

Appendix Q

Previously Considered Routes

APPENDIX Q

Route Alternatives Considered and Rejected

Under Minn. R. 7850.3100, an applicant must identify rejected route alternatives in the Application with an explanation of the reasons for rejecting them. In addition to the proposed route alternatives described in Section 6 of the Application several other route alternatives were considered and evaluated during route development and refinement which were ultimately not proposed. This appendix provides information about those route alternatives. Refer to Section 6.0 of the Application for a general discussion of the routing process.

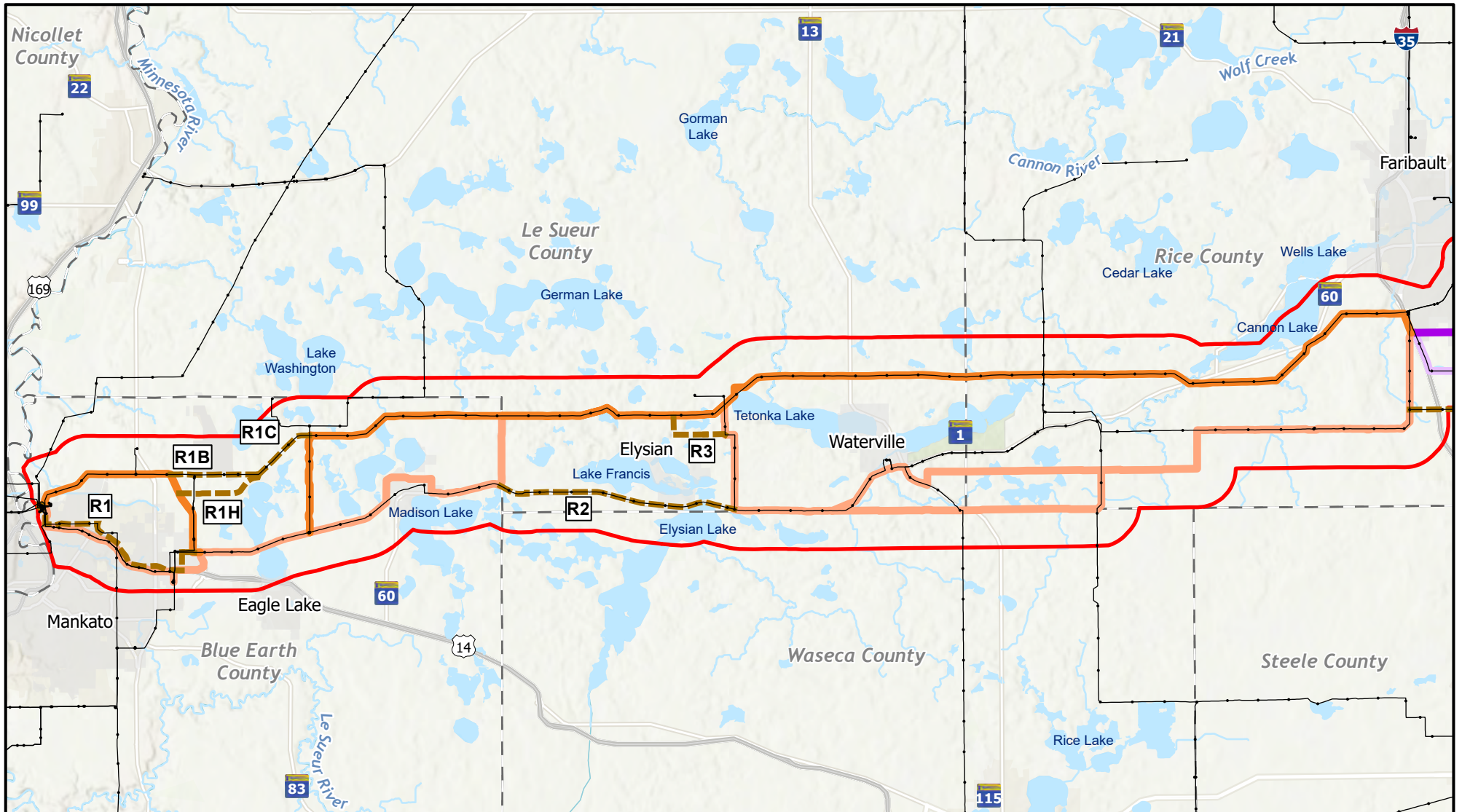
The Applicant identified and reviewed all route alternatives to characterize the important features of each and identify potential concerns for environmental and human resources associated with each route segment consistent with Minnesota's routing criteria. Evaluation of alternatives also considered constructability constraints and landowner and local government feedback. Route alternatives which were the least favorable based on the evaluation criteria, in comparison to other route segments, were removed from consideration in this Application. Information about considered but rejected route alternatives is included below, separated by Route Segment.

Segment 1

Four route alternatives were reviewed and subsequently rejected from consideration for Segment 1. Figure Q-1 shows the location of these route alternatives in relation to Segment 1 Route Options.

