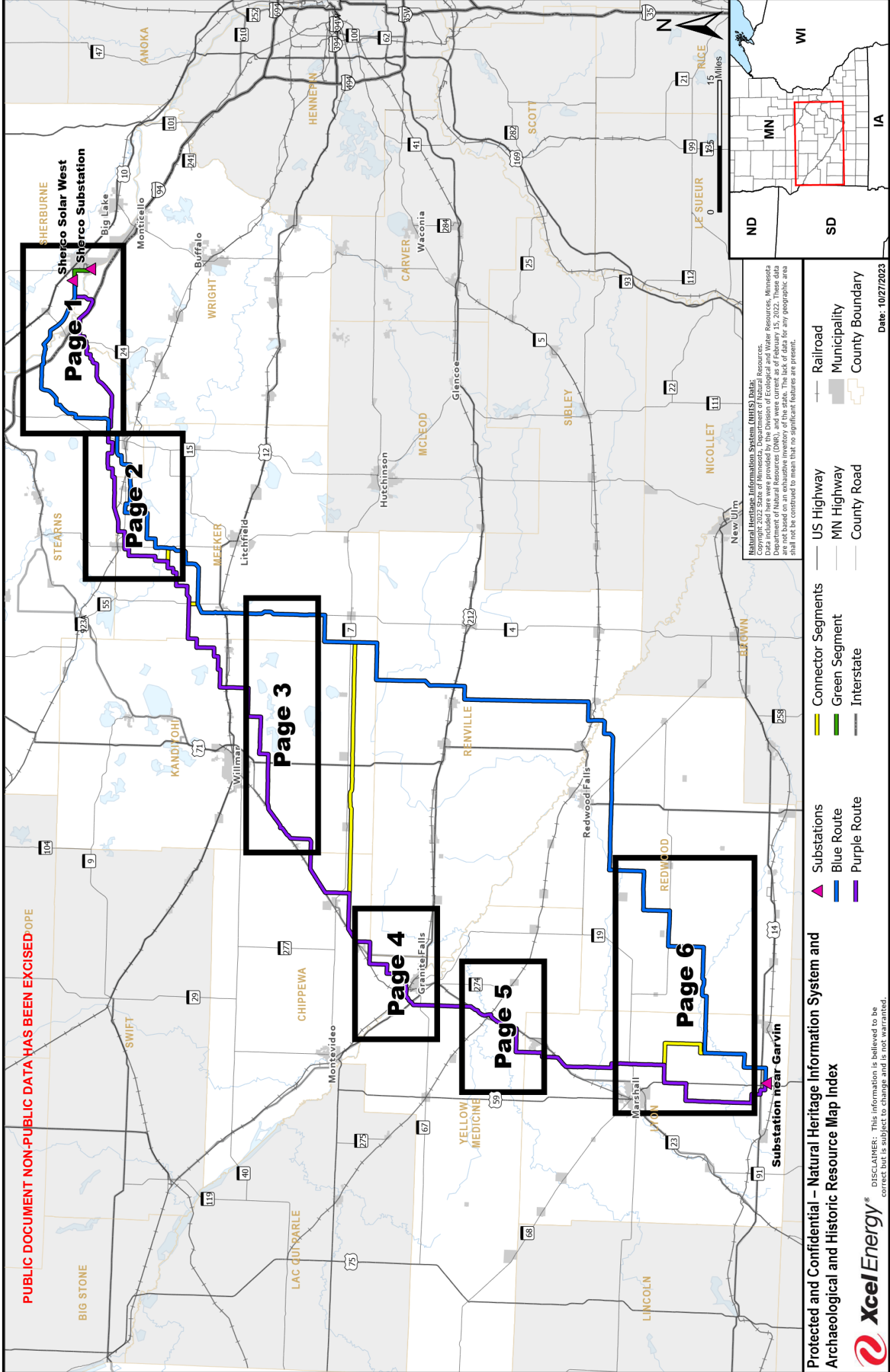


## **APPENDIX I**

### **Natural Heritage Information System and Archaeological and Historic Resource Maps**

PUBLIC DOCUMENT NON-PUBLIC DATA HAS BEEN EXCISED OPE



**Natural Heritage Information System (NHIS) Data:**  
 Copyright 2022 State of Minnesota, Department of Natural Resources.  
 Data included here were provided by the Division of Ecological and Water Resources, Minnesota  
 DNR. The data is current as of 5/2022. These data  
 are not based on an exhaustive inventory of the state. The lack of data for any geographic area  
 shall not be construed to mean that no significant features are present.

