

Appendix D Response to Data Requests

November 22, 2022

VIA ELECTRONIC FILING

Mr. Will Seuffert
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, MN 55101

Re: In the Matter of the Application of Great River Energy for a Route Permit to Rebuild the Existing 69-kV ST-WW Transmission Line to 115-kV in Stearns County, MN
MPUC Docket No. ET2/TL-22-235

Dear Mr. Seuffert:

Great River Energy submits this supplemental filing with attachments concerning its Application for a Route Permit (“Application”) to rebuild the existing 69-kilovolt (“kV”) ST-WW transmission line to 115-kV (the “Project”).

This supplemental filing has been e-filed today through www.edockets.state.mn.us. A copy of this filing is also being served upon the persons on the Official Service List of record. Please let me know if you have any questions regarding this filing.

Sincerely,

FREDRIKSON & BYRON, P.A.

/s/ Haley L. Waller Pitts

Haley L. Waller Pitts
Direct Dial: 612.492.7443
Email: hwallerpitts@fredlaw.com

Enclosures

CERTIFICATE OF SERVICE

In the Matter of the Application of Great River Energy for a Route Permit to Rebuild the Existing 69-kV ST-WW Transmission Line to 115-kV in Stearns County, MN

MPUC Docket No. ET2/TL-22-235

Breann Jurek certifies that on the 22nd day of November 2022, she e-filed on behalf of Great River Energy true and correct copies of the following documents:

1. Great River Energy's Pre-Scoping Supplemental Filing with Attachments A-F; and
2. Certificate of Service.

A copy has also been served on the individuals listed on the attached service lists.

Executed on: November 22, 2022

Signed: /s/ Breann L. Jurek

Fredrikson & Byron, P.A.
200 South Sixth Street
Suite 4000
Minneapolis, MN 55401

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Generic Notice	Commerce Attorneys	commerce.attorneys@ag.state.mn.us	Office of the Attorney General-DOC	445 Minnesota Street Suite 1400 St. Paul, MN 55101	Electronic Service	Yes	OFF_SL_22-235_TL-22-235
Sharon	Ferguson	sharon.ferguson@state.mn.us	Department of Commerce	85 7th Place E Ste 280 Saint Paul, MN 551012198	Electronic Service	No	OFF_SL_22-235_TL-22-235
Generic Notice	Residential Utilities Division	residential.utilities@ag.state.mn.us	Office of the Attorney General-RUD	1400 BRM Tower 445 Minnesota St St. Paul, MN 551012131	Electronic Service	Yes	OFF_SL_22-235_TL-22-235
Will	Seuffert	Will.Seuffert@state.mn.us	Public Utilities Commission	121 7th PI E Ste 350 Saint Paul, MN 55101	Electronic Service	Yes	OFF_SL_22-235_TL-22-235
Mark	Strohfus	mstrohfus@greenergy.com	Great River Energy	12300 Elm Creek Boulevard Maple Grove, MN 553694718	Electronic Service	No	OFF_SL_22-235_TL-22-235

**STATE OF MINNESOTA
BEFORE THE
PUBLIC UTILITIES COMMISSION**

Katie Sieben	Chair
Valerie Means	Commissioner
Matthew Schuenger	Commissioner
Joseph K. Sullivan	Commissioner
John A. Tuma	Commissioner

In the Matter of the Application of Great River Energy for a Route Permit to Rebuild the Existing 69kV ST-WW Transmission Line to 115kV in Stearns County, Minnesota

MPUC Docket No. ET2/TL-22-235

GREAT RIVER ENERGY’S SUPPLEMENTAL FILING

INTRODUCTION

Great River Energy submits this supplemental filing concerning its Application for a Route Permit (“Application”) to rebuild the existing 69-kilovolt (“kV”) ST-WW transmission line to 115-kV (the “Project”). As described further in the Application, the Project is an approximately 3.2-mile rebuild of an existing line that will complete Great River Energy’s upgrade of the St. Joseph area to a 115-kV transmission system and loop that system. The Project is expected to cost approximately \$6.4 million and is located in St. Joseph Township, the City of St. Joseph, and St. Wendell Township in Stearns County, Minnesota.

