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September 14, 2011

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ELECTRONIC FILING

Hon. Kathleen Sheehy
Administrative Law Judge
Office of Administrative Hearings
PO Box 64620
St. Paul, MN 55164-0620

Re: ***In the Matter of the Route Permit Application for the CapX2020 Hampton-Rochester-La Crosse 345 kV Transmission Line***
MPUC Docket No. E-002/TL-09-1448
OAH Docket No. 3-2500-21181-2

Dear Judge Sheehy:

Applicant Northern States Power Company, a Minnesota corporation, submits for electronic filing Applicant's Post-Hearing Brief in the above-captioned matter.

Please call me with any questions.

Sincerely,

/s/ Lisa M. Agrimonti

Lisa M. Agrimonti

LMA/jy
Enclosures

cc: Service List

MPUC Docket No. E-002/TL-09-1448
OAH Docket No. 3-2500-21181-2

STATE OF MINNESOTA
OFFICE OF ADMINISTRATIVE HEARINGS
FOR THE PUBLIC UTILITIES COMMISSION

In the Matter of the Route Permit Application for the CapX2020 Hampton – Rochester – La Crosse 345 kV Transmission Line

APPLICANT'S POST-HEARING BRIEF

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I. INTRODUCTION

Several years ago, Northern States Power Company, a Minnesota corporation ("Xcel Energy" or "Applicant"), and its other CapX2020 utility partners, embarked upon a course to construct the first major upgrade of Minnesota's high voltage transmission system in more than 40 years. This route permit proceeding for the Hampton to Rochester to La Crosse 345 kilovolt ("kV") Transmission Project ("Hampton – Rochester – La Crosse Project" or "Project") is the fourth of the four 345 kV route permit proceedings required for this historic transmission initiative.

Through the contested case process, the record has been fully developed to enable the Administrative Law Judge ("ALJ") and the Minnesota Public Utilities Commission ("Commission") to assess the effects of the Project on human settlement, land based economies, archaeological and historic sites, rare and unique resources, and the environment and to determine the appropriate route for the Project.

Xcel Energy respectfully submits this Post-Hearing Brief ("Brief") to the ALJ for the Hampton – Rochester – La Crosse Project. This Brief details Applicant's proposal, the applicable law, and the record and shows that Applicant has satisfied all requirements for a Route Permit for the Project. Applicant respectfully requests that the ALJ conclude that the Modified Preferred Route for the 345 kV transmission line with a Zumbro River crossing at White Bridge Road, the preferred North Rochester Substation site, and the Preferred Route for the 161 kV transmission line fully satisfy

the routing criteria and factors identified under Minnesota Rule 7850.4100 and Minnesota Statutes Section 216E.03, subdivision 7, and recommend that the Commission issue a Route Permit for these routes to Xcel Energy on behalf of itself and on behalf of the anticipated co-owners of the Project (Dairyland Power Cooperative ("Dairyland"), Southern Minnesota Municipal Power Agency, Rochester Public Utilities, and WPPI Energy).

Applicant further requests that the ALJ recommend a route width of up to 1,000 feet for the authorized routes and, in certain locations along US Highway 52 ("US-52"), a route width of up to 1.25 miles to address site-specific concerns and to allow Applicant to work with other agencies and landowners to refine the alignment of the facilities.[1]

II. SUMMARY OF ANALYSIS

A. 345 kV Transmission Line Routes

The Project consists of 345 kV transmission line facilities and substation connections between the Hampton Substation and a new substation in the La Crosse, Wisconsin area, as well as a 161 kV transmission line between the proposed North Rochester Substation and the existing Northern Hills Substation.[2] In the Route Permit Application, Applicant proposed two routes for the 345 kV transmission line

[1] Applicant will further narrow this route width after issuance of the ALJ Report and Recommendation. Evid. Hearing Vol. 1 at 147-48 (Hillstrom).

[2] Ex. 1 at 1-1 (Application); Ex. 2 at 5 (Hillstrom Direct).

between the Hampton Substation near Hampton, Minnesota, and the Mississippi River crossing at Kellogg, Minnesota: the Preferred 345 kV Route and the Alternate 345 kV Route.[3] The Preferred 345 kV Route was modified slightly based on comments received during the Environmental Impact Statement ("EIS") scoping process and is identified as the Modified Preferred 345 kV Route.[4]

Hampton Substation to North Rochester Substation

The Modified Preferred 345 kV Route is divided into two geographic sections: (1) the Hampton Substation to the North Rochester Substation section and (2) the North Rochester to Mississippi River section.[5] In the Hampton to North Rochester section, the Modified Preferred 345 kV Route follows US-52, a high volume highway that the Minnesota Department of Transportation ("Mn/DOT") plans to convert to a freeway in the future.[6] In addition, an existing 69 kV transmission line is located next to US-52 between Canon Falls and Zumbrota and much of the new 345 kV line will be co-located with this existing 69 kV line.[7] The Alternate 345 kV Route follows field divisions and property boundaries through agricultural land west of US-52.[8]

[3] Ex. 1 at 4-13 (Application); Ex. 2 at 8 (Hillstrom Direct).

[4] Ex. 2 at 11 (Hillstrom Direct).

[5] Ex. 2 at 8 (Hillstrom Direct).

[6] Ex. 2 at 9 (Hillstrom Direct).

[7] Ex. 1 at 5-15 (Application).

[8] Ex. 1 at 6-5 (Application); Ex. 2 at 9 (Hillstrom Direct).

The record supports the selection of the Modified Preferred 345 kV Route as the most appropriate route for this section. Selection of the Modified Preferred 345 kV Route is supported by the route's greater percentage of corridor sharing (96 percent versus 78 percent), including the use of a major transportation corridor and the co-location with an existing transmission line for the majority of the route's length and its shorter length compared to the Alternate 345 kV Route (36 miles versus 47 miles).[9] Additionally, the estimated cost of the Modified Preferred 345 kV Route is approximately $13 million less than the estimated cost of the Alternate 345 kV Route.[10]

North Rochester to Mississippi River

In the North Rochester to Mississippi River section, both routes head east from the North Rochester Substation Siting area and branch off into three potential Zumbro River crossings.[11] The northern alternative for the Zumbro River crossing along the Alternate 345 kV Route does not cross the river at an existing infrastructure corridor ("North Crossing").[12] The central crossing crosses the Zumbro River at the Zumbro Dam ("Zumbro Dam Crossing") and the southern alternative along the

[9] Ex. 1 at 7-71 (Application).

[10] Ex. 1 at 2-7 (Application).

[11] Ex. 2 at 9 (Hillstrom Direct).

[12] Ex. 2 at 9 (Hillstrom Direct). While the North Crossing is part of the Alternate 345 kV Route east of the Zumbro River, it can be combined at a common point east of the Zumbro River with the Modified Preferred 345 kV Route.

Modified Preferred Route crosses the Zumbro River at the County Road 12 bridge over the Zumbro River ("White Bridge Road Crossing").[13]

The Zumbro River crossing is the most contested portion of the 345 kV route. Two parties, Oronoco Township ("Oronoco") and the North Route Group, intervened in the proceeding to present evidence on this issue and each advocated for the crossing opposed by the other. Oronoco advocated for the North Crossing and opposed the White Bridge Road Crossing. Oronoco contended that the White Bridge Road Crossing would impact a greater number of current and future residents and would hamper future development in this area.[14] The North Route Group, made up of landowners along the Alternate 345 kV Route, opposed the North Crossing of the Zumbro River located approximately 2.2 miles north of the Zumbro Dam in Wabasha County.[15] The North Route Group argued that North Crossing would require creation of a new corridor across the Zumbro River and would result in greater forestry impacts.[16] No party advocated for or against the Zumbro Dam Crossing.

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[13] Ex. 2 at 9 (Hillstrom Direct). During the hearing, Oronoco Township proposed another route that also combined the Alternate 345 kV Route (east of the Zumbro River) and the Modified Preferred 345 kV Route (west of the Zumbro River). *See* Ex. 89 (map of Oronoco Preferred Route). However, this route also included a new route segment that was not included in the scoping decision for the EIS. This route alternative is not under consideration in this proceeding. Evid. Hearing Vol. 2 at 162-63.

[14] Ex. 68 at 7-9 (Broberg Direct).

[15] *See* Ex. 39 (Rohlfing and Hackman Direct).

[16] Ex. 39 at 6 (Rofling and Hackman Direct).

While the three Zumbro River crossings have relatively similar environmental impacts, Applicant's analysis of the routing criteria favors selection of the White Bridge Road Crossing. The White Bridge Road Crossing requires less tree clearing and avoids a forested area of high biodiversity significance near the Zumbro Dam.[17] The White Bridge Road Crossing also uses an existing infrastructure crossing.[18] In addition, the Modified Preferred 345 kV Route crosses less than a mile of area identified as "Potential Suburban" for future residential development near the White Bridge Road Crossing.[19]

East of the Zumbro River, the three river crossing options merge into two potential routes through relatively flat agricultural land.[20] In this area, the Modified Preferred 354 kV Route avoids impacts to farmland by following a greater percentage of property boundaries than the Alternate 345 kV Route (40 percent versus 29 percent).[21]

Northeast of Plainview, the Modified Preferred 345 kV Route and the Alternate 345 kV Route share a common segment following an existing transmission line, Dairyland's Q-3 161 kV line, through the rugged wooded terrain of blufflands west of the Mississippi River and several state and federal lands including the Snake

[17] Ex. 1 at 5-18 (Application).

[18] Ex. 1 at 5-18 (Application).

[19] *See* Ex. 66 at Exhibit 10 (Smith Direct); Ex. 68 at Exhibit 8 (Broberg Direct).

[20] Ex. 2 at 10 (Hillstrom Direct).

[21] Ex. 2 at 10 (Hillstrom Direct); Ex. 19 at 1 (Schedule 16A to Hillstrom Rebuttal).

Creek Management Unit, McCarthy Lake Wildlife Management Area ("McCarthy Lake WMA"), and the Richard J. Doer Memorial Hardwood State Forest ("RJD State Forest").[22] The Modified Preferred 345 kV Route and the Alternate 345 kV Route follow the Q-3 line for 11 miles and 9 miles, respectively.[23]

At the east end of the segment, there are two route options that deviate from the existing Q-3 transmission line to avoid impacts to the McCarthy Lake WMA, the McCarthy Lake Route Option and the Highway 42 Route Option.

The McCarthy Lake Route Option is located between US-61 and the Mississippi River around the McCarthy Lake WMA.[24] The Modified Preferred 345 kV Route which uses the existing Q-3 right-of-way through the WMA is a shorter and more direct route than the McCarthy Lake Route Option.[25] The McCarthy Lake Route Option is 1.8 miles longer than the Modified Preferred 345 kV Route and requires additional angle structures resulting in greater costs compared to the Modified Preferred 345 kV Route ($10 million versus $5 million).[26] The McCarthy Lake Route Option would have greater impacts on agricultural land, as it would permanently impact approximately 0.3 acres more cropland than the Modified Preferred 345 kV Route and would temporarily impact approximately nine acres more

[22] Ex. 1 at 5-4 and 5-20 (Application).

[23] Ex. 1 at 5-20 (Application).

[24] Ex. 1 at 8-60 (Application).

[25] Ex. 1 at 8-60 (Application).

[26] Ex. 1 at 8-60 and 8-70 (Application).

cropland than the Modified Preferred 345 kV Route.[27] Based on these criteria, Applicant does not support selection of the McCarthy Lake Route Option.

The Highway 42 Route Option also avoids impacts to McCarthy Lake WMA and the Snake Creek Management Unit and would require less tree clearing compared to the Modified Preferred 345 kV Route.[28] The Highway 42 Route Option further provides additional flexibility for system development in the future as detailed by Grant Stevenson in his direct testimony:[29]

> At such time deployment of a second 345 kV circuit is warranted, the Q3 line would need to be routed to a new 345/161 kV substation located in the Plainview area to maintain community service reliability. In addition, a new 345/161 kV substation may be required near Alma to maintain outlet capability of Dairyland Power Cooperative's generating plant. In contrast, these facilities would not be required to add a second 345 kV circuit if the Project were constructed along the Highway 42 Route. The difference in costs for construction and adding a second 345 kV circuit are shown in the table below.

Costs, 2009 Dollars (millions)			
Route Alternative	**Initial Construction**	**2nd 345 kV Circuit**	**Total**
Hwy 42 Route	$20.7	$2	$22.8
Q3 Route	$18.7	$16 to $31.3	$34.7 to $50

[27] Ex. 1 at 8-63 (Application).

[28] Ex. 2 at 14-15 (Hillstrom Direct).

[29] Ex. 26 at 10-11 (Stevenson Direct).

In addition, the Minnesota Department of Natural Resources ("MnDNR") in its comments on the Draft Environmental Impact Statement ("DEIS") has stated that it "encourages" utilization of the Highway 42 Route Option.[30] For these reasons, and the relatively low numbers of homes along the Highway 42 Route Option,[31] Applicant views both the Highway 42 Route Option and the Modified Preferred 345 kV Route as reasonable alternatives.[32]

Both the Modified Preferred and Alternate 345 kV Routes follow the Q-3 line corridor to the proposed Mississippi River crossing at Kellogg, Minnesota/Alma, Wisconsin ("Alma Crossing").[33] The Alma Crossing of the Mississippi River was selected because it utilizes an existing transmission corridor and the Alma Crossing and the associated routes minimize the length of transmission line traversing Mississippi River floodplain, Upper Mississippi River Wildlife and Fish Refuge ("Refuge") property, and open water/wetlands.[34] In addition, US Fish and Wildlife

[30] Ex. 21 at 3 (Schedule 18 to Hillstrom Rebuttal).

[31] There are 16 homes located between 0-300 feet of the Highway 42 Route Option compared to 3 homes located between 0-300 feet of the comparable segment of the Modified Preferred 345 kV Route. Ex. 2 at 14 (Hillstrom Direct).

[32] If the Highway 42 Route Option were selected, the Applicant would request additional route width at the north end of the route near Kellogg, Minnesota. Additional route width would be required here to accommodate steep wooded slopes. At the widest point, the Applicant is requesting a route width of 1,400 feet. Ex. 2 at 16 (Hillstrom Direct); Ex. 6 (Schedule 4 to Hillstrom Direct).

[33] Ex. 1 at 5-4 (Application).

[34] Ex. 1 at 5-1 (Application).

Service ("USFWS") has expressed a preference for this crossing.[35] The Alma Crossing also has the widest existing permitted right-of-way through the Mississippi Refuge, providing flexibility to work with state and federal agencies to identify structures that will minimize bird and aesthetic impacts while meeting engineering requirements.[36] An existing 161/69 kV double-circuit transmission line crosses the Mississippi River and Refuge at the Project's proposed crossing location.[37] The proposed triple-circuit specialty structures will be constructed to carry two 345 kV circuits and a 161 kV circuit but will be operated at 345/161/69 kV.[38] Applicant and USFWS have evaluated five possible design option for the proposed river crossing that will offer trade-offs between structure height, easement width, and the number of planes of conductors while maintaining only three structures on Refuge land.[39] The Applicant and agencies have arrived at an informal and general consensus that the preferable configuration is one that minimizes structure height and consolidates crossing wires in the fewest number of horizontal planes.[40] Applicant will continue to work closely with these agencies and the Department of Commerce, Energy Facility

[35] Ex. 1 at 5-1 (Application); Ex. 73 (USFWS Feb. 19, 2008 Letter to Applicant).

[36] Ex. 1 at 5-1 (Application); Ex. 2 at 21 (Hillstrom Direct).

[37] Ex. 2 at 21 (Hillstrom Direct).

[38] Ex. 26 at 7 (Stevenson Direct).

