STATE OF MINNESOTA
BEFORE THE
PUBLIC UTILITIES COMMISSION

Katie Sieben	Chair
Hwikwon Ham	Commissioner
Audrey Partridge	Commissioner
Joseph Sullivan	Commissioner
John Tuma	Commissioner

OAH Docket No. 23-2500-39782
MPUC Docket No. TL-22-132

IN THE MATTER OF THE ROUTE PERMIT APPLICATION FOR THE MINNESOTA ENERGY CONNECTION PROJECT IN SHERBURNE, STEARNS, KANDIYOHI, WRIGHT, MEEKER, CHIPPEWA, YELLOW MEDICINE, RENVILLE, REDWOOD, AND LYON COUNTIES IN MINNESOTA

INITIAL COMMENTS

INTRODUCTION

Northern States Power Company, doing business as Xcel Energy (Xcel Energy, the Company, or the Applicant) submits these Initial Comments in response to the March 14, 2025, Notice of Comment Period (Notice) issued by the Minnesota Public Utilities Commission (Commission) regarding the proposed Minnesota Energy Connection Project (or, Project). The Notice requests information regarding reconfiguring existing transmission lines in the vicinity of Xcel Energy's Preferred Route near Franklin, Minnesota. The Notice directed Xcel Energy to "provide a careful technical feasibility, reliability, and cost review" of four options identified in the Notice.[1]

[1] Notice of Comment Period (March 14, 2025) (eDocket No. 20253-216406-01).

As a general matter, Xcel Energy understands the value that co-locating transmission infrastructure can have in reducing landowner impacts. However, because this Project is a 180-mile generation-tie line that will carry up to 2,000 megawatts of power, co-location is not appropriate because such design creates increased reliability risks and maintenance complexities that would result in outages of the Project. For what will be the largest single contingency line on the Midcontinent Independent System Operator, Inc. (MISO) system, Xcel Energy believes that the co-locations described in the Notice should be avoided.

With respect to the four options in the Notice (Options), Xcel Energy opposes their adoption due to the reliability and maintenance concerns and for several additional site-specific reasons, as detailed by Option below:

- *All Options* – Increased costs.
- *Options 1, 2, and 4* – Conservation easement and solar garden constraints on each side of Highway 19.
- *Options 1, 2, and 4* – The need to relocate interconnections for existing solar gardens.
- *Option 3* – Conservation easement constraints.
- *Option 4* – Crossing of land requiring federal permitting and approval.
- *Potentially Options 1 and 2* – Bisection of the proposed Birch Coulee Solar Project.

The Notice also sought comments on co-location at the Minnesota River. Here too, Xcel Energy recommends that the Project follow the Preferred Route and not be combined with the existing Great River Energy 69 kilovolt (kV) line at the Minnesota River. In addition to the other issues related to triple-circuiting described in these Initial Comments, triple-circuiting at the Minnesota River crossing would require taller structures and larger foundations. Further, as discussed in Section VI, Xcel Energy proposes a vertical configuration for the Preferred Route at this crossing because of, among other things, the increased right-of-way and vegetation clearing requirements associated with a horizontal crossing.

In Section I of these Initial Comments, Xcel Energy provides analysis generally applicable to each Option identified in the Notice. Sections II through V discuss each Option individually, and Section VI discusses the Project's configuration at the Minnesota River crossing. The analysis in these Initial Comments reflects the best information available to Xcel Energy at this time within the limited time provided by the Notice. These Initial Comments also reflect correspondence with the Minnesota Department of Transportation (MnDOT) and Great River Energy (the owner of one of the 69-kV lines identified in the Notice). However, Xcel Energy notes that the analysis is nonetheless preliminary because design and engineering has not been conducted for the Options.

DISCUSSION

I. TRIPLE-CIRCUITING WITH TWO 345-KV LINES & A LOWER VOLTAGE LINE.

A. Feasibility & Reliability.

As directed by the Notice, Xcel Energy reviewed Options 1-4 for feasibility and reliability issues and, in this section, summarizes both the operational and construction issues that would be relevant to all Options.

With respect to operations, as described in the Certificate of Need Application, although triple-circuiting for short sections may be technically feasible, there are operational concerns.[2] First, triple-circuit structures require atypical maintenance techniques which present increased safety concerns.[3] Triple-circuit structures may require more specialized equipment and maintenance practices, particularly if triple-circuiting is done on a discrete section of a larger line.

Second, the Project will be a radial line supporting the interconnection of more than 2,000 megawatts. As such, it will be the largest single contingency on the MISO system. When multiple circuits are placed on common structures, for worker safety reasons, typically all circuits must be deenergized for the maintenance timeframe, even if the maintenance is on only one circuit; the outages must also be coordinated with MISO. For triple-circuit structures, multiple line outages would need to be coordinated

[2] Revised Certificate of Need (CN) Application at 73 (May 18, 2023) (eDocket No. 20235-195956-02) (CN Application).

[3] CN Application at 74.

with MISO. Here, Xcel Energy designed the Project to avoid outages; as such, Xcel Energy is not proposing to locate the Project's circuits on common towers with other lines, and Xcel Energy has designed the Project to minimize line crossings.[4] Although avoiding outages is important on any line, avoiding outages is particularly critical for this Project for the reasons described here.

With respect to construction, based on the information available to Xcel Energy, conducting the work described in the Notice is technically feasible. As discussed further in these Initial Comments, the Options contemplate removing and rebuilding existing load-serving lines, including distribution lines that serve load and interconnect existing solar gardens. However, removing and rebuilding lines will require outages on existing lines, which would need to be coordinated to avoid interruptions in service.

B. Design Considerations.

The Notice requested that Xcel Energy discuss design changes that would be necessary to accommodate triple-circuiting in the identified areas. In these Initial Comments, Xcel Energy describes the design that would generally be required for triple-circuiting; however, because detailed engineering has not been completed for such designs, site-specific conditions could require further changes. For example, terrain features, topography, and soil conditions could warrant taller structures and or

[4] Direct Testimony of Jason Standing at 7:19–21 (Sept. 6, 2024) (eDocket No. 20249-210020-04); Xcel Energy Comments on Draft Environmental Impact Statement at 6–7 (Nov. 25, 2024) (eDocket No. 202411-212383-01).

larger foundations. Further, the specific location of any alignment along Highway 19 is uncertain and would be based on MnDOT permitting requirements and require modifying existing conservation easements.

In general, a triple-circuit that includes two 345-kVs and a lower voltage line would require a 150-foot right-of-way, the same right-of-way proposed for the Project. Structures associated with this design would need to be approximately 30 feet taller than the structures proposed for the Project (or, approximately up to 190 feet). Foundations associated with the taller structures would be approximately 20 percent larger due to taller/heavier structures.

Xcel Energy does not anticipate that triple-circuit structures would exceed 200 feet in height, which the Federal Aviation Administration would require to be marked or lit. Additional analysis would be required to confirm structure heights.

Further, if the Minnesota River valley is crossed with triple-circuit structures, soil conditions may require larger foundations and/or present challenges related to foundation design, including greater foundation reveal for structures in the surrounding floodplain.

C. Cost.

Triple-circuiting and the other actions described in the Notice would increase Project costs. Given the short response timeframe and lack of detailed designs for the facility change concepts described in the Notice, Xcel Energy does not have a detailed cost-estimate for that work. However, based on initial review, Xcel Energy estimates

that the work described in the Notice would increase Project costs in the range of 25 to 35 percent, as compared to the corresponding sections of the Preferred Route as proposed. Cost increases would be due to a variety of factors, including: the need to remove and rebuild existing facilities, larger structures, larger foundations, and a longer construction timeframe.