Segment	Rejected Route Alternative/Connector	Length (miles)
1	R1: US 14 Northern Alternative	2.57
1	R1b/R1c and R1h/R1c: Mankato Airport Alternatives	4.01/4.00
1	R2: Elysian Alternative	6.22
1	R3: Ridge Road Alternative	1.84

FIGURE Q-1 SEGMENT 1: PREVIOUSLY CONSIDERED ROUTES

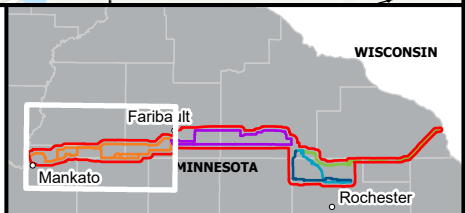
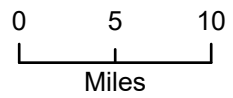


LEGEND

- Project Study Area Boundary
- Previously Considered Route
- County Boundary
- City Boundary
- Existing Transmission Line
- Proposed Route Option
- 1 North
- 1 South
- 2 North
- 2 South



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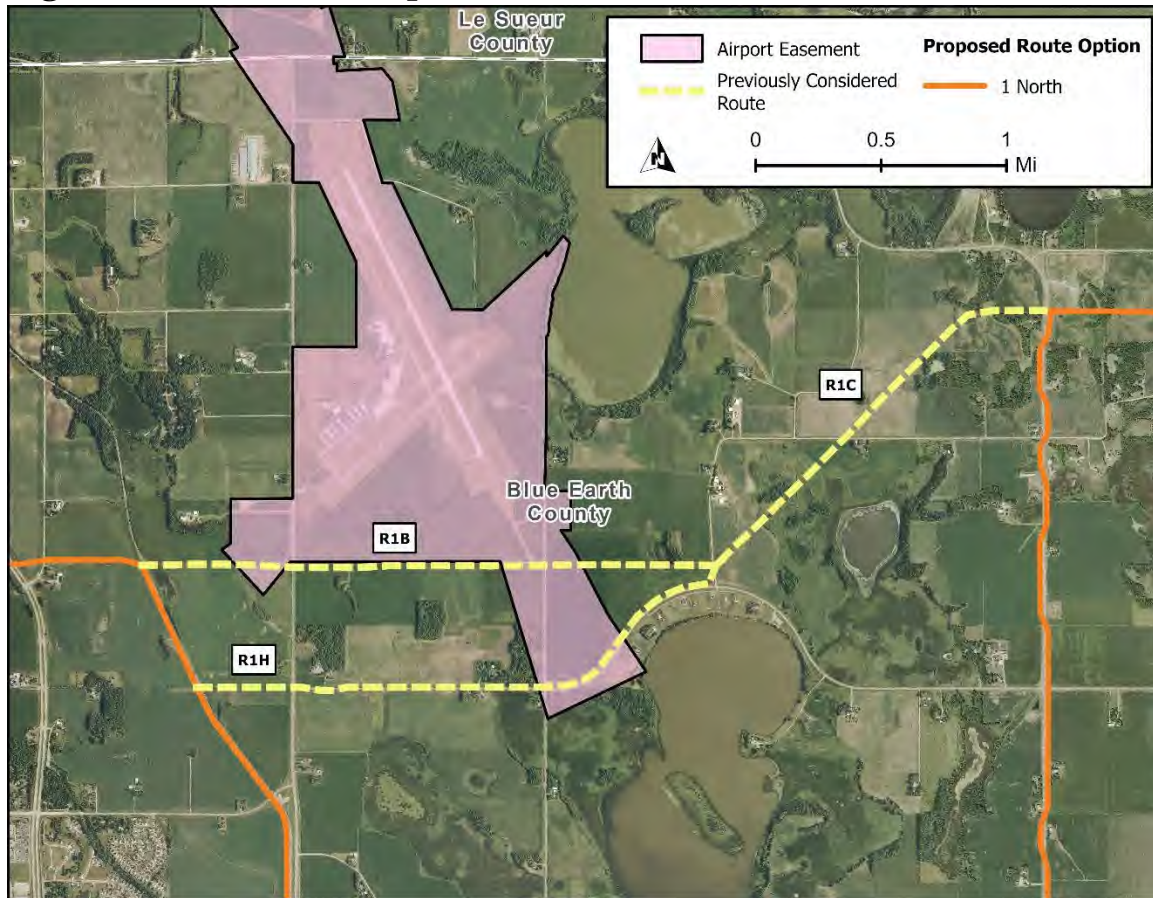
R1: US 14 Northern Alternative

During the routing process, Xcel Energy reviewed an approximately 2.6-mile route alternative that would have followed the north side of Highway 14 rather than paralleling the south side of the highway. This route would have been double-circuited with existing transmission lines for a smaller percentage of the route and would have brought the route closer to residences and businesses on the north side of Highway 14 where no existing transmission infrastructure currently exists. Xcel Energy also received feedback from MnDOT during the routing process that, because of the existing transmission line on the south side of the highway, a route on the north side of the highway would box MnDOT in if future work is needed on this roadway. For these reasons, the R1 alternative was removed from consideration.

R1b/R1c and R1h/R1c: Mankato Airport Alternatives

Xcel Energy initially evaluated two route alternatives for the new 345 kV line that would be located south of the Mankato Airport along Option 1 North. One route alternative, R1b/R1c, would have followed the existing 115 kV transmission line. Because that alignment would have necessitated placing a segment of the 345 kV underground due to Federal Aviation Administration (FAA) clearance requirements it was eliminated (see underground discussion in Application Section 5.2.4). A second route alternative, R1h/R1c, diverged from the 115 kV corridor and followed 230th Street to the east of the airport before rejoining the 115 kV corridor again. This alignment would have met the FAA clearance requirements for airport operations however Xcel Energy learned through discussions with the City of Mankato that an area extending from the main runway and continuing southeast as far as Eagle Lake (Figure Q-2) was encumbered by aviation easements, which prevent the construction of any structures above ground. City representatives confirmed that they would not amend any of these easements to allow for placement of the transmission line south of the airport, therefore those route alternatives are unbuildable, and were removed from consideration.

