COMMERCE DEPARTMENT

Supplemental Information Inquiry #1

To: Matt Langan
Xcel Energy

Sent via email to matthew.a.langan@xcelenergy.com

From: Andrew Levi
Energy Environmental Review and Analysis

Date: April 25, 2024

Project: MN Energy Connection Project
22-131/132

Respond: Preferably no later than May 10, 2024

Please respond to the following questions or provide the requested data or information. Staff will use the information provided to develop the environmental document for the project, which is a public document. Your response, in its entirety, will be included in the environmental document as an appendix; therefore, **responses will be publicly available** unless otherwise designated by the respondent as "nonpublic information" pursuant to Minnesota Statute § 13.02, subdivision 12.

Directions: Responses to questions should be contained within this form to the greatest extent possible (11-point Calibri, plain text font, RGB 192, 0, 0). Attach supporting documentation as necessary. While data and information requests, for example, shapefiles or draft plans, will not be contained within this form, document their submittal using this form as follows: "*Requested information* sent to *whom* by *what means* on *date*." Co-applicants please consolidate your reply into a single response.

Do not eFile your response. Return the completed form, as a PDF, along with necessary supporting documentation, and/or requested data or information to andrew.levi@state.mn.us. Contact me at (651) 539-1840 with questions.

1. Provide a dataset showing park lands that were acquired using Lawcon funding. This funding source was referenced by the Xcel term in relation to Unique ID 167b.

   Requested information sent to Andrew Levi via email on May 8, 2024. This shapefile was created using the Minnesota Department of Natural Resources (MDNR) Excel document titled "list of all grant-funded parks" obtained at the following website: https://www.dnr.state.mn.us/aboutdnr/lawcon/index.html

2. Provide the following GIS sources: Xcel digitized center pivot irrigation; Xcel digitized non-residential/commercial structures; county-specific parks and trails.

   Requested information on center pivot irrigation and county-specific parks and trails sent to Andrew Levi via email on May 8, 2024.

   To compile this information, Xcel Energy used the publicly available Protected Areas Database (PAD 3.0) County/Regional Agency Land data, and MDNR Minnesota Snowmobile Trails which includes State, "Grant-in-Aid", and Club snowmobile trails to present county-specific parks and trails in the route permit application.

Xcel Energy does not currently have digitized center pivot irrigation for route alternatives, nor does Xcel Energy currently have digitized non-residential/commercial structures for any route. Xcel Energy will create those files upon EERA request.

3. Provide a copy of the cultural resources literature review(s) completed and the associated cultural resource data. This includes but is not limited to data associated with the archaeological and historic resource maps in Appendix I; Table 6.4.1-1 and Table 6.4.1-2.

   Requested information sent to Andrew Levi via email on May 9, 2024. The information provided was cultural resources data reflected in the route permit application. Please note that, in accordance with Minn. R. 7829.0500, and Minn. Stat. Ch. 13, Xcel Energy has designated these Shapefiles as **NONPUBLIC INFORMATION** because they contain sensitive cultural resource information. A formal Phase Ia Literature Review has not yet been completed for the project routes.

4. Provide documentation of coordination efforts with interested Tribal Nations completed to date.

Tribal Nation outreach and coordination efforts are listed below. Documentation of these efforts can be found on the Certificate of Need or Route Permit docket. We have included those citations in the table.

Date	**Coordination/Outreach**
July 2022	Tribes with historic interest in Minnesota received notice of Certificate of Need application development as part of PUC-approved project notice plan (Docket 22-131 Doc ID 202211-190448-01)
November 2022	Tribes with historic interest in Minnesota received invite to participate in Xcel Energy-sponsored virtual open house (Route Permit Application, Appendix F)
February 2023	Tribes with historic interest in Minnesota received invite to participate in Xcel Energy-sponsored open houses throughout the project area in February and March 2023 (Route Permit Application, Appendix F)
March 2023	Met with Upper Sioux Indian Community Tribal Historic Preservation Officer to describe the project, discuss timelines, the State review process and gather feedback and input.
May 2023	Tribes with historic interest in Minnesota received invite to participate in Xcel Energy-sponsored open houses throughout the project area in June 2023 (Route Permit Application, Appendix F)
September 2023	Tribes with historic interest in Minnesota received project coordination notice from Xcel Energy, notifying Tribes of pending route permit application and the State of Minnesota review process. (Route Permit Application, Appendix E)
November 2023	Tribes with historic interest in Minnesota received notice of the route permit application filing. (Docket 22-132, Doc ID 202311-200249-02
January 2024	Met with Tribal Council members and staff for the Lower Sioux Indian Community to describe the project, discuss timelines, the State review process and gather feedback and input

February 2024	Met with Tribal Council members and staff for the Lower Sioux Indian Community, as well as tribal community members to describe the project, discuss timelines, the State review process and gather feedback and input (Docket 22-132, Doc ID 20241-202848-01)
March 2024	Met with Upper Sioux Indian Community Tribal Historic Preservation Officer to provide a project update, discuss timelines, the State review process and gather feedback and input.

5. Confirm whether there will be electrical consumption form the electrical gird during operation. If yes, provide the annual estimate in MWh.

Requested information was sent to Andrew Levi via an attachment to an email on May 10, 2024.

Some Project facilities, such as breaker tank heaters and the heating, ventilation, and air conditioning systems at the Terminal Substation, the Intermediate Substation, and the Voltage Support Substation, will use electricity during operations. The Terminal Substation will use approximately 1,060 megawatt hours (MWh) of electricity annually. The Intermediate Substation will use approximately 700 MWh of electricity annually. The Voltage Support Substation will use approximately 910 MWh of electricity annually.

The total expected electricity use for facilities associated with the Minnesota Energy Connection Project is approximately 2,670 MWh annually.

6. Confirm whether operation maintenance activities will involve fuel combustion. If yes, provide details on the activities, the type(s) and number of equipment to be used, estimated annual hours of operation, estimated annual fuel consumption, and fuel type.

Requested information was sent to Andrew Levi via an attachment to an email on May 10, 2024.

Operation and maintenance activities associated with the Minnesota Energy Connection (MNEC) Project (Project) will involve fuel consumption. The following paragraphs outline the planned inspection and maintenance activities for the transmission line and the substations associated with the Project. A summary of these activities, type(s) and number of equipment to be used, estimated fuel consumption, and fuel type is shown in the tables attached to this response.

Typically, operation and maintenance crews will limit vehicle idling time where practicable. Xcel Energy determined fuel consumption using fuel economy ratings for ground vehicles and fuel flow calculations for helicopters. Fuel economy ratings and fuel flow calculations calculate fuel usage based on the number of miles traveled. Therefore, Xcel Energy provides miles driven or flown rather than the estimated hours of operation for each vehicle.