On November 21, 2022, the Minnesota Public Utilities Commission (“Commission”) issued an order accepting the Application as complete. To assist the Department of Commerce, Energy Environmental Review and Analysis (“EERA”) in forthcoming scoping and preparation of the environmental assessment (“EA”), the Commission also required Great River Energy to submit certain supplemental information concerning the Project at least ten days in advance of the public information meeting. Specifically, the order states:

[Great River Energy] must file additional information identified by the EERA in its September 9, 2022, initial comments. The filing must include, in lieu of preliminary pole placement and a visual simulation, the range of number of poles for each structure type under consideration, including dead end structures. [Great River Energy] must also include in the filing graphic representations comparing existing structures to proposed structures.¹

The order also describes, in relevant part, the additional information identified by EERA which Great River Energy would submit:

- File an explanation of land rights and easements and any potential conflicts with other planned infrastructure projects, specifically those identified by the City of St. Cloud.
- Coordinate with the Department of Transportation on potential impacts of the Project on proposed transportation projects and road rights-of-way.
- Coordinate with the Department of Natural Resources on potential impacts of the Project on natural resources and timing of submission of the DNR Natural Heritage Information System review.
- Coordinate with the City of St. Cloud regarding pole placement, substation expansion, and right-of-way concerns.
- File additional discussion of the existing pipeline in the area, potential impacts, avoidance, and mitigation.
- File information on climate adaptation and resiliency for the proposed Project.
- File additional information as needed to prepare the EA, such as describing dead end structures, including the height range for the vegetation removal clear zone, and referencing which equations were used to calculate greenhouse gas emissions.²

This filing (including its attachments) includes that supplemental information.³

¹ Order Finding Application Complete and Referring the Matter for Summary Proceedings (Nov. 21, 2022), ordering ¶ 2.

² *Id.* at pp. 2-3.

³ The public information meetings are scheduled for December 7 and 8, 2022. Accordingly, this supplemental filing is timely submitted.

SUPPLEMENTAL INFORMATION

I. Additional information concerning structures.

Great River Energy and EERA agreed that Great River Energy would provide “the range of number of poles of each structure type under consideration, including dead end structures” and “graphic representations comparing existing structures to proposed structures.”⁴

Range of number of poles of each structure type. Great River Energy provides revised version of Table 4-1 from the Application, updated with a column that identifies the range of potential number of poles for each structure type, including dead-end structures. It is anticipated that the number of monopoles and H-Frame structures for the Project will be approximately the same number as the current line (or potentially fewer) and the new poles will be taller. The Project may require several additional dead-end structures.

Structure Type	Material	Approximate Height Above Ground (feet)	Structure Base Diameter (inches)	Span Between Distances (feet)	Potential number of poles
Monopole with horizontal post or braced post	Wood, steel or ductile iron	70 - 90	18 - 36	300 – 400	38 - 49
H-Frame	Wood, steel or ductile iron	40 - 60	18 - 60	300 - 400	1
Dead-end	Wood, steel	70 - 90	18 - 60	300 - 400	6 - 10

For purposes of comparison, there are currently a total of 61 structures on the existing transmission line, approximately 45 with distribution underbuild. The pole types/numbers are as follows:

- 48 monopole wood structures with horizontal post;
- One H-frame structure; and

⁴ Order Finding Application Complete and Referring the Matter for Summary Proceedings (Nov. 21, 2022), ordering ¶ 2.

- Six monopole wood dead-end structures. Three of these have switches incorporated.

Graphic representation. A graphic depicting existing structures, which are approximately 55-65 feet aboveground, as compared to structures for the Project, which are anticipated to be approximately 70-90 feet aboveground, is included as **Attachment A**. The graphic depicts dead-end structures. This graphic further includes a 30-foot home and a six-foot person for reference. Photographs of similar dead-end structures are also included in Attachment A.⁵

Structure locations – procedures and considerations. Good landowner relations are paramount to Great River Energy, and to facilitate good relations, it works cooperatively with landowners before, during, and after the permitting process regarding easements, rights-of-way, structure locations, and right-of-way restoration. More detail regarding Great River Energy's activities at each stage of this process is provided in the paragraphs below.

Pre-application: Initial landowner engagement typically begins with a pre-application open house. A study area for the Project is identified and all landowners within that area receive mailed notice of the open house, and Great River Energy also typically publishes notice in one or more local newspaper (as it did here). For this Project, the study area included all parcels within and immediately adjacent to the proposed route. Great River Energy incorporates what it learns during pre-application coordination into a proposed project and application. Here, the only concern raised at the open house was landowners requesting confirmation that the proposed route would be on the west side of 73rd Avenue. This was already what Great River Energy was proposing and is reflected in the Application.

