



Transmission Cost Rider (TCR) Proposed 2024 Rate

Informal Hearing (Case No. PU-23-315)

November 22, 2023



TCR Statute – NDCC 49-05-04.3

- Authorizes PSC to approve rider recovery of new or modified electric transmission facilities
- Allows ROE at level approved in utility's most recent general rate case (9.50 percent)
- Allows a current return on capital work in progress (CWIP) if recovery of allowance for funds used during construction (AFUDC) is not sought in any other proceeding
- TCR recovery of a project stops when project costs have been transferred to base rates

2024 TCR Rate Overview

- Includes 2 new projects
- 2024 revenue requirement: \$3,143,952
- Proposed rate is 0.001142¢/kWh
- \$1.08 per month for typical residential customer (750 kWh use)
- The monthly TCR charge reflects an approximate increase of \$0.43 compared to the charge approved in our last TCR proceeding (\$0.65).

TCR Rate History

Test Yr	Case No.	Rev Req	MWh Sales	Rate/kWh	Res'l Bill Imp.
2017	PU-16-658	\$7,263,124	2,255,537	0.3220¢	\$2.42
2018	PU-17-365	\$7,393,329	2,261,208	0.3270¢	\$2.45
2019*	PU-18-364	\$5,107,064	2,233,684	0.1914¢	\$1.44
2020*	PU-19-328	\$6,835,616	2,233,428	0.3322¢	\$2.49
2021**	PU-20-406	\$8,831,036	2,136,485	0.4133¢	\$3.10
	PU-20-441	\$288,731		0.0135¢	\$0.10
2022	PU-21-396	\$1,382,297	2,139,862	0.0764¢	\$0.57
2023	PU-22-402	\$1,859,218	2,154,594	0.0873¢	\$0.65
2024	PU-23-315	\$3,143,952	2,179,557	0.1442¢	\$1.08

* 2019, 2020 rates reflect 9 month recovery periods.

** 2021 rates reduced in October to reflect roll-over of projects into base rates.

(Residential bill impact reflects 750 kWh use)

2024 Revenue Requirements vs. 2023 (000's)

	<u>2024</u>	<u>2023</u>	<u>Change</u>
Approved Programs	\$2,391	\$1,745	\$646
Approved Projects	\$1,335	\$1,088	\$247
New Projects	<u>\$57</u>	<u>\$27</u>	<u>\$30</u>
Total Project Rev Reqs	\$3,784	\$2,860	\$923
MISO RECB Revenues	(\$1,011)	(\$1,112)	\$101
True-up	\$372	\$122	\$250
Net Rev Req's*	<u>\$3,144</u>	<u>\$1,859</u>	<u>\$1,274</u>

New Projects in 2024

	<u>Rev Req</u>
1. Roger Lake 115kV Bus Expansion	\$46,270
2. Congestion Capacity Increases	\$10,914
TOTAL:	\$57,184

Cumulative Program Expenditures - 2024

Transmission Program (millions)	2023 TCR	2024 TCR	Change
Asset Renewal - Major Line Rebuild	\$ 127.8	\$ 204.4	\$ 76.6
Asset Renewal - Major Line Refurbish	\$ 57.5	\$ 75.9	\$ 18.4
Asset Renewal – Transmission Line Relocation	\$ 8.7	\$ 11.1	\$ 2.4
End of Life Replacement – Line	\$ 3.7	\$ 3.7	\$ 3.7
End of Life Replacement – Transformer	\$ 15.6	\$ 24.6	\$ 9.1
End of Life Replacement – Breaker	\$ 25.1	\$ 30.3	\$ 5.1
End of Life Replacement – Relay	\$ 23.1	\$ 34.8	\$ 11.7
End of Life Replacement - Nuclear Subst	\$ 5.6	\$ 8.2	\$ 2.7
End of Life Replacement - Steel Pole	\$ 28.4	\$ 38.3	\$ 9.9
Storm & Emergency – Line	\$ 30.5	\$ 38.0	\$ 7.6
Storm & Emergency – Substation	\$ 30.0	\$ 37.9	\$ 7.9
Communications Network	\$ 44.4	\$ 66.4	\$ 22.0
NERC Circuit Protection (Order 754)	\$ 5.9	\$ 6.5	\$ 0.6
Net Change in Expenditures through 2024:	<u>\$406.2</u>	<u>\$580.1</u>	<u>\$173.9</u>