[39] Ex. 2 at 21-22 (Hillstrom Direct); Ex. 26 at 7-8 (Stevenson Direct).

[40] Ex. 2 at 22 (Hillstrom Direct).

Permitting ("EFP") staff to identify the most appropriate structure design for the Alma Crossing.

The evidence demonstrates that the Modified Preferred 345 kV Route for the North Rochester to Mississippi River section of the Project best satisfies the applicable routing criteria. This route follows a greater length of transmission lines, property lines, and roads when compared with the Alternate 345 kV Route (84 percent versus 55 percent).[41] The Modified Preferred 345 kV Route follows an existing 69 kV transmission line for approximately 3.5 miles near Plainview, and the existing Q-3 line for 11 miles to the Alma Crossing.[42] Where the Modified Preferred 345 kV Route does not follow an existing infrastructure corridor, it follows a higher percentage of property boundaries (40 percent versus 29 percent) and has less impact to forested land than the Alternate 345 kV Route (11 percent versus 16 percent).[43] The Alternate 345 kV Route follows fewer property lines, resulting in more impacts to open agricultural fields.[44] The Alternate 345 kV Route also crosses a higher number of forested ravines that offer wildlife habitat than the Modified Preferred 345 kV Route.[45]

[41] Ex. 19 at 1 (Schedule 16A to Hillstrom Rebuttal).

[42] Ex. 1 at 5-20 (Application).

[43] Ex. 19 at 1-2 (Schedule 16A to Hillstrom Rebuttal).

[44] Ex. 19 at 1 (Schedule 16A to Hillstrom Rebuttal).

[45] Ex. 1 at 5-21 (Application).

B. US-52 Considerations

The Modified Preferred 345 kV Route follows US-52 between the Hampton Substation and North Rochester Substation.[46] Along US-52, there are several areas where Applicant is continuing to work with local, state, and federal agencies to determine the most appropriate alignment for the 345 kV line along this highway.

The Modified Preferred 345 kV Route from the Hampton Substation to the North Rochester Substation follows US-52, a state trunk highway, for approximately 27 miles.[47] Pursuant to Minnesota Statute, utility facilities may be constructed, placed, or maintained across or along any State trunk highway in accordance with reasonable rules prescribed by Mn/DOT.[48] Xcel Energy will need to obtain Utility Permits from Mn/DOT to occupy state trunk highway right-of-way, for crossings, and potentially for longitudinal installations.[49]

During this proceeding, Mn/DOT provided information regarding the future plans for US-52 and its permitting requirements.[50] It is Applicant's understanding that Mn/DOT's future plan for US-52 is to make the highway a full control access highway.[51] Mn/DOT has stated that this upgrade would result in construction of new

[46] Ex. 1 at 7-27 (Application); Ex. 2 at 25-26 (Hillstrom Direct).

[47] Ex. 1 at 7-27 (Application); Ex. 2 at 25-26 (Hillstrom Direct).

[48] Minn. Stat. § 222.37, subd. 1; Minn. Stat. § 161.45, subd. 1.

[49] Minn. R. 8810.330, Subp. 1.

[50] Ex. 106 (Mn/DOT's May 20, 2010 Letter to Matt Langan).

[51] Ex. 2 at 26 (Hillstrom Direct); Ex. 106 at 11 (Mn/DOT's May 20, 2010 Letter to Matt Langan).

interchanges along US-52 and the construction of frontage roads alongside US-52.[52] It would also prohibit use of highway right-of-way for maintenance access.[53]

For two future interchanges along US-52 (US-52 and County Road 47 and US-52 and County Road 24), Xcel Energy designed alignments for the 345 kV line that avoid occupation of the highway right-of-way.[54] These two interchanges are funded and planned to be constructed by Mn/DOT within the next ten years.[55] Mn/DOT also indicated that there are several other areas along US-52 where interchanges may be built in the future.[56] These areas are: the Progressive Rail crossing north of Canon Falls, the intersection of County Road 1 or County Road 9, and the intersection of County Road 50 and County Road 7.[57] Mn/DOT has indicated that these potential projects do not have identified funding, timelines, or plans.[58] Based on the uncertainty of when or whether these projects would be built and the lack of clearly defined plans, Xcel Energy has not proposed alignment modifications for these

[52] Ex. 106 at 11-12 (Mn/DOT's May 20, 2010 letter to Matt Langan)

[53] Ex. 2 at 26 (Hillstrom Direct).

[54] Ex. 15 at 8 (Hillstrom Rebuttal).

[55] Ex. 15 at 8 (Hillstrom Rebuttal). The Elk Run interchange near Pine Island is also expected to be constructed within the next ten years but the Preferred 161 kV Route does not go through this proposed interchange area. Ex. 15 at 8 (Hillstrom Rebuttal).

[56] Ex. 15 at 8 (Hillstrom Rebuttal).

[57] Ex. 15 at 8 (Hillstrom Rebuttal).

[58] Ex. 15 at 8 (Hillstrom Rebuttal).

potential future interchanges.[59] However, Mn/DOT is continuing to update plans and it is expected that alignment adjustments may be appropriate as interchange plans become more definite. Xcel Energy requests the flexibility to continue to coordinate with Mn/DOT in these areas.

In addition, Mn/DOT stated in its comments on the scope of the EIS that it will apply "freeway standards" to US-52 when evaluating Xcel Energy's Utility Permit Application.[60] This means that Mn/DOT will require that there be no permanent overhang of the transmission facilities, unless an exception is approved by Mn/DOT and the Federal Highway Administration ("FHWA").[61] Based on this advisement by Mn/DOT, Xcel Energy examined an alignment 25-feet from road right-of-way where no permanent overhang of Mn/DOT right-of-way would be required.[62] This alignment analysis was conservative given that a setback of less than 25 feet in some

[59] Ex. 15 at 8-9 (Hillstrom Rebuttal).

[60] Ex. 106 at 11 (Mn/DOT's May 20, 2010 Letter to Matt Langan).

[61] Evid. Hearing Vol. 3 at 215 (Seykora); Ex. 15 at 9 (Hillstrom Rebuttal).

[62] Ex. 36 (Mapbook of 25-foot Alignment Along US-52). In developing this 25-foot alignment, Xcel Energy found one area, the interchange of US-52 and Highway 19, where a 25-foot setback from US-52 would not be possible without removing an existing home. Applicant, therefore, requested that a wider route width for this area be approved as shown on Sheetmap 9 of Ex. 36.

instances would provide for no permanent overhang because the pole arms of the CapX2020 345 kV design poles would extend a maximum of 18 feet from the pole.[63]

As detailed in Exhibit 36, there are four areas where there is not sufficient space between the highway right-of-way and existing land uses to accommodate a 25-foot setback.[64] As a result, alternative alignments have been identified. Three areas where the 25-foot setback analysis result in a more significant alignment adjustment are at the Farmland Natural Areas Program ("FNAP") easements (Sheetmap 6), County Road 19 (Sheetmap 9), and County Road 24 (Sheetmap 10). The fourth area, on Sheetmap 19 requires a crossing of the road and back within the original route.

FNAP easements are conservation easements granted in favor of Dakota County, the U.S. Department of Agriculture, and the Natural Resource Conservation Service and generally prohibit the placement of transmission lines with the easement area.[65] In the FNAP easement areas, Xcel Energy has requested a route width of 1.25 miles. The easements are located north of Canon Falls on both sides of US-52 for approximately 1 mile.[66] Xcel Energy proposed alternate alignment options in this location. First, if an agreement could be reached between Applicant, Dakota County,

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[63] *In the Matter of the Application for a Route Permit for the Fargo to St. Cloud 345 kV Transmission Line Project*, Docket No. ET-2, E002/TL-09-1056, EXHIBIT 44 AT ATTACHMENT 2 (Letter to ALJ Heydinger Attaching CapX2020 Double Circuit Structure Design).

[64] Ex. 36 at Sheetmaps 6, 9, 10 and 19 (Mapbook of 25-foot Alignment Along US-52).

[65] Ex. 2 at 16 (Hillstrom Direct); Ex. 74 (FNAP Easement for Regenscheid Property).

[66] Ex. 2 at 15 (Hillstrom Direct).

the U.S. Department of Agriculture, the Natural Resource Conservation Service, and the affected landowners the 345 kV line could be located close to US-52 within the FNAP easement area.[67] The other alignment option is to place the line away from US-52 in agricultural fields at the outer edge of the FNAP easements.[68] This second alternative is the only alternative that is presently constructible because no agreement has been reached with the agencies.

At the Highway 19 and US-52 interchange, a 25-foot setback from highway right-of-way is not possible within the route width proposed in the Application without removing an existing home. As a result, Applicant requested that a wider route width be approved for this area.[69] To ensure that potentially affected landowner had the opportunity to participate in the proceeding, Applicant called and mailed written notices of the hearing to the 13 landowners adjacent to the new alignment.[70] At Highway 19, Xcel Energy is also further analyzing whether an alignment closer

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[67] Ex. 2 at 17 (Hillstrom Direct); After the close of the record, Dakota County advised the Applicant that no physical occupation of the FNAP easement areas will be allowed. Applicant also examined placing the structures in the eight feet of space between the edge of road right-of-way and the FNAP easement. This eight feet, while large enough to accommodate a transmission structure base, would require permanent overhang of the conductors on road right-of-way which Mn/DOT has stated that it will not allow without an exception to its Utility Accommodation Policy. Evid. Hearing Vol. 3 at 17 (Stevenson).

[68] Ex. 2 at 17 (Hillstrom Direct).

[69] Ex. 36 at Sheetmap 9 (Mapbook of 25-foot Alignment Along US-52).

[70] Ex. 36 at 1 (Mapbook of 25-foot Alignment Along US-52); Ex. 72 (Affidavit of Mailing for Landowners near US-52 and Highway 19); Ex. 96 (Chart of Landowner Notification).

than 25 feet might be feasible. In this area, Applicant requests the flexibility to construct the line along either the 25-foot offset segment alternative or within the original route and continue to work with Mn/DOT on the specific alignment in this area.[71]

South of County Road 24 Boulevard, the original alignment was next to US-52 on the east side of the frontage road. However, the Mn/DOT highway permitting requirement cannot be met in this location.[72] As a result, Xcel Energy identified an alignment on the planned backage road, this alignment is within the original proposed route.[73] Xcel Energy requests approval of the route along the backage road.

Mn/DOT has not stated which of the alignments along US-52 it prefers nor which alignment it will permit for this Project. Applicant has continued to meet with Mn/DOT and anticipates ongoing discussions regarding potential future exchanges and how to best identify a permanent location for the transmission line as additional information becomes available. Applicant will also continue to work with Mn/DOT and EFP staff to determine the most appropriate and permittable alignment along US-52.

[71] Evid. Hearing Vol. 3 at 72-74 (Hillstrom).

[72] Ex. 36 at Sheetmap 10 (Mapbook of 25-foot Alignment Along US-52).

[73] Ex. 36 at Sheetmap 10 (Mapbook of 25-foot Alignment Along US-52).

C. 161 kV Transmission Line Routes

Two routes are under consideration for the 161 kV line between the new North Rochester Substation and the Northern Hills Substation: Preferred 161 kV Route and Alternate 161 kV Route.[74] The Preferred 161 kV Route is preferred because it follows existing infrastructure corridors (transmission lines or roads) for a greater percentage of its length when compared to the Alternate 161 kV Route.[75] Ninety-nine percent of the Preferred 161 kV Route follows existing transmission lines (3 percent), roads (86 percent), or property lines (10 percent).[76] In comparison, eighty-nine percent of the Alternate 161 kV Route follows existing transmission lines (32 percent), roads (45 percent), or property lines (12 percent).[77] The Preferred 161 kV Route also is shorter than the Alternate 161 kV Route.[78] Generally, a shorter route causes fewer impacts to land use and resources and would result in lower overall Project costs.[79]

No party advocated for any other route for the 161 kV transmission line.

[74] Ex. 2 at 17 (Hillstrom Direct).

[75] Ex. 2 at 18 (Hillstrom Direct).

[76] Ex. 8 at 2 (Schedule 6 to Hillstrom Direct).

[77] Ex. 8 at 2 (Schedule 6 to Hillstrom Direct).

[78] Ex. 8 at 2 (Schedule 6 to Hillstrom Direct).

[79] Ex. 1 at 5-24 (Application).

III. PROJECT SUMMARY

A. Hampton – Rochester – La Crosse Project Overview

The Project consists of a 345 kV transmission facilities and substation connections between the Hampton Substation and a new substation in the La Crosse, Wisconsin area and a 161 kV transmission line between the proposed North Rochester Substation and the existing Northern Hills Substation.[80] The Minnesota portion of the Project consists of the following:

- A 345 kV double-circuit capable transmission line from the proposed Hampton Substation near Hampton, Minnesota, to a proposed North Rochester Substation to be located between Zumbrota and Pine Island, Minnesota;
- A new double-circuit capable 345 kV transmission line from the proposed North Rochester Substation to the proposed Mississippi River crossing near Alma, Wisconsin;
- A new 161 kV transmission line between the proposed North Rochester Substation and the existing Northern Hills Substation, located in northwest Rochester, Minnesota; and

[80] Ex. 2 at 5 (Hillstrom Direct).

- Construction of the proposed North Rochester Substation and improvements to the Hampton and Northern Hills substations.[81]

The Wisconsin portion of the Project is subject to separate review and approval by the Public Service Commission of Wisconsin ("PSCW").[82]

B. 345 kV Routes

On January 15, 2010, Applicant submitted a Route Permit Application ("RPA" or "Application") identifying two routes for the new 345 kV line, the Preferred 345 kV Route and the Alternate 345 kV Route.[83] Both routes start at the Hampton Substation near Hampton, Minnesota and end at the Mississippi River crossing at Kellogg, Minnesota.

The 345 kV routes are analyzed in the Route Permit Application, the DEIS, and the Final Environmental Impact Statement ("FEIS") in two sections, corresponding to the geographic regions between the Project's substations. The two sections are: (1) Hampton to North Rochester 345 kV Section and (2) North Rochester to Mississippi River 345 kV Section.[84] This brief discusses the 345 kV routes in the same sections.

[81] Ex. 2 at 5-6 (Hillstrom Direct).

[82] Ex. 2 at 6 (Hillstrom Direct).

[83] Ex. 2 at 8 (Hillstrom Direct).

[84] Ex. 2 at 8 (Hillstrom Direct).

1. *Hampton to North Rochester 345 kV Section*

In the Hampton to North Rochester 345 kV Section, Applicant's Preferred 345 kV Route follows US-52, a high volume highway.[85] Applicant's Alternate 345 kV Route follows field divisions and property boundaries through agricultural land west of US-52.[86]

2. *North Rochester to Mississippi River 345 kV Section*

A new North Rochester Substation is proposed between Zumbrota and Pine Island. Within the 3.5-square mile siting area, Xcel Energy has identified a Preferred Siting Area to the south, and an Alternative Siting Area to the north.[87] In the North Rochester to Mississippi River 345 kV Section, Applicant's Preferred 345 kV Route starts at the North Rochester Substation Preferred Siting Area and the Alternate 345 kV Route starts at the Alternative Siting Area.[88] From the North Rochester Substation, both 345 kV routes head east and branch off into three potential Zumbro River crossings: the North Crossing, the Zumbro Dam Crossing and the White Bridge Road Crossing.[89]

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[85] Ex. 2 at 9 (Hillstrom Direct).

[86] Ex. 2 at 9 (Hillstrom Direct).

[87] Ex. 2 at 32 (Hillstrom Direct).

[88] Ex. 2 at 32 (Hillstrom Direct).

[89] Ex. 2 at 9 (Hillstrom Direct).

