

PUBLIC SERVICE COMMISSION OF WISCONSIN

Memorandum

April 20, 2012

TO: The Commission

FROM: Robert Norcross, Administrator
Jim Lepinski, Docket Coordinator
Kenneth Rineer, Environmental Analyst
Gas and Energy Division

RE: Joint Application of Dairyland Power Cooperative, Northern States Power Company-Wisconsin, and Wisconsin Public Power, Inc., for Authority to Construct and Place in Service 345 kV Electric Transmission Lines and Electric Substation Facilities for the CapX Twin Cities-Rochester-La Crosse Project, Located in Buffalo, Trempealeau, and La Crosse Counties, Wisconsin 5-CE-136

BRIEFING MEMORANDUM

Statement of the Proceeding

On January 3, 2011, pursuant to Wis. Stat § 196.491 and Wis. Admin. Code chs. PSC 4 and 111, Northern States Power Company Wisconsin (NSPW), Dairyland Power Cooperative (DPC), and WPPI Energy (WPPI) (together, applicants) filed with the Commission an application for a Certificate of Public Convenience and Necessity (CPCN) to construct new 345 kilovolt (kV) electric transmission facilities. The project, known as the CapX2020 Alma-La Crosse Transmission Project, includes construction of a 345 kV transmission line crossing the Mississippi River at Alma, Wisconsin, which would then continue to a new substation near Holmen, Wisconsin. The project would be 40 to 55 miles long depending on the route chosen.

The Commission found the application in this docket to be complete on June 9, 2011. A Notice of Proceeding was issued on June 20, 2011. A Notice of Prehearing Conference was issued

on November 16, 2011, and a prehearing conference subsequently was held on December 5, 2011.

Requests to intervene in the docket were granted to:

- American Transmission Company, LLC, and its corporate manager, ATC Management, Inc. (ATC)
- Citizens' Energy Task Force (CETF)
- Citizens' Utility Board (CUB)
- Clean Wisconsin (Clean WI)
- Ms. Patricia Conway
- Midwest Independent Transmission System Operator, Inc (MISO)
- NoCapX 2020
- State of Wisconsin Department of Transportation (WisDOT)

Subsequently, requests for intervenor compensation (IC) were filed by CUB, CETF, Clean WI, Ms. Conway, and NoCapX 2020. By Orders dated January 17, 2012, the Commission awarded CUB \$56,030 in IC for its participation in the docket, and denied the applications of NoCapX 2020 and Ms. Conway. By Order dated January 19, 2012, the Commission awarded Clean WI \$36,830 in IC. As a result of requests by the Commission for additional information regarding CETF's IC application, NoCapX 2020 and CETF (now participating in the docket together as NoCapX 2020/CETF) were awarded \$14,905.50 in IC by Order dated February 2, 2012.

The Commission held technical hearings in Madison on March 5, 6, and 8, 2012. Public hearings were held in the project area on March 13 and 14, 2012, in Alma and Centerville, Wisconsin, respectively. The issues for hearing, as determined during the December 5, 2012, prehearing conference, were:

1. Is a 345 kV transmission line needed to satisfy the reasonable needs of the public for an adequate supply of electric energy?
2. Does the proposed project provide usage, service or increased regional reliability benefits to wholesale and retail customers in Wisconsin that are reasonable in relation to its cost?
3. Does the proposed project comply with the requirements of Wis. Stat. §§ 196.49(3)(b) and 196.491(3)(d)5?
4. What is a reasonable cost for the proposed project?

5. What route for the proposed project is in the public interest, considering the requirements of Wis. Stat. §§ 1.12(6), 196.025(1m), and 196.491(3)(d)?
6. Should all or any part of the construction be subject to other specific design requirements or other conditions and, if so, how will they be enforced?
7. Has the proceeding complied with the requirements of Wis. Stat. § 1.11 and Wis. Admin. Code § PSC 4.30?

Initial and reply briefs were filed on March 30 and April 6, 2012, respectively. Initial briefs in support of the project were filed by the applicants, ATC, and MISO. Initial briefs opposing the project, or aspects of it, were filed by CUB, Clean WI, NoCapX 2020/CETF, and WisDOT. Reply briefs were filed by the applicants, CUB, Clean WI, NoCapX 2020/CETF, and WisDOT.

Comments on the proposed project were requested from members of the public in the Commission's January 13, 2012, Notice of Hearing. (Delayed Rineer Exhibit 2¹; Ex.-PSC-Rineer-02.) includes all written public comments received in response to the Commission's Notice of Hearing.

Several motions, petitions, and resolutions opposing the project were submitted to the Commission in the form of public comments or oral testimony at the hearing. These include:

Supporting Motions

- Trempealeau County Farm Bureau (Rineer Ex. 2 at 252; Tr. 0946; written comment received March 22, 2012, PSC REF#: 162002.)

Opposing Resolutions

- Town of Belvidere, Buffalo County (Rineer Ex. 2 at 90, 606.)
- Town of Caledonia, Trempealeau County (Rineer Ex. 2 at 232; Tr. 0895.)
- Town of Farmington, La Crosse County (Rineer Ex. 2 at 264; Tr. 0963.)
- Town of Franklin, Jackson County (Rineer Ex. 2 at 153.)
- Town of Greenfield, La Crosse County (Rineer Ex. 2 at 130.)
- Town of Onalaska, La Crosse County (Rineer Ex. 2 at 184, 439; Tr. 01010.)
- Town of Trempealeau, Trempealeau County (Rineer Ex. 2 at 27, 756.)
- La Crosse Area Builders Association (Rineer Ex. 2 at 167.)
- La Crosse County (Rineer Ex. 2 at 442; Tr. 01015.)

Opposing Petitions

- Mr. Gary Brone (Rineer Ex. 2 at 750.)

¹ See Transcript References section, below.

- CETF (Rineer Ex. 2 at 269; Tr. O972.)

In addition, public comments were received from the following local entities:

- Buffalo County Farm Bureau (Rineer Ex. 2 at 501; Tr. O735.)
- Holmen School Board (Rineer Ex. 2 at 213; Tr. O839.)
- Holmen School District (Rineer Ex. 2 at 231; Tr. O891.)
- Town of Buffalo, Buffalo County (Rineer Ex. 2 at 242; Tr. O920.)
- Town of Glencoe, Buffalo County (Rineer Ex. 2 at 83.)
- Town of Holland, La Crosse County (Rineer Ex. 2 at 67, 504; Tr. O738.)
- Town of Stark, Vernon County (Rineer Ex. 2 at 79, 80.)
- Town of Waumandee, Buffalo County (Rineer, Ex. 2 at 85.)
- Village of Holmen (Rineer Ex. 2 at 113, 224, 225, 226; Tr. O872, O875, O877.)
- Village of Trempealeau, Trempealeau County (Rineer Ex. 2 at 452; Tr. O1034.)

Public comments were also received from the following organizations:

- State of Wisconsin, Department of Agriculture, Trade, and Consumer Protection (DATCP) (Rineer Ex. 2 at 140-5.)
- Friends of McGillivray Road (Rineer Ex. 2 at 726.)
- Friends of the Mississippi River Wildlife Refuge (Rineer Ex. 2 at 216; Tr. O846-9.)
- Mississippi River Parkway Commission (Rineer Ex. 2 at 429; Tr. O691-4; *et al.*)
- Mississippi Valley Conservancy (Rineer Ex. 2 at 500; Tr. O725-33.)
- West Wisconsin Land Trust, Inc. (Rineer Ex. 2 at 35.)
- Wind on the Wires (Rineer Ex. 2 at 222; Tr. O867-71.)
- Wings Over Alma (Rineer, Ex. 2, at 515; Tr. O760-2.)
- Several businesses and farms located in the project area

This Briefing Memorandum provides details that do not appear in the Decision Matrix regarding the positions of the parties.

Transcript References

For brevity, the following conventions are used throughout this Briefing Memorandum and associated Decision Matrix to refer to the various parts of the hearing record.

For the rounds of testimony, the following abbreviations are used:

D – Direct
SD – Supplemental Direct
SSD – Second Supplemental Direct
TSD – Third Supplemental Direct
R – Rebuttal

SR – Surrebuttal
SSR – Sur-surrebuttal
O – Oral Testimony

For testimony and exhibits, the following abbreviations are used:

Doe, Tr. D44-5, Doe Ex. 1 (refers to Doe’s Direct testimony and Doe’s Exhibit 1)

Project Description, Purpose, and Cost

The applicants propose to construct a new 345 kV electric transmission line and substation. The 345 kV line would extend from the Wisconsin border at the Mississippi River west of Alma, Wisconsin, in Buffalo County, through Trempealeau County to a new 345/161 kV substation to be built on the southwest side of Holmen, Wisconsin, in La Crosse County. The new substation would be referred to as the Briggs Road Substation.

The proposed project is part of a larger multi-utility project called the “Hampton-Rochester-La Crosse 345 kV Transmission Project.” The Hampton-Rochester-La Crosse project, in turn, is part of the CapX2020 Transmission Expansion Initiative (CapX2020), which would serve the state of Minnesota and parts of Iowa, the Dakotas, and Wisconsin.

The CapX2020 Alma-La Crosse Transmission Project would require construction of a new 345 kV electric transmission line and a new 345/161 kV substation. The new 345 kV transmission line would be about 40 to 55 miles long depending on the route chosen. The proposed route alternatives mostly follow existing 161 or 69 kV transmission line corridors. The new line would begin at the Mississippi River crossing, where it would connect with the Minnesota portion of the Hampton-Rochester-La Crosse 345 kV line, and terminate at the new Briggs Road Substation. The new line in Wisconsin would in most places carry the new 345 kV circuit plus the existing 161 or 69 kV circuit on single poles. The right-of-way (ROW) would be widened to about 150 feet.

ROWs wider than 150 feet would be necessary for specialty poles such as those for the Mississippi River crossing or those needed for supporting long spans between hilltops in the coulee landscape.

The Briggs Road Substation would comprise the eastern endpoint of the project.

As stated in the application, the project would serve the following purposes:

- Local reliability – to serve increasing electric demand in the La Crosse, Wisconsin, and Winona and Rochester, Minnesota, areas.
- Regional reliability – to maintain the reliability of the regional electrical system.
- Generation support – to provide a means for getting local electric generation output onto the electric grid.

(Hillstrom Ex. 1 at 1-8 to 1-12.)

More recently, the applicants have also stated that another advantage of the new line is to enhance power transfers from states located west of the Mississippi River. (Noeldner, Tr. D4-9.)

The La Crosse local area includes La Crosse, Onalaska, Holmen, Sparta, Arcadia, Trempealeau, Buffalo City, Cochrane, and the surrounding rural areas in Wisconsin, and the areas of Winona/Goodview, La Crescent, Houston, and Caledonia in Minnesota. The area is currently served by the Alma-Marshland-La Crosse Tap, Alma-Tremval-La Crosse, Genoa-Coulee, and Genoa-La Crosse Tap 161 kV transmission lines. In addition, the existing power plants shown in the table below provide electric generation capacity in the local area.

Table 1 **Power plants serving the La Crosse local area**

Plant	Capacity (MW)	Fuel Type	Distance from La Crosse (miles)
John P. Madgett	395	Coal	40
Alma Units 1-5	208	Coal	40
Genoa Unit 3	377	Coal	20
French Island Units 1 and 2	26	Refuse	Within the city of La Crosse
French Island Unit 4*	70	Oil	Within the city of La Crosse
French Island Unit 3*	70	Oil	Currently not operational

*French Island Units 3 and 4 were modeled offline in the power flow analyses.

(Rineer Ex. 1, at 17.)

