

Appendix H

Previously Considered Routes

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**PREVIOUSLY CONSIDERED ROUTES
Big Stone South to Alexandria 345 kV
Transmission Line Project**

**MPUC DOCKET NO. E017, ET10/TL-23-160
October 2024**

In addition to the Route Options, Segment Alternatives, and Connector Segments described in Section 5 of the Application, several other Segment Alternatives were considered and evaluated during route development and refinement which were ultimately rejected. This appendix provides information about the rejected Segment Alternatives. Refer to Section 4 of the Application for a general discussion of the routing process.

The Applicants identified and reviewed route alternatives to characterize the important features of each and identify potential concerns for environmental and human resources associated with each route segment consistent with Minnesota’s routing criteria. The Applicants identified and reviewed Segment Alternatives/Connector Segments to characterize the important features of each and identify potential concerns for environmental and human resources associated with each Route Option consistent with Minnesota’s routing criteria. Evaluation of alternatives also considered construction constraints and stakeholder comments. Segment Alternatives which were the least favorable based on the evaluation criteria, in comparison to other Segment Alternatives, were removed from consideration in this Application.

There were eight rejected Segment Alternatives within the South Segment, six rejected Segment Alternatives within the Central Segment, and no rejected Segment Alternatives within the North Segment. Information about considered but rejected Segment Alternatives in the South and Central Segments is included below.

South Segment

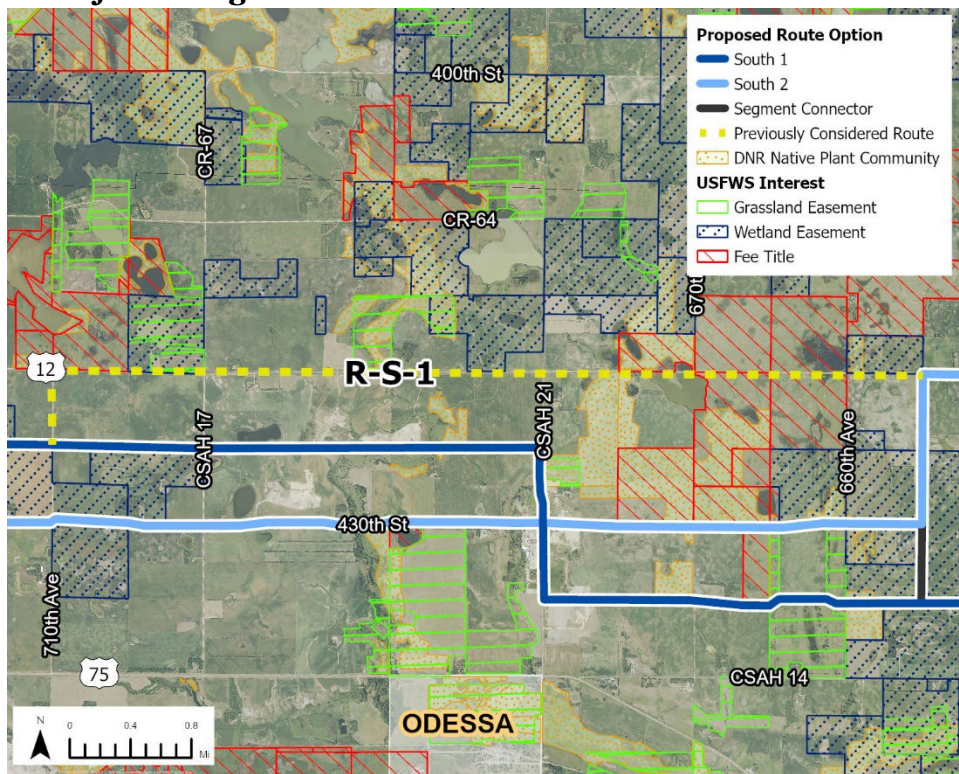
Eight Segment Alternatives were reviewed and subsequently rejected from consideration in the South Segment. Figures 1-8 show the location of these Segment Alternatives in relation to Route Option South 1 and South 2.

Rejected Segment Alternative	Length (miles)
R-S-1	9.8 miles
R-S-2	4.6 miles / 3.2 miles
R-S-3	3.0 miles
R-S-4	7.0 miles
R-S-5	7.0 miles
R-S-6	8.5 miles
R-S-7	1.5 miles
R-S-8	6.0 miles

Rejected Segment Alternative R-S-1

During the routing process, the Applicants reviewed an approximately 9.8-mile Segment Alternative that was requested by landowners. This Segment Alternative would parallel Highway 12 in the existing corridor. Segment Alternative R-S-1 would directly impact U.S. Fish and Wildlife Service (USFWS) fee-title lands, USFWS wetland easements, and Minnesota Department of Natural Resources (MDNR) native plant communities and sites of biodiversity significance. In addition to crossing these sensitive areas, Segment Alternative R-S-1 would impact five additional residences than the proposed Route Option South 2 and four additional residences than the proposed Route Option South 1. For these reasons, the Segment Alternative R-S-1 was removed from consideration.

