

# **Corrections to Environmental Assessment prepared for the Big Bend Wind, Red Rock Solar, and Big Bend HVTL Projects in Cottonwood, Watonwan, and Martin Counties**

Docket No. IP7013/CN-19-408, Docket No. IP7013/WS-19-619, Docket No. IP7013/TL-19-621,

Docket No. IP7014/CN-19-486, Docket No. IP7014/GS-19-620

OAH Docket No. 71-2500-36480

**Submitted by the Minnesota Department of Commerce, Energy Environmental Review and Analysis**

**February 2, 2022**

## **Summary**

On January 18, 2022, the Minnesota Department of Commerce, Energy Environmental Review and Analysis (EERA) staff completed and made available the Environmental Assessment (EA) prepared for the Big Bend Wind, Red Rock Solar, and Big Bend HVTL Projects in Cottonwood, Watonwan, and Martin Counties.

EERA has identified and corrected the following errors in the EA prepared for the Big Bend Wind, Red Rock Solar, and Big Bend HVTL Projects.

1. References to the Walleye Wind Project and project specifics in the acronyms and definitions section in the Summary of the EA, have been updated to reflect the appropriate acronyms and definitions used within the EA.
2. Beginning on page 76, Chapter 4 of the EA, the page header does not reflect the transition from Chapter 3 to Chapter 4, and this formatting error is on the header of all pages in Chapter 4.
3. Beginning on page 274, Chapter 6 of the EA, the page header does not reflect the transition from Chapter 5 to Chapter 6, and this formatting error is on the header of all pages in Chapters 6, 7, and 8 and the Notes section of the EA.
4. The Table 8-2 Application of Routing Factors/Relative Merits of the Proposed Route and Alternative Route Options in Chapter 8 is missing text in the resource section headers.
5. The Factor F Rare and Unique Resources section header was revised to Factor F Rare and Unique 'Natural' Resources in Tables 8-2, 8-3, and 8-4.
6. The Rare and Unique Resources subsection header was revised to Rare and Unique 'Natural' Resources in section 8.3 of Chapter 8.

These errors do not affect the analysis completed in the EA.

For the purpose of clarifying the record, EERA staff submits corrected versions of the following:

- Acronyms and Definitions Section of the EA Summary
- Chapter 8 of the EA

| ACRONYM/TERM | DEFINITION                                                                 |
|--------------|----------------------------------------------------------------------------|
| AADT         | average annual daily traffic                                               |
| ADLS         | aircraft detection lighting system                                         |
| ALJ          | administrative law judge                                                   |
| BMP          | best management practice                                                   |
| Commission   | Minnesota Public Utilities Commission                                      |
| CN           | certificate of need                                                        |
| CR           | County Road                                                                |
| CSAH         | County State Aid Highway                                                   |
| dba          | A-weighted decibels                                                        |
| DEED         | Minnesota Department of Economic Development                               |
| DNR          | Minnesota Department of Natural Resources                                  |
| ECS          | Ecological Classification System                                           |
| EERA         | Minnesota Department of Commerce, Energy Environmental Review and Analysis |
| EMF          | electromagnetic field                                                      |
| FAA          | Federal Aviation Administration                                            |
| FEMA         | Federal Emergency Management Agency                                        |
| GE           | General Electric                                                           |
| GPS          | global positioning system                                                  |
| HAP          | hazardous air pollutant                                                    |
| kV           | kilovolt                                                                   |
| kW           | kilowatt                                                                   |
| kWh          | kilowatt-hour                                                              |
| LIDS         | Light Intensity Dimming Solution                                           |
| LNTE         | low-noise trailing edge                                                    |
| LWECS        | large wind energy conversion system                                        |
| MBS          | Minnesota Biological Survey                                                |

