ITC Midwest LLC (ITCM) has proposed to construct approximately 73 miles of new 345 kilovolt (kV) transmission line in southern Minnesota, in the counties of Jackson, Martin, and Faribault. The proposed transmission line would proceed from the existing Lakefield Junction substation near Lakefield, Minnesota, eastward to a new Huntley substation near Winnebago, Minnesota, and then southward to the Iowa border. The project includes expansion of the Lakefield Junction substation, construction of the new Huntley substation, and the relocation of several segments of existing 161 kV and 69 kV transmission lines.

In order to construct the proposed transmission line, ITCM must obtain two approvals from the Minnesota Public Utilities Commission (Commission) – a certificate of need (CN) and a route permit. The Commission's docket numbers for these approvals are ET6675/CN-12-1053 and ET6675/TL-12-1337. In addition to these approvals from the Commission, the project will require approvals (e.g., permits, licenses) from other state agencies, federal agencies, and local units of government.

With ITCM's CN and route permit applications, the Commission has two considerations before it – (1) whether the project is needed, or whether some other project would be more appropriate for the State of Minnesota, and (2) if the project is needed, where it is best located. To aid the Commission in these considerations, the Commission gets assistance from several state agencies, including the Department of Commerce (Department) and the Office of Administrative Hearings (OAH).

Department Energy Environmental Review and Analysis (EERA) staff is responsible for conducting environmental review for CN and route permit applications submitted to the Commission. The intent of this review is to ensure that citizens, local governments, agencies, and the Commission are aware of the potential human and environmental impacts of the project and that the Commission can consider these impacts when determining whether the project is needed and where it should be located.

Environmental Review

EERA staff has prepared this environmental impact statement (EIS) for the Commission and for other agencies and entities that have permitting authority related to the project. This EIS also is intended to assist citizens in providing guidance to the Commission and other decision-makers regarding the project. This EIS evaluates the potential human and environmental impacts of ITCM's proposed project and possible mitigation measures, including route alternatives. It also evaluates potential alternatives to the project itself. The EIS does not advocate or state a preference for a specific route or route alternative, or for an alternative to the project itself. The EIS analyzes and compares potential impacts and mitigation measures, including routes and route alternatives, such that citizens, local governments, agencies, and the Commission can work from a common set of facts.

This EIS **was** issued in draft form – a draft EIS – so that it **could** be improved through public comment. **The draft EIS was issued on March 21, 2014. Comments on the draft EIS were accepted through May 9, 2014. All comments received on the draft EIS and responses to these comments are included in this final EIS (Appendix M)**.

EERA staff initiated work on this EIS by soliciting comments on (1) the issues and impacts that should be evaluated in the EIS, (2) the mitigation measures to study, including route, alignment and site alternatives, and (3) alternatives to the project itself that should be studied. This process of soliciting comments on the contents of the EIS is known as "scoping." EERA solicited comments through public meetings in July 2013 and a public comment period that ended August 2, 2013. In addition, ERRA staff convened an advisory task force which met three times in June and July 2013, and issued a report to the Department in August 2013.

Based on the scoping comments received, the Department issued the scoping decision for this EIS on October 14, 2013. The scoping decision includes those alignment, route and site alternatives that **are** evaluated in the EIS – including alternatives beyond those proposed by ITCM. All of the alternatives are analyzed in this EIS with same level of detail and analysis, and evaluated against the routing factors of Minnesota Rules, part 7850.4100.

The draft and final EIS for this project will be entered in the records for these proceedings, so that they can be used by the administrative law judge and the Commission in making decisions about ITCM's proposed project.

