

ATTACHMENT A

Natural Resource and Water Supply Summary Tables and Figures

Line 3 Replacement Project Route Segment Alternative (RSA)-21

DRAFT

Table 1 Line 3 Replacement Project – RSA-21-L3 Summary of Public Waters Inventory Streams Crossed by the Proposed Route Segment Alternative Centerline and within the 2,000-ft-wide Route Segment Alternative Corridor in Minnesota		
Watershed County	Number Crossed by the Proposed Route Segment Alternative Centerline^a	Miles Within the 2,000-ft-wide Route Segment Alternative Corridor^b
Prairie-Willow	7	4.3
Aitkin	5	3.2
St. Louis	1	0.6
Carlton	1	0.4
Grand Total^c	7	4.3
<i>Public Waters Inventory (PWI) Stream Data Source: https://gisdata.mn.gov/dataset/water-mn-public-waters</i> ^a Number of Public Waters Inventory streams crossed by the proposed Route Segment Alternative centerline. ^b Total miles of Public Waters Inventory stream segment(s) crossed by the 2000-ft-wide Route Segment Alternative corridor. ^c Numbers may not total consistently due to rounding.		

Table 2
Line 3 Replacement Project - RSA-21-L3
Summary of Waterbodies Crossed by the Proposed Route Segment Alternative Centerline
and within the 2,000-ft-wide Route Segment Alternative Corridor in Minnesota

Watershed County	Number Crossed by the Proposed Route Segment Alternative Centerline ^a				Miles Within the 2,000-ft-wide Route Segment Alternative Corridor ^b			
	Perennial	Intermittent	Canal/Ditch/ Artificial Path/ Connector	Total ^c	Perennial	Intermittent	Canal/Ditch/ Artificial Path/ Connector	Total ^c
Prairie-Willow	7	2	5	14	4.3	1.0	3.5	8.9
Aitkin	5	2	4	11	3.2	1.0	2.6	6.7
St. Louis	1	-	1	2	0.6	-	1.0	1.6
Carlton	1	-	-	1	0.5	-	-	0.5
St. Louis	1	1	9	11	0.4	0.5	8.7	9.5
Aitkin	1	1	1	3	0.3	0.5	3.3	4.1
St. Louis	-	-	8	8	0.1	-	5.3	5.4
Grand Total ^c	8	3	14	25	4.7	1.5	12.2	18.4

USGS National Hydrography Dataset (NHD) Data Source: <ftp://nhdftp.usgs.gov/DataSets/Staged/States/FileGDB/HighResolution/>

a Number of NHD waterbodies crossed by the proposed Route Segment Alternative centerline.

b Miles of NHD stream segment(s) crossed by the 2000-ft-wide Route Segment Alternative corridor.

c Numbers may not total consistently due to rounding.

Table 3
Line 3 Replacement Project – RSA-21-L3
Summary of USFWS National Wetlands Inventory Crossed by the Proposed Route Segment Alternative Centerline
and within the 2,000-ft-wide Route Segment Alternative Corridor in Minnesota

Watershed County	Miles Crossed by the Proposed Route Segment Alternative Centerline ^a				Acres Within the 2,000-ft-wide Route Segment Alternative Corridor ^b			
	PEM ^c	PFO/PSS ^c	Pond/Lake/ Riverine	Total ^d	PEM ^c	PFO/PSS ^c	Pond/Lake/ Riverine	Total ^d
Prairie-Willow	2.1	13.8	0.2	16.2	462.4	3751.0	53.5	4266.9
Aitkin	2.0	7.1	0.2	9.3	409.8	2151.0	51.5	2612.3
St. Louis	<0.1	2.0	-	2.1	12.9	512.3	0.4	525.5
Carlton	0.1	4.7	-	4.8	39.7	1087.8	1.6	1129.1
St. Louis	-	9.1	-	9.1	-	2421.3	2.2	2423.5
Aitkin	-	3.8	-	3.8	-	1124.8	2.2	1127.0
St. Louis	-	5.3	-	5.3	-	1296.5	-	1296.5
Kettle	-	2.5	-	2.5	1.0	638.9	-	639.9
Carlton	-	2.5	-	2.5	1.0	638.9	-	639.9
Grand Total ^d	2.1	25.4	0.2	27.8	463.4	6811.2	55.7	7330.3

USFWS National Wetlands Inventory (NWI) Data Source: <http://www.fws.gov/wetlands/data/Data-Download.html>

a Total miles of NWI crossed by the proposed Route Segment Alternative centerline.

b Total acres of NWI within the 2000-ft-wide Route Segment Alternative corridor.