In the Application, Xcel Energy also analyzed a route option, McCarthy Lake Route Option, that would deviate from the existing transmission line route to avoid the McCarthy Lake WMA.[90]

3. *Modified Preferred Route*

Since submitting the Route Permit Application in January 2010, Xcel Energy has continued to assess route alternatives. Based on this on-going analysis and public input during the scoping process, Xcel Energy incorporated one segment consolidation and one route alternative into the Preferred 345 kV Route to develop the Modified Preferred 345 kV Route.[91]

The segment consolidation would shift the Preferred 345 kV Route approximately ½ mile to the north through a two mile segment east of US-52 near the North Rochester Substation siting area.[92] In general, this alternative consolidates the Preferred 345 kV Route and the 161 kV routes in one corridor heading east from US-52 for two miles along the south side of 500th Street.[93] At County Road 11, the Modified Preferred 345 kV Route continues as it turns south for one half mile.[94] This consolidation would place the 345 kV and 161 kV structures adjacent to each other along 500th Street and one half mile south on County Road 11.

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[90] Ex. 2 at 10 (Hillstrom Direct).

[91] Ex. 2 at 11 (Hillstrom Direct).

[92] Ex. 2 at 11 (Hillstrom Direct).

[93] Ex. 2 at 11 (Hillstrom Direct).

[94] Ex. 2 at 11 (Hillstrom Direct).

The route alternative incorporated into the Modified Preferred 345 kV Route is the route alternative referred to as 3P-002 in the DEIS. This route alternative is 1.75 miles in length and is located just east of the previous consolidation alternative.[95] Route Alternative 3P-002 follows half section lines as opposed to quarter section lines.[96]

4. *Highway 42 Route Option*

One route option that was evaluated by Applicant but not included in the Modified Preferred 345 kV Route is the Highway 42 Route Option. This route alternative was proposed to avoid impacts to the McCarthy Lake WMA by following State Highway 42 to a point south of Kellogg, Minnesota.[97] Applicant believes the Highway 42 Route Option is a viable route alternative that avoids the high quality natural resource areas of McCarthy Lake WMA and Snake Creek Management Unit and would require less tree clearing compared to the Modified Preferred 345 kV Route.[98]

C. 161 kV Routes

In the Route Permit Application, Xcel Energy also proposed two routes for the new 161 kV line, the Preferred 161 kV Route and the Alternate 161 kV Route. Both of the 161 kV routes start at the designated siting area for the new North Rochester

[95] Ex. 2 at 12 (Hillstrom Direct).

[96] Ex. 2 at 12 (Hillstrom Direct).

[97] Ex. 6 (Schedule 4 to Hillstrom Direct).

[98] Ex. 2 at 14-15 (Hillstrom Direct).

Substation between Zumbrota and Pine Island and end at the existing Northern Hills Substation in Rochester.[99] Within the larger Northern Hills Substation siting area, Xcel Energy has identified an Alternative Siting Area to the north and a Preferred Siting Area which is two miles to the south.[100] The Preferred 161 kV Route begins at the North Rochester Preferred Siting Area and the Alternate 161 kV Route begins at the Alternative Siting Area.[101]

D. Associated Facilities

This Project includes the construction of one new substation, North Rochester Substation, and modifications to one existing substation, Northern Hills Substation.[102] The Project also includes connections at the proposed Hampton Substation which were approved by the Commission as part of the Brookings County – Hampton 345 kV Transmission Project (Docket No. E002/TL-08-1474).[103]

1. *New North Rochester Substation*

The North Rochester Substation must accommodate interconnections with the 345 kV line and the 161 kV line that are part of this Project.[104] The North Rochester Substation must also accommodate interconnections with the existing Prairie Island –

[99] Ex. 2 at 17 (Hillstrom Direct).

[100] Ex. 2 at 17 (Hillstrom Direct).

[101] Ex. 2 at 17 (Hillstrom Direct).

[102] Ex. 2 at 31 (Hillstrom Direct).

[103] Ex. 2 at 31 (Hillstrom Direct).

[104] Ex. 2 at 32 (Hillstrom Direct); Ex. 14 (Schedule 12 to Hillstrom Direct).

Byron 345 kV transmission line.[105] To accommodate these interconnections, the new substation will include six 345 kV circuit breakers, a 345 kV/161 kV transformer, three 161 kV circuit breakers, a control house and associated line termination structures, switches, buswork, controls, and associated equipment.[106]

Applicant proposes to voluntarily acquire 40 acres for the North Rochester Substation to provide room for the initial build out of the substation as well as possible future expansion to accommodate additional line terminations.[107] If Applicant is unable to obtain 40 acres for the North Rochester Substation through voluntary purchase, a smaller parcel would be acquired.[108] The minimum size parcel necessary for the initial build-out of the North Rochester Substation is approximately 20 acres. A 20-acre site would be required to accommodate a fenced area of 490 feet by 700 feet and area for setbacks, drainage, ponding, and other uses necessary for safe operation of the substation.[109]

2. *Northern Hills Substation*

The Project will require an approximately 0.5-acre expansion of the graded and fenced area of the Northern Hills Substation to accommodate the new 161 kV

[105] Ex. 2 at 32 (Hillstrom Direct).

[106] Ex. 2 at 32 (Hillstrom Direct).

[107] Ex. 2 at 32 (Hillstrom Direct); Evid. Hearing Vol. 3 at 11 (Stevenson).

[108] Evid. Hearing Vol. 3 at 11 (Stevenson).

[109] Evid. Hearing Vol. 3 at 10 (Stevenson); Ex. 91 (North Rochester Substation Concept Design).

transmission line and related equipment.[110] No additional property will be required for this expansion.[111] Improvements would include expansion of the existing graded area by approximately 30 feet and the addition of 161 kV equipment, including one circuit breaker and associated line termination switches and controls.[112] Construction would include the associated line switches, foundations, steel structures, and control panels.[113]

3. *Hampton Substation*

To accommodate the connection of the 345 kV transmission line associated with this Project, equipment at the Hampton Substation will include one circuit breaker, two switches and associated bus and additional relaying in the control building.[114]

IV. APPLICATION OF RELEVANT CRITERIA

A. The Statutes and Rules

1. *Power Plant Siting Act*

The Power Plan Siting Act, at Minn. Stat. § 216E.03, subd. 7(b), identifies twelve factors to guide the Commission's route designations:

> (1) evaluation of research and investigations relating to the effects on land, water and air resources of large electric power generating plants

[110] Ex. 2 at 33 (Hillstrom Direct).

[111] Ex. 2 at 33 (Hillstrom Direct).

[112] Ex. 2 at 33 (Hillstrom Direct).

[113] Ex. 2 at 33 (Hillstrom Direct).

[114] Ex. 2 at 31 (Hillstrom Direct); Ex. 12 (Schedule 10 to Hillstrom Direct).

and high-voltage transmission lines and the effects of water and air discharges and electric and magnetic fields resulting from such facilities on public health and welfare, vegetation, animals, materials and aesthetic values, including baseline studies, predictive modeling, and evaluation of new or improved methods for minimizing adverse impacts of water and air discharges and other matters pertaining to the effects of power plants on the water and air environment;

(2) environmental evaluation of sites and routes proposed for future development and expansion and their relationship to the land, water, air and human resources of the state;

(3) evaluation of the effects of new electric power generation and transmission technologies and systems related to power plants designed to minimize adverse environmental effects;

(4) evaluation of the potential for beneficial uses of waste energy from proposed large electric power generating plants;[115]

(5) analysis of the direct and indirect economic impact of proposed sites and routes including, but not limited to, productive agricultural land lost or impaired;

(6) evaluation of adverse direct and indirect environmental effects that cannot be avoided should the proposed site and route be accepted;

(7) evaluation of alternatives to the applicant's proposed site or route proposed pursuant to subdivision 1 and 2;

(8) evaluation of potential routes that would use or parallel existing railroad and highway rights-of-way;

(9) evaluation of governmental survey lines and other natural division lines of agricultural land so as to minimize interference with agricultural operations;

(10) evaluation of future needs for additional high-voltage transmission lines in the same general area as any proposed route, and the advisability of ordering the construction of structures capable of

[115] Subfactor 4 is not applicable since Applicant is not proposing to site a large electric generating plant.

expansion in transmission capacity through multiple circuiting or design modifications;

(11) evaluation of irreversible and irretrievable commitments of resources should the proposed site or route be approved; and

(12) when appropriate, consideration of problems raised by other state and federal agencies and local entities.

For applications filed after April 30, 2010, Section 216E.16, subd. 7(e) further requires the Commissioner to consider existing highways and transmission line routes.[116]

2. *Minn. R. 7850.4100 Factors*

The Commission must also consider Minn. R. 7850.4000 and 7840.4100, which established criteria and factors mirroring the criteria and factors established by Minn. Stat. § 216E.03, subd. 7. The rule factors are as follows:

A. effects on human settlement, including, but not limited to, displacement, noise, aesthetics, cultural values, recreation, and public services;

B. effects on public health and safety;

C. effects on land-based economies, including, but not limited to, agriculture, forestry, tourism, and mining;

D. effects on archaeological and historic resources;

E. effects on the natural environment, including effects on air and water quality resources and flora and fauna;

F. effects on rare and unique natural resources;

[116] The Hampton – Rochester – La Crosse Project Route Permit Application was filed prior to this date. However, this factor has been analyzed below.

G. application of design options that maximize energy efficiencies, mitigate adverse environmental effects, and could accommodate expansion of transmission or generating capacity;

H. use or paralleling of existing rights-of-way, survey lines, natural division lines, and agricultural field boundaries;

I. use of existing large electric power generating plant sites;[117]

J. use of existing transportation, pipeline, and electrical transmission systems or rights-of-way;

K. electrical system reliability;

L. costs of constructing, operating, and maintaining the facility which are dependent on design and route;

M. adverse human and natural environmental effects which cannot be avoided; and

N. irreversible and irretrievable commitments of resources.

To be granted a Route Permit, an applicant must demonstrate that the criteria of both the statutes and the rules have been satisfied. In many respects the statutory criteria and the Commission rules are essentially the same. Three of the statutory factors listed in Minn. Stat. § 216E.03, subd. 7(b), however, are not directly reflected in the factors listed in Minn. R. 7850.4100. *Compare* Minn. Stat. §§ 216E.03, subd. 7(b)(7) (evaluation of route alternatives), (5) analysis of direct and indirect economic impacts), and (12) (consideration of issues raised by other agencies and local entities) with Minn. R. 7850.4100.

[117] This criterion is not applicable here since it applies solely to power plant siting.

B. Analysis of Routing Factors: 345 kV Transmission Line

The following discussion pertains to the 345 kV transmission line. Applicant will first compare the Modified Preferred 345 kV Route with the Alternate 345 kV Route based on an analysis of the routing factors contained in Minn. R. 7850.4100. This analysis will show that the record evidence demonstrates that the Modified Preferred Route for the 345 kV line satisfies the applicable statutory and regulatory routing criteria.

Within this routing factor analysis, Applicant will also provide numeric data related to potential environmental impacts associated with the three Zumbro River crossings under consideration (White Bridge Road, Zumbro Dam, and the North Crossing). To fairly evaluate the three Zumbro River crossings, Applicant compared the three crossings with the assumption that each of the three routes associated with the three Zumbro River Crossings converge east of the Zumbro River and continue on the Modified Preferred Route to the Mississippi River.[118] For instance, the North Crossing would follow the Alternate 345 kV Route until approximately 3.3 miles east of the Zumbro River, where the route alternative would then head south to meet up with the Modified Preferred 345 kV Route.[119] The Zumbro Dam Crossing deviates from the Modified Preferred 345 kV Route approximately 4 miles west of the

[118] The North Crossing is part of the Alternate 345 kV Route. Ex. 71 at Attachment 4/5-1 at 2 (Oronoco Township IR 4 and 5 to Applicant).

[119] Ex. 113 at 147 (FEIS).

Zumbro River and continues east for 3.2 miles after crossing the Zumbro River at the Zumbro Dam.[120] The Zumbro Dam Crossing then heads south for 1.75 miles and east for 1 to connect with the Modified Preferred 345 kV Route on the east side of the Zumbro River.[121] Following this numerical analysis, Applicant will then provide an additional analysis of the three Zumbro River Crossings based on certain contested routing criteria.

1. *Effects on Human Settlement*

Minnesota Rule 7850.4100(A) requires consideration of the proposed routes' effects on human settlement, including displacement of residences and businesses; noise created during construction and operation of the Project; and impacts to aesthetics, cultural values, recreation, and public services.

a. *Displacement*

The National Electric Safety Code ("NESC") and the Applicant's standards require certain clearances between transmission line structures and buildings for safe operation of the transmission line.[122] The Applicant would require a right-of-way for the proposed transmission line sufficient to maintain those clearances.[123] The right-of-way requirement for a 345 kV transmission line is 150 feet, or 75 feet on either side

[120] Ex. 1 at 6-8 (Application).

[121] Ex. 1 at 6-8 (Application).

[122] Ex. 1 at 7-7 and 8-8 (Application).

[123] Ex. 1 at 7-7 and 8-8 (Application).

of the route centerline.[124] A displacement is defined by Applicant as any occupied structure located within 75 feet of the route centerline.[125] No displacement is anticipated if the Project is constructed along the Modified Preferred 345 kV Route.

The following table estimates the number of residences located within 500 feet of the Modified Preferred 345 kV Route and the Alternate 345 kV Route alignments broken down by route segment.

Route	Number of Residences 0-75 Feet from Route Centerline	Number of Residences 76-150 Feet from Route Centerline	Number of Residences 151-300 Feet from Route Centerline	Number of Residences 301-500 Feet from Route Centerline	Number of Residences 0-300 Feet from Route Centerline	Number of Residences 0-500 Feet from Route Centerline
Route End-to-End[126] (Hampton to North Rochester)						
Modified Preferred Route	1	12	23	95	36	131
Alternate Route	4	7	29	37	40	77
Route End-to-End[127] (North Rochester to Mississippi River)						
Modified Preferred Route	0	1	5	20	6	26
Alternate Route	0	0	4	16	4	20
Route Segment[128]						
White Bridge Road (Modified Preferred Route)	0	1	5	20	6	26
Zumbro Dam to Modified Preferred Route	0	2	7	15	9	24
North Crossing to Modified Preferred Route	0	0	5	16	5	21

[124] Ex. 1 at 7-7 and 8-8 (Application).

[125] Ex. 1 at 7-7 and 8-8 (Application).

[126] Ex. 113 at 86 (FEIS).

[127] Ex. 113 at 164 (FEIS).

[128] Ex. 113 at 164 (FEIS).

As shown in the table above, the Modified Preferred 345 kV Route has more homes located within 500 feet of its alignment compared to the Alternate 345 kV Route. One reason for this difference is that, as shown below, the Modified Preferred 345 kV Route follows roads for a greater percentage compared to the Alternate 345 kV Route. Where routes follow roads, the alignment generally follows close to the road right-of-way.[129] Route alignments that follow property boundaries tend to have jogs and angles to avoid nearby homes.[130] In an effort to comply with Minnesota's preference for corridor sharing, many routes follow roads.[131] Residences are primarily located along roads, therefore, more residences are likely to be impacted by these routes.[132] All of the potential route options between North Rochester and the Mississippi River have relatively low house numbers with approximately 20 to 30 homes within 500 feet for this approximately 45-mile segment.

b. *Noise*

The Minnesota Pollution Control Agency ("MPCA") has established standards for the regulation of daytime and nighttime noise levels for areas of residential, commercial, and industrial land use.[133] The primary noise-sensitive receptors in the

[129] Ex. 1 at 7-8 (Application).

[130] Ex. 1 at 7-8 and 8-8 (Application).