An administrative law judge (ALJ) **conducts** a contested case hearing for the project. Public hearings **were** held in the project area **the week of May 12, 2014. At the hearings, interested persons were afforded** an opportunity to ask questions, provide comments, submit evidence, and advocate for the routes and sites that they believe are most appropriate for the project. An evidentiary hearing **was** held **the week of May 19, 2014,** in St. Paul, Minnesota. The ALJ will submit a report

to the Commission which includes findings of fact, conclusions of law, and recommendations on ITCM's applications. Based on the ALJ's report and the entire record, the Commission will decide whether to grant a CN and route permit for the project.

Project Need and System Alternatives

ITCM indicates in its CN application that its project is needed to enhance regional electrical reliability, to increase transmission capacity to support additional generation, and to reduce congestion on the electrical grid. ITCM contends that the need for its project has been substantiated by its own studies and by those of the Midcontinent Independent System Operator (MISO). In this EIS, the need for the project is assumed as stated by ITCM and as presented in ITCM's and MISO's studies.

The system alternatives examined in this EIS are those noted in Minnesota Rules, part 7849.1500. Of these alternatives, a transmission line of a different size is the only alternative that is feasible and available and that could meet the need for the project. Specifically, an upgraded 161 kV line or a 345 kV line with different endpoints could meet the need for the project. The human and environmental impacts of an upgraded 161 kV line would be similar to those for ITCM's proposed route A. The potential impacts of a 345 kV line, with endpoints in Southern Minnesota and/or Northern Iowa, would have impacts similar to ITCM's proposed project.

Though the potential human and environmental impacts of these alternatives are anticipated to be similar to ITCM's proposed project, studies by ITCM and MISO indicate that these alternatives – an upgraded 161 kV line and a 345 kV line with different endpoints – are less effective in meeting the need than ITCM's project.

Potential Impacts and Mitigation Measures

Construction of a transmission line involves short and long-term human and environmental impacts. Some impacts may be avoidable; some may be unavoidable but can be mitigated; others may be unavoidable and unable to be mitigated. Impacts can be mitigated by prudent routing and right-of-way (ROW) placement – i.e., by avoiding specific human and environmental impacts – and by design and construction measures.

Short-term impacts of the project are anticipated to be similar to those of a large construction project – noise, dust, soil disturbance and compaction, clearing of flora. The project would require the use of heavy equipment to clear land, dig foundations, build structures and string conductors. The impacts of this equipment are anticipated to be fairly independent of the route selected for the project. They can occur wherever the project is located; they generally are not mitigated by prudent routing. However, these impacts can be mitigated by construction measures, for example, limiting construction work hours, using best management practices to control soil erosion, minimizing the removal of flora, remediating soil compaction and other soil disturbances.

Long-term impacts can exist for the life of the project and may include aesthetic impacts, health impacts, economic impacts, land use restrictions and impacts to flora and fauna. Long-term impacts are generally not well mitigated by construction measures – that is, these impacts do not flow from how the project is constructed but rather where it is placed and its operational characteristics over time. Long-term impacts can be mitigated by prudent routing and ROW placement and by design measures. Thus, certain categories of impacts can be avoided or mitigated, to a greater or less extent, based on the route selected for the project. Other categories of impacts are relatively unaffected by the route selected.

Potential impacts and mitigation measures for the project are summarized here using the nomenclature of the EIS. ITCM has proposed **three** routes for the project **– route A, modified route** A and **route** B. There are two segments of the project – Lakefield to Huntley (LH segment) and Huntley to the Iowa border (HI segment). A route alternative represents a complete connection from the Lakefield Junction substation to the Huntley substation or from the Huntley substation to the Iowa border. All of the route alternatives in the LH segment follow, to varying extents, Interstate 90 and are thus labeled as "I90 alternatives."

A route variation is a shorter section of route A or B that is designed to mitigate a specific local impact. There are four route variation areas in the LH segment, with a total of 15 route variations. There are two route variation areas in the HI segment, with a total of five route variations. Route variations use a prefix to designate the area in which they occur, e.g., "FL" for the Fox Lake area.

