. These are reproduced as Figures 1-5 and 1-6.⁴³

The blue areas on the maps in Figures 1-5 and 1-6 are areas where generation is “bottled up” and “not deliverable to the Midwest ISO market area on a reliability basis during summer peak load time” (Midwest ISO 2010a, p. 180). Red areas are those that can always be reliably served (however, even in the red area electricity costs may be higher than they would be with an efficient system because of congestion in the blue and yellow areas).

The fundamental purpose of the interconnected transmission systems is to move electric power from areas of generation to areas of customer demand (load).

Source: NERC

⁴³ These figures are included to show the area of “bottled up” generation that includes most of Minnesota. Other items in the figures such as the “MCC Category” are not discussed. For more in-depth information, refer to the source document, included in the references and available at the Midwest ISO website.

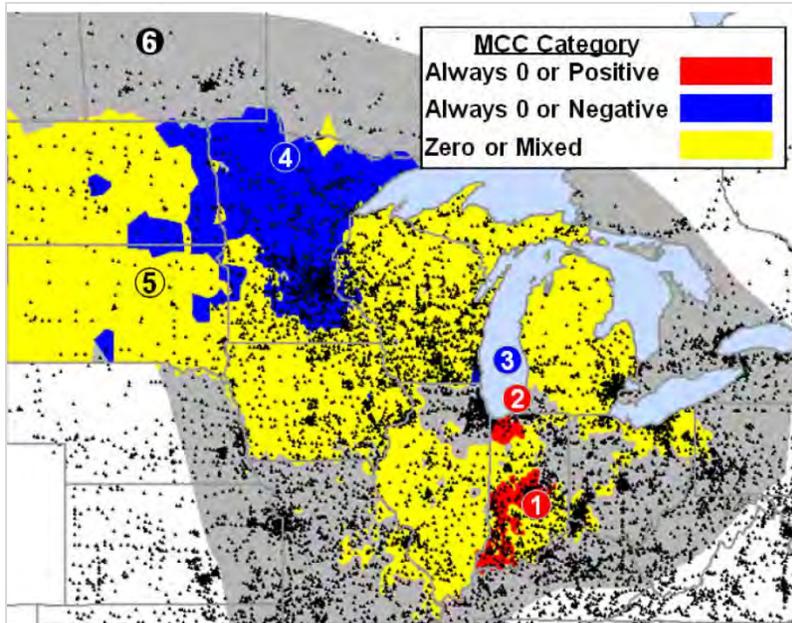


Figure 1-5: Congestion-Based Zones Modeled in 2010

Source: *Midwest ISO 2010a Figure 8.3-2*

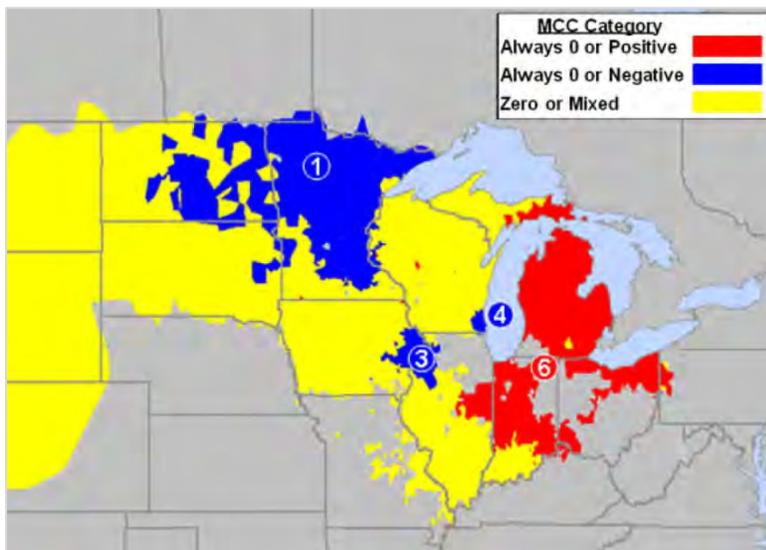


Figure 1-6: Congestion-Based Zones Modeled in 2014

Source: *Midwest ISO 2010a Figure 8.3-3.*

Yellow areas are reliably served most of the time. According to the 2010 MTEP, the blue area in Figure 1-5 represents “a shortfall in effectively sharing approximately 443 MW of installed capacity in 2010” (Midwest ISO 2010a, p. 180). In the model results for 2019, that blue area - mainly over Minnesota - is gone. This is due partly to the inclusion of planned transmission improvements in the 2019 model, and partly to the expectation that load will increase at a faster rate than new generation is added (i.e., some of the

excess generation is absorbed by load growth). In addition, the trapped generation identified in the 2010 and 2014 models was relieved by the HRL Project and another of the CapX projects (Midwest ISO 2010a, p. 182).

1.2 PURPOSE AND NEED FOR AGENCY ACTION

1.2.1 Rural Utilities Service

Under the Rural Electrification Act, as amended (RE Act), the U.S. Secretary of Agriculture is authorized and empowered to make loans for rural electrification to nonprofit cooperatives and others “for the purpose of financing the construction and operation of generating plants, electric transmission and distribution lines or systems for the furnishing and improving of electric service to persons in rural areas.”⁴⁴ A primary function or mission of the U.S. Department of Agriculture (USDA) Rural Utilities Service (RUS) is to carry out this electric loan program.⁴⁵

1.2.2 Federal Cooperating Agencies

Consistent with federal regulations implementing NEPA, the lead agency is responsible for establishing liaison with all federal, state, local, and tribal agencies that have jurisdiction by law or special expertise with respect to any environmental impact involved in a proposed action and for requesting their participation as cooperating agencies on an EIS, as appropriate.⁴⁶ RUS has requested the U.S. Army Corps of Engineers (USACE) and the U.S. Fish and Wildlife Service (USFWS) to participate as cooperating agencies, and both have accepted.