[131] Ex. 1 at 7-8 and 8-8 (Application).

[132] Ex. 1 at 7-8 and 8-8 (Application).

[133] Ex. 1 at 7-11 and 8-9 (Application).

Project area are rural residences.[134] Generally, activity-related noise levels during the operation and maintenance of transmission lines are minimal and do not exceed MPCA noise limits outside the right-of-way.[135] The Applicant modeled worst-case scenario noise levels from the 345 kV transmission line using the Bonneville Power Administration CFI8X model.[136] Modeled noise levels for the 345 kV transmission line are below the applicable MPCA standards.[137]

c. *Aesthetics*

Visual impacts for the proposed Project would result from new transmission line structures and conductors and in some cases, new or expanded right-of-way through forested areas.[138] The height of the 345 kV structures would range from 130 to 175 feet, and create additional lines and forms within the viewshed.[139] The extent to which these additional lines and forms affect scenic quality depends on whether the new transmission line follows an existing linear corridor, such as transmission lines, roadways, and railroads, the degree to which it is shielded from view by terrain and vegetation, and the types of other visual elements that already exist in the landscape.[140]

[134] Ex. 1 at 7-11 and 8-9 (Application).

[135] Ex. 1 at 7-11 and 8-9 (Application).

[136] Ex. 1 at 7-12 and 8-9 (Application); Ex. 113 at 42 (FEIS).

[137] Ex. 1 at 7-12 and 8-9 (Application); Ex. 113 at 42 (FEIS).

[138] Ex. 1 at 7-13 and 8-9 (Application).

[139] Ex. 1 at 7-13, 8-10 and 8-11(Application).

[140] Ex. 1 at 7-13 and 8-10 (Application).

Overall, the Modified Preferred 345 kV Route is likely to have reduced impact on aesthetics because it utilizes existing high-voltage transmission line corridors to a greater extent compared to the Alternate 345 kV Route. For the Hampton to North Rochester segment, the Modified Preferred 345 kV Route follows an existing transmission line for approximately 18 miles and is approximately 10 miles shorter than the Alternate 345 kV Route.[141] The Applicant proposes to minimize aesthetic impacts along the Modified Preferred 345 kV Route by consolidating the existing 69 kV transmission line and the proposed 345 kV line for 15.5 miles between Cannon Falls and north of Zumbrota.[142]

For the North Rochester to Mississippi River segment, the Modified Preferred 345 kV Route and Alternate 345 kV Route have the same visual impacts where they follow the same alignment along the Dairyland Q-3 line.[143] For instance, both the Modified Preferred and Alternate 345 kV Route cross the Great River Road south of Kellogg where the existing Q-3 line is located.[144] The Great River Road is a National Scenic Byway that parallels the Mississippi River from Northern Minnesota to southern Mississippi.[145] At the Great River Road crossing point, both the Modified Preferred and Alternate Routes would place the existing Q-3 161 kV transmission line

[141] Ex. 1 at 7-13 and 7-71 (Application).

[142] Ex. 1 at 7-13 (Application).

[143] Ex. 1 at 8-9 (Application).

[144] Ex. 2 at 22-23 (Hillstrom Direct).

[145] Ex. 2 at 22 (Hillstrom Direct).

on new structures with the new 345 kV line.[146] Both of these routes would minimize impacts to the Great River Road, as the crossing of the Great River Road would be perpendicular and utilize an existing transmission line corridor in an area that is shielded from view by trees.[147]

Aesthetically, the major difference between the Modified Preferred 345 kV Route and the Alternate 345 kV Route in this section occurs where they follow different alignments.[148] For the North Rochester to Mississippi River section of the Project, the Modified Preferred 345 kV Route parallels existing transmission lines for 32 percent of its length, including a 69 kV line for approximately 3.5 miles near Plainview, and the Q-3 line for 11 miles.[149] In comparison, the Alternate 345 kV Route parallels existing transmission lines for 22 percent of its length, along the Q-3 line for 9.2 miles.[150] The Alternate Route also crosses several forested drainages where there is no existing linear corridor west of the Q-3 line.[151]

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[146] Ex. 2 at 23 (Hillstrom Direct).

[147] Ex. 2 at 22 (Hillstrom Direct); Ex. 9 (Schedule 7 to Hillstrom Direct). Mn/DOT has stated that there does not appear to be any impediments to issuing a Utility Permit for this section of the Great River Road. Evid. Hearing Vol. 3 at 190-91 (Seykora).

[148] Ex. 1 at 8-10 (Application).

[149] Ex. 1 at 8-10 (Application); Ex. 19 at 1 (Schedule 16A to Hillstrom Rebuttal).

[150] Ex. 1 at 8-10 (Application); Ex. 19 at 1 (Schedule 16A to Hillstrom Rebuttal).

[151] Ex. 1 at 8-10 (Application).

d. *Cultural Values*

No adverse impacts to cultural resources are anticipated with selection of either the Modified Preferred 345 kV Route or the Alternate 345 kV Route.[152]

e. *Recreation*

There are a variety of outdoor recreational opportunities in the Project area, including snowmobiling, biking, hiking, canoeing, boating, fishing, camping, swimming, hunting, and nature observation.[153]

The transmission line might be visible from recreation areas located directly adjacent to the 345 kV routes and would have the potential to be visible from all recreation resources within approximately 1 mile of the route depending on the surrounding topography.[154] Snowmobile trails may be temporarily impacted during construction along the Modified Preferred or Alternate 345 kV Route as temporary closures are required where the transmission line would cross or parallel the trail.[155] Applicant will work with local clubs and the MnDNR to ensure that proper safety measures are taken during construction and to avoid pole placement in trails.[156]

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[152] Ex. 1 at 7-21 and 8-16 (Application).

[153] Ex. 1 at 7-22 and 8-16 (Application); Plainview Public Hearing, June 14, 2011, 1:30 p.m. at 58 (Regnier); Plainview Public Hearing, June 14, 2011, 6:30 p.m. at 31 (Roschen) and 41 (Mulholland); Pine Island Public Hearing, June 15, 2011, 6:30 p.m. at 28 (Isch); Cannon Falls Public Hearing, June 16, 2011, 6:30 p.m. at 64 (Wheatley).

[154] Ex. 1 at 7-24 and 8-19 (Application).

[155] Ex. 1 at 7-24 and 8-19 (Application).

[156] Ex. 1 at 7-24 and 8-19 (Application).

The transmission line would include spans up to 1,000 feet in length across recreational resources to minimize impacts.[157] No impacts on recreational uses that would permanently alter or limit the use of these resources are anticipated.[158]

f. *Public Services*

It is not anticipated that any public service, public facility, or existing utility will present a barrier to construction and operation of the 345 kV transmission line.[159] There are public services and facilities, generally defined as services provided by government entities such as hospitals, fire and police departments, schools, public parks, and water supply or wastewater disposal systems, along the routes.[160] Applicant will work with other public service utilities to relocate facilities if they conflict with the construction or operation of the 345 kV transmission line.[161]

2. *Effects on Public Health and Safety*

Minnesota Rule 7850.4100(B) requires consideration of the Project's effects on public health and safety. As set forth below, the record evidence demonstrates that health and safety concerns will be fully addressed during construction and operation of the facilities.

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[157] Ex. 1 at 7-24 and 8-19 (Application).

[158] Ex. 1 at 7-24 and 8-19 (Application).

[159] Ex. 1 at 7-24 and 8-20 (Application).

[160] Ex. 1 at 7-24 and 8-20 (Application).

[161] Ex. 1 at 7-25 and 8-20 (Application).

a. *Construction and Operation of Facilities*

The construction and operation of the transmission line located along either the Modified Preferred 345 kV Route or Alternate 345 kV Route is not anticipated to impact public health and safety because proper safeguards would be implemented for construction and operation of the line.[162] The Project will be designed according to local, state, NESC, and CapX2020 standards regarding clearance to ground, clearance to crossing utilities, clearance to buildings, strength of materials, wind and ice loadings, and right-of-way widths.[163] Construction crews and/or contract crews will comply with local, state, NESC, and CapX2020 standards regarding installation of facilities and standard construction practices.[164] Established Applicant and industry safety procedures will be followed during and after installation of the transmission line.[165] This would include clear signage during all construction activities.

The proposed 345 kV transmission line will be equipped with protective devices to safeguard the public in the event of an accident, or if the structure or conductor falls to the ground. The protective devices are breakers and relays located where the transmission lines connect to the substation.[166] The protective equipment

[162] Ex. 1 at 7-26 and 8-20 (Application).

[163] Ex. 1 at 7-26 , 8-20 and 8-21 (Application).

[164] Ex. 1 at 7-26 and 8-21 (Application).

[165] Ex. 1 at 7-26 and 8-21 (Application).

[166] Ex. 1 at 7-26 and 8-21 (Application).

would de-energize the transmission line should such an event occur.[167] In addition, the substation facilities will be properly fenced and accessible only to authorized personnel.[168]

Oronoco Township raised concerns during the hearing about the ability of the proposed monopole transmission structures to withstand extreme weather conditions such as a tornado.[169] Applicant's transmission structures are designed to meet or exceed the requirements set by the NESC and to withstand extreme wind and weather conditions normally experienced in their area of installation. Xcel Energy operates facilities within Applicant's System that serves Minnesota, North Dakota, South Dakota, Wisconsin and part of Michigan.[170] There has been no report of a steel monopole collapse in Applicant's System.[171]

b. *Electric and Magnetic Fields*

In the Application, Applicant provided estimated magnetic field levels for system intact, peak and average loading for the year 2015 when the Project would be in-service and for 10 years later, in 2025.[172] The highest system intact flow reported in

[167] Ex. 1 at 7-26 and 8-21 (Application).

[168] Ex. 1 at 7-26 and 8-21 (Application).

[169] Ex. 66 at 9-11 (Smith Direct).

[170] Ex. 83 (NoCapX2020 & U-CAN IR No. 64 to Applicant).

[171] Ex. 83 (NoCapX2020 & U-CAN IR No. 64 to Applicant).

[172] Ex. 1 at Table 3.6-2 (Application); Ex. 24 at 3 (King Direct).

the Application was 248 MVA, along the North Rochester to Mississippi River segment.[173]

As part of the DEIS process, Applicant provided additional calculations for a double circuit configuration and 600 MVA loading levels.[174] Applicant also assessed whether there was a scenario that could result in flows higher than 600 MVA.[175] Applicant determined that assuming load levels above 600 MVA would not be a reasonable assumption given the limited local generation that may develop in the area.[176]

There were several comments made during the public hearings regarding the potential impact of electric and magnetic fields ("EMF") on public health.[177] The possible impact of EMF exposure on human health has been investigated by public health professionals for the past several decades. The general consensus is that electric fields pose no human health risk. The main research on magnetic fields began in 1979. Since that time, epidemiological and toxicological studies have shown only

[173] Ex. 24 at 4 (King Direct).

[174] Ex. 53 at Table 7.1.1.2-2 (DEIS).

[175] Ex. 24 at 4 (King Direct).

[176] Ex. 24 at 4 (King Direct).

[177] Pine Island Public Hearing, June 15, 2011, 1:30 p.m. at 33-34 (Devick) and 88 (Tiedeman); Cannon Falls Public Hearing, June 16, 2011, 1:30 p.m. at 94-95 (Enedy); Cannon Falls Public Hearing, June 16, 2011, 6:30 p.m. at 68 (Reiswig).

weak associations between magnetic field exposure and health risks and none has established a casual relationship.[178]

The potential impacts of EMF on human health were also recently at issue in the route permit proceeding for the Brookings – Hampton 345 kV transmission line. In that proceeding, Administrative Law Judge Richard Luis found that:

> The absence of any demonstrated impact by EMF-ELF exposure supports the conclusion that there is no demonstrated impact on human health and safety that is not adequately addressed by the existing State standards for such exposure. The record shows that the current exposure standard for EMF-ELF is adequately protective of human health and safety.[179]

Similarly, in the route permit proceeding for the St. Cloud – Fargo 345 kV transmission line, ALJ Heydinger found:

> Over the past 30 years, many epidemiological studies have been conducted to determine if there is a correlation between childhood leukemia and proximity to electrical structures. Some studies have shown that there is an association and some have not. Although the epidemiological studies have been refined and increased in size, the studies do not show a stronger related effect. In addition, a great deal of experimental, laboratory research

[178] Ex. 1 at 3-20 and 3-21 (Application).

[179] *In the Matter of the Route Permit Application by Great River Energy and Xcel Energy for a 345 kV Transmission Line from Brookings County, South Dakota to Hampton, Minnesota*, Docket No. ET-2/TL-08-1474, ALJ FINDINGS OF FACT, CONCLUSIONS AND RECOMMENDATION, (Apr. 22, 2010 as amended Apr. 30, 2010).

> has been conducted to determine causality, and none has been found.[180]

There is no federal standard for transmission line electric or magnetic fields.[181] Additionally, there is no Minnesota regulations pertaining to EMF exposure. However, the Commission has imposed a maximum electric field limit of 8 kV/m measured at one meter above the ground at the edge of the right-of-way.[182] The calculated electric fields for the proposed 345 kV transmission line is significantly less than the maximum limit of 8 kV/m that has been imposed by the Commission.[183] The maximum electric field associated with the Applicant's proposal, measured at 1 meter aboveground, is calculated to be 3.76 kV/m.[184]

3. *Effects on Land-based Economies*

Minnesota Rule 7850.4100(C) requires consideration of the Project's effects on land-based economies, specifically agriculture, forestry, tourism, and mining.

a. *Agriculture*

The Project will result in permanent and temporary impacts to farmland. Permanent impacts will occur as a result of structure placement along the route

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[180] *In the Matter of the Application for a Route Permit for the Fargo to St. Cloud 345 kV Transmission Line Project*, Docket No. ET-2, E002/TL-09-1056, FINDINGS OF FACT, CONCLUSIONS OF LAW, AND ORDER ISSUING AN HVTL ROUTE PERMIT TO XCEL ENERGY AND GREAT RIVER ENERGY, *adopting* ALJ FINDINGS OF FACT, CONCLUSIONS AND RECOMMENDATION at Finding 125 (June 24, 2011).

[181] Ex. 1 at 3-20 (Application).

[182] Ex. 1 at 3-20 (Application).

[183] Ex. 1 at 3-25 (Application).

[184] Ex. 1 at 3-20 (Application).

centerline. Applicant estimates that the permanent impacts to the agricultural fields would be approximately 1,000 square feet per structure, estimated as the total area of the structure footprint plus a small area around the structure that would be removed from production.[185]

During construction, temporary impacts such as soil compaction and crop damage would occur in a small area around each structure.[186] Temporary impacts to agricultural lands are possible is staging areas and spooling locations are located on agricultural lands.[187] The Applicant estimates that the temporary impacts in agricultural fields would be 1 acre per span for construction.[188] The Applicant estimates that a 5-acre staging area would be required every 25 miles, and that a 1,600 square-foot spooling location would be required every 2 miles.[189] Total temporary impacts were calculated as the sum of impact areas from construction, spooling locations, and staging locations.[190] The tables below indicate the percentage of cropland crossed by the various route alternatives and the percentage of land

[185] Ex. 1 at 7-36 and 8-24 (Application).

[186] Ex. 1 at 7-36 and 8-24 (Application).

[187] Ex. 1 at 7-36 and 8-24 (Application).

[188] Ex. 1 at 7-36 and 8-24 (Application).

[189] Ex. 1 at 7-36 and 8-24 (Application).