Year Over Year TCR Cost Variances

- Would generally expect some project cost variances each year
 - Project scoping changes, permitting/routing, site conditions, commodity costs
- Annual TCR cost increases are primarily related to *Programs*, which are generally ongoing with incremental annual expenditures.
- *Programs* are groups of many individual projects undertaken for similar purposes (i.e., asset renewal, end-of-life replacement)
- Asset Renewal programs can be paced
- Budgeting by *Program* provides flexibility in allocating \$ each year
- Forecasted expenditures are trued up in the TCR, so customers aren't paying for unrealized costs

Transmission “Asset Health” Programs

Asset Renewal

Major Line Rebuilds
Major Line Refurbishment
Transmission Line Relocation

End of Life Replacement

Transmission Lines
Transformers
Breakers
Relays
Nuclear Substations
Steel Poles

Storm & Emergency

Transmission Lines
Substations

Special Purpose

Communications Network
NERC Circuit Protection



Appendix

“Asset Renewal” Programs

There are 84 discrete Asset Renewal projects in 2024-2028

Major Line Rebuild (2016)

Rebuild large segments of lines with a concentrated number of defects that contribute to poor line performance, often repeated outages with risk of imminent failure

Major Line Refurbishment (2018)

Replacement of an entire defective line segment (breaker to breaker), replacing all like property units on the line segment, rather than targeted individual asset replacements that have failed within a segment.

Transmission Line Relocation (2016)

Mandated transmission line relocation due to road and highway projects that may impact public safety or the transmission system.

“End of Life Replacement” Programs

These Programs allow for flexibility in determining where replacement is needed based on current line and equipment inspections.

- Line ELR (2018)
 - Transformers ELR (2016)
 - Breakers ELR (2015)
 - Relay ELR (2015)
 - Nuclear Substations ELR (2019)
 - Steel Pole ELR (2022)
- There are 69 discrete ELR projects identified for 2024-2028, all planned and prioritized under the same common objective.
 - Expenditures can be reprioritized based on changed circumstances
 - Actual expenditures trued-up each year in the TCR
 - The 2024 TCR reflects an added budget year (2028) not included in the 2023 TCR filing, contributing to the year-over-year increase.

“Storm & Emergency” Programs

Storm & Emergency – Line (2016)

Funding for updates/replacements of transmission line components in response to weather events, unexpected equipment failure, and other unscheduled maintenance that cannot wait until the next normal budget cycle.

Storm & Emergency – Substations (2020)

Funding for updates/replacements of substation components in response to weather events, unexpected equipment failure, and other unscheduled maintenance work that cannot wait until the next normal budget cycle.

Special Purpose Programs

Communication Network Program (2021)

Replaces equipment that will soon be obsolete to reduce dependency on third-party circuit providers, improving security, response time, and circuit integrity. Variance is due to additional year of spend appearing in tracker (2028) and ramping up of activity—program was beginning in 2020. There are 57 discrete projects identified for 2024-2025, all supporting same need and benefit.

NERC Circuit Protection (Order 754) (2019)

Projects to fulfill NERC requirements to upgrade relays, separate primary and secondary relaying, and add redundant DC circuits over several years of construction at multiple substations. There are 5 discrete projects identified for 2024.