Operation and maintenance activities occur on a range of schedules from once every quarter to once every six years. Annual fuel use will depend on the specific activities that occur in a given year. When only quarterly inspections occur, the Project will require 159 gallons of diesel per year. Crews perform aerial drone inspections on the transmission line two years after each ground inspection; ground inspections and drone inspections will never occur in the same year. In the unlikely event that all operation and maintenance activities except drone inspections occur in the same year, the Project will require 10,453

gallons of gasoline, 13,385 gallons of diesel, and 2,169 gallons of jet A fuel. The following table shows the annual operation and maintenance fuel usage averaged over 12 years. Supporting calculations are in the attached tables.

Annual Average Fuel Usage for Operation and Maintenance of the Minnesota Energy Connection Project	
Fuel Type	Annual Fuel Usage, averaged over 12 years, in gallons
Gasoline	2,444
Diesel	3,469
Jet A Fuel	887

Transmission Line

Section 5.4 of the route permit application states that workers will inspect the transmission line annually using drones and once every four years from the ground. Additional detail concerning the currently contemplated planned maintenance activities is provided below.

- Crews will perform transmission line ground inspections every four years. Up to four workers will drive up to two diesel-fueled pickup trucks and up to two all-terrain vehicles (ATVs) a maximum of 300 miles to complete this inspection. These 300 miles include the approximately 180-mile-long MNEC transmission line and commuting from a deployment location approximately 60 miles from each end of the transmission line.

- Starting approximately two years after completion of transmission line ground inspections, a crew will perform an aerial inspection with drones once every four years. Up to two workers will drive up to one diesel-fueled pickup truck a maximum of 300 miles. Workers will operate battery-powered drones to perform inspections.

- Annually, a crew will perform an aerial inspection of the transmission line in a helicopter. The helicopter will travel a maximum of 280 miles during this annual inspection, plus miles to refuel during the inspection.

As stated in section 5.4.1 of the route permit application, the average annual availability of transmission infrastructure is very high, in excess of 99 percent. Transmission lines typically require minimal maintenance. The MNEC transmission line will be designed and constructed to meet or exceed current industry standards. Given these industry standards and the fact that the transmission line will be new, Xcel Energy has not identified planned maintenance activities for the transmission line at this time.

Substations

The Project-related modifications at the existing Sherco Substation and Sherco Solar West Substation will be minor. Inspection or maintenance activity crews will include the new equipment in the existing plans. No additional crew deployment will be required to perform inspection or maintenance at these facilities. We will perform inspection and maintenance activities at the three new substations, as outlined below.

- Up to two crews will perform quarterly inspections of each of the three new substations associated with the MNEC Project. Crews will drive up to two diesel-fueled pickup trucks a maximum of 150 miles to each substation each quarter.

- Once every six years, up to two crews will perform relay testing at each substation. Each crew will consist of up to three crew members, each driving a Chevrolet Suburban, or similar. Testing may take up to four weeks, Monday through Friday, to complete at each substation. Crew members may commute a maximum of 45 miles each way to the substation testing site.

- Once every four years, crews will perform vegetation maintenance along the transmission line and at the substations. The line inspection quality control and contractor spray crew will each operate a gasoline-fueled pickup truck for a maximum of 5,200 miles and a gasoline-fueled ATV for a maximum of 5,000 miles. The contractor foreman will operate two gasoline-fueled pickup trucks for a maximum of 25,200 miles and two gasoline-fueled ATVs for a maximum of 25,000 miles. The contractor vegetation crew will operate three diesel-fueled bucket trucks for a maximum of 20,200 miles. The contractor special crew will operate a diesel-fueled mechanical saw for a maximum of 2,700 miles. The contractor LiDAR patrol crew will fly a Jet A fueled helicopter a maximum of 700 miles, plus miles to refuel during the patrol.

Minnesota Energy Connection Project
Response to Minnesota Department of Commerce Energy Environmental Review and Analysis Supplemental Information Inquiry #1 Number 6
Fuel Usage from Operation and Maintenance Activities
Overview

Maintenance Activity	Frequency of Activity	Vehicle Type	Number of vehicles per Activity	Fuel Type	Approximate miles traveled per vehicle per activity	Fuel Economy (miles per gallon) [a,b,c,d,e]	Fuel Usage per activity (gallons) [f]	Number of Activity in 12 years	Fuel Usage in 12 years (gallons)	Annual Average Fuel Usage in 12 years (gallons)
Transmission Line Ground Inspections	Every 4 years	Pickup Truck	2	Diesel	300	22.7	26	3	79	--
Transmission Line Ground Inspections	Every 4 years	ATV	2	Gasoline	300	12	50	3	150	--
Transmission Line Drone Inspections	Every 4 years, alternating	Pickup Truck	1	Diesel	300	22.7	13	3	40	--
Transmission Line Aerial Inspections	Annually	Helicopter	1	Jet A Fuel	280	See following page	460.2	12	5,523	--
Substation Inspections	Quarterly	Pickup Truck	6	Diesel	150	22.7	40	48	1,903	--
Substation Inspections - Relay Testing [g]	Every 6 years	Chevy Suburban	6	Gasoline	5,400	16	2,025	2	4,050	--
Vegetation Maintenance									0	--
Line Inspection / QC	Every 4 years	Pickup Truck	1	Gasoline	5,200	18	289	3	867	--
Line Inspection / QC	Every 4 years	ATV	1	Gasoline	5,000	12	417	3	1,250	--
Contractor Foreman	Every 4 years	Pickup Truck	2	Gasoline	25,200	18	2,800	3	8,400	--
Contractor Foreman	Every 4 years	ATV	2	Gasoline	25,000	12	4,167	3	12,500	--
Contractor Spray Crew	Every 4 years	Pickup Truck	1	Gasoline	5,200	18	289	3	867	--
Contractor Spray Crew	Every 4 years	ATV	1	Gasoline	5,000	12	417	3	1,250	--
Contractor Vegetation Crew	Every 4 years	Bucket Truck	3	Diesel	20,200	5	12,120	3	36,360	--
Contractor Special Crew	Every 4 years	Mechanical Saw	2	Diesel	2,700	5	1,080	3	3,240	--
Contractor Lidar patrol	Every 4 years	Helicopter	1	Jet A Fuel	700	See following page	1,709	3	5,126	--
TOTAL GASOLINE									**29,333**	**2,444**
TOTAL DIESEL									**41,622**	**3,469**
TOTAL JET A FUEL									**10,648**	**887**

[a] Fuel economy for diesel pickup trucks is the average combined city/highway fuel economy for 4-wheel drive standard diesel-fueled pick-up trucks, model year 2024. Available online at: https://www.fueleconomy.gov/feg/download.shtml. Accessed May 2024.

[b] Fuel economy for ATVs from the most conservative industry average from several sources, including Finntrail.com. 2023. Most Fuel Efficient ATVS and UTVS. Available online at: https://finntrail.com/blog/most-fuel-efficient-atvs-and-utvs/#:~:text=All%20in%20all%2C%20the%20fuel,the%20fuel%20tank%20as%20well. Accessed May 2024.

[c] Fuel economy for Suburbans is the average combined city/highway fuel economy for model year 2024 with 4-wheel drive and a 5.3 liter engine displacement. Available online at: https://www.fueleconomy.gov/feg/download.shtml. Accessed May 2024.