Using another metric, the work described in the Notice could be anticipated to cost an additional approximately $1.5 to $1.7 million per mile. Based on the cost estimate provided in the Surrebuttal Testimony of Joseph Samuel,[5] this would equate to approximately $5.9 to $6.1 million per mile, compared to $4.4 million per mile for the corresponding portions of the Preferred Route.

In addition to the per-mile cost increase for the Preferred Route, the removal, reconfiguration, and rebuilding of other lower voltage lines would also result in additional costs. At a high level, based on recent experience, removing a 69-kV or 115-kV line would cost approximately $200,000 per mile, and rebuilding and co-locating those two lines would cost approximately $2 million per mile, not taking into account site-specific conditions. These cost estimates do not include costs associated with relocating existing distribution lines because specific locations for lines that would need to be relocated have not been identified.

[5] Surrebuttal Testimony of Joseph Samuel (Oct. 22, 2024) (eDocket No. 202410-211225-03).

D. Schedule

Options 1-4 would likely extend the construction duration for the Project in this area. At a high level, construction could be extended approximately six weeks in this area due to the longer timeframe needed to pour foundations, set structures, and pull wire, among other things.

Further, as discussed in more detail in the sections below, certain Options present additional schedule risk because of potential impacts on conservation easements and the need to coordinate outages on existing load-serving distribution lines.

II. OPTION 1.

The Notice describes Option 1 as:

> Remove the section of the existing 69 kV line (69 Line B, Green Dash) that runs along State Highway 19 (Hwy 19) and co-locate on the same structures with the existing 69 kV line (69 Line C, Magenta Dash) for the section that runs north along County Road 5 (CR 5). At the intersection of CR5 and 660th Avenue, 69 Line B would be co-located on the same structures with existing 69 kV Line (69 Line A, Orange Dash) along 660th Avenue to the point where Alternative 220 begins. At this point 69 Line B would depart from 69 Line A and would become a single-circuit and utilize either (1) Alternative Route 220, or (2) would follow the not used portion of the Xcel Energy Preferred Blue Route (Blue Route) along 660th Avenue and turn south. Where both options meet with the Blue Route, 69 Line B would be triple-circuited with the new double-circuit 345 kV from that point and proceed to cross the Minnesota River and follow the southern portion of the Franklin Alternative (discussed below in Option 4). In this case, the Blue Route would use either (1) Alternative 215 or (2) would run south along CR 5 and connect with Alternative 215 with an alignment that runs south of Hwy 19.

The figure included in **Attachment 1** depicts the existing conditions in Options 1 and 2; **Attachment 1-A** depicts Option 1 as proposed in the Notice.

Before providing its analysis of Option 1, Xcel Energy first provides some clarifications and additions regarding the facilities shown on Attachments 1 and 1-A:

- Line A (orange dash) is an Xcel Energy-owned 115-kV line.
- Line B (green dash) is a 69-kV line owned by Great River Energy.
    - We further clarify that Line B is not a single-circuit 69 kV line; it is double-circuited with an Xcel Energy distribution circuit. This distribution circuit interconnects three solar gardens along Highway 19; it is also a radial feed for the City of Morton.
- Line C (magenta dash) is an Xcel Energy-owned 69 kV line.
- Where Line B and Line C are parallel, they are triple-circuited with the Xcel Energy distribution line.
- The parcel immediately to the west of the Franklin Substation is part of the proposed Birch Coulee Solar Project.

Xcel Energy addresses the individual components of Option 1, in turn, below:

- Option 1 component: Remove the section of the existing 69 kV line (69 Line B, Green Dash) that runs along State Highway 19 (Hwy 19) and co-locate on the same structures with the existing 69 kV line (69 Line C, Magenta Dash) for the section that runs north along County Road 5 (CR 5).
    - Xcel Energy analysis: Line B is owned by Great River Energy and is currently double-circuited with Xcel Energy distribution, as described above. Where Line B and Line C exit the Franklin Substation, they are currently triple-circuited with the distribution. If Line B were to follow Line C north along CR 5, the existing distribution would also likely need to be moved, and the lines would be triple-circuited for approximately 0.85 miles.
- Option 1 component: At the intersection of CR 5 and 660th Avenue, 69 Line B would be co-located on the same structures with existing 69 kV Line (69 Line A, Orange Dash) along 660th Avenue to the point where Alternative 220 begins.

- Xcel Energy analysis: Line A is a 115-kV line owned by Xcel Energy. Line B is a Great River Energy-owned 69-kV line currently double-circuited with Xcel Energy distribution. If Line A and Line B were co-located, the lines would be triple-circuited with the distribution for approximately 1.5 miles. As noted above, the existing distribution is a radial feed to the City of Morton and also connects three solar gardens. If the distribution is moved, the solar garden interconnections would also need to be moved.

- Option 1 component: At this point 69 Line B would depart from 69 Line A and would become a single-circuit and utilize either (1) Alternative Route 220, or (2) would follow the not used portion of the Xcel Energy Preferred Blue Route (Blue Route) along 660th Avenue and turn south.

    - Xcel Energy analysis: Line B would likely be double-circuited with the existing Xcel Energy distribution.

- Option 1 component: Where both options meet with the Blue Route, 69 Line B would be triple-circuited with the new double-circuit 345 kV from that point and proceed to cross the Minnesota River and follow the southern portion of the Franklin Alternative (discussed below in Option 4).

    - Xcel Energy analysis: The existing distribution would need to be relocated if Line B were triple-circuited with the Project.

- Option 1 component: In this case, the Blue Route would use either (1) Alternative 215 or (2) would run south along CR 5 and connect with Alternative 215 with an alignment that runs south of Hwy 19.

    - Xcel Energy analysis: Alternative 215 would bisect the proposed Birch Coulee Solar Project. There are solar gardens and conservation easements along Hwy 19. To attempt to avoid these features, the Project would need to cross Hwy 19 multiple times; however, it does not appear that sufficient right-of-way for the Project exists between the northern conservation easement and the solar garden on the other side of Hwy 19 to the south and west. Under either option, the Project would be within the City of Franklin.

Based on the analysis above, Xcel Energy does not support Option 1. To date, Xcel Energy also has not identified a material reduction in human or environmental

impacts related to this Option and, in some ways, Option 1 increases impacts because of potential impacts to solar gardens and a solar farm, conservation easements, and the City of Franklin. Option 1 would increase Project costs and is likely to increase the duration of construction. It would also result in a Great River Energy 69-kV line being double-circuited with a 69-kV Xcel Energy line, then a 115-kV Xcel Energy line, and then triple-circuited with the Project. Having the Great River Energy 69 kV line co-located with three different circuits and two different voltages likely creates long-term safety concerns related to ongoing maintenance.

The Notice further directs Xcel Energy to provide a technical feasibility and cost analysis if the route is not triple-circuited and instead crosses the Minnesota River on separate structures, as proposed in the original Blue Route. The Blue Route's crossing of the Minnesota River is also the Preferred Route's crossing of that river. If the Project crosses the Minnesota River, as proposed, it would use the design described in Section 2.4 of the Route Permit Application, which would parallel the existing Great River Energy 69-kV line at this crossing.[6] That design is included in the updated cost estimates provided in the Surrebuttal Testimony of Joseph Samuel.[7] To the extent the Notice seeks analysis of a horizontal river crossing, that configuration is discussed in Section VI below.