2023 Program Revenue Requirements

Transmission Program	2023 TCR Current Filing	2023 TCR Prior filing	Change
Asset Renewal - Major Line Rebuild	\$459,823	\$529,884	\$(70,061)
Asset Renewal - Major Line Refurbish	\$179,146	\$215,710	\$(36,564)
Asset Renewal – Transmission Line Relocation	\$30,405	\$28,428	\$1,977
End of Life Replacement – Line	\$63,646	\$55,998	\$7,648
End of Life Replacement – Transformer	\$40,559	\$28,236	\$12,323
End of Life Replacement – Breaker	\$83,937	\$85,168	\$(1,231)
End of Life Replacement – Relay	\$81,069	\$85,709	\$(4,640)
End of Life Replacement - Nuclear Subst	\$22,989	\$28,653	\$(5,664)
End of Life Replacement - Steel Pole	\$111,169	\$106,973	\$4,196
Storm & Emergency – Line	\$117,511	\$157,204	\$(39,693)
Storm & Emergency – Substation	\$118,258	\$143,752	\$(25,494)
Communications Network	\$156,206	\$250,057	\$(93,851)
NERC Circuit Protection (Order 754)	\$14,228	\$29,400	\$(15,172)
Total Rev Requirements	<u>\$ 1,478,946</u>	<u>\$1,744,172</u>	<u>\$(266,226)</u>

Program Revenue Requirements

Transmission Program	2024 TCR	2023 TCR	2022 TCR
Asset Renewal - Major Line Rebuild	\$797,462	\$459,823	\$163,622
Asset Renewal - Major Line Refurbish	\$321,539	\$179,146	\$58,074
Asset Renewal – Transmission Line Relocation	\$32,376	\$30,405	\$18,740
End of Life Replacement – Line	\$83,284	\$63,646	\$43,816
End of Life Replacement – Transformer	\$100,460	\$40,559	\$15,718
End of Life Replacement – Breaker	\$133,406	\$83,937	\$39,724
End of Life Replacement – Relay	\$141,579	\$81,069	\$34,229
End of Life Replacement - Nuclear Subst	\$34,492	\$22,989	\$11,691
End of Life Replacement - Steel Pole	\$155,070	\$111,169	\$5,031
Storm & Emergency – Line	\$151,189	\$117,511	\$102,867
Storm & Emergency – Substation	\$148,918	\$118,258	\$89,740
Communications Network	\$310,393	\$156,206	\$56,898
NERC Circuit Protection (Order 754)	\$31,215	14,228	\$2,946
Total Rev Requirements	<u>\$1,745,172</u>	<u>\$1,478,946</u>	<u>\$921,590</u>