| ACRONYM/TERM | DEFINITION                                                                                            |
|--------------|-------------------------------------------------------------------------------------------------------|
| MDH          | Minnesota Department of Health                                                                        |
| MET          | meteorological tower                                                                                  |
| MISO         | Midcontinent Independent Transmission System Operator, Inc.                                           |
| MnDOT        | Minnesota Department of Transportation                                                                |
| MPCA         | Minnesota Pollution Control Agency                                                                    |
| MW           | megawatt                                                                                              |
| MWh          | megawatt-hour                                                                                         |
| NAC          | noise area classification                                                                             |
| NESC         | National Electric Safety Code                                                                         |
| NHIS         | Natural Heritage Information System                                                                   |
| NPDES        | National Pollutant Discharge Elimination System                                                       |
| NRCS         | Natural Resources Conservation Service                                                                |
| NRO          | Noise Reducing Operation                                                                              |
| NSP          | Northern States Power, a subsidiary of Xcel Energy                                                    |
| NTIA         | National Telecommunications and Information Administration                                            |
| NWI          | National Wetlands Inventory                                                                           |
| O&M          | operation and maintenance                                                                             |
| PM           | particulate matter                                                                                    |
| ppm          | parts per million                                                                                     |
| PV           | photovoltaic                                                                                          |
| POI          | point of interconnection                                                                              |
| PWI          | Public Waters Inventory                                                                               |
| RD           | rotor diameter; diameter of the rotor from the tip of a single blade to the tip of the opposite blade |
| ROW          | right of way                                                                                          |
| SCADA        | supervisory control and data acquisition                                                              |
| SHPO         | Minnesota State Historic Preservation Office                                                          |

| ACRONYM/TERM | DEFINITION                           |
|--------------|--------------------------------------|
| SWPPP        | stormwater pollution prevention plan |
| USACE        | U.S. Army Corps of Engineers         |
| USEPA        | U.S. Environmental Protection Agency |
| USFWS        | U.S. Fish and Wildlife Service       |
| VOC          | volatile organic compound            |
| WCA          | Wetland Conservation Act             |
| WMA          | wildlife management area             |
| WPA          | waterfowl protection area            |

## Definitions

Several terms used in this document have a specific meaning in Minnesota law or regulation. Other terms are defined for clarity.

**associated facilities** means buildings, equipment, and other physical structures that are necessary to the operation of a large electric power generating plant or high voltage transmission line (Minnesota Rule 7850.1000, subpart 3).

**collection line** means an underground 34.5 kV distribution line proposed by the applicant to connect wind turbines to the wind project substation, or an underground 34.5 kV distribution line proposed by the applicant to connect the solar array to the solar project substation.

**collection line corridor** means the review area associated with the underground collection line, extending from the solar array to the solar project substation.

**construction** means any clearing of land, excavation, or other action that would adversely affect the natural environment of the site or route but does not include changes needed for temporary use of sites or routes for nonutility purposes, or uses in securing survey or geological data, including necessary borings to ascertain foundation conditions (Minnesota Statute 216E.01, subdivision 3).

**distribution line** means power lines that operate below 69 kilovolts, and deliver electricity to a retail customer's home or business

**gen-tie transmission line** means an above-ground transmission line used to connect the generation facility substations to a switching station.

**high voltage transmission line** means a conductor of electric energy and associated facilities designed for and capable of operation at a nominal voltage of 100 kilovolts or more and is greater than 1,500 feet in length (Minnesota Statute 216E.01, subdivision 4).

**Interconnection** means the location of project connection to the power grid

**large electric power generating plant** means electric power generating equipment and associated facilities designed for or capable of operation at a capacity of 50,000 kilowatts or more (Minnesota Statute 216E.01, subdivision 5).

**large energy facility** means any electric power generating plant or combination of plants at a single site with a combined capacity of 50,000 kilowatts or more and transmission lines directly associated with the plant that are necessary to interconnect the plant to the transmission system (Minnesota Statute 216B.2421, subdivision 2(1)).

**local vicinity** as it refers to the solar project, means within 1,000 feet from the identified project boundary. As it refers to the transmission line project, means within 1,000 feet from the anticipated alignment of the routing options.

**micrositing** means the process in which the wind resources, potential environmentally sensitive areas, soil conditions, and other site factors, as identified by local, state and federal agencies, are evaluated to locate wind turbines and associated facilities

**mitigation** means to avoid, minimize, correct, or compensate for a potential impact.

**power line** means a distribution, transmission, or high voltage transmission line.

**project area** as it refers to the solar project, means one mile from the project boundary and collection line corridor. As it refers to the transmission line project, means one mile from the anticipated alignment of the routing options.

**project boundary** as it refers to the solar project, means areas involved in project construction, areas within the fenced in facilities, i.e. solar array, substation, and the collection line corridor. As it refers to the wind project, means the outer most extend of lands involved in project construction and/or potentially affected by the operation of proposed wind turbines.

**solar farm** means ground-mounted photovoltaic equipment capable of operation at 5,000 kilowatts or more connected directly to the electrical grid.

**solar energy generation system** means a set of devices whose primary purpose is to produce electricity by means of any combination of collecting, transferring, or converting solar-generated energy (Minnesota Statute 216E.01, subdivision 9a).