[190] Because not all spooling and staging locations will be located in agricultural areas, the estimated acreage of temporary impacts may be overestimated.

designated as "prime farmland" which indicates land that is the most desirable for agricultural production.[191]

Route	Cropland (%)
Route End to End (Hampton to North Rochester)[192]	
Modified Preferred Route	57
Alternate Route	86
Route End to End (North Rochester to Mississippi River)[193]	
Modified Preferred Route	62
Alternate Route	59
Route Segment[194]	
White Bridge Road	62
Zumbro Dam to Modified Preferred Route	63
North Crossing to Modified Preferred Route	62

Route	Prime Farmland (%)
Route End to End (Hampton to North Rochester)[195]	
Modified Preferred Route	55
Alternate Route	62
Route End to End (North Rochester to Mississippi River)[196]	
Modified Preferred Route	2
Alternate Route	10
Route Segment[197]	
White Bridge Road	2
Zumbro Dam to Modified Preferred Route	3
North Crossing to Modified Preferred Route	6

[191] Ex. 113 at 90 (FEIS).

[192] Ex. 113 at 90 (FEIS).

[193] Ex. 113 at 166 (FEIS).

[194] Ex. 113 at 166 (FEIS).

[195] Ex. 113 at 91 (FEIS).

[196] Ex. 113 at 166 (FEIS).

[197] Ex. 113 at 166 (FEIS).

Applicant has worked with the Minnesota Department of Agriculture to develop an Agricultural Impact Mitigation Plan ("AIMP") for this Project.[198] The overall objective of the AIMP for this Project is to identify measures that utilities must take to avoid, mitigate, repair, and/or provide compensation for impacts that may result from transmission line construction on agricultural lands in Minnesota.[199] By following the procedures outlined in the AIMP, impacts to agricultural land based economies can be minimized.[200]

b. *Forestry*

The MnDNR Division of Forestry manages timber harvesting in Minnesota.[201] The forestry industry is located primarily in the northeast section of the state, but some lands are managed for forestry do exist in southeastern Minnesota.[202] The Annual Timber Harvest Plans ("AHPs") for townships in the Project area were referenced to identify potential impacts to economically important forestry resources.[203] The AHPs are work plans for forest stands on MnDNR-managed lands where timber sales are being considered for the upcoming state fiscal year.[204] According to the MnDNR Forestry Division Fiscal Year 2010 Harvest Plans, no

[198] Ex. 1 at Appendix G (Agricultural Impact Mitigation Plan).

[199] Ex. 113 at 91 (FEIS).

[200] Ex. 113 at 91 (FEIS).

[201] Ex. 1 at 7-38 and 8-25 (Application).

[202] Ex. 1 at 7-38 and 8-25 (Application).

[203] Ex. 1 at 7-38 and 8-24 (Application).

[204] Ex. 1 at 7-38 and 8-24 (Application).

townships crossed by the Modified Preferred 345 kV Route or Alternate 345 kV Route have AHPs.[205]

Impacts on other forest resources will occur at locations where trees will be cleared within the right-of-way. The Modified Preferred 345 kV Route and Alternate 345 kV Route are located primarily in grassland and cropland. Forested areas are scattered along the routes, primarily near drainages, along waterways such as the Canon River, Dry Run Creek, the Zumbro River, near farmsteads, along field windbreaks, and MnDNR managed lands.[206] In addition, the Modified Preferred 345 kV Route crosses approximately 12.7 miles of privately owned land in the RJD State Forest, and approximately 2.1 miles of the MnDNR owned and managed RJD State Forest.[207] The Alternate 345 kV Route crosses approximately 2.4 miles of MnDNR-owned and managed RJD State Forest and crosses approximately 27 miles of privately owned land in the RJD State Forest.[208]

Overall impacts to forested areas are expected to be as follows:

[205] Ex. 1 at 7-38 and 8-25 (Application).

[206] Ex. 1 at 7-38 and 8-24 (Application).

[207] Ex. 1 at 8-25 (Application).

[208] Ex. 1 at 8-25 (Application).

Route	Forested Land (%)
Route End to End (Hampton to North Rochester)[209]	
Modified Preferred Route	4
Alternate Route	2
Route End to End (North Rochester to Mississippi River)[210]	
Modified Preferred Route	11
Alternate Route	16
Route Segment[211]	
White Bridge Road	11
Zumbro Dam to Modified Preferred Route	12
North Crossing to Modified Preferred Route	13

c. *Tourism*

Neither of Applicant's proposed routes are located near any tourist attraction outside of recreational property.[212]

d. *Mining*

No aggregate mines were identified within 1 mile of the Modified Preferred 345 kV Route.[213] One aggregate mine, the Hammons/Milestone mine, was identified within 1 mile of the Alternate 345 kV Route and is within 500 feet of the Alternate 345 kV Route centerline to the north and approximately 1 mile southwest of Hammond.[214]

[209] Ex. 113 at 90 (FEIS).

[210] Ex. 113 at 166 (FEIS).

[211] Ex. 113 at 166 (FEIS).

[212] Ex. 1 at 7-22 and 8-17 (Application).

[213] Ex. 1 at 7-39 and 8-25 (Application).

[214] Ex. 1 at 7-39 and 8-25 (Application).

4. *Effects on Archaeological and Historic Resources*

Minnesota Rule 7850.4100(D) requires consideration of the Project's effects on archaeological and historic resources. Information about known archaeological and historic resources is generally limited to those resources identified through surveys in specific locations. These surveys are often tied to urban and rural development and infrastructure projects. These records of previous surveys are maintained by the State Historic Preservation Office ("SHPO") and were reviewed by Applicant as part of the Class I Literature Search to identify documented archeological and historic resources within 1 mile of the centerline of the Modified Preferred and Alternate 345 kV Routes. The following table compares the number of archaeological, National Register of Historic Places ("NRHP"), and architectural sites within 1 miles of the proposed centerline of the 345 kV routes.

Route	Archaeological Sites within 1 Mile of Route Centerline	NRHP Sites within 1 Mile of Route Centerline	Architectural Sites within 1 Mile of Route Centerline
Route End-to-End (Hampton to North Rochester)[215]			
Modified Preferred Route	4	8	60
Alternate Route	5	1	81
Route End-to-End (North Rochester to Mississippi River)[216]			
Modified Preferred Route	9	0	29
Alternate Route	9	0	21
Route Segment[217]			
White Bridge Road	9	0	29
Zumbro Dam to Modified Preferred Route	10	2	32
North Crossing to Modified Preferred Route	29	32	23

During the Project engineering phase, Applicant will seek to avoid these resources or minimize impacts by using best management practices developed in coordination with Rural Utilities Service ("RUS"),[218] U.S. Army Corps of Engineers ("USACE"), Office of Environmental Services, and SHPO.[219]

[215] Ex. 1 at 7-70 (Application).

[216] Ex. 19 at 1 (Schedule 16A to Hillstrom Rebuttal).

[217] Ex. 71 at Attachment 4/5-1 at 2 (Oronoco Township IR 4 and 5 to Applicant).

[218] One of the potential owners of the Project, Dairyland, intends to seek federal funding from RUS of the U.S. Department of Agriculture Rural Development Utilities Programs, for its anticipated ownership interest in the Project. RUS funding of the proposed Project would constitute a federal action subject to National Environmental Policy Act analysis and Section 106 of the National Historic Preservation Act. RUS determined that an EIS was necessary to assess the potential for

5. *Effects on the Natural Environment*

Minnesota Rule 7850.4100(E) requires consideration of the effects on the natural environment, including effects on air and water quality resources and flora and fauna. As set forth below, the Project is not anticipated to have a material effect on the natural environment if either the Modified Preferred 345 kV Route or the Alternate 345 kV Route were selected.

a. *Air Quality*

Construction of the Project would result in minor short-term air quality impacts from the operation of heavy-duty construction equipment and fugitive dust due to travel on unpaved roads and excavation of transmission structure foundations.[220] Due to the short-term nature of the construction activities, local impacts on air quality are expected to be minor.[221] Construction of the Project is not expected to have any long-term or regionally significant impacts on air quality.[222]

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significant impacts prior to making a decision regarding whether to fund Dairyland's ownership interest in the Project. Ex. 12 at 7-8 (Hillstrom Direct).

[219] Ex. 1 at 7-41 and 8-26 (Application). RUS may also invite other parties (particularly Native American Tribes and other state and federal permitting or land management agencies to assist in developing the avoidance, minimization, or treatment measures. Ex. 1 at 7-41 and 8-26 (Application).

[220] Ex. 1 at 7-43 and 8-27 (Application).

[221] Ex. 1 at 7-43 and 8-27 (Application).

[222] Ex. 1 at 7-43 and 8-28 (Application).

b. *Water Quality and Water Resources*

Numerous surface water resources including lakes, rivers, streams, wetlands and floodplains will be crossed by or located in the right-of-way of the proposed 345 kV routes.[223] The Project's temporary impacts could include some sedimentation reaching surface waters during construction due to ground disturbance by excavation, grading, construction traffic, and dewatering of holes drilled for transmission structures, which could temporarily degrade water quality due to turbidity.[224] Impacts to water resources will be avoided and minimized by implementing appropriate sediment control practices and best management practices.[225]

Applicant will endeavor to minimize permanent impacts to wetlands and drainage systems by spanning wetlands and drainage systems, where possible. When it is not possible to span a wetland, Applicant will employ construction techniques to minimize impacts. Permanent impacts to wetlands will take place where structures must be located within wetland boundaries, or if wetlands undergo permanent vegetative changes within the 150-foot right-of-way.[226] The record evidence demonstrates the following impacts to wetland, stream, and floodplains.

[223] Ex. 1 at 7-44 and 8-28 (Application).

[224] Ex. 1 at 7-51 and 8-34 (Application).

[225] Ex. 1 at 7-51 and 8-34 (Application).

[226] Ex. 1 at 7-52 and 8-34 (Application).

Route	Permanent Wetland Impacts (acres)	Temporary Wetland Impacts (acres)	Potential Wetland Tree Clearing (acres)	Stream Crossings[227]	Permanent Impacts to Floodplains (acres)
Route End-to-End (Hampton to North Rochester)[228]					
Modified Preferred Route	0	0	0	35	<1
Alternate Route	0	0	5.8	44	<1
Route End-to-End (North Rochester to Mississippi River)[229]					
Modified Preferred Route	<1	7	5.2	79	<1
Alternate Route	<1	7	5.4	72	<1
Route Segment[230]					
White Bridge Road	< 1	7	5.2	79	<1
Zumbro Dam to Modified Preferred Route	<1	7	6.4	69	<1
North Crossing to Modified Preferred Route	<1	7	7.1	73	<1

c. *Flora*

The Applicant will continue to work with the MnDNR and the USFWS to minimize and avoid impacts to sensitive flora along the route.[231] The Applicant would attempt to avoid, minimize, and/or mitigate impacts to any areas known to support native vegetation or special status species, as practicable.[232] When native vegetation communities cannot be feasibly spanned, the Applicant will minimize the number of

[227] These values represent the total number of times each route or segment crosses a stream.

[228] Ex. 1 at 7-70 (Application).

[229] Ex. 19 at 1 (Schedule 16A to Hillstrom Rebuttal).

[230] Ex. 71 at Attachment 4/5-1 at 2 (Oronoco Township IR 4 and 5 to Applicant).

[231] Ex. 1 at 7-57 and 8-37 (Application).

[232] Ex. 1 at 7-57 and 8-36 (Application).

structures within these communities.[233] The following table summarizes the types of vegetation crossed by the 345 kV routes.

Route	Cropland (%)	Grassland (%)	Shrubland (%)	Forested Land (%)	Aquatic Environment (%)
Route End-to-End (Hampton to North Rochester)[234]					
Modified Preferred Route	57	24	< 1	4	2
Alternate Route	86	12	< 1	1	< 1
Route End-to-End (North Rochester to Mississippi River)[235]					
Modified Preferred Route	62	23	2	11	2
Alternate Route	59	21	2	16	2
Route Segment[236]					
White Bridge Road	62	23	2	11	2
Zumbro Dam to Modified Preferred Route	63	22	1	12	2
North Crossing to Modified Preferred Route	62	22	1	13	2

During the hearing, the North Route Group expressed concerns about the impacts of Applicant's method of vegetation clearing and management on the native flora.[237] For initial construction, the forested areas of the right-of-way will be clear cut to remove trees.[238] To prevent regrowth, the right-of-way may be treated with an

[233] Ex. 1 at 7-57 and 8-36 (Application).

[234] Ex. 113 at 90 (FEIS).

[235] Ex. 113 at 166 (FEIS).

[236] Ex. 113 at 166 (FEIS).

[237] Ex. 39 at 15 (Rohlfing and Hackman Direct).

[238] Ex. 15 at 7 (Hillstrom Rebuttal).

Environmental Protection Agency approved herbicide.[239] The herbicides used are selective, promoting grasses and forbs for wildlife and holding the soil on steep slopes.[240] Applicant's contract crews applying the products are trained and licensed professionals.[241] Applicant's experience has been that the application of herbicides is less impactful to the environment is areas where there are steep slopes because these areas are more prone to erosion with cutting and mowing activities.[242]

d. *Fauna*

Raptors, waterfowl, and other bird species may be affected by the construction and placement of the proposed transmission lines.[243] Avian collisions are a possibility after the construction of the transmission lines, but due to the larger size of conductors associated with transmission lines, as well as bundling them, they are typically more visible than distribution lines.[244] The risk of avian collision can be minimized by marking shield wires with swan flight diverters.[245] Due to the size of the facilities in combination with the swan flight diverters, no significant impacts are anticipated.

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[239] Ex. 15 at 7 (Hillstrom Rebuttal).

[240] Ex. 15 at 7 (Hillstrom Rebuttal).

[241] Ex. 15 at 7 (Hillstrom Rebuttal).

[242] Ex. 15 at 7 (Hillstrom Rebuttal).

[243] Ex. 1 at 7-61 and 8-39 (Application).

[244] Ex. 1 at 7-61 and 8-39 (Application).

[245] Ex. 1 at 7-61 and 8-39 (Application).

In addition, Applicant is committed to implementing appropriate mitigation measures for the Project. In 2002, Xcel Energy entered into a voluntary Memorandum of Understanding ("MOU") with the USFWS, agreeing to work together to address avian issues throughout Xcel Energy's service territories.[246] The Project will be constructed in a manner to minimize potential risk to avian species.

Special consideration is being given to the structure design at the Mississippi River crossing.[247] Both the Modified Preferred and Alternate 345 kV Route cross the Mississippi River east of Kellogg, Minnesota across the USFWS managed Refuge, to a location in Alma, Wisconsin.[248] This stretch of the Mississippi River is one of the four primary bird migration routes in North America. There is an existing 161/69 kV line which crosses the river at this location.[249] The Applicant has been and continues to work with the USFWS, MnDNR, and Wisconsin Department of Natural Resources on designing river crossing structures to minimize potential avian impacts.[250] Based on coordination to date, five potential structure designs have been produced, as set forth in Section 8.4 of the DEIS. The Applicant and agencies have arrived at an informal and general consensus that the preferable configuration is one that minimizes structure height and consolidates crossing wires in the fewest number of

[246] Ex. 1 at 7-61 and 8-39 (Application).

[247] Ex. 1 at 8-39 (Application).

[248] Ex. 2 at 21 (Hillstrom Direct).

[249] Ex. 2 at 21 (Hillstrom Direct).