Program Expenditures – 2023 to 2028

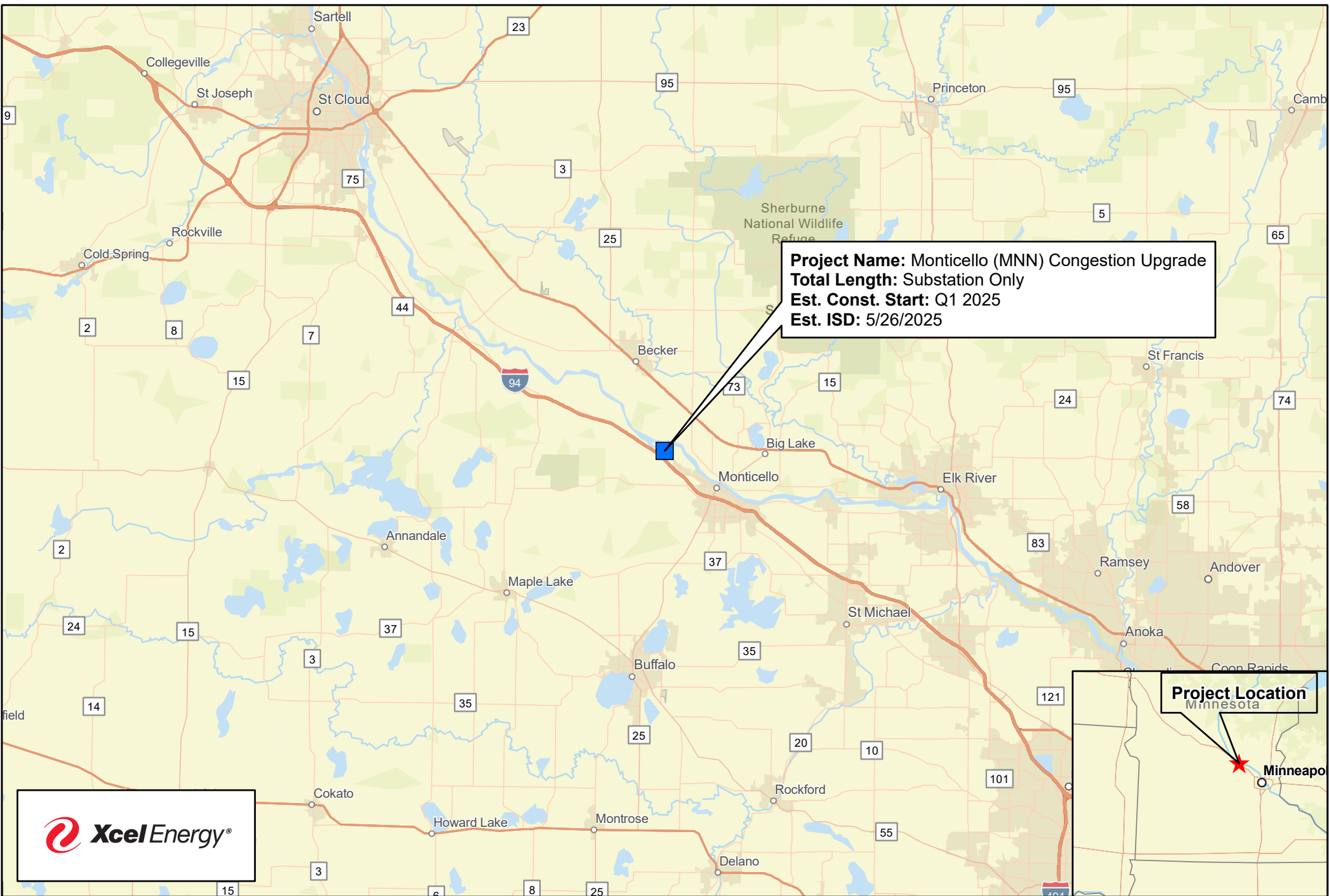
Transmission Program (millions)	2023	2024	2025	2026	2027	2028
Asset Renewal - Major Line Rebuild	\$57.4	\$76.6	\$62.1	\$97.0	\$42.1	\$50.1
Asset Renewal - Major Line Refurbish	\$32.2	\$18.4	\$17.5	\$16.5	\$11.4	\$14.2
Asset Renewal – Transm Line Relocation	\$4.3	\$2.4	-\$0.5	\$1.5	\$1.5	\$1.5
End of Life Replacement - Line	\$4.8	\$3.7	\$3.7	\$3.7	\$3.7	\$3.7
End of Life Replacement – Transformer	\$11.4	\$9.1	\$8.9	\$5.7	\$2.6	\$6.4
End of Life Replacement – Breaker	\$11.5	\$5.1	\$10.1	\$1.0	\$1.0	\$1.0
End of Life Replacement – Relay	\$10.9	\$11.7	\$7.3	\$6.9	\$2.6	\$4.9
End of Life Replacement - Nuclear Subst	\$1.3	\$2.7	\$5.4	\$8.6	\$0.0	\$0.0
End of Life Replacement - Steel Pole	\$14.5	\$9.9	\$13.2	\$30.6	\$29.6	\$28.8
Storm & Emergency – Line	\$4.8	\$7.6	\$7.7	\$7.7	\$7.7	\$7.6
Storm & Emergency – Substation	\$5.9	\$7.9	\$4.0	\$3.9	\$3.9	\$3.9
Communications Network	\$24.6	\$22.0	\$21.6	\$20.2	\$22.8	\$19.6
NERC Circuit Protection (Order 754)	\$4.5	\$0.6	\$0.0	\$0.0	\$0.0	\$0.0
Annual Expenditures:	<u>\$188.1</u>	<u>\$177.6</u>	<u>\$160.7</u>	<u>\$203.1</u>	<u>\$128.8</u>	<u>\$141.7</u>