⁵ During its review of a draft of this filing, EERA requested these photographs, so Great River Energy has included them with this filing.

During Commission permitting process: Throughout the entire process, landowners have access to Great River Energy staff and are encouraged to contact staff with any questions or concerns. To the extent specific issues are raised during scoping or elsewhere in the Commission process, Great River Energy may reach out to landowners individually to better understand their concerns. As the Commission and EERA are aware, landowners within and adjacent to any routes receive multiple notices of a project during the route proceeding.

Post-application: Once the Commission issues a route permit identifying a route for a project, as required by the Commission's rules, Great River Energy provides landowners with notice of and a copy of the route permit. Great River Energy engineers then create a preliminary design⁶ for the transmission line that is specific to the route approved by the Commission and begins reaching out to landowners regarding land rights needed for a project. A utility locate is also requested to determine any significant conflicts. Depending on site-specific conditions, soil boring may need to be collected to determine whether any areas are unsuitable for structures and/or whether special design measures will be needed. Great River Energy engineers review the utility locate and geotechnical information and make any revisions necessary. Great River Energy then stakes proposed structure locations so that landowners can visualize where a structure is proposed to be located. Great River Energy staff may meet with landowners on-site to discuss the preliminary structure locations and any specific concerns.⁷

⁶ Engineers use computer software and best industry practices to meet or exceed the requirements of the National Electrical Safety Code and Great River Energy's design criteria (*see* Application at 4-5). Each individual structure is designed to withstand all expected meteorological and construction related loads. Preliminary structure locations are selected to be consistent with current and known planned land use, not inhibit traffic flow, and not directly obstruct a landowner's views.

⁷ As noted here, Great River Energy initiates landowner conversations concerning specific structure locations after a route is identified by the Commission because, at that time, there is more certainty concerning a project's specific route. As described previously, however, landowners have the opportunity to provide comments concerning structure locations prior to Application submittal and during the routing proceeding, and Great River Energy would, of course, coordinate with landowners in response to any comments.

Factors which may ultimately affect structure locations include, but are not limited to: underground utilities; soil analysis; drain tile; landowner plantings/garden; picture windows; driveways; natural resources issues (wetlands, habitat, etc.); and, any known future development plans. Great River Energy subsequently modifies the design and draft easement documents, as appropriate, including exhibit documents and compensation offers. Landowners and Great River Energy then proceed with concluding easement negotiations.

II. Easements, land rights, and the City of St. Cloud.

Existing easements. Great River Energy has land rights for the existing 69-kV line which the Project will replace. In general, the current maintained right-of-way is approximately 70 feet.

Land rights which may be needed for the Project. Because the Project will be 115 kV (as compared to the existing 69-kV line), and because some adjustments to the centerline may be required due to landowner preferences or other constraints (including a potential road project, as discussed further below), it is possible that Great River Energy will need to acquire additional land rights for the Project. In general, shifts from the current alignment are likely to require the acquisition of additional land rights. Specifically, for example, if the Project's route is shifted to accommodate the potential future road project described in the next paragraph, Great River Energy will need to acquire additional land rights. Great River Energy will know what additional land rights may be needed after a route permit is issued.

Impact of City of St. Cloud road project on easements and land rights. On September 8, 2022, the City of St. Cloud submitted comments requesting that the Project's alignment "account for the future widening of 73rd Avenue North and its potential future extension south of Westwood Parkway." The City of St. Cloud explained that 73rd Avenue North currently has a 66-foot right-of-way and that the Project design and alignment "should account for a westerly right of way expansion from 66 feet to 100 feet." Although Great River Energy has an existing transmission

line adjacent to this road and engaged in substantial pre-Application coordination with the City of St. Joseph (in which much of the road project would occur), Great River Energy was not previously aware of this potential road project and reached out to the cities of St. Cloud and St. Joseph (“Cities”) for additional information. Based on that coordination, Great River Energy understands that, until recently, the road project was the lowest ranked of six alternatives under consideration. More recently, however, the Cities have been more focused on expansion of 73rd Avenue North (separate from extending that road southward), and the Cities hope to conduct this work in the next five years, although there currently are no detailed design plans or a budget. In response to questions from Great River Energy, the City of St. Joseph indicated that it would begin working on preliminary designs for the road project, and the Cities and Great River Energy agreed to further discuss the road and transmission line projects after preliminary designs are available. Documentation concerning coordination with the Cities is included as **Attachment B**, and **Attachment C** is a map depicting a potential expanded route width that was sent to the Cities on November 11, 2022, with a request for comments. Great River Energy will continue regular coordination with the Cities and will provide any additional information concerning the potential timing and scope of the road project throughout development of the EA if/when it becomes available.