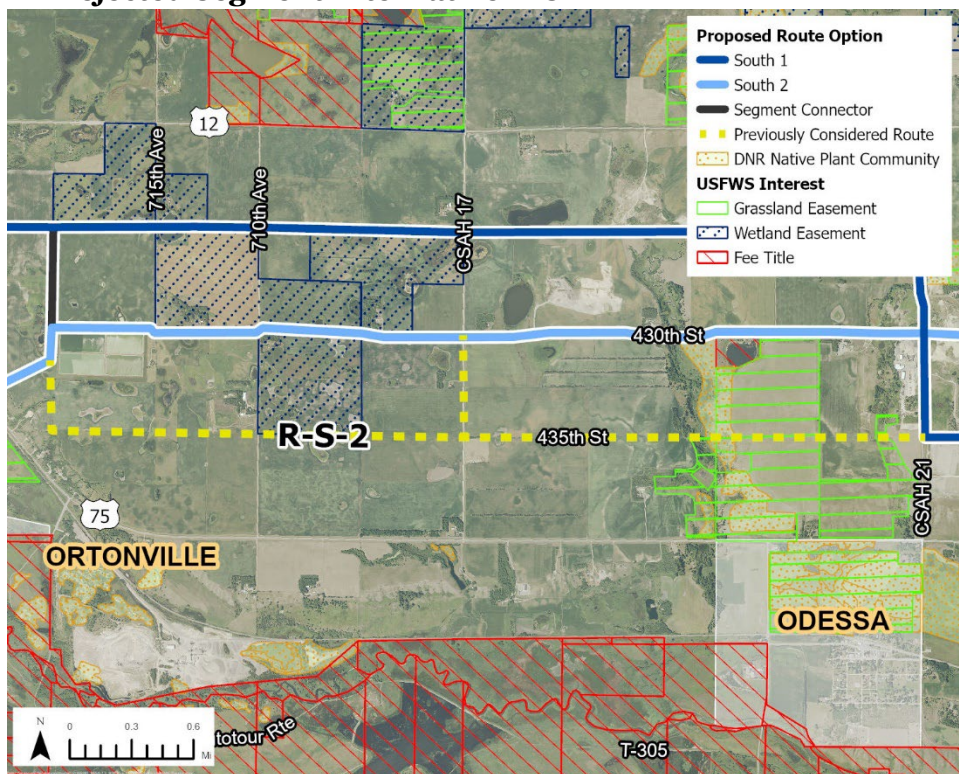
Figure 1 Rejected Segment Alternative R-S-1



Rejected Segment Alternative R-S-2

During the routing process, the Applicants reviewed an approximately 4.6-mile Segment Alternative that was requested by a landowner to avoid an additional four residences. An approximate 3.2-mile variation to Segment Alternative R-S-2 was also evaluated. Segment Alternative R-S-2 would have required Project structures to be placed within two USFWS grassland easements. Additionally, state-protected calcareous fens, which are very sensitive to disturbances such as foundation drilling, are present along Segment Alternative R-S-2. For these reasons, Segment Alternative R-S-2 and the associated 3.2-mile variation were removed from consideration.

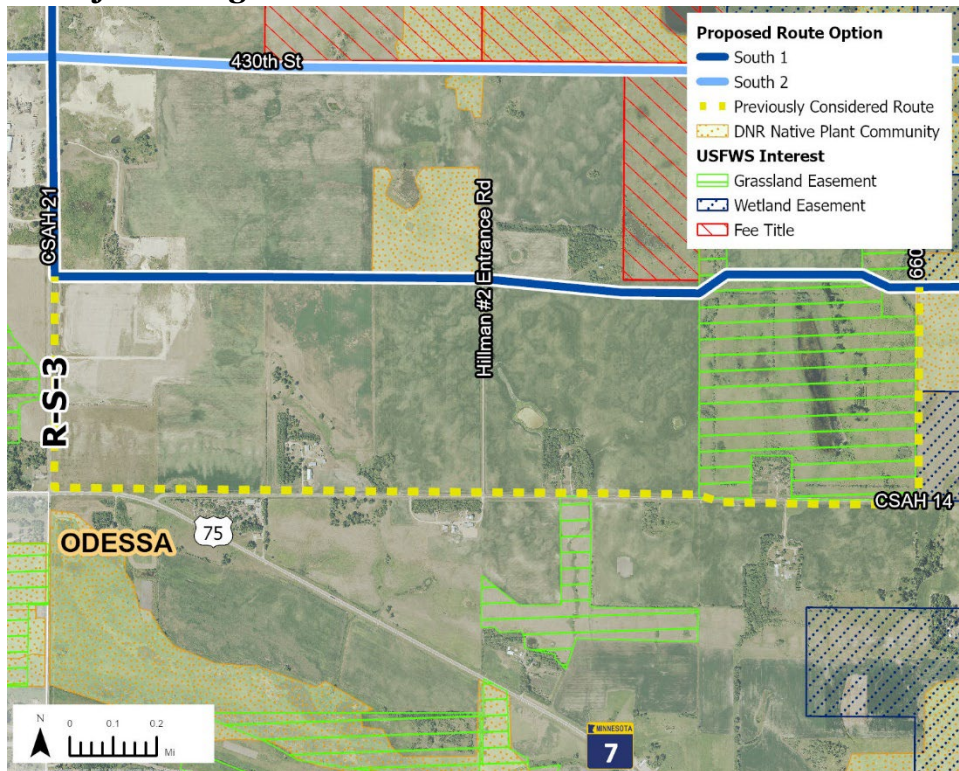
Figure 2 Rejected Segment Alternative R-S-2



Rejected Segment Alternative R-S-3

During the routing process, the Applicants reviewed an approximately 3.0-mile Segment Alternative. The Applicants presented Segment Alternative R-S-3 as part of Route Option South 1 during public open house meetings in June 2024. Subsequently, landowners provided additional alternatives to the north. After reviewing the suggested alternatives, the Applicants added Route Option South 2, as presented in the Application and rejected Segment Alternative R-S-3 as it would impact an additional seven residences when compared to Route Option South 1.