Approved Projects – Total Expenditures

Project	2024 TCR	2023 TCR	Change
Aldrich DCP	\$1.7	\$1.0	\$0.7
Avon – Albany Rebuild	\$8.1	\$8.6	\$(0.5)
Bayfield Loop	\$53.4	\$47.9	\$5.4
Black Dog - Wilson	\$3.7	\$3.7	\$0.0
DCP Dayton's Bluff Sub	\$4.8	\$6.9	\$(2.1)
DCP Great Plains	\$2.9	\$1.6	\$1.3
Elm Creek New Transformer 10 Install	\$14.0	\$10.7	\$3.3
Elm Creek TR9 Reactor	\$1.3	\$1.3	\$0.1
Helena to Scott County MISO Interconnections	\$25.5	\$25.5	\$0
HIBTAC 500kV	\$21.4	\$21.3	\$0.1
Hollydale Dist. 115kV	\$2.6	\$2.6	\$0
Huntley - Wilmarth	\$52.9	\$53.2	\$(0.3)
Lincoln County Capacitor Bank	\$5.1	\$4.8	\$0.4
Line 0953 OPGW Replacement	\$2.4	\$5.1	\$(2.7)
Line ELR - NSPM	\$34.8	\$39.2	\$(4.4)
Long Lake-Baytown Line Uprate	\$4.9	\$1.6	\$3.3
NSM0953 Galloping Mitigate SPK	\$5.8	\$5.6	\$0.1
Prairie Substation Capbank Remove	\$2.4	\$2.4	\$0.0
Raptor Distribution Substation	\$2.4	\$2.4	\$0.0
So. Washington Electric Reliability SWERU	\$13.2	\$13.3	\$0.0
Wilmarth-TC Thru Flow Mitigation	\$5.3	\$6.0	\$(0.8)

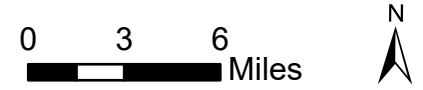
Net Change in Project Expenditure Forecast: \$268.6 \$264.6 \$4.0
1.5%