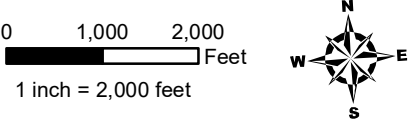
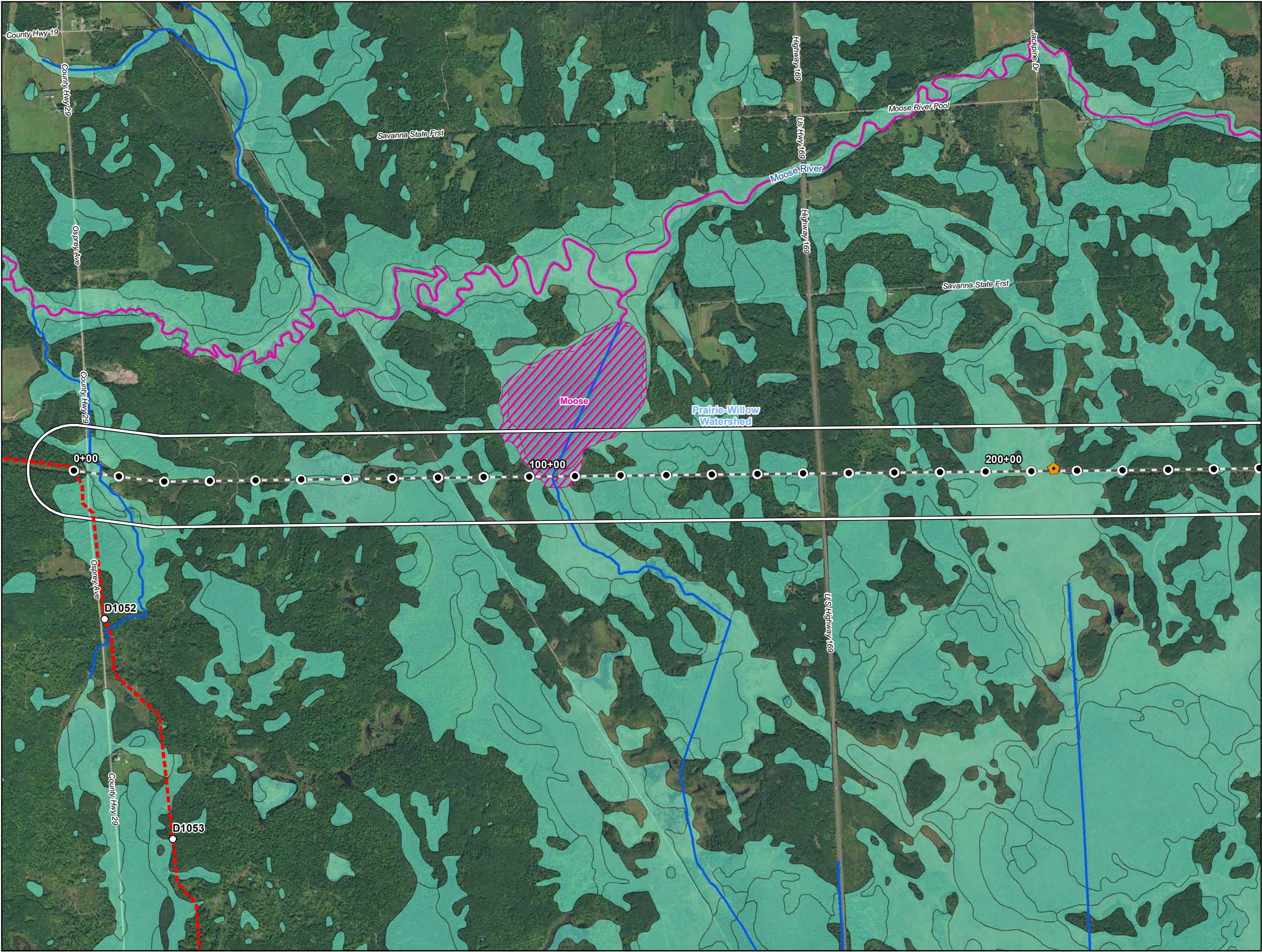
c PEM = Palustrine Emergent; PSS = Palustrine Scrub Shrub; PFO = Palustrine Forested (Cowardin et al. 1979).

d Numbers may not total consistently due to rounding.

Table 4 Line 3 Replacement Project – RSA-21-L3 Summary of Public Waters Inventory Wetlands and Basins Crossed by the Proposed Route Segment Alternative Centerline and within the 2,000-ft-wide Route Segment Alternative Corridor in Minnesota				
Watershed County	Miles Crossed by the Route Segment Alternative Centerline ^a		Acres Within the Route Segment Alternative Corridor ^b	
	Wetlands	Basins	Wetlands	Basins
Prairie-Willow	-	0.2	4.5	50.5
Aitkin	-	0.2	-	50.5
Carlton	-	-	4.5	-
Grand Total ^c	-	0.2	4.5	50.5
<i>PWI Wetland and Basin Data Source: https://gisdata.mn.gov/dataset/water-mn-public-waters</i> a Total miles of PWI wetlands and basins crossed by the Route Segment Alternative centerline. b Total acres of PWI wetlands and basins crossed by the 2000-ft-wide Route Segment Alternative corridor. c Numbers may not total consistently due to rounding.				

Table 5 Line 3 Replacement Project – RSA-21-L3 Summary of Trout Streams Crossed by the Proposed Route Segment Alternative Centerline and within the 2,000-ft-wide Route Segment Alternative Corridor in Minnesota		
Watershed County	Number Crossed by the Proposed Route Segment Alternative Centerline^a	Miles Within the 2,000-ft-wide Route Segment Alternative Corridor^b
Prairie-Willow	1	0.9
Aitkin	1	0.9
Grand Total^c	1	0.9
<i>Trout Stream Data Source: https://gisdata.mn.gov/dataset/env-trout-stream-designations</i> a Number of trout streams crossed by the proposed Route Segment Alternative centerline. b Total miles of trout stream segment(s) crossed by the 2000-ft-wide Route Segment Alternative corridor. c Numbers may not total consistently due to rounding.		

Table 6				
Line 3 Replacement Project – RSA-21-L3				
Wells within the 2,000-ft-wide Route Segment Alternative Corridor in Minnesota ^a				
Watershed Name	County	Well Type	Distance from Centerline (feet)	Total Number of Wells
Prairie-Willow	Aitkin	Exploration	64	1
		Domestic	734	2
			811	
County Well Index (CWI) Data Source: ftp://mgssun6.mnngs.umn.edu/pub2/cwi4/cwilocs_nps.zip				
^a Municipal wells are not included in the source data.				



- Water Well
- Surface Water Intake
- Calcareous Fen
- Line 3 Milepost
- Alternative Stationing
- Proposed Line 3 Replacement Pipeline
- Alternative Centerline
- 2,000 ft Alternative Corridor
- Trout Stream
- PWI Stream
- NHD Stream
- PWI Basin
- NWI
- Watershed Boundary
- WHPA
- DWSMA
- County Boundary