Normal transmission system operation requires that an outage of a single transmission element or equipment component (transformer, transmission line, or generator) not imperil the transmission system. This operating mode is based on the N-1 criterion, or the ability of the transmission system to sustain operation with the failing of one element. The sudden unplanned failure of a transmission system element is called a contingency event. NERC² Operating System Guidelines require that an area transmission system be capable of successful operation in the event of the failure of two transmission system elements. Such a failure of two elements is called an N-2 contingency. The applicants identified an N-2 critical contingency that limits load serving capability over 430 megawatts (MW) in the La Crosse local area. The applicants state that additional electric infrastructure is needed to provide local area load serving capability for local area customer loads greater than 430 MW. (Hillstrom Ex. 1 at 2-35 to 2-40.)

The applicants evaluated several transmission system alternatives to serve local area need. These alternatives are compared in the table shown below. The costs included in the table are planning level costs used primarily for comparison purposes.

² NERC stands for North American Electric Reliability Corporation.

Table 2 **Cost and performance comparison of transmission line alternatives based on 2010 dollar planning level estimates**

Alternatives	La Crosse/Winona Area Load Serving Capability (MW)	Project Cost (\$ million)	Transmission Losses Cost (\$ million)	Total Cost (\$ million)*
Proposed 345 kV Project	750 MW	201	0	201
Reconductor Option	600 MW	182	36	218
Transmission Line Option: 161 kV Red Wing-La Crosse	750 MW	332	3	335
Transmission Line Option: Single-Circuit 161 kV North Rochester-La Crosse	550 MW	70	32	102
Transmission Line Option: Double-Circuit 161 kV North Rochester-La Crosse	600 MW	95	23	118
Transmission Line Option: Single-Circuit 230 kV North Rochester-La Crosse	550 MW	83	18	101

* For this comparison, Total Cost = Project Cost + Transmission Losses Cost. Costs of transmission losses were calculated using the proposed 345 kV project as a basis. The costs for transmission losses shown in the table are over and above the estimated cost of transmission losses for the proposed 345 kV project.

(Rineer Ex. 1, at 34.)

The applicants developed the following route alternatives for the proposed project:

- Q1–Highway 35
- Q1–Highway 35 with STH Option A
- Q1–Highway 35 with STH Option B
- Q1–Galesville with STH Option A
- Q1–Galesville with STH Option B
- Arcadia
- Arcadia–Ettrick
- Original Q1

The proposed project cost estimated as the sum of year of occurrence dollars ranges from about \$195 million to about \$234 million, depending upon the transmission line route. These costs were estimated from 2010 dollar costs escalated to represent 2014-15 construction years. They include the new substation cost, existing transmission and distribution line relocation cost, and allowance for funds used during construction (AFUDC). (Hillstrom Ex. 1 at 2-54 to 2-62.)

Background on Issues Not Specifically Addressed in the Decision Matrix

ATC Interconnection Location

ATC witness Mr. Peter Holtz stated that it would encounter significant difficulties routing a 345 kV line from Interstate 90 in La Crosse, north to the Briggs Road substation sites. ATC asks that a project route be chosen that would allow a simpler connection to its projected Badger-Coulee 345 kV line at one of five points north and west of the village of Holmen near the city of Alma or the villages of Arcadia or Galesville. ATC indicated that this connection point would not have to be a step-down transformation substation but could instead be an additional 345 kV switching station. (Burmester Tr. D4-5, SR1-5; Holtz Tr. D3-4, SR2-6, Holtz Ex. 1; ATC Init. Br. at 1-11.)

Applicants' Response to ATC's Interconnection Location Testimony

In response to ATC's testimony regarding its preferred interconnection location, the applicants stated that relocating the substation to a site near the city of Alma or the villages of Arcadia or Galesville would be inconsistent with area long-range planning principles and would need further study. (Kline Tr. R2-13, O148-58.) Sites near the city of Alma or the villages of Arcadia or Galesville would require a radial connection to the La Crosse area at either 345 kV or 161 kV and would cost more and provide less capacity than the proposed project. (King Tr. SD1-4, King Ex. 11; Hillstrom Tr. SD1-3, Hillstrom Ex. 28, 29, 30, 31; Stevenson Tr. SD1-6, SSD1-4, TSD1-3, Stevenson Ex. 10, 11, 12; Applicants' Init. Br. at 10-2, Applicants' Reply Br. at 2-3.) The applicants also argued that ATC has already demonstrated that it can build a 345 kV project in a constrained area, using the Arrowhead-Weston (docket 05-CE-113) and Rockdale-West Middleton (docket 137-CE-147) projects as examples. (Applicants' Reply Brief at 3.)

Health Effects/Electric and Magnetic Fields

Many members of the public submitted comments expressing concern regarding possible health effects that they believe are caused by electric and magnetic fields (EMF). (B. Herman, Rineer Ex. 2 at 244-6; Tr. O926-30; M. Lloyd, Rineer Ex. 2 at 534, Tr. O787-8; D. Pierzina, Rineer Ex. 2 at 24-6; *et al.*) The Commission's final Environmental Impact Statement (EIS) addresses EMF in Section 8.4.5, pp. 179-83, and in Appendix B. (Rineer Ex. 1.)

Stray Voltage

Several members of the public submitted comments expressing concern that the proposed project would cause stray voltage problems. (Waldenburger Farm, Rineer Ex. 2 at 235, Tr. 900-4; D. Rebarchek, Rineer Ex. 2 at 654; S. Hart, Rineer Ex. 2 at 677-9; *et al.*) The Commission's final EIS addresses stray voltage in Section 5.5.15, pp. 81-3. (Rineer, Ex. 1.)

Property Values

Many members of the public submitted comments expressing concern that the proposed project would diminish the value of their properties. (S. Bruha, Rineer Ex. 2 at 63-4; J. Cielecki, Rineer, Ex. 2 at 739; J. Wegman, Rineer, Ex. 2 at 437, Tr. O1003-7; *et al.*) The Commission's final EIS addresses property owner issues in section 5.5.11, pp. 76-8. (Rineer, Ex. 1.)

Discussion of Contested Docket Issues

- 1. Will the proposed project, if constructed, satisfy the reasonable needs of the public for an adequate supply of electric energy as required for Commission approval under Wis. Stat. § 196.491(3)(d)2, without substantially impairing the efficiency of utility service, providing facilities unreasonably in excess of probable future requirements, or adding to the cost of service without proportionately increasing the value or available quantity of service, pursuant to Wis. Stat. §§ 196.49(3)(b)1, 2, 3, and 196.491(3)(d)3t. and 5?**

1a. Existing La Crosse Local Area Critical Load Level

The applicants' witness Amanda King identified an existing N-2 critical contingency that limits load serving capability over 430 MW in the La Crosse local area. (King Ex. 2, at 3, 35.) According to Ms. King, above 430 MW, the area will experience low voltages under an N-2 contingency, which is the Genoa 3 generator off-line and the Alma-Marshland 161 kV transmission line out-of-service. (King, Tr. D10.) Ms. King testified that NERC standards require that load be interrupted after the first outage to put the system in a condition where it can withstand the next contingency. (King Ex. 2, at 3, 35.) The applicants point out that Commission staff witness Ms. Julie Urban provided testimony that the La Crosse area local load has surpassed 430 MW every year since 2003, with the exception of 2004. (Urban, Tr. 7.) As such, Ms. King concluded that additional electric infrastructure is needed to reliably provide local area load serving capability above this critical load limit of 430 MW. (Hillstrom Ex. 1, King Ex. 2.)

The applicants' witness Stephan Beuning testified that the applicants did not consider the existing French Island Units 3 and 4 as available resources in their critical load limit analysis. (Beuning, Tr. R2-6.) He stated that NSPW has allocated \$1.9 million for the repair of French Island Unit 3, now mothballed, and that the unit can be "made operational," though that is not a certainty. (Buening Ex. 5 at 3-4.) Mr. Beuning stated that Unit 4 was not included because it has numerous operational problems that result in reduced availability of the unit. (Buening Ex. 5 at 3-4.)

MISO witness Jeffrey Webb testified that applicants and Intervenors differ in their estimates of the local area critical load level. (Webb, Tr. R6.) Mr. Webb stated that because the applicants observed a peak level of 465 MW in 2011, the critical load level is likely to be exceeded before the project is placed in service. (Webb, Tr. R6.) He testified that MISO's analysis shows

line loadings and voltages more than 10 percent out of design range without the proposed project as load levels approach 500 MW. (Webb, Tr. R4-6.) According to Mr. Webb, at an annual load growth rate of 0.7 percent, line loadings and voltages will be out of tolerance within the five- to ten-year planning horizon. (Webb, Tr. R6.)

CUB witness Richard Hahn stated that the applicants' critical load level analysis is overly cautious because it assumes that both French Island Units 3 and 4 are not operating. (Hahn, Tr. D16.) If the French Island units are considered, each having a generating capacity of 70 MW, the critical load limit could be as high as 570 MW. (Hahn, Tr. 17.) Mr. Hahn concludes that the range of critical load limits should be from 430 to 570 MW. (Hahn, Tr. 17.)

NoCapX 2020/CETF argues that the proposed project will meet local load levels of 750 MW, which would likely not develop in the La Crosse local area until well after the usual 20-year planning horizon. (NoCapX 2020/CETF Init. Br. at 8-10.) NoCapX 2020/CETF also points out that assumptions regarding local area need for the La Crosse area have changed since the 2008 Minnesota Certificate of Need filing. (NoCapX 2020/CETF Init. Br. at 8-10.)

Commission staff Udaivir Sirohi stated that operation of French Island Unit 4 and reactivation of French Island Unit 3 could increase the local area load serving capability to 500 MW. (Sirohi, Tr. S3.)

1b. Future Load Forecasts

The applicants' witness Ms. King testified that they developed their load forecast for the La Crosse area from anticipated load growth estimates at individual substations for NSPW, and at individual member cooperatives for DPC. These individual increases were based on distribution planners' knowledge of each location. (King, Tr. O144-6, King Ex. 6.) Using these individual load growth estimates, Ms. King advised that the applicants arrived at estimated average annual

load growth rates of 1.46 percent for the period 2011 to 2020, and 1.24 percent for the period after 2020. (King, Tr. R7, King Ex. 6; Applicants' Init. Br. at 9.)³

MISO witness Mr. Webb acknowledged the differences between the parties' expected average annual load growth rates for the La Crosse area. (Webb, Tr. R4-6.) Mr. Webb found that demand in the area is likely to be very close to, or exceed, the critical load level before the project is placed in service, and concluded that the project should commence as soon as possible. (Webb, Tr. R4-6.) In its Initial Brief, MISO took the position that the applicants' expected average annual load growth rates are reasonable. (MISO Init. Br. at 4-5.)

CUB witness Mr. Hahn stated that a reasonable load growth rate for the La Crosse area for the entire study period would be 1.0 percent. (Hahn, Tr. D13; CUB Init. Br. at 4-7.) In addition, Mr. Hahn stated that the applicants do not provide an adequate explanation regarding the higher load growth rate used for the period 2011 to 2020. (Hahn, Tr. D12.)

NoCapX 2020/CETF argues that the CapX 2020 transmission plan is predicated on a 2.49 percent annual demand increase, which is more than double the applicants' growth projection. (NoCapX 2020/CETF Init. Br. at 3-8.) It contends that since the CapX 2020 transmission plan was developed, load growth has slowed dramatically due to economic conditions. (NoCapX 2020/CETF Init. Br. at 3-8.) NoCapX 2020/CETF contends that the need for the proposed project is based on a past, higher growth projection which is now too high, and as a result does not support the need for the project. (NoCapX 2020/CETF Init. Br. at 3-8.)

