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November 13, 2014

**VIA E-FILING**

William Cole Storm  
Planning Director State  
Minnesota Department of Commerce  
85 7<sup>th</sup> Place East, Suite 500  
Saint Paul, MN 55101

Re: *In the Matter of the Request by Minnesota Power for a Route Permit for the  
Great Northern Transmission Line  
MPUC Docket No. E015/TL-14-21*

Dear Mr. Storm,

Enclosed for eFiling is Minnesota Power's response to the November 2014 Scoping Summary Report prepared for the United States Department of Energy and the Minnesota Department of Commerce - Energy Environmental Review and Analysis for the Great Northern Transmission Line Environmental Impact Statement. Minnesota Power appreciates the opportunity to provide this response.

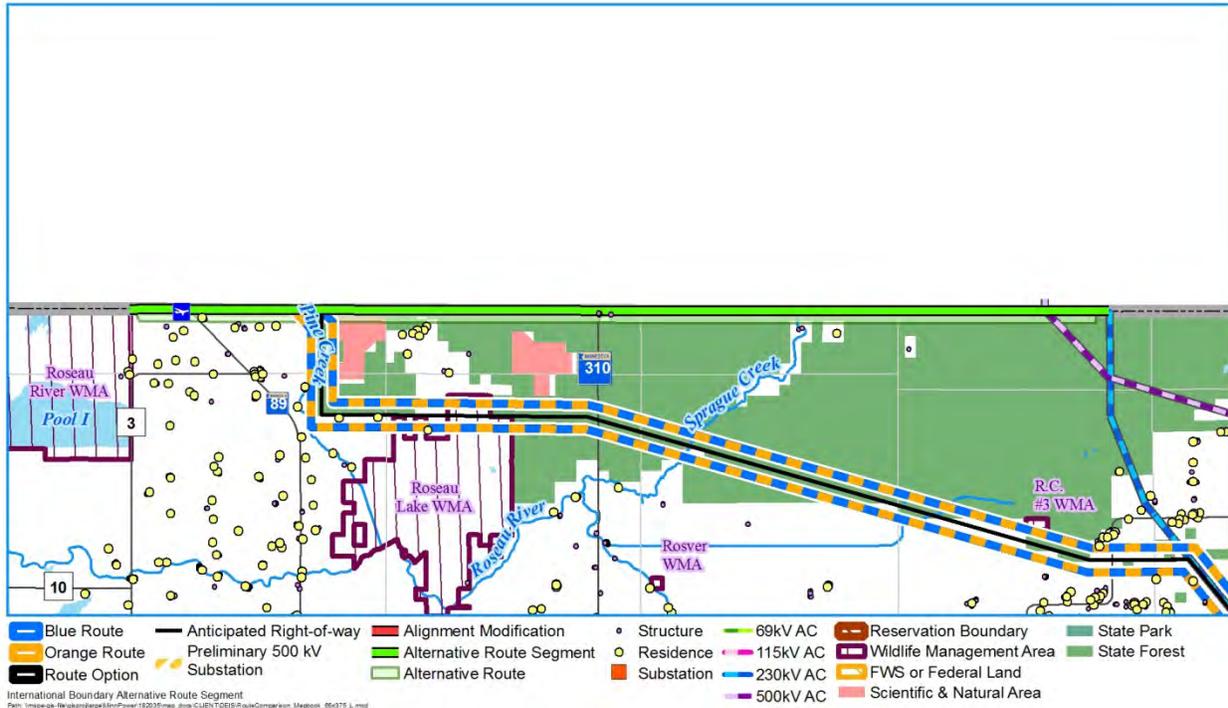
Yours truly,

David R. Moeller  
Senior Attorney  
Minnesota Power

DRM:sr  
Enc.



# International Boundary Alternative Route Segment



## Overview

A landowner proposed a Route Alternative that follows the U.S. - Canadian border. It was proposed that since the border is already cleared of trees, a route in this area would limit the amount of developed land impacted by new Right-of-Way (ROW).

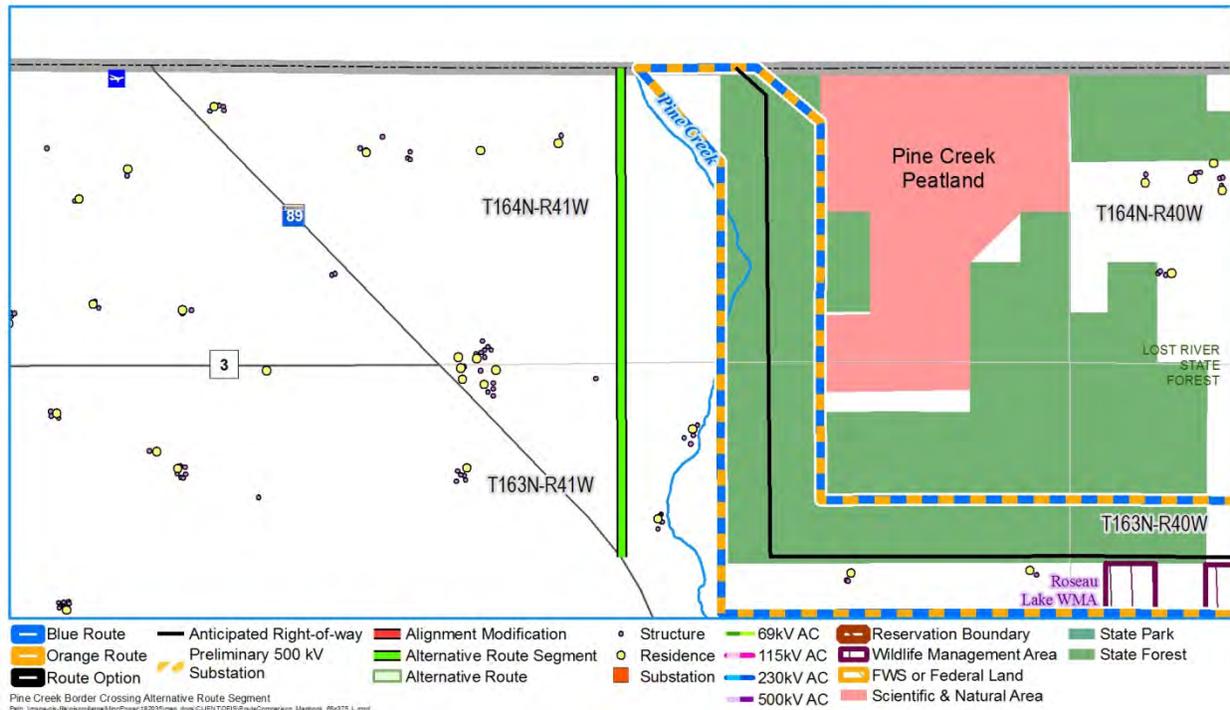
## Factors to Consider

As drawn, this Alternative would directly impact the Piney-Pine Creek Airport and runway. The proposed Route Alternative would also cross the Pine Creek Peatland Scientific and Natural Area (SNA), which is prohibited by Minnesota Administrative Rule 7850.4300 subp. 2.

## Conclusion

This Alternative would likely have greater environmental effects, including prohibited effects on the Pine Creek SNA, and highly problematic effects on the Piney-Pine Creek Airport. In addition, the clearing along the border is not wide enough to accommodate the project. Minnesota Power accordingly recommends against including this Route Alternative in the Scoping Decision.

# Pine Creek Border Crossing Alternative Route Segment



## Overview

The Pine Creek Border Crossing Alternative Route Segment is aligned west of 320<sup>th</sup> Avenue along the quarter-sections of Sections 27 and 34 in T164N, Range 41W and through Section 3 of T163N, Range 41W. This Route Alternative would avoid impacts to the Roseau River Wildlife Management Area (WMA) and possible peatlands in that area.

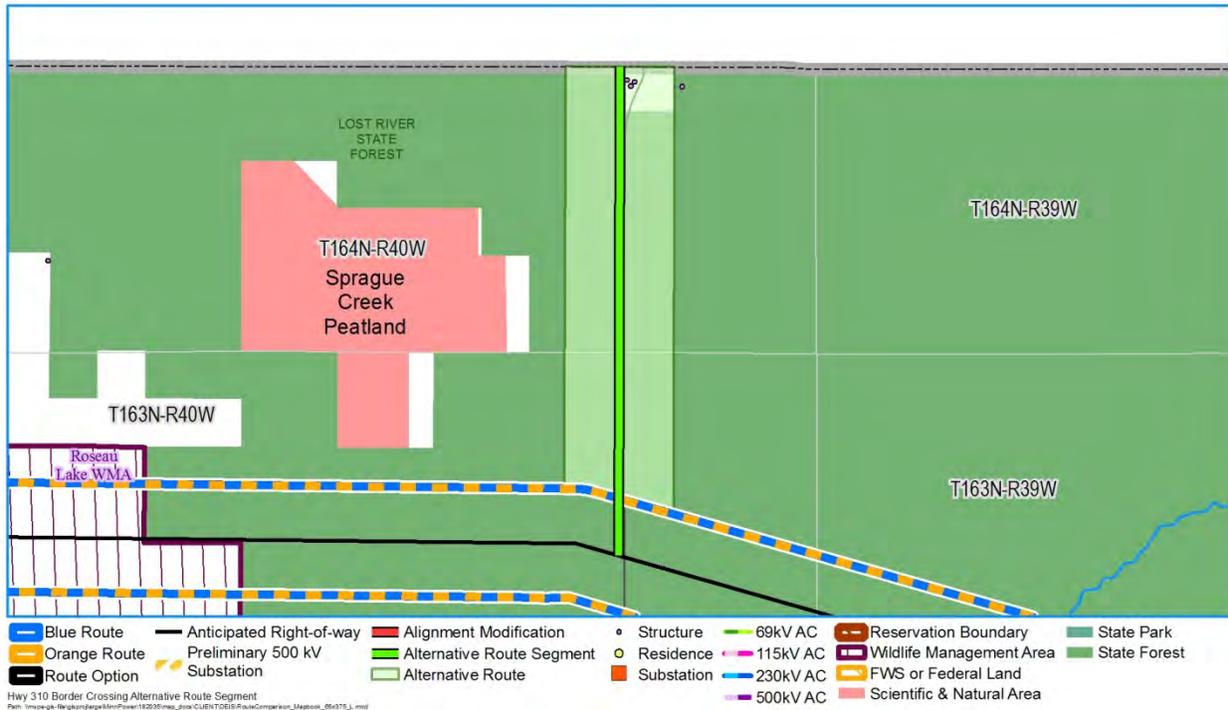
## Factors to Consider

The Pine Creek Border Crossing Alternative is not aligned with the agreed upon border crossing location decided by Minnesota Power and Manitoba Hydro. In addition, this Route Alternative would “box in” the homestead on the northwest corner of 320<sup>th</sup> Avenue and 390<sup>th</sup> Street, and would have a greater impact on the farming practices in that Section.

## Conclusion

Because of the impact on the nearby homestead and the impact to agricultural land use, this Route Alternative is less consistent with Minnesota Power’s stated purpose of making a positive impact on communities. Minnesota Power accordingly recommends against including this Route Alternative in the Scoping Decision.

# Hwy 310 Border Crossing Alternative Route Segment



## Overview

A landowner proposed a Route Alternative east of the Sprague Creek Peatland SNA along State Highway 310. This Alternative would minimize impacts to the Piney-Pine Creek Airport, agricultural land, and developed areas.

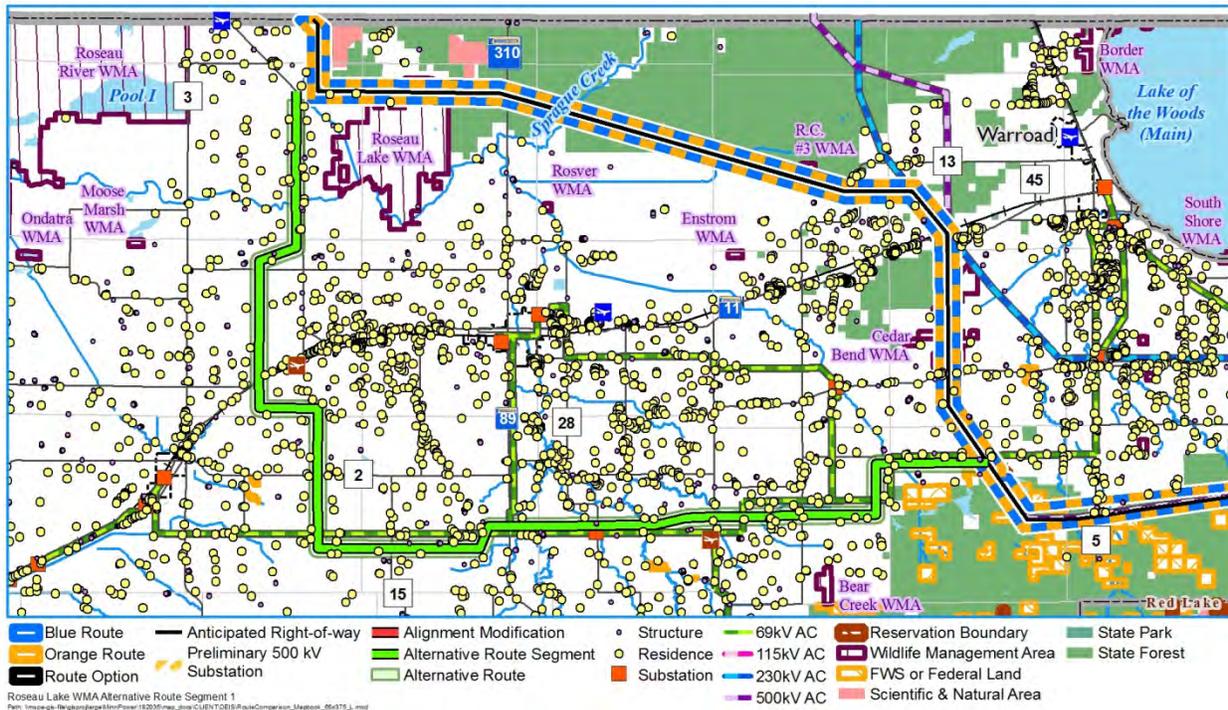
## Factors to Consider

The Highway 310 Alternative is not aligned with the agreed upon border crossing location decided by Minnesota Power and Manitoba Hydro. Manitoba Hydro is constrained by aboriginal community interests and environmental impacts on the Manitoba side of the border at this location.

## Conclusion

Because agreement with Manitoba Hydro is necessary for the U.S.-Canada crossing to be built, any other crossing location—including the one proposed here—is infeasible. Given the constraints listed above, Manitoba Hydro is no longer evaluating a border crossing at this location. Minnesota Power accordingly recommends against including this Route Alternative in the Scoping Decision.

# Roseau Lake WMA Alternative Route Segment 1



## Overview

The Roseau Lake WMA Alternative generally follows MN-89 south, cross MN-11, stair-step its way south to CR-126 then back north and east to the Orange/Blue Route Alternative. This Alternative would avoid Roseau Lake and Cedar Bend WMAs.

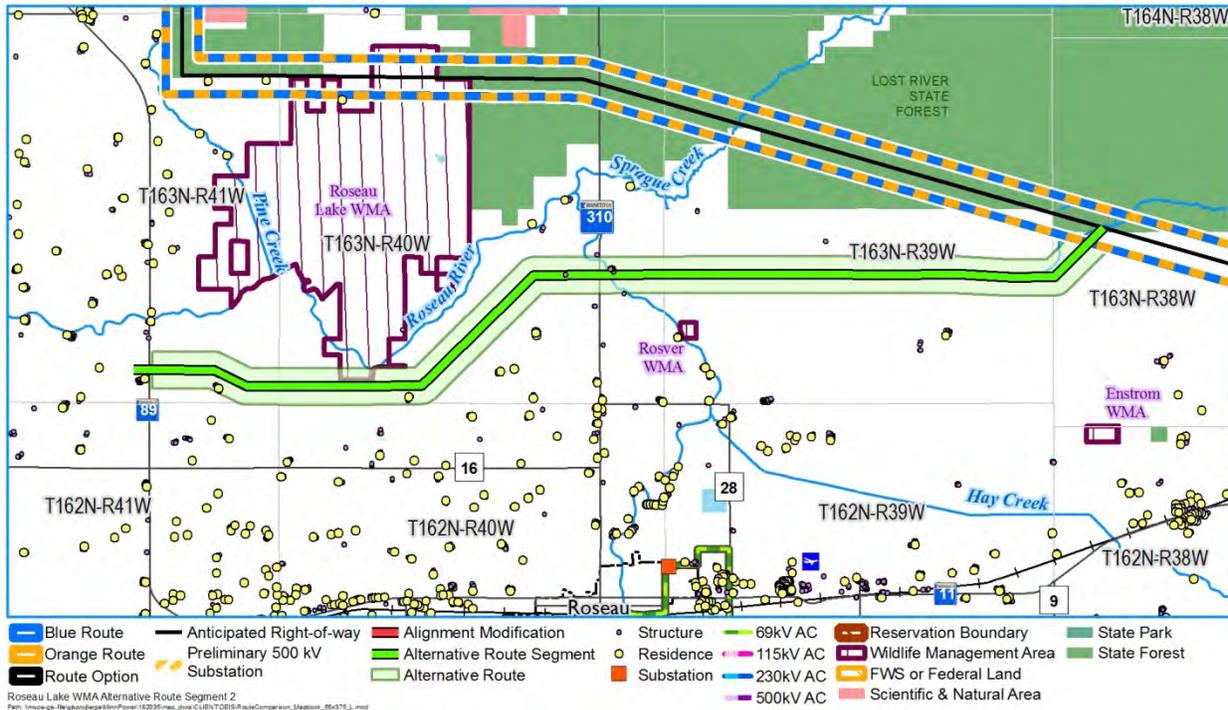
## Factors to Consider

This Alternative would mitigate 24.5 acres of impact to Roseau Lake WMA; however, in doing so, it require more angle structures, be 13.5 miles longer, and impact more private landowners and agricultural land use — potentially requiring condemnations. It would also decrease the length of corridor sharing with the existing 500kV transmission line by 10 miles. This Alternative would be located less than one mile from a private airstrip and could interfere with air traffic safety and the operation of the airstrip.