1.2.2.1 U.S. Army Corps of Engineers (USACE)

The USACE would need to issue the following permits for the Proposal:

- A permit under Section 10 of the Rivers and Harbors Act, for the crossing of the Mississippi and Black Rivers.
- A permit under Section 404 of the Clean Water Act (CWA), for activities that discharge fill into Waters of the United States, including wetlands.

⁴⁴ United States Code, Title 7 (7 USC) 904

⁴⁵ 7 USC 6942

⁴⁶ 40 CFR 1501.5, 1501.6, 1508.5, and 1508.16

1.2.2.2 U.S. Fish and Wildlife Service (USFWS)

The USFWS would need to issue a Special Use Permit for crossing the Upper Mississippi River National Wildlife and Fish Refuge, which is part of the National Wildlife Refuge System, and may need to authorize additional right-of-way (ROW). USFWS also has authority and trust responsibility under the Endangered Species Act, the Bald and Golden Eagle Protection Act, and the Migratory Bird Treaty Act.

The mission of the National Wildlife Refuge System, as defined in the Refuge Improvement Act of 1997, is "to administer a national network of lands and waters for the conservation, management and where appropriate, restoration of fish, wildlife and plant resources and their habitats within the United States for the benefit of present and future generations of Americans."⁴⁷ The refuge system is administered by the U.S. Fish and Wildlife Service, an agency of the Department of the Interior, with the stated mission of "working with others to conserve, protect and enhance fish, wildlife and plants and their habitats for the continuing benefit of the American people" (USFWS 2006b).

Under the National Environmental Policy Act of 1969 and the National Wildlife Refuge Improvement Act of 1997, major actions affecting the environment require full consideration of potential impacts, public involvement and an interdisciplinary approach to decision-making that considers a reasonable range of alternatives.

1.2.3 State Agencies

There are state agencies within both Minnesota and Wisconsin that have responsibility and authority for addressing the need for new transmission projects.

1.2.3.1 Minnesota

The PUC is responsible for determining whether or not a proposed large transmission project is needed and for approval of a route if it determines the project is needed. These decisions are implemented through a Certificate of Need (CON) and a route permit.⁴⁸ The MDC is involved in review, and is also responsible for environmental

⁴⁷ National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57), Section 4.

⁴⁸ Minn. Stat. 216B.243 and Minn. Rules ch. 7849, 7829, 7849.0010-0110 and 1405

review.⁴⁹ The reliability criteria established by entities with authority under the FERC (NERC, the MRO and the Midwest ISO) are taken as constraints that must be met by the PUC and the MDC in their review of the need for a project (MDC 2011a, pp. 2-3).

Projects are first identified through the PUC's transmission planning process, described in Section 1.1.2.1. For the Proposal, Great River Energy (GRE) and Xcel Energy (also known as Northern States Power Company) (collectively, CON Applicants), two of the utilities participating in the Proposal, submitted an application for a CON in August 2007 on behalf of all the CapX 2020 parties, including Dairyland (Xcel and GRE 2007, PUC 2009, pp. 1-2).⁵⁰ In the Minnesota process the PUC directed the applicants for the CON to include all four priority CapX projects (Group 1) in one submittal (PUC 2009, p. 2). This was done for the purpose of administrative simplicity, not because the projects were interdependent (PUC 2009, p. 2). In its analysis of the projects, the PUC evaluated each independently and issued a CON for each project (PUC 2009).

Through the CON process the CON Applicants were required to demonstrate that the Proposal is in the best interest of Minnesota's citizens and that there is not a more reasonable and prudent alternative to the Proposal (PUC 2009).

The PUC conducts a completeness review of CON applications, and during this review, the public may comment on the application's completeness. During the completeness review for the application that included the Proposal the PUC requested additional information from the CON Applicants.

Once an application is found to be complete, the PUC refers the case to an independent Administrative Law Judge (ALJ), who presides over a series of public hearings. For the CON application that included the Proposal, the PUC made the completeness determination and ALJ referral in November 2007 (PUC 2009, p. 2).

Members of the public can attend the ALJ hearings, file written comments, and present testimony. Parties who wish to participate more formally can request intervener status from the ALJ. An intervener is typically represented by an attorney and presents a formal case that includes filing written testimony, cross-examining witnesses and filing

⁴⁹ Minn. Rules ch. 7849.1200, 4410.0200, 4410.2000

⁵⁰ Northern States Power Company is a wholly-owned subsidiary of Xcel Energy, Inc.

post-hearing briefs. After the hearing process is complete, the ALJ prepares a report and recommendations for the PUC. The PUC evaluates the report and hears comments at one or more of its regular weekly meetings. If the PUC determines, based on its criteria, that the project is needed, it issues a CON. The PUC issued the CON that included the Proposal on May 22, 2009 (PUC 2009). The full public record for the CON is available at the PUC website, Docket No. CN-06-1115.⁵¹

1.2.3.2 Wisconsin

In Wisconsin, the PSC is responsible for determining if a large transmission project is needed. An applicant applies for a Certificate of Public Convenience and Necessity (CPCN), and, if approved, the PSC grants a CPCN.⁵² The PSC reviews the material for completeness and requests additional information, if needed. The Wisconsin Department of Natural Resources (WDNR) Office of Energy participates in the process jointly with the PSC. WDNR permit applications are filed at the same time as the CPCN application. On January 3, 2011, Dairyland, Northern States Power Company-Wisconsin (Xcel) and Wisconsin Public Power, Inc. (collectively, the CPCN Applicants), filed an initial CPCN application (PSC 2011c). After additional submittals to address information requests, the PSC determined that the application was complete on June 9, 2011 (PSC 2011b). On June 29, 2011, the CPCN Applicants submitted a final revised package that incorporated additions and changes from PSC/WDNR information requests (Xcel et al. 2011).