Figure Q-2 : Mankato Airport Alternatives



R2: Elysian Alternative

R2 is an approximately 6.2-mile alternative route segment for the 345 kV line. Although this alternative is significantly shorter (6.2 miles versus 10.7 miles) than the corresponding segment of Route Option 1 South, a site review determined that there was not adequate room for a new 150 foot transmission line right-of-way through the City of Elysian. Given the proximity of Lake Francis to the north and Lake Elysian to the south meant that there were no route alternatives to bypass the more densely developed part of the City of Elysian without going all the way around one of the lakes. The proposed Route Option 1 South does this by following existing roads and transmission lines to route around Lake Francis as well as two smaller lakes, Round Lake and Rays Lake, before returning to the existing corridor east of the City of Elysian. Because there was an option to route around the City of Elysian and the lakes, Alternative R2 was removed from consideration and is not being put forward by Xcel Energy in this Application.

R3: Ridge Road Alternative

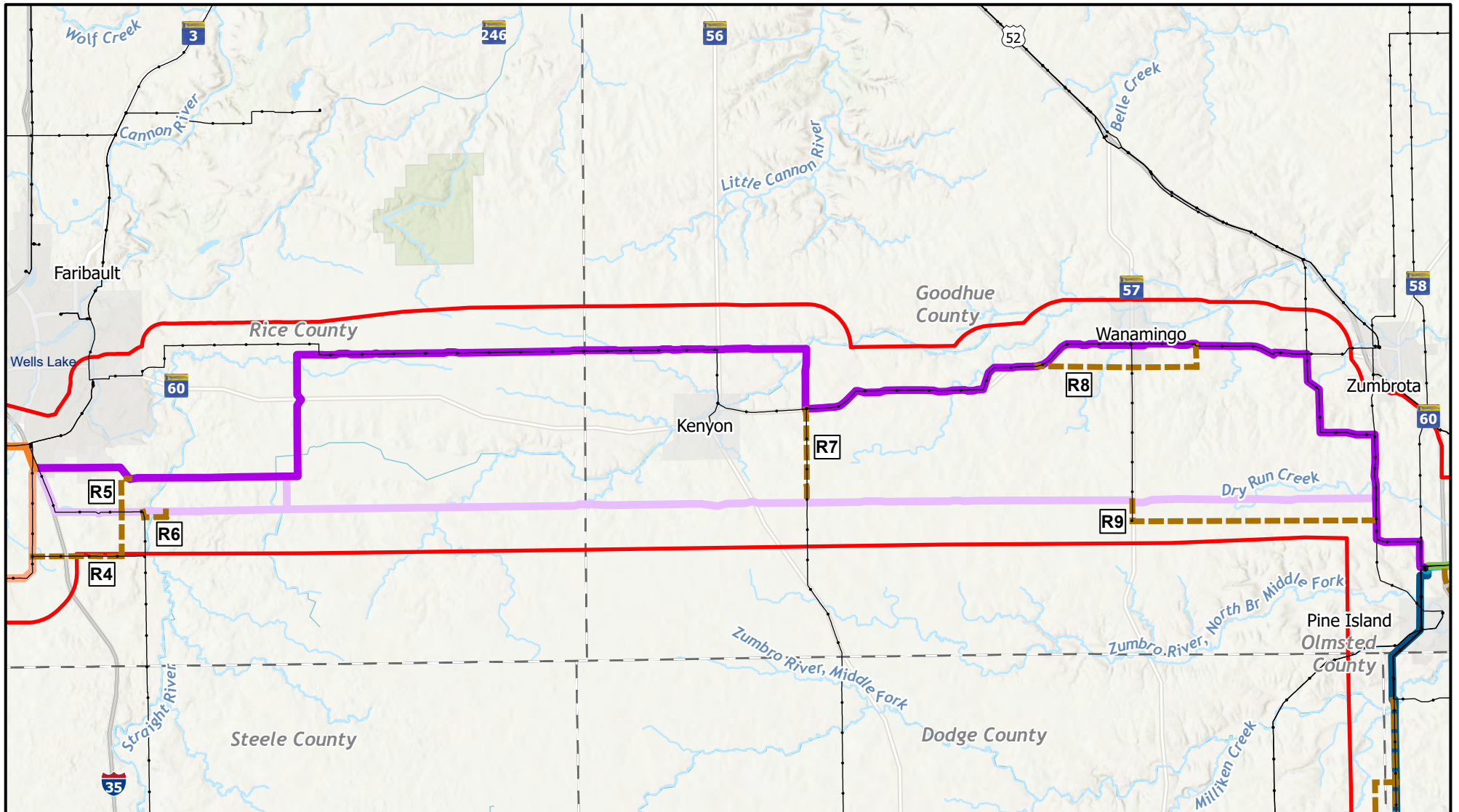
R3 is an approximately 1.8-mile route alternative that wraps around the southern side of Fish Lake. This alternative was evaluated as an alternative to the portions of Route Option 1 South where it bypasses the City of Elysian by way of subsegments 1E and 1K. The alternative would have required new transmission line right-of-way for the full 1.8 miles (1.3 miles cross country and 0.5 miles parallel to Ridge Road), whereas the corresponding portion of the Proposed Route would be double-circuited with existing transmission lines. This alternative was initially considered because there were residences relatively close to 193rd Avenue, however it was determined that the proposed alignment could be shifted in order to avoid direct impacts to those homes so R3 was removed from consideration.