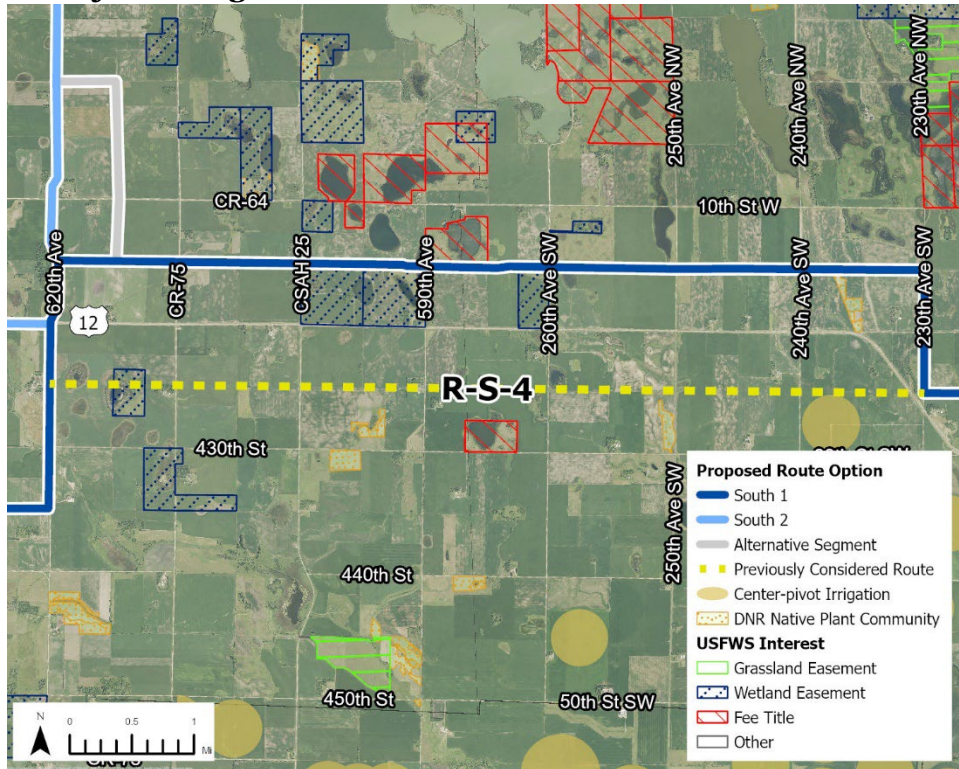
Figure 3 Rejected Segment Alternative R-S-3



Rejected Segment Alternative R-S-4

During the routing process, the Applicants reviewed an approximately 7.0-mile Segment Alternative that was requested by landowners. Segment Alternative R-S-4 would parallel Highway 12 in the existing corridor. However, when compared to Route Option South 1, Segment Alternative R-S-4 would impact an additional six residences and, therefore, was removed from consideration.

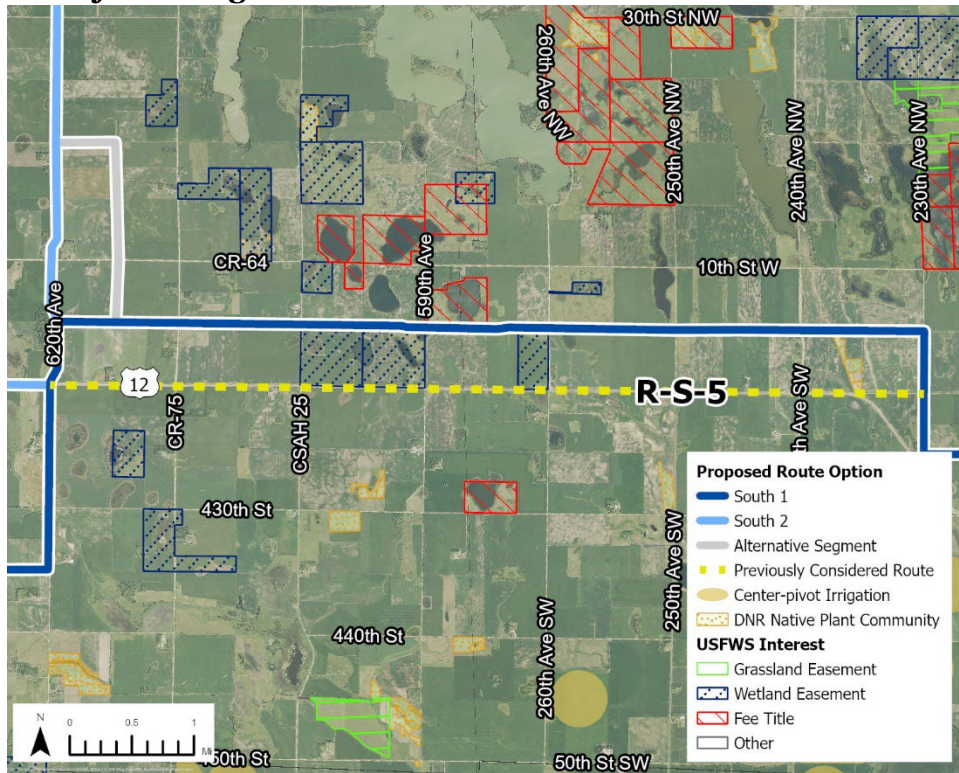
Figure 4 Rejected Segment Alternative R-S-4



Rejected Segment Alternative R-S-5

During the routing process, the Applicants reviewed an approximately 7.0-mile Segment Alternative requested by USFWS. Segment Alternative R-S-5 would avoid a wetland complex area and USFWS wetland easements. However, it would impact two additional residences, including dissecting through the middle of a farmstead. Additionally, by siting the Route Option South 1 appropriately, impacts to wetlands within USFWS wetland easements can be avoided. For these reasons, the Segment Alternative R-S-5 was removed from consideration.