⁵¹ The PUC website is at www.puc.state.mn.us.

⁵² Wis. Stat. 1.12(6), 196.491 and Wisconsin Administrative Codes (WAC) PSC 2, 4, 111 and 112 govern the CPCN process.

1.3 AUTHORIZING ACTIONS

1.3.1 Applicable Statutory Requirements

Federal and state laws, regulations, and associated permits, approvals and coordination that are applicable to the Proposal are summarized in Table 1-1, Table 1-2, and Table 1-3. These laws and regulations are addressed throughout this EIS.

Table 1-1: Federal Permits and Other Compliance

Agency	Permits/Other Compliances
RUS	RUS Environmental Policies and Procedures (7 CFR) 1794] National Environmental Policy Act Compliance (42 USC 4321) National Historic Preservation Act—Section 106, tribal consultation
USACE	Section 10 Permit of the Rivers and Harbors Act of 1899 (33 USC 403) for crossing the Mississippi and Black Rivers
USACE and U.S. Environmental Protection Agency (USEPA) Region 5	Individual permit under Section 401 and 404 of the Clean Water Act (CWA) of 1977 (33 USC 1344)
U.S. Department of Agriculture Natural Resource Conservation Service (NRCS)	Farmland Conversion Impact Rating (Form AD-1006)
Federal Aviation Administration (FAA)	Form 7460-1 Objects Affecting Navigable Airspace
Federal Highway Administration (FHWA)	Permit required to cross federal highways and interstate highways (usually coordinated through the state Department of Transportation)
National Park Service (NPS)	Consultation: National River Inventory (NRI) rivers.

Agency	Permits/Other Compliances
USFWS	<p>ROW regulations on Refuge land (50 CFR 29.21 to 29.22)</p> <p>USFWS Service Manual Chapters 340 FW 3 (ROWs and road closing), 601 FW 1 (Refuge system mission and goals), 603 FW 2 (compatibility)</p> <p>Use authorization if right-of-way required on National Wildlife Refuge or Wetland Management District lands (Standard Form 299) and Special Use Permit if crossing National Wildlife Refuge</p> <p>Section 7 of the Endangered Species Act 1973 (16 USC 1531–1544)</p> <p>Bald and Golden Eagle Protection Act (16 USC 668), (50 CFR 22)</p> <p>Migratory Bird Treaty Act of 1918(16 USC 703–712)</p>

Table 1-2: State of Minnesota Permits and Other Compliance

Agency	Permits/Other Compliance
Minnesota Public Utilities Commission	<p>Certificate of Need – Minnesota Statutes (Minn. Stat.) 216B.243, Minnesota Administrative Rules (Minn. Rules) ch. 7849</p> <p>Route Permit (includes state environmental impact statement requirement).</p>
Minnesota Pollution Control Agency	<p>Air Quality and Noise Standards and Requirements National Pollutant Discharge Elimination System Stormwater Permits (construction, operation) – Form Minn. Rules1000001</p> <p>Section 401 Water Quality Certification</p>
Minnesota Historical Society/Minnesota State Preservation Office	<p>National Historic Preservation Act—Section 106 compliance – NHPA 1966, Section 106</p>
Minnesota Department of Agriculture	<p>State Agricultural Land Preservation and Conservation Policy, Minn. Stat. 17.80; Agricultural Mitigation Plan</p>

Agency	Permits/Other Compliance
Minnesota Department of Transportation	<p>Application for Utility Permit to occupy or cross Trunk Highway Right of Way (Long Form No. 2525) – TP-2525, Minn. Stat. 161.45, Minn. Rules 8810.3300</p> <p>Application for Access Driveway Permit – Form TP-1721, Minn. Stat. 505, Minn. Rules 8810.0050</p> <p>Application for Drainage Permit Form – Form TP-30795-02, Minn. Stat. 160.20</p> <p>Air Navigation Obstruction Criteria – Minn. Rules ch. 880</p>
Minnesota Department of Natural Resources	<p>Protected water crossings permits – Minn. R. 6105.0060</p> <p>Application for a License to cross Public Lands and Waters - Minn. Stat. 84.415, Minn. Rules 6135</p> <p>Wetland Conservation Act requirements - Minn. Rules ch. 8420</p> <p>Public Waters Work Permit – Minn. Stat. 103G, Minn. Rules 6115.0150 – 0280</p> <p>Minnesota Wild and Scenic Rivers Program – Minn. Rules ch. 6105.0060</p> <p>State Canoe Routes and Trails</p> <p>Minnesota State Forests</p> <p>Endangered Species Statues—Permits and Coordination - Minn. Stat. 84.089</p> <p>Noxious Weeds – Minn. Stat. 18.82, Minn. Rules ch. 1505</p>