Segment 2

Four route alternatives and two connector segments were reviewed and subsequently rejected from consideration for Segment 2. The location of these route alternatives and connector segments is depicted on Figure Q-3. Information on these six routes are presented in the following sections.

Segment	Rejected Route Alternative/Connector	Length (miles)
2	R4: 245 th Street E Alternative	3.02
2	R5: Glynview Trail Connector	0.94
2	R6: Straight River Golf Course	0.74
2	R7: 50 th Avenue Connector	2.12
2	R8: Wanamingo South Alternative	4.08
2	R9: 490 th Street Alternative	5.97

FIGURE Q-3 SEGMENT 2: PREVIOUSLY CONSIDERED ROUTES

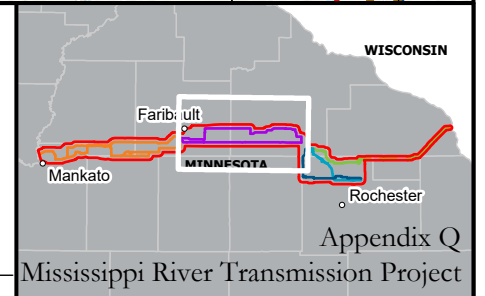
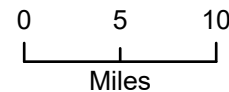


LEGEND

- Project Study Area Boundary
- Previously Considered Route
- County Boundary
- City Boundary
- Existing Transmission Line
- Proposed Route Option
- 1 North
- 1 South
- 2 North
- 2 South
- 3
- 4 East
- 4 West



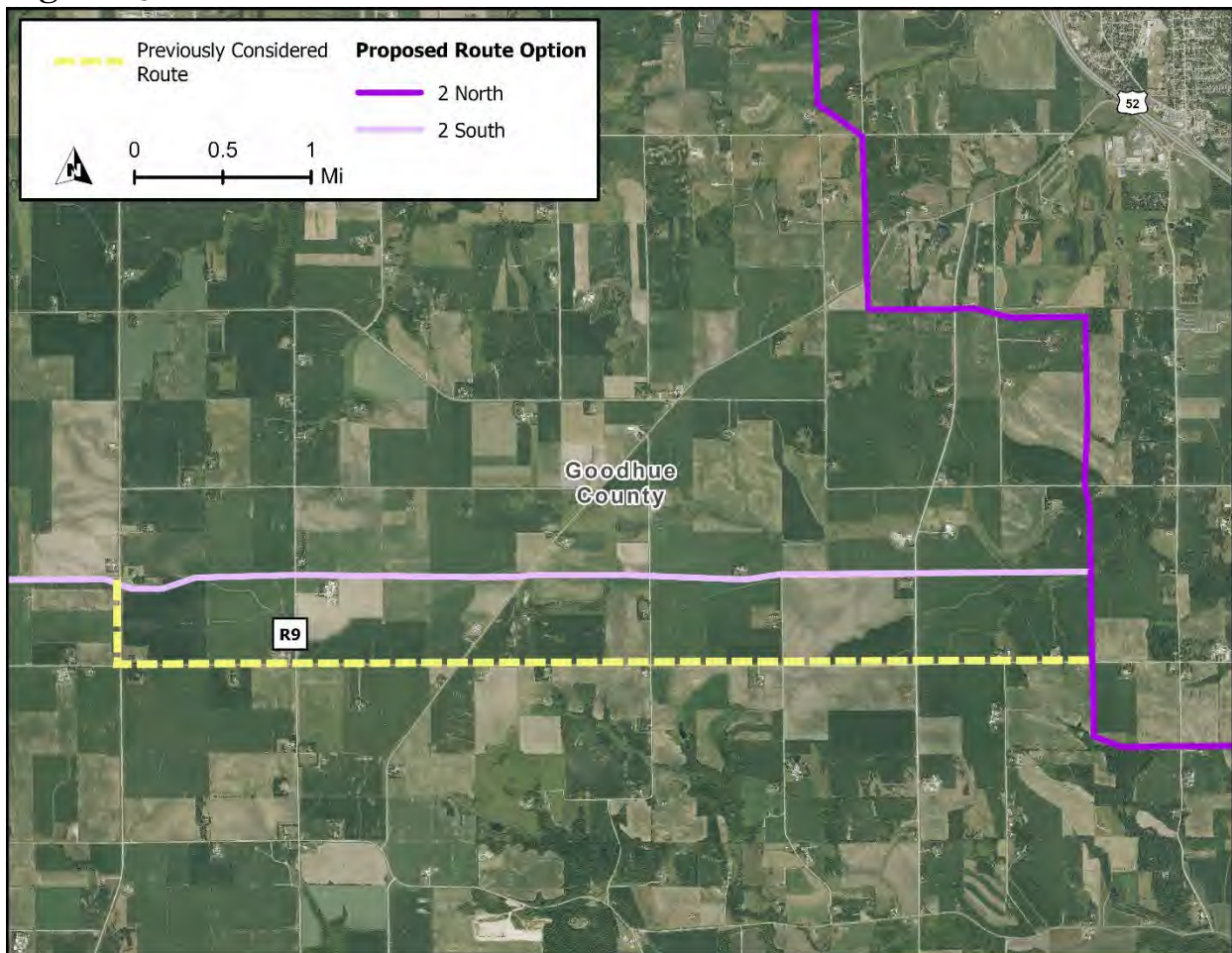
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R9: 490th Street Alternative