III. Minnesota Department of Transportation (“MnDOT”).

Great River Energy has engaged in further coordination with MnDOT and confirmed that the Project will not impact MnDOT facilities. Correspondence documenting this coordination is included as **Attachment D**.

IV. Minnesota Department of Natural Resources (“MDNR”).

Great River Energy has coordinated with MDNR to gain a better understanding of the agency’s new Natural Heritage Inventory System (“NHIS”) process. As a result of that

coordination, Great River Energy submitted a “final” NHIS request through MDNR’s tool. The results of that request are consistent with the documentation filed with the Application, and the “final” request is included as **Attachment E**.

V. City of St. Cloud.

As discussed in Section II and related attachments, Great River Energy has coordinated with the City of St. Cloud. Great River Energy will continue such coordination, including the City of St. Joseph, as the Project proceeds.

VI. Existing pipeline in the area, potential impacts, avoidance, and mitigation.

Great River Energy has cooperated and coordinated with pipeline owners on numerous projects. When a transmission line crosses a pipeline, review and approval of the crossing design by the pipeline company typically includes a review of Great River Energy’s design details. For this Project, there is a natural gas pipeline approximately 0.2 miles south of the intersection of 73rd Avenue and Mullen Road that will be spanned by the Project (and is currently spanned by the existing line). However, if the Cities widen 73rd Avenue, the location where the transmission line crosses the pipeline will need to shift west or east. The location of the pipeline crossing is uncertain without a road design from the Cities and is further complicated by the gas company’s existing pumping station, which is approximately 0.2 miles south of the intersection of 73rd Avenue and Mullen Road (See **Attachment C**). As discussed in Section II above, Great River Energy is continuing coordination regarding the road project and will provide any further information throughout EA development.

Regardless of the existence or location of any road project, consistent with standard practices on other projects, Great River Energy will identify the specific locations of pipelines and other existing utilities during survey activities. After the route permit decision and when the preliminary design is complete, Great River Energy will engage more specifically with the pipeline

owner regarding a crossing. No structure locations will be placed on or near existing utilities, including the natural gas pipeline. Other than this avoidance, no other specific minimization or mitigation measures are anticipated. Mitigation is typically only an issue when a transmission line parallels a pipeline—not for a routine crossing like the one contemplated for the Project.

VII. Climate adaptation and resiliency proposed for the Project.

As discussed in more detail below, Great River Energy considers climate adaption and resiliency in its development and design of facilities, generally. For this Project, Great River Energy evaluated the Project area for extreme weather events. Great River Energy concluded that no specific climate resiliency measures are warranted here which would necessitate deviation from its typical 115-kV design standards; those design standards already contemplate the type of extreme weather events in the Project area. Great River Energy’s conclusion was based on the operating history of the existing line; Great River Energy has not experienced flooding or other significant extreme weather events with respect to the existing line.

Great River Energy also assessed outages associated with freezing rain conditions. This assessment determined that freezing rain triggers more frequent galloping of transmission lines south of Interstate 94, which can result in a line fault or cause structures to fail. As a result of this assessment, Great River Energy considers twisted-pair conductors located south of Interstate 94 to reduce galloping. Because here, the Project is located north of Interstate 94, twisted-pair conductors are not planned to be used.

Overall, the Project itself is intended to improve reliability and resiliency in the area.⁸ In addition, as explained in the Application:

Great River Energy is actively assessing risks to the reliable operation of its transmission system from the potential impacts of climate change (extreme weather events such as high winds and

⁸ Application at 1-9.

excessive rainfall) and is working on opportunities to mitigate those risks. Over the last three years, Great River Energy has invested over \$67M in transmission resiliency improvement projects.⁹

Further, one of the primary impacts of climate change to the Great River Energy transmission system is the potential for electrification to increase the transmission load beyond the existing system capacities. Electrification is a key strategy for reducing greenhouse gas emissions, especially within Minnesota and neighboring states. Electrification is driving the surge in electric cars, and this trend is expected to continue and increase over time. Whereas the 69-kV system could serve the load of the past, more capacity is needed and will be needed in the future to support electrification. The 115-kV voltage level also has proven to be more reliable and provides the capacity to address the upcoming load shift expected not only from growth in population but to accommodate the use of new technologies today that eventually will be standard technologies in the future.