[6] Route Permit (RP) Application at 13-14, 49, 85 (Oct. 30, 2023) (eDocket No. 202310-199981-02).

[7] Surrebuttal Testimony of Joseph Samuel (Oct. 22, 2024) (eDocket No. 202410-211225-03).

III. OPTION 2.

The Notice describes Option 2 as:

> Remove the section of the existing 69 Line B that runs along Hwy 19 and co-locate on the same structures with the existing 69 Line A from the substation area and that follows along 660th Avenue. At the point where Alternative 220 begins, 69 Line B would depart from 69 Line A and would become a single-circuit and utilize either (1) Alternative 220, or (2) would follow the not used portion of the Blue Route along 660th Avenue and turn south. Where both options meet with the Blue Route, 69 Line B would be triple-circuited with the new double-circuit 345 kV from that point and proceed to cross the Minnesota River and follow the southern portion of the Franklin Alternative (discussed below in Option 4). Similar to Option 1, the Blue Route would use either (1) Alternative 215 or (2) would run south along CR 5 and connect with Alternative 215 with an alignment that runs south of Hwy 19.

The figure included in **Attachment 1** depicts the existing conditions in Options 1 and 2; **Attachment 1-B** depicts Option 2 as proposed in the Notice. Because Option 2 is in the same area as Option 1, the existing conditions described in Section II also apply to Option 2. Likewise, many of the same issues described in Section II with implementing Option 1 would also apply to Option 2.

More specifically, like Option 1, Xcel Energy addresses each component of Option 2, in turn, below:

- Option 2 component: Remove the section of the existing 69 Line B that runs along Hwy 19 and co-locate on the same structures with the existing 69 Line A from the substation area and that follows along 660th Avenue.
    - Xcel Energy analysis: Line A is a 115-kV line owned by Xcel Energy. Line B is a Great River Energy-owned 69-kV line currently double-circuited with Xcel Energy distribution. If Line A and Line B were co-located starting at the Franklin Substation, the lines would be triple-circuited for approximately 2.25 miles. As noted in Section II, the existing distribution is a radial feed to the City of Morton and also connects three solar gardens. If the distribution is moved, the solar garden interconnections would likely need to be moved. Further, these lines would bisect the proposed Birch Coulee Solar Project.

- Option 2 component: At the point where Alternative 220 begins, 69 Line B would depart from 69 Line A and would become a single-circuit and utilize either (1) Alternative 220, or (2) would follow the not used portion of the Blue Route along 660th Avenue and turn south.

    - Xcel Energy analysis: Line B would likely be double-circuited with the existing Xcel Energy distribution.

- Option 2 component: Where both options meet with the Blue Route, 69 Line B would be triple-circuited with the new double-circuit 345 kV from that point and proceed to cross the Minnesota River and follow the southern portion of the Franklin Alternative (discussed below in Option 4).

    - Xcel Energy analysis: The existing distribution would need to be relocated if Line B is triple-circuited with the Project.

- Option 2 component: Similar to Option 1, the Blue Route would use either (1) Alternative 215 or (2) would run south along CR 5 and connect with Alternative 215 with an alignment that runs south of Hwy 19.

    - Xcel Energy analysis: Alternative 215 would bisect the proposed Birch Coulee Solar Project. There are solar gardens and conservation easements along Highway 19. To attempt to avoid these features, the Project would need to cross Highway 19 multiple times; however, it does not appear that sufficient right-of-way for the Project exists between the northern conservation easement and the solar garden on the other side of Highway 19 to the south and west. Under either option, the Project would be within the City of Franklin.

For the same reasons discussed with respect to Option 1, Xcel Energy also does not support Option 2.

IV. OPTION 3.

The Notice describes Option 3 as:

> A. The Blue Route would use Alternative 214 modified with the new Porter Avenue Alternative (Yellow Line). This option would require the existing 69 Line B to be relocated to the Porter Avenue Alternative and co-located with the new double-circuit 345 kV, but on separate structures.

> B. The Blue Route would use Alternative 214 modified with shifting the existing 69 Line B further west of Porter Avenue within the existing route width allowing the new 345 kV line to be co-located on different structures together to the west of Porter Avenue. This shift would occur south of the farm at the northern end of Porter Avenue and before the homesteaded residence on the east side of Porter Avenue. Understanding that this route would encroach closer on the non-homesteaded abandoned farm and the small outbuilding on the west side of Porter Avenue towards the south end of this alternative. Both of these options keep the new 345 kV line south and east of existing 69 Line B through this area eliminating the need for any crossovers.

The figure included in **Attachment 3** depicts the existing conditions in Option 3; **Attachment 3-A** depicts Option 3 as proposed in the Notice.

As an initial matter, in this area, Xcel Energy has incorporated Alignment Alternative 1 (AA1) into its Preferred Route.[8] Based on additional title review conducted by Xcel Energy, Xcel Energy supports the Department of Commerce, Energy Environmental Review and Analysis unit's recommendation to include AA1 because AA1 avoids conservation easements which would be crossed by the Preferred Route.

Option 3 would use Alternative 214. Xcel Energy does not support this alternative because it would require installation of transmission structures and foundations within a Board of Water and Soil Resources (BWSR) easement that restricts construction of structures. Thus, the affected portion of this alternative would likely require partial termination/alteration of the BWSR easement, a process with an uncertain schedule.

[8] *See* Xcel Energy Exceptions to Administrative Law Judge Report at 5 (Feb. 20, 2025) (eDocket No. 20252-215599-01).

In addition, co-locating the Project with the existing Great River Energy 69-kV line on separate structures would likely require placing structures farther into the field to provide adequate rights-of-way for each facility. Moreover, part of the alignment associated with Option 3 is outside of any route width studied in the Environmental Impact Statement.

For the reasons discussed in this section and in Section I, Xcel Energy does not support Option 3.

V. OPTION 4.

The Notice describes Option 4 as:

> Option 4 (Franklin Alternative) would include the co-location of the two newly proposed 345 kV lines with Xcel Energy's existing 69 kV line (69 Line B) on triple-circuit structures from approximately the intersection of County Road 5 and State Highway 19 following a portion of Route Alternative 215 and the Blue Route across the Minnesota River to where the Blue Route intersects with Porter Avenue. In addition, the portion of the existing 69 kV line along Alternative Route 214 would be relocated and triple-circuited with the newly proposed 345 kV lines.

The figure included in **Attachment 4** depicts the existing conditions in Option 4; **Attachment 4-A** depicts Option 4 as proposed in the Notice.

Xcel Energy provides its analysis of Option 4, by each component, below:

- Option 4 component: Option 4 (Franklin Alternative) would include the co-location of the two newly proposed 345 kV lines with Xcel Energy's existing 69 kV line (69 Line B) on triple-circuit structures from approximately the intersection of County Road 5 and State Highway 19 following a portion of Route Alternative 215 and the Blue Route across the Minnesota River to where the Blue Route intersects with Porter Avenue.
    - Xcel Energy analysis: As discussed previously, Line B is owned by Great River Energy and is currently double-circuited with Xcel Energy distribution. There are solar gardens and conservation easements along

Highway 19. To attempt to avoid these features, the Project would need to cross Highway 19 multiple times; however, it does not appear that sufficient right-of-way (less than 150 feet) for the Project exists between the northern conservation easement and the solar garden on the other side of Highway 19 to the south and west.

- Option 4 component: In addition, the portion of the existing 69 kV line along Alternative Route 214 would be relocated and triple-circuited with the newly proposed 345 kV lines.

