

## Executive Summary

Dodge County Wind, LLC (DCW or applicant) is proposing to build a 170-megawatt wind farm in Dodge and Steele Counties in southeast Minnesota (**Figure ES-1**). The applicant is also proposing to build a 21-mile to 26-mile long 345-kilovolt high-voltage transmission line through Dodge and Olmsted Counties to connect the wind farm to the electric grid (**Figure ES-2**). DCW anticipates that construction will begin in 2020, and the project will be in-service in late 2020.

In order to build the project, DCW must obtain three approvals from the Public Utilities Commission (Commission): a certificate of need (CN) for the project as a whole, a site permit for the wind farm, and a route permit for the transmission line. The purpose of this environmental impact statement (EIS) is to provide information the Commission needs to make these permit decisions.

This EIS evaluates alternatives to the project itself. It also evaluates the potential human and environmental impacts of the proposed project and possible mitigation measures including transmission line route, route segment, and alignment alternatives.

This EIS is not a decision-making document, but rather serves as a guide for decision makers

## Project

The Dodge County Wind Project consists of two parts – a wind farm and a transmission line that connects the wind farm to the electrical grid:

- **Wind Farm:** The proposed 170 MW wind farm consists of up to 68 turbines to be located within an area of approximately 52,085 acres (the site) in Dodge and Steele counties. DCW anticipates that the wind farm would consist of 60 GE 2.5 MW turbines and eight (8) GE 2.3 MW turbines, for an installed capacity of 168.4 MW. DCW has identified four alternate turbine locations to provide for some flexibility if there are obstacles facing any of the proposed turbine sites. The wind farm also includes underground electric collection lines, an operation and maintenance building, permanent meteorological towers, and gravel access roads.
- **Transmission Project:** DCW proposes to construct between 21 and 26 miles of 345 kilovolt (kV) transmission line in Dodge and Olmsted counties to connect the wind farm to the electric grid. The 345 kV line would run from the new collector substation (DCW Substation), south of Claremont, to the Byron Substation, near the city of Byron. DCW proposed two possible routes for the transmission line (routes A and B). This EIS also evaluates additional routing alternatives for the transmission line. DCW proposes to use single-circuit monopole structures with heights of 80 to 140 feet, and spans of approximately 400 to 1,200 feet between structures. DCW proposes a typical right-of-way (ROW) of 150 feet, with a narrower ROW (approximately 75 feet) for portions that are within road ROW.