VIII. Additional information as needed to prepare the EA, such as describing dead-end structures, including the height range for the vegetation removal clear zone, and referencing which equations were used to calculate greenhouse gas emissions.

Additional information as needed to prepare the EA. Great River Energy will coordinate with EERA regarding its preparation of the EA, as Great River Energy has done in prior projects. Great River Energy provides the information below specifically requested by EERA.

Describing dead-end structures. A dead-end structure is used to change direction and/or wire tension in a transmission line. Dead-end structures are also used as a “storm structure” to limit the number of structures damaged by a cascading effect due to higher line tensions when a pole is knocked down by a storm. Anticipated locations of dead-end structures were shown in Appendix B of the Application.¹⁰ Additional information regarding the potential specifications for the dead-

⁹ Application at 7-23.

¹⁰ Application at 4-4; Appendix B (showing anticipated dead-end structure locations on map series).

end structures is included in the revised Table 4-1 in Section I, above. Potential dead-end structures—both illustrations and photographs—are also depicted on **Attachment A**.

Height range for vegetation removal clear zone. For construction, the entire width of the right-of-way is initially cleared of woody species (*i.e.*, trees and shrubs). During operations, Great River Energy will employ wire/border zone vegetation management, in which “[t]he area below the outer conductors plus 10 to 15 feet (the ‘wire zone’ or ‘clear zone’) is cleared [and maintained free] of all shrubs and trees to ensure maintenance trucks can access the line and no vegetation interferes with the safe operation of the transmission line.”¹¹ Typical non-woody vegetation may be mowed during routine maintenance. Figure 6-1 in the Application depicts Great River Energy’s standard operations and maintenance tree removal practices.

Equations used to calculate greenhouse gas emissions. Great River Energy used methodologies consistent with calculating emissions as discussed by the U.S. Environmental Protection Agency in its *Compilation of Air Emission Factors*, in conjunction with the emission factors identified in 40 CFR Part 98, Tables A-1, C-1, and C-2.¹² Great River Energy has provided EERA with a live version of its calculation spreadsheet (with formulae intact) (*see **Attachment F***). this spreadsheet was pasted as a static image into the Application as Table 7-6.

More specifically, Great River Energy notes that 40 CFR Part 98 does not cover mobile emissions sources (like sources for this Project). However, consistent with that methodology, Great River Energy used 40 CFR § 98.33 Equation C-1 and, using the applicable fuel’s emission factor (Tables C-1 and C-2), multiplied by the estimated fuel consumption during Project construction. Appropriate conversion factors (Table A-2) were applied, and global warming potentials were calculated in accordance with Table A-1. Referring to Table 7-6 in the Application:

¹¹ Application at 6-16.

¹² See Application at 7-22 fn.40.

- The “total estimated fuel use values” is based upon an estimate of per-day fuel use, each multiplied by an assumed five day work week, four weeks per month, and nine months of construction.
- The “heating value” and CO2 emission factor values for No. 1 and No. 2 distillate fuel oils are from 40 CFR Part 98, Table C-1
 - To calculate total CO2 emissions, the estimated total fuel use, heating value, and CO2 emission factor were multiplied together.
- The CH4 and N2O factors are from 40 CFR Part 98, Table C-2 (the “fuel gas” row).
 - To calculate total CH4 and N2O emissions, the total fuel use, heating value, and emission factors were multiplied together.
- The global warming potential values are from 40 CFR Part 98, Table A-1.

CONCLUSION

Great River Energy appreciates consideration of this Supplemental Filing by the Commission and EERA and looks forward to further developing the record as this process proceeds.

Dated: November 22, 2022

Respectfully submitted,

/s/ Haley Waller Pitts

Haley Waller Pitts (# 0393470)
FREDRIKSON & BYRON, P.A.
200 South Sixth Street, Suite 4000
Minneapolis, MN 55402-1425
Telephone: (612) 492-7000
Fax: (612) 492-7077

Attorneys for Great River Energy