    - Xcel Energy analysis: For the reasons previously discussed, Xcel Energy does not support Alternative 214. To the extent the existing Great River Energy 69-kV line was wrecked out, relocated, and triple-circuited with the Project along AA1, the configuration would be technically feasible but subject to the considerations in Section I above. This Option would lessen impacts on landowners on Alternative 214 because the existing line would be removed, but would marginally increase impacts on landowners on AA1 because Project structures would need to be taller and have wider foundations.

Option 4 includes a triple-circuit with the Project and the Great River Energy 69-kV line for the longest length (approximately 5.9 miles); this presents concerns because longer triple-circuits increase induction hazard risks. In addition, a portion of the existing 69-kV line crosses land subject to the Wetlands Reserve Program. Activity within these parcels would likely require federal permitting and environmental review, so Xcel Energy has currently designed the Preferred Route to avoid these parcels.[9] Revising the route to implicate federal permitting and environmental review presents significant uncertainty and schedule risk.

[9] A portion of the Preferred Route does cross BWSR easements in this location. As shown on Attachment 4-A, a crossing that avoids these easements is not readily available in this area, so Xcel Energy selected a crossing location that follows the existing line and minimizes easement crossings.

For these reasons, Xcel Energy does not support Option 4.

VI. CONFIGURATION AT MINNESOTA RIVER CROSSING.

Finally, the Notice requests that Xcel Energy describe whether design changes could be made "at the Minnesota River crossing to include H-frame structures that may provide a horizontal crossing plane."[10] Section A below describes configurations associated with a double-circuit facility; Section B describes a triple-circuit facility.

A. Double-Circuit.

Currently, Xcel Energy proposes a vertical crossing at the Minnesota River because, in Xcel Energy's view, this configuration minimizes impacts and is also preferable from an engineering, schedule, and cost perspective.[11] Before reaching this proposal, Xcel Energy analyzed both a vertical and horizontal configuration at the Minnesota River and, in these Initial Comments, compares the two configurations. Regardless of which configuration is used, the Preferred Route's crossing of the Minnesota River is parallel to an existing 69-kV line.

A vertical configuration at the Minnesota River would require a 150-foot right-of-way and would use typical Project structures. The structures would be approximately 120-145 feet tall with foundations approximately 7-10 feet in diameter. Based on current

[10] Notice at 3.

[11] As discussed in Section 3.3.1 of the Route Permit Application, Xcel Energy considered six potential Minnesota River crossings and assessed each crossing with respect to, among other things, natural resources features, residences, conservation easements, and existing infrastructure. Xcel Energy removed from consideration crossings that would pose constructability concerns and otherwise increase impacts to residences and sensitive natural resources. *See* RP Application at 36-44.

design, a vertical configuration would require five structures for the Minnesota River crossing.

A horizontal configuration at the Minnesota River crossing would require three-pole suspension structures. The structures would be approximately 85-105 feet tall,[12] with foundations approximately 5.5-6 feet in diameter. Based on current design, 15 structures would be required. The horizontal configuration requires a wider right-of-way (250 feet) because the lower height of the horizontal configuration requires the use of additional structures. The full width of the right-of-way would need to be cleared for construction and operation of the Project. Overall, we would anticipate a horizontal configuration at the Minnesota River to increase costs approximately $700,000. We also anticipate it would take approximately 11 weeks more to construct. The increased cost and time to construct are the result of additional vegetation removal within the right-of-way, additional foundations, additional structures and wire installation, and restoration.

[12] These structures would be taller than the existing 69-kV structures at this crossing, which are approximately 45 feet tall.

The table below compares a vertical and horizontal configuration using the Preferred Route's crossing of the Minnesota River (as a double-circuit).

	Vertical	Horizontal
Right-of-way required	150 feet	250 feet
Total acres of right-of-way	20.2	33.7
Structure height	120-145 feet	85-105 feet
Number of structures	5	15
Foundation diameter	7-10 feet	5.5-6 feet
BWSR easement (acres)	10.2	17.1
Forested wetland (acres)	2.8	5.0
Non-forested wetlands (acres)	14.0	22.8
Cost	-	+$700,000
Schedule	-	+ 11 weeks

B. Triple-Circuit.

A vertical, triple-circuit crossing of the Minnesota River would require structures approximately 30 feet taller than the proposed structures. The same cost, schedule, and construction / operation issues related to triple-circuiting discussed in Section I above would also apply to a triple-circuit Minnesota River crossing. In particular, and in addition to those reasons, Xcel Energy does not support triple-circuiting at the Minnesota River crossing because maintenance activities in this area would require longer than normal outage durations.

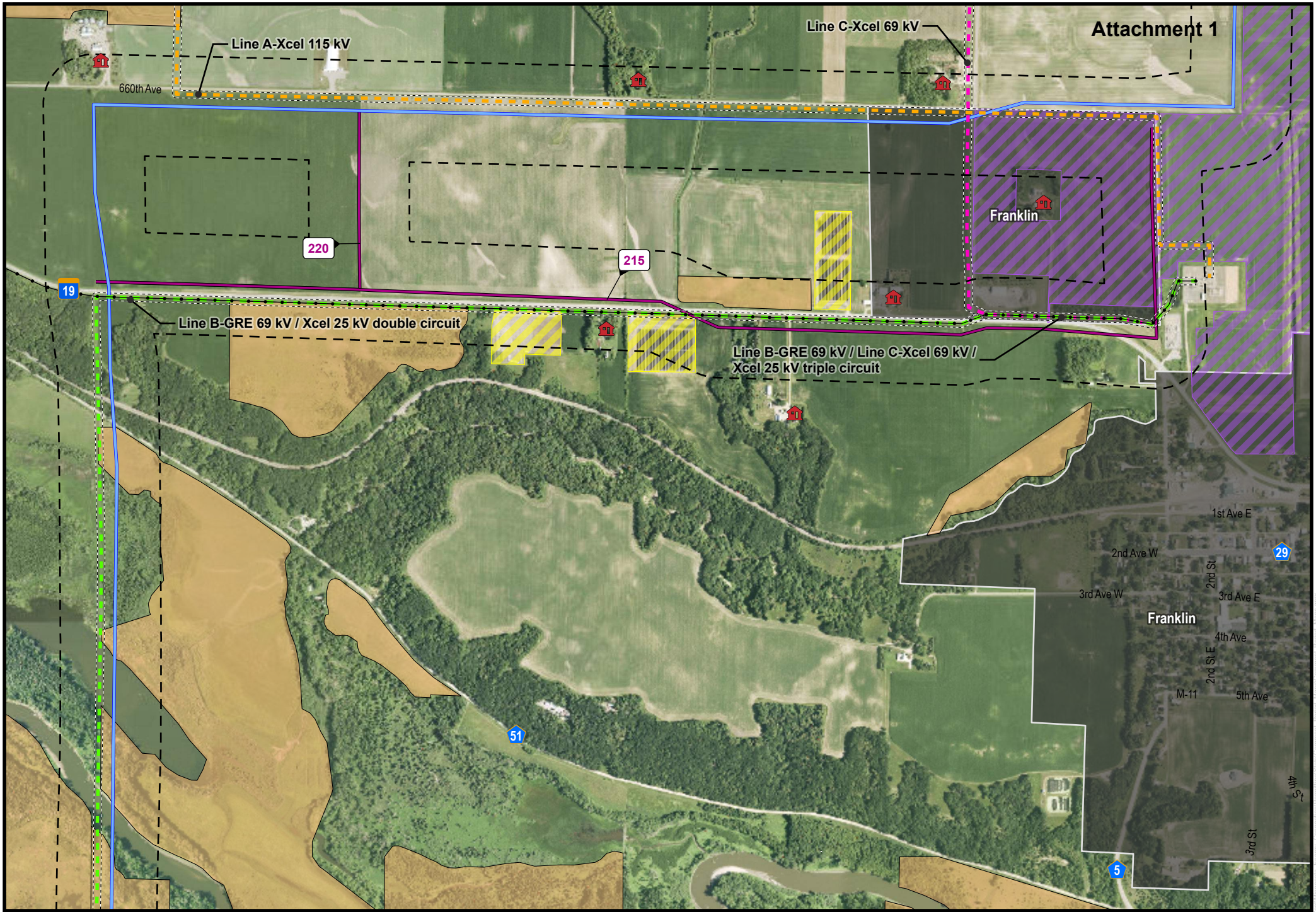
A horizontal, triple-circuit crossing of the Minnesota River would place each line on its own structures to allow for lower structure heights. The Project's two circuits would be configured as discussed in Section A above. Another lower voltage line, if removed and rebuilt, would likely require additional right-of-way between 50-75 feet.