Commission staff witness Julie Urban testified that a reasonable range of average annual load growth rates would be from 0.78 to 1.28 percent. (Urban, Tr. D6, O651-4.) Dr. Urban further

³ A correction to Amanda King's testimony was submitted by the applicants on March 30, 2012 (PSC REF#: 162440). This correction clarifies the discussion on page Rebuttal–Applicants–King–Page 7, lines 9 and 10. A copy is attached. The growth rate of 1.24 percent for the period after 2020 is used in the applicants' Initial Brief (PSC REF#: 162544).

testified that this range was based on the MISO scenarios developed for transmission planning for MISO Transmission Expansion Plan 2011 (MTEP11). She also pointed out that for the relatively similar years of 2002 and 2010, when the peak temperature was 94°F in both years, the historical average annual growth rate was 0.75 percent. (Urban, Tr. D5.)

1c. Local Area Load Serving Alternatives

The applicants' witness Ms. King stated that the applicants' evaluated several project alternatives, and that the proposed project is the best solution to meet long-term La Crosse local area needs. (King, Tr. D14-21; Hillstrom Ex. 1; Applicants' Init. Br. 7.)

CUB witness Mr. Hahn stated that the proposed project is excessive to meet La Crosse local area needs, which could instead be met with his proposed hybrid 345/161 kV project. (Hahn, Tr. D31-3.) This hybrid project would include a new 345/161 kV substation at Alma, and a new 161 kV transmission line from Alma to La Crosse. (Hahn, Tr. S5.) He also stated that the 161 kV transmission line is likely all that is needed to solve La Crosse local area needs. (Hahn, Tr. D33, CUB Init. Br. at 3-4.)

NoCapX 2020/CETF contends that the long-term needs of the La Crosse local area can be met by reconductoring existing transmission lines serving the area. (NoCapX 2020/CETF Init. Br. at 23.)

Commission staff witness Mr. Sirohi analyzed local load serving alternatives over a 20-year planning period. (Sirohi, Tr. D7-10, S4-10, SS1-2.) Based on this analysis, he found that the following are the least-cost alternatives for serving the La Crosse local area need for the 20-year planning period:

1. Reconductor Option, for a local area load growth rate of 0.78 percent. (Urban, Tr. D7; Sirohi, Tr. S5, S7.)
2. Reconductor Option, for a local area load growth rate of 1.0 percent. (Sirohi, Tr. S1-2; Hahn, Tr. S6.)

3. Alma-La Crosse 345 kV Transmission Line Option (proposed project), based on MTEP11 load growth rate of 1.28 percent. (Sirohi, Tr. S5, S6, Table 3, S8.)
4. Alma-La Crosse 345 kV Transmission Line Option (proposed project), for the local area load growth rate described in Ms. King's corrected rebuttal testimony, PSC REF#: 162440, attached. (Sirohi, Tr. S6, S7, Table 4, S8.)

1d. Regional Benefits

The applicants contend that the proposed 345 kV project is the best solution for providing regional reliability and efficiency, reducing wholesale prices, and increasing access to renewable energy while supporting La Crosse local area need. (Hillstrom Ex. 1 at 2-50.) Applicants' witness Ms. King testified that the project reduces electrical system losses by 10 MW, which represents a present value savings of about \$45 million. (King Ex. 2 at 50.) Ms. King testified that the project by itself will increase transfer capability by 800 MW, and when the 345 kV transmission network is extended to the east, the transfer capability will rise to 1200 MW. According to Ms. King, a 161 kV local alternative, however, has a negative transfer capability when 345 kV is extended into Wisconsin. (King Ex. 2, at 57.) Applicants' witness Mr. Buening testified that using MISO's regional models, the 345 kV project has superior performance compared to a 161 kV alternative. Using the PROMOD market modeling software over the 20 to 40 years beginning in 2019, Mr. Buening found that the project would provide approximately \$354 to \$445 million in present value benefits. (Buening, Tr. D7-10.) The value of accessing additional wind resources with the increased transfer capability is estimated to be from \$130 to \$250 per kW based on the wind resources in Minnesota versus those in Wisconsin. (Noeldner, Tr. D4-5, 9, Ex. Noeldner 2 and 3.)

MISO witness Mr. Webb testified that by the year 2021, without the proposed project, 23 different facilities are projected to overload or load to near their emergency capability for any of 17 single contingencies, and 24 events are projected to occur involving forced outages as a result of a prior outage of another facility. (Webb, Tr. D15-19, O179-184.)

ATC supports the 345 kV project crossing into western Wisconsin toward the La Crosse area. ATC witness Burmester testified that the 345 kV project would provide significant reliability and service benefits to Wisconsin customers and a continuous 345 kV interconnection for planned projects such as the Badger-Coulee 345 kV project. (Burmester, Tr. D3-6, ATC Init. Br. at 1-3.)

Commission staff witness Dr. Urban testified that increased transfer capability has a positive impact that would facilitate commerce and not adversely affect competition in the wholesale electric market. (Urban, Tr. D8.) Commission staff witness Donald Neumeyer testified that the transfer capability and design of the project match long range plans for the area and are not in excess of probable future requirements. (Neumeyer, Tr. D2-5, Neumeyer Ex. 3.)

CUB disagrees that the local benefits to Wisconsin ratepayers justify the cost of the proposed 345 kV project into the La Crosse area. CUB witness Mr. Hahn proposed an alternative hybrid system, as described in Section 1c above. This hybrid alternative would bring only new 161 kV facilities to La Crosse but preserve the attributes of a continuous 345 kV network for later connection if and when desired. (Hahn, Tr. O35, O84-5, SR8, CUB Init. Br. at 1-2, 10-14.)

NoCapX 2020/CETF argues that the 345 kV project is not needed for regional reliability and that transfer capability and “congestion” relief are market issues. According to NoCapX 2020/CETF, the 345 kV line would instead bring system instability, voltage and dynamic issues, and require the addition of a line to Madison to stabilize the system. NoCapX 2020 contends that the local load can be reliably served by reconductoring existing transmission in the area. NoCapX 2020/CETF concludes that the project does not meet the requirements of Wis. Stats. § 196.491, and the Commission should deny the application. (NoCapX 2020/CETF Init. Br. at 1-2, 10-14, 23.)

Alternative One: The applicants' proposed project meets the requirements for approval, considering the existing La Crosse local area critical load level, future load forecasts, local load serving alternatives, and regional benefits.

Alternative Two: The applicants' proposed project does not meet the requirements for approval, and the Commission should order the applicants to study a hybrid 345/161 kV project.

Alternative Three: The applicants' proposed project does not meet the requirements for approval, and La Crosse local area need can be addressed by reconductoring existing transmission lines in the area.

2. Are there technically feasible and environmentally sound alternatives to building the proposed project, per Wis. Stat. §§ 1.12(4) and 196.025(1)? Specifically, is energy efficiency and conservation a reasonable alternative to the proposed project?

In response to a Commission staff data request, the applicants stated that the availability of energy efficiency and conservation, load management, and generation were studied as alternatives to meet the three needs identified in the application: local reliability, regional reliability, and generation support. The applicants concluded that none of these alternatives would satisfy all three of these needs. (King Ex. 10.)

As alternatives to the proposed project, the applicants evaluated renewable and non-renewable generation alternatives. The renewable alternatives evaluated were wind, photovoltaic, biomass, and landfill gas. The applicants concluded that wind is not a feasible alternative because its variability prevents it from providing capacity support. Photovoltaic was determined not to be a feasible alternative, not only due to its cost, but also because voluntary construction of new systems would likely not provide sufficient capacity within the required timeframe to ensure transmission grid reliability. The applicants also concluded that multiple

biomass plants would be needed to ensure reliability, would not be cost-effective, and that there is not sufficient available landfill gas in the study area to ensure reliability. (King Ex. 10.)

The applicants' analysis of the ability of load reduction to meet the needs identified an immediate need to reduce peak load in the study area by 3 MW. Load growth would need to remain stagnant until 2020, which would require a 98 MW load reduction based on the applicants load forecast. (King Ex. 10.)

Commission staff witness Carol Stemrich conducted an independent analysis of the ability of energy efficiency and conservation to alleviate the need for the project. Ms. Stemrich's analysis indicated that an approximate 8 percent reduction in peak load is needed immediately. This is in addition to the approximate 0.5 percent annual reduction achieved by Focus on Energy programs that is already reflected in the forecast submitted in support of the application. It is unlikely that this level of load reduction can be achieved through energy efficiency and conservation. This level of load reduction is substantially higher than the annual potential identified in the August 2009 *Energy-Efficiency and Customer-sited Renewable Resource Potential in Wisconsin Study* conducted by the Energy Center of Wisconsin. It is also substantially higher than the annual savings goals established by various Midwestern states, which range from 1.0 to 2.0 percent. (Stemrich, Tr. D2-4.)

Several members of the public testified that energy efficiency and conservation should be pursued in lieu of the proposed project. (Bechly, Rineer Ex. 2 at 468, Tr. O698-9; Muller, Rineer Ex. 2 at 218, Tr. O853-7; Schultz, Rineer Ex. 2 at 221, Tr. O865-6; Morse, Rineer Ex. 2 at 430, Tr. O980-2; Danielson, Rineer Ex. 2 at 435, Tr. O994-8; Larson, Rineer Ex. 2 at 445-6, Tr. O1022-5.) Others commented in support the use of renewable energy to meet the needs identified by the applicants. (Public: Wald, Rineer Ex. 2 at 498, Tr. O721-3; Kamrowski, Rineer

Ex. 2 at 517; Tr. 0766-9; Nygard, Rineer Ex. 2 at 237, Tr. 0909-15; Miller, Rineer Ex. 2 at 241, Tr. 0915-20.)

Alternative One: No. Energy efficiency and conservation is not a technically feasible, cost-effective alternative to the project.

Alternative Two: Yes. Energy efficiency and conservation, particularly if combined with local renewable resources, could offset the need for the project.

3. If approved, would the proposed project have a material adverse impact on competition in the relevant wholesale electric service market under Wis. Stat. § 196.491(3)(d)?

Uncontested Alternative: The addition of the proposed project by the applicants will not have a material adverse impact on competition in the relevant wholesale electric service market.

4. Do the routes proposed by the applicants comply with Wis. Stat. §§ 1.12(6)?

The applicants state that all the routes under consideration for this project are viable and constructible and comply with Wis. Stat. § 1.12(6) to different extents. (Hillstrom Tr. D9-15; Applicants' Init. Br. at 15.) According to Table 1 on page 15 of the applicants' initial brief, no routes under consideration share less than two-thirds of their length with existing transmission, road, or railroad corridors. Two of the three routes originally proposed (Q1-Highway 35 and Arcadia routes) share at least 90 percent. Portions of routes not utilizing existing corridors are generally either portions connecting two different corridors or portions routed differently for engineering or reliability purposes.

DNR argues that Segment 8B of the Q1-Highway 35 route does not share any ROW with State Highway (STH) 35 as the applicants indicate but, instead, creates a new ROW across the Black River bottoms north of the road corridor. (Rineer Ex. 1 at 129.) On cross examination, Mr. Hillstrom agreed that although the portion of the Q1-Highway 35 route along STH 35 is

adjacent to the road, it does not share the corridor and creates a new 150-foot wide ROW outside of the WisDOT easement, that extends 350 feet from the center of the road. (Hillstrom Tr. O313 4) If Segment 8B is considered new ROW, the percentage of route shared with transmission or road corridors decreases by about 4 percent.

WisDOT argues that the applicants have veered from the statutory priorities along the Q1 routes when proposing new alignments that move the route ROW outside the ROW of STH 35 to avoid WisDOT permitting jurisdiction. If these alignments are considered new ROW, the percentage of sharing along the Q1 routes is decreased. If the new alignments are not seen as necessary for the route, the route is less compliant with the statute. (Fasick, Tr. D12-3; WisDOT Init. Br. at 17-20.)

The DNR and WisDOT positions presume “ROW” and “corridor” are the same. If “corridor” is broader than “ROW,” the project may still be in compliance with the statutory priorities.