[d] Fuel economy for gasoline pickup trucks is the average combined city/highway fuel economy for 4-wheel drive standard gasoline-fueled pick-up trucks, model year 2024. Available online at: https://www.fueleconomy.gov/feg/download.shtml. Accessed May 2024.

[e] Fuel economy for bucket trucks and mechanical saw trucks is a conservative average from several online sources, including https://www.energy.gov/eere/vehicles/fact-626-june-7-2010-fuel-economy-light-and-heavy-vehicles and https://www.government-fleet.com/131654/heavy-duty-bucket-truck-operating-costs-increasing.

[f] Fuel usage per activity calculated as the product of the number of vehicles per activity * approximate miles traveled per vehicle per activity * fuel economy.

[g] Relay testing occurs once every 6 years at substations. Testing is performed by a maximum of 2 crews of 3 people each over a maximum of 4 weeks. If crew members reside more than 45 miles from the job site, workers will rent a hotel room closer to the job site, so the maximum daily commute for each crew member is 45 miles. The MNEC Project includes three new substations that will require relay testing. Miles traveled per vehicle is calculated by: 3 substations * 4 weeks * 5 days/week * 45 miles/trip * 2 trips/day.

Minnesota Energy Connection Project
Response to Minnesota Department of Commerce Energy Environmental Review and Analysis Supplemental Information Inquiry #1 Number 6
Fuel Usage from Operation and Maintenance Activities
Fuel Usage from Helicopters

Activity	Engine Mode	Miles per trip	Speed (miles per hour)	Hours per Trip [a]	Number of Trips	Fuel Flow [b] (kg/s)	Max Power (HP)	Percent engine power [c]	Loaded Power (HP)	Fuel Usage (gallons)
TRANSMISSION LINE INSPECTIONS										
	Ground Idle	NA	NA	0.08	5	0.013	350	0.13	46	6.7
	Hover and Climb	NA	NA	0.08	5	0.030	350	0.87	305	14.8
	Approach	NA	NA	0.08	5	0.024	350	0.46	161	11.8
	Flight to/from Line	50	34.53	1.45	5	0.029	350	0.8	280	248.2
	Line Inspection	36	34.53	1.04	5	0.029	350	0.8	280	178.7
TOTAL FUEL USE - TRANSMISSION LINE INSPECTIONS										**460.2**
LiDAR LINE INSPECTIONS										
	Ground Idle	NA	NA	0.08	18	0.013	350	0.13	46	24.0
	Hover and Climb	NA	NA	0.08	18	0.030	350	0.87	305	53.4
	Approach	NA	NA	0.08	18	0.024	350	0.46	161	42.3
	Flight to/from Line	50	34.53	1.45	18	0.029	350	0.8	280	893.7
	LiDAR Patrol	39	34.53	1.13	18	0.029	350	0.8	280	695.1
TOTAL FUEL USE - LiDAR PATROL										**1,708.5**

[a] Ground idle, hover and climb, and approach from section 3.2 of Guidance on the Determination of Helicopter Emissions, Edition 2, Dec 2015. Flight for inspections assumes 180 miles over the transmission line plus 4 trips to refuel at an airfield 25 miles away. Flight for LiDAR patrol assumes 500 miles over the transmission line, one round trip to an airfield 100 miles away, and 15 trips to refuel at an airfield 25 miles away. Fuel tank size assumed to be 96 gallons. Flight speed assumed to be 30 knots, converted to miles per hour using 1 knot = 1.151 miles/hour.

[b] Data for a turboshaft single engine <600 shaft horsepower from section 3.2 of Guidance on the Determination of Helicopter Emissions, Edition 2, Dec 2015.

[c] Data for a turboshaft single engine <600 shaft horsepower from section 2.3 of Guidance on the Determination of Helicopter Emissions, Edition 2, Dec 2015.

Conversions:

792.5	kg/m3 jet A fuel density
264.172	gallons / m3
2000	lb/ton
1.151	miles/hour per 1 knot

COMMERCE DEPARTMENT

Supplemental Information Inquiry #2

To: Matt Langan
Xcel Energy

Sent via email to matthew.a.langan@xcelenergy.com

From: Andrew Levi
Energy Environmental Review and Analysis

Date: June 14, 2024

Project: MN Energy Connection Project
22-131/132

Respond: Questions 5-7 July 1

Please respond to the following questions or provide the requested data or information. Staff will use the information provided to develop the environmental document for the project, which is a public document. Your response, in its entirety, will be included in the environmental document as an appendix; therefore, **responses will be publicly available** unless otherwise designated by the respondent as "nonpublic information" pursuant to Minnesota Statute § 13.02, subdivision 12.

Directions: Responses to questions should be contained within this form to the greatest extent possible (11-point Calibri, plain text font, RGB 192, 0, 0). Attach supporting documentation as necessary. While data and information requests, for example, shapefiles or draft plans, will not be contained within this form, document their submittal using this form as follows: "*Requested information* sent to *whom* by *what means* on *date*." Co-applicants please consolidate your reply into a single response.

Do not eFile your response. Return the completed form, as a PDF, along with necessary supporting documentation, and/or requested data or information to andrew.levi@state.mn.us. Contact me at (651) 539-1840 with questions.

5. The Route Permit Application indicates the Purple Route follows 3.2 miles of existing underground pipeline, the Blue Route follows 2.8 miles of underground existing pipeline, and the routes collectively cross pipeline ROWs in multiple places. The data source is noted as the National Pipeline Mapping System. Please provide the shapefiles of the pipeline ROWs as you mapped them to identify the parallel ROWs and crossing locations.

   Requested information sent to Andrew Levi via email on July 1, 2024. This shapefile was created using the following data sources: Rextag, Ventyx Velocity, National Pipeline Mapping System (https://pvnpms.phmsa.dot.gov/PublicViewer/), and aerial photography verification using Google Earth imagery.

6. Provide the original images provided in the Route Permit Application as Figure 2.4-1 Photos of Typical 345 kV Structures. Please also provide an image of a triple dead-end structure.

Figure 2.4-1 Photos of Typical 345 kV Structures

Typical Double Circuit Structures | Typical Dead-end Structures

Requested information sent to Andrew Levi via email on July 1, 2024.

7. Provide the parcel shapefile the company is using.

Requested information sent to Andrew Levi via email on May 10, 2024. This shapefile was created using Xcel Energy's Lightbox subscription.