R9 is an approximately 6.0-mile alternative in Goodhue County primarily paralleling 490th Street. The alternative diverges from proposed Route Option 2 South at Highway 57. This alternative was suggested by a landowner located adjacent to proposed Route Option 2 South. The landowner specifically noted a concern about visual impacts that would be created by the proposed Route Option 2 South. While R9 would follow roads rather than property lines, there are nine residences within 300 feet of the alternative compared with zero residences along the corresponding portion of Route Option 2 South. For this reason, the R9 Alternative was removed from consideration by Xcel Energy.

Figure Q-4: 490th Street Alternative Overview



R4: 245th Street E Alternative

R4 is an approximately 3.0-mile alternative south of the City of Faribault which would connect Route Option 1 South to Route Option 2 South. This alternative was considered because there is an existing transmission line located along the east/west

portion, providing a potential opportunity to double-circuit the proposed 345 kV line with this existing line. The corresponding portions of Route Option 1 South and 2 South are also proposed to be double-circuited with existing transmission lines and did not pose any significant constraints. This alternative would be significantly further away from the West Faribault Substation and was determined to not meet the need of the Project as Xcel Energy determined that a 345 kV connection into that substation may be needed in the future.

R5: Glynview Trail Connector

This connector is a continuation of alternative R4 above, and together R4 and R5 would connect Route Option 1 South to Route Option 2 North. This connector was eliminated because alternative R4 was eliminated.

R6: Straight River Golf Course Alternative

R6 is a short segment which was considered as an alternative to a direct crossing the Straight River Golf Course. This alternative generally follows the parcel boundary on the south side of the golf course and a private residential property. It is slightly longer (0.7 mile versus 0.5 mile) than the corresponding portion of Route Option 2 South and would have placed the new transmission line closer to the residence at the southeast corner of the golf course. For these reasons, the R6 alternative was removed from consideration.

R7: 50th Avenue Connector

The alternative parallels 50th Avenue and could be double-circuited with an existing transmission line for its entire length, crossing primarily agricultural land adjacent to the road corridor. The connector includes multiple crossings of 50th Avenue to bring the route further from residences. Although this provided variability to the route options, it was eliminated because it was not determined to be a necessary connector. Switching from Route Option 2 North to Route Option 2 South at this point would reduce the amount of the route that would be double-circuited with existing transmission lines. Switching from Route Option 2 South to Route Option 2 North would increase the amount of the route that would be double-circuited with existing transmission lines, it would also add more than 6 miles to the total route length, thereby increasing overall impacts and cost.

R8: Wanamingo South Alternative

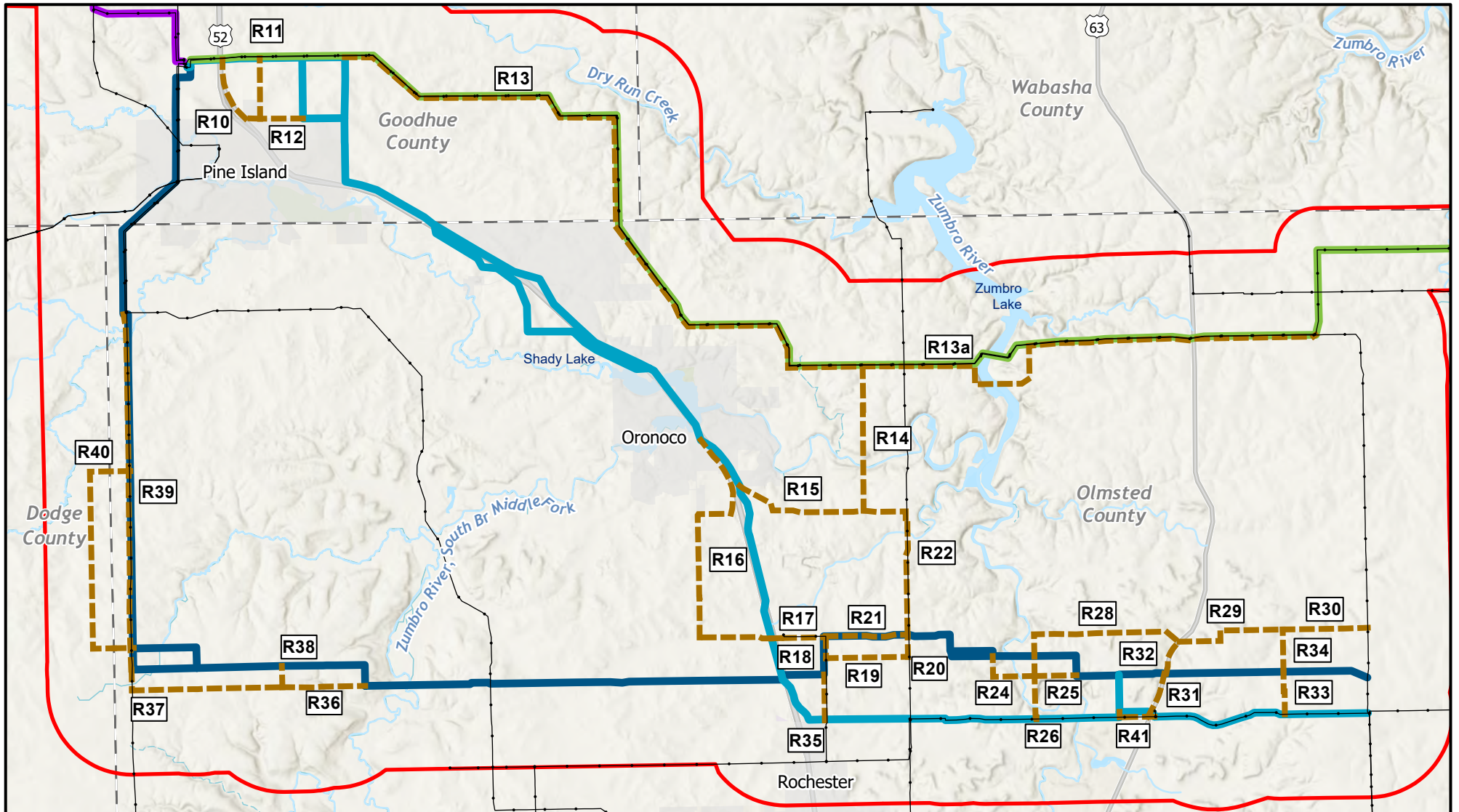
R8 is an approximately 4.1-mile alternative developed to the proposed portion of Route Option 2 North that runs through the City of Wanamingo. The alternative crosses primarily agricultural and forested land along a combination of roads and property lines. The alternative would not be double-circuited with existing transmission lines whereas the corresponding portion of the Route Option 2 North would. While the alternative would avoid more densely developed lands in the City Wanamingo, it would instead be closer to residences near Shingle Creek and on either side of Highway 57. Representatives from the City of Wanamingo attended a public open house for the Project and requested that the proposed line remain along Highway 60 where it would be double-circuited with the existing 69 kV line. For these reasons, the R8 alternative was removed from consideration and is not being put forth as part of the proposed Project.