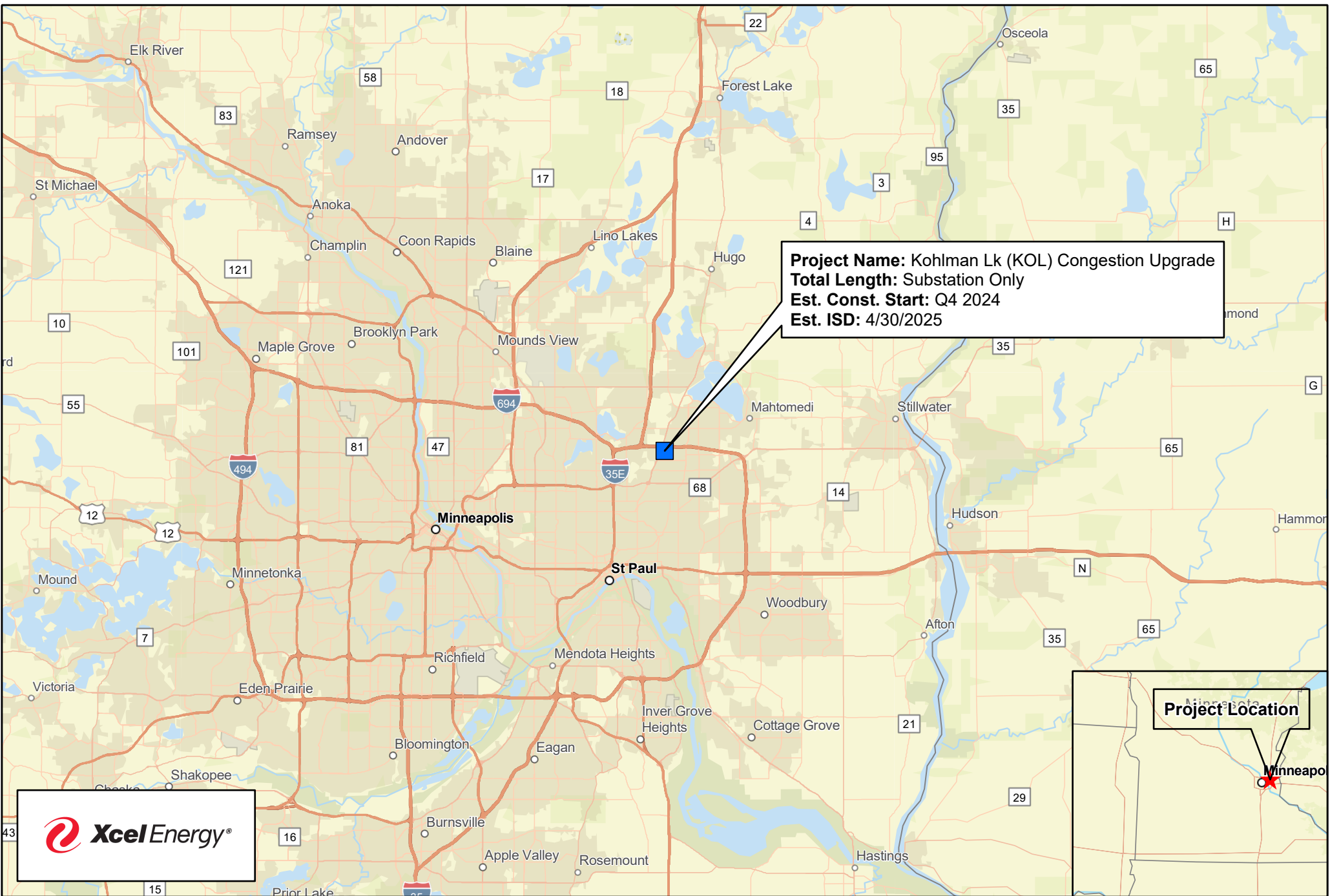


Monticello (MNN) Congestion Upgrade Project

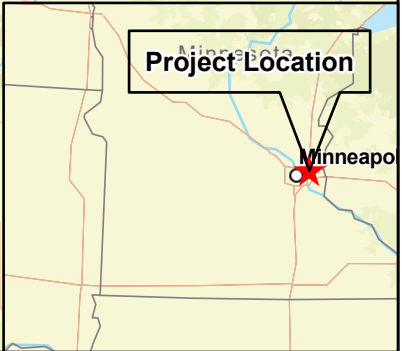
■ Monticello (MNN) Congestion Upgrade



Disclaimer: This information is believed to be correct, but is subject to change and carries no warranty.



Project Name: Kohlman Lk (KOL) Congestion Upgrade
Total Length: Substation Only
Est. Const. Start: Q4 2024
Est. ISD: 4/30/2025