ITCM's proposed route A follows, for most of its length, the existing Lakefield to Border 161 kV line. **The instances where route A, modified route A and route B do not utilize this existing transmission line ROW are at the** root of most all

of the project's impacts and routing options to avoid these impacts.

Impacts to human settlements are anticipated to be minimal with aesthetic impacts and impacts to private airstrips being the only impacts that could be mitigated by routing. Because of their relatively greater transmission line ROW sharing, route A-LH and route alternatives I90-1 and I90-2 in the LH segment and route A1-HI and route alternative A2-HI in the HI segment are anticipated to minimize aesthetics impacts. Route variations in both segments further minimize aesthetic impacts of these routes and route alternatives. Route variation JA-2 and **modified route** A **(MRA**-JA**)** are anticipated to minimize aesthetic impacts near the Jackson Municipal Airport. The route variations that cross Fox Lake and Lake Charlotte (FL-1 and LC-4, respectively) are anticipated to minimize aesthetic impacts near these lakes. In the HI segment, route variations HI-2 and HI-5 are anticipated to minimize aesthetic impacts.

Impacts to transportation and public services are anticipated to be minimal for the project. However, route A-LH as well as select route variations near Fox Lake and Lake Charlotte would impact two, private airstrips. The route and route variations would significantly impact an airstrip in Fox Lake Township, and impact to an uncertain degree an airstrip in Rutland Township, both in Martin County.

Impacts to public health and safety are anticipated to be minimal for all routes, route alternatives, and route variations.

Impacts to archaeological and historic resources are anticipated to be minimal except for discrete sections of (1) route A-LH and route alternatives I90-1 and I90-2, (2) route alternative I90-4 and (3) route A1-HI. In these sections there are known archaeological resources within the ROWs of these routing options, and potential impacts to these resources would require mitigation measures.

Impacts to land-based economies are almost exclusively impacts to agriculture. The project proceeds through an area that is, by land cover, approximately 98 percent agricultural. Thus, impacts to agricultural operations cannot be avoided; however, they can be mitigated and primarily by following existing transmission line ROW. In the LH segment, Route A-LH is anticipated to minimize impacts on agricultural operations, as is route alternative I90-2. In the HI segment, route A1-HI and route alternative A2-HI are anticipated to minimize agricultural impacts. Route variations in the LH segment further minimize agricultural impacts. Route variation JA-2 and **modified route** A **(MRA**-JA**)** are anticipated to minimize agricultural impacts near the Jackson Municipal airport. The route variations that cross Fox Lake and Lake Charlotte (FL-1 and LC-4, respectively) are anticipated to minimize agricultural impacts near these lakes. Route variations in the HI segment typically have greater agricultural impacts than the sections of route A1-HI that they would replace. The route variations trade off greater agricultural impacts for fewer aesthetic impacts (HI-2, HI-5) and fewer impacts to the natural environment (HI-1, **MRA-HI1,** HI-4).

Impacts to the natural environment cannot be avoided, but these impacts are anticipated to be minimal. All surface waters in the project would be spanned. All wetlands can be spanned except for one wetland in the LH segment and one in the HI segment. Impacts to flora are anticipated to be minimal. Direct impacts to fauna are anticipated to be minimal. Indirect impacts – collisions of avian species with transmission line conductors – would occur but can be mitigated by limiting these impacts to incremental impacts and by structure design and the use of bird flight diverters. In the LH segment, the route variations that cross Fox Lake and Lake Charlotte (FL-1 and LC-4, respectively) would likely minimize avian impacts near these lakes.

Impacts to rare and unique natural resources are anticipated to be minimal across the project.

Impacts to electrical system reliability are anticipated to be minimal (and, in general, positive for south central Minnesota) with the exception of route alternatives I90-4 and I90-5 Option 2. These alternatives place several transmission lines in close proximity such that the risk of a multiple-line outage is likely higher than other alternatives and the time to repair such an outage likely greater than for other alternatives.