T-Line Project Group Breakouts:

Line Notes:

Line / Route Miles - $/Mile Adder
Structure Count
# of Parcels in Route
Distribution Relocates (LF)

Route Alt Total
Green Route (Sherco Solar West -Sherburne County Sub)
T-line Total*

Blue Route Variance
Purple Route Variance

Green Route (Sherco Solar West -Sherburne County Sub - Miles)
Total Project Miles:

Cost / Mile

***All costs inclusive of AFUDC**

Total $'s by Group (Blue Route)	Total $'s by Group (Purple Route)	Total $'s by Group (Purple A2 Route)	Total $'s by Group (Purple A4 Route)
174.7	171.0	171.0	171.5
922	933	934	935
729	743		
120,000	146,000	154,000	121,000
$ 760,400,000	**$ 780,100,000**	**$ 780,900,000**	**$ 781,900,000**
$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000
$ 766,921,000	**$ 786,621,000**	**$ 787,421,000**	**$ 788,421,000**
$ -	$ (19,700,000)		
$ 19,700,000	$ -	$ 800,000	$ 1,800,000
3.1	3.1	3.1	3.1
177.8	174.1	174.1	174.6
$ 4,313,391	$ 4,518,214	$ 4,522,809	$ 4,515,584
		$ 4,522,809	
		$ 4,313,634	95%
		$ 209,174	

A

Total $'s by Group (Blue A7 Route)	Total $'s by Group (Blue A6 Route)	Total $'s by Group (Purple-Blue A5 Route)
174.7	174.7	175.2
923	923	926
128,000	135,000	120,000
$ 763,800,000	**$ 761,100,000**	**$ 762,600,000**
$ 6,521,000	$ 6,521,000	$ 6,521,000
$ 770,321,000	**$ 767,621,000**	**$ 769,121,000**
$ 3,400,000	$ 700,000	$ 2,200,000
		$ (17,500,000)
3.1	3.1	3.1
177.8	177.8	178.3
$ 4,332,514	$ 4,317,328	$ 4,313,634

Total $'s by Group (Blue-Purple B2 Route)	Total $'s by Group (Purple B3 Route)	Total $'s by Group (Purple-Blue C2 Route)	Total $'s by Group (Blue C2 Route)
173.6	172.4	177.7	174.7
940	936	952	922
126,000	173,000	173,000	173,000
$ 787,600,000	**$ 780,900,000**	**$ 780,300,000**	**$ 768,500,000**
$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000
$ 794,121,000	**$ 787,421,000**	**$ 786,821,000**	**$ 775,021,000**
$ 27,200,000		$ 19,900,000	$ 8,100,000
$ 7,500,000	$ 800,000	$ 200,000	
3.1	3.1	3.1	3.1
176.7	175.5	180.8	177.8
$ 4,494,177	$ 4,486,729	$ 4,351,886	$ 4,358,948

$	4,494,177	
$	4,343,624	97%
$	150,553	

B

Total $'s by Group (Purple-Blue C3 Route)	Total $'s by Group (Blue C3 Route)	Total $'s by Group (Purple D2 Route)
177.1	174.7	171.2
951	922	935
128,000	120,000	157,000
$ 776,200,000	**$ 766,000,000**	**$ 781,100,000**
$ 6,521,000	$ 6,521,000	$ 6,521,000
$ 782,721,000	**$ 772,521,000**	**$ 787,621,000**
$ 15,800,000	$ 5,600,000	
$ (3,900,000)		$ 1,000,000
3.1	3.1	3.1
180.2	177.8	174.3
$ 4,343,624	$ 4,344,888	$ 4,518,766
		$ 4,518,766
		$ 4,306,732
		$ 212,034

D

Total $'s by Group (Purple-Blue D3 Route)	Total $'s by Group (Blue D5 Route)	Total $'s by Group (Blue D6 Route)	Total $'s by Group (Blue-Purple D7 Route)
180.9	174.8	175.3	167.8
956	922	924	915
134,000	118,000	131,000	133,000
$ 787,300,000	**$ 760,800,000**	**$ 761,800,000**	**$ 765,100,000**
$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000
$ 793,821,000	**$ 767,321,000**	**$ 768,321,000**	**$ 771,621,000**
$ 26,900,000	$ 400,000	$ 1,400,000	$ 4,700,000
$ 7,200,000			$ (15,000,000)
3.1	3.1	3.1	3.1
184.0	177.9	178.4	170.9
$ 4,314,245	$ 4,313,215	$ 4,306,732	$ 4,515,044

95%

Total $'s by Group (Purple F2 Route)	Total $'s by Group (Purple F3 Route)	Total $'s by Group (Blue F5 Route)
171.0	171.5	174.4
933	936	921
145,000	144,000	124,000
$ 780,300,000	**$ 784,500,000**	**$ 761,300,000**
$ 6,521,000	$ 6,521,000	$ 6,521,000
$ 786,821,000	**$ 791,021,000**	**$ 767,821,000**
		$ 900,000
$ 200,000	$ 4,400,000	
3.1	3.1	3.1
174.1	174.6	177.5
$ 4,519,362	$ 4,530,475	$ 4,325,752

$ 4,530,475		
$ 4,325,752	95%	
$ 204,723		

F

Total $'s by Group (Blue F6 Route)	Total $'s by Group (Purple F7 Route)	Total $'s by Group (Blue F8 Route)	Total $'s by Group (Purple-Blue G2 Route)
174.6	170.9	174.6	179.4
923	932	924	953
122,000	148,000	125,000	128,000
$ 762,300,000	**$ 779,700,000**	**$ 771,600,000**	**$ 781,800,000**
$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000
$ 768,821,000	**$ 786,221,000**	**$ 778,121,000**	**$ 788,321,000**
$ 1,900,000		$ 11,200,000	$ 21,400,000
	$ (400,000)		$ 1,700,000
3.1	3.1	3.1	3.1
177.7	174.0	177.7	182.5
$ 4,326,511	$ 4,518,511	$ 4,378,846	$ 4,319,567
			$ 4,550,630
			$ 4,319,567
			$ 231,063

G

Total $'s by Group (Purple G4 Route)	Total $'s by Group (Purple G5 Route)	Total $'s by Group (Purple G6 Route)
173.1	172.5	171.1
948	943	933
149,000	149,000	155,000
$ 795,300,000	**$ 787,300,000**	**$ 780,000,000**
$ 6,521,000	$ 6,521,000	$ 6,521,000
$ 801,821,000	**$ 793,821,000**	**$ 786,521,000**
$ 15,200,000	$ 7,200,000	$ (100,000)
3.1	3.1	3.1
176.2	175.6	174.2
$ 4,550,630	$ 4,520,621	$ 4,515,046

95%

Total $'s by Group (Blue 211 Route)	Total $'s by Group (Blue 219 Route)	Total $'s by Group (Blue 213 Route)	Total $'s by Group (Blue 215 Route)
175.7	175.7	175.7	174.7
928	928	929	922
132,000	129,000	113,000	120,000
$ 762,200,000	**$ 760,700,000**	**$ 764,300,000**	**$ 761,800,000**
$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000
$ 768,721,000	**$ 767,221,000**	**$ 770,821,000**	**$ 768,321,000**
$ 1,800,000	$ 300,000	$ 3,900,000	$ 1,400,000
3.1	3.1	3.1	3.1
178.8	178.8	178.8	177.8
$ 4,299,334	$ 4,290,945	$ 4,311,079	$ 4,321,265