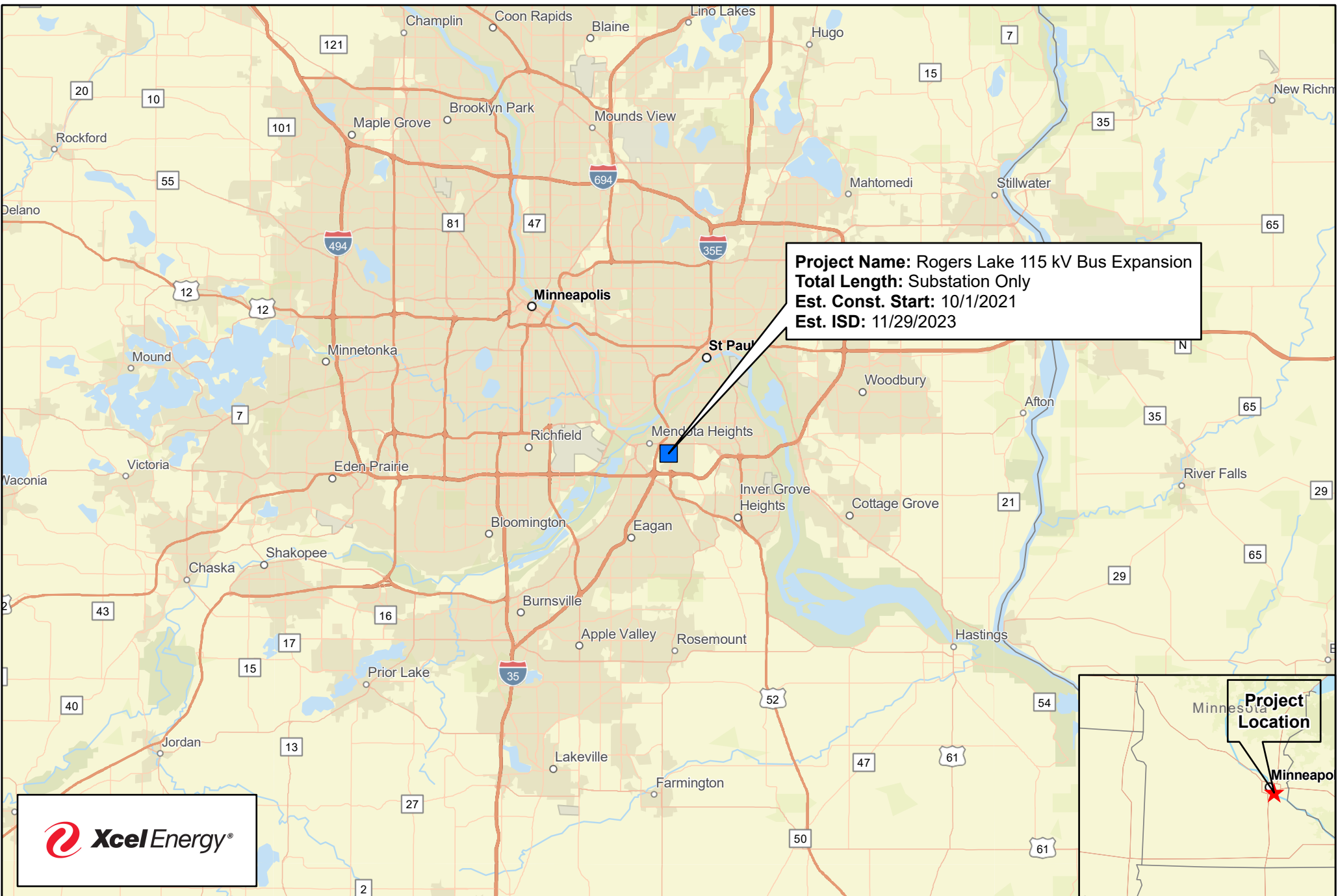


Kohlman Lk (KOL) Congestion Upgrade Project

■ Kohlman Lk (KOL) Congestion Upgrade



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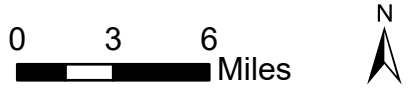


Project Name: Rogers Lake 115 kV Bus Expansion
Total Length: Substation Only
Est. Const. Start: 10/1/2021
Est. ISD: 11/29/2023