Figure 1

Line 3 Replacement Project

RSA-21-L3

Enbridge

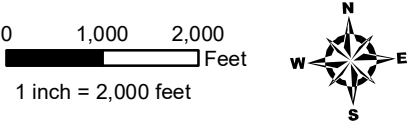
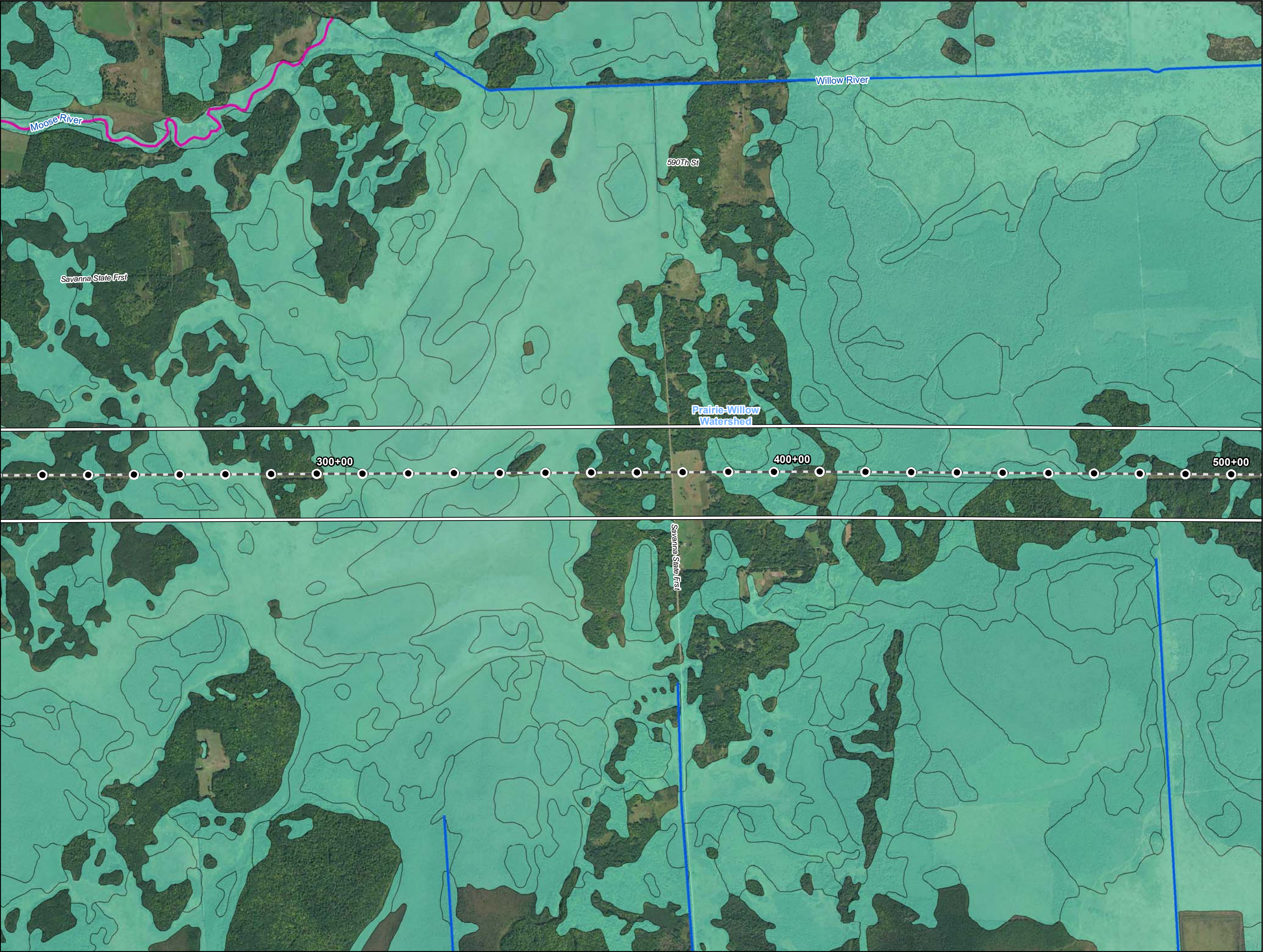
Aitkin County, Minnesota

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Page 1 of 12

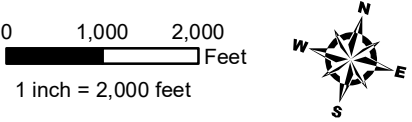
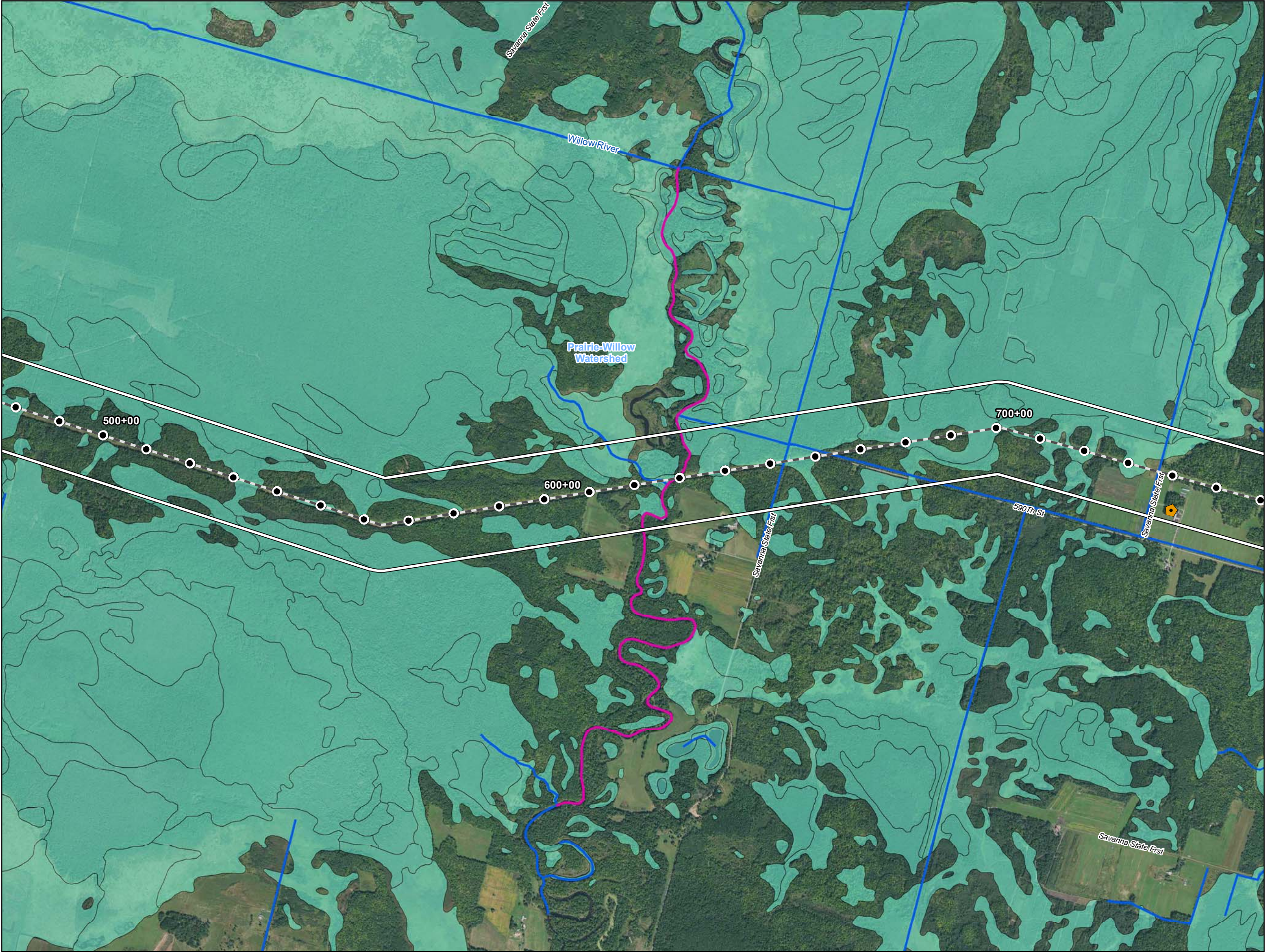
For Environmental Review Purposes Only