CONCLUSION

Xcel Energy appreciates the opportunity to provide these Initial Comments and reserves the right to respond to any other comments that are filed during this comment period. For the reasons discussed herein, Xcel Energy does not recommend Options 1-4 and instead respectfully submits that the Preferred Route, as proposed, compares more favorably when considering reliability, cost, and human and environmental impacts.

Dated: March 20, 2025

Northern States Power Company



Minnesota Energy Connection

Option 1 and 2 - Existing Conditions

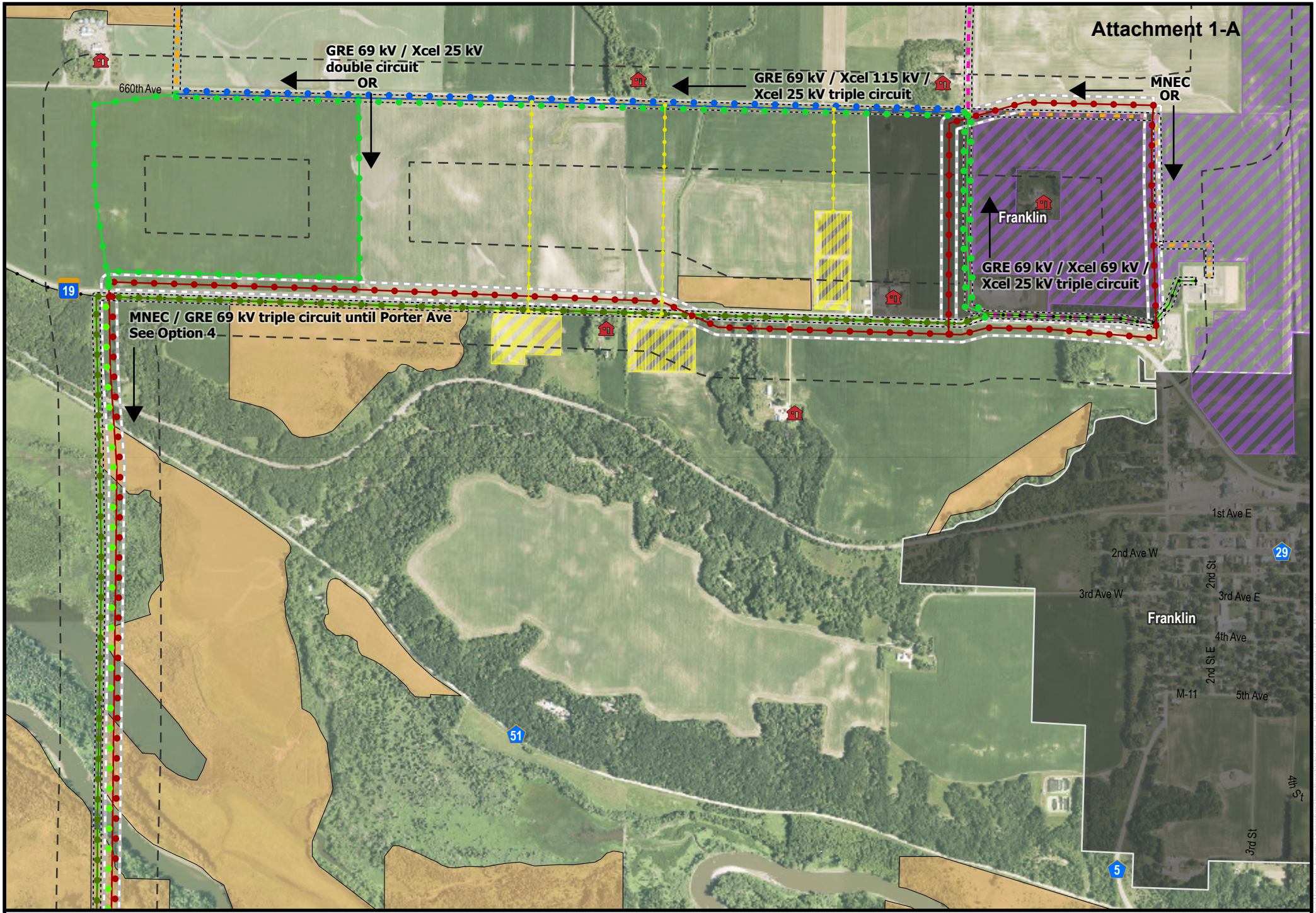
Existing Line A-Xcel 115 kV
Existing Line B-GRE 69 kV
Existing Line C-Xcel 69 kV
Existing Xcel 25 kV
Existing Assumed Right-of-Way
Preferred Route
Route Alternatives
Route Width
Residence
Solar Farm
Birch Coulee Site Boundary
BWSR Conservation Easement
Municipality