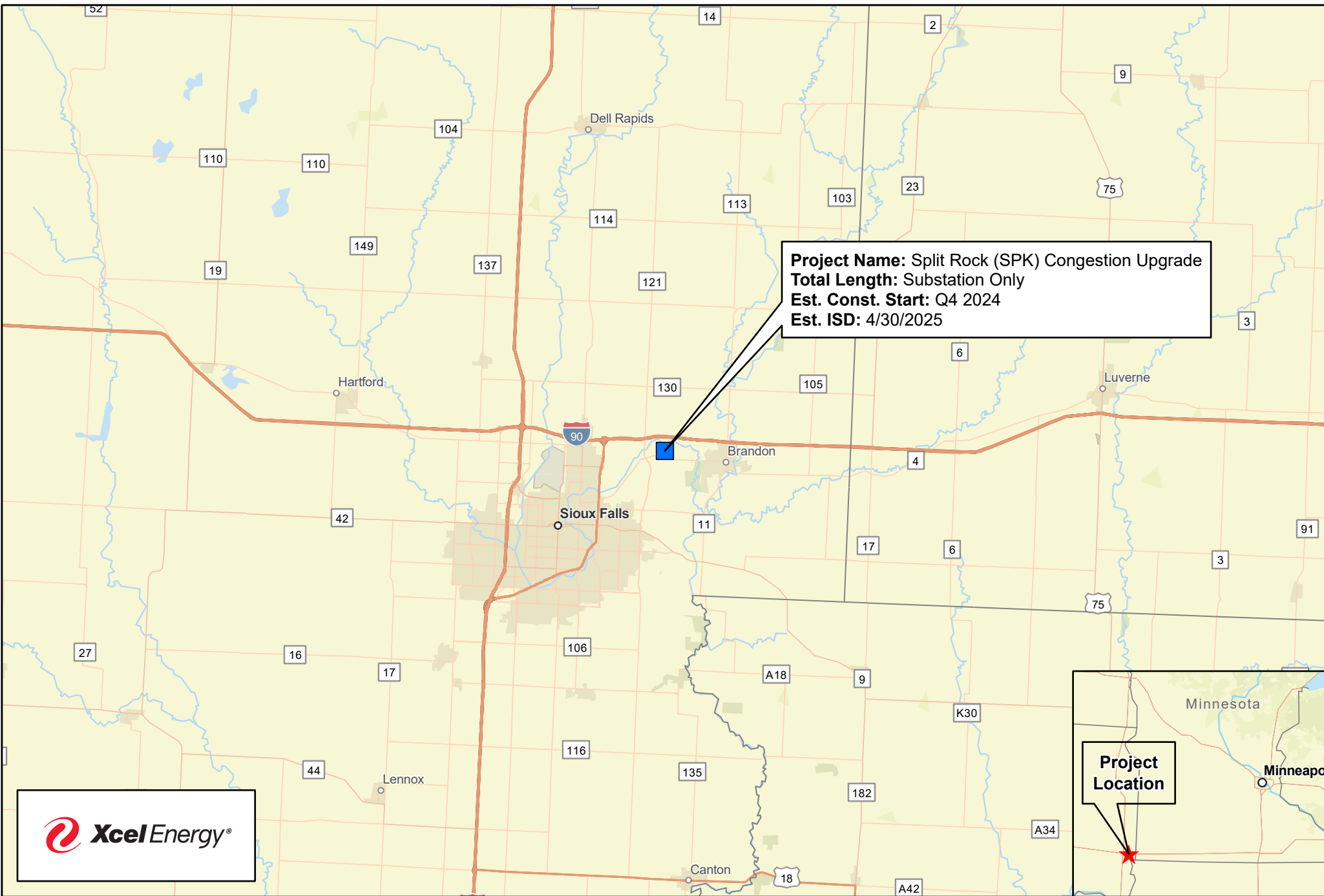


Rogers Lake 115 kV Bus Expansion Project

■ Rogers Lake 115 kV Bus Expansion




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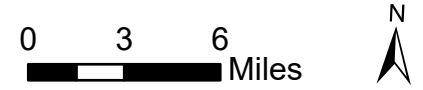


Project Name: Split Rock (SPK) Congestion Upgrade
Total Length: Substation Only
Est. Const. Start: Q4 2024
Est. ISD: 4/30/2025



Split Rock (SPK) Congestion Upgrade Project

 Split Rock (SPK) Congestion Upgrade



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