Figure ES-1. DCW Wind Farm

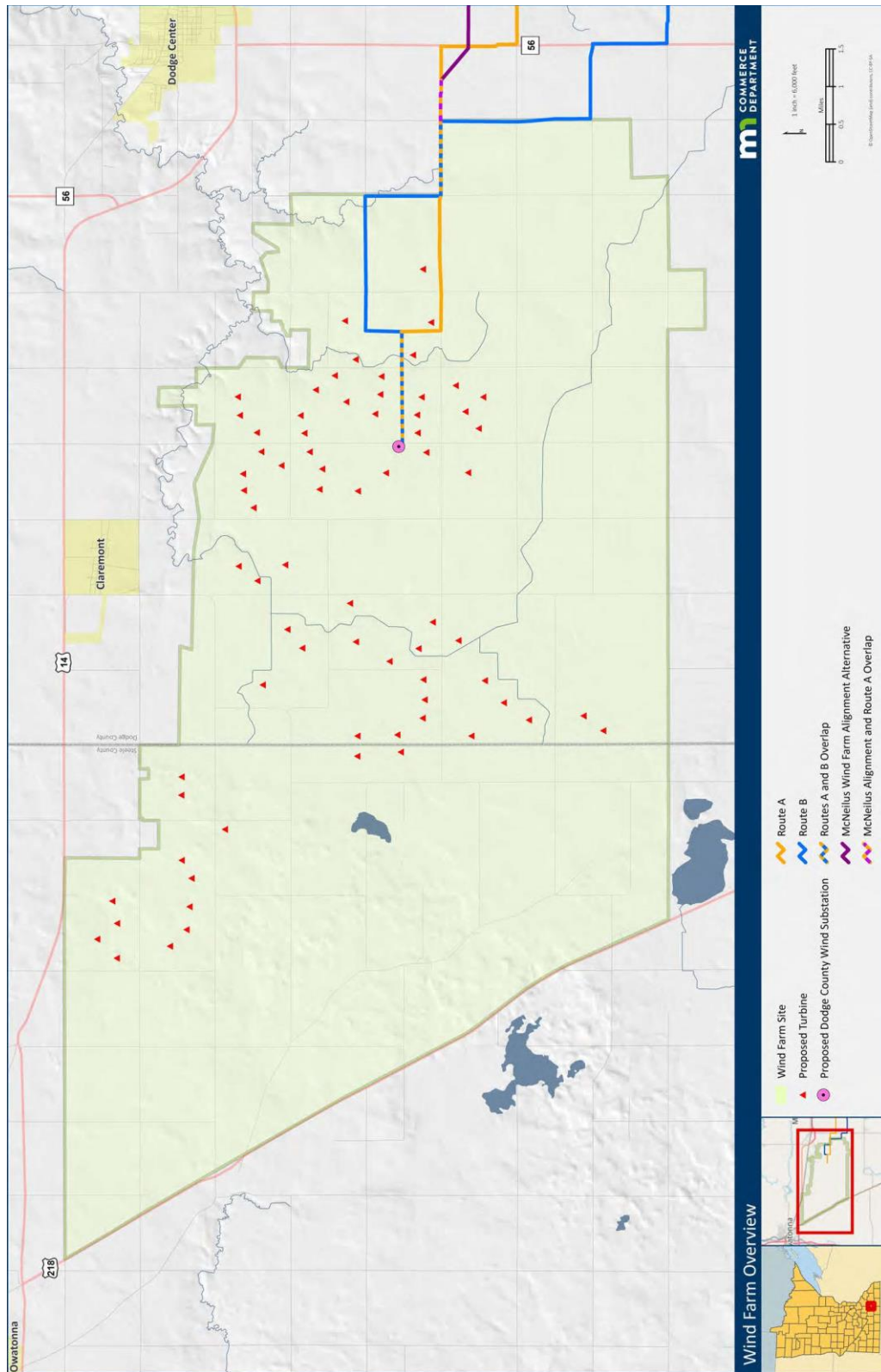
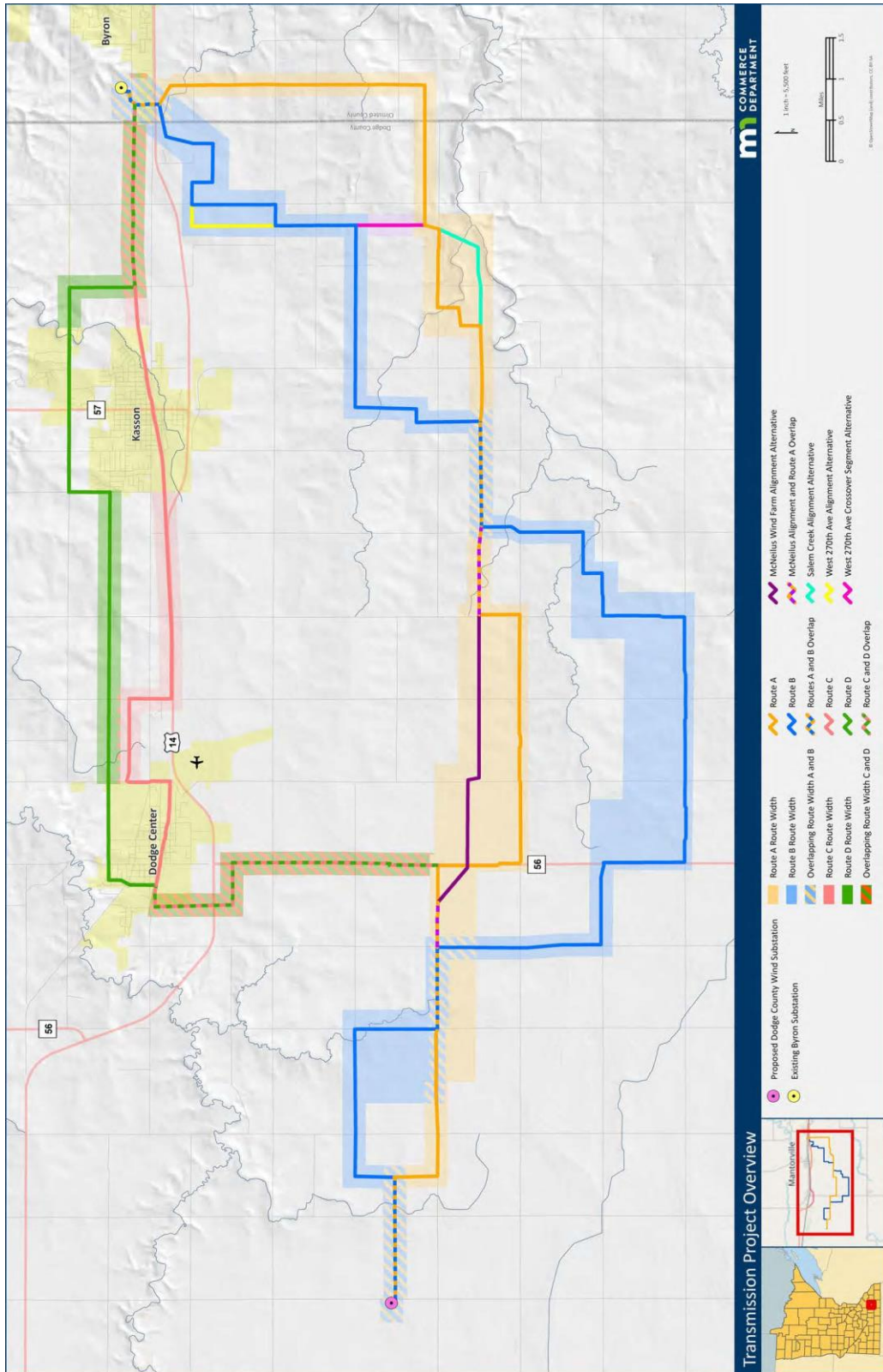