**transmission line** means power lines that operate at 69 kilovolts and above.

## 8 Application of Siting Factors and Routing Factors

### 8.1 Application of Siting Factors to the Red Rock Solar Project

The analysis that follows applies the information in the site permit application and this EA to the factors the commission must consider when making a site permit decision. Generally, EERA staff reviews these factors to help establish the relative merits of a proposed project against alternative power plant sites or transmission line routes studied in the environmental document. In this matter only one site was studied; therefore, the concept of relative merits is not applicable. However, because multiple electrical collection systems are proposed within the land control area the concept of relative merits applies to these systems.

The Minnesota Legislature directed the commission to select sites for large electric power generating plants that minimize adverse human and environmental impacts while insuring continuing electric power system reliability and integrity. The site must be compatible with environmental preservation and the efficient use of resources while also ensuring electric energy needs are met and fulfilled in an orderly and timely fashion. Minnesota Statute 216E.03, subdivision 7(b) identifies 12 considerations that guide commission decisions when designating a site for a large electric power generating plant. These considerations are further clarified and expanded by Minnesota Rule 7850.4100, which identifies 14 factors the commission must consider when making a permit decision.

Some factors are described in just a few words, for example, effects on archaeological and historic resources. Other factors are more descriptive and include a list of elements that, when grouped, make up the factor. Finally, certain factors are relatively succinct, but the scoping process identified elements to be analyzed in this EA. For example, the public health and safety factor includes an EMF element.

Factor M (unavoidable impacts) and Factor N (irreversible and irretrievable resource commitments) were discussed in the previous chapter. Factor H (use of existing rights-of-way) and Factor J (use of existing infrastructure rights-of-way) apply solely to high voltage transmission lines. Factor G (application of design options) and Factor L (costs dependent on design) do not apply as the design of the proposed project is the only design under consideration. Should the applicant receive a generation interconnection agreement from the Midcontinent Independent System Operator, Factor K (electrical reliability) will be met.

Other factors are ranked as follows:

|                                                                                   |                                                       |
|-----------------------------------------------------------------------------------|-------------------------------------------------------|
|  | Impacts are anticipated to be negligible to minimal   |
|  | Impacts are anticipated to be minimal to moderate     |
|  | Impacts are anticipated to be moderate to significant |

**Table 8-1 Application of Siting Factors/Relative Merits of the Proposed Red Rock Solar Project**

| Element                           | Application of Siting Factors                                                       |                                                                                     |
|-----------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   | Construction                                                                        | Operation                                                                           |
| <b>Factor A. Human Settlement</b> |                                                                                     |                                                                                     |
| Aesthetics                        |    |    |
| Displacement                      |   |   |
| Cultural Values                   |  |  |
| Electric Interference             |  |  |
| Environmental                     |  |  |
| Floodplains                       |  |  |
| Land Use and Zoning               |  |  |
| Noise                             |  |  |
| Property Values *                 |  |  |
| Recreation                        |  |  |
| Socioeconomics                    |  |  |
| <b>Factor A Public Services</b>   |                                                                                     |                                                                                     |
| Airports                          |  |  |
| Roads and Highways                |  |  |
| Utilities                         |  |  |
| <b>Factor B Public Safety</b>     |                                                                                     |                                                                                     |
| EMF                               |  |  |
| Emergency Services                |  |  |
| Induced Voltage                   |  |  |

| Element         | Application of Siting Factors |           |
|-----------------|-------------------------------|-----------|
|                 | Construction                  | Operation |
| Medical Devices | ●                             | ●         |
| Public Safety   | ●                             | ●         |
| Stray Voltage   | ●                             | ●         |
| Worker Safety   | ●                             | ●         |

**Factor C Land Based Economies**

|             |   |   |
|-------------|---|---|
| Agriculture | ○ | ○ |
| Forestry    | ● | ● |
| Mining      | ● | ● |
| Tourism     | ● | ● |

**Factor D Archaeological and Historic**

|               |   |   |
|---------------|---|---|
| Archeological | ● | ● |
| Historic      | ● | ● |

**Factor E Natural Resources**

|                      |   |   |
|----------------------|---|---|
| Air Quality          | ● | ● |
| Climate Change       | ● | ● |
| Geology              | ● | ● |
| Groundwater          | ● | ● |
| Soils                | ○ | ● |
| Surface Water        | ● | ● |
| Topography           | ● | ● |
| Vegetation           | ● | ● |
| Wetlands             | ● | ● |
| Wildlife and Habitat | ● | ● |

**Factor F. Rare and Unique Natural Resources**

|                                    |   |   |
|------------------------------------|---|---|
| State and Federally Listed Species | ● | ● |
| Rare and Unique Habitats           | ● | ● |

## 8.2 Application of Routing Factors and Relative Merits for the Big Bend HVTL Project

The analysis that follows applies the information and data available in the route permit application and this EA to the factors the Commission must consider when making a route permit decision

The Minnesota Legislature has directed the Commission to select HVTL routes that minimize adverse human and environmental impacts while insuring continuing electric power system reliability and integrity. An HVTL route must be compatible with environmental preservation and the efficient use of resources while also insuring electric energy needs are met and fulfilled in an orderly and timely fashion.