The existing 161 kV lines across Fox Lake and Lake Charlotte could be removed from the lakes by double-circuiting the 161 kV line with the new 345 kV line around these lakes. Route alternatives I90-1 and I90-2 could be used to remove the 161 kV line from both lakes. Route variations FL-3 and FL-4 **and modified route A (MRA-FL)** could be used to remove the 161 kV line from Fox Lake. Several route variations could be used to remove the 161 kV line from Lake Charlotte. All of these removals would positively impact aesthetics at and near the lakes by creating one transmission line ROW instead of two near the lakes. The removals would have a positive impact on agricultural operations along the 161 kV line. The removals would decrease avian impacts at both lakes. The removals would create new

impacts related to transmission facilities necessary to affect the double-circuiting and would create incremental aesthetic and avian impacts along the route alternatives and route variations used for the double-circuiting.

Relative Merits of Routing Options

The Commission must locate transmission lines "in an orderly manner compatible with environmental preservation and the efficient use of resources" that minimizes "adverse human and environmental impact[s]" while ensuring electric power reliability (Minnesota Statutes, section 216E.02). Minnesota Statutes, section 216E.03, subdivision 7(b) identifies considerations that the Commission must take into account when designating transmission lines routes. Minnesota Rules, part 7850.4100 lists 14 factors for the Commission to consider in its route permitting decisions.

Many of the impacts of the project, relative to the routing factors of Minnesota Rules, part 7850.4100, are anticipated to be minimal and mitigated by (1) the general conditions in part 4.0 of the Commission's generic route permit template, (2) prudent pole placement and placement of the alignment within the permitted route, and (3) the requirements of downstream permits. As noted above, the selection of certain routing options could also minimize and mitigate these impacts.

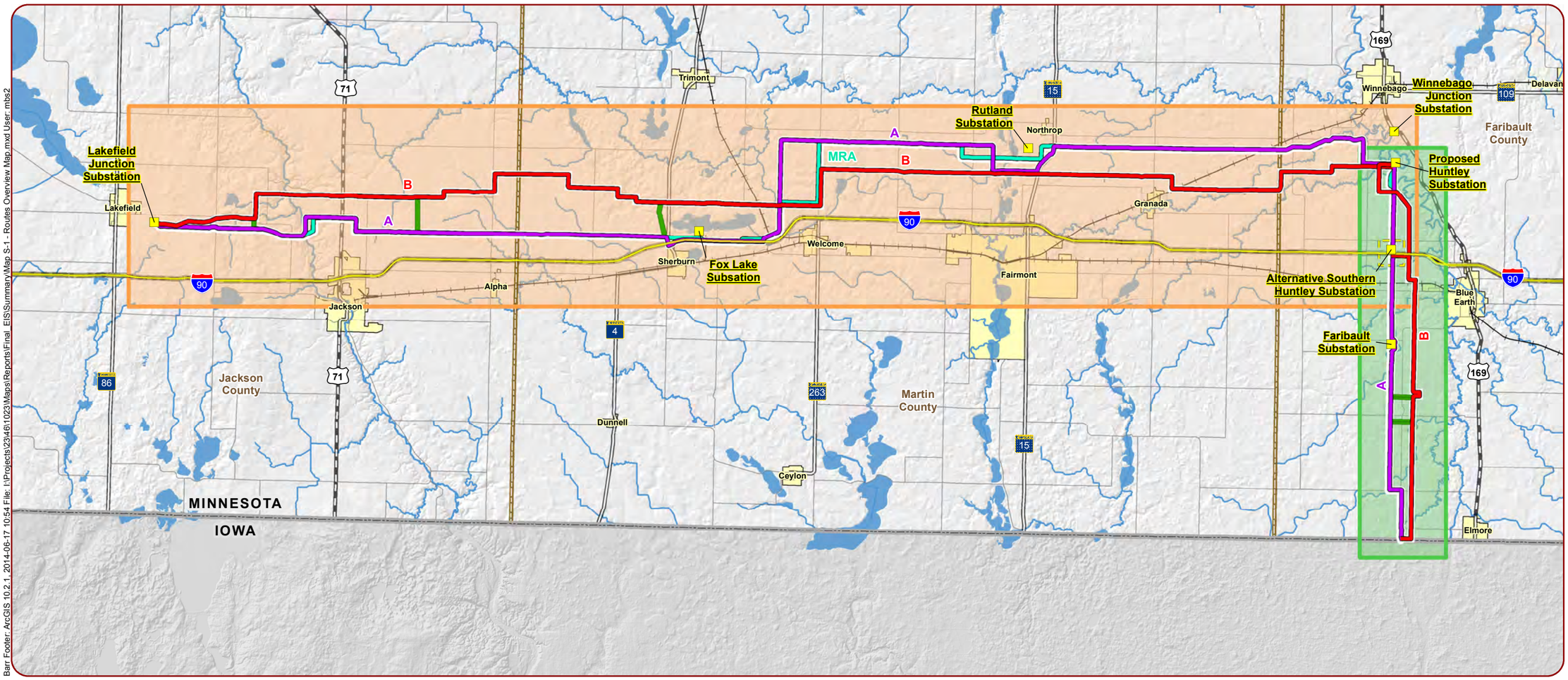
For some routing factors and elements of routing factors, impacts are anticipated to be minimal to moderate and require special conditions in a Commission route permit. Finally, there are some impacts that are anticipated to be moderate and unavoidable – impacts that cannot be mitigated by a permit condition, but could be avoided by choice of a different routing option.