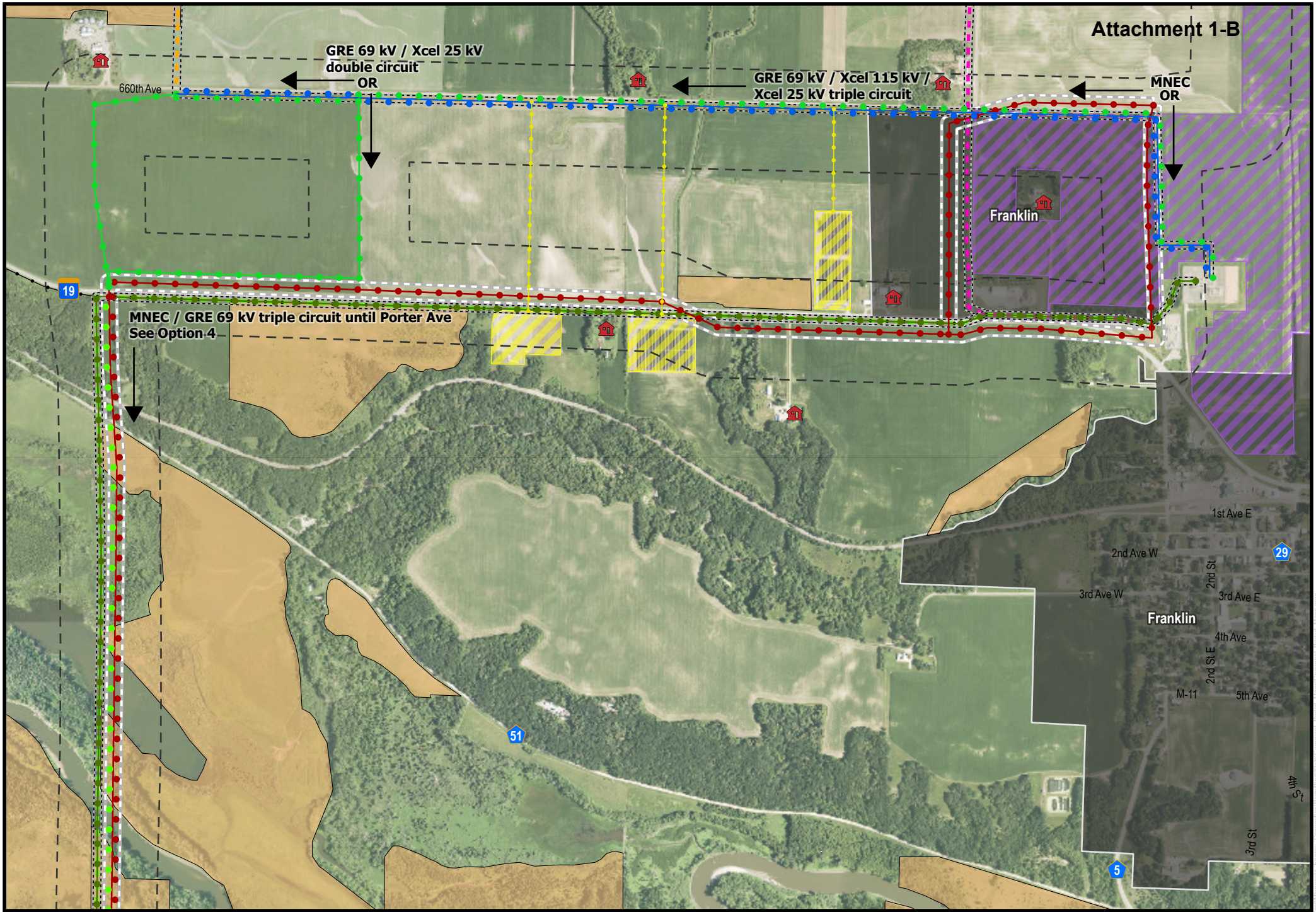
0 0.1 0.2 Miles

N

Xcel Energy®

DISCLAIMER: This information is believed to be correct but is subject to change and is not warranted.


Attachment 1-A
GRE 69 kV / Xcel 25 kV
double circuit
OR
GRE 69 kV / Xcel 115 kV /
Xcel 25 kV triple circuit
MNEC
OR
660th Ave
Franklin
GRE 69 kV / Xcel 69 kV /
Xcel 25 kV triple circuit
19
MNEC / GRE 69 kV triple circuit until Porter Ave
See Option 4
1st Ave E
2nd Ave W
2nd St
29
3rd Ave W
3rd Ave E
Franklin
4th Ave
2nd St E
M-11
5th Ave
51
4th St
3rd St
5
Minnesota Energy Connection
Option 1 - After
Residence
Route Width
GRE 69kV Removal
MNEC
MNEC / GRE 69 kV Triple Circuit
GRE 69 kV / Xcel 25 kV Double Circuit
GRE 69 kV / Xcel 115 kV / Xcel 25 kV Triple Circuit
GRE 69 kV / Xcel 69 kV / Xcel 25 kV Triple Circuit
Relocated Solar Interconnection Lines – Conceptual
Existing Line A-Xcel 115 kV
Existing Line B-GRE 69 kV
Existing Line C-Xcel 69 kV
Existing Xcel 25 kV
MNEC Assumed Right-of-Way
Existing Assumed Right-of-Way
Solar Fields
Birch Coulee Site Boundary
BWSR Conservation Easement
Municipality
0 0.1 0.2 Miles
N
Xcel Energy®
DISCLAIMER: This information is believed to be correct but is subject to change and is not warranted.



Minnesota Energy Connection

Option 2 - After

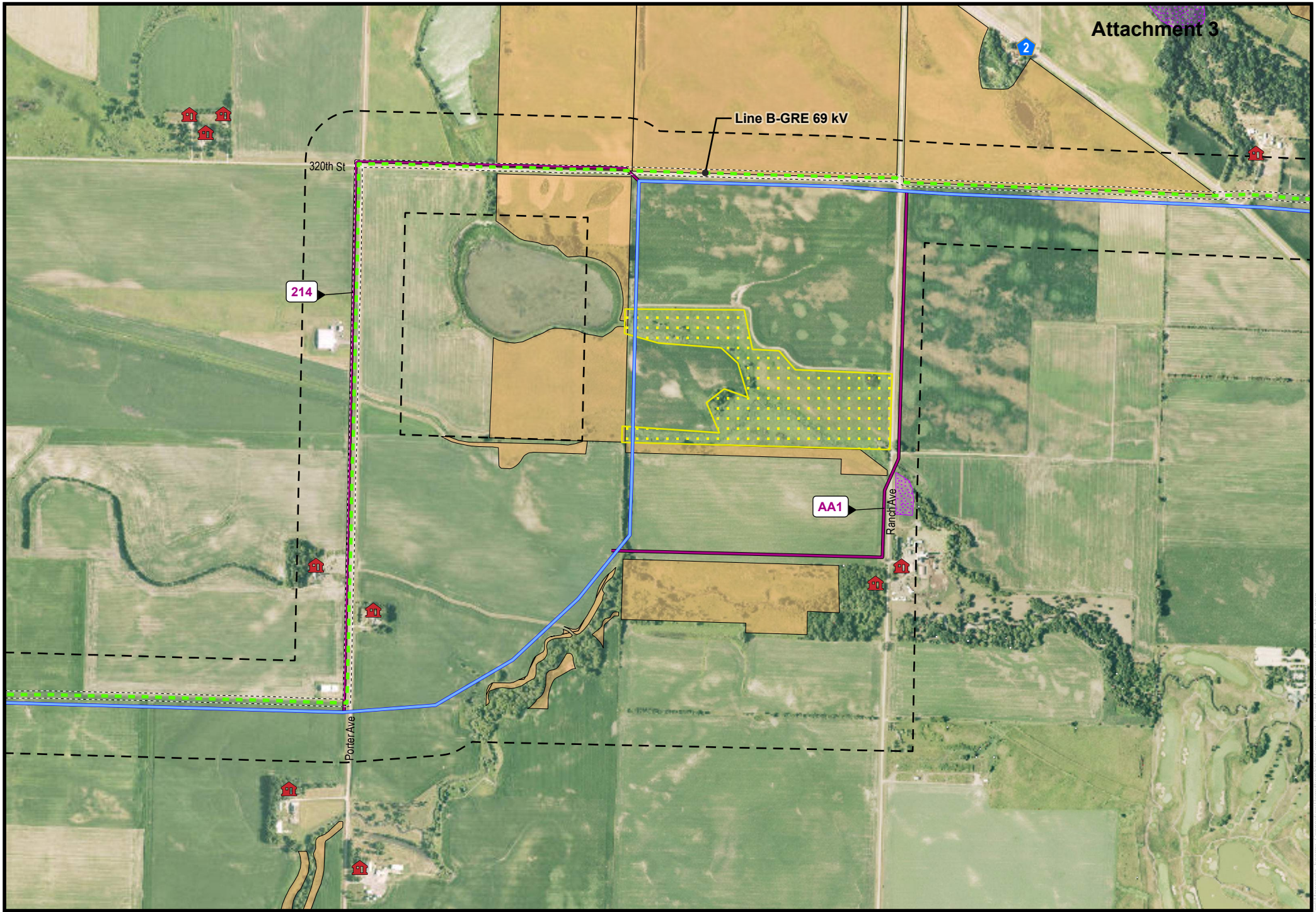
Xcel Energy®

DISCLAIMER: This information is believed to be correct but is subject to change and is not warranted.