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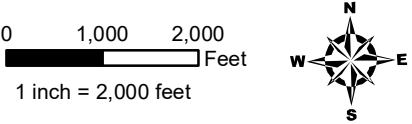
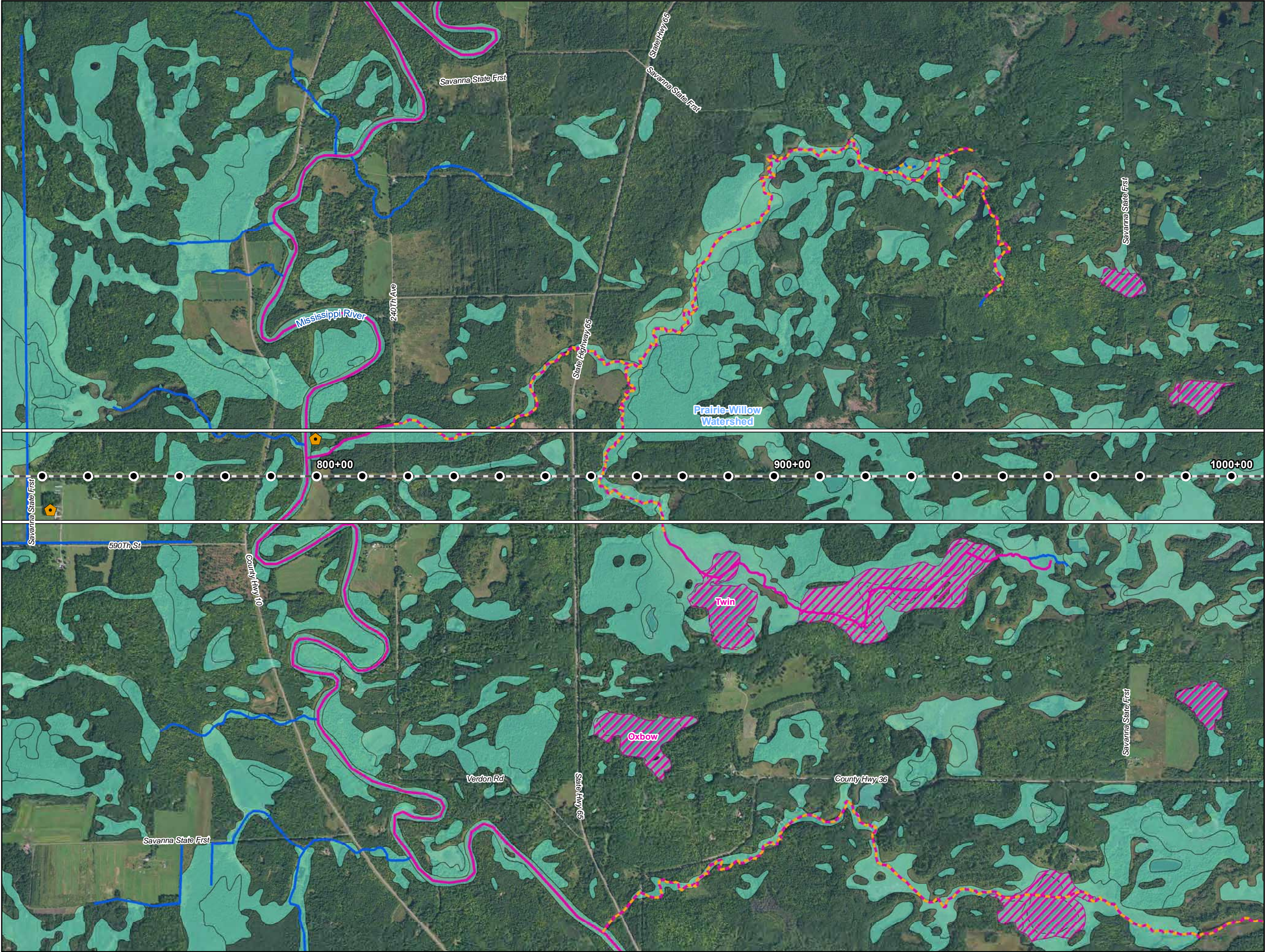
- Water Well
- Surface Water Intake
- Calcareous Fen
- Line 3 Milepost
- Alternative Stationing
- Proposed Line 3 Replacement Pipeline
- Alternative Centerline
- 2,000 ft Alternative Corridor
- Trout Stream
- PWI Stream
- NHD Stream
- PWI Basin
- NWI
- Watershed Boundary
- WHPA
- DWSMA
- County Boundary