NoCapX argues that a route selection in the public interest and in compliance with this statute and others is not possible at this time but gives no specific argument. (NoCapX 2020/CETF Init. Br. at 16-9.)

Alternative One: All the routes under consideration are viable and constructible and comply with the statutory requirements for issuance of a CPCN.

Alternative Two: The Q1-Highway 35 Route may not be completely in compliance with the statute to the extent that Segment 8B deviates from the existing STH 35 corridor unnecessarily. While the Q1-Highway 35 Route would be parallel to STH 35, its ROW would not share any of the existing DOT ROW.

Alternative Three: The Q1 routes may not be completely in compliance with the statute to the extent that the alignment relocations along the Great River Road National Scenic Byway (GRRNSB) deviate from the existing STH 35 or Q1 ROWs unnecessarily.

Alternative Four: A route selection in the public interest and in compliance with the Wisconsin Statutes and Administrative Code is not possible at this time.

5. If approved, would the proposed project comply with Wis. Stat. § 196.491(3)(d)6. and not unreasonably interfere with the orderly land use and development plans for the area involved?

The applicants acknowledged that the proposed project would have some impact on existing land use and development plans, but argue that none of the route alternatives would unreasonably interfere with such plans. (Applicants' Init. Br. at 18.)

Some members of the public provided comments regarding the impacts of the proposed project on local land use plans. (Lautz, Rineer Ex. 2 at 196, Tr. 827-9; Heinig, Rineer Ex. 2 at 113-7, 225; Tr. O875-7; *et al.*) Mr. D. Carlson, representing the town of Holland, stated that the project would conflict with the town's comprehensive plan. (Rineer Ex. 2 at 67-8.)

Ms. N. Proctor, representing the village of Holmen, submitted comments regarding the possible effects of the project on the village of Holmen's tax incremental financing district. (Rineer Ex. 2 at 226, Tr. O 877-8.)

Many members of the public provided comments stating that route alternatives through or near the developed areas of the village of Holmen should be avoided. (Brott, Rineer Ex. 2 at 217, Tr. 849-52; Bassuener, Rineer Ex. 2 at 4; Waldenberger, Rineer Ex. 2 at 725; *et al.*) Route alternatives that pass through developed areas of Holmen include all of the proposed route alternatives except the Original Q1 Route.

Alternative One: None of the route alternatives will unreasonably interfere with local land use and development plans.

Alternative Two: Some route segments would unreasonably interfere with local land use and development plans, and route alternatives using those segments should be eliminated from consideration.

Alternative Three: Route alternatives through or near the developed areas of the village of Holmen should be avoided.

6. Which substation site should be used for the eastern terminus of the project?

The applicants proposed two sites for the Briggs Road Substation, an East Site and a West Site. The applicants state that the West Site should be used. Two of the four main 161 kV lines serving the La Crosse area converge near the intersection of U.S. Highway (USH) 53 and Briggs Road. The existing DPC 69 kV North La Crosse Substation is also located near this intersection. The new Briggs Road Substation would require a fenced area of approximately 700 feet by 900 feet (totaling approximately 15 acres) with a total site area of about 1,100 feet by 1,300 feet, or 32 acres, to include space for grading, driveways, storm water ponds, property line setbacks, and sufficient space to route transmission lines into the substation. The Briggs Road sites are about 40 acres. The West Site is currently cropland and would need less grading, less woodland clearing, and is the lower-cost alternative. (Stevenson, Tr. D10-3.)

DNR witness Shari Koslowsky noted that the East Site contains habitat that may be suitable for rare plant or bird species, while the West Site does not. (Koslowsky Tr. D5; Rineer Ex. 1 at 98.)

Several members of the public submitted comments regarding the proposed Briggs Road substation site alternatives. (Medinger, Rineer Ex. 2 at 213, Tr. O839-42; Olson, Rineer Ex. 2 at

224, Tr. O872-5; *et al.*) One member of the public, Mr. A. Mueller, expressed concern that the proposed substation sites were too close to a park area, and proposed additional substation site alternatives. (Rineer Ex. 2 at 470-4, Tr. O703-6.) Mr. D. Brady provided comments stating that the proposed substation sites would interfere with his plans to construct housing for disabled veterans. (Rineer Ex. 2 at 215, Tr. O845-6.)

Many members of the public provided comments stating that route alternatives through or near the developed areas of the village of Holmen should be avoided. (Brott, Rineer Ex. 2 at 217, Tr. 849-52; Bassuener, Rineer Ex. 2 at 4; Waldenberger, Rineer Ex. 2 at 725; *et al.*)

Alternative One: The Briggs Road Substation West Site should be used.

Alternative Two: The Briggs Road Substation East Site should be used.

Alternative Three: Neither the Briggs Road East Site nor the West Site should be selected. The new substation should be located away from developed areas of the village of Holmen. In addition, route alternatives through or near the developed areas of the village of Holmen should be avoided.

7. Is the use of the Alma Crossing of the Mississippi River appropriate?

The applicants found four potential crossings of the Mississippi River in the vicinity of the project area, three of them places where existing electric transmission lines already crossed. After working with the U.S. Fish and Wildlife Service (USFWS) and the Wisconsin DNR, the applicants winnowed the four potential crossings of the Mississippi River to one crossing at the city of Alma. This crossing was accepted by cooperating state agency staff in Minnesota and Wisconsin for the purpose of route application review in each state. (Hillstrom Ex. 1 at 1-3, 1-14 to 1-15, 2-73, Appendix F; Rineer Ex. 1 at 42-5.)

Clean WI and NoCapX 2020/CETF argue that the process for choosing the crossing location was inadequate for the Wisconsin CPCN process and that the coverage of the process in the final EIS does not comply with the requirements of the Wisconsin Environmental Policy Act (WEPA) and Wis. Admin. Code chs. NR 150 and PSC 4. Clean WI stated that WEPA and the CPCN statute require analyses of alternative Mississippi River crossings, “the same treatment as any other segment under consideration in this proceeding.” (Clean WI Init. Br. at 8.) It argues, “Failure to consider at least one alternative and its environmental consequences to the Mississippi River crossing violates the PSC’s duty under WEPA, Wis. Admin. Code PSC 4 and Wis. Stat. § 196.025. *See also State ex rel. Boehm v. Wisconsin Dept. of Natural Res.*, 174 Wis. 2d 657, 665, 497 N.W. 2d 445, 449 (1993).” (Clean WI Init. Br. at 9.) NoCapX 2020/CETF likewise stated that the Wisconsin process allowing the Alma crossing to be an endpoint for the project is inexplicable and “contrary to the most basic environmental and statutory tenets (sic).” (NoCapX 2020/CETF Init. Br. at 18.) NoCapX 2020/CETF notes that the Minnesota Certificate of Need proceeding⁴ considered the four river crossings and the interstate U.S. Department of Agriculture Rural Utilities Service (RUS) EIS initially addressed the four river crossings and narrowed them to three, while the Commission proceeding considered only the Alma crossing. (NoCapX 2020/CETF Init. Br. at 17-8; Hillstrom Tr. O288-9; Rineer Tr. O575-86.) NoCapX 2020/CETF also cite USFWS correspondence from 2008 and 2009 with the applicants to show that each crossing was evaluated by USFWS. (NoCapX 2020/CETF Ex. 1, Items 20, 21.)

In turn, the applicants argue that (1) Clean WI (and by implication NoCapX 2020/CETF) did not identify any legal requirement to analyze more than one river crossing under WEPA, (2) the CPCN application did include a detailed analysis of the four river crossings and their

⁴ The Minnesota Certificate of Need (CON) proceeding and decision both precede the Minnesota routing process. The decision on the CON was made May 22, 2009, and is referenced by as NoCapX 2020/CETF Item 1, PSC REF#: 160012.

potential impacts, (3) the EIS included an “abridged version of this analysis,” and (4) the analysis in the CPCN application and the discussion of it in the EIS comply with the requirements of WEPA. (Applicants’ Reply Br. at 15.)

Considering that the Mississippi River crossing choice has been made, the applicants’ witness Grant Stevenson stated that the applicants will work closely with Wisconsin DNR, Minnesota DNR, U.S. Army Corps of Engineers, and USFWS to develop construction plans for the overhead crossing. (Stevenson, Tr. D20.)

NoCapX 2020/CETF notes that, early in the permitting process for the project, USFWS stated a preference for an underground crossing of the Mississippi at Alma. (NoCapX 2020/CETF Init. Br. at 19; NoCapX 2020/CETF Ex. 1, Item 21.) NoCapX 2020/CETF argues that an underground crossing would still be preferable because it would not then be “a 1.3 mile crossing of one of North America’s largest flyways,” would not require an eagle take permit, and would no longer be “a visual intrusion in this scenic area, and could legitimately cross the Great River Road National Scenic Byway.” (NoCapX 2020/CETF Init. Br. at 20.) The cost would be high but reasonable because of the benefits and because this route segment is already the most expensive segment in the entire route. (NoCapX 2020/CETF Init. Br. at 20; Hillstrom Tr. O288-9; Rineer Tr. O586.) NoCapX 2020/CETF further argues “Undergrounding, at even \$20 million per mile, is only \$13 million per mile more and a total of \$26 million more.” (NoCapX 2020/CETF Init. Br. at 20.)

Alternative One: Yes. The applicants will work closely with Wisconsin DNR, Minnesota DNR, U.S. Army Corps of Engineers, and USFWS to develop construction plans for the overhead crossing.

Alternative Two: No. The process for choosing the crossing location is inadequate.

Regardless of crossing location, the line across the Mississippi should be underground.

8. Given the requirements for issuance of a CPCN under Wis. Stats. § 196.025 (1m), and Wis. Stats. § 196.491(3)(d), which route, if any, does the Commission authorize?

8a. Q1-Highway 35

The applicants stated that, while they believe that all the route alternatives under consideration are viable and constructible and comply with the statutory requirements for the issuance of a CPCN, the Q1-Highway 35 route best serves the overall public interest. They stated that this route is favored by comparison of human impacts, natural resource impacts, and agricultural impacts and that it would not unreasonably interfere with local land use and development plans. (Hillstrom Tr. D12-3, R6-7; Applicants' Init. Br. at 13-30.) The estimated cost of the project using this route is \$194,590,000. (Rineer Ex. 1, at 48.)

DATCP submitted a comment letter supporting the applicants' position. Noting that an Agricultural Impact Statement (AIS) is being prepared for the project, Secretary Ben Brancel of DATCP stated that the route is one of two that affect the least amount of farmland or prime farmland.⁵ The Q1-Highway 35 route would affect about 335 acres of farmland. (Rineer Ex. 2 at 140-5.)

WisDOT indicated that it would permit the Q1-Highway 35 Route only if (1) the line were placed underground on all scenic easements and on any WisDOT ROW along the GRRNSB, except for Segments 9 and 18H, where the easements are now being released at the request of the village of Holmen, and (2) DNR permits construction in the wetlands along Segment 8B in the Black River bottoms.

⁵ The other is the Original Q1 route, which was removed from consideration in the final EIS after USFWS stated in its comments on the draft EIS that it would not permit project segments located in the Upper Mississippi River National Wildlife and Fish Refuge. (Applicants Ex. Hillstrom 10.)

Otherwise, WisDOT stated that it does not intend to grant permits, give written consent or sell or release scenic easements along or across the GRRNSB for this route. (Fasick Tr. D8; WisDOT Init. Br. 1-28.) WisDOT notes that it has the authority to permit utility construction in its ROWs and that it has the obligation to protect the current aesthetic character of the GRRNSB and to administer and maintain the existing scenic easements along the road. Any route that included the GRRNSB would require special WisDOT attention and possible permit restrictions. (WisDOT Init. Br. at 1-28.)