- Residence
- Route Width
- GRE 69kV Removal
- MNEC
- MNEC / GRE 69 kV Triple Circuit
- GRE 69 kV / Xcel 25 kV Double Circuit
- GRE 69 kV / Xcel 115 kV / Xcel 25 kV Triple Circuit
- Relocated Solar Interconnection Lines – Conceptual
- Existing Line A-Xcel 115 kV
- Existing Line B-GRE 69 kV
- Existing Line C-Xcel 69 kV
- Existing Xcel 25 kV
- MNEC Assumed Right-of-Way
- Existing Assumed Right-of-Way
- Solar Fields
- Birch Coulee Site Boundary
- BWSR Conservation Easement
- Municipality

0 0.1 0.2 Miles

N



Minnesota Energy Connection

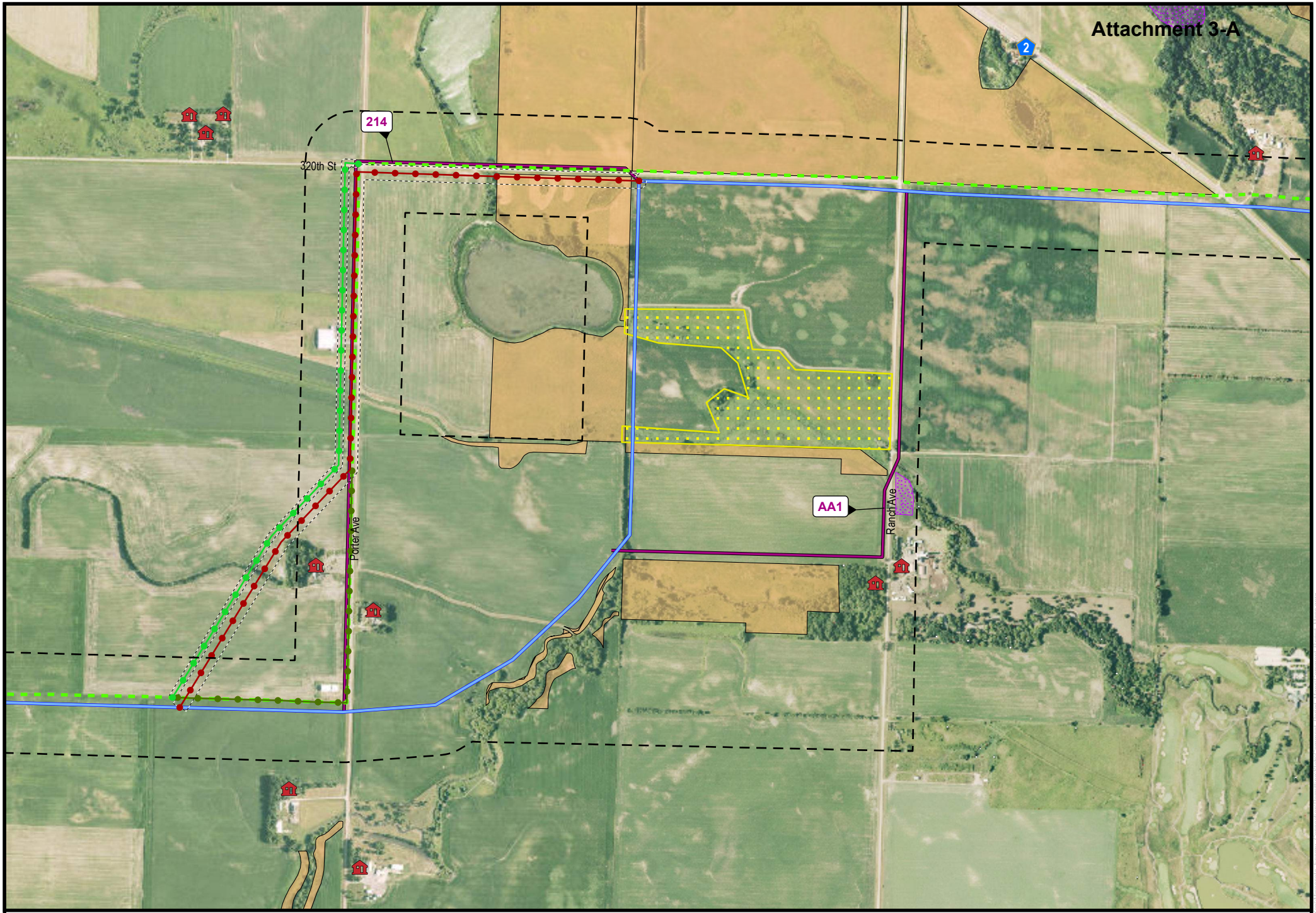
Option 3 - Existing Conditions

Existing Line B-GRE 69 kV
Existing Assumed Right-of-Way
Preferred Route
Route Alternatives
Route Width
Residence
Native Plant Community (S1-S3)
Native Prairie Bank Easement
BWSR Conservation Easement