Minnesota Statute 216E.03, subdivision 7(b) identifies 12 considerations that the Commission must take into account when designating a route for a HVTL. These considerations are further clarified and expanded by Minnesota Rule 7850.4100, which identifies 14 factors the Commission must consider when making a permit decision.

- A. effects on human settlement, including, but not limited to, displacement, noise, aesthetics, cultural values, recreation, and public services;
- B. effects on public health and safety;
- C. effects on land-based economies, including, but not limited to, agriculture, forestry, tourism, and mining;
- D. effects on archaeological and historic resources;
- E. effects on the natural environment, including effects on air and water quality resources and flora and fauna;
- F. effects on rare and unique natural resources;
- G. application of design options that maximize energy efficiencies, mitigate adverse environmental effects, and could accommodate expansion of transmission or generating capacity
- H. use or paralleling of existing rights-of-way, survey lines, natural division lines, and agricultural field boundaries;
- I. use of existing large electric power generating plant sites;
- J. use of existing transportation, pipeline, and electrical transmission systems or rights-of-way;
- K. electrical system reliability;
- L. costs of constructing, operating, and maintaining the facility which are dependent on design and route;
- M. adverse human and natural environmental effects which cannot be avoided; and
- N. irreversible and irretrievable commitments of resources.

Some factors are described in just a few words, for example, effects on archaeological and historic resources. Other factors are more descriptive and include a list of elements that, when grouped, make up the factor. Finally, certain factors are relatively succinct, but the scoping process identified elements to be analyzed in this EA. For example, the public health and safety factor includes an EMF element.

**Factor I** (use of existing large electric power generating plant sites) does not apply to HVTLS. *It is assumed that all routing options maximize energy efficiencies and accommodate expansion of transmission capacity (Factor G), and all routing options are electrically reliable (Factor K). Factor M* (unavoidable impacts) and **Factor N** (irreversible and irretrievable resource commitments) were discussed in Chapter 7. Other factors are ranked as follows:

|                                                                                     |                                                                                                                                                                                                                                                                                      |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | Route alternative is consistent with the routing factor OR<br>Impacts are anticipated to be negligible to minimal                                                                                                                                                                    |
|  | Route alternative is consistent with routing factor but less so than the other options OR<br>Impacts are anticipated to be minimal but the potential for impacts is greater than the other options or require special permit conditions OR<br>Impacts are anticipated to be moderate |
|  | Route alternative is not consistent with routing factor or consistent only in part OR<br>Impacts might be moderate but the potential for impacts is greater than the other options or require special permit conditions OR<br>Impacts are anticipated to be significant              |

This analysis applies the routing factors to the Proposed Route and discusses the relative merits of the Crandall Alternate Route, the Peaking Plant Alternate Route, and the relative merits of the four alternate route segments; Alternate Red, Alternate Yellow, Alternate Purple, and the Peaking Plant Alternate Route – Alternate Route Segment.

Graphics (described above) are used to illustrate the application of the routing factors outlined in Minnesota Rule 7850.4100 to the Proposed Route. These same graphics are used to explain the distinct impacts associated with the different routing options. A discussion highlighting differences follows.

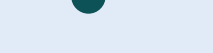
**Table 8-2 Application of Routing Factors/Relative Merits of the Proposed Route and Alternate Route Options**