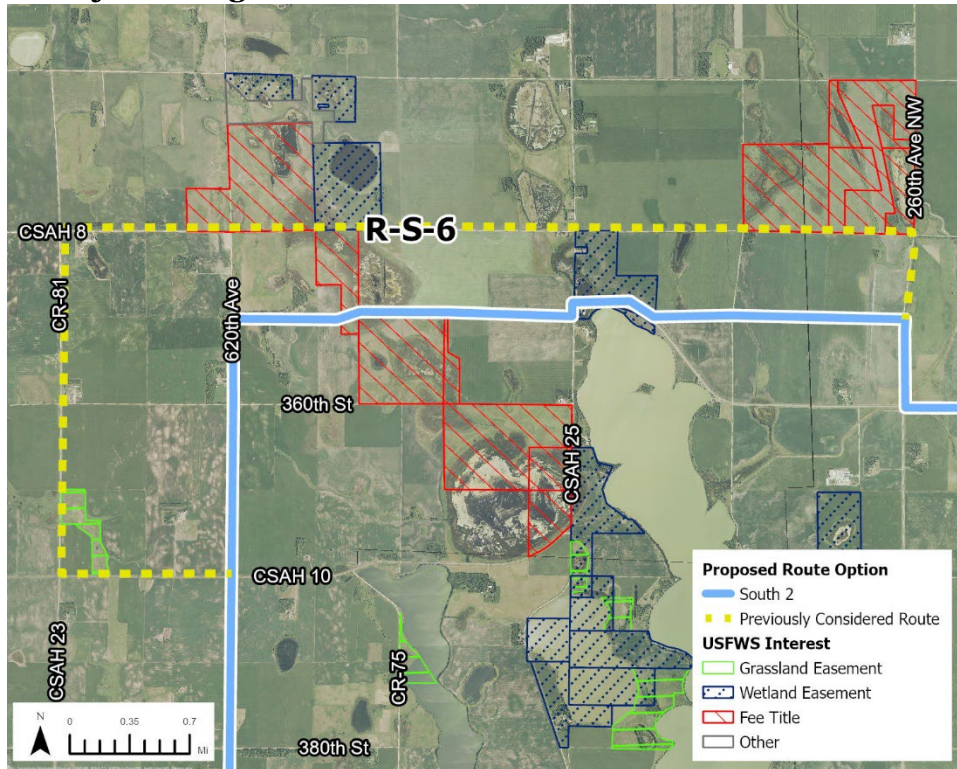
Figure 5 Rejected Segment Alternative R-S-5



Rejected Segment Alternative R-S-6

During the routing process, the Applicants reviewed an approximately 8.5-mile Segment Alternative requested by MDNR that would parallel existing infrastructure and, therefore, avoid adding a new corridor. Segment Alternative R-S-6 would result in a longer transmission line and require additional structures which would result in an additional permanent impacts and increased Project costs. Additionally, Segment Alternative R-S-6 and Route Option South 2 both cross through Natural Resources Conservation Service (NRCS) easements, Minnesota Board of Water & Soil Resources lands (BWSR), and USFWS fee-title and easement lands. Route Option South 2 minimizes the overall impacts to state and federal protected lands when compared to Segment Alternative R-S-6. The Route Option South 2 also parallels existing linear features including 620th Ave and quarter section lines. For these reasons, Segment Alternative R-S-6 was removed from consideration.

Figure 6 Rejected Segment Alternative R-S-6

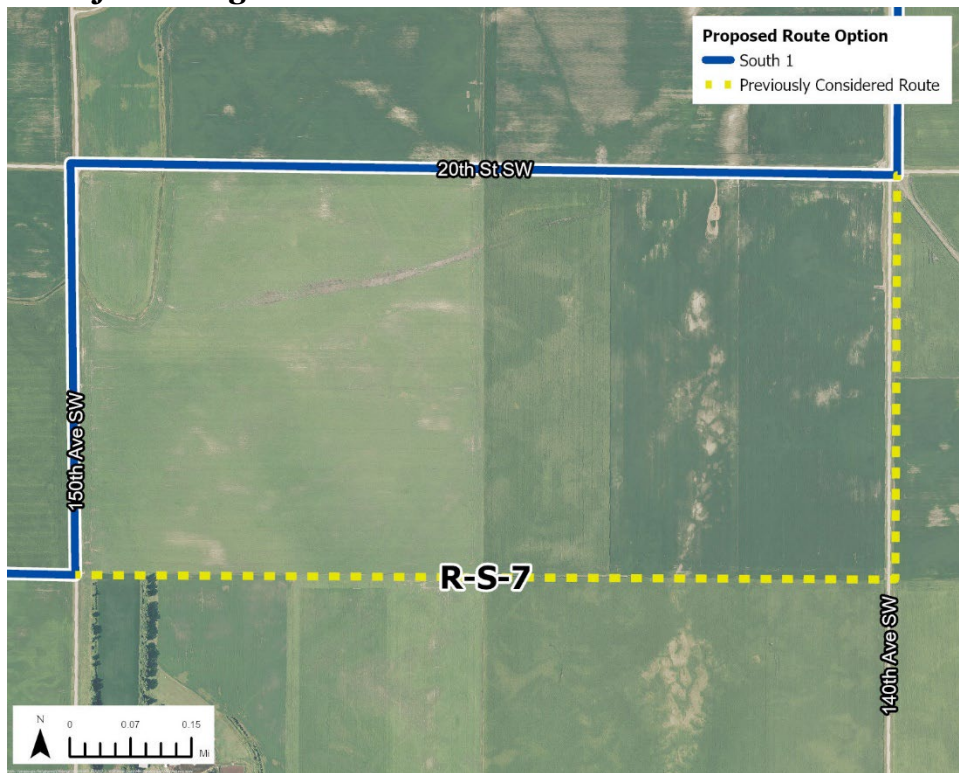


Rejected Segment Alternative R-S-7

During the routing process, the Applicants reviewed an approximately 1.5-mile Segment Alternative. The Applicants presented Segment Alternative R-S-7 as part of Route Option South 1 during public open house meetings in June 2024. Subsequently, a landowner provided a variation due to operational safety concerns of a private air strip nearby. After reviewing the suggested alternatives, the Applicants modified Route Option South 1, as presented in the Application and rejected Segment Alternative R-S-7 based on the landowner's recommendation.