Total $'s by Group (Blue 220 Route)	Total $'s by Group (Blue 217 Route)	Total $'s by Group (Blue 218 Route)
174.7	176.0	176.0
923	929	930
120,000	120,000	120,000
$ 760,800,000	**$ 765,500,000**	**$ 765,600,000**
$ 6,521,000	$ 6,521,000	$ 6,521,000
$ 767,321,000	**$ 772,021,000**	**$ 772,121,000**
$ 400,000	$ 5,100,000	$ 5,200,000
3.1	3.1	3.1
177.8	179.1	179.1
$ 4,315,641	$ 4,310,558	$ 4,311,117

Total $'s by Group (Purple 221Route)	Total $'s by Group (Purple 231Route)	Total $'s by Group (Purple 242 Route)	Total $'s by Group (Purple 243 Route)
171.8	171.3	171.5	171.4
941	934	936	935
146,000	162,000	150,000	143,000
$ 787,900,000	**$ 781,800,000**	**$ 782,900,000**	**$ 782,300,000**
$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000
$ 794,421,000	**$ 788,321,000**	**$ 789,421,000**	**$ 788,821,000**
$ 7,800,000	$ 1,700,000	$ 2,800,000	$ 2,200,000
3.1	3.1	3.1	3.1
174.9	174.4	174.6	174.5
$ 4,542,144	$ 4,520,189	$ 4,521,312	$ 4,520,464

Total $'s by Group (Blue 236 Route)	Total $'s by Group (Blue 237 Route)	Total $'s by Group (Blue 238 Route)
174.9	174.9	174.8
925	925	924
120,000	121,000	120,000
$ 761,400,000	**$ 761,400,000**	**$ 761,300,000**
$ 6,521,000	$ 6,521,000	$ 6,521,000
$ 767,921,000	**$ 767,921,000**	**$ 767,821,000**
$ 1,000,000	$ 1,000,000	$ 900,000
3.1	3.1	3.1
178.0	178.0	177.9
$ 4,314,163	$ 4,314,163	$ 4,316,026

Total $'s by Group (Blue 235 Route)	Total $'s by Group (Blue 239 Route)	Total $'s by Group (Blue 240 Route)	Total $'s by Group (Blue-Purple 249 Route)
174.7	174.8	174.8	173.5
924	924	923	947
119,000	119,000	116,000	153,000
$ 761,000,000	**$ 761,400,000**	**$ 760,600,000**	**$ 791,900,000**
$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000
$ 767,521,000	**$ 767,921,000**	**$ 767,121,000**	**$ 798,421,000**
$ 600,000	$ 1,000,000	$ 200,000	$ 31,500,000
			$ 11,800,000
3.1	3.1	3.1	3.1
177.8	177.9	177.9	176.6
$ 4,316,766	$ 4,316,588	$ 4,312,091	$ 4,521,070

Total $'s by Group (Blue-Purple 250 Route)	Total $'s by Group (Blue 244 Route)	Total $'s by Group (Blue 245 Route)
172.9	174.8	175.4
947	922	923
148,000	117,000	120,000
$ 794,700,000	**$ 760,800,000**	**$ 762,900,000**
$ 6,521,000	$ 6,521,000	$ 6,521,000
$ 801,221,000	**$ 767,321,000**	**$ 769,421,000**
$ 34,300,000	$ 400,000	$ 2,500,000
$ 14,600,000		
3.1	3.1	3.1
176.0	177.9	178.5
$ 4,552,392	$ 4,313,215	$ 4,310,482

Total $'s by Group (Blue 246 Route)	Total $'s by Group (Blue-Purple 108 Route)	Total $'s by Group (Blue-Purple 105 Route)	Total $'s by Group (Purple-Blue 107 Route)
178.0	172.0	171.8	180.9
939	915	916	956
120,000	121,000	116,000	141,000
$ 773,600,000	**$ 767,300,000**	**$ 768,100,000**	**$ 787,600,000**
$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000
$ 780,121,000	**$ 773,821,000**	**$ 774,621,000**	**$ 794,121,000**
$ 13,200,000	$ 6,900,000	$ 7,700,000	$ 27,200,000
	$ (12,800,000)	$ (12,000,000)	$ 7,500,000
3.1	3.1	3.1	3.1
181.1	175.1	174.9	184.0
$ 4,307,681	$ 4,419,309	$ 4,428,937	$ 4,315,875

Total $'s by Group (Blue 223 Route)	Total $'s by Group (Blue 212 Route)	Total $'s by Group (Blue 216 Route)
174.7	174.8	174.7
921	923	922
116,000	129,000	120,000
$ 760,600,000	**$ 761,400,000**	**$ 760,900,000**
$ 6,521,000	$ 6,521,000	$ 6,521,000
$ 767,121,000	**$ 767,921,000**	**$ 767,421,000**
$ 200,000	$ 1,000,000	$ 500,000
3.1	3.1	3.1
177.8	177.9	177.8
$ 4,314,516	$ 4,316,588	$ 4,316,204

Total $'s by Group (Purple 229 Route)	Total $'s by Group (Purple AA3 Route)	Total $'s by Group (Purple 230 Route)
171.0	171.1	171.0
934	933	933
145,000	146,000	146,000
$ 781,400,000	**$ 780,200,000**	**$ 780,200,000**
$ 6,521,000	$ 6,521,000	$ 6,521,000
$ 787,921,000	**$ 786,721,000**	**$ 786,721,000**
$ 1,300,000	$ 100,000	$ 100,000
3.1	3.1	3.1
174.1	174.2	174.1
$ 4,525,681	$ 4,516,194	$ 4,518,788

T-Line Project Group Breakouts:	Total $'s by Group (Blue Route)	Total $'s by Group (Purple Route)
Line Notes:		
Line / Route Miles - $/Mile Adder	174.7	171.0
Structure Count	922	933
# of Parcels in Route	729	743
Distribution Relocates (LF)	120,000	146,000
Route Alt Total	**$ 760,400,000**	**$ 780,100,000**
Green Route (Sherco Solar West -Sherburne County Sub)	$ 6,521,000	$ 6,521,000
T-line Total*	**$ 766,921,000**	**$ 786,621,000**
Blue Route Variance	$ -	$ (19,700,000)
Purple Route Variance	$ 19,700,000	$ -
Green Route (Sherco Solar West -Sherburne County Sub - Miles)	3.1	3.1
Total Project Miles:	177.8	174.1
Cost / Mile	$ 4,313,391	$ 4,518,214

***All costs inclusive of AFUDC**

Total $'s by Group (Purple A2 Route)	Total $'s by Group (Purple A4 Route)	Total $'s by Group (Blue A7 Route)	Total $'s by Group (Blue A6 Route)	Total $'s by Group (Purple-Blue A5 Route)	Total $'s by Group (Blue-Purple B2 Route)
171.0	171.5	174.7	174.7	175.2	173.6
934	935	923	923	926	940
154,000	121,000	128,000	135,000	120,000	126,000
$ 780,900,000	**$ 781,900,000**	**$ 763,800,000**	**$ 761,100,000**	**$ 762,600,000**	**$ 787,600,000**
$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000
$ 787,421,000	**$ 788,421,000**	**$ 770,321,000**	**$ 767,621,000**	**$ 769,121,000**	**$ 794,121,000**
		$ 3,400,000	$ 700,000	$ 2,200,000	$ 27,200,000
$ 800,000	$ 1,800,000			$ (17,500,000)	$ 7,500,000
3.1	3.1	3.1	3.1	3.1	3.1
174.1	174.6	177.8	177.8	178.3	176.7
$ 4,522,809	$ 4,515,584	$ 4,332,514	$ 4,317,328	$ 4,313,634	$ 4,494,177
$ 4,522,809					$ 4,494,177
$ 4,313,634	95%				$ 4,343,624
$ 209,174					$ 150,553
A					**B**