| Element                              | Application of Routing Factor | Relative Merits of Routing Factor |                               |
|--------------------------------------|-------------------------------|-----------------------------------|-------------------------------|
|                                      | Proposed Route                | Crandall Alternate Route          | Peaking Plant Alternate Route |
| <b>Factor A Human Settlement</b>     |                               |                                   |                               |
| Aesthetics                           | ○                             | ○                                 | ○                             |
| Displacement                         | ●                             | ●                                 | ●                             |
| Cultural Values                      | ●                             | ●                                 | ●                             |
| Electric Interference                | ●                             | ●                                 | ●                             |
| Environmental                        | ●                             | ●                                 | ●                             |
| Floodplains                          | ●                             | ●                                 | ●                             |
| Land Use and Zoning                  | ●                             | ●                                 | ●                             |
| Noise                                | ●                             | ●                                 | ●                             |
| Property Values *                    | ○                             | ○                                 | ○                             |
| Recreation                           | ●                             | ●                                 | ●                             |
| Socioeconomics                       | ●                             | ●                                 | ●                             |
| <b>Factor A Public Services</b>      |                               |                                   |                               |
| Airports                             | ●                             | ●                                 | ●                             |
| Roads and Highways                   | ●                             | ●                                 | ●                             |
| Utilities                            | ●                             | ●                                 | ●                             |
| <b>Factor B Public Safety</b>        |                               |                                   |                               |
| EMF                                  | ●                             | ●                                 | ●                             |
| Emergency Services                   | ●                             | ●                                 | ●                             |
| Induced Voltage                      | ●                             | ●                                 | ●                             |
| Medical Devices                      | ●                             | ●                                 | ●                             |
| Public Safety                        | ●                             | ●                                 | ●                             |
| Stray Voltage                        | ●                             | ●                                 | ●                             |
| Worker Safety                        | ●                             | ●                                 | ●                             |
| <b>Factor C Land Based Economies</b> |                               |                                   |                               |
| Agriculture                          | ●                             | ●                                 | ○                             |

| Element                                               | Application of Routing Factor | Relative Merits of Routing Factor |                               |
|-------------------------------------------------------|-------------------------------|-----------------------------------|-------------------------------|
|                                                       | Proposed Route                | Crandall Alternate Route          | Peaking Plant Alternate Route |
| Forestry                                              | ●                             | ●                                 | ●                             |
| Mining                                                | ●                             | ●                                 | ●                             |
| Tourism                                               | ●                             | ●                                 | ●                             |
| <b>Factor D</b> Archaeological and Historic Resources |                               |                                   |                               |
| Archeological                                         | ●                             | ●                                 | ●                             |
| Historic                                              | ●                             | ●                                 | ●                             |
| <b>Factor E</b> Natural Resources                     |                               |                                   |                               |
| Air Quality                                           | ●                             | ●                                 | ●                             |
| Climate Change                                        | ●                             | ●                                 | ●                             |
| Geology                                               | ●                             | ●                                 | ●                             |
| Groundwater                                           | ●                             | ●                                 | ●                             |
| Soils                                                 | ●                             | ●                                 | ●                             |
| Surface Water                                         | ●                             | ●                                 | ●                             |
| Topography                                            | ●                             | ●                                 | ●                             |
| Vegetation                                            | ●                             | ●                                 | ●                             |
| Wetlands                                              | ●                             | ●                                 | ●                             |
| Wildlife and Habitat                                  | ●                             | ●                                 | ●                             |
| <b>Factor F</b> Rare and Unique Natural Resources     |                               |                                   |                               |
| State and Federally Listed Species                    | ●                             | ●                                 | ●                             |
| Rare and Unique Habitats                              | ○                             | ●                                 | ●                             |
| <b>Factor H</b><br>Paralleling Existing ROW           |                               |                                   |                               |
| —                                                     | ●                             | ●                                 | ●                             |

| Element                                                                           | Application of Routing Factor                                                       | Relative Merits of Routing Factor                                                   |                                                                                      |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                                                                                   | Proposed Route                                                                      | Crandall Alternate Route                                                            | Peaking Plant Alternate Route                                                        |
| <b>Factor J Use of Existing Infrastructure</b>                                    |                                                                                     |                                                                                     |                                                                                      |
| —                                                                                 |    |    |    |
| <b>Factor L Cost</b>                                                              |                                                                                     |                                                                                     |                                                                                      |
| —                                                                                 | N/A                                                                                 |    |    |
| Minnesota Statute 216E.03, Subdivision 7(12): Existing HVTL route and Highway ROW |                                                                                     |                                                                                     |                                                                                      |
| —                                                                                 |  |  |  |