This private air strip has since been registered with the Federal Aviation Administration (FAA).

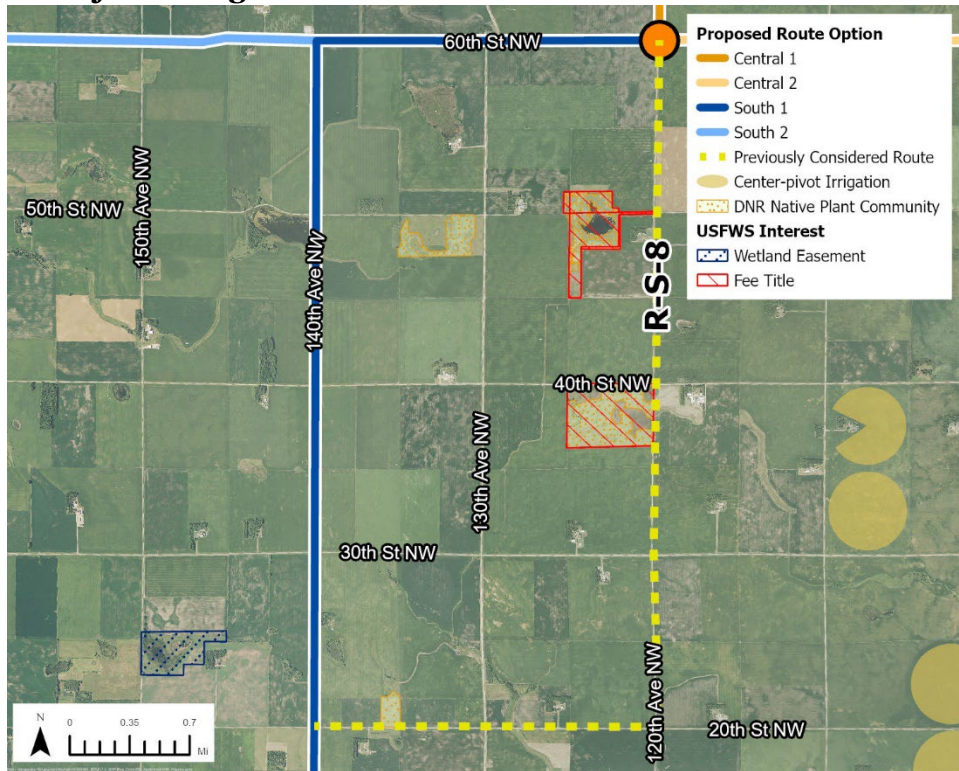
Figure 7 **Rejected Segment Alternative R-S-7**



Rejected Segment Alternative R-S-8

During the routing process, the Applicants reviewed an approximately 6.0-mile Segment Alternative as part of Route Option South 1. USFWS proposed an alternative to Route Option South 1 which would avoid one residence and would avoid a USFWS fee-title parcel and a MDNR native plant community. After reviewing the suggested alternative, the Applicants incorporated the USFWS recommendation into Route Option South 1 as presented in the Application and rejected Segment Alternative R-S-8.

Figure 8 Rejected Segment Alternative R-S-8



Central Segment

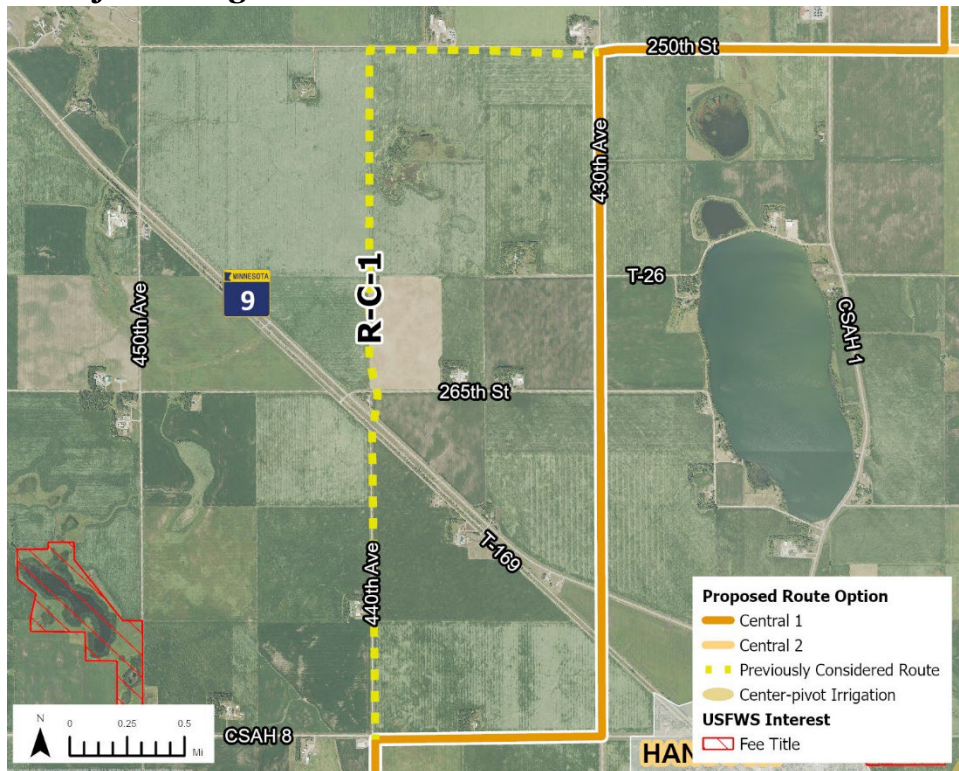
Six Segment Alternatives were reviewed and subsequently rejected from consideration in the Central Segment. Figures 9-15 show the location of these Segment Alternatives in relation to Route Option Central 1 and Central 2.