Total $'s by Group (Purple B3 Route)	Total $'s by Group (Purple-Blue C2 Route)	Total $'s by Group (Blue C2 Route)	Total $'s by Group (Purple-Blue C3 Route)	Total $'s by Group (Blue C3 Route)	Total $'s by Group (Purple D2 Route)	Total $'s by Group (Purple-Blue D3 Route)
172.4	177.7	174.7	177.1	174.7	171.2	180.9
936	952	922	951	922	935	956
173,000	173,000	173,000	128,000	120,000	157,000	134,000
$ 780,900,000	**$ 780,300,000**	**$ 768,500,000**	**$ 776,200,000**	**$ 766,000,000**	**$ 781,100,000**	**$ 787,300,000**
$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000
$ 787,421,000	**$ 786,821,000**	**$ 775,021,000**	**$ 782,721,000**	**$ 772,521,000**	**$ 787,621,000**	**$ 793,821,000**
	$ 19,900,000	$ 8,100,000	$ 15,800,000	$ 5,600,000		$ 26,900,000
$ 800,000	$ 200,000		$ (3,900,000)		$ 1,000,000	$ 7,200,000
3.1	3.1	3.1	3.1	3.1	3.1	3.1
175.5	180.8	177.8	180.2	177.8	174.3	184.0
$ 4,486,729	$ 4,351,886	$ 4,358,948	$ 4,343,624	$ 4,344,888	$ 4,518,766	$ 4,314,245
					$ 4,518,766	
97%					$ 4,306,732	95%
					$ 212,034	

D

Total $'s by Group (Blue D5 Route)	Total $'s by Group (Blue D6 Route)	Total $'s by Group (Blue-Purple D7 Route)	Total $'s by Group (Purple F2 Route)	Total $'s by Group (Purple F3 Route)	Total $'s by Group (Blue F5 Route)
174.8	175.3	167.8	171.0	171.5	174.4
922	924	915	933	936	921
118,000	131,000	133,000	145,000	144,000	124,000
$ 760,800,000	**$ 761,800,000**	**$ 765,100,000**	**$ 780,300,000**	**$ 784,500,000**	**$ 761,300,000**
$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000
$ 767,321,000	**$ 768,321,000**	**$ 771,621,000**	**$ 786,821,000**	**$ 791,021,000**	**$ 767,821,000**
$ 400,000	$ 1,400,000	$ 4,700,000			$ 900,000
		$ (15,000,000)	$ 200,000	$ 4,400,000	
3.1	3.1	3.1	3.1	3.1	3.1
177.9	178.4	170.9	174.1	174.6	177.5
$ 4,313,215	$ 4,306,732	$ 4,515,044	$ 4,519,362	$ 4,530,475	$ 4,325,752

$	4,530,475	
$	4,325,752	95%
$	204,723	

F

Total $'s by Group (Blue F6 Route)	Total $'s by Group (Purple F7 Route)	Total $'s by Group (Blue F8 Route)	Total $'s by Group (Purple-Blue G2 Route)	Total $'s by Group (Purple G4 Route)	Total $'s by Group (Purple G5 Route)	Total $'s by Group (Purple G6 Route)
174.6	170.9	174.6	179.4	173.1	172.5	171.1
923	932	924	953	948	943	933
122,000	148,000	125,000	128,000	149,000	149,000	155,000
$ 762,300,000	**$ 779,700,000**	**$ 771,600,000**	**$ 781,800,000**	**$ 795,300,000**	**$ 787,300,000**	**$ 780,000,000**
$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000
$ 768,821,000	**$ 786,221,000**	**$ 778,121,000**	**$ 788,321,000**	**$ 801,821,000**	**$ 793,821,000**	**$ 786,521,000**
$ 1,900,000		$ 11,200,000	$ 21,400,000			
	$ (400,000)		$ 1,700,000	$ 15,200,000	$ 7,200,000	$ (100,000)
3.1	3.1	3.1	3.1	3.1	3.1	3.1
177.7	174.0	177.7	182.5	176.2	175.6	174.2
$ 4,326,511	$ 4,518,511	$ 4,378,846	$ 4,319,567	$ 4,550,630	$ 4,520,621	$ 4,515,046

$	4,550,630	
$	4,319,567	95%
$	231,063	

G

Total $'s by Group (Blue 211 Route)	Total $'s by Group (Blue 219 Route)	Total $'s by Group (Blue 213 Route)	Total $'s by Group (Blue 215 Route)	Total $'s by Group (Blue 220 Route)	Total $'s by Group (Blue 217 Route)
175.7	175.7	175.7	174.7	174.7	176.0
928	928	929	922	923	929
132,000	129,000	113,000	120,000	120,000	120,000
$ 762,200,000	**$ 760,700,000**	**$ 764,300,000**	**$ 761,800,000**	**$ 760,800,000**	**$ 765,500,000**
$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000
$ 768,721,000	**$ 767,221,000**	**$ 770,821,000**	**$ 768,321,000**	**$ 767,321,000**	**$ 772,021,000**
$ 1,800,000	$ 300,000	$ 3,900,000	$ 1,400,000	$ 400,000	$ 5,100,000
3.1	3.1	3.1	3.1	3.1	3.1
178.8	178.8	178.8	177.8	177.8	179.1
$ 4,299,334	$ 4,290,945	$ 4,311,079	$ 4,321,265	$ 4,315,641	$ 4,310,558

Total $'s by Group (Blue 218 Route)	Total $'s by Group (Purple 221Route)	Total $'s by Group (Purple 231Route)	Total $'s by Group (Purple 242 Route)	Total $'s by Group (Purple 243 Route)	Total $'s by Group (Blue 236 Route)	Total $'s by Group (Blue 237 Route)
176.0	171.8	171.3	171.5	171.4	174.9	174.9
930	941	934	936	935	925	925
120,000	146,000	162,000	150,000	143,000	120,000	121,000
$ 765,600,000	**$ 787,900,000**	**$ 781,800,000**	**$ 782,900,000**	**$ 782,300,000**	**$ 761,400,000**	**$ 761,400,000**
$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000
$ 772,121,000	**$ 794,421,000**	**$ 788,321,000**	**$ 789,421,000**	**$ 788,821,000**	**$ 767,921,000**	**$ 767,921,000**
$ 5,200,000					$ 1,000,000	$ 1,000,000
	$ 7,800,000	$ 1,700,000	$ 2,800,000	$ 2,200,000		
3.1	3.1	3.1	3.1	3.1	3.1	3.1
179.1	174.9	174.4	174.6	174.5	178.0	178.0
$ 4,311,117	$ 4,542,144	$ 4,520,189	$ 4,521,312	$ 4,520,464	$ 4,314,163	$ 4,314,163