**Table 8-3. Application of Routing Factors/Relative Merits of Routing Options**  
**Comparative Portion of the Proposed Route and Alternate Route Segments (Red, Yellow, and Purple)**

| Element                          | Application of Routing Factor                                                       | Relative Merits of Routing Factor                                                   |                                                                                      |                                                                                       |
|----------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                                  | Comparative Portion of the Proposed Route                                           | Alternate Red                                                                       | Alternate Yellow                                                                     | Alternate Purple                                                                      |
| <b>Factor A Human Settlement</b> |                                                                                     |                                                                                     |                                                                                      |                                                                                       |
| Aesthetics                       |  |  |  |  |
| Displacement                     |  |  |  |  |
| Cultural Values                  |  |  |  |  |
| Electric Interference            |  |  |  |  |
| Environmental Justice            |  |  |  |  |

| Element                                               | Application of Routing Factor             | Relative Merits of Routing Factor |                  |                  |
|-------------------------------------------------------|-------------------------------------------|-----------------------------------|------------------|------------------|
|                                                       | Comparative Portion of the Proposed Route | Alternate Red                     | Alternate Yellow | Alternate Purple |
| Floodplains                                           |                                           |                                   |                  |                  |
| Land Use and Zoning                                   |                                           |                                   |                  |                  |
| Noise                                                 |                                           |                                   |                  |                  |
| Property Values *                                     |                                           |                                   |                  |                  |
| Recreation                                            |                                           |                                   |                  |                  |
| Socioeconomics                                        |                                           |                                   |                  |                  |
| <b>Factor A Public Services</b>                       |                                           |                                   |                  |                  |
| Airports                                              |                                           |                                   |                  |                  |
| Roads and Highways                                    |                                           |                                   |                  |                  |
| Utilities                                             |                                           |                                   |                  |                  |
| <b>Factor B Public Safety</b>                         |                                           |                                   |                  |                  |
| EMF                                                   |                                           |                                   |                  |                  |
| Emergency Services                                    |                                           |                                   |                  |                  |
| Induced Voltage                                       |                                           |                                   |                  |                  |
| Medical Devices                                       |                                           |                                   |                  |                  |
| Public Safety                                         |                                           |                                   |                  |                  |
| Stray Voltage                                         |                                           |                                   |                  |                  |
| Worker Safety                                         |                                           |                                   |                  |                  |
| <b>Factor C Land Based Economies</b>                  |                                           |                                   |                  |                  |
| Agriculture                                           |                                           |                                   |                  |                  |
| Forestry                                              |                                           |                                   |                  |                  |
| Mining                                                |                                           |                                   |                  |                  |
| Tourism                                               |                                           |                                   |                  |                  |
| <b>Factor D Archaeological and Historic Resources</b> |                                           |                                   |                  |                  |
| Archeological                                         |                                           |                                   |                  |                  |
| Historic                                              |                                           |                                   |                  |                  |
| <b>Factor E Natural Resources</b>                     |                                           |                                   |                  |                  |
| Air Quality                                           |                                           |                                   |                  |                  |

| Element                                                                           | Application of Routing Factor             | Relative Merits of Routing Factor |                  |                  |
|-----------------------------------------------------------------------------------|-------------------------------------------|-----------------------------------|------------------|------------------|
|                                                                                   | Comparative Portion of the Proposed Route | Alternate Red                     | Alternate Yellow | Alternate Purple |
| Climate Change                                                                    | ●                                         | ●                                 | ●                | ●                |
| Geology                                                                           | ●                                         | ●                                 | ●                | ●                |
| Groundwater                                                                       | ●                                         | ●                                 | ●                | ●                |
| Soils                                                                             | ●                                         | ●                                 | ●                | ●                |
| Surface Water                                                                     | ●                                         | ○                                 | ○                | ●                |
| Topography                                                                        | ●                                         | ●                                 | ●                | ●                |
| Vegetation                                                                        | ●                                         | ●                                 | ●                | ●                |
| Wetlands                                                                          | ●                                         | ○                                 | ○                | ●                |
| Wildlife and Habitat                                                              | ●                                         | ●                                 | ●                | ●                |
| <b>Factor F</b> Rare and Unique Natural Resources                                 |                                           |                                   |                  |                  |
| State and Federally Listed Species                                                | ●                                         | ●                                 | ●                | ●                |
| Rare and Unique Habitats                                                          | ●                                         | ●                                 | ●                | ●                |
| <b>Factor H</b> Paralleling Existing ROW                                          |                                           |                                   |                  |                  |
| —                                                                                 | ●                                         | ●                                 | ●                | ●                |
| <b>Factor J</b> Use of Existing Infrastructure                                    |                                           |                                   |                  |                  |
| —                                                                                 | ●                                         | ●                                 | ●                | ●                |
| <b>Factor L</b> Cost                                                              |                                           |                                   |                  |                  |
| —                                                                                 | N/A                                       | ●                                 | ●                | ●                |
| Minnesota Statute 216E.03, Subdivision 7(12): Existing HVTL route and Highway ROW |                                           |                                   |                  |                  |
| —                                                                                 | ●                                         | ●                                 | ●                | ●                |

| Element | Application of Routing Factor             | Relative Merits of Routing Factor |                  |                  |
|---------|-------------------------------------------|-----------------------------------|------------------|------------------|
|         | Comparative Portion of the Proposed Route | Alternate Red                     | Alternate Yellow | Alternate Purple |

\* Impacts to property values, on whole, are expected to be minimal to moderate and dissipate quickly at distances greater than 400 feet from the HVTL.