Rejected Segment Alternative	Length (miles)
R-C-1	4.0 miles
R-C-2	various
R-C-3	15.6 miles
R-C-4	28.4 miles
R-C-5	20.9 miles
R-C-6	4.0 miles
R-C-7	8.0 miles

Rejected Segment Alternative R-C-1

During the routing process, the Applicants reviewed an approximately 4.0-mile Segment Alternative. The Applicants presented Segment Alternative R-C-1 as part of Route Option Central 1 during public open house meetings in June 2024. Subsequently, an additional alternative was suggested to avoid several residences. After reviewing the suggested alternative, the Applicants added modified Route Option Central 1 to include the suggested alternative, as presented in the Application and rejected Segment Alternative R-C-1 as it would impact an additional four residences when compared to Route Option Central 1.

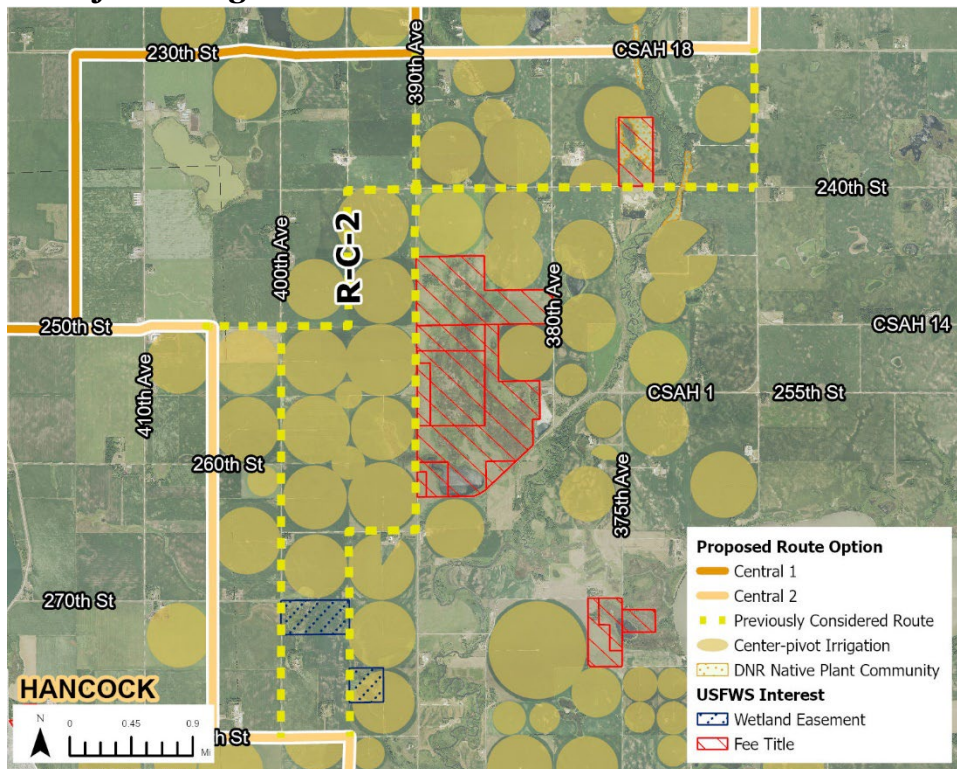
Figure 9 Rejected Segment Alternative R-C-1



Rejected Segment Alternative R-C-2

During the routing process, the Applicants reviewed several Segment Alternatives requested by landowners to avoid center and corner pivot irrigation systems in the Central Segment. The Applicants reviewed several Segment Alternatives after the public open house meetings in June 2024 and after individual landowner meetings. The various options, collectively identified as Segment Alternative R-C-2, were reviewed by the Applicants but ultimately rejected due to their impacts on center and corner pivot irrigation systems, USFWS fee-title and easement lands, and proximity to residences.

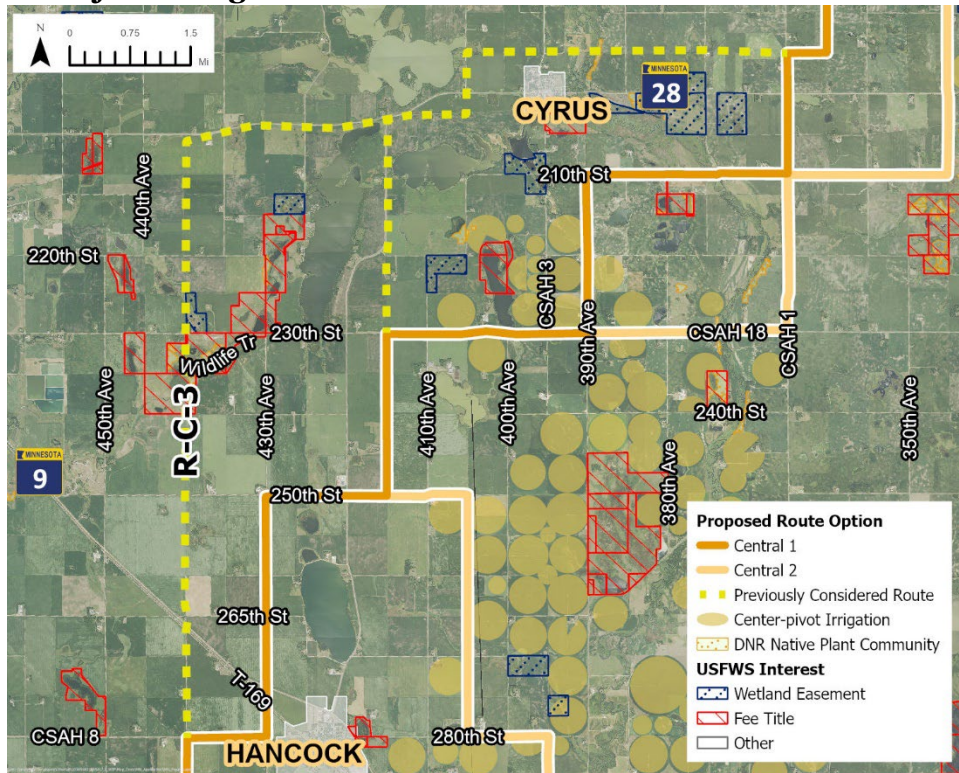
Figure 10 Rejected Segment Alternative R-C-2