Figure ES-2 DCW Transmission Project – Routing Alternatives



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DCW has negotiated a 30-year power purchase agreement to sell the entire output of the project to the Minnesota Municipal Power Agency (MMPA). MMPA is purchasing the power to meet its requirements under the State of Minnesota’s renewable energy objectives.

## State of Minnesota’s Role

In order to build the DCW Project, DCW must obtain three approvals from the Public Utilities Commission (Commission)—a certificate of need (CN) for the project as a whole, a site permit for the wind farm, and a route permit for the transmission line. In addition to these approvals from the Commission, the Project also requires approvals (e.g., permits, licenses) from other state agencies and federal agencies with permitting authority for specific resources (e.g., the waters of Minnesota). Commission site and route permits supersede and preempt all zoning, building, and land-use regulations promulgated by local units of government.

DCW applied to the Commission for a CN, site permit, and route permit for the project in June 2018. DCW amended the applications for the CN and site permit in January 2019. With these applications, the Commission has before it three distinct considerations:

- whether the proposed Project is needed, or whether some other project would be more appropriate for the state of Minnesota, for example, a project of a different type or size, or a project that is not needed until further into the future,
- if the Project is needed, is the wind farm as proposed compatible with environmental preservation, sustainable development, and the efficient use of resources, and
- if the proposed Project is needed, where is the transmission line best located and what conditions should be placed on the route permit.

To help the Commission with its decision-making, the state of Minnesota has set out a process for the Commission to follow in making its decisions. This process requires the development of an EIS and public hearings before an administrative law judge (ALJ).

The goal of the EIS is to describe the potential human and environmental impacts of the project (“the facts”). The goal of the hearings is to advocate, question, and debate what the Commission should decide about the project (“what the facts mean”). The entire record developed in this process—the EIS and the report from the ALJ, including all public input and testimony—is considered by the Commission when it makes its decisions on the applicant’s CN, site, and route permit applications.

## Certificate of Need Decision

Construction of a large energy facility in Minnesota requires a CN from the Commission. Both the 170 MW wind farm and the 345 kV transmission line meet the definition of a large energy facility and require a CN.

The Commission must determine whether the proposed project is needed or if another project would be more appropriate for the state of Minnesota. Minnesota Rules, part 7849.0120 provides the criteria that the Commission must use in determining whether to grant a CN:

- The probable result of denial would be an adverse effect on the future adequacy, reliability, or efficiency of energy supply to the applicant, to the applicant’s customers, or to the people of Minnesota and neighboring states.
- A more reasonable and prudent alternative to the proposed facility has not been demonstrated by a preponderance of the evidence on the record.
- The proposed facility, or a suitable modification of the facility, will provide benefits to society in a manner compatible with protecting the natural and socioeconomic environments, including human health.
- The record does not demonstrate that the design, construction, or operation of the proposed facility, or a suitable modification of the facility, will fail to comply with relevant policies, rules, and regulations of other state and federal agencies and local governments.