## Conclusion

Minnesota Power reviewed this Alternative during the Routing Process and received a number of objections from the community. This Route Alternative is inconsistent with Minnesota Power’s stated purpose of making a positive impact on communities. This Alternative also contradicts the Workgroup recommendation to route the project “as much as possible on public land, minimizing impact to human settlement and private property use.” In addition, the greater line length and increased number of angle structures created by this Alternative raises cost and feasibility concerns. Minnesota Power accordingly recommends against including this Route Alternative in the Scoping Decision.

# Roseau Lake WMA Alternative Route Segment 2



## Overview

The Roseau Lake WMA Route Alternative generally follows MN-89 south then east on the south side of Roseau Lake WMA to 360<sup>th</sup> Street east to the intersection with the Orange/Blue Route Alternative. This Alternative would avoid impacts to Roseau Lake WMA.

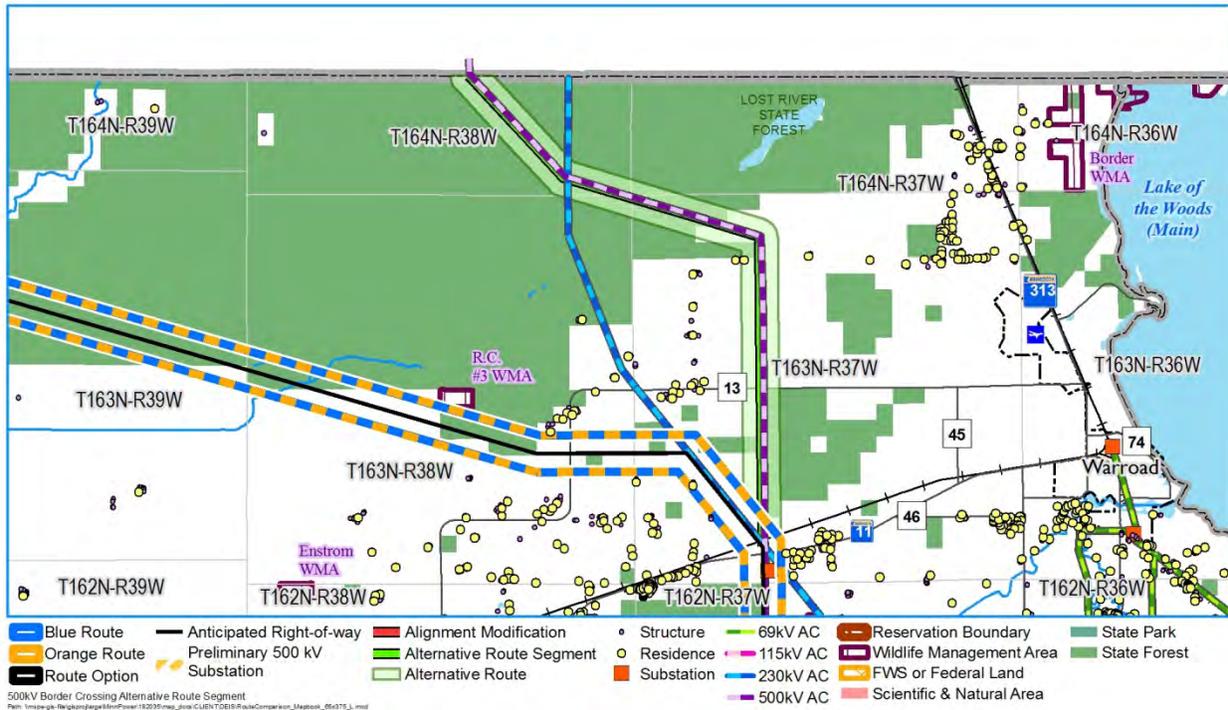
## Factors to Consider

This Alternative would require more angle structures, be significantly longer, and impact more landowners and agricultural land use — potentially requiring condemnations. It mitigates approximately 24.5 acres of impact to the Roseau Lake WMA. The Alternative could increase waterfowl impacts by creating a greenfield route along the south side of the WMA in an area more likely to be used by migrating waterfowl transitioning from the lake bed to the adjacent agricultural fields.

## Conclusion

This Route Alternative is inconsistent with Minnesota Power’s stated purpose of making a positive impact on communities. This Alternative also contradicts the Workgroup recommendation to route the project “as much as possible on public land, minimizing impact to human settlement and private property use.” In addition, the greater line length and increased number of angle structures created by this Alternative raises cost and feasibility concerns. Minnesota Power accordingly recommends against including this Route Alternative in the Scoping Decision.

# 500kV Border Crossing Alternative Route Segment



## Overview

The 500kV Border Crossing Route Alternative follows the existing 500 kilovolt (kV) transmission line from the international border until it intersects with the Orange/Blue Route Alternative. This Alternative would increase the length of line paralleling the existing 500kV transmission line and minimize impacts to state forest land.

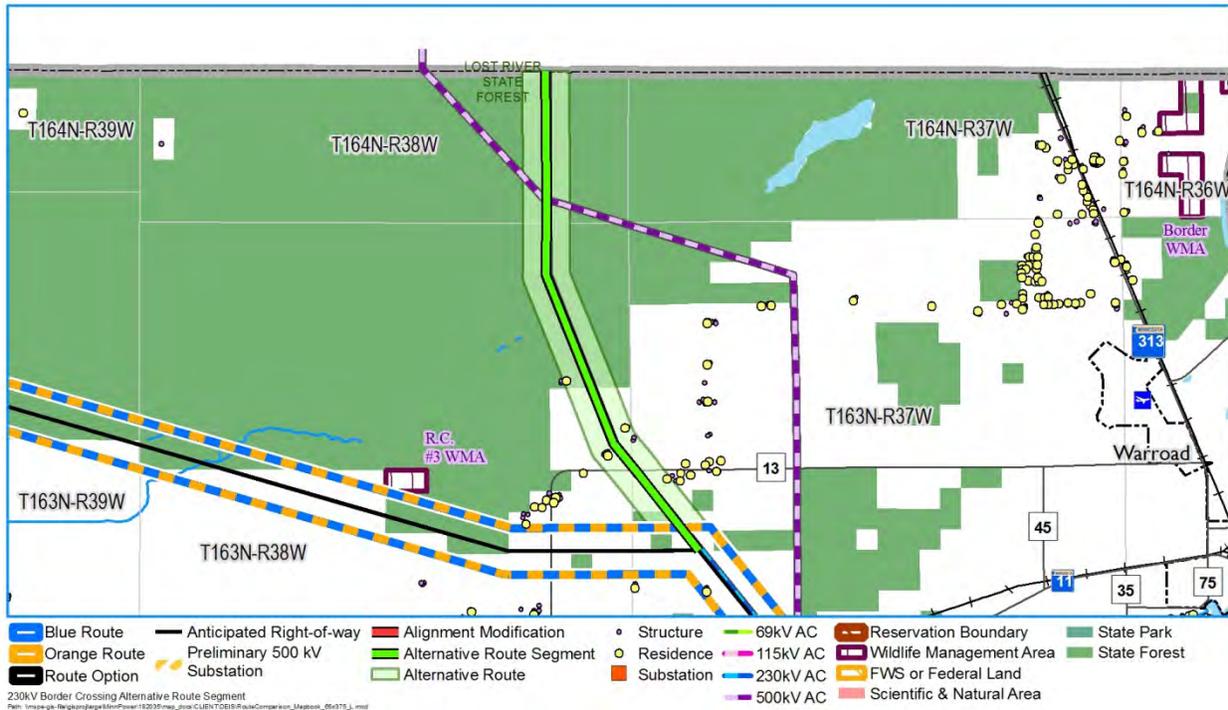
## Factors to Consider

This Route Alternative is not aligned with the agreed upon border crossing location decided by Minnesota Power and Manitoba Hydro. Manitoba Hydro is constrained by aboriginal community interests and environmental impacts on the Manitoba side of the border at this location. Manitoba Hydro is also concerned about reliability issues associated with three high-voltage lines in one area.

## Conclusion

Because agreement with Manitoba Hydro is necessary for the U.S. - Canada crossing to be built, any other crossing location—including the one proposed here—is infeasible. Given the constraints listed above, Manitoba Hydro is not evaluating a border crossing at this location. Minnesota Power accordingly recommends against including this Route Alternative in the Scoping Decision.

# 230kV Border Crossing Alternative Route Segment



## Overview

The 230kV Border Crossing Route Alternative follows the existing 230kV transmission line from the international border until it intersects with the Orange/Blue Route Alternative. This Alternative would increase the length of line paralleling the existing 230kV transmission line and minimize impacts to state forest land.

## Factors to Consider

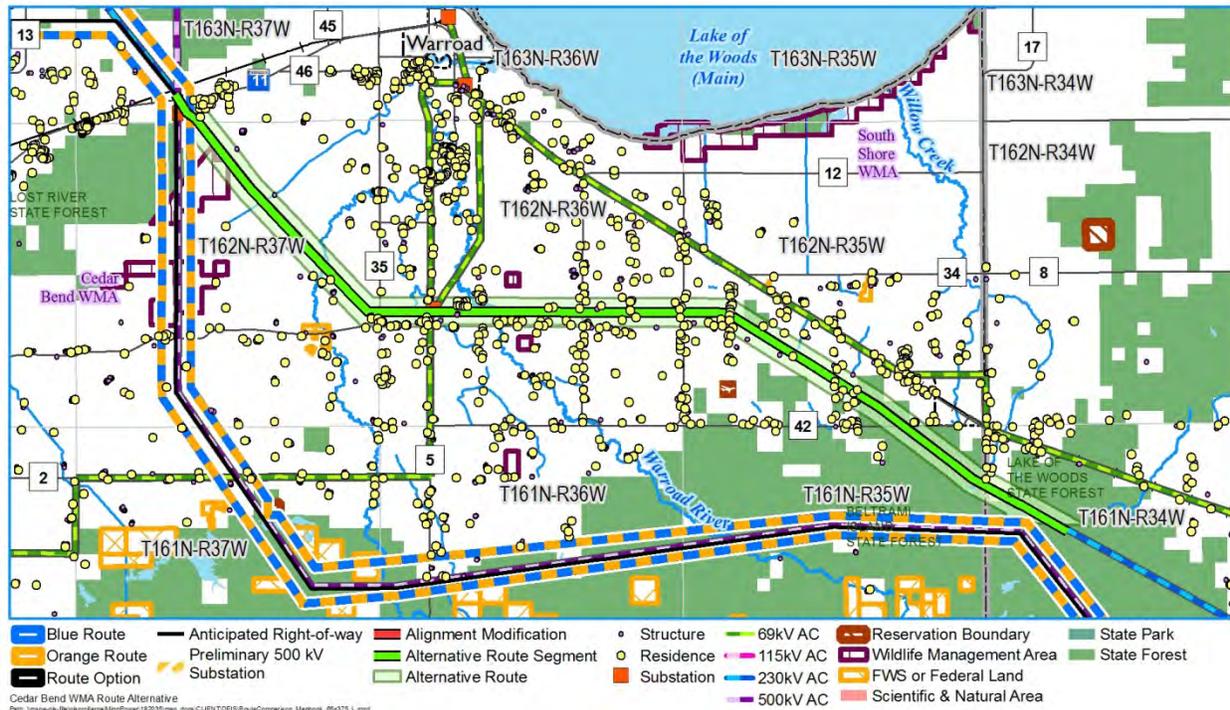
This Route Alternative is not aligned with the agreed upon border crossing location decided by Minnesota Power and Manitoba Hydro. Manitoba Hydro is constrained by aboriginal community interests and environmental impacts on the Manitoba side of the border at this location. Manitoba Hydro is also concerned about reliability issues associated with three high-voltage lines in one area. This Route Alternative also crosses the existing 500kV transmission line.

## Conclusion

Because agreement with Manitoba Hydro is necessary for the U.S. - Canada crossing to be built, any other crossing location—including the one proposed here—is infeasible. Given the constraints listed above, Manitoba Hydro is not evaluating a border crossing at this location. An additional crossing of the existing 500kV transmission is also less consistent with Minnesota Power’s stated purpose of strengthening system reliability. Minnesota Power accordingly recommends against including this Route Alternative in the Scoping Decision.

# Cedar Bend WMA Route Alternative

Figure 8



## Overview

The Cedar Bend Route Alternative follows the existing 230kV transmission line from where it intersects the Orange/Blue Route Alternative then turns southeast to continue along the existing 230kV line. This Alternative would avoid impacts to Cedar Bend WMA and increase the length of line paralleling the existing 230kV transmission line.

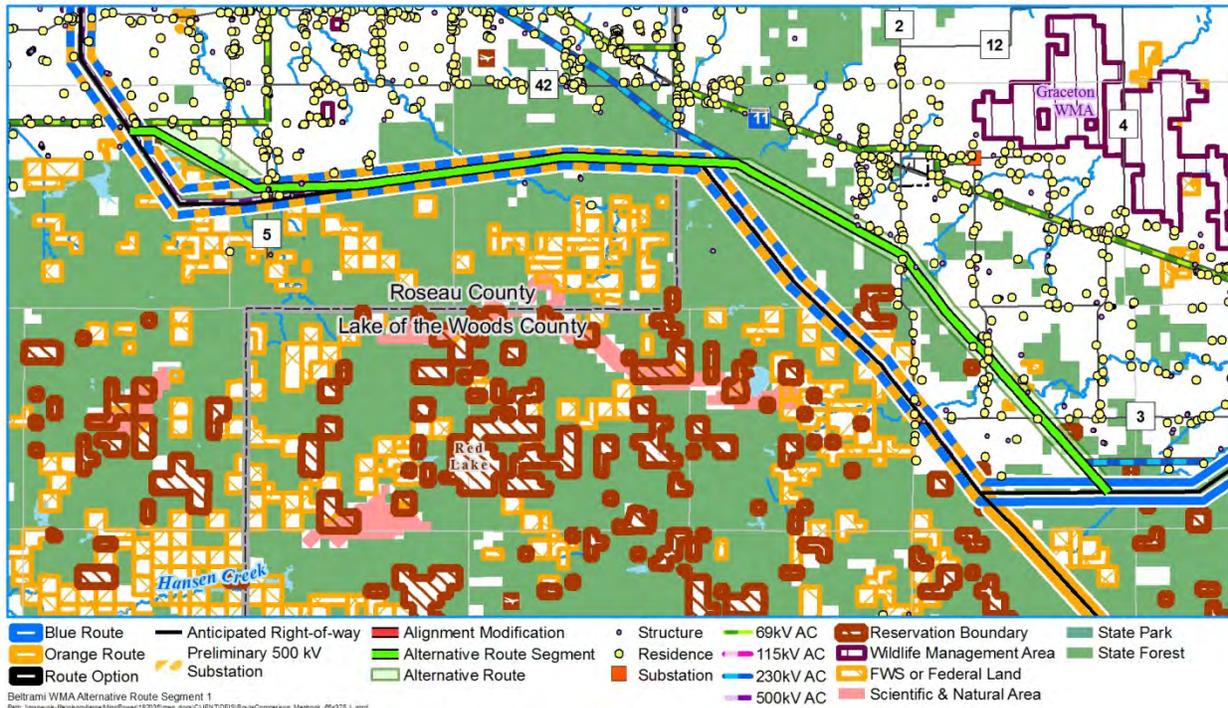
## Factors to Consider

This Route Alternative mitigates 40 acres of impact to the Cedar Bend WMA. While this Route Alternative would be shorter in length, it would impact more landowners and agricultural land use — potentially requiring condemnations.

## Conclusion

Minnesota Power reviewed this Alternative during the Routing Process and received a number of objections from the community. This Route Alternative is inconsistent with Minnesota Power's stated purpose of making a positive impact on communities. This Alternative also contradicts the Workgroup recommendation to route the project "as much as possible on public land, minimizing impact to human settlement and private property use." Minnesota Power accordingly recommends against including this Route Alternative in the Scoping Decision.

# Beltrami WMA Alternative Route Segment 1



## Overview

The Beltrami WMA Route Alternative – Segment 1 generally follows the north side of the existing 500kV transmission line (Orange/Blue Route Alternative). This Alternative would avoid impacts to USFWS parcels.

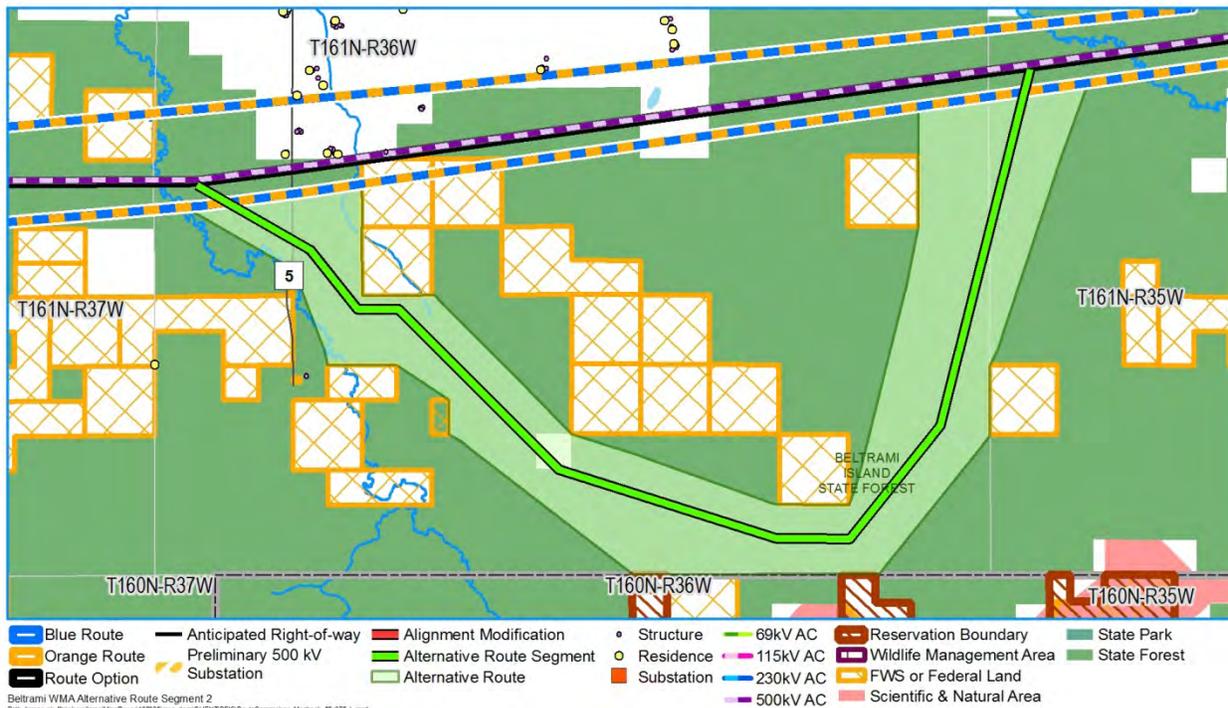
## Factors to Consider

This Route Alternative would utilize less of the existing 500kV transmission line corridor and require an additional angle structure. It would also “box in” three homesteads and numerous structures with the existing 500kV line. This Alternative would reduce the impact to USFWS parcels by approximately 23 acres, but would also increase fragmentation of identical habitat by requiring construction of 3.7 miles (approximately 90 acres) of new corridor.