Rejected Segment Alternative R-C-3

During the routing process, the Applicants reviewed an approximately 15.6-mile Segment Alternative requested by landowners to avoid center and corner pivot irrigation systems. However, Segment Alternative R-C-3 would result in a longer transmission line and require additional structures which would result in additional permanent impacts and increased Project costs. Additionally, Segment Alternative R-C-3 would also impact USFWS grassland easements, USFWS fee-title land, an MDNR Wildlife Management Area (WMA), and BWSR land and an additional 11 residences. The Applicants attempted to make the route more feasible by including a variation that went north between Long Lake and Lake Cyrus, east along a railroad corridor, and then north over the City of Cyrus. However, this variation still impacted an additional two residences, and resulted in a pinch point between two lakes. For these reasons, Segment Alternative R-C-3 and variation were removed from consideration and became a rejected alternative.

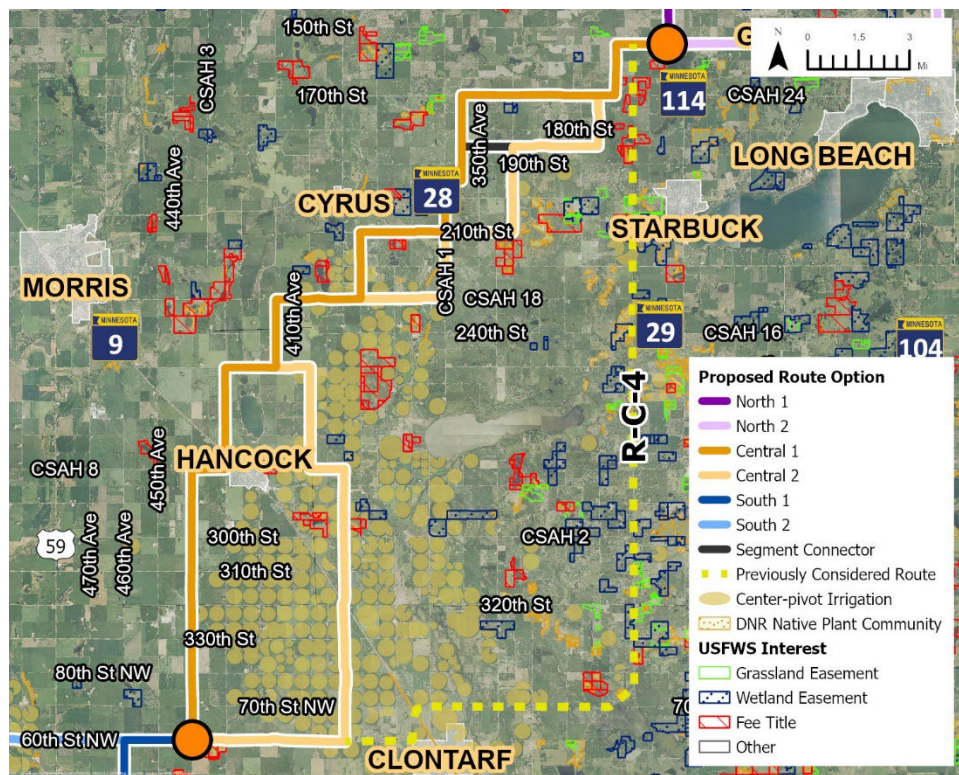
Figure 11 Rejected Segment Alternative R-C-3



Rejected Segment Alternative R-C-4

During the routing process, the Applicants reviewed an approximately 28.4-mile Segment Alternative requested by landowners to avoid center and corner pivot irrigation systems. Segment Alternative R-C-4 would result in additional human and natural resource impacts, including bisecting farmland and impacting additional residences, USFWS fee-title lands, USFWS grassland and wetland easements, BWSR easements, MDNR native plant communities, MDNR rare natural communities, MDNR sites of biodiversity significance, and bisecting a large water basin near Starbuck. Segment Alternative R-C-4 would require zigzagging to avoid, where feasible, residences and federal and state protected lands. There were also several pinch points identified which would require routing through the front yard of a residence in several places. Additionally, paralleling Highway 29 may have impacted the area's aesthetics due to the presence of numerous recreational lakes and environmental features. For these reasons, the Segment Alternative R-C-4 was removed from consideration.