Total $'s by Group (Blue 238 Route)	Total $'s by Group (Blue 235 Route)	Total $'s by Group (Blue 239 Route)	Total $'s by Group (Blue 240 Route)	Total $'s by Group (Blue-Purple 249 Route)	Total $'s by Group (Blue-Purple 250 Route)
174.8	174.7	174.8	174.8	173.5	172.9
924	924	924	923	947	947
120,000	119,000	119,000	116,000	153,000	148,000
$ 761,300,000	**$ 761,000,000**	**$ 761,400,000**	**$ 760,600,000**	**$ 791,900,000**	**$ 794,700,000**
$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000
$ 767,821,000	**$ 767,521,000**	**$ 767,921,000**	**$ 767,121,000**	**$ 798,421,000**	**$ 801,221,000**
$ 900,000	$ 600,000	$ 1,000,000	$ 200,000	$ 31,500,000	$ 34,300,000
				$ 11,800,000	$ 14,600,000
3.1	3.1	3.1	3.1	3.1	3.1
177.9	177.8	177.9	177.9	176.6	176.0
$ 4,316,026	$ 4,316,766	$ 4,316,588	$ 4,312,091	$ 4,521,070	$ 4,552,392

Total $'s by Group (Blue 244 Route)	Total $'s by Group (Blue 245 Route)	Total $'s by Group (Blue 246 Route)	Total $'s by Group (Blue-Purple 108 Route)	Total $'s by Group (Blue-Purple 105 Route)	Total $'s by Group (Purple-Blue 107 Route)	Total $'s by Group (Blue 223 Route)
174.8	175.4	178.0	172.0	171.8	180.9	174.7
922	923	939	915	916	956	921
117,000	120,000	120,000	121,000	116,000	141,000	116,000
$ 760,800,000	**$ 762,900,000**	**$ 773,600,000**	**$ 767,300,000**	**$ 768,100,000**	**$ 787,600,000**	**$ 760,600,000**
$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000
$ 767,321,000	**$ 769,421,000**	**$ 780,121,000**	**$ 773,821,000**	**$ 774,621,000**	**$ 794,121,000**	**$ 767,121,000**
$ 400,000	$ 2,500,000	$ 13,200,000	$ 6,900,000	$ 7,700,000	$ 27,200,000	$ 200,000
			$ (12,800,000)	$ (12,000,000)	$ 7,500,000	
3.1	3.1	3.1	3.1	3.1	3.1	3.1
177.9	178.5	181.1	175.1	174.9	184.0	177.8
$ 4,313,215	$ 4,310,482	$ 4,307,681	$ 4,419,309	$ 4,428,937	$ 4,315,875	$ 4,314,516

Total $'s by Group (Blue 212 Route)	Total $'s by Group (Blue 216 Route)	Total $'s by Group (Purple 229 Route)	Total $'s by Group (Purple AA3 Route)	Total $'s by Group (Purple 230 Route)
174.8	174.7	171.0	171.1	171.0
923	922	934	933	933
129,000	120,000	145,000	146,000	146,000
$ 761,400,000	**$ 760,900,000**	**$ 781,400,000**	**$ 780,200,000**	**$ 780,200,000**
$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000	$ 6,521,000
$ 767,921,000	**$ 767,421,000**	**$ 787,921,000**	**$ 786,721,000**	**$ 786,721,000**
$ 1,000,000	$ 500,000			
		$ 1,300,000	$ 100,000	$ 100,000
3.1	3.1	3.1	3.1	3.1
177.9	177.8	174.1	174.2	174.1
$ 4,316,588	$ 4,316,204	$ 4,525,681	$ 4,516,194	$ 4,518,788

COMMERCE DEPARTMENT

Supplemental Information Inquiry #3

To: Matt Langan
Xcel Energy

Sent via email to matthew.a.langan@xcelenergy.com

From: Andrew Levi
Energy Environmental Review and Analysis

Date: August 1, 2024

Project: MN Energy Connection Project
22-131/132

Respond: August 15, 2024

Please respond to the following questions or provide the requested data or information. Staff will use the information provided to develop the environmental document for the project, which is a public document. Your response, in its entirety, will be included in the environmental document as an appendix; therefore, **responses will be publicly available** unless otherwise designated by the respondent as "nonpublic information" pursuant to Minnesota Statute § 13.02, subdivision 12.

Directions: Responses to questions should be contained within this form to the greatest extent possible (11-point Calibri, plain text font, RGB 192, 0, 0). Attach supporting documentation as necessary. While data and information requests, for example, shapefiles or draft plans, will not be contained within this form, document their submittal using this form as follows: "*Requested information* sent to *whom* by *what means* on *date*."

Do not eFile your response. Return the completed form, as a PDF, along with necessary supporting documentation, and/or requested data or information to andrew.levi@state.mn.us. Contact me at (651) 539-1840 with questions.

1. Please provide additional detail (above and beyond what is provided in the Route Permit Application) concerning where possible ROW sharing could occur. Should the company care to discuss the feasibility of these locations it may.

Response sent to Andrew Levi via email on August 16, 2024.

The types of right-of-way (ROW) present within the project area are those associated with public roads, Xcel Energy transmission lines, transmission lines owned by a utility other than Xcel Energy, railroads, and pipelines. The feasibility of the Project sharing ROW for each type is described below. Figure 4.4-1 of the Route Permit Application identifies the extent to which the Blue and Purple Routes follow existing roads, transmission lines, railroad, or pipelines.

- **Public Road ROW sharing** – Xcel Energy will, as part of its standard practice, work with public road authorities to overlap portions of road and transmission line rights-of-way where feasible where the Project parallels a public road. Placing transmission line structures adjacent to and outside public road ROW can help reduce the amount of new ROW on adjacent land parcels while minimizing the potential relocation lines in the future due to road projects. The amount of ROW overlap is determined by the space needed to safely operate the roadway and transmission line, and to safely provide

maintenance access to both the roadway and transmission line. Xcel Energy also coordinates with road authorities regarding any known future road ROW expansions to minimize relocation of the transmission line in the future.

- **Xcel Energy-owned Electric Transmission Line ROW sharing** – Xcel Energy will, as part of its standard practice, examine areas of the approved route that parallel Xcel Energy-owned Transmission Line ROW for opportunities to overlap portions of ROW, and reduce the amount of new ROW on adjacent land parcels. The amount of ROW overlap will be determined by the space needed to safely operate both of the transmission lines, and the space needed to safely provide maintenance access to both transmission lines.

- **Electric Transmission owned by a Utility other than Xcel Energy ROW sharing** – Xcel Energy will, as part of its standard practice, work with other utilities to overlap portions of rights-of-way where the approved route parallels their existing electric transmission lines to reduce the amount of new ROW on adjacent land parcels. If the other utility will allow ROW sharing, the amount of overlap will be determined by the space needed to safely operate both of the transmission lines, and the space needed to safely provide maintenance access to both transmission lines.