If the Commission determines that the applicant has met these criteria, a CN is granted. The Commission’s CN decision determines the type of project, the size of the project, and the project’s termini, or its start and end points. The Commission could place conditions on the granting of a CN.

The CN decision does not determine the locations of wind turbines or the route for transmission line; these determinations are made in the site and route permits for the project.

### Need for the Wind Farm

Section 3 of the EIS provides an analysis of impacts associated with the DCW Wind Farm and alternatives to the wind farm portion of the Project. Because the DCW Project is intended to meet renewable energy objectives, wind farm alternatives examined in this EIS are limited to technologies that support renewable energy objectives. These alternatives are:

- a generic 170 MW wind generation project sited elsewhere in Minnesota,
- a 170 MW solar farm, and
- a “no-build” alternative.

The DCW Wind Farm would create human and environmental impacts similar to other large wind projects located in Minnesota:

- With use of mitigation measures outlined in its site permit application and site permit conditions, it is not anticipated that the wind farm would create significant impacts to air quality, water quality, wetlands, solid or hazardous wastes, overall vegetative cover in the project area, non-avian wildlife, rare and unique natural features, or property values.
- The proposed wind farm is consistent with local planning and zoning.
- The wind farm has the potential for impacts to avian and bat populations. DCW has

incorporated pre-construction avian studies in the design and layout of the wind farm. Preconstruction studies have also been used to inform the design of DCW's proposed post-construction avian fatality monitoring. The Commission's Draft Site Permit requires curtailment of turbine operation to minimize avian and bat fatalities, including restrictions on turbine operations during bat migration season and software that allows for adjustment of cut-in speeds during the operational life of the project. The most current Draft Avian and Bat Protection Plan for the project is included as **Appendix G**.

- The DCW Wind Farm would create noise. The predicted worst-case sound level from the project wind turbines is below the 50 dBA limit at all modeled residences within the site. DCW has incorporated in to the project design a 1,400-foot setback from residences for compliance with MPCA noise standards.
- The DCW Wind Farm would create both short-term and long-term economic benefits. Short-term economic benefits would occur as a result of the approximately 200 temporary construction jobs during the five to seven-month construction period and construction-related spending. DCW estimates expenditures on construction labor to be approximately \$62.5 million. Once the project becomes operational, approximately five full-time workers will be required to operate and maintain the facility. Landowners with turbines or other wind farm facilities on their land would receive an annual lease payment for the life of the project. Local governments would receive wind production tax revenues over the operating life of the project. DCW estimates annual wind energy production tax payments of between \$570,000 and \$700,000 to Dodge County and between \$130,000 and \$160,000 to Steele County.

### Need for Transmission Line

Chapter 4 of the EIS reviews potential impacts and mitigation measures for the proposed 345 kV transmission project as well as alternatives (no-build, other voltages, and alternative endpoints) to the 345 kV transmission project. If a transmission line is not built, the generation from the wind farm would have no outlet; the wind farm would not be financially viable and the project would not be built. Transmission voltages greater than 345 kV, while technically feasible, are in excess of what is required to connect the wind farm to the grid and would have greater costs and impacts than the proposed 345 kV transmission project. Transmission alternatives that connect the wind farm to the grid at a lower voltage are feasible and available, although they would have higher line losses, would subject the wind farm to a higher risk of curtailment, and may be more expensive than the proposed 345 kV transmission project.

### Site Permit Decision

A site permit from the Commission is required to construct a large wind energy conversion system (LWECS), which is any combination of wind turbines and associated facilities with the capacity to generate five MW or more of electricity. The DCW Wind Farm will generate up to 170 MW; thus, it requires a site permit

In making a siting decision for the wind farm, the Commission considers factors prescribed in statute and rule. Minnesota Statutes, section 216E.03, identifies considerations that the Commission must take into account when siting wind farms, including potential impacts on human and natural resources. The Commission also must determine that a project is compatible with environmental preservation, sustainable development, and the efficient use of resources.

**Section 3** of this EIS examines the potential impacts on human and natural resources from construction and operation of the wind farm. With use of mitigation measures outlined in its site permit application and site permit conditions the DCW Wind Farm is compatible with environmental preservation, sustainable development, and the efficient use of resources.

## Route Permit Decision

The Commission is charged with locating transmission lines in a manner that is “compatible with environmental preservation and the efficient use of resources” and that minimizes “adverse human and environmental impact(s)” while ensuring electric power reliability (Minnesota Statutes, section 216E.02).