Segment 4

Due to the number and variety of constraints located within the study area around Segment 4 (the 161 kV line) this segment contains the largest number of alternative segments that were considered. The location of these route alternatives and connector segments in relation to the Segment 4 Route Options is depicted on Figure Q-5 Alternatives were removed when there were less impactful, viable route alternatives available. Rather than describe every alternative or connector that was excluded from the final Proposed Routes, the descriptions below focus on those alternatives that were proposed by landowners or local governments in the area around Segment 4.

Segment	Rejected Route Alternative/Connector	Length (miles)
4	R10/R12: US Route 52 Alternative	1.46
4	R11/R12: 195 th Ave Alternative	1.23
4	R13/R13a: Hampton to La Crosse Parallel Alternative	14.76
4	R13/R14/R22: Oronoco East Alternative	12.44
4	R24/R25: Quarry Alternative	1.24
4	R39: Western Parallel Alternative	4.22
4	R40: 280 th Ave Western Alternative	3.06

FIGURE Q-5 SEGMENT 4: PREVIOUSLY CONSIDERED ROUTES

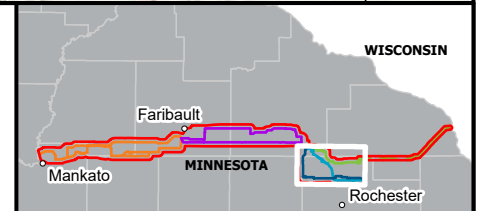
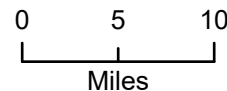


LEGEND

- ▭ Project Study Area Boundary
- ▭ Previously Considered Route
- County Boundary
- City Boundary
- Existing Transmission Line
- ▭ Proposed Route Option 2 North
- ▭ Proposed Route Option 3
- ▭ Proposed Route Option 4 East
- ▭ Proposed Route Option 4 West



MANKATO-MISSISSIPPI RIVER TRANSMISSION PROJECT



Appendix Q

Mankato – Mississippi River Transmission Project
Certificate of Need and Route Permit Application