## Conclusion

This Route Alternative would likely have greater environmental impacts than the Orange/Blue Route, primarily due to increased fragmentation of comparable habitat. In addition, the increased number of angle structures created by this Alternative raises cost and feasibility concerns. Minnesota Power accordingly recommends against including this Route Alternative in the Scoping Decision.

## Beltrami WMA Alternative Route Segment 2



### Overview

The Beltrami WMA Route Alternative - Segment 2 diverges from the Orange/Blue Route Alternative that parallels the existing 500kV transmission line, south around USFWS parcels then back north to connect back with the existing Route Alternative. This Alternative would avoid impacts to USFWS parcels.

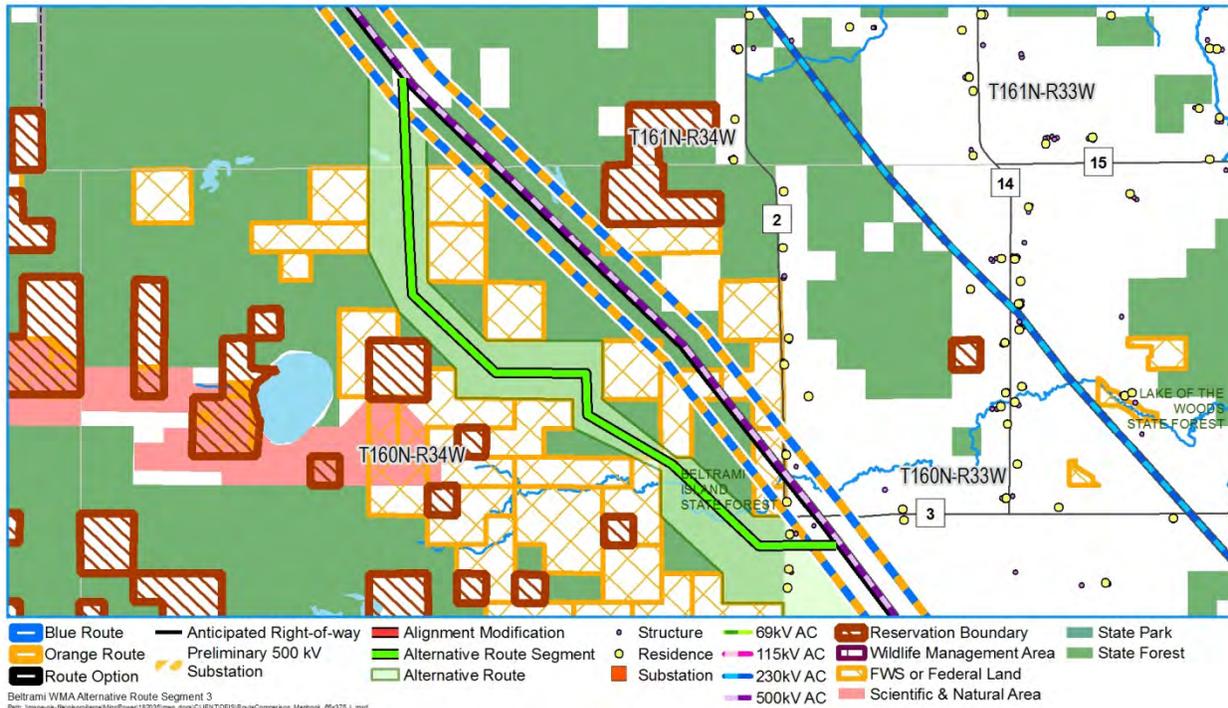
### Factors to Consider

This Route Alternative is 3.25 miles longer and adds eight angle structures. This Alternative would reduce the impact to USFWS lands by approximately 5 acres of impact to USFWS land, but would also increase fragmentation of identical habitat by requiring construction of 9.25 miles (approximately 225 acres) of new corridor.

### Conclusion

This Route Alternative would likely have greater environmental impacts than the Orange/Blue Route Alternative, primarily due to increased fragmentation of comparable habitat. In addition, the greater line length and larger number of angle structures created by this Alternative raises cost and feasibility concerns. Minnesota Power accordingly recommends against including this Route Alternative in the Scoping Decision.

## Beltrami WMA Alternative Route Segment 3



### Overview

The Beltrami WMA Route Alternative – Segment 3 diverges from the Orange/Blue Route Alternative that parallels the existing 500kV transmission line, south and east around USFWS parcels then connect back with the Orange/Blue Route Alternative. This Alternative would avoid impacts to USFWS parcels.

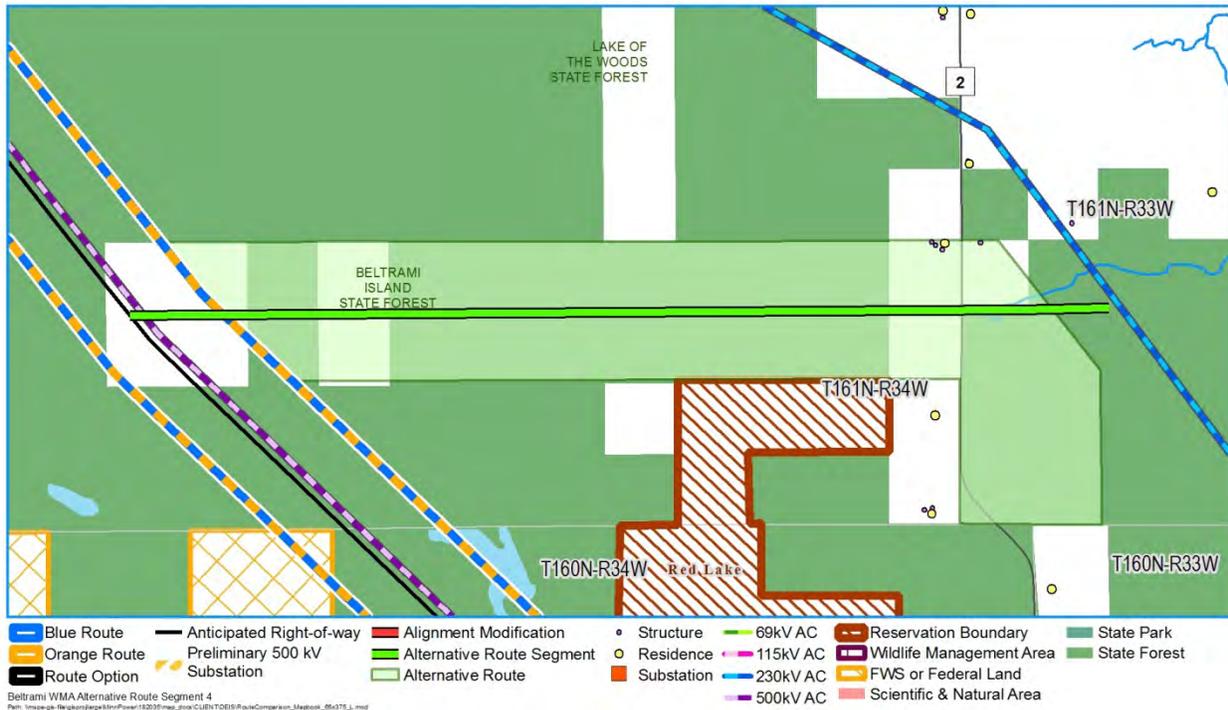
### Factors to Consider

This Route Alternative is one mile longer and adds eight angle structures. This Alternative would reduce the impact to USFWS lands by approximately 10 acres, but would also increase fragmentation of identical habitat by requiring construction of 6.5 miles (approximately 158 acres) of new corridor.

### Conclusion

This Route Alternative would likely have greater environmental impacts than the Orange/Blue Route Alternative, primarily due to increased fragmentation of comparable habitat. In addition, the greater line length and larger number of angle structures created by this Alternative raises cost and feasibility concerns. Minnesota Power accordingly recommends against including this Route Alternative in the Scoping Decision.

# Beltrami WMA Alternative Route Segment 4



## Overview

The Beltrami WMA Route Alternative – Segment 4 diverges from the Orange/Blue Route Alternative that parallels the existing 500kV transmission line, turns east to avoid USFWS parcels, then connects with the existing 230kV transmission line.

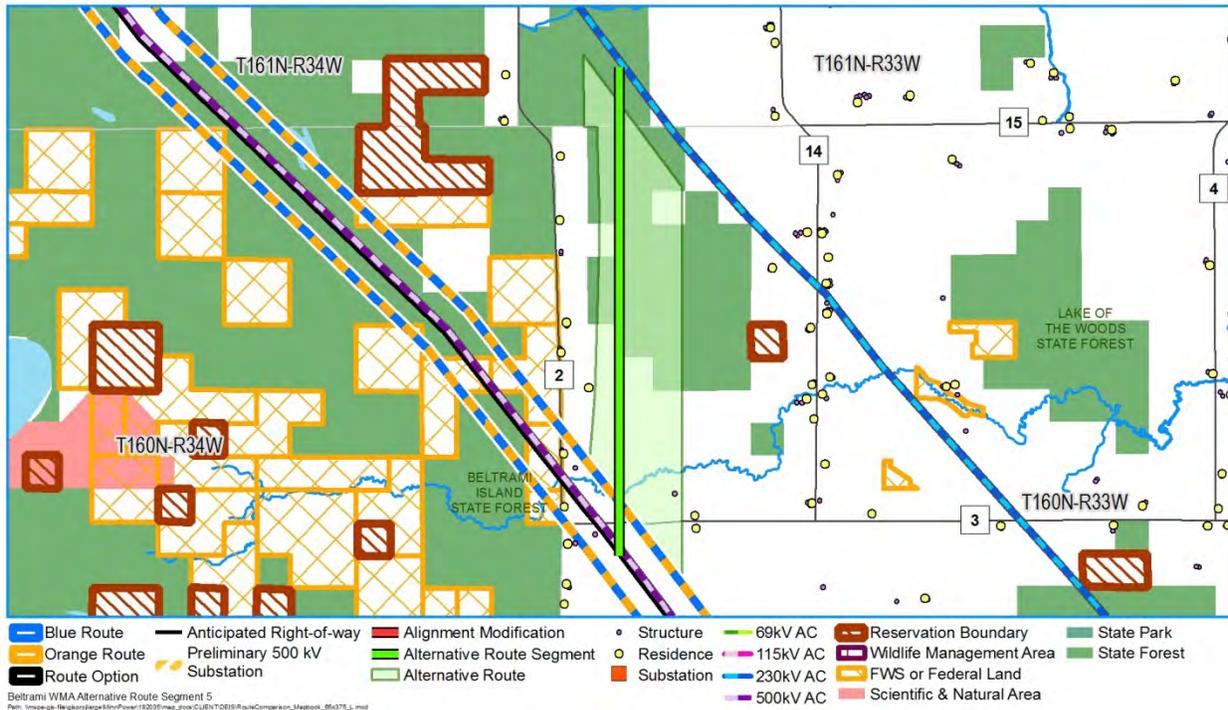
## Factors to Consider

This Alternative would reduce the impact to USFWS lands by approximately 10 acres of impact to USFWS land, but would also increase fragmentation of identical habitat by requiring construction of 3.5 miles (approximately 85 acres) of new corridor.

## Conclusion

This Route Alternative would likely have greater environmental impacts than the Orange/Blue Route Alternative, primarily due to increased fragmentation of comparable habitat. Minnesota Power accordingly recommends against including this Route Alternative in the Scoping Decision.

# Beltrami WMA Alternative Route Segment 5



## Overview

The Beltrami WMA Route Alternative – Segment 5 diverges from the Orange/Blue Route Alternative that parallels the existing 500kV transmission line, turns east to avoid USFWS parcels, then connects with the existing 230kV transmission line.

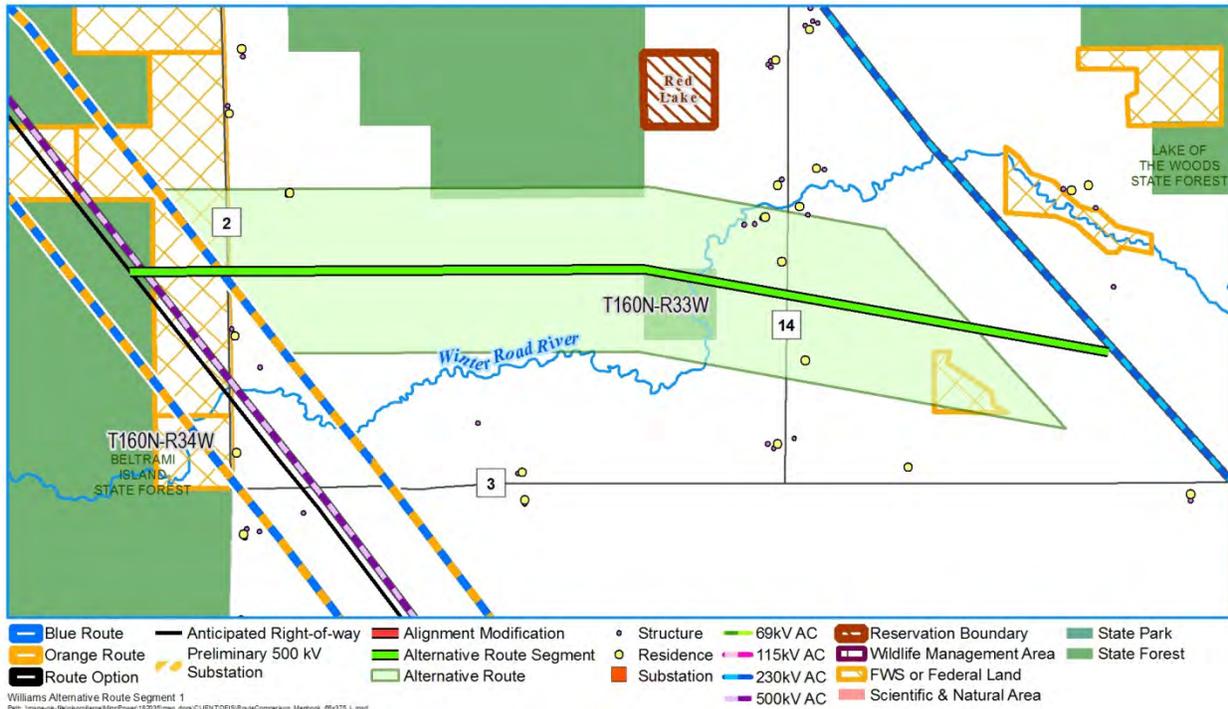
## Factors to Consider

This Alternative would reduce the impact to USFWS lands by approximately 23 acres of impact, but would also increase fragmentation of identical habitat by requiring construction of 7.4 miles (approximately 180 acres) of new corridor.

## Conclusion

This Route Alternative would likely have greater environmental impacts than the Orange/Blue Route Alternative, primarily due to increased fragmentation of comparable habitat. Minnesota Power accordingly recommends against including this Route Alternative in the Scoping Decision.

# Williams Alternative Route Segment 1



## Overview

A landowner proposed a Route Alternative that diverges from the Orange/Blue Route Alternative that parallels the existing 500kV transmission line then turns east towards the existing 230kV transmission line (Beltrami WMA Alternative Route - Segment 1). This Alternative would avoid impacts to private property and state land.

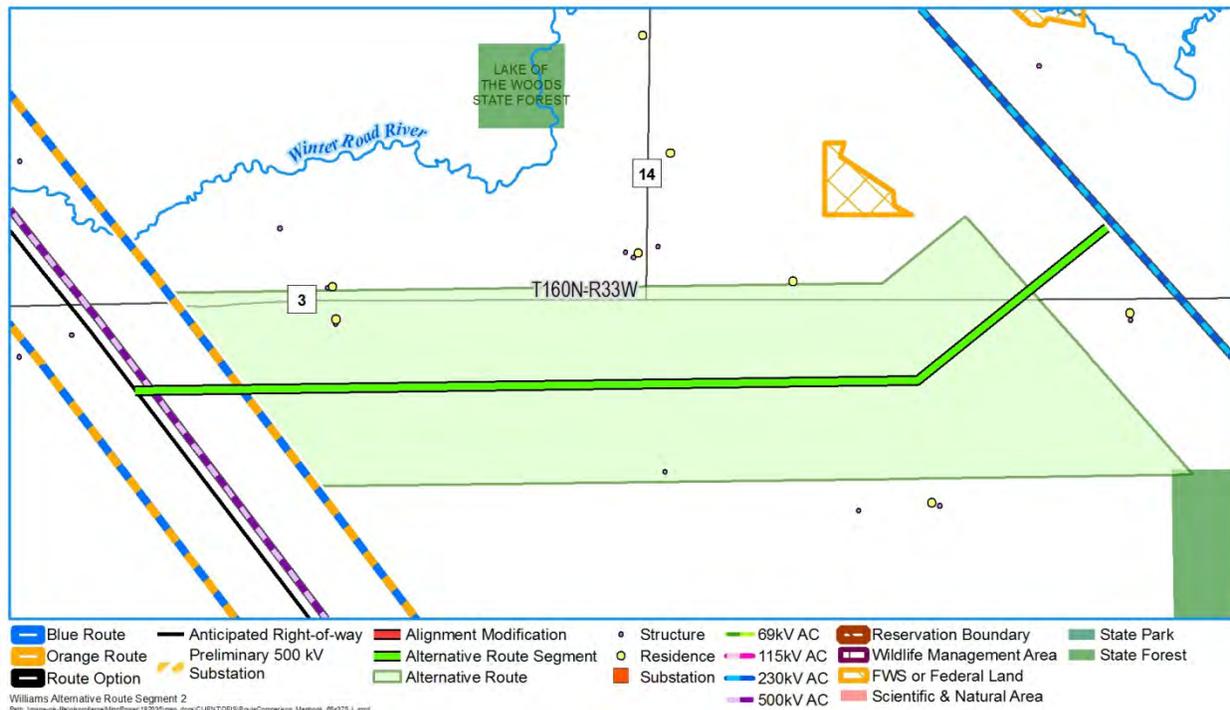
## Factors to Consider

While this proposed Alternative may avoid impacts to one landowner's private land, it would increase impacts to other private land and still traverse parcels of state land along the existing 230kV corridor. This Alternative would also require clearing of a new corridor between the two existing transmission lines.