**Table 8-4. Application of Routing Factors/Relative Merits of Routing Option**  
**Comparative Portion of the Peaking Plant Alternate Route and Alternate Blue Route Segment**

| Element | Application of Routing Factor                            | Relative Merits of Routing Factor |  |
|---------|----------------------------------------------------------|-----------------------------------|--|
|         | Comparative Portion of the Peaking Plant Alternate Route | Alternate Blue                    |  |

**Factor A Human Settlement**

|                       |  |  |  |
|-----------------------|--|--|--|
| Aesthetics            |  |  |  |
| Displacement          |  |  |  |
| Cultural Values       |  |  |  |
| Electric Interference |  |  |  |
| Environmental         |  |  |  |
| Floodplains           |  |  |  |
| Land Use and Zoning   |  |  |  |
| Noise                 |  |  |  |
| Property Values *     |  |  |  |
| Recreation            |  |  |  |
| Socioeconomics        |  |  |  |

**Factor A Public Services**

|                    |  |  |  |  |
|--------------------|--|--|--|--|
| Airports           |  |  |  |  |
| Roads and Highways |  |  |  |  |
| Utilities          |  |  |  |  |

**Factor B Public Safety**

|                    |  |  |  |  |
|--------------------|--|--|--|--|
| EMF                |  |  |  |  |
| Emergency Services |  |  |  |  |

| Element                                               | Application of Routing Factor                            | Relative Merits of Routing Factor |  |  |
|-------------------------------------------------------|----------------------------------------------------------|-----------------------------------|--|--|
|                                                       | Comparative Portion of the Peaking Plant Alternate Route | Alternate Blue                    |  |  |
| Induced Voltage                                       | ●                                                        | ●                                 |  |  |
| Medical Devices                                       | ●                                                        | ●                                 |  |  |
| Public Safety                                         | ●                                                        | ●                                 |  |  |
| Stray Voltage                                         | ●                                                        | ●                                 |  |  |
| Worker Safety                                         | ●                                                        | ●                                 |  |  |
| <b>Factor C Land Based Economies</b>                  |                                                          |                                   |  |  |
| Agriculture                                           | ○                                                        | ●                                 |  |  |
| Forestry                                              | ●                                                        | ●                                 |  |  |
| Mining                                                | ●                                                        | ●                                 |  |  |
| Tourism                                               | ●                                                        | ●                                 |  |  |
| <b>Factor D Archaeological and Historic Resources</b> |                                                          |                                   |  |  |
| Archeological                                         | ●                                                        | ●                                 |  |  |
| Historic                                              | ●                                                        | ●                                 |  |  |
| <b>Factor E Natural Resources</b>                     |                                                          |                                   |  |  |
| Air Quality                                           | ●                                                        | ●                                 |  |  |
| Climate Change                                        | ●                                                        | ●                                 |  |  |
| Geology                                               | ●                                                        | ●                                 |  |  |
| Groundwater                                           | ●                                                        | ●                                 |  |  |
| Soils                                                 | ○                                                        | ●                                 |  |  |
| Surface Water                                         | ●                                                        | ●                                 |  |  |
| Topography                                            | ●                                                        | ●                                 |  |  |
| Vegetation                                            | ●                                                        | ●                                 |  |  |
| Wetlands                                              | ●                                                        | ●                                 |  |  |
| Wildlife and Habitat                                  | ●                                                        | ●                                 |  |  |
| <b>Factor F Rare and Unique Natural Resources</b>     |                                                          |                                   |  |  |
| State and Federally Listed Species                    | ●                                                        | ●                                 |  |  |

| Element                                                                           | Application of Routing Factor                                                       | Relative Merits of Routing Factor                                                    |  |  |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--|--|
|                                                                                   | Comparative Portion of the Peaking Plant Alternate Route                            | Alternate Blue                                                                       |  |  |
| Rare and Unique Habitats                                                          |    |    |  |  |
| Factor H Paralleling Existing ROW                                                 |                                                                                     |                                                                                      |  |  |
| —                                                                                 |    |    |  |  |
| Factor J Use of Existing Infrastructure                                           |                                                                                     |                                                                                      |  |  |
| —                                                                                 |    |    |  |  |
| Factor L Cost                                                                     |                                                                                     |                                                                                      |  |  |
| —                                                                                 | N/A                                                                                 |   |  |  |
| Minnesota Statute 216E.03, Subdivision 7(12): Existing HVTL route and Highway ROW |                                                                                     |                                                                                      |  |  |
| —                                                                                 |  |  |  |  |

### 8.3 Recommendations

The following summarizes mitigation techniques recommended by staff that are not part of the sample site permit or the sample route permit issued for the project. In addition to the techniques summarized below, the Commission could require that one third party agency monitor reporting directly to EERA staff monitor construction and restoration of the project. The costs for such a monitor could be borne by the applicant.