Also opposing the Q1-Highway 35 route, DNR testified that it will not permit any segment of the 345 kV line in the Van Loon State Wildlife Area, including Segment 8B. (Laatsch, Tr. D12.) The joint EIS discusses in detail the particular qualities of the wetlands in this area. (Rineer Ex. 1 at 130-2; Thompson, Tr. D3-6.) In the EIS and in testimony, DNR states that it cannot permit wetland construction on Segment 8B because practicable alternatives exist that avoid impacts to the Black River bottoms/Van Loon wetlands. The Q1-Galesville and Arcadia routes cross the Black River east of USH 53 and outside of the area of the Van Loon. Under Wis. Admin. Code § NR 103.08(4), DNR may not issue a permit if a practicable alternative avoiding the wetland exists. (Laatsch Tr. D9-12, Laatsch Ex. 1; Rineer Ex. 1 at 127-9, 274.) DNR is supported in this position by Clean WI witness Mr. Mosca, who indicated that impacts to the Van Loon State Wildlife Area wetland, one of the state's higher-quality wetlands, would be too great. (Mosca, Tr. D10-15; Clean WI Initial Brief at 5-8; Clean WI Reply Brief at 2-8.)

The applicants acknowledge that WisDOT and DNR both consider this route unpermissible but state that "these conclusions are not well-founded and that the underlying concerns can be adequately addressed with appropriate mitigation measures." (Applicants' Init. Br. at 14, 18-30.) The applicants' witness Tom Hillstrom stated that the existing DPC Q1 utility easements supersede

the scenic easements and that, regardless, the scenic easements include electric lines as permitted use. (Hillstrom Tr. D34-6.) The applicants also state that WisDOT “has both the authority and the discretion to permit the Q1 routes.” (Applicants’ Reply Br. at 4-8.) They argue that, “A review of the record provides compelling evidence that the decision does not represent reasoned agency decision making.” (Applicants’ Init. Br. at 28-30.) They also argue that WisDOT’s interpretation of its authority “has varied” during the course of the proceeding and that its “decision-making is demonstrably arbitrary and capricious.” (Applicants’ Init. Br. at 26; Applicants’ Reply Br. at 5-13.) They argue that WisDOT’s reliance on Wis. Stat. § 86.07(2), Wis. Stat. § 14.85, and federal rule 23 CFR 645.209(h) is “misplaced” because the ROW authority has no references to aesthetics or undergrounding of the utilities, the membership on the Wisconsin Mississippi River Parkway Commission does not give it authority to ban transmission lines for aesthetic reasons, and the federal regulation cannot be enforced by the state DOT. (Applicants’ Init. Br. at 28; Applicants’ Reply Br. at 6-9.) Regarding DNR permit issues, the applicants counter that DNR is overstating the potential impacts along Segment 8B and not comparing them properly to potential impacts along other routes such as the Arcadia Route, and they argue that their suggested mitigation measures would reduce impacts to an acceptable level. (Hillstrom Tr. D17-28, R3-6, R17-23, SSR2, O290-5; Applicants’ Init. Br. at 20-3; Applicants’ Reply Br. at 14-5.)

DNR witness Mr. Thompson testified that based on his personal knowledge of the resource, the scope of the proposed impact, and the difficulties of restoration efforts, that the applicants’ proposed mitigation measures were of marginal assurance of any benefit to the resource. (Thompson, Tr. D6-7, S1-2, O542, O553-6.)

In addition to wetland permitting DNR testified regarding the need for an incidental take permit to redress impacts to endangered and threatened species in the Black River bottoms/Van

Loon. (Koslowsky, Tr. D10.) DNR must consider other routes more likely to avoid incidental take. (Koslowsky, Tr. D9. *See also* Wis. Stat. §29.604(6m)(c).)

DATCP Secretary Brancel stated the DATCP interpretation “that the scenic easements do not appear to prohibit the routing of the project through the lands covered by the easements.” A memorandum from DATCP Chief Legal Counsel argues that electric transmission lines and structures appear to be a specific permitted use under the scenic easements. Secretary Brancel also stated that DATCP believes the proposed mitigation measures, along with an independent environmental monitor, can minimize impacts to the wetland resources along Segment 8B. (Rineer Ex. 2 at 140-5.)

Some members of the public provided comments supporting the Q1-STH 35 route alternative. (Frie, Rineer Ex. 2 at 828-32, Tr. O708-13; LeMasters, Rineer Ex. 2 at 652-3; *et al.*)

Several members of the public provided comments stating that the proposed project should be constructed underground to avoid aesthetic impacts. (Plank, Rineer Ex. 2 at 513-4, Tr. O757-60; Stiers, Rineer Ex. 2 at 19, *et al.*)

Some members of the public provided comments asking that the project not be constructed in environmentally sensitive areas, including the Van Loon State Wildlife Area. (Narveson, Rineer Ex. 2 at 51; Pederson, Rineer Ex. 2 at 194; *et al.*) Other members of the public provided comments asking that the project not be constructed in areas of high wildlife use, to avoid impacts on birds and other wildlife. (Amundson, Rineer Ex. 2 at 681-2; Pelech; Rineer Ex. 2 at 705-6; Swanson, Rineer Ex. 2 at 214, Tr. O842-5; Van Art, Rineer Ex. 2 at 431, Tr. O892-5; *et al.*)

Several members of the public submitted comments expressing concern over the possible effects of the project on aesthetic qualities of the GRRNSB. (Galasinski, Rineer Ex. 2 at 197, Tr. 829-34; Helmueller, Rineer Ex. 2 at 32-3; *et al.*) Some members of the public provided

comments regarding possible negative effects of the proposed project on tourism in the area.

(Balk, Rineer Ex. 2 at 515, Tr. O760-2; Peterslie, Rineer Ex. 2 at 700-1; Smith, Rineer Ex. 2 at 674-6; *et al.*)

Alternative One: Yes, this route is viable and constructible and complies with the statutory requirements for issuance of a CPCN.

Alternative Two: Yes, only if the transmission line is placed underground on all scenic easements and on any WisDOT ROW along the GRRNSB, STH 35, except for Segments 9 and 18H, and only if DNR permits construction in wetlands along Segment 8B.

Alternative Three: No. This route alternative should not be selected because it relies on Segment 8B in the Black River bottoms/Van Loon State Wildlife Area, where adverse impacts to one of the state's higher-quality wetlands and rare species would be too great. DNR does not intend to approve construction in any wetlands in Segment 8B because practicable alternatives to avoid impacts to these sensitive areas exist.

8b. Q1-Highway 35 with STH 88 Option A

The applicants indicate that this route is viable and constructible and complies with the statutory requirements for issuance of a CPCN, but that it resulted from a WisDOT recommendation and is not the applicants' first choice. (Hillstrom Tr. D11; Hillstrom Ex. 1 at 1-18, Appendix W, at 2-1 to 2-7; Applicants' Init. Br. at 13-4.) The difference between this route and the Q1-Highway 35 Route is the utilization of the STH 88 corridor to replace the Q1 corridor along the GRRNSB. The estimated cost of the project using this route is \$213,380,000. (Rineer Ex. 1 at 50, 193-6)

WisDOT witness Robert Fasick indicated that WisDOT would issue a permit for above-ground installation along most of this route because (1) the STH 88 corridor would be

utilized instead of the Q1 corridor along the GRRNSB, and (2) the GRRNSB ROW shared along Route Segments 2A1, 2A2, and 2I are short. Scenic easements along Segments 9 and 18H would be released for Holmen development. However, WisDOT would issue permits or release easements for Segments 8A, 8B, and 8C only if DNR wetland permits were also issued. (Fasick Tr. D8-9; WisDOT Init. Br. at 1-28; WisDOT Reply Br. at 3-14.) NoCapX 2020/CETF indicate their support of WisDOT's effort to protect its scenic easements. (NoCapX 2020/CETF Reply Br. at 14-5.)

As with the proposed Q1-Highway 35 Route, DNR has indicated that DNR will not permit construction of the line in the wetlands along Segment 8B. (Laatsch, Tr. D9-12, Laatsch Ex. 1.) Clean WI supports DNR's position for all routes that include Segment 8B. (Mosca, Tr. D10-15; Clean WI Init. Br. at 5-8; Clean WI Reply Br. at 2-8.)

Several members of the public provided comments opposing route alternatives that use the STH 88 connector segments (Segments 88A-F). (Bechy, Rineer Ex. 2 at 469, Tr. O701-3; Dittrich, Rineer Ex. 2 at 72; Schiffli, Rineer Ex. 2 at 516, Tr. O762-6; *et al.*)

Alternative One: Yes, this route is viable and constructible and complies with the statutory requirements for issuance of a CPCN.

Alternative Two: Yes, but WisDOT permits or scenic easement releases would be done along Route Segments 8A, 8B, and 8C only if DNR permits construction in wetlands along these segments.

Alternative Three: No. This route should not be selected because it relies on Segment 8B in the Black River bottoms/Van Loon State Wildlife Area, where impacts to one of the state's higher quality wetlands would be too great because practical alternatives to avoid impacts to these

sensitive areas exist. DNR does not intend to approve construction in any wetlands on Segment 8B.

Alternative Four: No. The STH 88 Options are not appropriate and have major environmental, agricultural, social, and aesthetic impacts.

8c. Q1-Highway 35 with STH 88 Option B

As with STH 88 Option A, the applicants indicate that this route is viable and constructible and complies with the statutory requirements for issuance of a CPCN, but that it resulted from a WisDOT recommendation and is not the applicants' first choice. (Hillstrom, Tr. D11, Hillstrom Ex. 1, at 1-17, 2-2, Appendix W, at 2-1 to 2-7; Applicants' Init. Br. at 13-4.) The difference between this route and the Q1-Highway 35 Route is the routing in the Waumandee Creek valley along STH 88 and partial utilization of the STH 88 corridor to replace the Q1 corridor along the GRRNSB. The estimated cost of the project using this route is \$207,630,000. (Rineer Ex. 1 at 50, 193-196.)

WisDOT witness Mr. Fasick indicated that WisDOT would issue a permit for above-ground installation along this route for the same reasons and under the same conditions as it would for the Q1-Highway 35 Route with STH 88 Connector Option A. (Fasick, Tr. D9; WisDOT Initial Brief at 1-28; WisDOT Reply Br. at 3-14.) NoCapX 2020/CETF indicate support of WisDOT's effort to protect its scenic easements. (NoCapX 2020/CETF Reply Br. at 14-5.) Likewise, DNR would not permit construction in wetlands along Segment 8B (Laatsch, Tr. 9-12, Laatsch Ex. 1), and Clean WI supports DNR's position for all routes that include Segment 8B. (Mosca, Tr. D10-15; Clean WI Init. Br. at 5-8; Clean WI Reply Br. at 2-8.)

Several members of the public provided comments opposing route alternatives that use the STH 88 connector segments (Segments 88A-F). (See citations in section 8b.)

Alternative One: Yes, this route is viable and constructible and complies with the statutory requirements for issuance of a CPCN.

Alternative Two: Yes, but permits or scenic easement releases would be done along Segments 8A, 8B, and 8C only if DNR permits construction in wetlands along these segments.

Alternative Three: No. This route alternative should not be selected because it relies on Segment 8B in the Van Loon State Wildlife Area, where impacts to one of the state's higher-quality wetlands would be too great. DNR does not intend to approve construction in any wetlands in Segment 8B.

Alternative Four: No. The STH 88 Options are not appropriate and have major environmental, agricultural, social, and aesthetic impacts.

8d. Q1–Galesville

The applicants indicate that this route is viable and constructible and complies with the statutory requirements for issuance of a CPCN, but it is not the applicants' preferred route primarily because it passes more homes and follows the curving STH 54 south of Galesville. The estimated cost of the project using this route is \$ 202,065,000. (Hillstrom, Tr. D13, Hillstrom Ex. 1 at 1-18, 2-16; Applicants' Init. Br. at 13-4; Rineer Ex. 1 at 48.) The route is proposed to allow an option for the line to utilize the existing Q1 transmission corridor but avoid crossing the Van Loon State Wildlife Area. (Hillstrom Ex. 1 at 1-18; Rineer Ex. 1 p.36.)