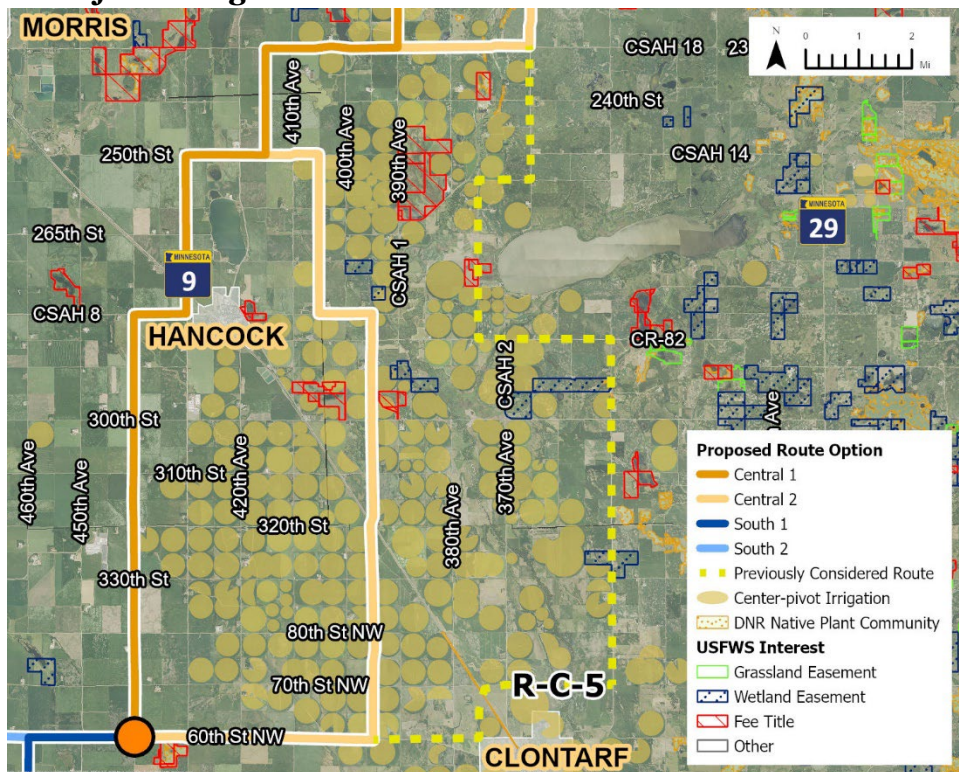
Figure 12 Rejected Segment Alternative R-C-4



Rejected Segment Alternative R-C-5

During the routing process, the Applicants reviewed an approximately 20.9-mile Segment Alternative to avoid center and corner pivot irrigators to the extent feasible; however, center pivot irrigators would still require working around, notably the area near Lake Emily. Segment Alternative R-C-5 would result in a longer transmission line and require additional structures which would result in additional permanent impacts and increased Project costs. In addition to increased construction costs, Segment Alternative R-C-5 would impact BWSR easements, MDNR native plant communities, an MDNR WMA, and a USFWS WPA. An increased number of residences would also be impacted. For these reasons, the Segment Alternative R-C-5 was removed from consideration and became a rejected alternative.

Figure 13 Rejected Segment Alternative R-C-5

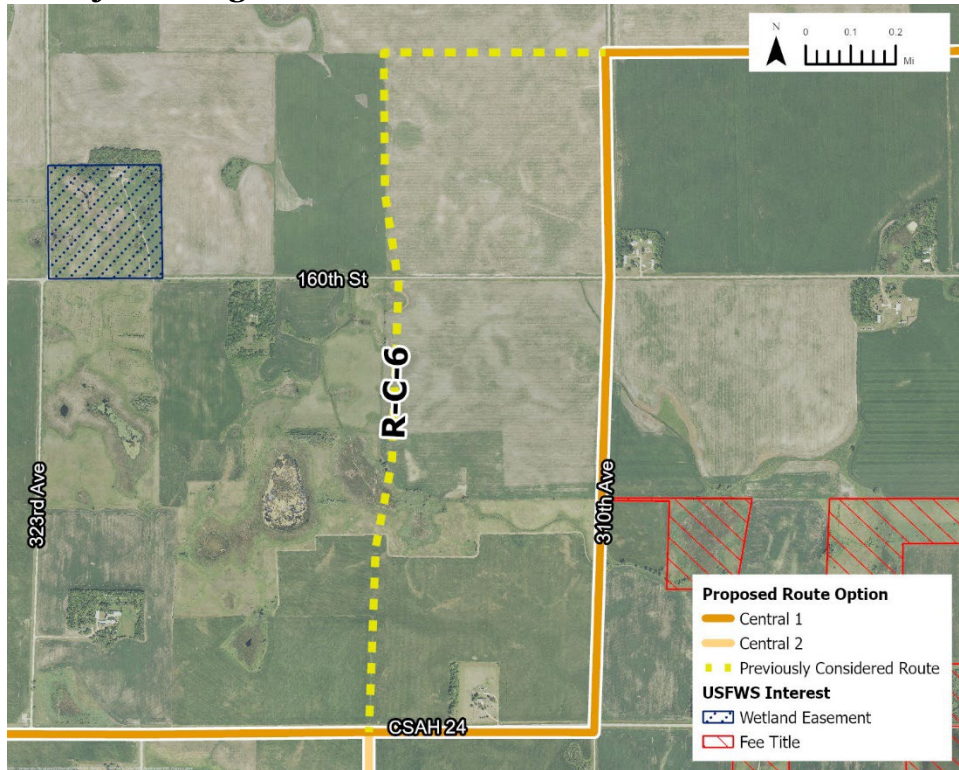


Rejected Segment Alternative R-C-6

During the routing process, MDNR requested a re-route of what was shown as an overlapping area in the Central Segment between Route Option Central 1 and Central 2 at the June 2024 public open house meetings to avoid an MDNR WMA.

The Applicants presented Segment Alternative R-C-6 as part of Route Option Central 1 and Route Option Central 2 (an area of overlap) during public open house meetings in June 2024. Subsequently, MDNR suggested an additional alternative to avoid an MDNR WMA. After reviewing the suggested alternative, the Applicants added modified Route Option Central 1 and Central 2 to include the suggested alternative, as presented in the Application and rejected Segment Alternative R-C-6 as it would avoid the MDNR WMA. However, it would impact two additional residences. For these reasons, Segment Alternative R-C-6 was removed from consideration and became a rejected alternative.

Figure 14 Rejected Segment Alternative R-C-6



Rejected Segment Alternative R-C-7

During the routing process, the Applicants reviewed an approximately 8.0-mile Segment Alternative requested by landowners. Segment Alternative R-C-7 would impact additional residences and result in multiple areas where the Project would be routed between two homes when compared to Route Option Central 1 or Route Option Central 2 and, therefore, was removed from consideration.

Figure 15 Rejected Segment Alternative R-C-7