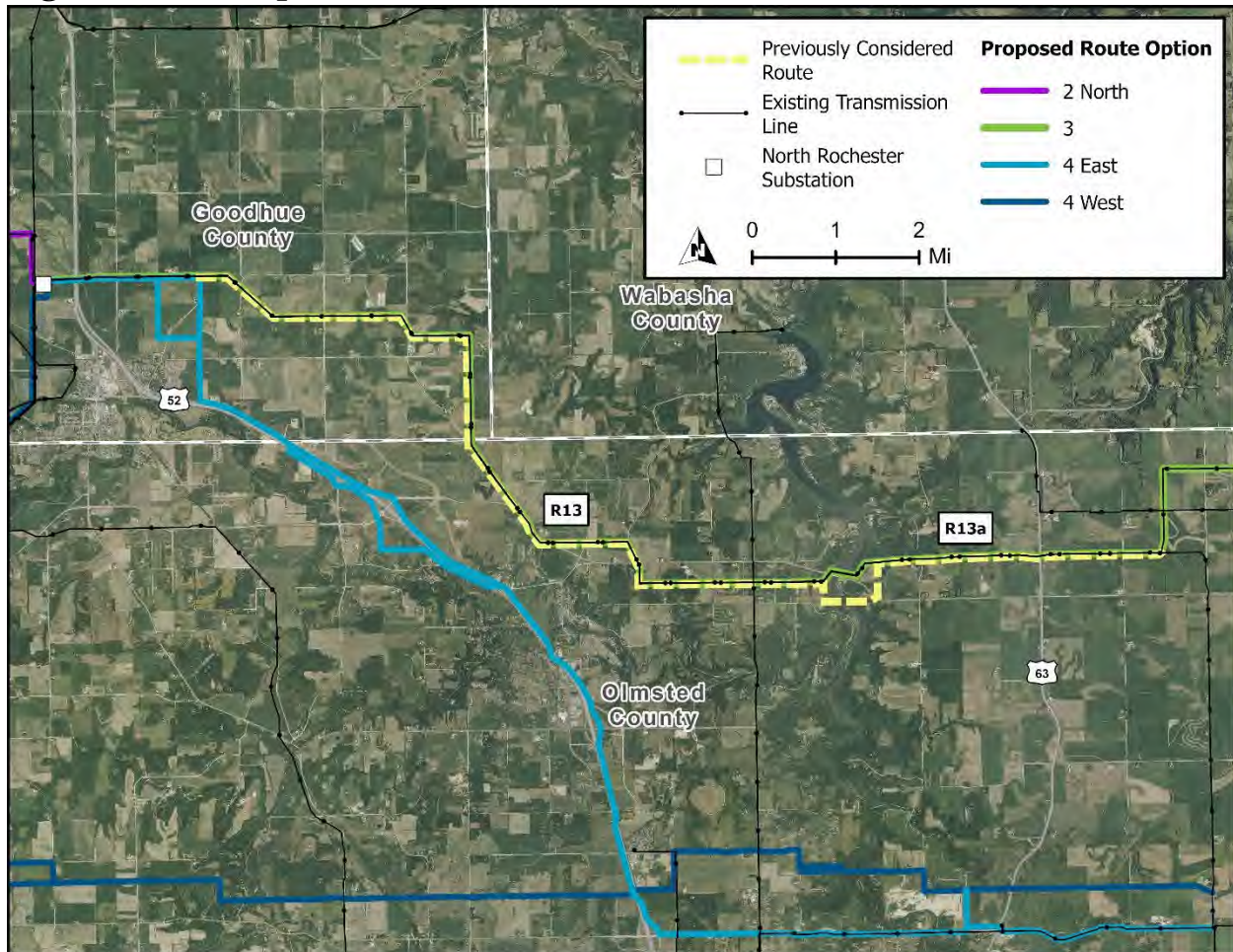
R10/R12: US Route 52 and R11/R12: 195th Avenue Alternatives

R10/R12 is an approximately 1.5-mile alternative which parallels Highway 52 and property lines, crossing primarily agricultural land. R11/R12 would follow 195th Avenue rather than Highway 52. During public open houses a landowner who would be visually impacted by either of these routes, and would also be impacted by the corresponding alternatives, asked that those routes be removed. Because there were acceptable viable options to the east (4B and 4C) these route alternatives were removed from consideration.

R13/R13a: Hampton to La Crosse Parallel Alternative

During early stages of the routing process, the Applicant evaluated an approximately 14.8-mile alternative that would have involved construction of the 161 kV line parallel and adjacent to the CapX Hampton to La Crosse 345 kV line, which is also Segment 3 of this Project. This would have involved construction the 161 parallel to and offset from the existing 345/345 kV double-circuit line. The primary concern with this alignment was that there was inadequate room to construct this line at the Zumbro River crossing where the existing line crosses from the top of bluffs on the east and west banks. This alternative also included the greatest amount of new transmission right-of-way on lands already occupied by transmission line right-of-way, and included some locations where the parallel line would have been within 150 feet of existing homes. Because of these reasons, the alternative was not included as part of the Proposed Routes. In January and February 2024, the Applicant received resolutions from three townships and one city in Olmsted County (see Appendix M) requesting that this alternative be included in the application. Figure Q-6 shows this parallel alternative, which includes a possible alternative Zumbro River crossing location, which would be necessary due to the terrain where the existing Hampton to La Crosse crosses the river.

Figure Q-6: Hampton to La Crosse Parallel Alternative Overview



R13/R14/R22: Oronoco East Alternative

During the early stages of the routing process, the Applicant identified an alternative that would have followed portions of Route Option 4 West or 4 East to cross to the west side of the Zumbro River before traveling north along existing local roads and then crossing the middle fork of the Zumbro River at a point north of County Road 112 then reaching and paralleling the alignment for the existing CapX Hampton – La Crosse 345 kV line/Segment 3 second 345 kV circuit back to the North Rochester Substation. This route alternative was eliminated due to a variety of reasons including, proximity to homes, necessity of creating a new greenfield corridor across the Middle Fork Zumbro River, and the availability of other viable alternatives which were more consistent with overall routing criteria.