Figure 2
Line 3 Replacement Project
RSA-21-L3
Enbridge
Aitkin County, Minnesota



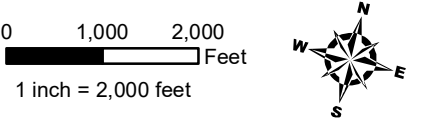
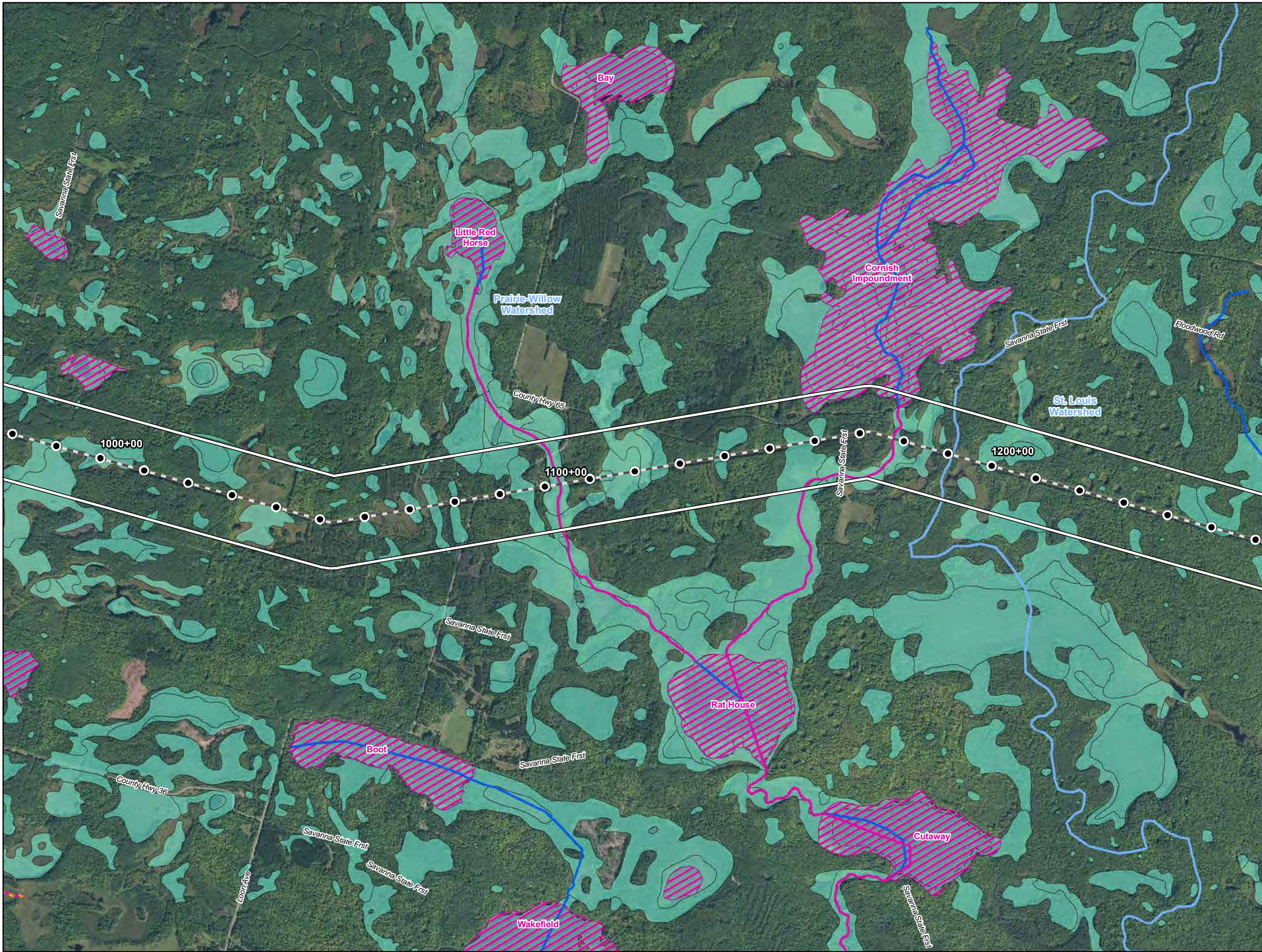
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- Line 3 Milepost
- Alternative Stationing
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- Alternative Centerline
- 2,000 ft Alternative Corridor
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- PWI Basin
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- WHPA
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- County Boundary

Figure 3
Line 3 Replacement Project
RSA-21-L3
Enbridge
Aitkin County, Minnesota



- Water Well
- Surface Water Intake
- Calcareous Fen
- Line 3 Milepost
- Alternative Stationing
- Proposed Line 3 Replacement Pipeline
- Alternative Centerline
- 2,000 ft Alternative Corridor
- Trout Stream
- PWI Stream
- NHD Stream
- PWI Basin
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- Watershed Boundary
- WHPA
- DWSMA
- County Boundary

Figure 4
Line 3 Replacement Project
RSA-21-L3
Enbridge
Aitkin County, Minnesota



- Water Well
- Surface Water Intake
- Calcareous Fen
- Line 3 Milepost
- Alternative Stationing
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- Alternative Centerline
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- Trout Stream
- PWI Stream
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- PWI Basin
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- Watershed Boundary
- WHPA
- DWSMA
- County Boundary

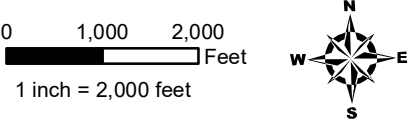
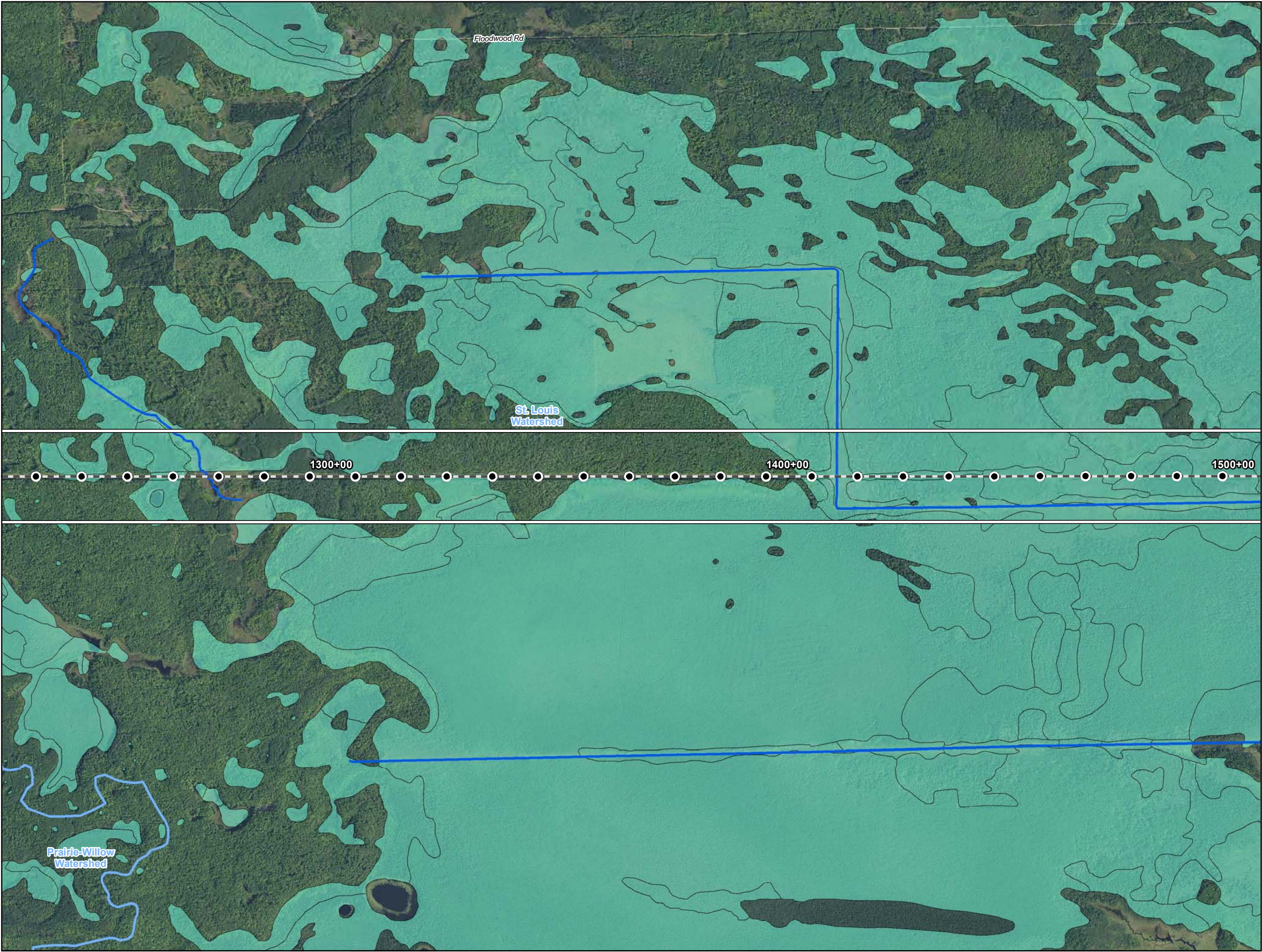
Figure 5