Routing factors and elements of routing factors where special conditions in a Commission route permit are likely required to mitigate impacts include:

- **Human Settlements – Private Airstrips.** Impacts to the private airstrip near Lake Charlotte in Rutland Township, Martin County, may occur but the magnitude of these impacts is uncertain. Impacts, if they occur, could be mitigated in part by the use of low-profile specialty structures. Such structures may also be required for routing options north of the Jackson Municipal Airport.
- **Land-Based Economies – Agriculture.** Agricultural impacts to lands along the I-90 ROW (route A-LH in part, I90 route alternatives) could be mitigated by a requirement that the line, when paralleling the I-90 ROW, use the ROW to the maximum extent feasible, consistent with MnDOT's accommodation policy.
- **Archaeological and Historic Resources.** Impacts to archaeological resources could be mitigated by measures developed in consultation with the State Historic Preservation Office (SHPO) and by training of construction workers regarding archaeological resources.
- **Natural Environment – Fauna.** Impacts to avian species could be mitigated through structure design that places conductors in a relatively flat profile and by bird flight diverters.

Routing factors and elements of routing factors where impacts are anticipated to be moderate and unavoidable with certain routing options include:

- **Human Settlements – Private Airstrips.** Impacts to the private airstrip in Fox Lake Township, Martin County, are unavoidable with certain routing options in the Fox Lake area.
- **Electrical Systems Reliability.** Impacts to electric system reliability are unavoidable with route alternatives I90-4 and I90-5 Option 2.



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0 1 2 4 6 Miles
0 2.5 5 10 Kilometers

Routes
- Route A
- Modified Route A (MRA)
- Route B

- Connector Segment
- Project Substation
- Area of Potential Location for Alternative Southern Huntley Substation
- Segment 1: Lakefield to Huntley
- Segment 2: Huntley to Iowa border

- Municipal Boundary
- County Boundary
- State Boundary

Note:
Anticipated alignments are shown offset for display purposes only. Please refer to more detailed figures for precise alignment placement.

ITC Midwest will be issued a route permit with a specific route width. The proposed route widths are shown in Appendix L.

Map S-1

Routes Overview Map
Minnesota-Iowa 345 kV Transmission Project
ITC Midwest LLC

Summary

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