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RE: In the Matter of the Application of Minnesota Power for a Route Permit for the Great Northern High-Voltage Transmission Line Project from Manitoba, Canada- Minnesota Border to the Blackberry Substation near Grand Rapids, Minnesota  
PUC Docket No. E-015/TL-14-21

Thank you for this opportunity to comment on the proposed Great Northern Transmission Line Draft Scoping Document

I am proposing an alternative to the proposed Blue and Orange routes that I feel would have less environmental and human impacts. I would hope that the commission would consider it as an alternative and compare the potential impacts of this route to the two proposed alternatives.

I am proposing that the GNTL share the corridor with the existing 230KV and 500KV transmission lines beginning at the intersection of the Blue route with this shared corridor and follow it around the east side of Itasca County. At the point where the 230KV and 500KV lines turn SE to the Shannon Sub my proposed route would head SW intersecting and following the Orange route to its intersection with the Blue route. It would then follow the Blue route to the Blackberry substation.

I will submit a map of the proposed route for your consideration.

If the Commission decides to consider this alternative I would suggest the following impacts and mitigation be considered.

I am aware of the concerns on system reliability with three lines sharing a common corridor and request the commission consider mitigation that would reduce these risks to an acceptable level.

Minnesota Power has identified possible mitigation in their GNTL Application:

The Applicant will address potential simultaneous outages of the Project and the existing 500 kV line due to weather events by developing a weather study of the Project's Study Area to define and incorporate the appropriate design considerations based on actual weather data. Based on the weather study, the design criteria for the Project may be adjusted to increase the robustness of the design for those lengths where the Project parallels the existing 500 kV transmission line.

Where design criteria cannot fully address potential simultaneous outages due to weather events, as is the case with tornadoes, the Applicant will consider further mitigation as appropriate to enhance restorability. This could include more frequent use of anti-cascade towers, maintaining an increased supply of emergency spare towers, or even locating a permanent storage facility for emergency spares on or near the location where the Project parallels the existing 500 kV transmission line.

The Applicant will address potential simultaneous outages of the Project and the existing 500 kV line due to lightning events by installing shield wires and single pole tripping, a protective relay scheme that allows power to continue being transferred over the line even if one of the three phases is struck by lightning. Since the majority of lightning events only affect one phase of a transmission line, single pole tripping should alleviate any concerns with simultaneous outages due to lightning.

The Applicant will address potential simultaneous outages of the Project and the existing 500 kV line due to equipment failures by maintaining appropriate separation distances between the Project and the existing 500 kV transmission line.

The Applicant will evaluate the steady state and dynamic performance of the regional transmission system after a simultaneous outage of the two 500 kV transmission lines for both north and south flow conditions in the electrical design optimization studies for the Project.

These studies should identify any potential electrical problems with this event and if there are any reasonable electrical design considerations that will improve the performance of the system during this event.

*continued...*

**Table ES-1. Proposed Mitigation Measures, *continued...***

## **Executive Summary**

Great Northern Transmission Line

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Once the Project is in service, the reliability impacts in the United States of a simultaneous outage of the Project and the existing 500 kV line will be addressed by modifying the existing SPS associated with the four current Manitoba to United States tie lines to include the Project and associated facilities. In the event of an unexpected simultaneous outage of the Project and the existing 500 kV line, the modified SPS will be set up to preserve the integrity of the system based on the operating studies for the Project.

I hope the commission will evaluate these proposed mitigation measures apply them to paralleling the 230KV and 500KV lines as well. If these measures are effective then having all three HVTLs in a common corridor should be an acceptable alternative. On the East Coast of the United States up to five HVTLs share common corridors.

Additional measures that could be taken would be decreasing line loading if a severe weather event is approaching the lines. Real time modern forecasting and radar makes that a possibility.

A thorough study should be done on past storm history in this shared corridor. The number and type of storm related outages for the existing 230KV and 500KV lines should be part of the EIS.

Tornados seem to pose the greatest threat to a common corridor but I feel it is minimal in this area. In my 65 years living here I don't recall any major tornados.

Straight line wind and ice events are more likely but they affect a larger geographic area so they would pose an equal threat to all three lines whether they shared a common corridor or were separated as proposed by Minnesota Power's Blue and Orange routes.

I would like to see raw data addressing how strong a wind the power lines can sustain as proposed and if built stronger to make them more robust and what the cost factor is.

The existing lines could also be upgraded to make them more robust in the common corridor.

The EIS should calculate the probability of a storm event affecting all three lines simultaneously and what the result to the system would be if such an event were to occur. Because the existing 500KV line serves a load center near Minneapolis and the other two serve Minnesota Power's territory would a simultaneous outage affect the stability of the grid? Would the result of a three line simultaneous outage be any different from a simultaneous outage at the present time of the two existing lines? Why would adding a third 500KV line make a difference?

In considering whether to include the shared common corridor in the EIS evaluation I feel doing so would greatly reduce the environmental and human impacts to the point that the environment and people impacts would out weigh the small threat to system reliability.

We don't know the probability of a storm event affecting the three lines but we do know with certainty that there will be greater environmental negative impacts by building either the Orange or Blue lines.

The Orange and Blue routes as proposed will disturb a large area of greenfield and undisturbed habitat in Itasca county. Widening an existing corridor will result in moving the "edge"

over 200 feet while building a new corridor cross country will open an entirely new area to fragmentation and introduction of invasive species. It would also impact new private and public properties that are presently not impacted. It would also affect tourism due to negative visual and noise effects on recreational trails, woodlands, hunting areas and lakes. The properties on the existing 230KV and 500KV corridor have already been impacted and their property values negatively affected. Widening the corridor would have less impact on them than building a new corridor through untouched property.