Table 1-3: State of Wisconsin Permits and Other Compliance

Agency	Permits/Other Compliance
Public Service Commission of Wisconsin	<p>Certificate of Public Convenience and Necessity – Wisconsin Administrative Code (WAC) PSC 111.51, Wisconsin Statute (Wis. Stat.) 196.49 and 196.491025 (1s) (Submitted - Xcel et al. 2011)</p> <p>Restrictions on oak tree cutting and pruning – WAC PSC 113.0511</p>
Wisconsin Department of Natural Resources	<p>State EIS requirements – Wis. Stat. 1.11</p> <p>Joint state-federal application for impacts to waterways and wetlands Invasive species control – WAC ch. NR 40</p> <p>General Utility Crossings Permit - Wis. Stat. 30.12 and 30.20, Wis. Stat. 182.017, WAC ch. NR 345</p> <p>Routing Criteria – Wis. Stat. 1.12(6)</p> <p>Utility Permit - Wis. Stat. 30.025 (1s) – application submitted (Xcel et al. 2011, Appendix T). The utility permit application also included the following applications:</p> <ul style="list-style-type: none"> -Chapter 30 permit to place temporary bridges in or adjacent to navigable waterways – Wis. Stat. 30.123, WAC ch. NR 320 -Chapter 30 permit to place Miscellaneous Structures within navigable waterways – Wis. Stat. 30.12, WAC ch. NR 329 -Chapter 30 permit for grading on the bank of a navigable waterway – Wis. Stat. 30.19, WAC ch. NR 341 -Wetland water quality certification to discharge fill in wetlands – Wis. Stat. 281.36, WAC ch. NR 103 and NR 299 -Indication of Endangered/Threatened Species Incidental Take Authorization - Wis. Stat. 29.604 -Construction Site Erosion Control and Stormwater Discharge Permit – Wis. Stat. 283, WAC ch. NR 216.41-216.55
Wisconsin Department of Transportation)	<p>Application to Construct and Operate Utility Facilities on Highways Rights-of-Way - Form DT1553</p>
Wisconsin Historical Society/Office of Preservation Planning	<p>National Historic Preservation Act, Section 106 consultation – NHPA 1966, Section 106</p>

Agency	Permits/Other Compliance
Wisconsin Department of Agriculture, Trade, and Consumer Protection	Agricultural Impact Statement – Wis. Stat. 32.035

1.3.2 Federal and State EIS Requirements

1.3.2.1 Federal EIS Requirements

The NEPA requires an Environmental Impact Statement (EIS) for major federal actions with the potential to significantly affect the quality of the human environment. Dairyland, a rural electric cooperative, may apply to RUS under the provisions of the RE Act, for financing assistance for its anticipated 11 percent ownership interest in the construction of the Proposal. Prior to making a decision about whether to provide financing assistance for the Proposal, RUS is required to conduct an environmental review under the NEPA in accordance with its policies and procedures.⁵³ According to RUS guidance, the Proposal requires an Environmental Assessment (EA) with scoping.⁵⁴ However, due to the potential for significant impacts, RUS is requiring that an EIS for this Proposal be prepared prior to granting Dairyland’s request for ownership interest funding. An EIS is intended to “provide full and fair discussion of significant environmental impacts and shall inform decision makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment.”⁵⁵

The process for preparing an EIS is determined by the federal regulations implementing NEPA (Council on Environmental Quality [CEQ] regulations).⁵⁶ The major steps in the EIS process are described below.

Notice of Intent – The EIS process for the Proposal began when RUS published a NOI in the Federal Register and in 19 newspapers local to the Proposal on May 28, 2009.⁵⁷

⁵³ 7 CFR 1794

⁵⁴ 7 CFR 1794.24(b)(1)

⁵⁵ 40 CFR 1502.1

⁵⁶ 40 CFR Parts 1500 - 1508

⁵⁷ Federal Register on May 29, 2009, Vol. 74, No. 101, pp. 25485-25486

The NOI announced RUS' intention to prepare an EIS and hold public scoping meetings concerning the projects. A copy of the NOI is included in Appendix A.

Scoping Period – The purpose of scoping is to identify public and agency issues to be addressed in the EIS, as well as possible alternatives to the Proposal that should be considered. The results of the scoping process are summarized in Section 1.4 below. RUS prepared a detailed scoping report, which is included in Appendix B.

Draft EIS – This Draft EIS describes the Proposal and alternatives to the Proposal, considers public and agency comments received during the public scoping process, assesses the potential impacts of the Proposal, and identifies potential measures to mitigate those impacts. This Draft EIS complies with NEPA and the CEQ regulations and RUS' Environmental Policies and Procedures.⁵⁸ A notice of availability (NOA) for this Draft EIS has been published in the Federal Register and in newspapers local to the Proposal.

Comment Period and Public Hearings – The public and agencies will have the opportunity to review and comment on the Draft EIS during a 45-day comment period that begins on the date of publication of the NOA for the Draft EIS. During the public comment period, RUS will hold public hearings in the Proposal area.

Final EIS – In the final EIS, RUS responds to comments on the Draft EIS and makes appropriate changes in response to those comments. Any changes to the Proposal resulting from comments on the Draft EIS will be identified in the final EIS. RUS will publish an NOA in the Federal Register and in newspapers local to the Proposal when the final EIS is available. RUS encourages public review and comment on the final EIS for 30 days after it is published.

Record of Decision – RUS will publish a Record of Decision (ROD) describing the selected action and any mitigation measures, and the factors considered in making its decision. The ROD concludes the agency's environmental review process in accordance with NEPA and its implementing regulations. The USACE and the USFWS

⁵⁸ 7 CFR 1794

will also publish RODs describing the action and mitigation measures that are relevant to their areas of authority.