Line 3 Replacement Project

RSA-21-L3

Enbridge

Aitkin County, Minnesota



- Water Well
- Surface Water Intake
- Calcareous Fen
- Line 3 Milepost
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- NWI
- Watershed Boundary
- WHPA
- DWSMA
- County Boundary

Figure 6

Line 3 Replacement Project

RSA-21-L3

Enbridge

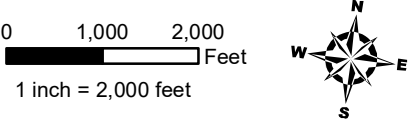
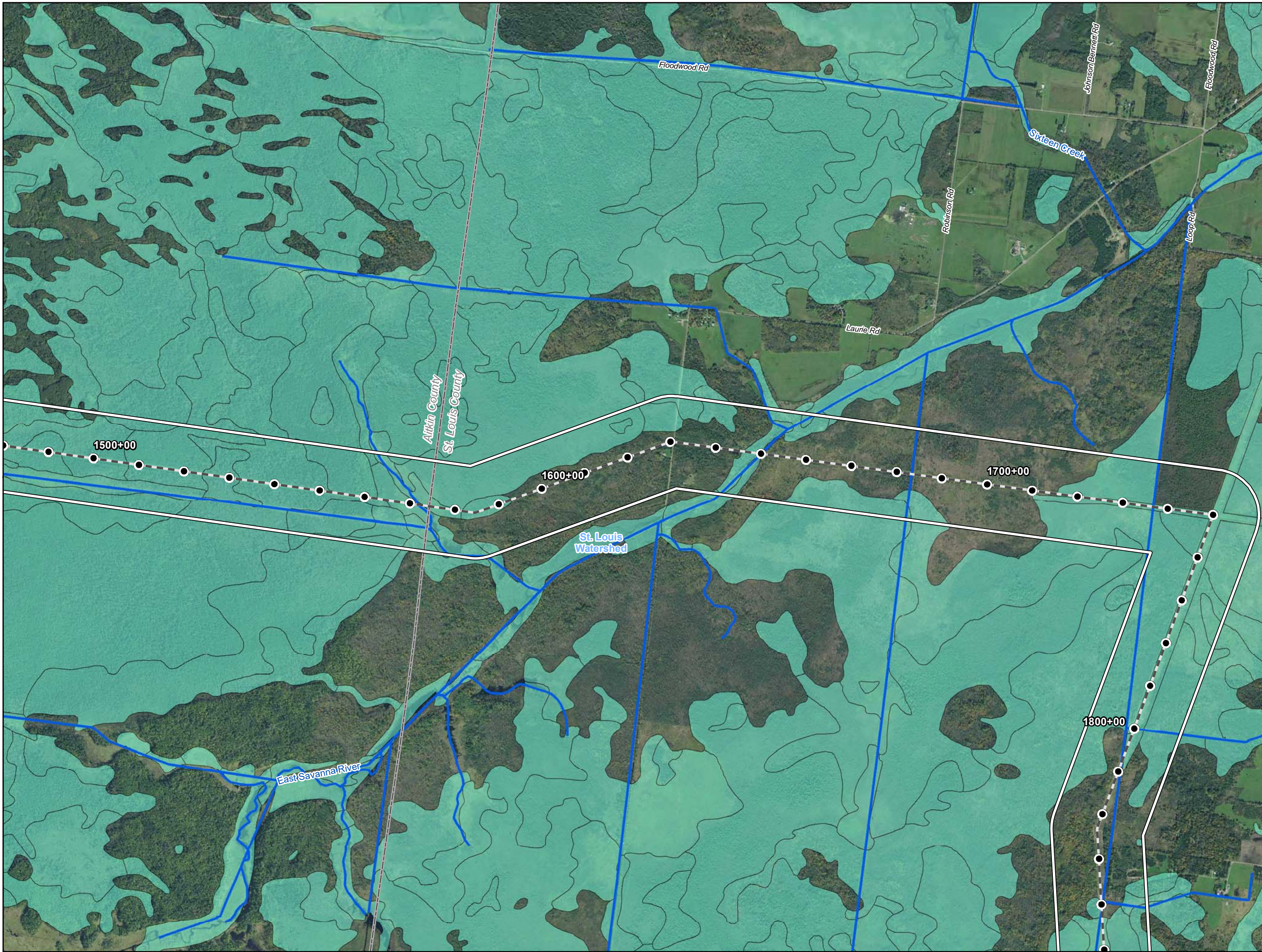
Aitkin County, Minnesota