Impacts that should be considered are forest fragmentation.

The spread of invasive species including the spread of non native earthworms that consume the forest duff and leaf layers to the point of changing the forest floor ground cover should be evaluated. The impacts would be less in the existing corridors.

Goshawk nesting territories need to be addressed as they can not tolerate disturbances and changes to the forest canopy.

Avian impacts and mitigation using towers where practical that don't require guy wires and using bird deflectors.

Impacts to deer yarding areas need to be avoided.

Rare plant surveys should be done on the proposed routes.

Logging camps should be considered along with archeological sites.

The number of private properties affected should be evaluated in considering the three routes and the economic impact to these property values.

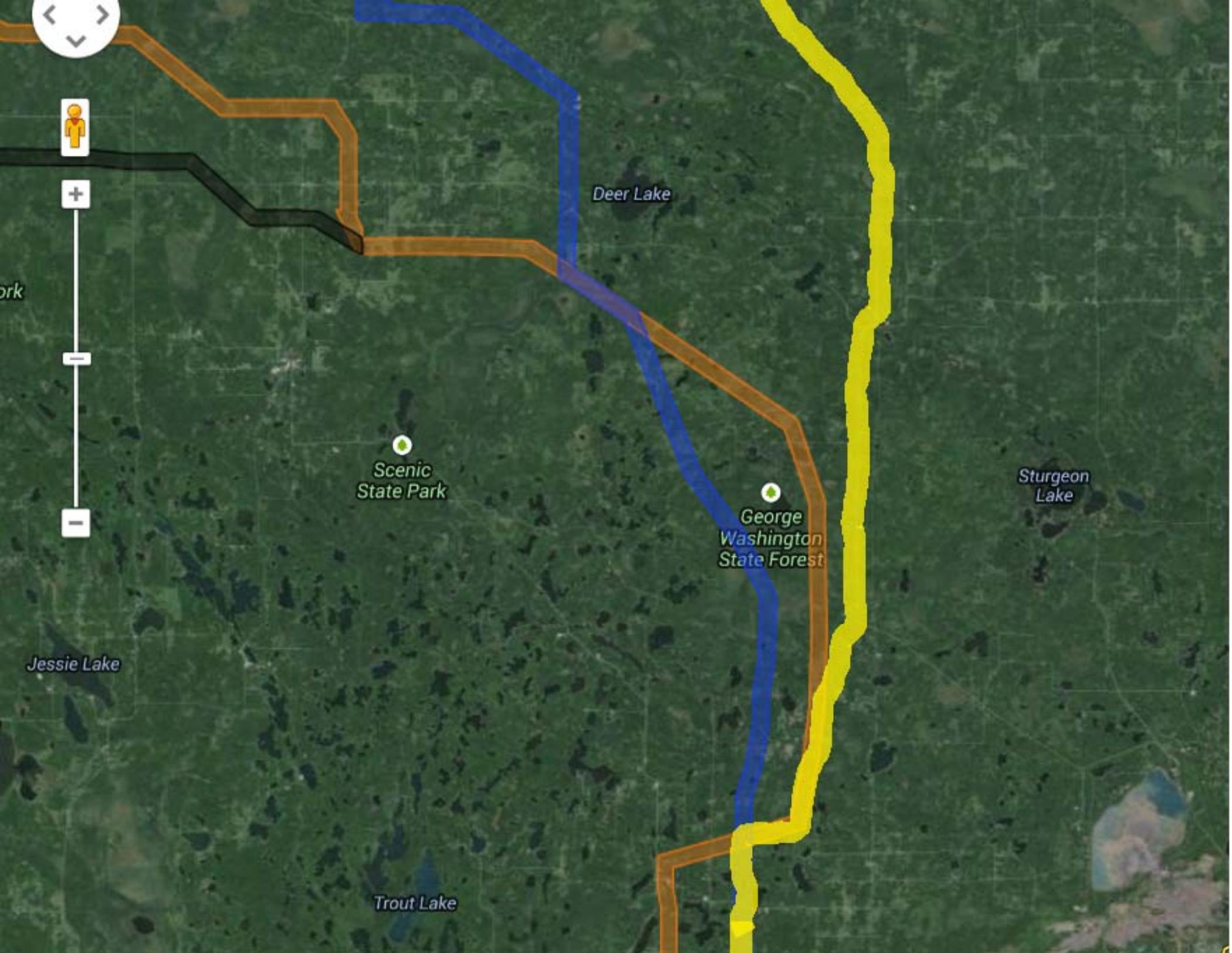
As proposed the Orange and Blue routes pass just south of the Itasca County Bass Lake Park and would be visible from the park. This should be addressed.

Consideration of possible impacts on the drastically diminishing bat population and possible listing as a threatened species should be considered.

I would also like to submit Minnesota Power's Route Permit Application For The Minnesota Public Utilities Commission Dated April 15, 2015 to be part of the EIS Scoping Document. I feel their very thorough identification of the issues and mitigation measures should be evaluated and incorporated in the EIS and applied to evaluating not only the Orange and Blue routes but also any alternative routes the Commission accepts for consideration. I feel all the issues and mitigation measures identified in the Permit Application should be evaluated in the EIS in addition to those explicitly raised by the agencies and the public.

Thank you for this opportunity to comment,  
Richard Libbey  
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Deer Lake

Scenic State Park

George Washington State Forest

Sturgeon Lake

Jessie Lake

Trout Lake