## Conclusion

Because this proposed Alternative avoids the property of one private landholder at the expense of others, without mitigating any adverse effects, it should not be included in the Scoping Decision. This Route Alternative would likely have greater environmental impacts than the Orange/Blue Route Alternative, primarily due to increased fragmentation of comparable habitat. In addition, this Route Alternative is less consistent with Minnesota Power's stated purpose of making a positive impact on communities. Minnesota Power accordingly recommends against including this Route Alternative in the Scoping Decision.

## Williams Alternative Route Segment 2



### Overview

A landowner proposed a Route Alternative – similar in nature to Williams Alternative Segment 1 - that diverges from the Orange/Blue Route Alternative east towards the existing 230kV transmission line (Beltrami WMA Alternative Route - Segment 1). This Alternative would avoid impacts to private property and state land.

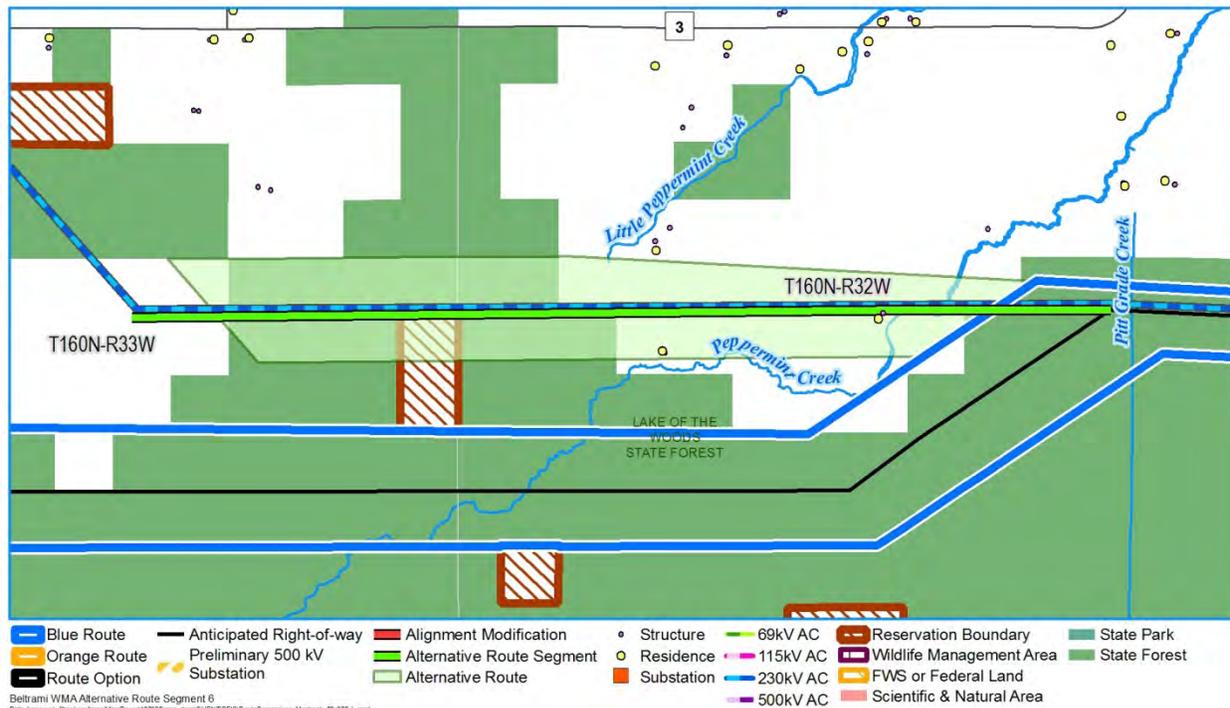
### Factors to Consider

While this proposed Alternative may avoid impacts to one landowner's private land, it would increase impacts to others' private land and still traverse parcels of state land along the existing 230kV transmission line corridor. This Alternative would also require clearing of a new corridor between the two existing transmission lines.

### Conclusion

Because this proposed Alternative avoids the property of one private landholder at the expense of others, without mitigating any adverse effects, it should not be included in the Scoping Decision. This Route Alternative would likely have greater environmental impacts than the Orange/Blue Route Alternative, primarily due to increased fragmentation of comparable habitat. Minnesota Power accordingly recommends against including this Route Alternative in the Scoping Decision.

# Beltrami WMA Alternative Route Segment 6



## Overview

The Beltrami WMA Route Alternative – Segment 6 diverges from Beltrami WMA Alternative Route - Segment 1 east along the existing 230kV transmission line corridor before intersecting with the Blue Route Alternative. This would minimize impacts to state forest land.

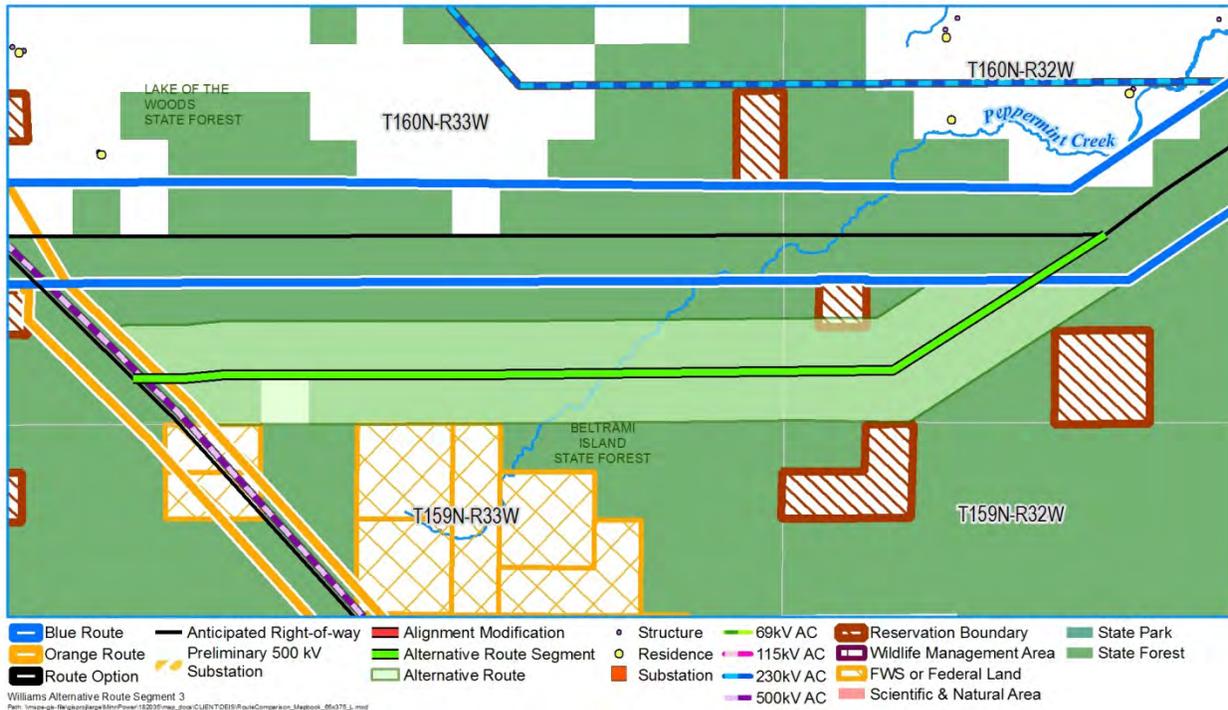
## Factors to Consider

This Alternative would reduce the overall length of the line, but it may traverse Red Lake Reservation lands, which would require involvement of a Native American tribe. Early in the routing process, Minnesota Power excluded tribal lands from consideration. This Alternative would also be located closer to two homesteads, potentially requiring condemnation.

## Conclusion

Minnesota Power reviewed this Alternative during the Routing Process and received a number of objections from the community. This Route Alternative is inconsistent with Minnesota Power’s stated purpose of making a positive impact on communities. This Alternative also contradicts the Workgroup recommendation to route the project “as much as possible on public land, minimizing impact to human settlement and private property use.” In addition, the possible involvement of a Native American tribe raises cost and feasibility questions. Minnesota Power accordingly recommends against including this Route Alternative in the Scoping Decision.

# Williams Alternative Route Segment 3



## Overview

A landowner proposed a Route Alternative that diverges from the Orange Route Alternative east towards the Blue Route Alternative. This Alternative would avoid impacts to private property.

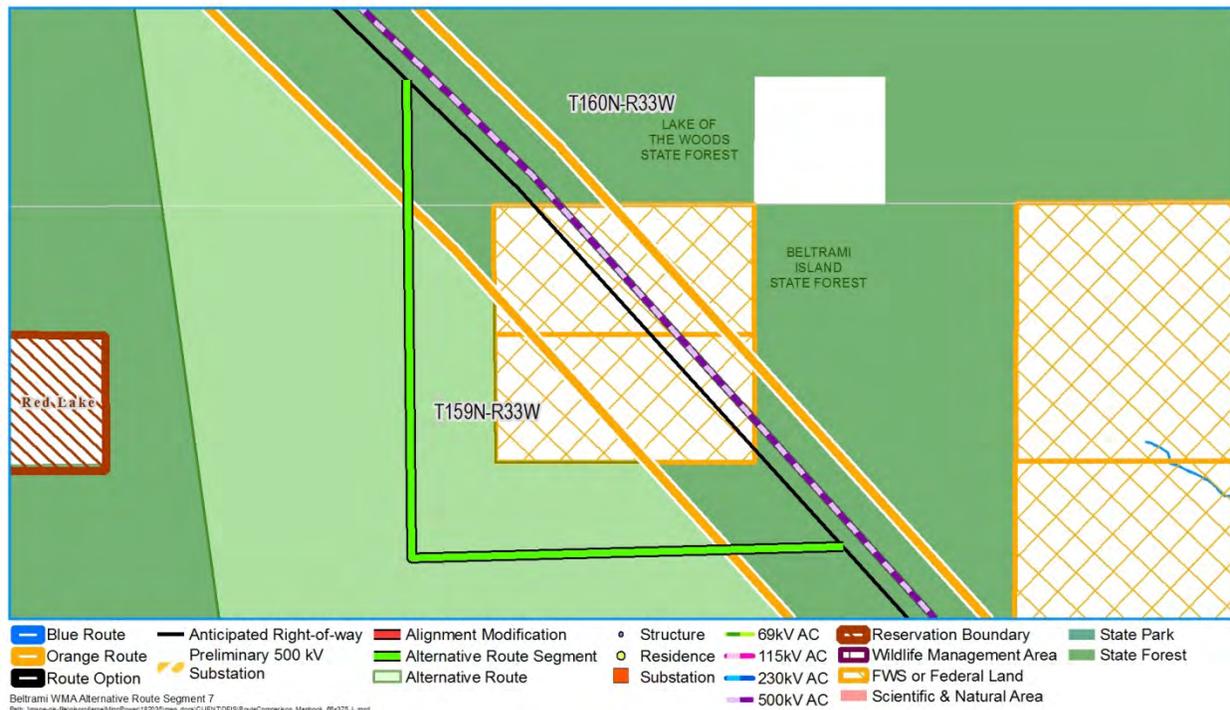
## Factors to Consider

While this Alternative may avoid impacts to one landowner's private land, it would increase impacts to other private land and still traverse parcels of state land along the existing 230kV transmission line corridor. As drawn, this Alternative would also include a small portion of a Red Lake Reservation parcel. This Alternative is approximately 0.5 miles longer than the Blue Route Alternative.

## Conclusion

Because this proposed Alternative avoids the property of one private landholder at the expense of others without mitigating any adverse effects, it should not be included in the Scoping Decision. In addition, the possible involvement of a Native American tribe raises cost and feasibility questions. Minnesota Power accordingly recommends against including this Route Alternative in the Scoping Decision.

# Beltrami WMA Alternative Route Segment 7



## Overview

The Beltrami WMA Route Alternative – Segment 7 diverges from the Orange Route Alternative and create an “L” shape around a USFWS parcel, then back along the Orange Route Alternative. This Alternative would avoid impacts to USFWS parcels.

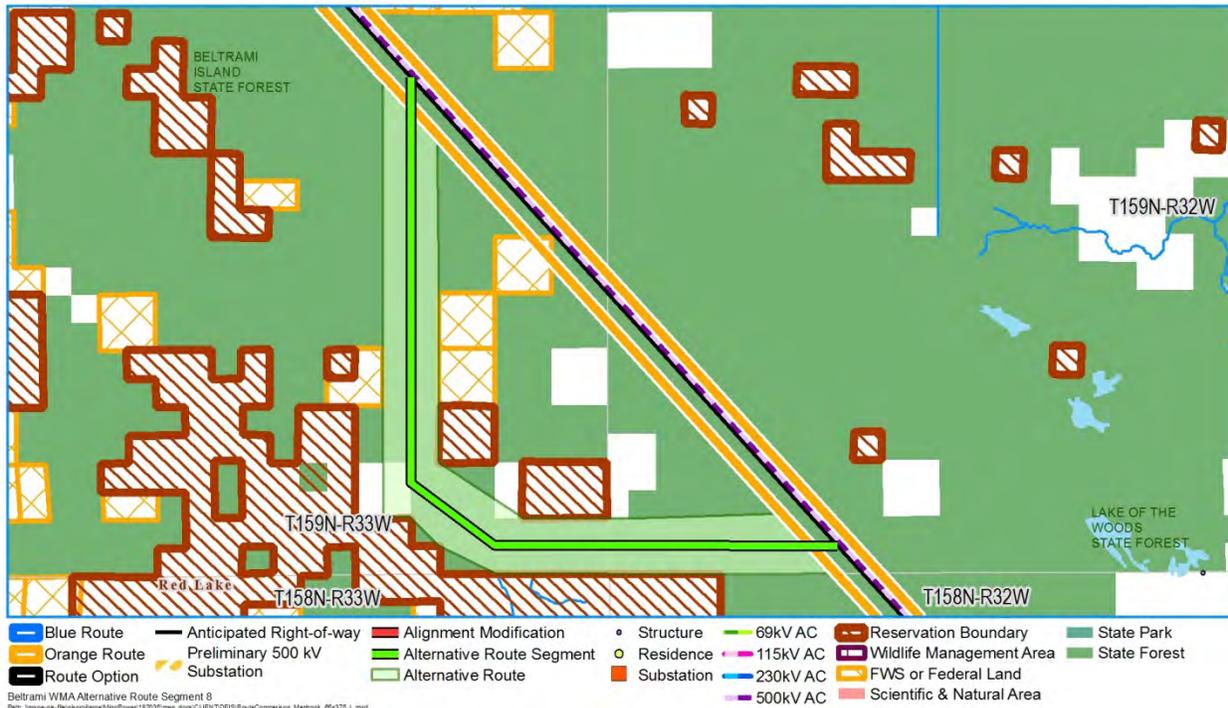
## Factors to Consider

This Alternative would be longer and require three additional angle structures. This Alternative would reduce the impact to USFWS lands by approximately 15.5 acres, but would also increase fragmentation of identical habitat by requiring construction of 1.75 miles (approximately 43 acres) of new corridor. It would isolate the area of land between the proposed and existing 500kV lines, creating greater habitat disturbance and fragmentation.

## Conclusion

This Route Alternative would likely have greater environmental impacts than the Orange Route Alternative, primarily due to increased disturbance and fragmentation of comparable habitat. In addition, the increased length and number of angle structures created by this Alternative raises cost and feasibility concerns. Minnesota Power accordingly recommends against including this Route Alternative in the Scoping Decision.

## Beltrami WMA Alternative Route Segment 8



### Overview

The Beltrami WMA Route Alternative – Segment 8 diverges from the Orange Route Alternative and create an “L” shape around three USFWS parcels, then back east to an intersection with the Orange Route Alternative. The anticipated centerline of the Orange/Blue Route does not impact any USFWS parcels; the Orange/Blue Route Alternative includes approximately 12 acres of USFWS land.