[250] Ex. 2 at 21-22 (Hillstrom Direct).

horizontal planes.[251] It is the Applicant's view that the potential for avian interaction with electrical facilities at the Kellogg Mississippi River crossing area will be reduced because of construction of the Project. Currently there is a double circuit 161/69 kV transmission line that crosses the river at this location. This line has three sets of wires stacked vertically in addition to a shield wire, thus creating four horizontal planes of wires.[252] Depending on which configuration is selected, the Applicant's proposed structures would reduce the number of horizontal planes of wires from four to as few as two over the river thereby lowering the likelihood of avian collisions.[253]

6. *Effects on Rare and Unique Natural Resources*

Minnesota Rule 7850.4100(F) requires consideration of the effects on rare and unique resources. No federally listed threatened species and one federal endangered species have been identified within one mile of the Modified Preferred 345 kV Route.[254] Sixty-one species listed as endangered, threatened, or special concern by the State of Minnesota have been documented within one mile of the Modified Preferred Route.[255] To reduce and minimize impacts to rare and unique natural resources the Applicant would, to the maximum extent practicable, span all native prairie remnants,

[251] Ex. 2 at 22 (Hillstrom Direct).

[252] Ex. 2 at 22 (Hillstrom Direct).

[253] Ex. 2 at 22 (Hillstrom Direct).

[254] Ex. 1 at 7-70 and 8-69 (Application); Ex. 19 at 2 (Schedule 16A to Hillstrom Rebuttal).

[255] Ex. 1 at 7-70 and 8-69 (Application); Ex. 19 at 2 (Schedule 16A to Hillstrom Rebuttal).

documented native plant communities, rock outcrops, wetlands, streams, and rivers.[256] Upon receipt of a permitted route the Applicant will coordinate with the appropriate agencies (e.g., USFWS, USACE, and MnDNR) to determine species-specific survey and wetland delineation needs, as well as additional avoidance and mitigation measures.[257]

7. *Application of Various Design Considerations*

Minnesota Rule 7850.4100(G) requires consideration of whether the Modified Preferred Route applied design options that maximize energy efficiencies, mitigate adverse environmental effects, and could accommodate expansion of transmission or generating capacity. The record evidence demonstrates that appropriate design alternatives were considered. The entire length of the 345 kV transmission line will be constructed with 345 kV double circuit capable poles so that a second 345 kV circuit can be strung when conditions justify expansion. This includes location where the 345 kV transmission line is co-located with a lower voltage line; both sides will be constructed at 345 kV standards, although the lower voltage side will only be operated at the lower voltage until an increase in voltage is justified. This will allow for maximizing the use of existing right-of-way and minimizing the construction time for a new circuit when circumstances merit expansion. In addition, constructing the lower voltage line to 345 kV standards will minimize impacts to sensitive areas as they

[256] Ex. 1 at 7-69 and 8-48 (Application).

[257] Ex. 1 at 7-69 and 8-48 (Application).

will not need to be accessed for the stringing of new conductor when conditions justify increasing the voltage of the lower voltage line.

Applicant also proposes to install six conductors during initial construction at highway crossings and interchanges to facilitate the addition of the second circuit in the future. Initial installation of six conductors will minimize construction-related conflicts with the existing transmission line and disruptions to highway facilities at the time when the second circuit is added.

8. *Use or Paralleling of Existing Rights-of-Way, Survey Lines, Natural Division Lines, Agricultural Field Boundaries, Transportation, Pipeline, and Electrical Systems*

Minnesota Rule 7850.4100(H) and (J) require consideration of the proposed routes' use or paralleling of existing rights-of-way and linear features. A discussion of these factors is set forth above. The relative percentages of corridor sharing for each route are set forth below:

Route	Route Following Transmission Line (%)	Route Following Road (%)	Route Following Existing Transmission Line or Road Rights-of-Way (%)
Route End-to-End (Hampton to North Rochester)[258]			
Modified Preferred Route (36.1 miles)	42	40	82
Alternate Route (47.1 miles)	1	7	8
Route End-to-End (North Rochester to Mississippi River)[259]			
Modified Preferred Route (44.8 miles)	32	12	44
Alternate Route (41.9 miles)	22	4	26
Route Segment[260]			
White Bridge Road (44.8 miles)	32	12	44
Zumbro Dam to Modified Preferred Route (43 miles)	36	8	44
North Crossing to Modified Preferred Route (44.5 miles[261])	32	3	35

Overall, the Modified Preferred 345 kV Route follows a greater length of transmission lines, roads, and property boundaries when compared to the Alternate 345 kV Route. In the Hampton to North Rochester section, the Modified Preferred 345 kV Route maximizes the use of existing transportation and transmission corridors

[258] Ex. 1 at 7-71 (Application).

[259] Ex. 19 at 1 (Schedule 16A to Hillstrom Rebuttal).

[260] Ex. 71 at Attachment 4/5-1 at 1 (Oronoco Township IR 4 and 5 to Applicant).

[261] Due to this route originating at the North Rochester Substation siting area, it would require the 161 kV line to be 2.5 miles longer compared to routes that originate from the Southern Substation siting area. The analysis of routing factors for the 161 kV line considers the additional length for the Alternate 161 kV Route analysis.

(over 82% for the Modified Preferred 345 kV Route compared to 8% for the Alternate 345 kV Route). The Modified Preferred 345 kV Route follows US-52, the primary transportation corridor between the Twin Cities and Rochester.[262] In addition, an existing 69 kV line is located next to US-52 between Cannon Falls and Zumbrota.[263] The proposed 345 kV line would be collocated with the existing 69 kV line, where possible, for up to 16 miles.[264]

In the North Rochester to Mississippi River section, the Modified Preferred 345 kV Route follows an existing 69 kV transmission line for approximately 3.5 miles near Plainview, and the Dairyland Q-3 line for 11 miles to the Alma crossing.[265] Where the Modified Preferred 345 kV Route does not follow an existing infrastructure corridor, it follows a higher percentage of property boundaries than the Alternate 345 kV Route.[266]

9. *Electrical System Reliability*

Minnesota Rule 7850.4100(K) requires consideration of electrical system reliability. The Project is proposed to be constructed with double circuit capable structures-strung with a single circuit initially and capability to add a second circuit at a later date.

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[262] Ex. 1 at 5-15 (Application).

[263] Ex. 1 at 5-15 (Application).

[264] Ex. 1 at 5-15 and 5-16 (Application).

[265] Ex. 1 at 5-20 (Application).

[266] Ex. 1 at 5-20 (Application).

10. *Costs*

Minnesota Rule 7850.4100(L) requires consideration of each of the proposed route's cost of construction, operation, and maintenance. The total cost of the Project, which includes the survey, engineering, materials, construction, right-of-way, and project management associated with the transmission line and substations, is dependent, in significant part, on the design of the transmission line facilities. The Minnesota portion of the Project is estimated to cost between $229 million and $253 million (in 2009 dollars), depending on the route selected, as summarized in the table below.[267]

Route	**Estimated Cost (millions)[268]**
Modified Preferred Route (Hampton to Mississippi River)	$194[269]
Alternate Route (Hampton to Mississippi River)	$202[270]
Modified Preferred Route with White Bridge Road Crossing (Hampton to Mississippi River)	$194[271]
Modified Preferred Route with Zumbro Dam Crossing (Hampton to Mississippi River)	$191[272]
Modified Preferred Route with North Crossing (Hampton to Mississippi River)	$192[273]

[267] Ex. 26 at 14 (Stevenson Direct). The costs for the Hampton Substation were assumed to be zero for purposes of these calculations as this substation is being permitted and constructed as part of the CapX2020 Brookings County – Hampton 345 kV Transmission Project (Docket No. E002/TL-08-1474).

[268] Applicant provides these cost estimates with a plus or minus 30 percent accuracy.

[269] Ex. 26 at 14 (Stevenson Direct).

[270] Ex. 26 at 14 (Stevenson Direct).

[271] Ex. 71 at Attachment 4/5-1 at 2 (Oronoco Township IR 4 and 5 to Applicant).

[272] Ex. 26 at 14 (Stevenson Direct).

[273] Ex. 71 at Attachment 4/5-1 at 2 (Oronoco Township IR 4 and 5 to Applicant).

11. *Unavoidable Adverse Human and Natural Environmental Effects*

Minnesota Rule 7850.4100(M) requires consideration of the adverse human and natural environmental effects that cannot be avoided for each proposed route. Unavoidable adverse impacts include the physical impacts to the land, primarily agricultural land, due to the construction of the Project. These agricultural impacts are addressed in Section V.B.3.a above. In addition, Applicant has identified mitigation measures to address adverse environmental effects during the Project. Applicant will work with public agencies to minimize the unavoidable adverse environmental effects that may arise during and after construction of the Project.

12. *Irreversible and Irretrievable Commitment of Resources*

Minnesota Rule 7850.4100(N) requires consideration of the irreversible and irretrievable commitments of resources that are necessary for each proposed route. The Project will require few irreversible and irretrievable commitments of resources. Only construction resources, such as concrete, steel, and hydrocarbon fuels, will be irreversibly and irretrievable committed to this Project. This commitment of resources are slightly greater for the Alternate 345 kV Route (89 miles) as this route is slightly longer than the Modified Preferred 345 kV Route (80.9 miles).

13. *Federal and State Agency Concerns*

Minnesota Statute § 216E.03, subd. 7(12) requires the Commission and ALJ to consider issues presented by Federal and state agencies when appropriate. During this

proceeding, Mn/DOT expressed several potential concerns with the portion of the Modified Preferred 345 kV Route that follows US-52. In addition, there are two FNAP easements administered by Dakota County, the U.S. Department of Agriculture, and Natural Resource Conservation Service located along US-52 that generally prohibit the placement of transmission lines within the easement area. As discussed above, many of the agencies' concerns have been addressed and remaining issues can be addressed through further anticipated coordination on final alignment and facilities design.

14. *Analysis of Three Zumbro River Crossing*

From the North Rochester Substation, both the Modified Preferred and Alternate 345 kV Route both head east and branch off into three potential Zumbro River crossings (North Crossing, Zumbro Dam Crossing, and the White Bridge Road Crossing). The White Bridge Road Crossing crosses the Zumbro River at Olmstead County Road 12, also known as White Bridge Road.[274] While the White Bridge Road Crossing would require some additional tree clearing, the bridge provides an existing corridor that could be used to minimize impacts to the river.[275] The North Crossing follows a property line across the Zumbro River at a location where there is no existing linear corridor on either side of the river.[276] The North Crossing would

[274] Ex. 1 at 5-18 (Application).

[275] Ex. 1 at 5-18 (Application).

[276] Ex. 1 at 5-18 (Application).

require more tree clearing of forested areas compared to the White Bridge Road Crossing.[277] At the Zumbro Dam Crossing, there is an existing crossing of the river (Zumbro Dam and Hydroelectric Generation Facility).[278] This crossing option would require new tree clearing on the east bank of the Zumbro River, where MnDNR has identified a forested area of high biodiversity significance.[279] The Zumbro Dam Crossing would be located in proximity to several recreational resources, including a campground and two summer camps on the east bank of the Zumbro River.[280]

During the hearing, Oronoco Township advocated against the White Bridge Road Crossing and the North Route Group advocated against the North Crossing of the Zumbro River. As pointed out by Oronoco Township's witness Jeffrey Broberg, the impacts of the three Zumbro River crossings are relatively similar for a majority of the routing criteria. Applicant's analysis here will address certain contested factors related to these three Zumbro River crossing options.

a. *Impacts on Human Settlement*

Oronoco Township alleges that the White Bridge Road Crossing will have a greater impact on human settlement compared to the other two Zumbro River crossings because the population density is higher in the area of this crossing and there is a greater potential for future residential development.

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[277] Ex. 1 at 5-18 (Application).

[278] Ex. 1 at 5-18 (Application).

[279] Ex. 1 at 5-18 (Application).

[280] Ex. 1 at 5-18 (Application).

With regard to current population density, the three Zumbro River crossings have relatively similar population densities with the White Bridge Road Crossing having a slightly higher population density, as shown on the following table.

Residences	**Modified Preferred Route (White Bridge Road Crossing)**[281]	**Zumbro Dam Crossing to Modified Preferred Route**[282]	**North Crossing to Modified Preferred Route**[283]
Number of Residences 0-75 feet from route centerline	0	0	0
Number of Residences 76-150 feet from route centerline	1	2	0
Number of Residences 151-300 feet from route centerline	5	7	5
Number of Residences 301-500 feet from route centerline	20	15	16
Number of Residences 0-300 feet from route centerline	6	9	5
Number of Residences 0-500 feet from route centerline	26	24	21

Oronoco Township states that the White Bridge Road Crossing will have a greater impact on future residential development compared to the other two Zumbro River crossings.[284] Oronoco's witness Mr. William Smith points out that the land that would be affected by the White Bridge Crossing is zoned for suburban residential development while the land that would be impacted by the North Crossing and the

[281] Ex. 113 at 164 (FEIS).

[282] Ex. 113 at 164 (FEIS).

[283] Ex. 113 at 164 (FEIS).

[284] Ex. 68 at 5 (Broberg Direct).

Zumbro Dam Crossing is zoned agricultural.[285] The Modified Preferred 345 kV Route crosses less than one mile of land identified as "Potential Suburban" for future residential development.[286] Moreover, it is unknown whether, when, and where residential development may occur within the land zoned within Olmstead County for residential development. As a result is difficult to determine what, if any, additional future residential homes will be impacted by the proposed transmission lines.

Oronoco Township further claims that construction of the proposed transmission line along the White Bridge Road Crossing will hamper future development in this area. Actual past experience in Minnesota indicates however that development can and does occur around and up to existing transmission facilities.[287] In Shakopee, for example, homes have been constructed very close to the conductors of transmission facilities.[288] Another example is in Cottage Grove.[289] In 1968, the Prairie Island – Red Rock 345 kV line was constructed.[290] A second circuit was added in 1977. Aerial photographs of the area taken in 1970, 1980, 1991, and 2010, show development expanding from the city center toward the line and beyond.[291]

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[285] Ex. 66 at 25 (Smith Direct).

[286] Ex. 15 at 4 (Hillstrom Rebuttal).

[287] Ex. 15 at 4 (Hillstrom Rebuttal).

[288] Ex. 15 at 5 (Hillstrom Rebuttal).

[289] Ex. 15 at 5 (Hillstrom Rebuttal).

[290] Ex. 15 at 5 (Hillstrom Rebuttal).

[291] Ex. 17 (Schedule 14 to Hillstrom Rebuttal).

Oronoco alleged not only that the proposed transmission line hamper development in Olmstead County but that the lines may impact the ability of potential homeowners and developers to obtain financing through the Federal Housing Administration ("FHA").[292] Oronoco's contention is based, however, on a prior interpretation of guidelines established by the U.S. Department of Housing and Urban Development ("HUD") to qualify for FHA mortgage insurance.[293] For single family and multi-family homes, the eligibility standards to qualify for an FHA-insured mortgage were recently clarified in a fact sheet issued by FHA in November 2010.[294] This fact sheet states that if "a living unit is located outside the easement [for a high-voltage transmission line] than the property is eligible for FHA financing."[295] No residences will be located in the easement area of the proposed transmission lines.[296]

b. *Impacts on Recreation*

Oronoco Township alleges that the White Bridge Road Crossing will have a greater impact on recreation compared to the other two crossing options.[297] Specifically, Oronoco states that Lake Zumbro, an impounded portion of the Zumbro River at the White Bridge Road Crossing, is a valued recreational resource for fishing,

[292] Ex. 66 at 14 (Smith Direct).

[293] Ex. 15 at 3 (Hillstrom Rebuttal).

[294] Ex. 15 at 3 (Hillstrom Rebuttal).

[295] Ex. 16 at 19 (Frequently Asked Questions: Valuation Protocal, FHA, dated Nov. 2, 2010).

[296] Ex. 15 at 4 (Hillstrom Rebuttal).