- **Railroad ROW sharing** – Railroads are long linear features developed on the landscape in the project area and therefore can be considered as an opportunity to run parallel with a transmission line. Railroad rights-of-way are fee-owned by railroad companies, and not available for ROW sharing without approval from the railroad company. Xcel Energy is not proposing any ROW sharing with railroads in the project area. Rather, the proposed 150-foot transmission line ROW for the proposed Project would be located entirely off and adjacent to railroad-owned property. Transmission lines, such as those proposed in the application, have the ability to cause AC Interference on railroads. As such, caution is used when siting near railroad facilities. Engineering analysis and induction studies are used to determine the extent of possible impacts and determine if co-location is feasible and reasonable. If induction mitigation is necessary, the railroad company would have to approve of the mitigation being installed and Xcel Energy would be responsible for the added project costs.

- **Pipeline ROW sharing** - Transmission lines, such as those proposed in the application, have the ability to cause AC Interference on pipelines. As such, caution is used when siting near pipeline facilities. Engineering analysis and induction studies are used to determine the extent of possible impacts and determine if co-location is feasible and reasonable. If induction mitigation is necessary, the pipeline company would have to approve of the mitigation being installed and Xcel Energy would be responsible for the added project costs.

COMMERCE DEPARTMENT

Supplemental Information Inquiry #4

To: Matt Langan
Xcel Energy

Sent via email to matthew.a.langan@xcelenergy.com

From: Andrew Levi
Energy Environmental Review and Analysis

Date: September 4, 2024

Project: MN Energy Connection Project
22-131/132

Respond: ASAP

Please respond to the following questions or provide the requested data or information. Staff will use the information provided to develop the environmental document for the project, which is a public document. Your response, in its entirety, will be included in the environmental document as an appendix; therefore, **responses will be publicly available** unless otherwise designated by the respondent as "nonpublic information" pursuant to Minnesota Statute § 13.02, subdivision 12.

Directions: Responses to questions should be contained within this form to the greatest extent possible (11-point Calibri, plain text font, RGB 192, 0, 0). Attach supporting documentation as necessary. While data and information requests, for example, shapefiles or draft plans, will not be contained within this form, document their submittal using this form as follows: "*Requested information* sent to *whom* by *what means* on *date*."

Do not eFile your response. Return the completed form, as a PDF, along with necessary supporting documentation, and/or requested data or information to andrew.levi@state.mn.us. Contact me at (651) 539-1840 with questions.

1. **Electric System Reliability**- Minnesota Rules 7850.4100 requires us to considered electrical system reliability as part of the DEIS. From Xcel's perspective, are there any particular areas at higher risk for reliability issues? For example, where HVTLs might cross one another? If yes, please provide a discussion of the potential higher risk reliability issue. If no, please say so.

Response sent to Andrew Levi via email on September 12, 2024.

There are no particular geographic areas that pose a higher risk to reliability issues. High voltage transmission lines are designed to be highly reliable. The design for the MN Energy Connection project consists of concrete foundations, steel structures, twisted pair conductor and shield wire for lighting protection.

As described in the Direct Testimony of Jason Standing, however, circuits that cross over one another present operational and maintenance challenges. For example, both lines may need to be removed from service for a maintenance crew to work safely on one of the lines. Accordingly, Xcel Energy has sought to minimize the number of times the project crosses other high voltage transmission lines.

2. **Proposed Climate Mitigation** – Please confirm the below text is accurate. If not, please provide alternate text.

> The project's design incorporates elements that minimize impacts from more extreme weather events such as increased rainfall and flooding, storms, high winds, and heat waves that are expected to accompany a warming climate. Transmission infrastructure has few mechanical elements and is built to withstand weather extremes that are normally encountered. Apart from outages due to severe weather such as tornadoes and heavy ice storms, transmission lines rarely fail. When this happens, transmission lines are automatically taken out of service by protective relaying equipment when a fault is sensed on the line. Such interruptions are usually only momentary. Scheduled maintenance outages are also infrequent. As a result, the average annual availability of transmission infrastructure is more than 99%.

Response sent to Andrew Levi via email on September 12, 2024.

> The text above is accurate, and the annual average availability of transmission infrastructure is 99.9%.

3. **Proposed Mitigation for Flooding and Rain** –Provide more information about how the project will be designed to withstand floods as well as increased frequency and intensity of rain. Provide specific information for Wright County if different.

Response sent to Andrew Levi via email on September 12 ,2024.

> Xcel Energy's standard practice, which will be used on the MN Energy Connection transmission line project, is to design the top of concrete for the structure foundations to be one foot above the 100-year floodplain elevation anywhere structures are installed in areas prone to flooding. If flooding were to exceed the 100-year flood level, the structures and foundations have the resilience to resist the flood loads. This includes flood-prone areas in Wright County. High Voltage Transmission Lines are designed to be highly reliable. The MN Energy Connection project design includes shield wire for lighting protection, and steel structures and twisted pair conductor to withstand frequent and/or intense rain events.

COMMERCE DEPARTMENT

Supplemental Information Inquiry #5

To: Matt Langan
Xcel Energy

Sent via email to matthew.a.langan@xcelenergy.com

From: Andrew Levi
Energy Environmental Review and Analysis

Date: October 1, 2024

Project: MN Energy Connection Project
22-131/132

Respond: October 2, 2024

Please respond to the following questions or provide the requested data or information. Staff will use the information provided to develop the environmental document for the project, which is a public document. Your response, in its entirety, will be included in the environmental document as an appendix; therefore, **responses will be publicly available** unless otherwise designated by the respondent as "nonpublic information" pursuant to Minnesota Statute § 13.02, subdivision 12.

Directions: Responses to questions should be contained within this form to the greatest extent possible (11-point Calibri, plain text font, RGB 192, 0, 0). Attach supporting documentation as necessary. While data and information requests, for example, shapefiles or draft plans, will not be contained within this form, document their submittal using this form as follows: "*Requested information* sent to *whom* by *what means* on *date*."

Do not eFile your response. Return the completed form, as a PDF, along with necessary supporting documentation, and/or requested data or information to andrew.levi@state.mn.us. Contact me at (651) 539-1840 with questions.

1. Staff understands that for a 230 kV transmission line to replace the proposed project it would need to be triple circuited. Is this the case? If yes, can a triple circuit be placed on a single structure or would multiple structures, that is, two rights-of-way, be needed? Please provide any additional information you believe is relevant to the question.

Response sent to Andrew Levi via email on October 2, 2024.

A 230kV alternative would not be feasible. As is noted in the Certificate of Need application (p.72) "Xcel Energy evaluated and screened a 230kV option because it would have to operate at thermal operating limits to meet the required capacity at 3,000 amps with two lines. Losses on a 230kV option would be more than double a comparable 345kV option and would result in an unstable system with the required generation at a distance like Sherco to Lyon County due to the line impedance." Because the 230 kV is not feasible, Xcel Energy has not undertaken any analysis of 230 kV configurations.