1.3.2.2 State EIS Requirements

Minnesota

Minnesota statutes require preparation of an EIS by the “responsible governmental unit” when there is “potential for significant environmental effects.”⁵⁹ In general, an EIS is required for a high voltage transmission line that requires a CON, although there are some exceptions. The Minnesota regulations generally require preparation of another document called an Environmental Report; however, this requirement can be waived if an EIS is prepared instead. The Department of Commerce is responsible for preparation of the EIS, which evaluates impacts, alternative routes, and mitigation.⁶⁰

After the PUC issues the CON, the next step in the transmission permitting process is the Route Permit Application.⁶¹ Northern States Power (Xcel) submitted the Route Permit Application in January 2010 on behalf of itself and the other participating utilities: Dairyland, SMMPA, RPU and WPPI (Xcel et al. 2010). The PUC docket number for the Route Permit Application is 09-1448. Within 15 days after submission of the application, applicants are required to notify all property owners along the route of the proposed project.⁶² Once the PUC accepts the Route Permit Application as complete, the Minnesota Department of Commerce begins the EIS process.⁶³ The PUC makes the final decision on completeness, and the MDC provides a recommendation based on its review of the application contents as required by Minnesota regulations.⁶⁴ The PUC issued its order accepting the Route Permit Application as complete in March 2010 (PUC 2010).

The MN DEIS was released on March 21, 2011 and comments were accepted until April 29, 2011 (MDC 2011b, p. i). The Final Minnesota EIS (MN FEIS) was published on

⁵⁹ Minn. Stat. 116D.04 Subd 2a

⁶⁰ Minn. Rules ch. 4410.0200 to 4410.5600, 4410.4400 Subpart 6, 7849.1000 Subpart 1, 7849.1200, 7849.1900 Subpart 2

⁶¹ Minn. Rules ch.7850.1900 Subpart 2

⁶² Minn. Stat. 216E.03 Subd 4

⁶³ Minn. Rules ch. 7850.2500 Subpart 1

⁶⁴ Minn. Rules ch. 7850.1900

August 31, 2011. Much of the content of the MN FEIS was incorporated into this Draft EIS, after independent verification of the content.

Wisconsin

The Proposal is within a category of activities for which the State of Wisconsin requires the PSC to prepare an EIS:

Construct an electric transmission line designed for operation at a nominal voltage of 345 kV, if the line is more than 10 miles long and if any related construction activity takes place outside the area of an existing electric transmission line right-of-way⁶⁵.

Wisconsin regulations require the EIS to be prepared in accordance with CEQ regulations, and have additional specific requirements.⁶⁶ The Wisconsin Draft EIS (WI DEIS) was published in November 2011, with a 45-day comment period. Public hearings will be held after the comment period (PSC-WDNR 2011). Much of the content of the WI DEIS was incorporated into this Draft EIS, after independent verification of the content.

1.3.3 Decisions to be Made Based on this Analysis

Dairyland may apply to RUS for financing assistance for the Proposal and RUS must decide whether or not to provide the financing assistance.

⁶⁵ WAC PSC 4.10 (1)

⁶⁶ WAC PSC 4.30

1.4 PUBLIC PARTICIPATION

While RUS provides opportunity for public participation throughout the NEPA process, the major opportunities for public participation in the federal EIS process are in scoping and in review of the Draft and Final EIS. This section summarizes the public participation that has occurred to date. Both Minnesota and Wisconsin provide opportunities for public input in their review processes.

The list of agencies, organizations and persons to whom copies of the Draft EIS are sent is included in Appendix Q.

1.4.1 Scoping Process

1.4.1.1 Federal Process and Requirements

The scoping process involved the following actions:

- Notifying the public and agencies about the scoping meetings.
- Developing project information for review by the public and agencies.
- Conducting the scoping meeting.
- Collecting and reviewing comments.
- Identifying issues raised that need to be addressed in the EIS process.

RUS published notices in 19 newspapers throughout the Proposal area in the weeks preceding the public scoping meetings. The list of newspapers is included in the Scoping Report in Appendix B. The notices included large display ads that identified meeting times and locations, and legal notices similar to the NOI.

A public mailer was distributed to landowners and other individuals who requested to be on the Project mailing list. The mailing list was developed initially using county landowner data for the original study area. Additional contact information was added during the scoping meetings, and will continue to be added throughout the process.

Agency Scoping Meetings

RUS conducted two agency scoping meetings with federal, state and local agencies and tribal representatives that included a presentation and an interactive question-and-answer session. The agency meetings were held on June 17, 2009 in Wanamingo, Minnesota, and on June 24, 2009 in La Crosse, Wisconsin.

Representatives of the following agencies attended the agency scoping meeting in Wanamingo, Minnesota: USFWS, Minnesota Public Utilities Commission (PUC), Minnesota Department of Natural Resources (MDNR), Minnesota Department of Transportation (MnDOT) District 6, Minnesota Department of Commerce (MDC), Minnesota legislators, and representatives from Goodhue County, the City of Wanamingo, the City of Cannon Falls, and Cherry Grove Township. A representative of the Shakopee Dakota Tribe also attended.

Representatives of the following agencies attended the agency scoping meeting in La Crosse, Wisconsin: Bureau of Indian Affairs, Wisconsin Department of Natural Resources (WDNR), Public Service Commission of Wisconsin (PSC), La Crosse County, La Crosse County Zoning and Planning Department, the City of La Crosse, the City of Onalaska, and the City of Onalaska Planning Department.

Public Scoping Meetings

RUS conducted 6 public scoping meetings from June 16, 2010 to June 26, 2010 at Plainview, Wanamingo, St. Charles and La Crescent, Minnesota; and at Galesville and Fountain City, Wisconsin. A total of 460 people signed the attendance form.