[297] Ex. 68 at 11 (Broberg Direct).

water skiing, swimming, and jet skiing and that the transmission line will be visible to these recreational users if this crossing is selected.[298] The majority of the lakeshore property is privately-owned; however, there are two public boat ramps on the lake.[299] One public boat ramp, managed by MnDNR, is approximately 0.1 mile south of the White Bridge Road Crossing.[300]

In comparison, the Zumbro Dam Crossing is also located in close proximity to several recreational resources, including a campground and two summer camps located on the east bank of the Zumbro River.[301] Recreational opportunities are also present at the North Crossing. While the land surrounding the Zumbro River at this location is privately owned, public recreation such as boating, fishing, and swimming, may occur as public access points are located further upstream.[302]

None of the Zumbro River Crossings will inhibit recreational uses of the Zumbro River but rather the impacts will be limited to visual impacts on recreational users.

c. *Flora Impacts, i.e., Forested Land*

All three Zumbro River crossings would require some amount of tree clearing. The White Bridge Road Crossing will impact require less wetland tree clearing and will

[298] Ex. 68 at 11-12 (Broberg Direct).

[299] Ex. 1 at 8-17 (Application).

[300] Ex. 1 at 8-17 (Application).

[301] Ex. 1 at 5-18 (Application).

[302] Ex. 1 at 8-18 (Application).

cross fewer acres of forested land compared to the other two crossing alternatives. A table detailing these impacts is provided bellowing.

Route Segment	Potential Wetland Tree Clearing (acres)[303]	Forested Land (% of total right-of-way)[304]
White Bridge Road	5.2	11
Zumbro Dam to Modified Preferred Route (43 miles)	6.4	12
North Crossing to Modified Preferred Route (44.5 miles[305])	7.1	13

In addition, the Zumbro Dam Crossing crosses the Zumbro River in a location without existing aerial infrastructure and where impacts to a high quality Maple Basswood forest would occur on the east back of the River.[306]

d. *Impacts on Land-based Economies*

Oronoco Township contends that a comparison of land-based economies favors selection of North Crossing of the Zumbro River. Specifically, Oronoco witness Mr. Broberg testified that because the

> properties in Olmstead county are considerably more expensive than those in Wabasha County, likely because the market recognizes that the Olmstead County property is more developable than the Wabasha County Property . . . .

[303] Ex. 71 at Attachment 4/5-1 at 1 (Oronoco Township IR 4 and 5 to Applicant).

[304] Ex. 113 at 166 (FEIS).

[305] Due to this route originating at the North Rochester Substation siting area, it would require the 161 kV line to be 2.5 miles longer compared to routes that originate from the Southern Substation siting area. The analysis of routing factors for the 161 kV line considers the additional length for the Alternate 161 kV Route analysis.

[306] Ex. 1 at 8-55 (Application).

> it would seem more reasonable to locate the proposed transmission line in Wabasha County instead of Olmstead County.[307]

While the effect on land-based economies is one of the 14 factors listed in Minnesota Rule 7850.4100 that must be evaluated when selecting a route, this factor has never been interpreted to require a comparison of the taxable value of properties within each route alternative. Such an interpretation would result in avoiding affluent counties at the expense of less affluent counties and neighborhoods.

e. *Use of Existing Right-of-Way*

Two of the proposed Zumbro river crossings, White Bridge Road and Zumbro Dam Crossing, utilize existing infrastructure crossings of the river, while the North Crossing would require creation of a new corridor across the Zumbro River.[308]

Route Segment[309]	**Route Following Transmission Line (%)**	**Route Following Property Line (%)**	**Route Following Road (%)**	**Route Following Transmission Line or Property Line (%)**
White Bridge Road (44.8 miles)	32	40	12	72
Zumbro Dam to Modified Preferred Route (43 miles)	36	29	8	65
North Crossing to Modified Preferred Route (44.5 miles[310])	32	41	3	73

[307] Ex. 68 at 18 (Broberg Direct).

[308] Ex. 1 at 5-18 (Application).

[309] Ex. 71 at Attachment 4/5-1 at 1 (Oronoco Township IR 4 and 5 to Applicant).

[310] Due to this route originating at the North Rochester Substation siting area, it would require the 161 kV line to be 2.5 miles longer compared to routes that originate from the Southern Substation

As shown in the above table, the White Bridge Road Crossing utilizes the greatest percentage of existing corridors compared to the other two crossings under consideration.

f. *Zumbro River Crossing Conclusion*

Based on an analysis of all of the factors set forth in Minn. R. 7850.4100, the White Bridge Road Crossing best conserves natural resources, minimizes potential environmental and human settlement impacts, and minimizes other land use conflicts.

15. *345 kV Line Conclusion*

In the Hampton to North Rochester section, the Modified Preferred 345 kV Route should be selected because it has a significantly higher percentage of corridor sharing (82 percent for the Modified Preferred 345 kV Route compared to 8 percent for the Alternate 345 kV Route).[311] The Modified Preferred 345 kV Route is also shorter than the Alternate 345 kV Route and less expensive. In the North Rochester to Mississippi River section, the Modified Preferred 345 kV Route should be selected because it minimizes impacts to land use by following existing transmission line or road corridors and property boundaries.[312]

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siting area. The analysis of routing factors for the 161 kV line considers the additional length for the Alternate 161 kV Route analysis.

[311] Ex. 2 at 13 (Hillstrom Direct); Ex. 1 at 7-71 (Application).

[312] Ex. 2 at 13 (Hillstrom Direct); Ex. 19 at 1 (Schedule 16A to Hillstrom Rebuttal).

C. Analysis of Routing Factors: North Rochester to Northern Hills 161 kV

The following discussion pertains to the 161 kV transmission line. The record evidence demonstrates that the Preferred 161 kV Route satisfies the applicable statutory and regulatory routing criteria.

1. *Effects on Human Settlement*

Minnesota Rule 7850.4100(A) requires consideration of the proposed routes' effects on human settlement, including displacement of residences and businesses; noise created during construction and operation of the Project; and impacts to aesthetics, cultural values, recreation, and public services.

a. *Displacement*

The reasons Applicant has requested a particular right-of-way width are discussed in Section V.B.1.a, and this safety clearance discussion for the 345 kV transmission line also applies to the 161 kV transmission line. The right-of-way width will be narrower for the 161 kV transmission line than that for the 345 kV transmission line. The right-of-way requirement for a 161 kV transmission line is 80 to 100 feet, or 40 to 50 feet on either side of the route centerline.[313] A displacement is defined by Applicant as any occupied structure located within 40 feet of the route centerline.[314] No displacement is anticipated if the 161 kV transmission line is

[313] Ex. 1 at 9-9 (Application).

[314] Ex. 1 at 9-7 (Application).

constructed along the Preferred 161 kV Route or the Alternate 161 kV Route, as there are no homes within 40 feet of the route centerline.[315]

Route	Number of Residences 0-40 Feet from Route Centerline	Number of Residences 41-100 Feet from Route Centerline	Number of Residences 101-300 Feet from Route Centerline	Number of Residences 301-500 Feet from Route Centerline	Total Number of Residences 0-500 Feet from Route Centerline
Preferred 161 kV Route	0	7	51	49	107
Alternate 161 kV Route	0	1	27	49	77

There are an additional 30 homes within 0-500 feet of the Preferred 161 kV Route centerline compared with the Alternate 161 kV Route centerline.[316]

b. *Noise*

As discussed in Section V.B.1.b transmission lines produce noise under certain conditions. The level of noise depends on conductor geometry, voltage level, and weather conditions.[317] The noise levels calculated for the 161 kV single circuit portion of the Project, using either the Preferred 161 kV Route or the Alternate 161 kV Route, at the edge of the right-of-way, are 14.2 dBA and 10.7 dBA for the L_5[318] and L_{50}[319] levels, respectively.[320] These calculated levels are below all daytime and

[315] Ex. 113 at 128 (FEIS).

[316] Ex. 113 at 128 (FEIS).

[317] Ex. 1 at 9-8 (Application).

[318] The noise level calculated to occur five percent of the time within an hour (*i.e.* three minutes per hour).

[319] The noise level calculated to occur 50 percent of the time within an hour (*i.e.* thirty minutes per hour).

nighttime Noise Area Classification ("NAC") limits (residential, industrial, and commercial) set by the MPCA.[321]

c. *Aesthetics*

The 161 kV transmission line will likely affect visual quality and area aesthetics within close proximity of the transmission line. The existing landscape in the North Rochester – Northern Hills section of the Project is dominated by agricultural lands.[322] There are urbanizing areas concentrated on the outskirts of Rochester.[323] The major differences between the aesthetics of the Preferred 161 kV Route and the Alternate 161 kV Route are the length of the routes, the extent to which each follows existing transmission infrastructure or the Douglas Trail, which is a recreational resource valued for its scenic quality, and the use or paralleling of existing transmission infrastructure.[324]

The Preferred 161 kV Route is 2.6 miles shorter than the Alternate 161 kV Route, resulting in a lessened aesthetic impact because fewer structures will need to be installed to support the transmission line.[325] For portions of the overall length, both the Preferred 161 kV Route and the Alternate 161 kV Route parallel the Douglas

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[320] Ex. 1 at 7-12 (Application).

[321] Ex. 1 at 7-12 (Application).

[322] Ex. 1 at 9-8 (Application).

[323] Ex. 1 at 9-8 (Application).

[324] Ex. 1 at 9-8 (Application).

[325] Ex. 8 at 2 (Schedule 6 to Hillstrom Direct).

Trail. The Preferred 161 kV Route parallels the Douglas Trail for approximately 1.3 miles, whereas the Alternate 161 kV Route parallels the Douglas Trail for approximately 3.5 miles.[326] The segments of the Alternate 161 kV Route that parallel the Douglas Trail may require tree removal along the trail.[327] Although the use of an existing linear corridor is often seen as a routing opportunity, the potential impact to forested areas along the trail is a disadvantage for the Alternate 161 kV Route.[328] The Preferred 161 kV Route would result in greatly reduced potential impacts to the Douglas Trail and therefore have a lessened aesthetic impact.

Another evaluation for aesthetic impacts relates to the use or paralleling of existing transmission infrastructure. The Alternate 161 kV Route follows existing transmission lines for approximately 5.8 miles, whereas the Preferred 161 kV Route follows existing transmission line for approximately 0.5 miles.[329] Although the Alternate 161 kV Route follows an existing transmission line for a greater portion of its length, the new 161 kV transmission line would be constructed parallel to the existing transmission line instead of consolidating the lines onto the same structures.[330] The use of other existing rights-of-way and property lines is discussed in more detail below in Sections V.C.8 and V.C.9.

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[326] Ex. 1 at 9-9 (Application).

[327] Ex. 2 at 18 (Hillstrom Direct).

[328] Ex. 2 at 18-19 (Hillstrom Direct).

[329] Ex. 8 at 2 (Schedule 6 to Hillstrom Direct).

[330] Ex. 1 at 9-9 (Application).

d. *Cultural Values*

No adverse impacts to cultural resources are anticipated with selection of either the Preferred 161 kV Route or the Alternate 161 kV Route.[331]

e. *Recreation*

It is not anticipated that selection of either the Preferred 161 kV Route or the Alternate 161 kV Route would impact recreation.[332] The majority of the land along the Preferred and Alternate 161 kV routes is private land and does not provide public recreation opportunities.[333] Some recreation resources in the vicinity of the Preferred and Alternate 161 kV routes include snowmobile trails, the Douglas Trail, and tributaries of the Zumbro River.[334] Neither the Preferred 161 kV Route nor the Alternate 161 kV route cross or are located in proximity to any WMAs, SNAs, or any state, county, or local parks.[335]

The Preferred and Alternate 161 kV routes are located in proximity to branches of the Zumbro River that are used for recreation, including fishing and canoeing.[336] The Preferred 161 kV Route crosses Zumbro River tributaries at two locations: the Middle Fork of the Zumbro River along Olmsted County Road 31 and the South

[331] Ex. 1 at 9-12 (Application).

[332] Ex. 8 at 1 (Schedule 6 to Hillstrom Direct).

[333] Ex. 1 at 9-14 (Application).

[334] Ex. 1 at 9-14 (Application).

[335] Ex. 1 at 9-14 (Application).

[336] Ex. 1 at 9-14 (Application).

Branch of the Middle Fork of the Zumbro River near the intersection of Olmsted County Road 3 and the Douglas Trail.[337] The Alternate 161 kV Route crosses Zumbro River tributaries at three locations: the North Middle Fork of the Zumbro River north of Pine Island, the Middle Fork of the Zumbro River between Olmsted County Road 13 and Olmsted County Road 5 and the South Branch of the Middle Fork of the Zumbro River near the intersection of Olmsted County Road 3 and the Douglas Trail.[338]

Both the Preferred and Alternate 161 kV routes cross and/or parallel several snowmobile trails.[339] The Douglas Trail is also a designated snowmobile trail.[340] The Douglas Trail is a 12.5-mile trail managed by the MnDNR and is valued for its "outstanding rural scenery".[341] The dual-tread trail offers a paved path for bikers, hikers, in-line skaters, and cross-country skiers, and a natural surface path for horseback riders and snowmobilers.[342] As discussed in Section V.C.1.c, the Preferred 161 kV Route follows the Douglas Trail for approximately 1.25 miles and crosses the trail in one location, whereas the Alternate 161 kV Route follows the Douglas Trail

[337] Ex. 1 at 9-14 (Application).

[338] Ex. 1 at 9-14 (Application).

[339] Ex. 1 at 9-14 (Application).

[340] Ex. 1 at 9-14 (Application).

[341] Ex. 1 at 9-14 (Application).

[342] Ex. 1 at 9-14 (Application).

for approximately 3.5 miles and crosses the trail in three locations.[343] The Douglas Trail is a valued recreation resource in the area north of Rochester and based on the foregoing, selection of the Preferred 161 kV Route will minimize impacts to this resource.

f. *Public Services*

It is not anticipated that any public service, public facility, or existing utility will present a barrier to construction and operation of the 161 kV transmission line.[344] There are public services and facilities, generally defined as services provided by government entities such as hospitals, fire and police departments, schools, public parks, and water supply or wastewater disposal systems, along the Preferred and Alternate 161 kV routes.[345] There are no municipal buildings, wastewater treatment facilities, or other public services located along the Preferred or Alternate 161 kV Routes.[346] Applicant will work with other public service utilities to relocate facilities if they conflict with the construction or operation of the 161 kV transmission line.[347]

2. *Effects on Public Health and Safety*

Minnesota Rule 7850.4100(B) requires consideration of the proposed routes' effects on public health and safety. The record evidence, as set forth below,

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[343] Ex. 1 at 9-14 (Application).

[344] Ex. 1 at 9-15 (Application).

[345] Ex. 1 at 9-15 (Application).

[346] Ex. 1 at 9-15 (Application).

[347] Ex. 1 at 9-16 (Application).

demonstrates that health and safety concerns will be fully addressed during construction and operation of the facilities.

a. *Construction and Operation of Facilities*

It is not anticipated that construction and operation of the 161 kV transmission line along either the Preferred or Alternate 161 kV routes will impact public health and safety as appropriate safeguards will be implemented during construction and operation of the line. The 161 kV transmission line will be constructed and operated by implementing the same design standards and safety procedures discussed in Section V.B.2.a.

b. *Electric and Magnetic Fields*

An extensive discussion of perceived health effects associated with electric and magnetic fields is available in Section V.B.2.b. The calculated electric fields for the proposed 161 kV transmission line is significantly less than the maximum limit of 8 kV/m that has been imposed by the Commission.[348] The maximum electric field associated with the Applicant's proposal, measured at 1 meter aboveground, is calculated to be 1.64 kV/m.[349]

[348] Ex. 1 at 3-25 (Application).

[349] Ex. 1 at 3-25 (Application).

3. *Effects on Land-based Economies*

The next routing factor, Minnesota Rule 7850.4100(C) requires consideration of the Preferred 161 kV Route and Alternate 161 kV Route effects on land-based economies, including, but not limited to, agriculture, forestry, tourism, and mining.