N

0 0.1 0.2 Miles

Xcel Energy®



Minnesota Energy Connection

Option 3 - After

Existing Line B-GRE 69 kV
GRE 69kV Removal
GRE 69kV Single Circuit
MNEC

Assumed Right-of-Way
Preferred Route
Route Alternatives
Route Width

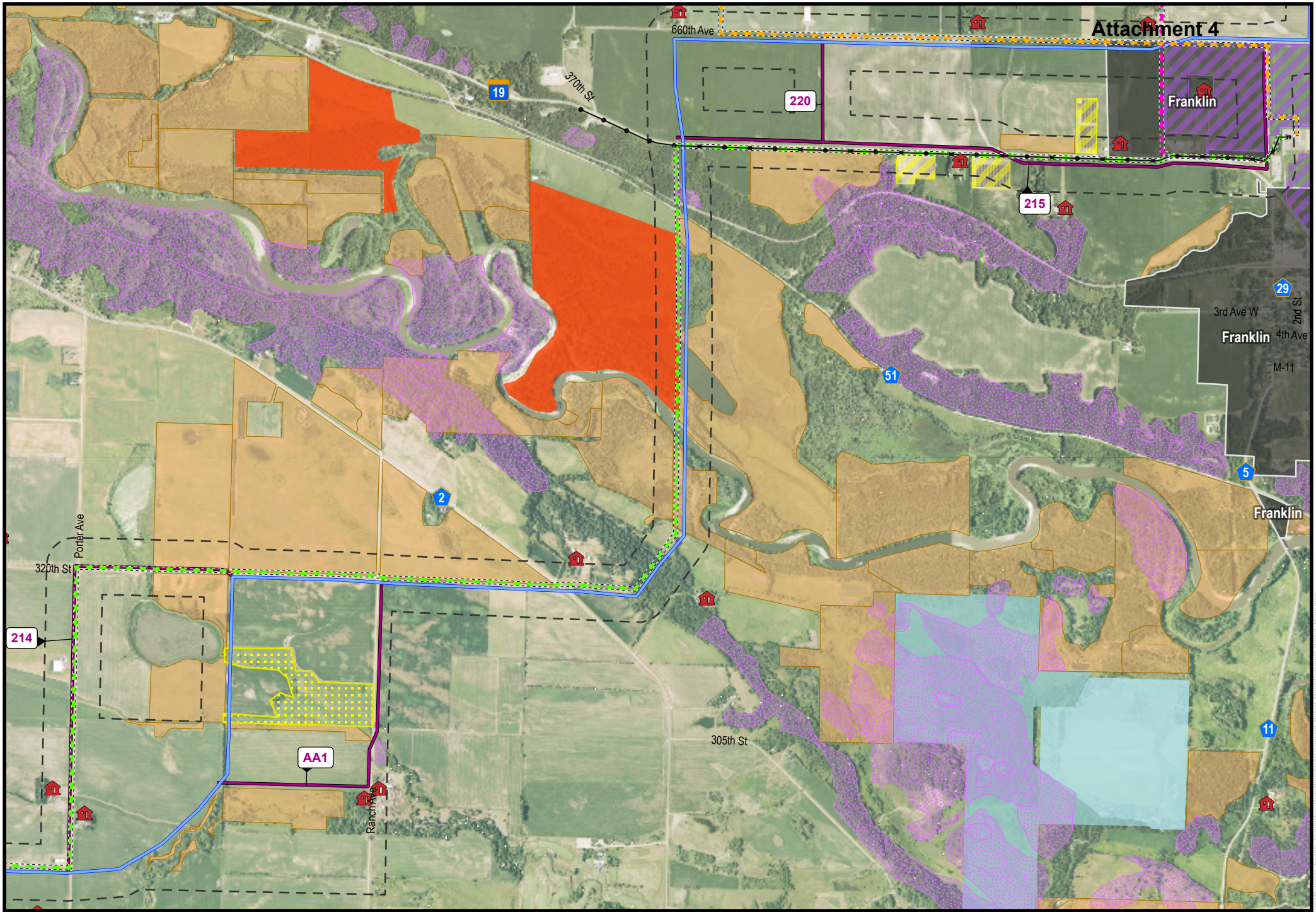
Residence
Native Plant Community (S1-S3)
Native Prairie Bank Easement
BWSR Conservation Easement

0 0.1 0.2 Miles

N

Xcel Energy®

DISCLAIMER: This information is believed to be correct but is subject to change and is not warranted.



Minnesota Energy Connection

Option 4 - Existing Conditions

Residence
Existing Line A-Xcel 115 kV
Existing Line B-GRE 69 kV
Existing Line C-Xcel 69 kV

Existing Xcel 25 kV
Existing Assumed Right-of-Way
Preferred Route
Route Alternatives
Route Width

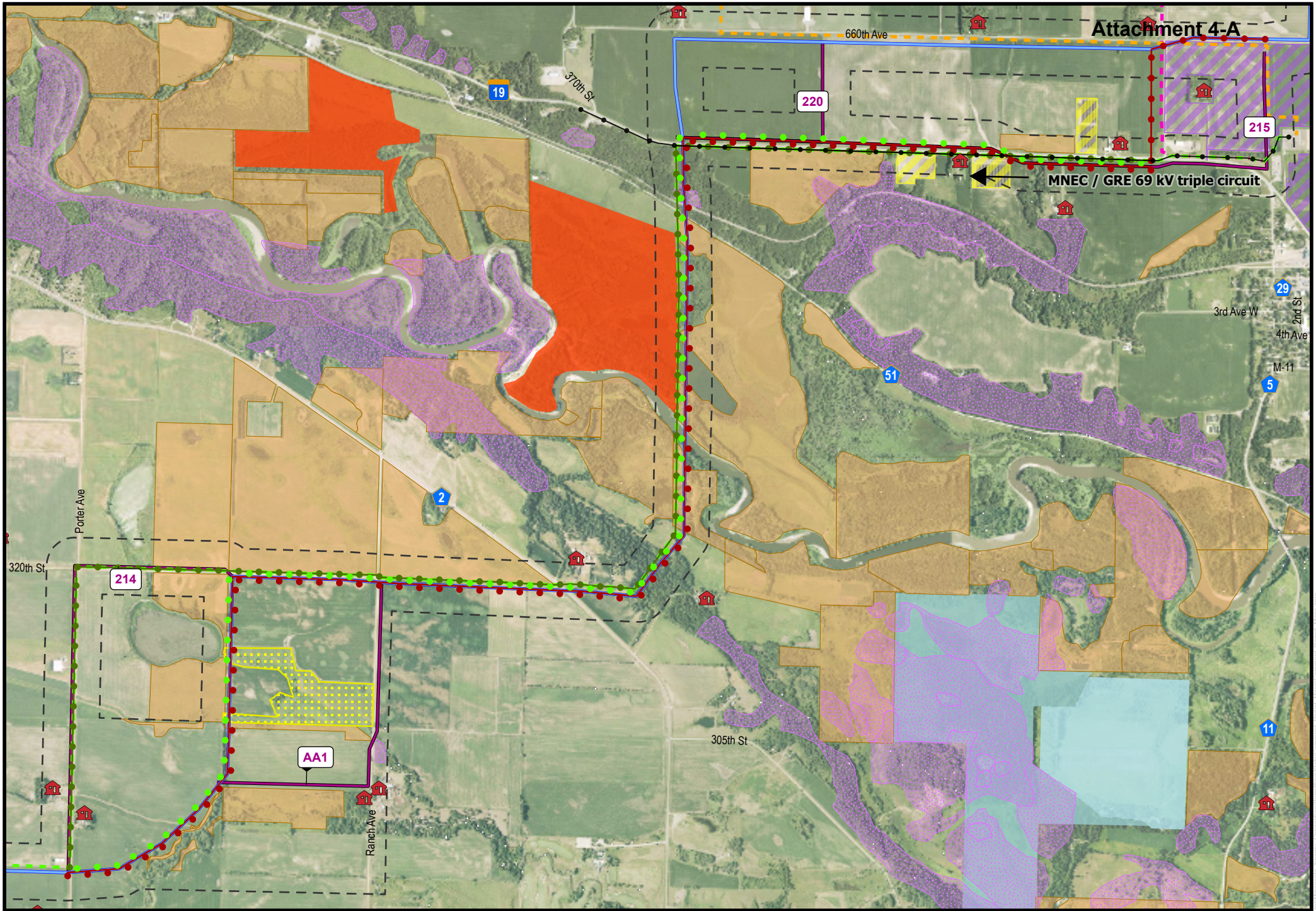
Solar Farm
Birch Coulee Site Boundary
Native Prairie Bank Easement
Native Plant Community (S1-S3)
BWSR Conservation Easement

Wetlands Reserve Program (federal)
State Trust Land
State Fish and Wildlife
Municipality

0 0.2 0.4 Miles

N

Xcel Energy®



Minnesota Energy Connection

Option 4 - After

Existing Line A-Xcel 115 kV
Existing Line B-GRE 69 kV
Existing Line C-Xcel 69 kV
Existing Xcel 25 kV
GRE 69kV Removal
MNEC
MNEC / GRE 69kV Triple Circuit
Preferred Route
Route Alternatives
Route Width

Solar Farm
Birch Coulee Site Boundary
Native Prairie Bank Easement
Native Plant Community (S1-S3)
BWSR Conservation Easement
Wetlands Reserve Program (federal)
State Trust Land
State Fish and Wildlife

Note: Relocation of existing distribution currently along Highway 19 not shown.

N

0 0.2 0.4 Miles

Xcel Energy®

DISCLAIMER: This information is believed to be correct but is subject to change and is not warranted.