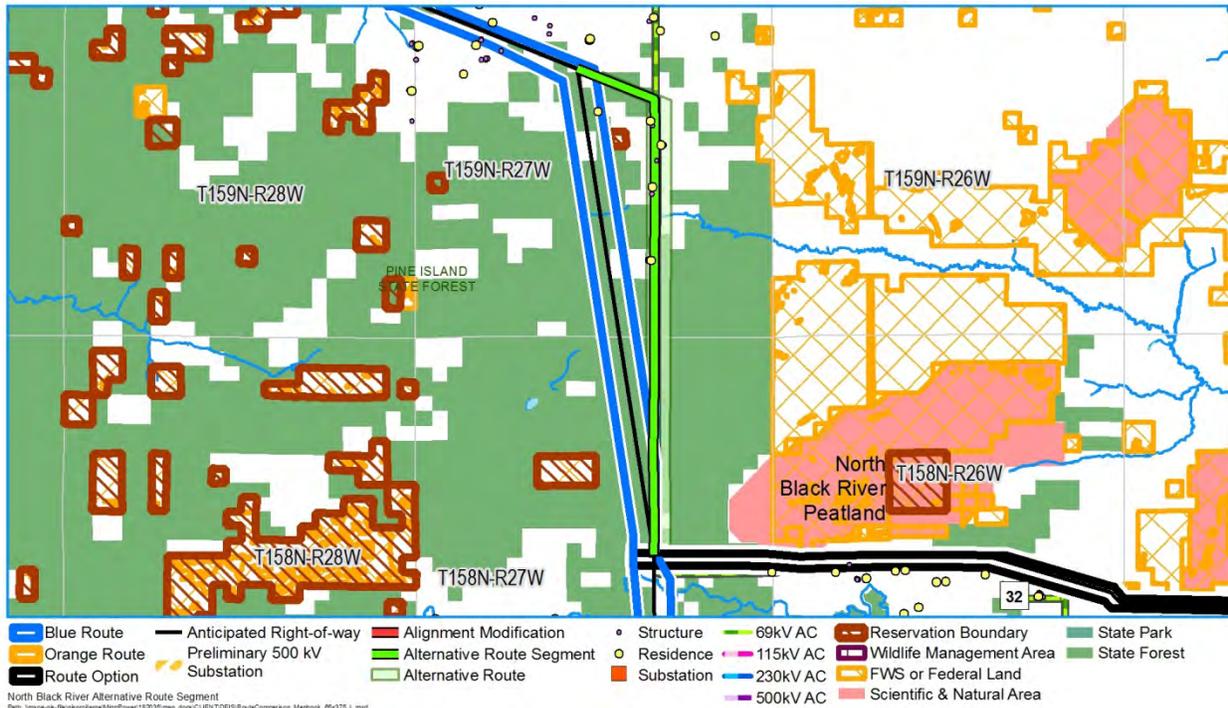
### Factors to Consider

This Alternative would be approximately two miles longer and require four additional angle structures. This Alternative would not reduce any impacts to USFWS lands, but would increase fragmentation of identical habitat by requiring construction of two miles (approximately 48 acres) of new corridor. It would isolate the area of land between the proposed and existing 500kV lines, creating greater habitat disturbance and fragmentation.

### Conclusion

This Route Alternative would likely have greater environmental impacts than the Orange Route Alternative, primarily due to increased disturbance and fragmentation of comparable habitat. In addition, the increased length and number of angle structures created by this Alternative raises cost and feasibility concerns. Minnesota Power accordingly recommends against including this Route Alternative in the Scoping Decision.

# North Black River Alternative Route Segment



## Overview

The North Black River Route Alternative diverges from the Blue Route Alternative and continues along the existing 230kV transmission line north and east before intersecting with the Blue Alternative farther east.

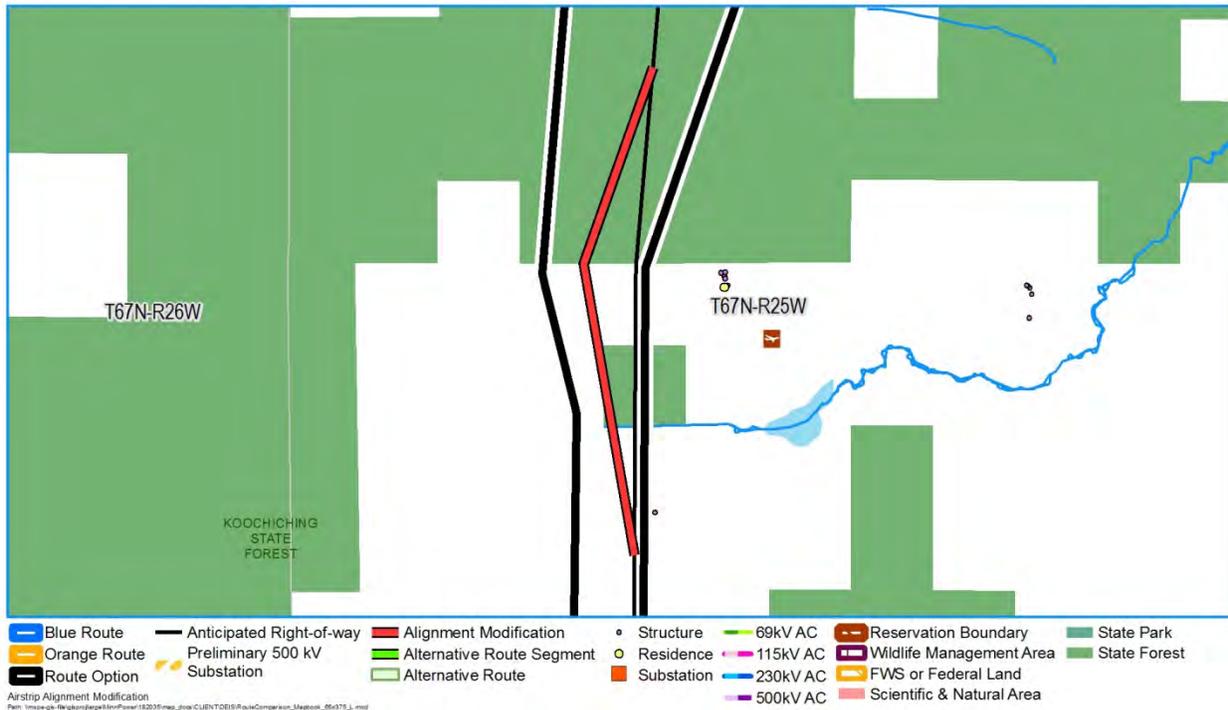
## Factors to Consider

This Alternative would increase the distance that the line parallels the existing 230kV corridor by 9 miles. It would also be closer to, and would increase the impact to, four additional homesteads located near the existing line—potentially requiring condemnation.

## Conclusion

This Route Alternative is inconsistent with Minnesota Power's stated purpose of making a positive impact on communities. Minnesota Power accordingly recommends against including this Route Alternative in the Scoping Decision.

# Airstrip Alignment Modification



## Overview

A landowner proposed an alignment modification of the C2 Route Alternative to increase the distance of the anticipated centerline within C2 from a private airstrip. The alignment modification is approximately 725 feet west of the C2 Route Alternative.

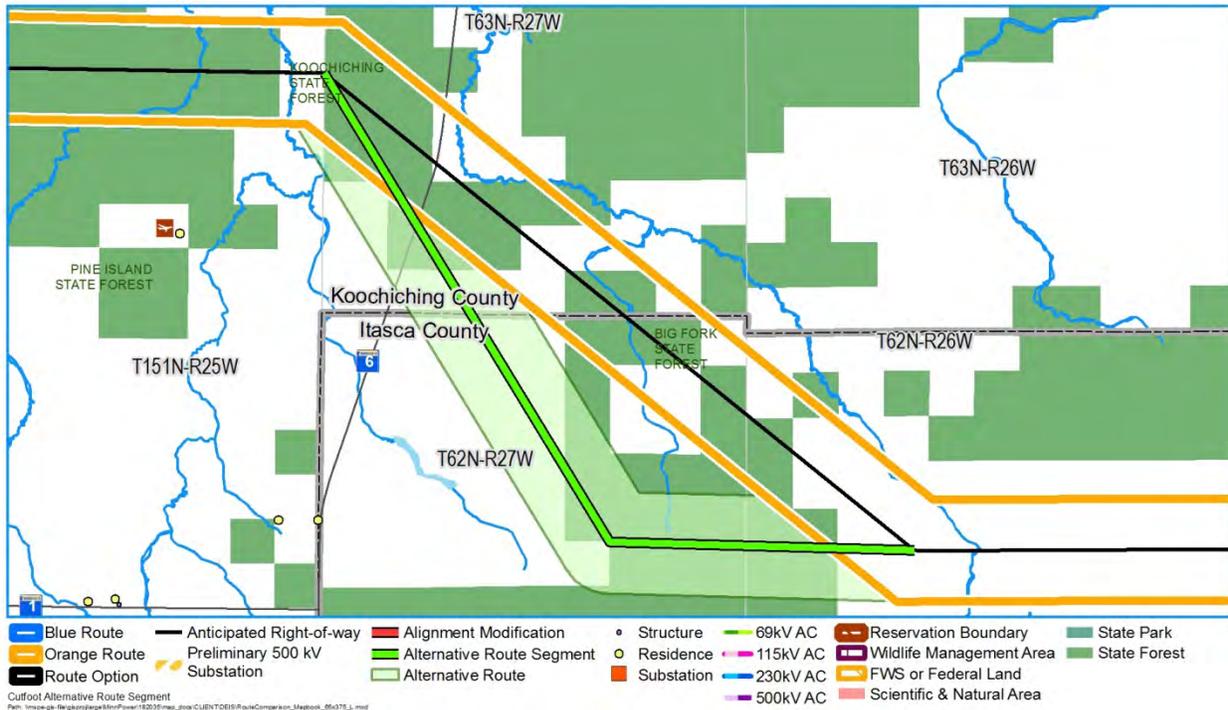
## Factors to Consider

This alignment modification would reduce the length of line that parallels the existing 230kV line by 4,700 feet and would add three additional angle structures. This alignment modification is also 500 feet longer than C2.

## Conclusion

This alignment modification is located within the C2 Route Alternative and could mitigate a potential impact on a private airstrip. The overall change in environmental effects; however, would be negligible. The greater number of angle structures created by this alignment modification raises cost and feasibility concerns. Minnesota Power also believes that a more detailed engineering review and adjustment is necessary before consideration of this modification. Such minor adjustments could be proposed during the Route Permit process and need not be included in the Scoping Decision.

# Cutfoot Alternative Route Segment



## Overview

A landowner proposed a Route Alternative that avoids private land and cedar stands and impacts corporate and state land.

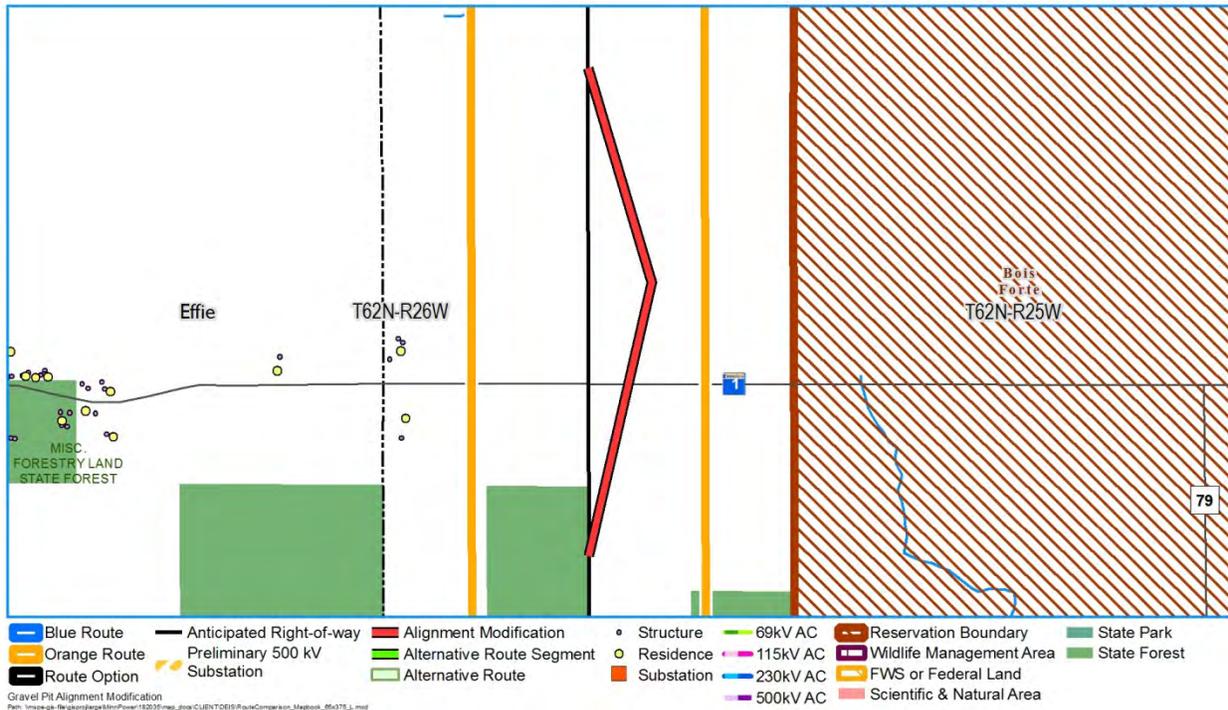
## Factors to Consider

This Alternative is 0.5 miles longer than the Orange Route. It would impact approximately 19 more acres of private/corporate property.

## Conclusion

The overall change in environmental effects from this Alternative would be negligible. This Alternative also contradicts the Workgroup recommendation to route the project “as much as possible on public land, minimizing impact to human settlement and private property use.” Minnesota Power also believes that a more detailed engineering review and adjustment is necessary before consideration of this Alternative.

# Gravel Pit Alignment Modification



## Overview

A landowner proposed an alignment modification that avoids private land and impacts tax forfeit and corporate land.

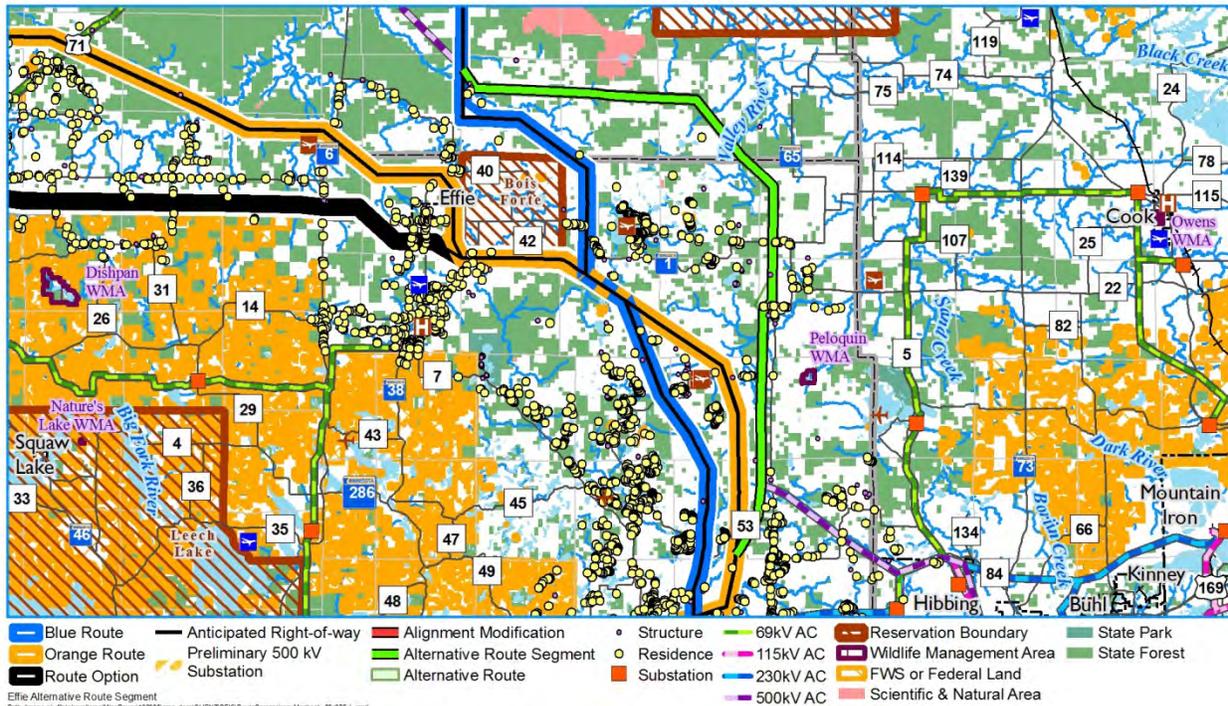
## Factors to Consider

This alignment modification is approximately 0.1 miles longer than the Orange Route and would require three additional angle structures.

## Conclusion

This alignment modification is within the existing Orange Route Alternative. The overall change in environmental effects from this alignment modification would be negligible. The greater number of angle structures created by this alignment modification raises cost and feasibility concerns. Minnesota Power also believes that a more detailed engineering review and adjustment is necessary before consideration of this modification. Such minor adjustments could be proposed during the Route Permit process and need not be included in the Scoping Decision.

# Effie Alternative Route Segment



## Overview

The Effie Route Alternative parallels the existing 230kV and 500kV transmission lines and minimizes new corridor habitat impacts.

## Factors to Consider

In a memo to the DNR dated September 27, 2013, Minnesota Power provided a detailed discussion of the environmental impacts this Alternative. To summarize the memo, as compared to the Orange and Blue Route Alternatives, the Effie Route Alternative:

- is the longest route;
- crosses the most NWI wetlands;
- contains the most acres of NWI forested wetlands;
- contains the most acres of Old Growth Forest (per DNR's dataset);
- contains slightly more acres of general forest lands;
- contains the most acres of shrubland;
- contains the most acres of critical habitat;
- crosses the longest distance through Forest Legacy Act parcels and contains the most acres; and
- crosses the longest distance and greatest acreage of State Forest parcels.

This Alternative has fewer acres of agricultural land within the potential ROW and crosses the shortest distance (and thus, contains the fewest acres) of County forest land.

The entire east half of the Effie Route Alternative is infeasible as crossing over the 500kV line and the 230kV lines at the same discrete location would be unacceptable. There would be considerable engineering challenges in designing the crossing, as the new line would likely be required to cross under the existing 500kV line for reliability reasons and then cross over the adjacent 230kV line. Modifications to one or both of the existing lines could be required. However the crossing is designed, it will add significant cost and complexity to the project in that location.

Of even greater concern are the operational and maintenance issues associated with the establishment of such a crossing. In order to do maintenance or construction on the crossing spans, a simultaneous outage of all three lines would be required. Since this crossing would involve three out of the five Manitoba - United States tie lines (including the two largest and most significant lines) the outage restrictions on these lines would make a simultaneous outage practically impossible. Minnesota Power has recent experience with 230kV-over-230kV line crossings and has found that it is nearly impossible in some instances to perform construction and maintenance due to outage restrictions. A 500kV-over-500kV and 230kV line crossing would be much more significant.