1.4.1.2 State Requirements

Minnesota

The Minnesota permitting process provides extensive opportunities for public participation. The hearing and meeting process for the CON was described in Section 1.2.3.1, and a similar process is required for the Route Permit Application. Minnesota regulations also allow the PUC to establish citizen advisory task forces.⁶⁷ Based on the MDC recommendation that task forces were needed to “assist in determining specific impacts and issues of local concern that should be assessed in the EIS” and to “assist in determining potential route alternatives that should be assessed” in the EIS, the PUC determined that at least two task forces were needed (PUC 2010, p. 6).

Minnesota regulations provide for a scoping period for the Draft EIS, and public input following publication of the draft.⁶⁸ During the scoping process, anyone may suggest an

⁶⁷ Minn. Rules ch. 7850.2400

⁶⁸ Minn. Rules ch. 4410.2000 to 4410.3200 and 7850.2500

alternate route to the MDC. The submittal should include an explanation of why the route should be included in the EIS and any other relevant information. The MDC includes the route in the EIS only if it determines that evaluation of the route will assist the decision on the permit application.⁶⁹

The public scoping comment period for the MN DEIS was open from April 19, 2010, through May 20, 2010. The MDC also held 6 public information and scoping meetings in locations along the proposed Project routes in May 2010. Approximately 350 people attended, in total. The two advisory task forces consisted of local government officials and members of non-governmental organizations. The two task forces, the Hampton to Northern Hills Task Force and the North Rochester to Mississippi River Task Force, each represented approximately one-half of the Project area, and met three times between April and June of 2010 (MDC 2010, p. 4, MDC 2011c, p. 1). Both task forces issued reports in June 2010 (MDC 2010a and 2010b). Both included recommendations for alternative routes to consider in the MN DEIS.

Wisconsin

As discussed in Section 1.3.2.2, Wisconsin has an EIS process similar to the federal process. The process began after the PSC determines the CPCN application was complete, which occurred in June 2011. The PSC and the WDNR held a series of public open-house meetings as part of the scoping process for preparation of their Draft EIS. The PSC also solicited comments in a letter sent July 5, 2011, to interested and affected persons, towns, counties and municipalities (PSC-WDNR 2011 p. 9).

1.4.2 Public Review and Comment

1.4.2.1 RUS Scoping Comments

Agency Comments

The following federal and state agencies provided written comments during the EIS scoping process: the FAA, NPS, the PUC, MnDOT, the PSC, MDNR, the Wisconsin Mississippi River Parkway Commission, and the WDNR. Senator Sharon Erikson Ropes of the Minnesota State Senate also provided comments.

⁶⁹ Minn. Rules ch. 7850.2500 Subpart 3

The following tribes submitted comments during the scoping period: Bois Forte Band of Ojibwe, Oneida Nation of Wisconsin, Leech Lake Band of Ojibwe, Ketegitigaaning Ojibwe Nation, Ho-Chunk Nation, Mille Lacs Band of Ojibwe, Stockbridge Munsee, and Little Traverse Bay Band of Odawa Indians. Scoping efforts specific to cultural resources are discussed in Section 3.9.

The following local governments provided written comments: Goodhue County, La Crosse County, Farmington Township, New Market Township, Highland Township, Warren Township, the City of Hampton, Holden Township, and Bridgewater Township.

An index and record of all agency and tribal items with delineated comments and corresponding RUS responses is included in the Scoping Report in Appendix B.

Public Comments

A total of 1135 comments from 359 commenters were received during the scoping comment period beginning on May 28, 2009, ending on July 25, 2009. Public comments were submitted using comment forms, letters, emails, online comment form submission, and phone calls. Some of the comments submitted were, in whole or part, identical form letters. The public comments and RUS responses are included in the scoping report in Appendix B.

1.4.2.2 Scoping for the MN DEIS

Based on the comments received during the public scoping comment period and at the public meetings, as well as the information provided in the advisory task force reports, the MDC finalized the scope of the MN DEIS in a scoping decision dated August 6, 2010 (MDC 2010). A total of 211 comments were submitted. The MN DEIS scoping document reported that the public suggested 66 alternatives to the applicant's proposed routes, and that 12 of these fell within the original requested route width. The other 54 were considered route alternatives, and of those, 44 were retained for evaluation (MDC 2010, pp. 8-9). These alternatives are included in this Draft EIS and are described in Section 2.

1.4.3 Comment Analysis

1.4.3.1 RUS Scoping Comments

Comments from RUS scoping are summarized below. Note that the total comments for each category is greater than the total number of comments received (211). This is because many commenters made comments in multiple categories.

Purpose and Need – 143 comments. Most of the comments questioned the legitimacy of the need provided by the utilities and requested that the EIS independently verify the need for the Project and review the background data used to create the need justification including load forecasts, assumptions, data, and projections.

Process - 125 comments. These comments included questions and requests about the adequacy and legality of the federal, state, local, routing and planning processes used in the Project.

Alternatives – 83 comments. Commenters provided suggestions for system alternatives to be included in the EIS: local generation and transmission, conservation, alternative sources of energy, renewable energy, nuclear energy, incentivized conservation, postponement, undergrounding, decentralized energy, load management, upgrading existing transmission lines, smart grid technology, and the no build alternative.

Route Alternatives – 177 comments. The comments varied from general routing suggestions and comparisons to route-specific comments.

Interconnection to Generation – 12 comments. Most of the comments were inquiries regarding the kind of generation that would be energizing the Project if built.