Page 6 of 12

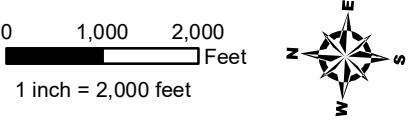
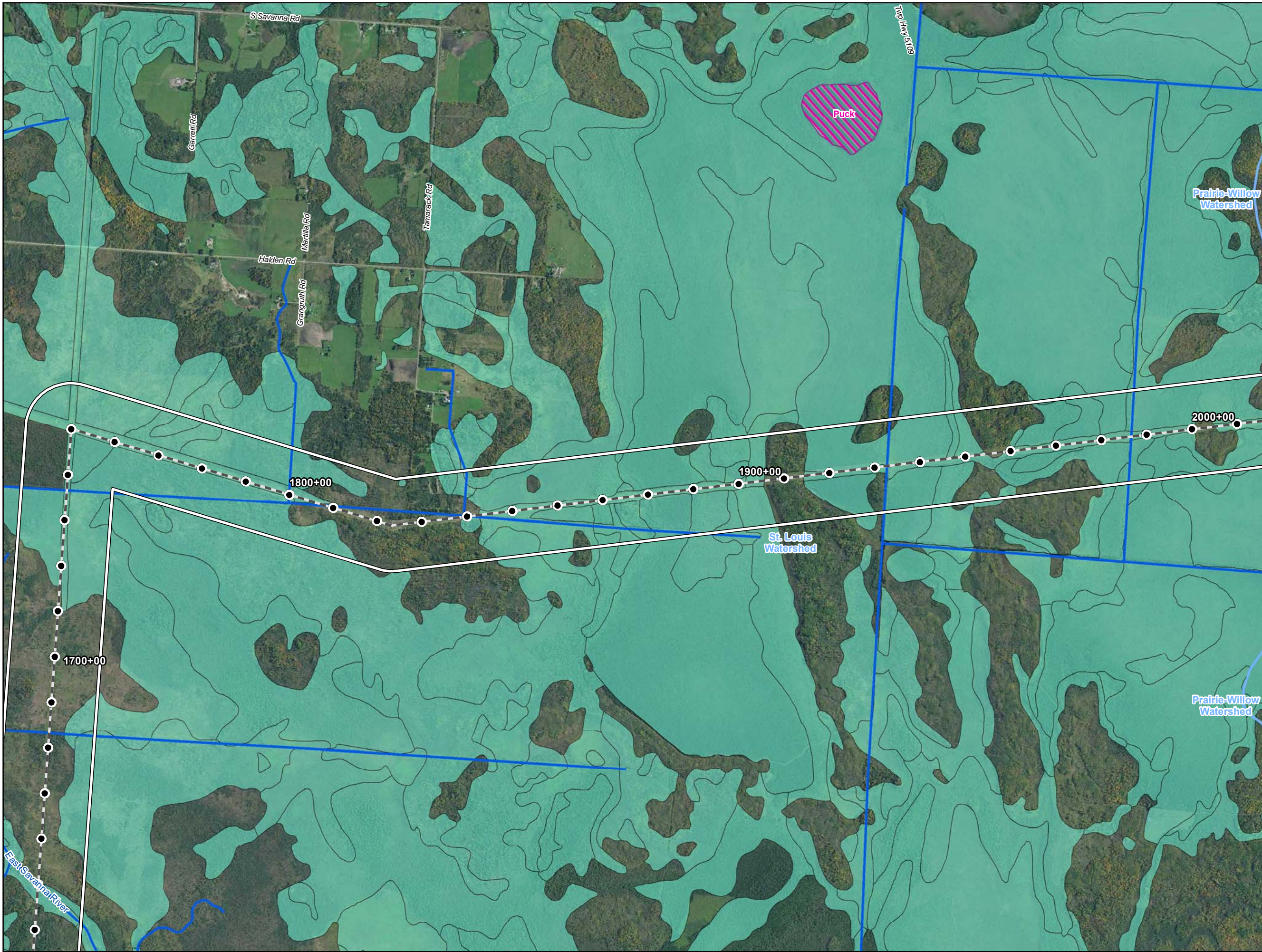
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Figure 7
Line 3 Replacement Project
RSA-21-L3
Enbridge
St. Louis County, Minnesota




