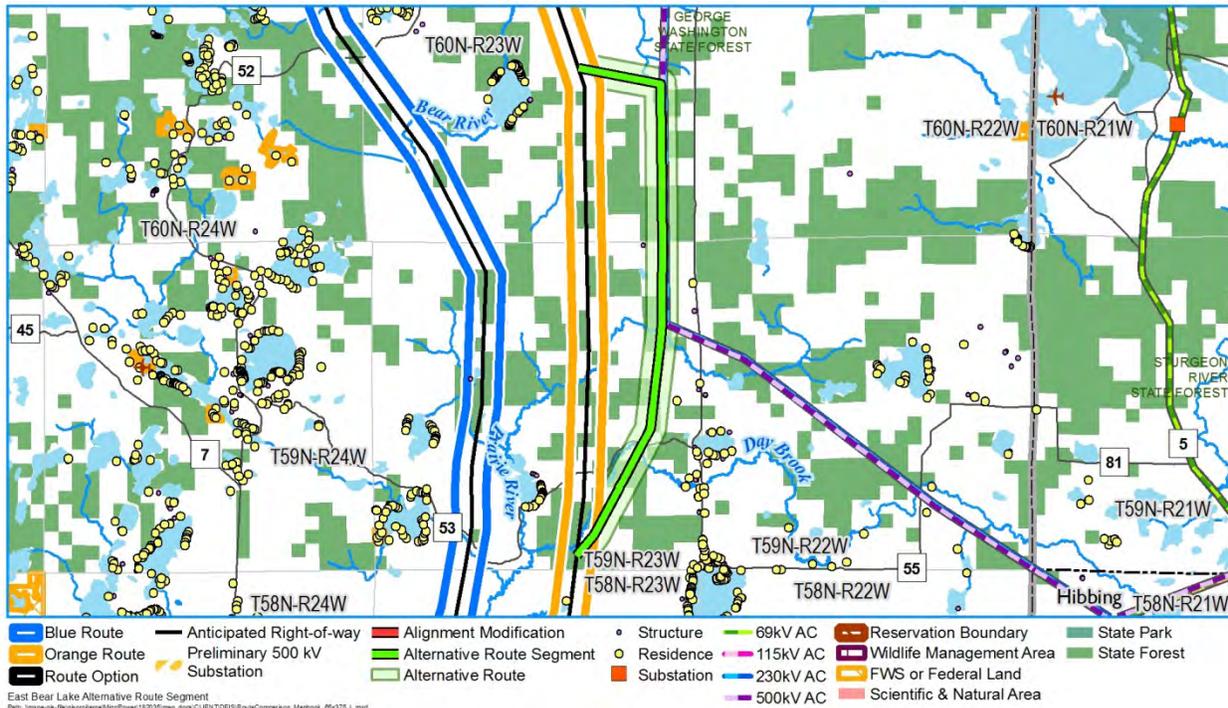
The west half of the Effie Route Alternative would establish a corridor approximately 40 miles long that would parallel the existing 500kV and 230kV lines, creating a situation where all three of the lines are in the same corridor. Minnesota Power is concerned that the establishment of a common ROW corridor that includes three out of the five total Manitoba – United States tie lines will negatively impact the reliability of the Manitoba – United States transmission interface. Minnesota Power’s proposed Blue and Orange Routes were designed to parallel, to the extent feasible, either the existing 500kV line or the existing 230kV line, but never both at the same time.

Furthermore, the Blue and Orange Routes were designed to strike a balance between the total length of parallel corridor with the existing 500kV line (36 miles for the Blue Route, 60 miles for the Orange Route), the number of crossings of the 500kV line (two for the Blue Route, zero for the Orange Route), and the human and environmental impacts associated with not following the existing 500kV line. The Effie Route Alternative would double the distance of parallel 500kV construction for the Blue Route and add a third critical Manitoba – United States tie line in the same corridor for 40 miles, on a Route that that already crosses the existing 500kV line twice. It is Minnesota Power’s position that the cumulative impact of the modifications proposed in the Effie Route Alternative increases the magnitude of the impact on the existing 500kV line and the Manitoba – United States transmission interface to the degree that it renders the Effie Route Alternative infeasible.

## Conclusion

For the reasons discussed above, Minnesota Power recommends against including this Route Alternative in the Scoping Decision.

# East Bear Lake Alternative Route Segment



## Overview

The East Bear Lake Route Alternative that would diverge from the Orange Route Alternative; follow the existing 230kV and 500kV transmission line for approximately four miles, then reconnecting to the Orange Route Alternative. This Alternative would avoid the Bear-Wolf Peatland.

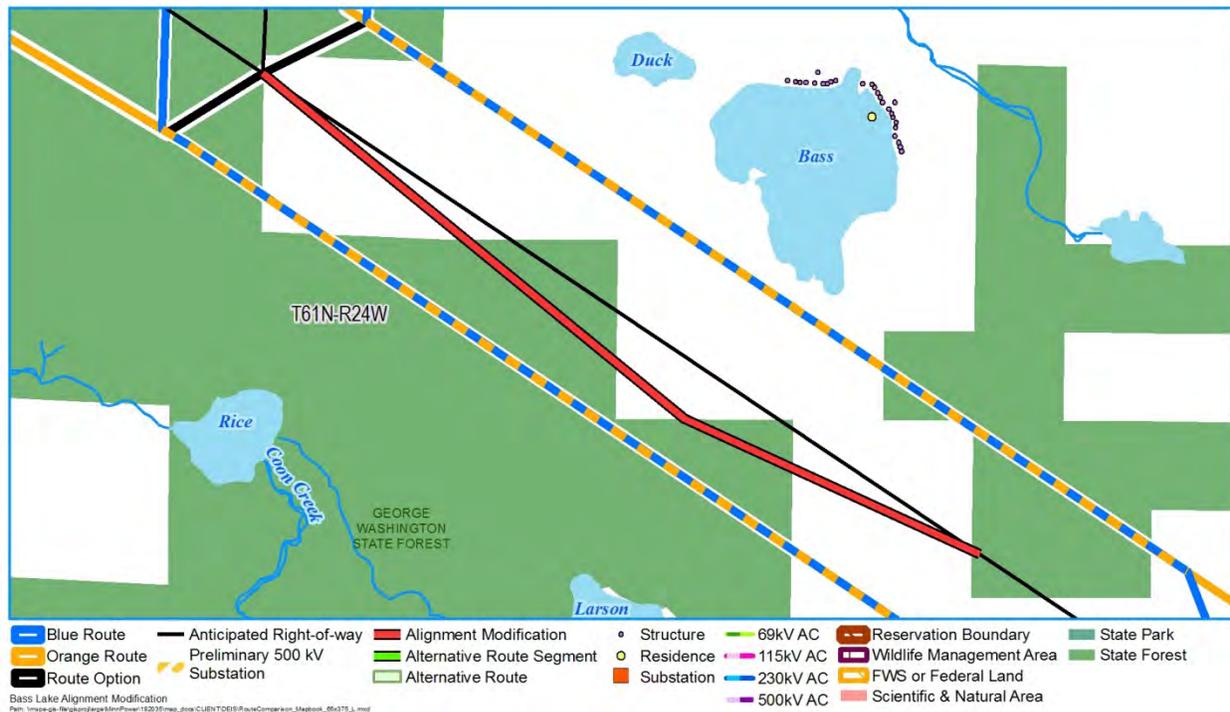
## Factors to Consider

This Alternative is almost two miles longer than the Orange Route Alternative and would add two additional angle structures. The Bear-Wolf Peatland does not have a specific boundary nor is there any information available at this time that would allow calculations associated with impacts mitigated by this Alternative.

## Conclusion

The larger number of angle structures created by this Alternative raises cost and feasibility concerns. Minnesota Power also believes that a more detailed engineering review and adjustment is necessary before consideration of this Alternative. For the reasons discussed above and those included in the Effie Alternative Route Segment, Minnesota Power accordingly recommends against including this Route Alternative in the Scoping Decision.

# Bass Lake Alignment Modification



## Overview

A landowner proposed an alignment modification that would maximize the distance from the Bass Lake Park & Campground.

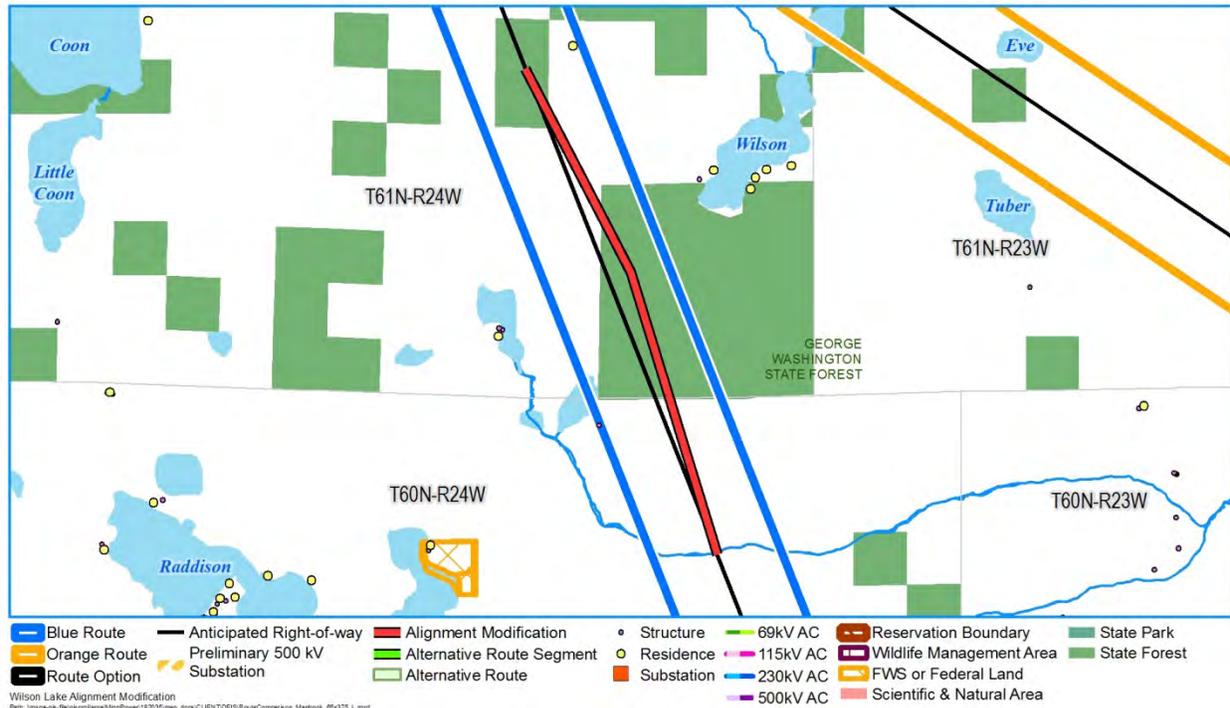
## Factors to Consider

This alignment modification is 100 feet longer than the Orange/Blue Route Alternative and would add three additional angle structures. It would also be closer to the Larson Lake recreation area and campground. From a visual perspective, this adjustment to the alignment would likely not reduce any visual impacts to the Bass Lake Park & Campground.

## Conclusion

Because this alignment modification increases the distance from one recreation area at the expense of another recreation area, it should not be included in the Scoping Decision. This alignment modification is also inconsistent with Minnesota Power's stated purpose of making a positive impact on communities. In addition, the larger number of angle structures created by this alignment modification raises cost and feasibility concerns. Such minor adjustments could be proposed during the Route Permit process and need not be included in the Scoping Decision.

# Wilson Lake Alignment Modification



## Overview

A landowner proposed an alignment modification that would minimize impacts to private land and cedar stands.

## Factors to Consider

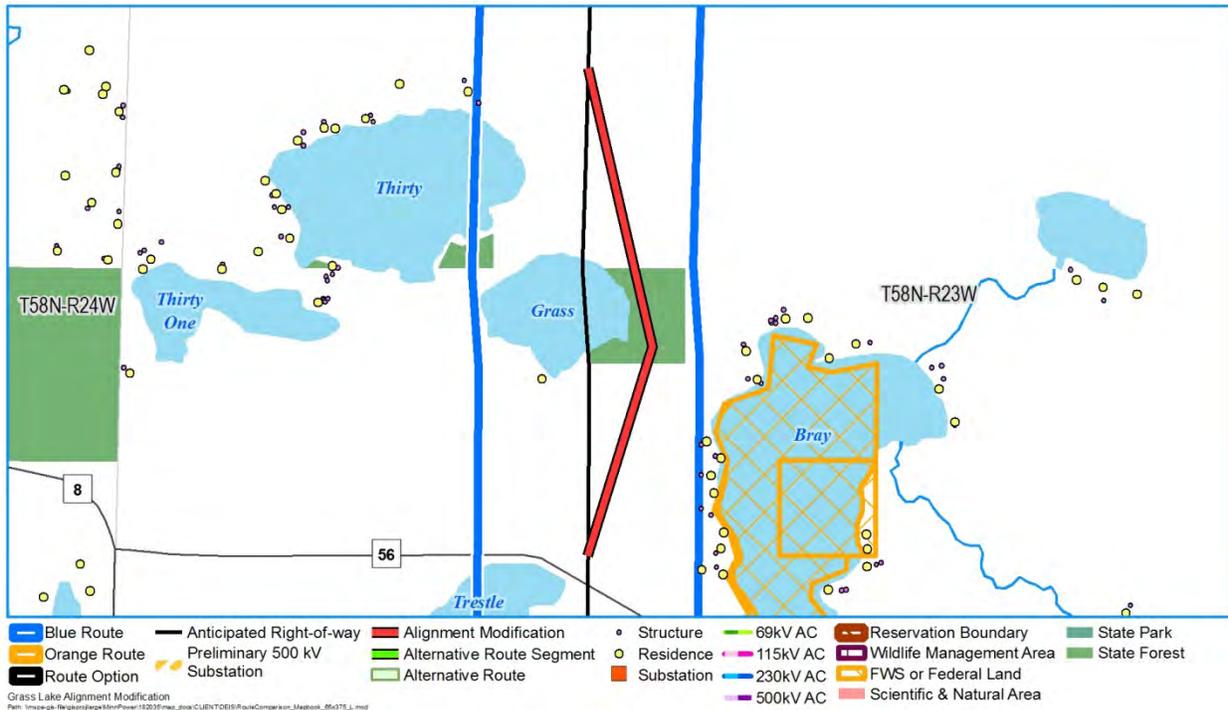
The anticipated centerline of the Blue Route Alternative does not cross the landowner's property, but the Blue Route Alternative would include his property. This alignment modification would also add three angle structures.

## Conclusion

The overall change in environmental effects from this alignment modification would be negligible and no impacts are being mitigated. The larger number of angle structures created by this Alternative raises cost and feasibility concerns. Such minor adjustments could be proposed during the Route Permit process and need not be included in the Scoping Decision.



# Grass Lake Alignment Modification



## Overview

A landowner proposed an alignment modification that would maximize the distance from private property and utilize more public and corporate land.

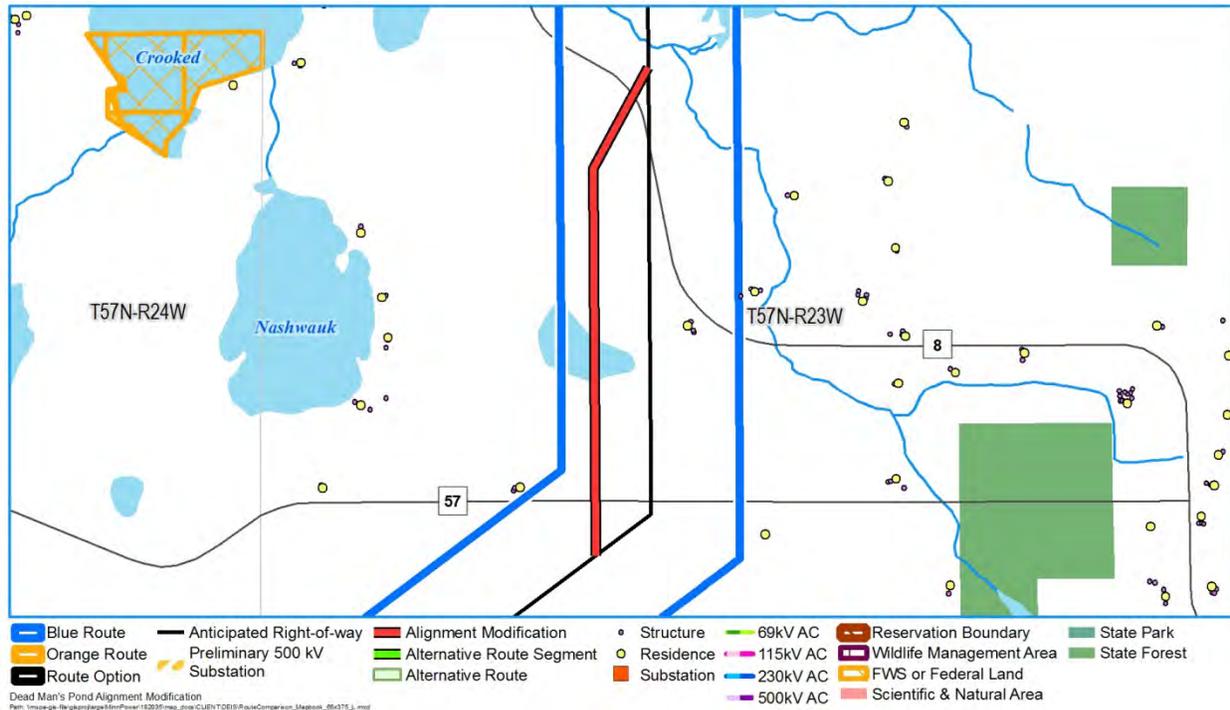
## Factors to Consider

This alignment modification would be 200 feet longer and would add one additional angle structure. It would also make the alignment closer to Bray Lake and associated cabins and homes surrounding it. This alignment would reduce the impact to Grass Lake.

## Conclusion

Because this alignment modification increases the distance from one landowner at the expense of other landowners, it should not be included in the Scoping Decision. This alignment modification is also inconsistent with Minnesota Power's stated purpose of making a positive impact on communities. In addition, the larger number of angle structures created by this Alternative raises cost and feasibility concerns. Such minor adjustments could be proposed during the Route Permit process and need not be included in the Scoping Decision.