Connected Actions – 8 comments. Some commenters believe that some or all of the other CapX transmission projects are connected actions, or that electric generation is a connected action.

Geology and Soils – 14 comments. These comments were related to erosion potential, karst features, potentially unstable soils, soil compaction and impacts to bluffs.

Noise – 5 comments. Some commenters were concerned about the hum or whistling of transmission lines.

Biological Resources – 66 comments. These comments were related to wildlife, fish, vegetation, habitat, sensitive resources, wetlands and biodiversity.

River Crossings – 3 comments. Commenters are concerned about potential impacts to the Mississippi, Black and Cannon Rivers.

Land Use – 11 comments. Concerns include agriculture, forests, river valleys, MDNR forestry management areas, sensitive land uses, businesses, recreational land uses, residential areas and commercial land use.

Land Rights and Easement Acquisition – 22 comments. Most of the commenters questioned the process of easement acquisition, compensation for direct and indirect decreases in land and property value, allowable uses within an easement, eminent domain, maintenance, repairs, and easement valuation.

Conservation Easements – 6 comments. Commenters requested avoiding land conservation easements.

Recreation – 14 comments. Most commenters requested that recreational areas be avoided.

Visual – 44 comments. Many commented that transmission lines are “ugly” or “unsightly.” Some comments mentioned specific areas of concerns.

Transportation and Access – 2 comments. One comment requested consideration of private airfields and one requested avoidance of private driveways.

Public Facilities or Uses – 1 comment. MnDOT stated that rest areas cannot be encroached on by utility lines or structures.

Historic and Cultural – 19 comments. Commenters requested that resources be avoided, such as century farms, places currently or nominated to be on the National Registry of Historic Places, historic farms, historic school houses, cemeteries, archeological sites, historic trails, and homesteads.

Health and Safety – 94 comments. Concerns included effects from stray voltage, electric and magnetic fields (EMF), and safe clearances under the lines.

Electrical Characteristics – 19 comments. Some commenters requested information on EMF characteristics and potential interference with electronic and electric devices.

Social and Economic – 82 comments. Commenters expressed concern about impacts on property values and tax bases.

Agriculture – 37 comments. General concerns include the loss of productive farmland and revenue associated with production, interference with farming equipment and operations, compaction of soil, and the health and safety of livestock especially dairy cattle.

Residential – 10 comments. Most of the commenters requested that residences, family farms, and future home sites be avoided.

Environmental Justice – 3 comments. These commenters believe the Project may represent disproportionate impacts on low-income populations.

Cumulative Impacts – 9 comments. Resource areas of concern included global warming, migratory birds, and landowners with multiple impacts from utilities.

1.4.3.2 MN DEIS Scoping

In addition to the descriptions of the 44 route alternatives to be considered in the MN DEIS, the MDC provided the summary of public comments reproduced in Table 1-4 (MDC 2010, Table 1).

Table 1-4: MDC Summary of Major Issues Raised During Scoping

Issue	Number of Times Issue Mentioned	Percentage of All Commenters Who Raised
Airport	10	5
Archaeological	6	3
Effects on Local Development	9	4
EMF	40	19
GPS (including Aircraft and Agricultural Navigation)	7	3
Implantable Medical Devices	8	4
Land Based Economics	50	24
Noise	12	6
Process	40	19
Property Value	67	32
Proximity to Homes/Structures	66	31
Rare or Unique Natural Resources	28	13
Recreation	33	16
Soils (erosion, sinkholes, karst, gravel)	29	14
Stray Voltage	12	6
Tree Groves/Wind Breaks	36	17
TV, Radio, Cell Phone, Internet	11	5
Visual and Aesthetic Impacts	42	20
Water Resources (Including Wetlands)	25	12
Water Well Installation	3	1
Wildlife (Including Birds)	41	19
Other*	39	18

*Other included issues related to data in route permit application, general opposition to the Project, Project need, and easement negotiation process, among others.

1.4.3.3 MN DEIS Comments

A series of three public meetings were held April 12 to 14, 2011 regarding the MN DEIS. Approximately 260 unique comments were identified in the comment file in the Minnesota docket (09-1448).⁷⁰ Many of the public comments on the MN DEIS were similar to those made during the RUS scoping. These are summarized by category below. (As with the RUS scoping comments, the total from all the categories is greater than the total number of comments).

Purpose and Need – 25 comments, most similar to the RUS scoping comments.

Process - 71 comments. The majority of these comments focused on the adequacy of the public meetings and dissemination of Project information. Many found the number of route alternatives confusing.

Alternatives – 10 comments. Renewable energy was a prime topic with commenters wanting to make the Project as “green” as possible.

Route Alternatives – 80 comments. Most of these were comparative comments on the routes presented in the MN DEIS.

Interconnection to Generation – 3 comments. Two of these comments were regarding the connection to the Invenergy peak plant in Cannon Falls.

Geology and Soils – 31 comments. Most comments were related to karst formations, erodible soil, and wetland soil.

Noise – 17 comments, with concerns similar to those from the RUS scoping.

Biological Resources – 99 comments, similar to those from the RUS scoping.

River Crossings – 23 comments. Commenters are concerned with potential multiple crossings of the Zumbro River. Some commenters requested an underground crossing of the Mississippi River.

Land Use – 36 comments. Comments were similar to those from the RUS scoping. In addition, some commenters requested consideration of township future land use plans.

⁷⁰ The MN FEIS reports that 288 written and oral comments were received during the comment period (MN FEIS, Appendix O).

Land Rights and Easement Acquisition – 19 comments, most similar to RUS scoping comments.

Conservation Easements – 6 comments, similar to those from the RUS scoping.