WisDOT witness Mr. Fasick stated that WisDOT would issue a permit for this route only if the transmission line is placed underground on all scenic easements and on any WisDOT ROW along the GRRNSB except for Segment 18H, where the scenic easements are being released at the request of the village of Holmen to accommodate development. Otherwise, WisDOT does not intend to grant permits, give written consent or sell or release scenic easements along or across the

GRRNSB for this route. (Fasick, Tr. D9, WisDOT Init. Br. at 1-28; WisDOT Reply Br. at 3-14.) NoCapX 2020/CETF indicate their support of WisDOT's effort to protect its scenic easements. (WisDOT Reply Br. at 14-5.)

Several members of the public provided comments opposing route alternatives that use the Galesville route segments (Segments 6, and 13A-E). (Anderson, Rineer Ex. 2 at 157-8; Hart, Rineer Ex. 2 at 677-9; Price, Rineer Ex. 2 at 95-9; *et al.*)

Alternative One: Yes, this route is viable and constructible and complies with the statutory requirements for issuance of a CPCN.

Alternative Two: Yes, only if the transmission line was placed underground on all scenic easements and on any WisDOT ROW along the GRRNSB except for segment 18H. Otherwise WisDOT will not grant permits or written consent or sell or release scenic easements along or across the GRRNSB for this route.

Alternative Three: No. Route alternatives that use the Galesville route segments (6 and 13A-E) should be avoided.

8e. Q1-Galesville with STH 88 Option A

The applicants indicate that this route is viable and constructible and complies with the statutory requirements for issuance of a CPCN. It resulted not only from DNR recommendations about the Black River but also from a WisDOT recommendation about avoiding the GRRNSB, but is not the applicants' first choice. (Hillstrom, Tr. D11, Hillstrom Ex. 1 at 1-18, Appendix W, at 2-1 to 2-7; Applicants' Init. Br. at 13-4.) The difference between this route and the Q1-Galesville Route is the utilization of the STH 88 corridor to replace the Q1 corridor along the GRRNSB. The estimated cost of the project using this route is \$ 220,660,000. (Rineer Ex. 1 at 37, 50, 193-6.)

WisDOT indicated that it will issue a permit for an overhead line along this route if the Commission selects it. The STH 88 Connector avoids the GRRNSB south of Alma, and the place where the route would cross the GRRNSB on Segment 2I is short. The scenic easements along Segment 18H would be released at the request of the village of Holmen. (Fasick, Tr. D9; WisDOT Init. Br. at 1-3; WisDOT Reply Br. at 5-6.)

Several members of the public provided comments opposing route alternatives that use the Galesville route segments (Segments 6, and 13A-E). (See Section 8d.) Several members of the public provided comments opposing route alternatives that use the STH 88 connector segments (Segments 88A-F). (See Section 8b.)

Alternative One: Yes, this route is viable and constructible and complies with the statutory requirements for issuance of a CPCN.

Alternative Two: No. The STH 88 Options are not appropriate and have major environmental, agricultural, social, and aesthetic impacts. Route alternatives that use the Galesville route segments (6 and 13A-E) should be avoided.

8f. Q1-Galesville with STH 88 Option B

As with Option A, the applicants indicated that this route is viable and constructible and complies with the statutory requirements for issuance of a CPCN. It resulted not only from DNR recommendations about the Black River bottoms but also from a WisDOT recommendation about avoiding the GRRNSB, but it is not the applicants' first choice. (Hillstrom Tr. D11, Hillstrom Ex. 1 at 1-18, Appendix W at 2-1 to 2-7; Applicants' Init. Br. at 13-4) The difference between this route and the Q1-Highway 35 Route is the routing in the Waumandee Creek valley along STH 88 and partial utilization of the STH 88 corridor to replace the Q1 corridor along the GRRNSB. The estimated cost of the project using this route is \$ 214,910,000. (Rineer Ex. 1 at 37, 50, 193-6.)

WisDOT indicated that it would issue a permit for this route if the Commission selects it. As with STH 88 Option A, the STH 88 Connector with Option B avoids the GRRNSB south of Alma, and the place where the route would cross the GRRNSB is short. The scenic easements along Segment 18H would be released at the request of the village of Holmen. (Fasick, Tr. D9; WisDOT Init. Br. at 1-3; WisDOT Reply Br. at 5-6.)

Noting the importance of agriculture in the project area, DATCP Secretary Brancel stated specifically that the Q1-Galesville Route with the STH 88 Connector Option B would affect more farmland than any other route alternative being considered. It would potentially affect about 469 acres of farmland, about 134 acres or 40 percent more farmland than the Q1-Highway 35 Route, representing about \$3,021,525 more in potential lost agricultural production than that for the Q1-Highway 35 Route. (Rineer Ex. 2 at 140-5.)

Several members of the public provided comments opposing route alternatives that use the Galesville route segments (Segments 6, and 13A-E). (See Section 8d.) Several members of the public provided comments opposing route alternatives that use the STH 88 connector segments (Segments 88A-F). (See section 8b.)

Alternative One: Yes, this route is viable and constructible and complies with the statutory requirements for issuance of a CPCN. WisDOT indicated that it would permit this route alternative.

Alternative Two: No. The STH 88 Options are not appropriate and have major agricultural, environmental, social, and aesthetic impacts. Route alternatives that use the Galesville route segments (6 and 13A-E) should be avoided.

8g. Arcadia

The applicants indicate that this route is viable and constructible and complies with the statutory requirements for issuance of a CPCN, but it is not the applicants' preferred route. It was offered as the original alternative to a route along the Q1 line and the GRRNSB. The estimated cost of the project using this route is \$224,355,000. (Hillstrom, Tr. D13, Hillstrom Ex. 1 at 1-16 to 1-18, 2-7; Applicants' Init. Br. at 13-14; Rineer Ex. 1 at 48.)

DNR staff indicated that this route has the least overall impacts to wetlands because the wetland habitat is mostly in an agricultural setting and of lower quality than that in the Black River bottoms, even though more wetland acres would be impacted than for other alternatives. DNR considers project construction in the wetlands along this route to be permissible. In addition, this route is expected to have the least overall impact to endangered resources and rare species.

(Laatsch, Tr. D9; Koslowski, Tr. D7.)

WisDOT has indicated that it would have no permitting concerns with this route. As with the Arcadia-Ettrick Route, WisDOT stated that it would permit the line as an above-ground facility in Route Segments 2A1 and 2A2 because those segments would be short. (Fasick, Tr. D9-10; WisDOT Init. Br. at 1-3; WisDOT Reply Br. at 5-6.)

DATCP, acknowledging that wetland impacts would occur along the routes utilizing the existing Q1 ROW, stated that while "Some of the longer, more circuitous routes were proposed to avoid these areas where a permit or approval may be required and possibly denied. These longer routes would also impact more farmland." (Rineer Ex. 2 at 140-5.)

Some members of the public provided comments opposing route alternatives that use the Arcadia route segments (Segments 10C1-11G2). (Winey, Rineer Ex. 2 at 177-8; Ziegeweid, Rineer Ex. 2 at 499, Tr. O723-5; *et al.*)

Alternative One: Yes, this route is viable and constructible and complies with the statutory requirements for issuance of a CPCN. It is a route that DNR considers permissible and it would have the least overall impact to endangered resources and rare species. WisDOT agrees to permit overhead installation for scenic easement or highway ROW sharing and crossing along this route.

Alternative Two: No. Route alternatives that use the Arcadia route segments (Segments 10C1-11G2) should be avoided.

8h. Arcadia–Ettrick

The applicants indicated that this route is viable and constructible and complies with the statutory requirements for issuance of a CPCN, but it is not the applicants' preferred route. It is offered as a second alternative route around the Van Loon State Wildlife Area in response to a suggestion from DNR and has been proposed as an alternative to the Arcadia Route. It would avoid the village of Galesville. The estimated cost of the project using this route is \$233,570,000. (Hillstrom, Tr. D13, Hillstrom Ex. 1 at 1-16 to 1-18, Appendix W at 2-1 to 2-6, 2-14; Applicants' Init. Br. at 13-4; Rineer Ex. 1, at 50.)

WisDOT has indicated that it would have no permitting concerns with this route. As with the Arcadia Route, WisDOT witness Mr. Fasick stated that it would permit the line as an above-ground facility on Segments 2A1 and 2A2 because those segments would be short. (Fasick, Tr. D9-10; WisDOT Init. Br. at 1-3; WisDOT Reply Br. at 5-6.)

Noting the importance of agriculture in the project area, DATCP Secretary Brancel stated specifically that the Arcadia-Ettrick Route would affect more farmland than any other route alternative being considered except the Q1-Galesville Route with the STH 88 Connector Option B. It would potentially affect about 466 acres, 131 acres or 39 percent more farmland than the

Q1-Highway 35 Route, representing about \$2,948,400 more in potential lost agricultural production than that for the Q1-Highway 35 Route. (Rineer Ex. 2 at 140-5.)

Some members of the public provided comments opposing route alternatives that use the Arcadia route segments (Segments 10C1-11G2). (See section 8g.) Some members of the public provided comments opposing route alternatives that use the Ettrick route segments (Segments 1ET-4ET). (Congdon, Rineer Ex. 2 at 118-9; Zollweg Rineer Ex. 2, at 132-6; *et al.*)

Alternative One: Yes, this route is viable and constructible and complies with the statutory requirements for issuance of a CPCN. WisDOT would permit overhead installations on scenic easements or highway ROW sharing and crossing.

Alternative Two: No. This route affects more farmland than any other route alternative except the Q1-Galesville with STH 88 Option B. Route alternatives that use the Arcadia route segments (Segments 10C1-11G2) and Ettrick route segments (Segments 1ET-4ET) should be avoided.

8i. Original Q1

The applicants state that, while they believe that all the routes under consideration are viable and constructible and comply with the statutory requirements for the issuance of a CPCN, the Original Q1 Route, while an early preference (Hillstrom Ex. 1, Appendix N.), is not a viable route because the USFWS would refuse to renew the easement permit for the Q1 ROW.

(Hillstrom Ex. 1 at 1-16 to 1-18.) They state that the Q1-Highway 35 Route, derived from the Original Q1 Route, is favored by comparison of human impacts, natural resource impacts, and agricultural impacts, and that it will not unreasonably interfere with local land use and development plans; and these aspects are shared by the Original Q1 Route. (Hillstrom, Tr. D12-3, R6-7; Applicants' Init. Br. at 13-30.) The estimated cost of the project using this route is

\$188,767,000 (Hillstrom Ex. 1, Appendix N, at N-16; Rineer Ex. 1 at 283), but Commission staff witness Mr. Rineer acknowledged that the route is not viable because USFWS has confirmed that it will not permit that portion of the route that is Segment 5B. (Rineer Ex. 1 at 37-8, Appendix F at 6.)

WisDOT witness Mr. Fasick stated that this route would be permitted by WisDOT only if the transmission line is placed underground on all scenic easements and on any WisDOT ROW along the GRRNSB. (Fasick, Tr. D8; WisDOT Init. Br. at 1-3; WisDOT Reply Br. at 3-14.) WisDOT is supported in this position by NoCapX 2020/CETF. (NoCapX 2020/CETF Reply Br. at 14-5.)

DNR has indicated that DNR has no intention of permitting construction in the Black River bottoms along Segment 5B, and it is supported in this position by Clean WI. (Laatsch, Tr. D10-2, Laatsch Ex. 1; Koslowsky, Tr. D4-10; Thompson, Tr. D3-7, R1-4, O538-71; Clean WI Reply Br. at 4-8.)