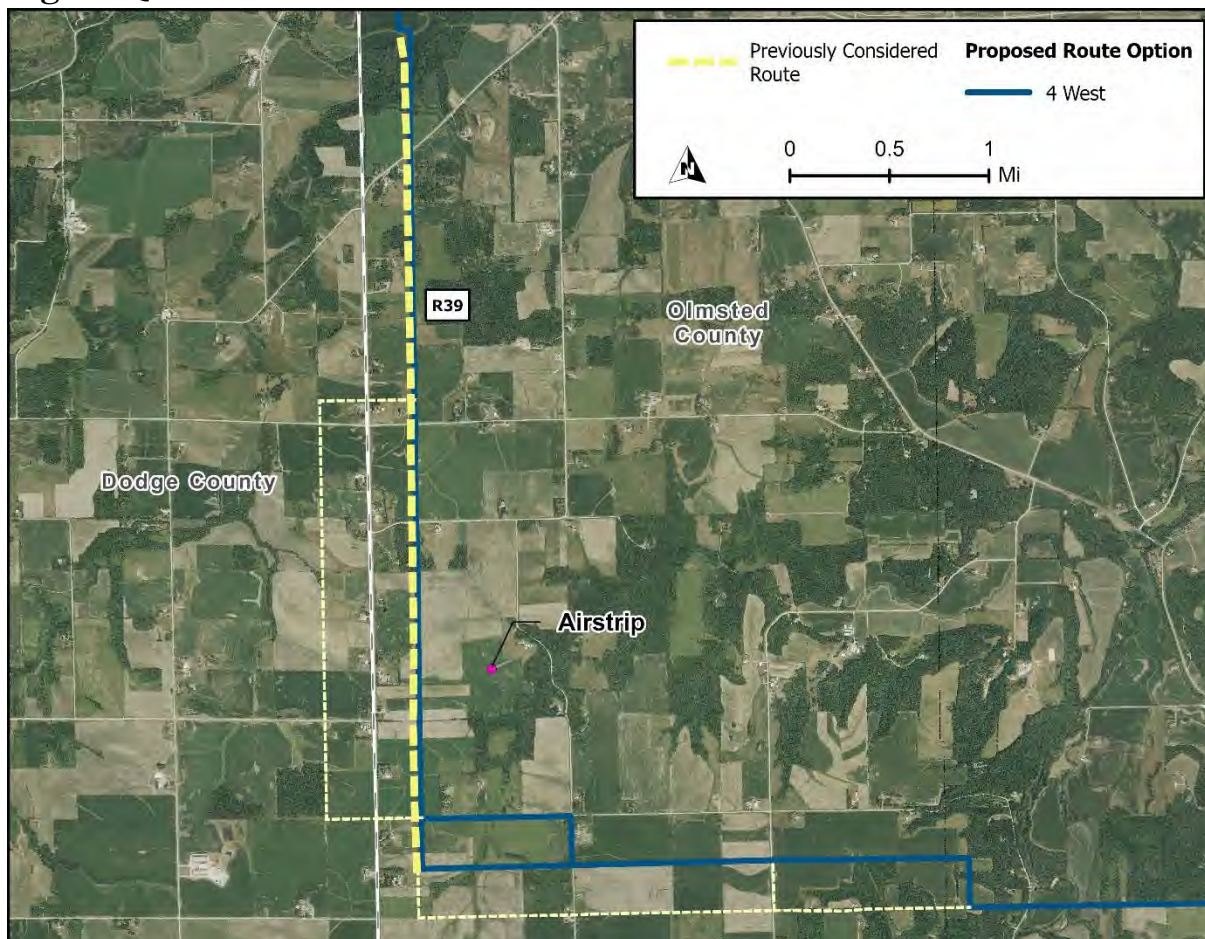
R24/R25: Quarry Alternative

R24/R25 is an approximately 1.2-mile alternative in Oronoco Township. It is about the same length as the corresponding portion of Route Option 4 West. The alternative crosses the northern edge of the quarry for about 0.5 mile in close proximity to active quarry operations. The alternative also crosses the Rochester Archery Club, including multiple crossings of the archery course trail. During public open houses Xcel Energy learned that the quarry owners had plans to expand mining operations into a parcel located north of this alternative. Subsequent communications with the owners confirmed these plans. For these reasons, this alternative was replaced by the current Proposed Route which is north of this rejected route option.

R39: Western Parallel Alternative

An approximately 4.2-mile alternative in Olmsted County was proposed by a landowner (see Appendix N) to move Route Option 4 West further from a private airstrip by shifting the 161 kV line to the west side of the existing 345 kV line and is about the same length as the corresponding portions of Route Option 4 West. While the alternative would increase the distance from the airstrip, there are three residences on the west side of the existing 345 kV transmission line that would be impacted by placement of the 161 kV line on that side. Project engineers determined that they can design the structures to be slightly lower than the existing 345 kV line at that location, thus keeping the same departure plane as is currently present. For these reasons, the R36/R37/R39 alternative was removed from consideration and is not being put forth by Xcel Energy as part of the Proposed Routes for the proposed Project.

Figure Q-7: Western Parallel Alternative Overview



R40: 280th Avenue Western Alternative

R40 is an approximately 3.1-mile alternative that was proposed by a landowner to move Route Option 4 West further from a private airstrip. The alternative is located primarily on agricultural land and does not follow roads or existing transmission line right-of-way. Alternative R40 is longer (3.1 versus 2.1 miles) than as the corresponding portion of Route Option 4 West and would require two additional crossings of the existing 345 kV transmission line. After being notified about the concern, the Project team met with the landowner to discuss options to minimize potential impacts to the flight path. The engineers determined that the portion of proposed Route 4 West located in line with the airstrip can be constructed to be just lower than the existing 345 kV keeping the current plane of takeoff and return consistent with current conditions. For these reasons, the R40 alternative was removed from consideration and is not being put forth as part of Proposed Routes for the proposed Project.

Figure Q-8: 280th Ave Western Alternative Overview