# Dead Man's Pond Alignment Modification



## Overview

A landowner proposed an alignment modification (associated with the Dead Man's Pond Route Alternative) that would maximize the distance of the line to his private land.

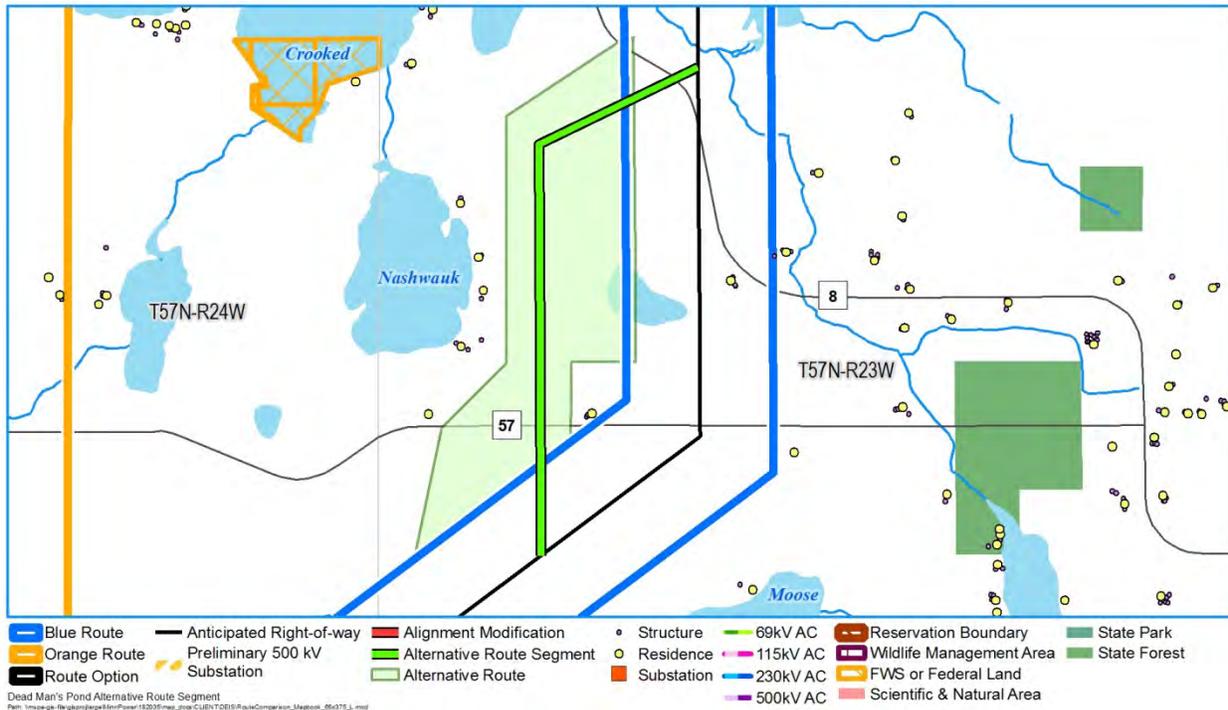
## Factors to Consider

Although this alignment modification may reduce the impacts to the landowner's private property, it would generally maintain the same ratio of private and public land as the Blue Route Alternative. This would also cross Dead Man's pond, causing potential habitat impacts.

## Conclusion

Because this alignment modification avoids the property of one private landholder at the expense of others, it should not be included in the Scoping Decision. This alignment modification would likely have greater environmental impacts than the Blue Route Alternative. Such minor adjustments could be proposed during the Route Permit process and need not be included in the Scoping Decision.

# Dead Man's Pond Alternative Route Segment



## Overview

A landowner proposed a Route Alternative (associated with the Dead Man's Pond alignment modification) that would minimize the impact to private property and impact more corporate property.

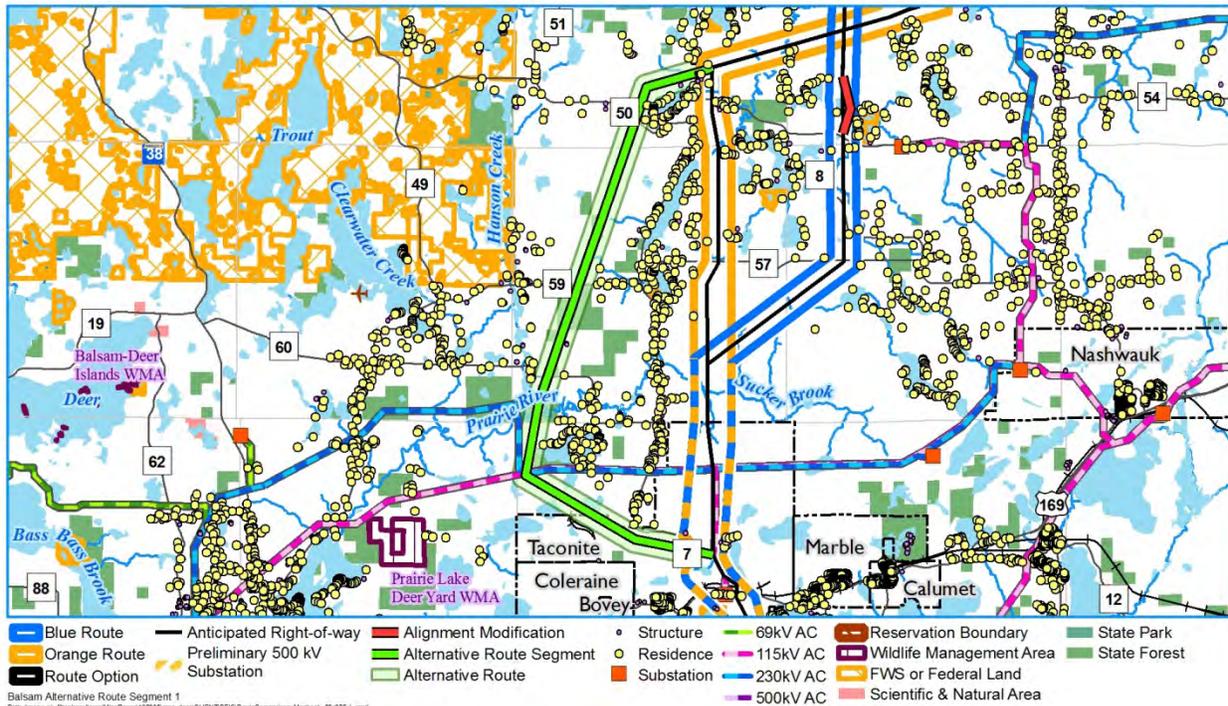
## Factors to Consider

The Alternative would not impact private land; however, it is closer to Nashwauk Lake and six additional homes.

## Conclusion

Because this proposed Alternative avoids the property of one private landholder at the expense of others, it should not be included in the Scoping Decision. This Route Alternative would likely have greater environmental impacts than the Blue Route Alternative. This Route Alternative is inconsistent with Minnesota Power's stated purpose of making a positive impact on communities. Minnesota Power accordingly recommends against including this Route Alternative in the Scoping Decision.

# Balsam Alternative Route Segment 1



## Overview

A landowner proposed a Route Alternative that would utilize abandoned Minnesota Power 230kV transmission line corridor to avoid the Balsam Township area.

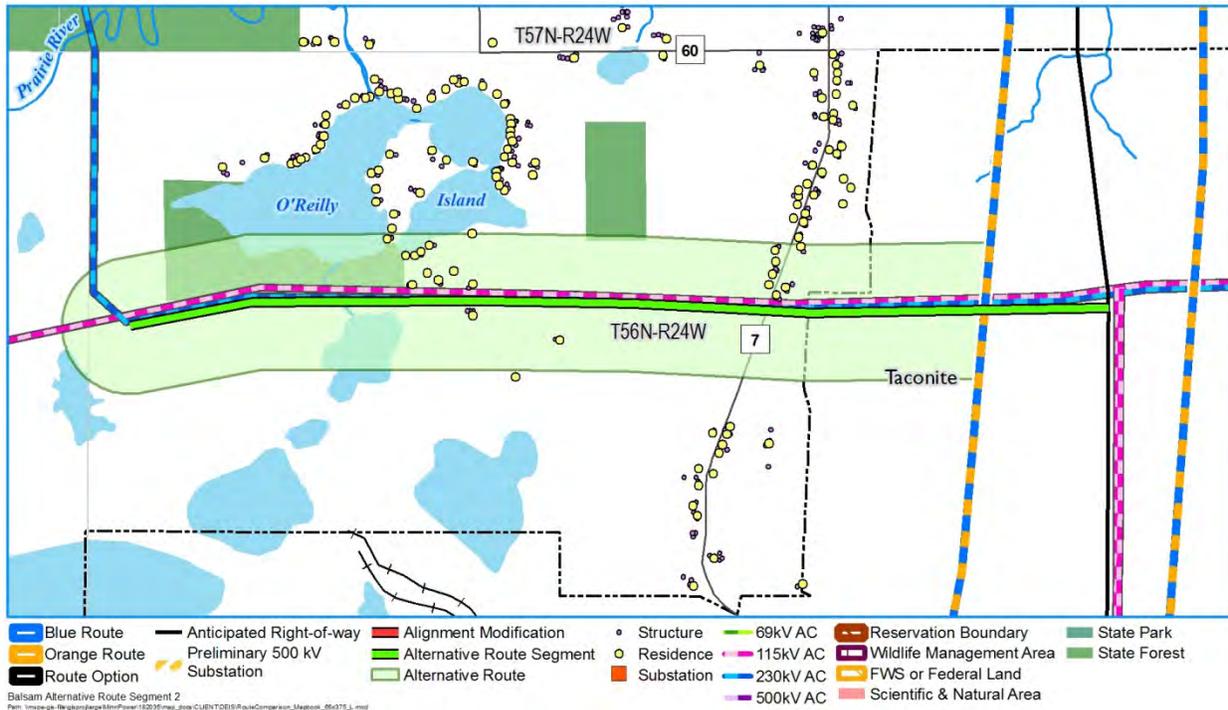
## Factors to Consider

The abandoned 230kV transmission line corridor has been transitioned out of a utility use and no longer provides an opportunity to accommodate a transmission line. Additionally, over the course of project development, Minnesota Power, the DNR, and mining stakeholders have analyzed and submitted the most appropriate crossing of the iron formation. The Orange/Blue Route Alternative is consistent with those submissions and this Alternative is not. This Alternative is four miles longer than the Orange/Blue Alternative.

## Conclusion

Because the abandoned 230kV transmission line corridor has been transitioned out of a utility use, it is not appropriate for consideration. In addition, this Alternative is not consistent with the recommendations of DNR and mining stakeholders regarding the Route through the iron formations. Minnesota Power accordingly recommends against including this Route Alternative in the Scoping Decision.

# Balsam Alternative Route Segment 2



## Overview

A landowner proposed a second Route Alternative that would also utilize the same abandoned Minnesota Power 230kV transmission line corridor. This second Alternative would turn east just south of O'Reilly and Island Lakes and parallel an existing 115 and 230kV transmission line corridor before intersecting the Orange/Blue Route Alternative.

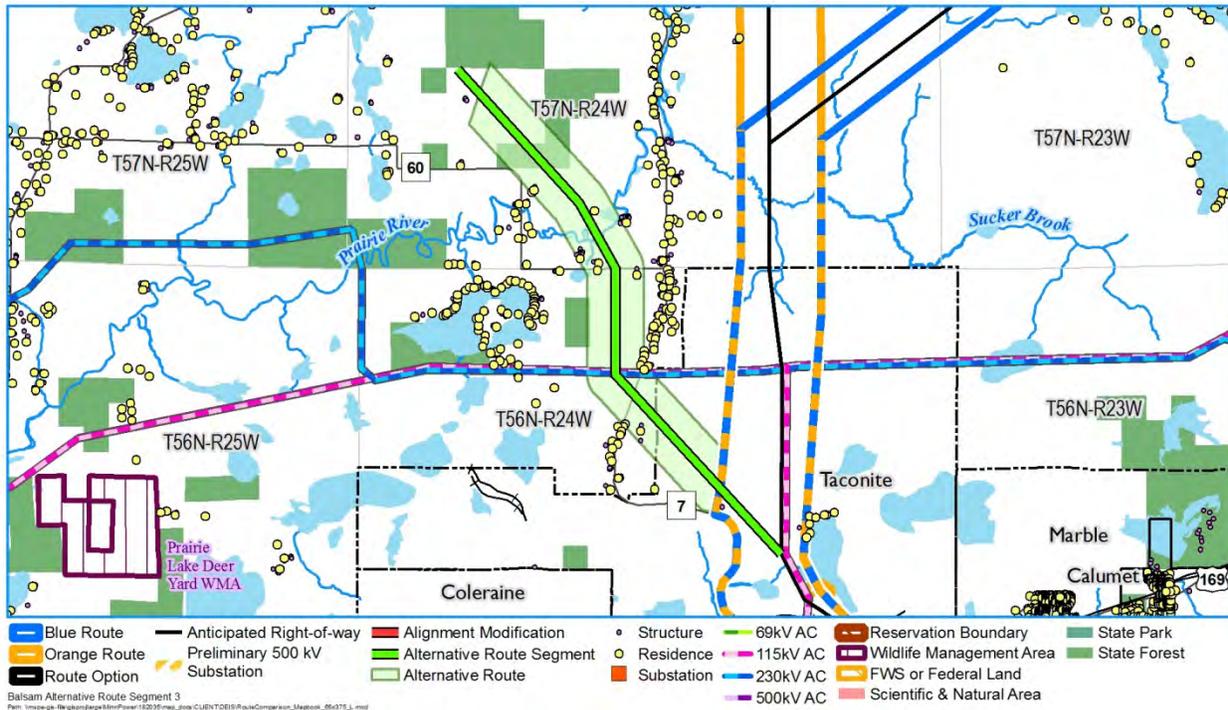
## Factors to Consider

The abandoned 230kV transmission line corridor has been transitioned out of a utility use and no longer provides an opportunity to accommodate a transmission line. This Alternative is 5.6 miles longer than the Orange/Blue Alternative. This Route Alternative would also impact more homes as it parallels the existing transmission line corridor, potentially requiring condemnation.

## Conclusion

Because the abandoned 230kV corridor has been transitioned out of a utility use, it is not appropriate for consideration. This Route Alternative is also less consistent with Minnesota Power's stated purpose of making a positive impact on communities. Minnesota Power accordingly recommends against including this Route Alternative in the Scoping Decision.

# Balsam Alternative Route Segment 3



## Overview

A landowner proposed a third Route Alternative that would utilize the abandoned Minnesota Power 230kV transmission line corridor, then turn southeast to avoid the Reiley/Island/Shamrock Lakes area, then connect with the Orange/Blue Route Alternative near Big Diamond Lake.

## Factors to Consider

The abandoned 230kV transmission line corridor has been transitioned out of a utility use and no longer provides an opportunity to accommodate a transmission line. Additionally, over the course of project development, Minnesota Power, the DNR, and mining stakeholders have analyzed and submitted the most appropriate crossing of the iron formation/mineral resource. The Orange/Blue Route Alternative is consistent with those submissions and this Alternative is not. This Route Alternative is 2.5-3.1 miles longer than the Orange/Blue Route and would impact more homes as it parallels the existing transmission line corridor - potentially requiring condemnation.

## Conclusion

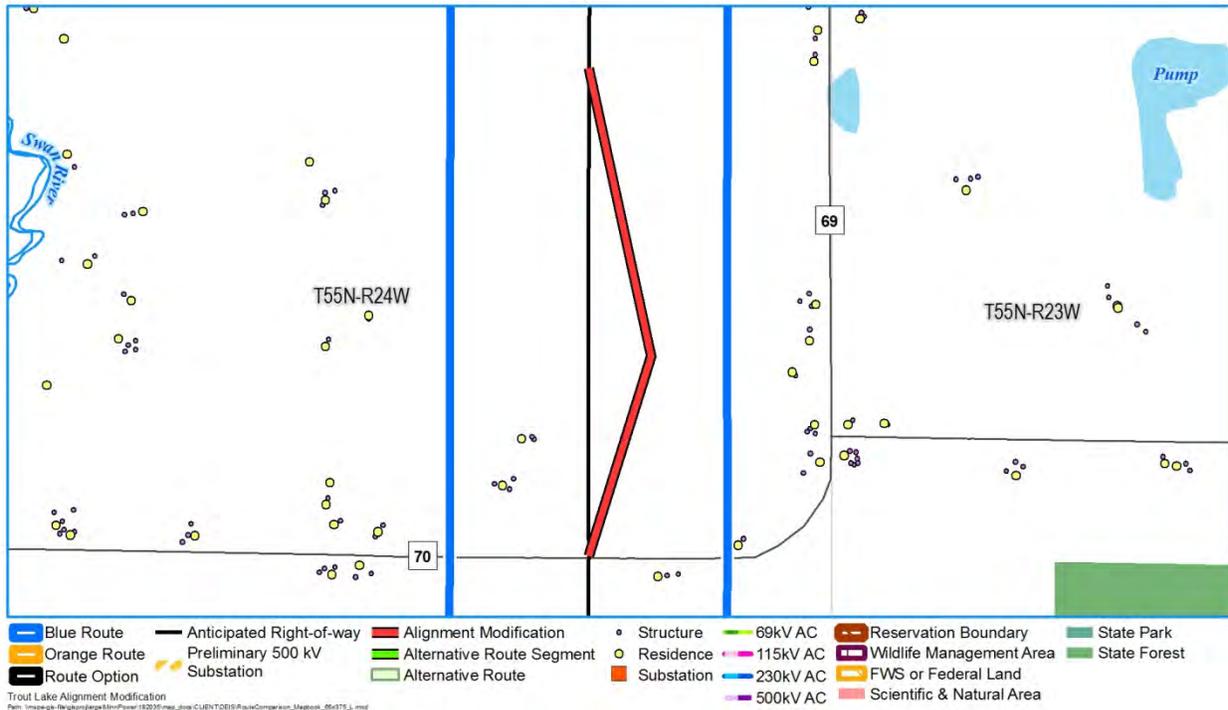
Because the abandoned 230kV transmission line corridor has been transitioned out of a utility use, it is not appropriate for consideration. In addition, this Alternative is not consistent with the recommendations of DNR and mining stakeholders regarding the Route through the iron formations. This Route Alternative is also less consistent with Minnesota Power's stated



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purpose of making a positive impact on communities. Minnesota Power accordingly recommends against including this Route Alternative in the Scoping Decision.