#### Agriculture

If the Peaking Plant Alternate Route is selected, the Alternate Blue Route will reduce pole structure placement through three parcels of land that currently farmed as one large tract. Alternate Blue Route would place the HVTL adjacent to an existing road.

### Rare and Unique Natural Resources

If the applicant's proposed route is selected, the Commission could require construction and pole structure placement along 50<sup>th</sup> Avenue in Martin County avoid impacts to Cedar 2-3, a moderate ranked MBS Site of Biodiversity Significance, and the adjacent native prairie areas.

Any tree removal should avoid the active season (April 1-September 30) for the Northern long-eared bat. Ensuring construction and operation are consistent with USFWS guidance would minimize impacts to this species.

### Wildlife Habitat

If the applicant's proposed route is selected, the Commission could require that construction and pole placement along the Cottonwood and Watonwan County borders avoid impacts to the existing CREP easement on the Cottonwood County side of the border.

## Discussion

The following summarizes potential impacts to resource elements that are anticipated to vary across routing options, or those resource elements not previously discussed.

### Aesthetics

All routing options will impact residences and recreational areas. The Alternate Yellow Route Segment will have reduced aesthetic impacts when compared to the associated segment of the applicant's proposed route.

### Agriculture

Impacts to agriculture are expected to be minimal for all routing options; however, the Peaking Plant Alternate Route will have the most potential for disruption, due to the routing option cutting through large tract of farmland. Alternate Blue Route Segment would avoid this disruption of farming on multiple parcels of land.

### Surface Waters

The comparative segments of the applicant's proposed route has less surface water crossings when compared to the Alternate Red and Alternate Yellow Route Segments.

### Rare and Unique Natural Resources

The applicant's proposed route does cross a MNDNR SOBS of moderate value and associated native prairie areas. Construction and pole placement should be able to be completed in a manner that will

avoid these habitats, but if not, the Crandall Alternate Route and Peaking Plant Alternate Route will avoid these habitat areas.

### Floodplains

Alternate Red, Alternate Yellow, and Alternate Purple Route Segments all avoid crossing identified floodplains when compared to the comparative segment of the applicant's proposed route.

### Property Values

The segment of the Peaking Plant Alternate Route that travels through the large tract of farmland north of 220<sup>th</sup> Street has the potential to impact property values, as the routing option could reduce the desirability of purchasing the land for farming. The Alternate Blue Route Segment could reduce the potential of these impacts.

### Soils

The segment of the Peaking Plant Alternate Route that travels through the large tract of farmland north of 220<sup>th</sup> Street has the potential to impact soils, as the routing option would extend through lands currently used for agricultural production and there is no previous disturbance for construction activities. The Alternate Blue Route Segment could reduce the potential of these impacts, as it is located adjacent to an existing road ROW.

### Paralleling

The applicant's proposed route, the Crandall Alternate Route, and Peaking Plant Alternate Route parallel existing infrastructure for the vast majority or all their length. All of Alternate Blue Route Segment parallels existing infrastructure. Alternate Red, Alternate Yellow, and Alternate Purple parallel less existing infrastructure than any of the comparative segments of the applicant's proposed route.

### Use of existing infrastructures

The applicant's proposed route, the Crandall Alternate Route, and Peaking Plant Alternate Route parallel existing infrastructure for the vast majority or all their length. All of Alternate Blue Route Segment parallels existing infrastructure. Alternate Red, Alternate Yellow, and Alternate Purple parallel less existing infrastructure than any of the comparative segments of the applicant's proposed route.

### Minnesota Statute 216E.03

The applicant's proposed route, the Crandall Alternate Route, and Peaking Plant Alternate Route parallel existing infrastructure for the vast majority or all their length. All of Alternate Blue Route

Segment parallels existing infrastructure. Alternate Red, Alternate Yellow, and Alternate Purple parallel less existing infrastructure than any of the comparative segments of the applicant's proposed route.

No route segment follows an existing HVTL.