- ▲ Substations
- Connector Segments
- Green Segment
- Interstate
- US Highway
- MN Highway
- County Road
- Railroad
- Municipality
- County Boundary

**Protected and Confidential – Natural Heritage Information System and  
 Archaeological and Historic Resource Map Index**



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

Date: 10/27/2023

PUBLIC DOCUMENT NON-PUBLIC DATA HAS BEEN EXCISED

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# **APPENDIX J**

## **Air and GHG Emissions Estimates**

Xcel Energy  
 Minnesota Energy Connection Project  
 Construction Emission Calculations  
 Summary

Description	Construction Emissions (tons)					
	NOx	CO	VOC	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Off-Road Engine Emissions	302.50	66.66	21.76	0.15	11.06	10.97
Helicopter Engine Emissions	0.04	170.32	0.01	--	0.51	0.05
Unpaved Roads	--	--	--	--	32.42	3.24
Commuters and Delivery Vehicles	--	--	--	--	--	--
Earthmoving	--	--	--	--	353.46	37.30
<b>TOTAL</b>	<b>302.54</b>	<b>236.98</b>	<b>21.77</b>	<b>0.15</b>	<b>397.44</b>	<b>51.57</b>

Xcel Energy  
Minnesota Energy Connection Project  
Construction Emission Calculations  
Emission Factors for Construction Engines

Equipment	Quantity <sup>a</sup>	Total Hours Used <sup>b</sup>	Max Power (HP)	Load Factor <sup>c</sup>	Loaded Power (HP)	VOC	CO	NOx	Emission Factors <sup>d,e</sup> (g/hp-hr)		
									PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>
Air Compressor	5	14,700	80	1	80	0.367	2.366	4.700	0.240	0.240	0.002
ATV	10	12,232	20	0.5	10	0.438	2.161	4.440	0.267	0.267	0.002
Backhoe	4	9,120	75	0.8	60	0.367	2.366	4.700	0.240	0.240	0.002
Bulldozer	8	14,480	250	1	250	0.309	0.748	4.000	0.132	0.132	0.002
Compactor	1	200	300	1	300	0.167	0.843	4.335	0.132	0.132	0.002
Fork Lift	8	18,956	120	1	120	0.167	0.843	4.335	0.132	0.132	0.002
Concrete Mixer Truck	8	23,040	325	1	325	0.338	0.867	4.100	0.180	0.180	0.002
Dump Truck	3	11,970	325	0.8	260	0.338	0.867	4.100	0.180	0.180	0.002
Excavator	11	35,900	138	1	138	0.309	0.748	4.000	0.132	0.132	0.002
Front End Loader	15	43,040	196	1	196	0.309	0.748	4.000	0.132	0.132	0.002
Generator	3	14,976	250	0.5	125	0.167	0.843	4.335	0.132	0.132	0.002
Boom truck	34	58,668	50	1	50	0.338	0.867	4.100	0.180	0.180	0.002
Pickup Truck	58	229,276	150	0.25	38	0.167	0.843	4.335	0.132	0.132	0.002
Skid steer loader	20	57,556	50	1	50	0.309	0.748	4.000	0.132	0.132	0.002
Water truck	5	13,904	100	0.5	50	0.637	2.366	4.700	0.240	0.240	0.002
Welding machine	9	17,405	35	0.8	28	0.367	2.366	4.700	0.240	0.240	0.002
Grader	1	2,880	35	0.8	28	0.438	2.161	4.44	0.267	0.259	0.002
Large Crane	11	30,750	15	0.21	3	0.438	2.161	4.44	0.267	0.259	0.002
Medium Crane	13	46,410	450	0.7	315	0.3085	0.7475	4.0	0.132	0.128	0.002
Fuel Truck	1	3,000	200	0.59	118	0.3085	0.7475	4.0	0.132	0.128	0.002
2-inch Water Pump	6	0	5	0.69	3	0.438	2.161	4.44	0.267	0.259	0.002
Semitruck/Trailer	22	66,480	500	0.59	500	0.167	0.843	4.335	0.132	0.132	0.002
Light Tower	18	40,500	50	1	50	0.438	2.161	4.44	0.267	0.259	0.002

<sup>a</sup> Equipment counts based on experience with construction of a similar projects.

<sup>b</sup> Generally assumes work will occur 7 am - 7 pm, Monday through Saturday.

<sup>c</sup> Load Factors from Appendix A of EPA 420\_P-04-005, Median Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling, USEPA, April 2004.

<sup>d</sup> EPA 420-P-04-009, Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling - Compression Ignition, USEPA, April 2004 - Tier 2 Engines.

<sup>e</sup> GHG emission factors from Title 40 Subchapter C Part 98 Subpart C Table C-1 and C-2 to Subpart C.

Assumption:

393.5 hp-hr/MMBtu  
453.6 g/lb