# Trout Lake Alignment Modification



## Overview

A landowner proposed an alignment modification that would avoid impacts to private property.

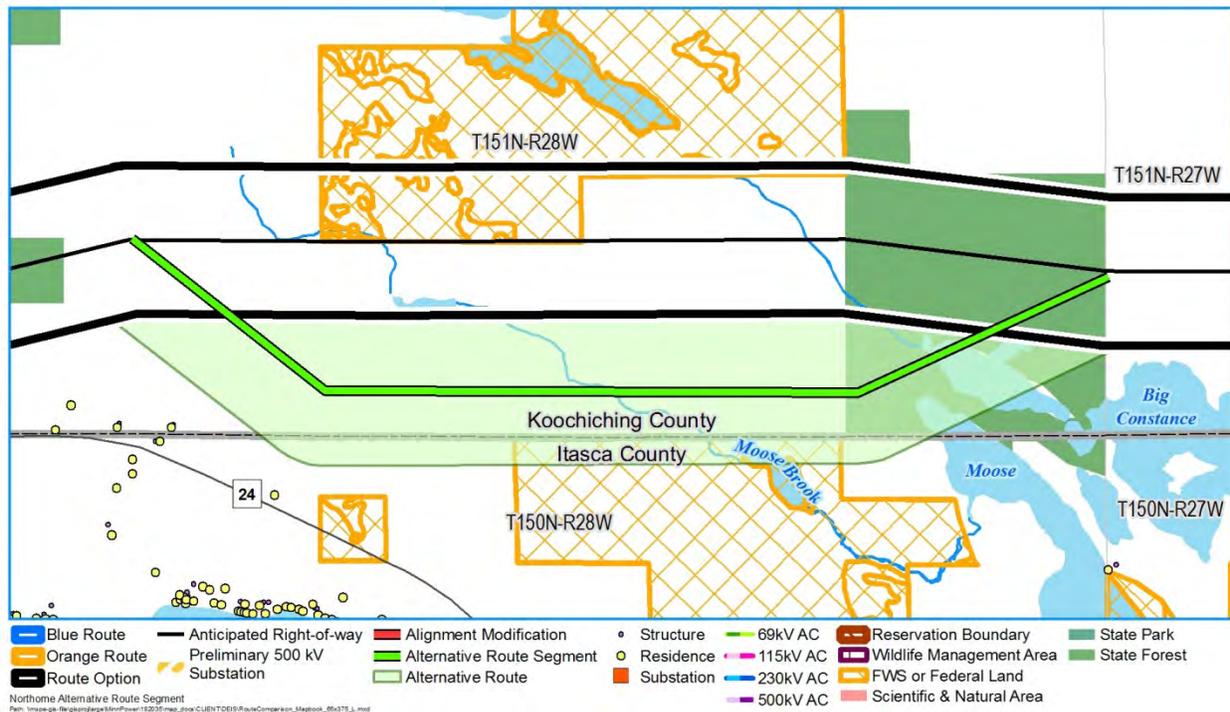
## Factors to Consider

Although the alignment modification would avoid impacts to the landowner's private property, it would be 150 feet longer and would add three additional angle structures.

## Conclusion

The larger number of angle structures created by this alignment modification raises cost and feasibility concerns. Minnesota Power also believes that a more detailed engineering review and adjustment is necessary before consideration of this modification. Such minor adjustments could be proposed during the Route Permit process and need not be included in the Scoping Decision.

# Northome Alternative Route Segment



## Overview

A landowner proposed a Route Alternative that would avoid impacts to private property.

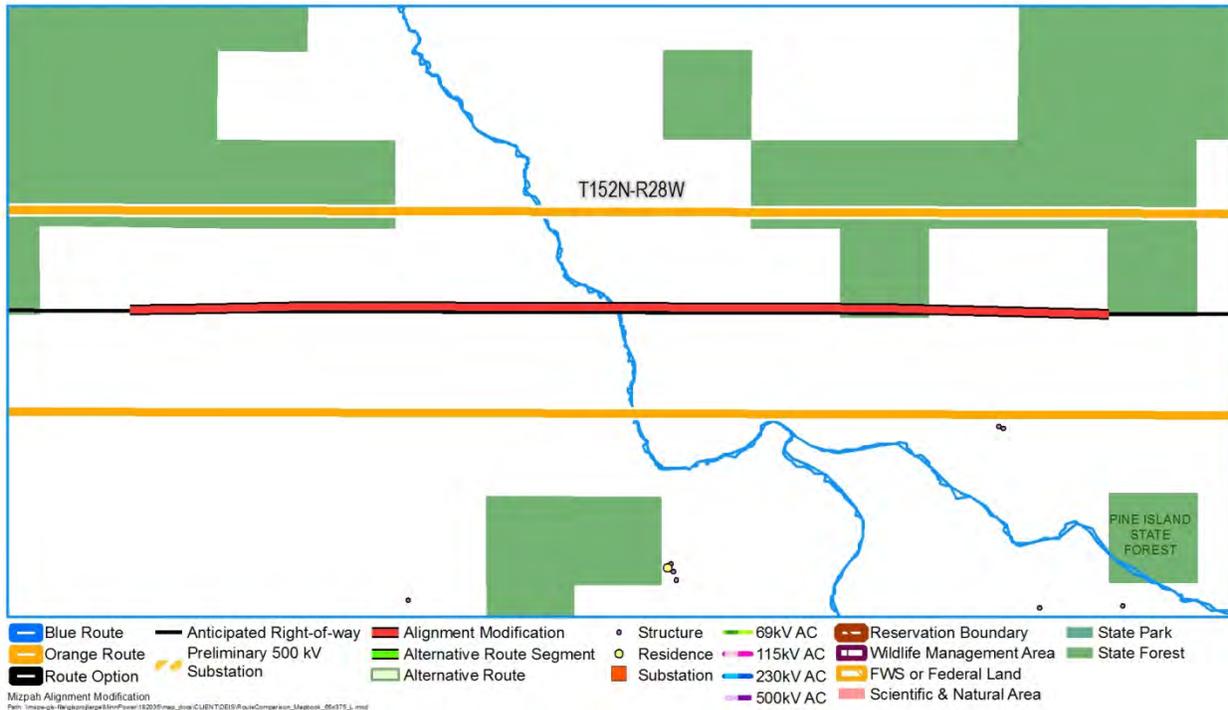
## Factors to Consider

The Alternative would avoid impacts to the landowner's private property; it would be 0.25 miles longer and would require one additional angle structure. Although this Route Alternative may reduce the impacts to the landowner's private property, it would generally maintain the same ratio of private and public land as the J2 Route Alternative.

## Conclusion

Because this proposed Alternative avoids the property of one private landholder at the expense of others, it should not be included in the Scoping Decision. Minnesota Power accordingly recommends against including this Route Alternative in the Scoping Decision.

# Mizpah Alignment Modification



## Overview

A landowner proposed an alignment modification that would avoid impacts to his private property.

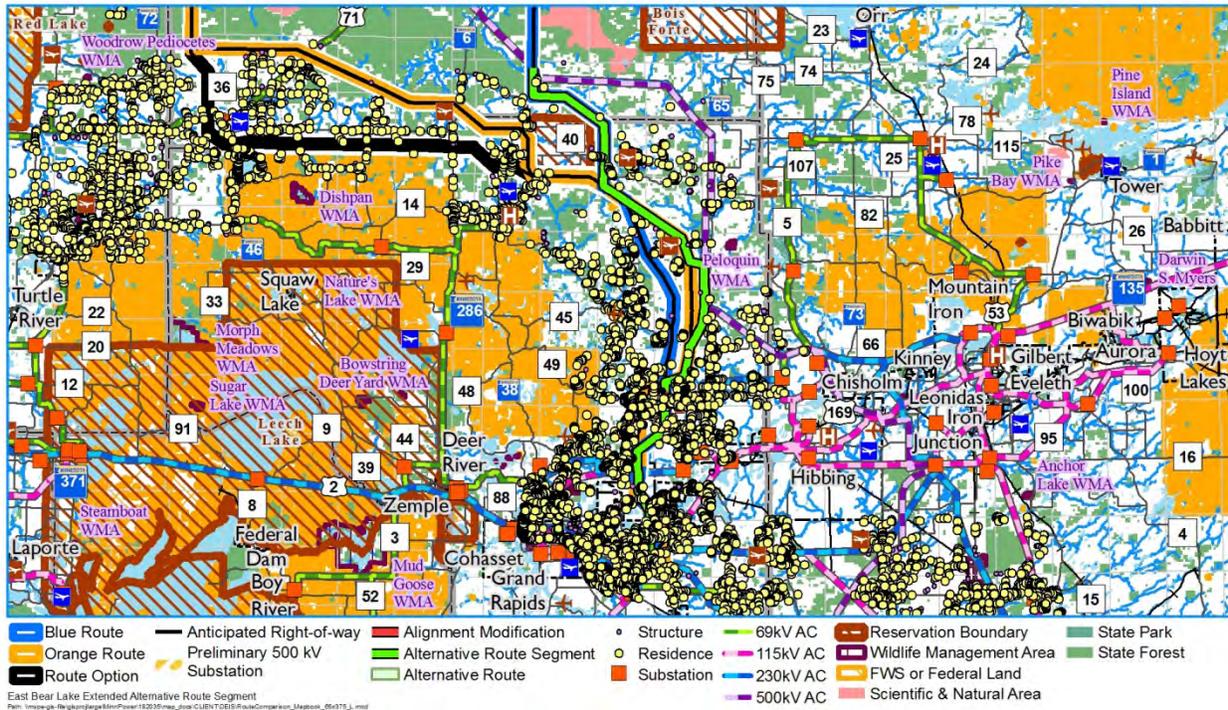
## Factors to Consider

Although this alignment modification may reduce the impacts to the landowner’s private property, it would generally maintain the same ratio of private and public land as the Orange Route Alternative.

## Conclusion

Because this proposed alignment modification avoids the property of one private landholder at the expense of others, it should not be included in the Scoping Decision. Such minor adjustments could be proposed during the Route Permit process and need not be included in the Scoping Decision.

# East Bear Lake Extended Alternative Route Segment



## Overview

A landowner proposed a Route Alternative similar the Effie Alternative Route Segment that would parallel a small portion of the existing 230/500kV transmission line corridor but largely include portions of the Blue and Orange Route Alternatives.

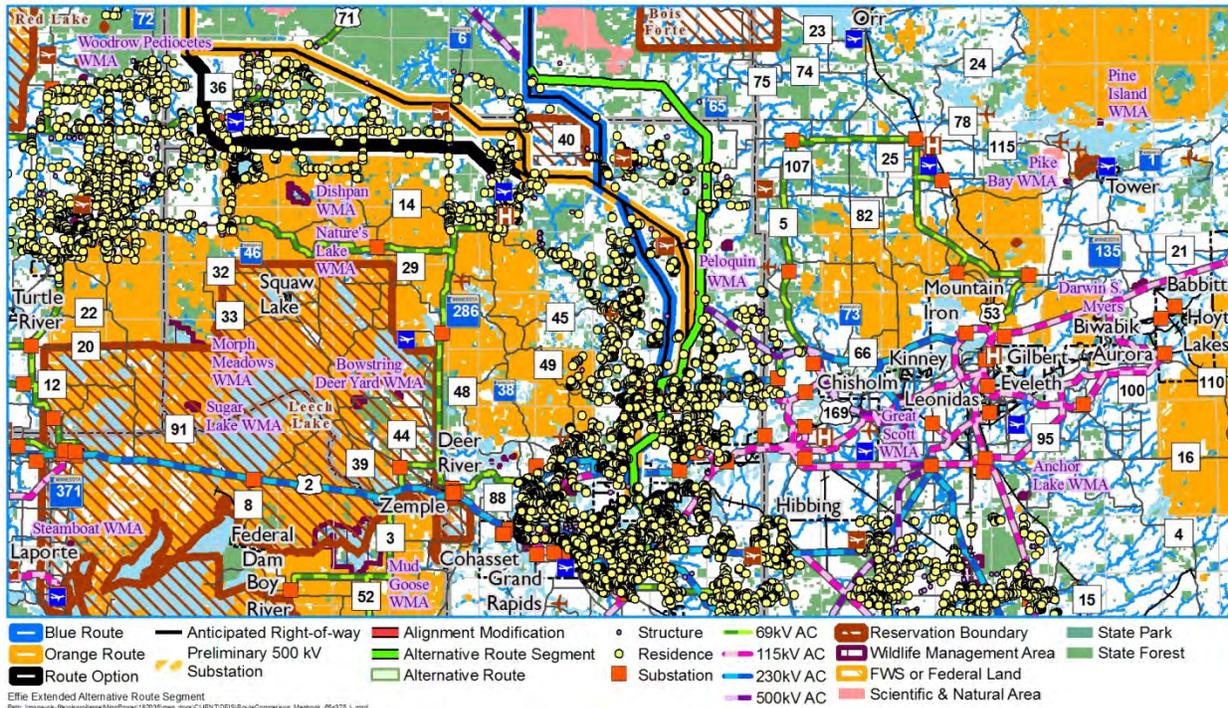
## Factors to Consider

This Alternative is only slightly different than the Orange or Blue Route Alternatives. It would parallel approximately four miles of the existing 230/500kV transmission line corridor which would increase the overall length of the line and add two additional angle structures.

## Conclusion

For the reasons discussed above and those included in the Effie Alternative Route Segment discussion, Minnesota Power recommends against including this Route Alternative in the Scoping Decision.

# Effie Extended Alternative Route Segment



## Overview

A landowner proposed a Route Alternative similar to the Effie Alternative Route Segment that would parallel the existing 230/500kV transmission line corridor but include portions of the Blue and Orange Route Alternatives.

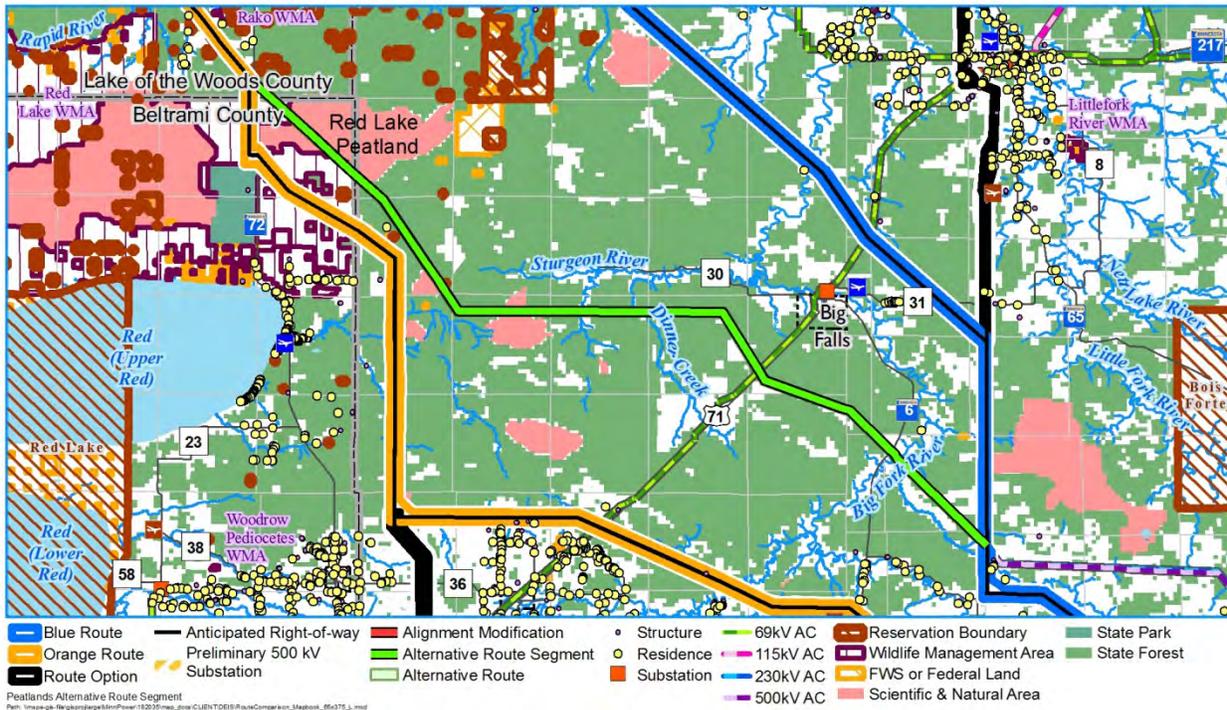
## Factors to Consider

This Alternative is similar to the Effie Alternative Route Segment and would have similar impacts. Refer to the Effie Alternative Route Segment for more information.

## Conclusion

For the reasons discussed above and those included in the Effie Alternative Route Segment discussion, Minnesota Power recommends against including this Route Alternative in the Scoping Decision.

# Peatlands Alternative Route Segment



## Overview

A landowner proposed a Route Alternative that would increase the length of line paralleling the existing 500kV transmission line through Koochiching County. This Alternative would reduce visual impacts to the Big Bog State Recreation Area ‘Bog Boardwalk.’

## Factors to Consider

This Route Alternative would parallel the existing 500kV line but in doing so, would cross two Scientific and Natural Areas (SNAs) which is prohibited by Minnesota Administrative Rule: 7850.4300 subp. 2. This rule states that “No high voltage transmission line may be routed through state or national parks or state scientific and natural areas unless the transmission line would not materially damage or impair the purpose for which the area was designated and no feasible and prudent alternative exists. Economic considerations alone do not justify use of these areas for a high voltage transmission line.” The Orange and the Blue Routes are feasible and prudent alternatives to crossing an SNA; therefore, the Peatlands Alternative Route Segment is prohibited by this Public Utilities Commission rule.

## Conclusion

Because this proposed Alternative is prohibited by Minnesota Rule 7850.4300 subp. 2, it should not be included in the Scoping Decision. Minnesota Power accordingly recommends against including this Route Alternative in the Scoping Decision.