Recreation – 28 comments, similar to those from the RUS scoping.

Visual – 60 comments, similar to those from the RUS scoping.

Transportation and Access – 14 comments, mostly similar to those from the RUS scoping. Several commenters expressed concern about potential conflicts with medical evacuation helicopters.

Historic and Cultural – 31 comments, similar to those from the RUS scoping.

Health and Safety – 75 comments, similar to those from the RUS scoping. Additionally, specific comments concerning the spread of Chronic Wasting Disease (CWD) due to soil disturbance were noted.

Electrical Characteristics – 53 comments, similar to those from the RUS scoping.

Social and Economic – 131 comments, similar to those from the RUS scoping.

Agriculture – 57 comments, similar to those from the RUS scoping. A major concern is the effect of high voltage on dairy cattle.

Residential – 65 comments, similar to those from the RUS scoping.

Cumulative Impacts – 19 comments, mostly similar to those from the RUS scoping. Commenters also mentioned potential cumulative impacts from highway construction projects.

1.4.3.4 Summary of Comments

The tables in Appendix C provide more detail on comments RUS received during scoping and comments that were made on the MN DEIS. RUS has endeavored to ensure that all comments are addressed, including those on the MN DEIS to the extent they are relevant to this RUS Draft EIS. Comments from the MN scoping process are not included in the tables, as RUS assumes these were addressed in the MN DEIS. The tables are organized under the same headings used in the Scoping Report in Appendix

B, which are the same categories outlined above for RUS scoping and the MN DEIS comments.

Comments are summarized in Appendix C. Comments from federal, state, and tribal officials are summarized in Table C-1, other agency comments are summarized in Table C-2, and other public comments are summarized in Table C-3. Each table has a response and/or refers the reader to the section of the Draft EIS where the comment is addressed.

1.5 ISSUES ASSOCIATED WITH THE PROPOSED ACTION

1.5.1 Key Issues

A key issue overall is the Mississippi River crossing at the Upper Mississippi River National Wildlife and Fish Refuge, and the potential impacts to Refuge resources associated with the crossing. While there is an existing transmission line crossing at the location of the proposed crossing, there is potential for impact because of the larger line and additional conductors.

Impacts to agriculture and impacts to residences near the Proposal are also key issues.

Minnesota. In the northern part of the Proposal area, use of the existing US 52 corridor, the Applicant's preferred route and the route that appears to best comply with Minnesota siting criteria, will require substantial coordination with the Minnesota Department of Transportation. The potential for impacts to the Zumbrota River is another key issue. Three alternative crossings are considered, only one of which is in an existing infrastructure corridor. Near the Mississippi River, the potential natural resource impacts to the McCarthy Lake Wildlife Area Management Area and other nearby resources are key.

Wisconsin. Key issues are related to the trade-offs between the longer and costlier routes with greater impacts to agriculture and homes versus the potential impacts to the Great River Road and the Black River Bottoms, including forested wetland impacts and potential impacts to important species.

1.5.2 Other Issues Considered

Other issues identified during the scoping process are summarized in Section 1.4.3.

1.6 CONNECTED ACTIONS

The CEQ regulations define the scope of an EIS as “the range of actions, alternatives, and impacts to be considered in an EIS.”⁷¹ One type of action that agencies must consider in determining the scope of an EIS is the “connected action.” Connected actions are those that “are closely related and therefore should be discussed in the same impact statement.”⁷²

The Proposal incorporates all actions connected with the operation of the Proposal, including the substations that will allow connection to the rest of the transmission system, and activities associated with construction of the Proposal.

According to the CEQ regulations, actions are connected if they:

- i. Automatically trigger other actions which may require environmental impact statements.
- ii. Cannot or will not proceed unless other actions are taken previously or simultaneously.
- iii. Are interdependent parts of a larger action and depend on the larger action for their justification.⁷³

The Proposal will not automatically trigger other actions which may require their own environmental impact statements.

Other actions upon which the Proposal depends on are incorporated into the Proposal. The Proposal will make use of the Hampton substation, which was approved as part of another project, and is currently under construction. The substation is expected to be completed before the NEPA process for the Proposal is complete.

The Proposal is not an interdependent part of any larger action, and does not depend on any larger action for its justification.

The Proposal is part of the CapX 2020 transmission expansion initiative plan to meet the regional transmission needs. In the Minnesota process the PUC directed the applicants for the CON to include all four priority CapX projects (Group 1) in one submittal (PUC 2009, p. 2). This was done for the purpose of administrative simplicity,

⁷¹ 40 CFR 1508.25

⁷² 40 CFR 1508.25(a)1

⁷³ 40 CFR 1508.25(a)1

not because the projects were interdependent (PUC 2009, p. 2). In its analysis of the projects, the PUC evaluated each independently and issued a CON for each project (PUC 2009).

Appropriate and efficient transmission planning, like transportation planning, occurs within the context of the existing system and other regional proposals. Similar to a highway project that has independent utility and also provides benefit to the overall system, the Proposal would have independent utility and also provide benefits to the region and to the overall Midwest ISO transmission system. However, each of the CapX projects was identified to address local needs, independent of the overall plan. The specific needs for the Proposal are discussed in Section 1.1.2.

Similarly, Dairyland plans to rebuild other parts of the Q1 system that are outside the Proposal area and are not included in this EIS. That part of the Q1 system included in this EIS (Alma to North La Crosse) has an independent need and does not require or trigger rebuild of the other parts of the system. Accordingly, if the Alma to North La Crosse section of the Q1 were to be built separately from the Proposal, it would not be considered a connected action.