On the other hand, DATCP supports the Original Q1 Route. It disagrees with WisDOT's approach to the route segments along the GRRNSB and points out that farmland is disappearing more swiftly than wetland and that much wetland is on farms. The Q1 Route would affect about 335 acres of farmland, less than any other route being considered except the Q1-Highway 35 Route. (Rineer Ex. 2 at 140-5.)

Several members of the public submitted comments supporting the Original Q1 Route. (Bremer, Rineer Ex. 2 at 139; Drogemiller, Rineer Ex. 2 at 615-8; Killian Rineer Ex. 2 at 261-2, Tr. O961-2; *et al.*) Many members of the public provided comments stating that route alternatives through or near the developed areas of the village of Holmen should be avoided. (Brott, Rineer Ex. 2 at 217, Tr. 849-52; Bassuener, Rineer Ex. 2 at 4; Waldenberger, Rineer Ex. 2 at 725; *et al.*)

Alternative One: No, because a USFWS permit to construct the project along the Original Q1 Route in the Upper Mississippi River National Wildlife Refuge is not obtainable.

Alternative Two: Yes, only if the transmission line is placed underground on all scenic easements and on any WisDOT ROW along the GRRNSB except for Segment 18H.

Alternative Three: No. DNR will not permit any segment of 345 kV line that follows the existing Q1 line through the Black River bottoms area.

Alternative Four: Yes. It is one of two routes that affect the least amount of farmland or prime farmland. WisDOT scenic easements do not seem to prohibit the routing of the line. Also, the Original Q1 Route alternative is the only alternative that avoids the developed areas of the village of Holmen.

9. Should any portion of the routes under consideration be constructed underground?

The applicants do not believe that any portion of any of the routes under consideration need to be installed as an underground facility. They state that the costs would be excessive. Although underground construction of Segment 1 would eliminate overhead facilities in the Mississippi flyway, impacts to the Mississippi River waterline habitat would occur. If a route were selected that included only crossings of the GRRNSB and they were required to be underground for aesthetic reasons, there would still be the aesthetic impacts from the transition stations needed on either side of the road. The applicants also disagree with WisDOT's stated authority for managing scenic easements along the GRRNSB, stating that WisDOT has the authority and discretion to issue permits for the proposed construction but not to withhold permits or require underground installation. (Hillstrom, Tr. D33, R9-13, Hillstrom Ex. 1 Appendix F; Stevenson, Tr. R3-7, SR1-2, SSR2-4, Stevenson Ex. 16, 17, 20, 21; Applicants' Init. Br. at 23-30; Applicants' Reply Br. at 4-13.)

WisDOT has stated that it will not, except for short segments in certain routes, permit any overhead construction on the Q1 routes along the GRRNSB because aesthetic values along the GRRNSB are protected by scenic easements. WisDOT stated it will permit only underground construction to protect against aesthetic impacts along the GRRNSB for any of the Q1 routes. Mr. Fasick testified that WisDOT believes that the underground construction could cost less than the applicants have indicated. (Fasick, Tr. D6-15, R1-2, SR1-5, O412-20, O437-9, Fasick Ex. 1; WisDOT Init. Br. at 1-2, WisDOT Reply Br. at 12-3; Hillstrom Tr. O269.) NoCapX 2020/CETF supports WisDOT's position on scenic easements. (NoCapX 2020/CETF Reply Br. at 14-5.)

NoCapX 2020/CETF also argues in favor of underground construction on Segment 1 across the Mississippi River. (NoCapX 2020/CETF Init. Br. at 19-20.)

Several members of the public provided comments stating that the proposed project should be constructed underground to avoid aesthetic impacts. (Plank, Rineer Ex. 2 at 513-4, Tr. O757-60; Stiers, Rineer Ex. 2 at 19, *et al.*)

Alternative One: No.

Alternative Two: Yes, for any new transmission construction along the GRRNSB as part of the Q1-Highway 35 Route, the Q1-Galesville Route, and any crossings of the GRRNSB by the line.

Alternative Three: Yes. The cost of undergrounding for portions of the line in this case is reasonable. The Mississippi River crossing should be installed underground.

Alternative Four: Yes. The proposed project should be constructed underground to avoid aesthetic impacts.

10. What general conditions, if any, should be attached to construction of the proposed project to meet the requirements of Commission approval?

10a. Effects of Herbicide Treatment in Rights-of-Way on Certified Organic Farms and Agri-tourism Businesses

Several operators of organic farms and agri-tourism businesses submitted public comments expressing concern that application of herbicides in the project ROWs could affect organic certification or agri-tourism crops. (M. Delany, Elmaro Farms, Rineer Ex. 2 at 22-3, Tr. O619-20; J. Ecker, Ecker's Apple Farm, Rineer Ex. 2 at 20-1, 451, Tr. O1029-34; B. Franklin, Rineer Ex. 2 at 511, Tr. O746-49; A. Schaub, Rineer Ex. 2 at 479-84, Tr. O713-6; *et al.*) A member of the public, Ms. L. Docken, submitted in public comments a paper that stated that airborne drift of certain herbicides can "injure grapes half a mile (sometimes up to ten miles) away from the application site." (L. Docken, Rineer Ex. 2 at 711-8.)

For electric transmission lines designed for operation at a nominal voltage of 100 kV or more, Wis. Stat. § 182.017(7)(d) states:

The utility shall control weeds and brush around the transmission line facilities. No herbicidal chemicals may be used for weed and brush control without the express written consent of the landowner. If weed and brush control is undertaken by the landowner under an agreement with the utility, the landowner shall receive from the utility a reasonable amount for such services.

While the Commission has no authority to interpret or enforce the provisions of Wis. Stat. ch. 182, it is Commission staff's understanding that the provision cited above is intended to apply only to landowners with whom the utility holds an easement. Some of the members of the public that submitted comments in this regard do not have properties that would be under easement, and consequently would not normally have the opportunity to consent to herbicide application under Wis. Stat. § 182.017(7)(d).

The Commission could consider an order condition requiring the applicants to work with operators of organic farms and agri-tourism businesses to minimize the likelihood injury to crops or loss of organic certification from herbicide application within the authorized route ROW. The Commission could require that the applicants work with the operators to determine the most effective techniques for minimizing the likelihood of injury to crops or loss of organic certification.

10b. Radio and Other Communications Interference

Members of the public provided comments regarding possible interference with radio communications services, such as Emergency Medical Services (EMS) communications, cellular telephone services, and AM radio reception. (D. Miller, Rineer Ex. 2 at 267, Tr. O967-9; E. Stahl, Rineer Ex. 2 at 707; R. Benusa, Rineer Ex. 2 at 447, Tr. O1025-8; *et al.*)

Two requirements to resolve radio frequency interference exist. For electric transmission lines designed for operation at a nominal voltage of 100 kV or more, Wis. Stat. § 182.017(7)(d) states:

The utility shall employ all reasonable measures to ensure that the landowner's television and radio reception is not adversely affected by the high-voltage transmission lines.

Wis. Admin. Code § PSC 113.0707(3) states:

Each utility shall, upon notification or detection of the presence of radio and/or television interference, survey its lines and equipment for possible sources of radio and television interference. When significant interference is found, reasonable measures shall be taken to locate the source and, if on the utility's system, to mitigate the interference. Where the magnitude and nature of the interference is found to be so small, intermittent or insignificant that it affects only a few customers or a particular, unique piece of customer equipment that may have limited capabilities to receive weak signals, it may be necessary to limit the utility's responsibility for mitigation to reasonable, cost-effective measures.

While the Commission has no authority to interpret or enforce the provisions of Wis. Stat. ch. 182, it is Commission staff's understanding that the provision cited above is intended to apply

only to landowners with whom the utility holds an easement. The Commission has the authority to interpret and enforce Wis. Admin. Code § PSC 113.0707(3), and does so frequently.

The Commission could consider an order condition explicitly requiring the applicants to work with residents to detect and mitigate radio communications interference. Such a condition might be redundant with other statutory and administrative code requirements, particularly Wis. Admin. Code § PSC 113.0707(3).

10c. Conservation Easements

Several members of the public submitted public comments regarding properties that are currently under conservation easement. (A. Kube, Rineer Ex. 2 at 455, Tr. O684-5; G. Hohman, Rineer Ex. 2 at 457, Tr. O688-9; *et al.*) A representative of the Mississippi Valley Conservancy provided a comment regarding the properties it has sought to protect. (G. Howe, Rineer Ex. 2 at 500, Tr. O725-33.) A representative of West Wisconsin Land Trust, Inc., submitted a comment that stated that the easement terms for the Salwey-White property prohibit new structures and improvements, including utility poles. (Rineer Ex. 2 at 35.) Several properties in the project area are known to be under conservation easements. (Rineer Ex. 1 at 150-3, Fig. Vol. 2-1.)

The Commission could consider an order condition requiring the applicants to work with landowners and holders of conservation easements regarding facilities placement to minimize the effects on properties under conservation easement.

Alternative One: No additional general conditions should be attached to construction of the proposed project.

Alternative Two: Any or all of the following conditions are appropriate:

10a. Require that the applicants work with operators of organic farms and agri-tourism businesses to minimize the likelihood injury to crops or loss of organic certification from herbicide

application within the authorized route ROW. The Commission could require that the applicants work with the operators to determine the most effective techniques for minimizing the likelihood of injury to crops or loss of organic certification.

10b. Require that the applicants to work with residents to detect and mitigate radio communications interference.

10c. Require that the applicants work with landowners and holders of conservation easements regarding facilities placement to minimize the effects on properties under conservation easement.

11. What route-specific conditions, if any, should be attached to construction of the proposed project to meet the requirements of Commission approval?

11a. Placement of Project Facilities on Individual Landowners' Properties

Members of the public, Messrs. F. Allen and J. Scheidegger, submitted public comments regarding specifics of project facilities placement on their properties, and requesting that the proposed placement be altered. (Rineer Ex. 2 at 737; Rineer Ex. 2 at 666-71.) The properties are affected by Segments 3 and 2G, respectively.

The Commission could consider an order condition that requires the applicants to work with landowners, to the extent practicable, regarding the placement of facilities on the properties.

11b. Drinking Water Well Protection

A member of the public, Ms. S. Suhr, submitted a comment expressing her concern regarding well contamination resulting from construction of the proposed project. (Rineer Ex. 2 at 519-30, Tr. O771-9.) Ms. Suhr's property is affected by Segment 88E.

The Commission could consider an order condition that requires the applicants to use best construction practices to avoid impacts to drinking water wells.

11c. Center Pivot Irrigation

A member of the public, Mr. S. Wright, submitted a comment expressing concern that the proposed project would affect operation of center pivot irrigation systems on his properties.

(Rineer Ex. 2 at 731.) Mr. Wright's properties are affected by Segment 13A.

The Commission could consider an order condition that requires the applicants to work with operators of center pivot irrigation systems, to the extent practicable, to avoid impacts from project facilities on operations of those systems.

Alternative One: No route-specific conditions should be attached to construction of the proposed project.

Alternative Two: Any or all of the following conditions are appropriate:

11a. Require that the applicants work with landowners, to the extent practicable, regarding the placement of facilities on their properties.

11b. Require the applicants to use best construction practices to avoid impacts to drinking water wells.

11c. Require the applicants to work with operators of center pivot irrigation systems, to the extent practicable, to avoid impacts from project facilities on operations of those systems.