The record evidence demonstrates that it is not anticipated that the Preferred 161 kV Route or the Alternate 161 kV Route, if selected, would have an impact on tourism, forestry, or mining.[350] With respect to agriculture, there are 139 acres of temporary impact and 2.4 acres of permanent impact along the Preferred 161 kV Route.[351] There are 161 acres of temporary impact and 2.6 acres of permanent impact to agricultural lands along the Alternate 161 kV Route.[352]

4. *Effects on Archaeological and Historic Resources*

Minnesota Rule 7850.4100(D) requires consideration of the proposed routes' effects on archaeological and historic resources. The evidence on the record demonstrates the following:

[350] Ex. 8 at 1 (Schedule 6 to Hillstrom Direct).

[351] Ex. 1 at 9-33 (Application); Ex. 8 at 1 (Schedule 6 to Hillstrom Direct).

[352] Ex. 1 at 9-33 (Application); Ex. 8 at 1 (Schedule 6 to Hillstrom Direct).

Factor	Preferred 161 kV Route (sites within one mile of route centerline)[353]
Archaeological Sites	2
NRHP Sites	0
Architectural Sites	13

Of the two archaeological sites documented within one mile of the Preferred 161 kV Route centerline, one was identified as a lithic scatter and one is recommended to be eligible for listing on the NRHP. The Alternate 161 kV Route has no archaeological sites, three NRHP sites,[354] and 11 architectural sites within one mile of the route centerline.[355] No designated historic landscapes were identified in the Class I survey within proximity to the Preferred or Alternate 161 kV Routes.[356]

5. *Effects on the Natural Environment*

Minnesota Rule 7850.4100(E) requires consideration of the proposed routes' effects on the natural environment, including effects on air quality resources, water quality resources, flora, and fauna.

[353] Ex. 1 at 9-21 (Application); Ex. 8 at 1 (Schedule 6 to Hillstrom Direct). Exhibit 8 (Schedule 6 to Hillstrom Direct) does not reflect the proper value for archaeological sites within one mile of the route centerline for the Preferred 161 kV Route, but the text of Exhibit 1 (page 9-21) does reflect the number of archaeological sites accurately.

[354] These sites are all located within the municipal boundary of Pine Island: the Jacob Bringghold House, the Opera Block House, and the Pine Island City Hall and Fire Station. Ex. 1 at 9-21 (Application).

[355] Ex. 1 at 9-21 (Application); Ex. 8 at 1 (Schedule 6 of Hillstrom Direct).

[356] Ex. 1 at 9-22 (Application).

a. *Air Quality*

Applicant anticipates no permanent air quality impacts from the operation of the 161 kV transmission line.[357] Temporary air quality impacts caused by construction vehicle emissions and fugitive dust from right-of-way clearing are expected to occur, but are not expected to have any long-term or regionally-significant impacts.[358] These effects are estimated to be similar for both the Preferred and Alternate 161 kV routes.[359] Other anticipated air quality impacts and mitigation for the 161 kV transmission line are similar to those discussed in Section V.B.5.a.

b. *Water Quality*

The record evidence demonstrates that the Preferred 161 kV Route will have the least impact on water quality resources when compared to the Alternate 161 kV Route. The Preferred 161 kV Route crosses five streams and has a total of 18 crossings.[360] The Alternate 161 kV Route crosses nine streams and has a total of 18 crossings.[361] Two of the streams crossed by the Preferred 161 kV Route and five of the streams crossed by the Alternate 161 kV Route are PWI streams under the regulatory jurisdiction of the MnDNR.[362] Applicant anticipates that all streams along

[357] Ex. 1 at 9-22 (Application).

[358] Ex. 1 at 9-22 (Application).

[359] Ex. 1 at 9-22 (Application).

[360] Ex. 1 at 9-23 (Application); Ex. 8 at 1 (Schedule 6 to Hillstrom Direct).

[361] Ex. 1 at 9-24 (Application); Ex. 8 at 1 (Schedule 6 to Hillstrom Direct).

[362] Ex. 1 at 9-23 (Application).

the Preferred and Alternate 161 kV routes would be spanned and no structures would be located within these water features.[363]

The Preferred 161 kV Route crosses three NWI wetlands compared to the five NWI wetlands crossed by the Alternate 161 kV Route.[364] Applicant estimates approximately two acres of temporary wetland impacts and 1.3 acres of tree clearing in wetlands if the Preferred 161 kV Route were selected.[365] If the Alternate 161 kV Route were selected, Applicant estimates approximately three acres of temporary wetland impacts and 1.9 acres of tree clearing in wetlands.[366] Construction along either the Preferred 161 kV Route or the Alternate 161 kV Route would result in less than one acre of permanent wetland impacts as Applicant does not anticipate the need to place structures in NWI wetlands.[367]

FEMA 100-year floodplains are crossed by both the Preferred and Alternate 161 kV routes.[368] The Preferred 161 kV Route crosses the FEMA 100-year floodplain at three locations compared to the Alternate 161 kV Route that crosses the FEMA 100-year floodplain at four locations.[369] Each route crosses FEMA 100-year floodplains that are wider than the typical span distance of 100 feet and would require

[363] Ex. 1 at 9-23 and 9-24 (Application).

[364] Ex. 1 at 9-25 (Application).

[365] Ex. 1 at 9-34 (Application); Ex. 8 at 1 (Schedule 6 to Hillstrom Direct).

[366] Ex. 1 at 9-34 (Application); Ex. 8 at 1 (Schedule 6 to Hillstrom Direct).

[367] Ex 1 at 9-24 (Application).

[368] Ex. 1 at 9-26 (Application).

[369] Ex. 1 at 9-26 (Application).

structures to be placed in those floodplains.[370] The Preferred 161 kV Route would require two structures to be placed within floodplains and the Alternate 161 kV Route would require 10 structures to be placed within floodplains, but the total permanent impacts to floodplains for either route would be less than one acre.[371]

c. *Flora*

The Preferred 161 kV Route would cross several dominant land cover types. For the length of the Preferred 161 kV Route, 77% would be cropland, 17% would be grassland, and 3% would be forested shrubland.[372] By comparison, the Alternate 161 kV Route crosses 72% cropland, 22% grassland, and 5% shrubland.[373] Field surveys would occur once a route is permitted to identify native vegetation communities along the route.[374]

d. *Fauna*

The Preferred 161 kV Route has one Grassland Bird Conservation Area and four conservation reserve program lands within one mile of the route compared to three Grassland Bird Conservation Areas and two conservation reserve program lands within one mile of the Alternate 161 kV Route.[375] Additionally, 88 CRP lands are

[370] Ex. 1 at 9-26 (Application).

[371] Ex. 1 at 9-26 (Application); Ex. 8 at 1 (Schedule 6 to Hillstrom Direct).

[372] Ex. 1 at 9-28 (Application); Ex. 8 at 1 (Schedule 6 to Hillstrom Direct).

[373] Ex. 1 at 9-28 (Application); Ex. 8 at 1 (Schedule 6 to Hillstrom Direct).

[374] Ex. 1 at 9-28 (Application).

[375] Ex. 1 at 9-29 (Application); Ex. 8 at 2 (Schedule 6 to Hillstrom Direct).

located within one mile of the Preferred 161 kV Route, four of which are within the Preferred 161 kV Route.[376] The Alternate 161 kV Route has 85 CRP lands within one mile, two of which are within the route.[377] No NWRs, federally-designated WPAs, MnDNR WMAs, MnDNR SNAs, MnDNR designated trout streams, IBAs, CREP land easements, or WRP land easements occur within 1 mile of either the Preferred or Alternate 161 kV route.[378]

6. *Effects on Rare and Unique Natural Resources*

Minnesota Rule 7850.4100(F) requires consideration of the proposed routes' effects on rare and unique natural resources. With respect to the Preferred 161 kV Route there are 11 state listed species, including four species of concern, and 35 MnDNR Rare Native Communities within one mile of the route centerline.[379] There are eight state listed species, including two species of concern, and 70 MnDNR Rare Native Communities within one mile of the Alternate 161 kV Route centerline.[380] Neither route has any known occurrences of federal rare and unique species within one mile of each route centerline.[381] Both routes have six known occurrences of state

[376] Ex. 1 at 9-29 (Application).

[377] Ex. 1 at 9-29 (Application).

[378] Ex. 1 at 9-29 and 9-30 (Application).

[379] Ex. 1 at 9-30 and 9-31 (Application); Ex. 8 at 2 (Schedule 6 to Hillstrom Direct).

[380] Ex. 1 at 9-30 and 9-32 (Application); Ex. 8 at 2 (Schedule 6 to Hillstrom Direct).

[381] Ex. 1 at 9-34 (Application); Ex. 8 at 2 (Schedule 6 to Hillstrom Direct).

rare and unique threatened species within one mile of route centerlines.[382] Additionally, the only biodiversity site crossed by either route is and approximately 0.7 mile long high biodiversity site crossed by the Alternate 161 kV Route.[383]

7. *Application of Various Design Considerations*

Minnesota Rule 7850.4100(G) requires consideration of whether the proposed routes applied design options that maximize energy efficiencies, mitigate adverse environmental effects, and could accommodate expansion of transmission or generating capacity. Project design considerations are discussed in Section V.B.7. Generally, Applicant proposes design options for the Preferred 161 kV Route and the Alternate 161 kV Route that maximize energy efficiencies, mitigate adverse environmental effects, and accommodate expansion.

8. *Use or Paralleling of Existing Rights-of-Way, Survey Lines, Natural Division Lines, Agricultural Field Boundaries*

Minnesota Rule 7850.4100(H) requires a showing of how the routes under consideration used or paralleled existing rights-of-way, survey lines, natural division lines, and agricultural field boundaries. The evidence on the record demonstrates that the Preferred 161 kV Route follows property lines (but not transmission lines or roads) for approximately 10% of its length.[384] Approximately 12% of the Alternate 161 kV Route length follows property lines (but not transmission lines or roads).

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[382] Ex. 1 at 9-34 (Application); Ex. 8 at 2 (Schedule 6 to Hillstrom Direct).

[383] Ex. 1 at 9-34 (Application); Ex. 8 at 2 (Schedule 6 to Hillstrom Direct).

[384] Ex. 8 at 2 (Schedule 6 to Hillstrom Direct).

9. *Use of Existing Transportation, Pipeline, and Electrical Transmission Systems or Rights-of-Way*

Minnesota Rule 7850.4100(J)[385] requires consideration of the proposed routes' use of existing transportation, pipeline, and electrical transmission systems or rights-of-way. The relative percentages of corridor sharing for each route are set forth below:

Description	Preferred 161 kV Route	Alternate 161 kV Route
Percentage of route following Transmission Lines	3%	32%
Percentage of route following Roads but not Transmission Lines	86%	45%
Percentage of route following Roads, Transmission Lines, or Property Lines	100%	89%

The evidence on the record establishes that the Preferred 161 kV Route makes the greatest opportunity to use or parallel existing transmission lines and roads.[386]

10. *Electrical System Reliability*

Minnesota Rule 7850.4100(K) requires consideration of electrical system reliability associated with the proposed routes. The evidence on the record demonstrates that the Preferred 161 kV Route and the Alternate 161 kV Route will support the reliable operation of the transmission system.[387]

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[385] Minn. R. 7850.4100(I) requires consideration of a proposed project's use of existing large electric power generating plant sites, and does not apply to the Project.

[386] Ex. 8 at 2 (Schedule 6 to Hillstrom Direct).

[387] Ex. 1 at §§ 3.1.2 and 5.2 (Application).

11. *Costs*

Minnesota Rule 7850.4100(L) requires consideration of each of the proposed route's cost of construction, operation, and maintenance. The record evidence demonstrates that it will cost approximately $16 million, including materials, engineering, survey, and right-of-way costs to construct the Preferred 161 kV Route,[388] approximately $17 million, including materials, engineering, survey, and right-of-way costs to construct the Alternate 161 kV Route.[389] Costs to operate and maintain the 161 kV transmission line are the same as those discussed for the 345 kV transmission line in Section V.B.10.

12. *Unavoidable Adverse Human and Natural Environmental Effects*

Minnesota Rule 7850.4100(M) requires consideration of the adverse human and natural environmental effects that cannot be avoided for the proposed routes. Unavoidable adverse impacts include the physical impacts to the land, primarily agricultural land, due to the construction of the Project. These agricultural impacts are addressed in Section V.B.3.a above. Neither of the routes cross center pivot irrigation systems, farmland preservation easements, or organic farms, so no impacts to these resources are anticipated.[390] The Preferred 161 kV Route would have less of

[388] Ex. 1 at 2-7 (Application); Ex. 26 at 15 (Stevenson Direct).

[389] Ex. 1 at 2-7 (Application); Ex. 26 at 15 (Stevenson Direct). Applicant provides this estimate with a plus or minus 30 % accuracy.

[390] Ex. 1 at 9-19 (Application).

an impact to agricultural land when compared to the Alternate 161 kV Route.[391] In addition, Applicant has identified mitigation measures to address adverse environmental effects during the 161 kV Transmission.[392] Applicant will work with public agencies to minimize the unavoidable adverse environmental effects that may arise during and after construction of the 161 kV transmission line.

13. *Irreversible and Irretrievable Commitment of Resources*

Minnesota Rule 7850.4100(N) requires consideration of the irreversible and irretrievable commitments of resources that are necessary for the proposed routes. Section V.B.12 discusses the potential construction resources to be committed to the overall Project, including the 161 kV transmission line. These commitments will be less for the 15.4-mile Preferred 161 kV Route than for the 18.0-mile Alternate 161 kV Route, based purely on length.

14. *161 kV Line Conclusion*

Based on the record evidence, the Preferred 161 kV Route is the most appropriate route for the 161 kV transmission line for the following reasons: 1) the Preferred 161 kV Route achieves greater use of using or paralleling existing rights-of-way than does the Alternate 161 kV Route; 2) the Preferred 161 kV Route is shorter than the Alternate 161 kV Route; 3) the Preferred 161 kV Route would reduce the impacts to the Douglas Trail compared to the Alternate 161 kV Route; 4) the

[391] Ex. 8 at 1 (Schedule 6 to Hillstrom Direct).

[392] Ex. 1 at 9-19 (Application).

Preferred 161 kV Route would have a lessened impact on agricultural lands than the Alternate 161 kV Route; and 5) the Preferred 161 kV Route would reduce impacts to water quality resources when compared to the Alternate 161 kV Route.[393] Applicant requests that the ALJ recommend the Preferred 161 kV Route, as proposed, with a 1,000-foot route width.

V. CONCLUSION

Applicant respectfully requests that the ALJ recommend that the Commission grant a Route Permit for the Modified Preferred 345 kV Route and the Preferred 161 kV Route with adequate route widths to accommodate site specific concerns and to work with permitting agencies on final alignment.

Dated: September 14, 2011

Respectfully submitted:

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[393] Ex. 8 at 1-2 (Schedule 6 to Hillstrom Direct).

In the Matter of the Route Permit Application for the CapX2020 Hampton-Rochester-LaCrosse 345 kV Transmission Line

CERTIFICATE OF SERVICE
MPUC Docket No. E-002/TL-09-1448
OAH DOCKET NO. 3-2500-21181-2

Jill N. Yeaman certifies that on the 14th day of September, 2011, she filed a true and correct copy of the **Applicant's Post-Hearing Brief** by posting it on www.edockets.state.mn.us. Said document was also served via U.S. Mail and e-mail as designated on the Official Service List on file with the Minnesota Public Utilities Commission in the above-referenced docket.

/s/ Jill N. Yeaman
Jill N. Yeaman

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