The EIS evaluates four routes – two proposed by DCW in its application (routes A and B), and two additional routes responding to the Commission’s desire to evaluate route alternatives that follow existing 69 kV and 161 kV transmission lines (routes C and D). Additionally, this EIS evaluates three alignment alternatives, and one crossover segment that could be used with routes A and B. Routing alternatives are illustrated in Figure ES-2.

## Comparison of Route Alternatives

Minnesota Rules, part 7850.4100 lists 14 factors for the Commission to consider in its route permitting decisions, including impacts on human settlements, impacts on land-based economies, and impacts on the natural environment.

Chapter 6 of this EIS discusses the route alternatives and their merits relative to these routing factors. Potential impacts are anticipated to vary among route alternatives for the following routing factors and elements:




- **Displacement:** Routes C and D would displace homes, non-residential buildings, and some businesses. It is anticipated that routes A and B can avoid displacement of homes, although there is one home within Route B’s anticipated ROW.
- **Aesthetics:** Because of their proximity to homes and businesses, routes C and D would create significant aesthetic impacts. Both routes A and B are anticipated to have minor to moderate aesthetic impacts.
- **Transportation:** Both routes C and D conflict with the operation of the Dodge Center Airport. Route C also conflicts with the operation of the Canadian Pacific Railroad. DCW proposes to construct portions of both routes within county road ROW. The placement of routes A and B

along roadways could affect plans for future road expansions or realignments.

- **Land-Based Economics:** No impacts to forestry or mining are anticipated from the project. Overall impacts to agricultural lands are anticipated to be minimal to moderate for all routes, although somewhat greater for routes A and B compared to routes C and D.
- **Archaeological and Historic Resources:** All routes have the potential to encounter unidentified archaeological sites. Routes A, B, and D are not adjacent to any historic properties. Two historic properties are located adjacent to the anticipated alignment of Route C in downtown Kasson. The Eureka Hotel is within the ROW of the alignment that most closely follows the existing 161 kV line.
- **Natural Resources:** Impacts to wetlands and wildlife wetlands are anticipated to be minimal for all routes. Impact to vegetation are expected to be minimal to moderate for all routes. Impacts to surface waters are expected to be minimal for all routes with common mitigation measures, although routes C and D have fewer water crossings than routes A and B.
- **Rare and Unique Natural Resources:** Although rare and unique species exist along routes A, B, and C, impacts are expected to be minimal. Proper pole placement should allow routes to span these resources, thereby avoiding direct impacts.
- **Use of Existing ROWs:** Routes C and D follow existing ROW, although at the expense of dislocating home and businesses. Both routes A and B follow existing infrastructure for a significant portion of their length – 50 percent for Route A and 45 percent for Route B.
- **Electrical System Reliability:** Neither routes A or B pose system reliability challenges. Route C poses moderate to significant reliability concerns during construction. Route D poses moderate reliability concerns during construction.
- **Cost:** The only cost differentiator between routes A and B is the length. Because Route A is shorter, the lower cost is reflective of its length. Routes C and D would cost roughly double the cost of routes A and B.

The discussion here uses text and a stoplight graphic to briefly summarize the relative merits of the route alternatives (Table ES-1).

**Table ES-1. Guide to Relative Merits of Route Alternatives**

Anticipated Impact or Consistency with Routing Factor	Color/Shape
Impacts anticipated to be minimal with the conditions in section 5.0 of the Commission’s generic route permit – OR- route alternative is very consistent with the routing factor.	
Impacts anticipated to be minimal to moderate with the conditions in section 5.0 of the Commission’s generic route permit template; special conditions may be required for mitigation – OR – route alternative is very consistent with the routing factor, but less so than other route alternatives.	
Impacts anticipated to be moderate to significant and likely unable to be mitigated – OR – route alternative is not consistent with the routing factor or consistent only in part.	







































These factors and factor elements are summarized in **Table ES-2**. For routing factors where impacts are anticipated to vary with the route alternatives, the graphic represents these anticipated impacts and compares them across alternatives.