12. Should the Commission require independent environmental monitors?

Commission and DNR staff request that independent environmental monitors (IEM) be required to ensure compliance with Commission order conditions, other agencies' permits, and property rights. They ask that the IEMs be independent of the applicants but answerable to the Commission, DNR, and DATCP. They ask that the IEMs have the authority to stop work on the project at places where concerns arise. Such IEMs have been utilized successfully for construction of three recent 345 kV transmission projects. (Rineer, Tr. D7-10, S1-2, O592-3, O597-8, Rineer

Ex. 1 at 57, 65, 281-3; Laatsch, Tr. D10.) The applicants had no further testimony, cross-examination of staff, or briefing concerns on this subject after staff's prefiled surrebuttal.

The applicants have volunteered to employ environmental monitors (Stevenson, Tr. D17-8), but the applicants' witness Mr. Hillstrom argues that IEMs with stop-work authority are not necessary and would add unnecessary costs to the project. (Hillstrom Tr. R3.)

Commission staff's position is supported by the DATCP. DATCP Secretary Brancel stated that impacts to any selected route can best be kept to a minimum "through the use of an independent environmental monitor who enforces a comprehensive Construction/Mitigation Plan that includes protocols that must be followed... The independent environmental monitor would report directly to the regulatory agencies to minimize the adverse resource impacts..." Secretary Brancel also points out that, while an agreed-upon agricultural monitor may oversee construction through farmland, that person "would not have stop-work authority, but would work in coordination with the independent environmental monitor to implement the Agricultural Impact Mitigation Plan." (Rineer Ex. 2 at 140-5.)

Clean WI has also indicated that it would want an IEM if the project is approved. While he does not believe the proposed wetland mitigation is adequate for any route under consideration at this time, Clean WI witness Vincent Mosca has indicated that it would be necessary for the agencies to employ an IEM to ensure that any required wetland protections were enforced. (Mosca Tr. D22.) Clean WI itself stated that, if the Commission approves the project and selects a route, "it should condition its approval on a requirement that Independent Environmental Monitors are used during the construction process... An independent monitor who reports to the Commission will ensure that natural resources are protected." (Clean WI Init. Br. at 14-5; Clean WI Reply Br. at 8.)

Alternative One: Environmental monitors should be employed that would be independent of the applicants and their contractors and report to the Commission and other state agencies. The independent environmental monitors should have the authority to stop work at a site until a problem is rectified.

Alternative Two: No independent environmental monitor is needed.

13. Assuming minor routing flexibility may be needed if the project is approved, what process should be followed?

This issue was not contested during the proceeding.

The applicants propose that the Commission allow a process for minor route adjustments after the project is approved. The process would be based on the processes used for recent 345 kV construction cases. (Hillstrom, Tr. D50; Applicants' Init. Br. at 30.) Commission staff also proposes that, if the project is approved, the applicants have this minor route adjustment flexibility based on recent 345 kV construction cases. (Rineer, Tr. D5-7.) Commission staff witness Mr. Rineer and applicants' witness Mr. Hillstrom both describe the desired process. In it, any modification to the approved transmission line centerline would be submitted to the Commission by the applicants via a formal letter describing:

1. The nature of the requested change.
2. The reason for the requested change.
3. The incremental cost difference from that of the approved route.
4. The incremental difference in any environmental impacts.
5. Applicants' communications with the potentially affected landowners.

The requests would be reviewed by Commission staff knowledgeable about the project, and Commission staff would decide whether to grant or deny the change. (Hillstrom, Tr. D50; Rineer, Tr. D7.)

Uncontested Alternative: The applicants should follow the process and communications required of the applicants in previous 345 kV dockets and should be granted the minor routing flexibility granted by the Commission in those dockets if the process is followed.

14. What is the cost of the proposed project?

Uncontested Alternative: The proposed project costs estimated as the sum of year of occurrence dollars range from about \$195 million to about \$234 million, depending upon the transmission line route selected. These costs include the new substation cost, distribution line relocation cost, and AFUDC.

15. What are the appropriate high-voltage impact fees?

The applicants request the Commission exclude all lower-voltage construction costs from the base cost for calculating the high-voltage impact fees. The lower-voltage facilities include the 161 kV substation components to the Briggs Road Substation, the 161 kV transmission lines connecting to the Briggs Road Substation, and the relocation of lower voltage and distribution lines. (Stevenson Tr. D26-7, R2, Stevenson Ex. 8.)

The Commission in a previous order described a “but for” test to determine whether lower-voltage construction costs should be included in the base cost. (PSC staff: Weiss, Tr. D2-4, O601-602; docket 137-CE-147 Supplemental Order, PSC REF#: 144226.)

Alternative One: Exclude all lower voltage construction costs from the base cost for the calculation of the high-voltage impact fees.

Alternative Two: Include some or all of the lower-voltage construction costs in the base cost for the calculation of the high-voltage impact fees:

- a. Costs for 161 and 69 kV substation components at the Briggs Road Substation.
- b. Costs for 161 kV and 69 kV lines near the Briggs Road Substation.

- c. Costs for 161 kV line facilities along segments using the existing Q1 route, because DPC will reconstruct Q1 regardless of which route alternative the Commission selects. (If the Q1 line is reconstructed but not selected by the Commission for the Alma – La Crosse 345 kV project, no high voltage impact fees would be collected because the facilities would operate below 345 kV.)
- d. Costs for relocation of lower voltage and distribution lines.

16. Has the Commission complied with the Wisconsin Environmental Policy Act (WEPA) pursuant to Wis. Stats. § 1.11 and Wis. Admin. Code ch. PSC 4?

The requirements of WEPA have been fulfilled by the Commission through (1) the preparation and issuance of the EIS (Ex. Rineer 1) and (2) the creation of the record of the technical and public hearings held in the project area. (Ex. Rineer 1, signature page and “To the Reader” page; Applicants’ Reply Br. at 14-15). The joint EIS was prepared by the staffs of the Commission and DNR. (Rineer, Tr. D2-D4, D10) DNR witness Ms. Cheryl Laatsch states that the EIS adequately describes waterway impacts. (DNR-Laatsch, Tr. D7)

Although they did not provide testimony to that effect, two parties have indicated that the Commission’s review has not complied with WEPA requirements. Clean WI stated that the review “violates the PSC’s duty under WEPA” in part because it did not adequately and publicly examine the four crossings of the Mississippi River that were originally considered. (Clean WI, Init. Br. at 8-9) Clean WI also stated that a lack of adequate description of wetland impacts and mitigation potential for each route alternative has resulted in a lack of “clear basis for choice among options” as required for an EIS under Wis. Admin. Code § PSC 4.30(1)(a). (Mosca Tr. D3-D22; Clean WI Init. Br. at 9-14) NoCapX 2020/CETF also argue that it is “not sufficient under WEPA for the Commission to have only one route crossing of the Mississippi River under consideration.” (Rineer Tr. O577-O580; NoCapX/CETF Init. Br. at 17-18)

WisDOT witness Mr. Jay Waldschmidt stated that he was unable to find an adequate discussion of the indirect and cumulative effects on environmental resources in the EIS, particularly regarding Route Segment 8B. He pointed out that not including such discussions would make the documents insufficient from a NEPA and WEPA perspective. (Waldschmidt Tr. S3) DNR witness Laatsch stated that the EIS was adequate in this regard. (Laatsch Tr. D7)

A member of the public, Ms. Machel Plank, provided comments stating that the Commission's final EIS did not meet WEPA requirements regarding environmental impacts of the STH 88 segments, projected load growth in the La Crosse local area, and route alternatives. (Plank, Rineer Ex. 2 at 513-4, Tr. O757-60)

Alternative One: Yes, the Commission's analysis and review of the proposed project meets the requirements of Wis. Stats. § 1.11 and Wis. Admin. Code ch. PSC 4.

Alternative Two: No, the Commission's analysis and review of the proposed project does not meet the requirements of Wis. Stats. § 1.11 and Wis. Admin. Code ch. PSC 4.

17. Should the Commission grant a CPCN for the proposed project?

The applicants state that the proposed project meets the requirements for issuance of a CPCN. (Hillstrom, Ex. 1 at 1-22; Applicants' Init. Br. at 2-3, 30.)

Some members of the public provided comments stating that the Commission should approve the project. (Wind on the Wires, Rineer Ex. 2 at 222, Tr. O867-71; D. Oekers, Rineer Ex. 2 at 230, Tr. O887-91; *et al.*)

ATC supports the applicants' proposed project, and argues that a CPCN should be issued along a route that considers ATC's preference for interconnecting the future Badger-Coulee project. (ATC Init. Br. at 1-11.) MISO stated that the project addresses near- and long-term local

reliability issues, and urges the Commission to approve the project as proposed. (ATC Init. Br. at 7.)

Clean WI argues that the application for the proposed project should be denied. Its basis for this statement is that there is inadequate information to assess the environmental impacts of the proposed project when considering mitigation that could be applied to offset the environmental impacts of specific alternatives. (Clean WI Init. Br. at 9-14.) Clean WI also asserts that, if the Commission issues a CPCN, it should include a condition that requires use of independent environmental monitors. (Clean WI Init. Br. at 14-5.)

CUB stated that the proposed project is contrary to the requirements of Wis. Stat. § 196.491, and that the Commission should reject the application. (CUB Init. Br. at 1-16.) CUB also stated that, in denying the application, the Commission should direct the applicants to study the 345/161 kV hybrid alternative that CUB witness Mr. Hahn identified in his analysis. (Hahn, Tr. D31, S5.)

NoCapX 2020/CETF stated that the application for the proposed project does not meet the requirements of Wis. Stat. § 196.491, and should be denied. (NoCapX 2020/CETF Init. Br. at 1-23.)

Members of the public also request that the Commission deny the project. (D. Severson, Rineer Ex. 2 at 59-61; K. Goodman, Rineer Ex. 2 at 560, Tr. O800-6; *et al.*) A member of the public, Mr. D. Olson, submitted comments stating that the proposed project should be decided by the Commission at the same time that it decides the Badger-Coulee project. (Rineer Ex. 2 at 5-6.)

Alternative One: Grant a CPCN.

Alternative Two: Grant a CPCN, with conditions.

Alternative Three: Deny a CPCN, and decide this project at a later date, concurrent with the Badger-Coulee decision.

Alternative Four: The application does not meet the requirements of Wis. Stat. § 196.491, and should be denied.

RDN:JAL:cmk:DL:00484791

1 **Q. Mr. Hahn challenges the load forecasts in your direct testimony and suggests there**
2 **may be errors the load projections in your direct testimony. What is your response?**

3 A. I have reviewed Mr. Hahn's testimony on pages 12 and 13 and have a couple of
4 responses. First, he challenges the growth rates in my testimony using data from the SNS
5 rather than updated forecasts **Ex.-Applicants-King-6**. In that forecast, the 2002 load is
6 425.13 MW. The 2020 projected load level is 529.92 MW. This represents an
7 approximately 1.2 percent growth rate. With respect to the load growth rate from 2011 to
8 2020, Mr. Hahn's comments revealed an error in my testimony. The 1.02 growth rate
9 was applied to loads beyond 2020. For loads between 2011 to 2020, the growth rate was
10 1.46 percent, 2011~~10~~ load (~~4651.41~~ MW) to 2020 (529.92 MW).

11 **Q. On p. 12 of his testimony, Mr. Hahn notes that the number of substations in the**
12 **CPCN Application was 31 and in Ex.-Applicants-King-6 has 33 substations. Can**
13 **you explain the difference?**

14 A. As Mr. Hahn notes, the SNS and my Exhibit 6 include two substations not included in the
15 CPCN Application. One is the new Holland Substation in the La Crosse area. The
16 addition to my forecast chart recognizes that existing load that was at Brice and New
17 Amsterdam was transferred to the new Holland Substation in 2010 to redistribute the
18 growing load in the area and provide additional reliability by the addition of another
19 source.

20 The other substation is Cedar Creek. Cedar Creek is adjacent to the Sand Lake Coulee
21 Substation. These two loads are modeled as a single load in the powerflow models and
22 the Cedar Creek Substation was overlooked when the CPCN table was created and all