**Table ES-2. Relative Merits - All Routes**

Routing Factor Element	Route A	Route B	Route C	Route D	Summary
Aesthetic Impacts					<ul style="list-style-type: none"> <li>Route A is near fewer homes and makes relatively better use of infrastructure than Route B.</li> <li>Routes C and D are near substantially more homes than either routes A or B.</li> <li>Route C would substantially alter the aesthetics of the downtown areas of Dodge Center and Kasson,</li> <li>Route D would substantially alter the aesthetics of the Kasson-Mantorville education complex</li> </ul>
Displacement of Homes and Businesses					<ul style="list-style-type: none"> <li>There are no homes and 5 buildings within the anticipated ROW of Route A.</li> <li>There is one home and 5 buildings within the anticipated ROW of Route B.</li> <li>There are 6 homes and 55 non-residential buildings within the anticipated ROW of Route C.</li> <li>There are 34 homes and 16 non-residential buildings within the anticipated ROW of Route D</li> </ul>
Transportation Impacts					<ul style="list-style-type: none"> <li>Portions of routes A and B are within county road ROW. The placement of transmission lines could affect plans for future road expansions or realignments.</li> <li>Route C conflicts with operation of the railroad and Dodge Center Airport.</li> <li>Route D conflicts with the operation of the Dodge Center Airport.</li> </ul>
Agricultural Impacts					<ul style="list-style-type: none"> <li>The overall impact on agricultural lands is anticipated to be minimal to moderate for all routes.</li> <li>Agricultural impacts are generally greater for routes A and B as a</li> </ul>

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Routing Factor Element	Route A	Route B	Route C	Route D	Summary
					those routes are located in predominantly agricultural areas, compared to the more urban routing of routes C and D.
Archaeological Impacts					<ul style="list-style-type: none"> <li>All routes have the potential to encounter unidentified archaeological sites.</li> <li>Routes A, B, and D are not adjacent to any historic properties.</li> <li>Two historic properties are located adjacent to the anticipated alignment of Route C in downtown Kasson. The Eureka Hotel is within the ROW of the alignment that most closely follows the existing 161 kV line.</li> </ul>
Impact on Surface Waters					<ul style="list-style-type: none"> <li>Impacts to surface waters are anticipated to be minimal for all routes.</li> <li>There are differences between routes A and B in the Salem Creek area</li> </ul>
Impacts to Wetlands					<ul style="list-style-type: none"> <li>Impacts to wetlands are anticipated to be minimal for all routes.</li> <li>There are differences between routes A and B in the Salem Creek area</li> </ul>
Impacts to Vegetation					<ul style="list-style-type: none"> <li>Vegetation impact for all routes would be minimal to moderate.</li> <li>Because routes C and D parallel existing infrastructure for the majority of their length any impacts are anticipated to be incremental</li> </ul>
Impacts to Wildlife					<ul style="list-style-type: none"> <li>Impacts to wildlife is anticipated to be minimal for all routes</li> </ul>
Rare and Unique Natural Resources					<ul style="list-style-type: none"> <li>Although rare and unique species exist along routes A, B, and C, impacts are expected to be minimal. Proper pole placement should allow either route to span these resources, thereby avoiding direct impacts</li> </ul>
Use or Paralleling of Existing Rights-of-					<ul style="list-style-type: none"> <li>Route A makes relatively better use of existing infrastructure (roads and transmission lines) than does Route B.</li> </ul>

Routing Factor Element	Route A	Route B	Route C	Route D	Summary
Way					<ul style="list-style-type: none"> <li>Routes C and D follow existing ROW, although at the expense of dislocation of homes and businesses.</li> </ul>
System Reliability					<ul style="list-style-type: none"> <li>Neither routes A or B pose a system reliability challenge.</li> <li>Route C poses moderate to significant reliability concerns during construction.</li> <li>Route D poses moderate reliability concerns during construction.</li> </ul>
Costs Dependent on Design and Route					<ul style="list-style-type: none"> <li>The only variable in costs between routes A and B is the route length. Because Route A is shorter, the lower cost is reflective of its length.</li> <li>Routes C or D would cost roughly double (\$90 to \$100 million) the cost of routes A or B.</li> </ul>

Because routes C and D are anticipated to create demonstrably greater impacts, including displacement of home and businesses, compared to other routing options, routes C and D are not carried forward for full analysis in this EIS. Routes C and D are evaluated in **Section 5.3**

In addition to the routing factors summarized in Table ES-2, it is important to note that transmission lines are large infrastructure projects that have adverse human and environmental impacts. Even with mitigation strategies, such as prudent routing, there are adverse impact of the transmission project that cannot be avoided. These impacts include long-term aesthetic changes to the project area, temporary construction impacts including noise and dust, loss of some productive agricultural land due to the DCW substation and transmission structures as well as constraints on the layout and operation of field operations, and natural resource impacts.

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