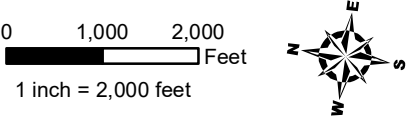
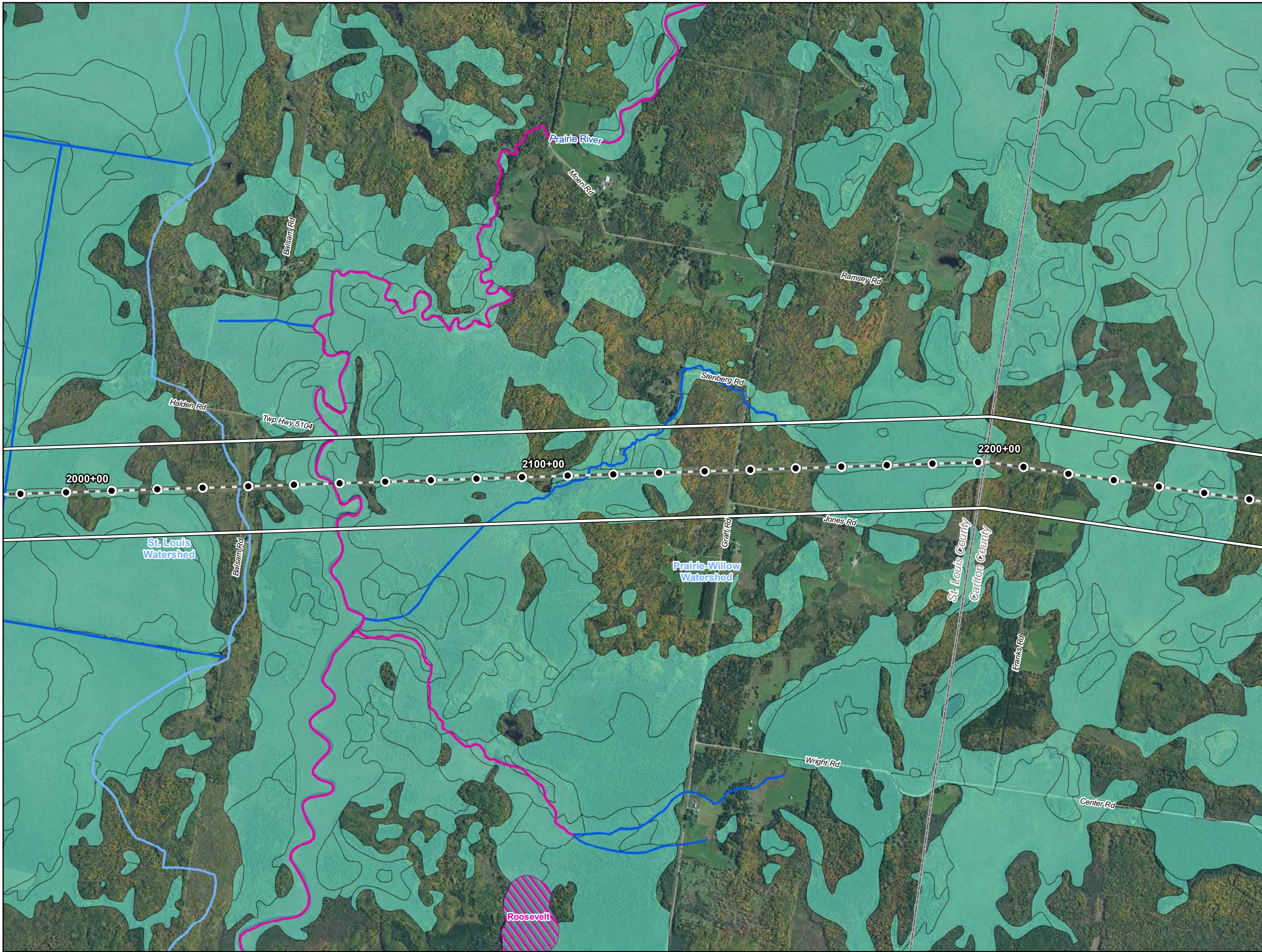
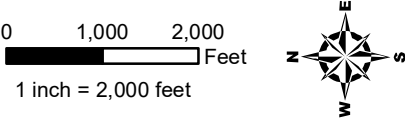
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Figure 8
Line 3 Replacement Project
RSA-21-L3
Enbridge
St. Louis County, Minnesota



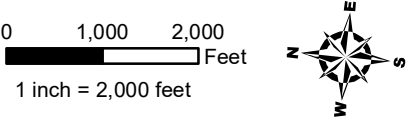
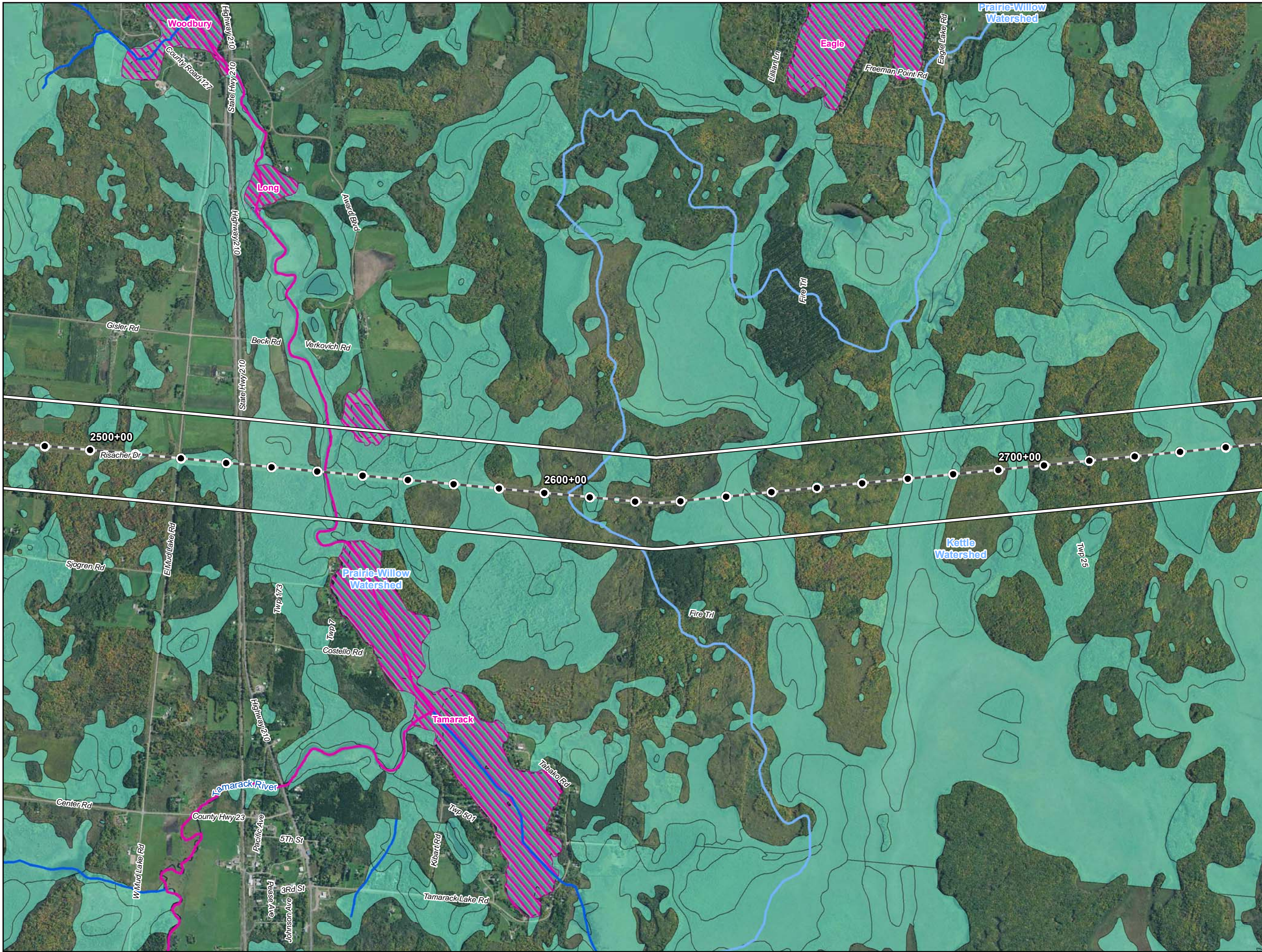
- Water Well
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Figure 9
Line 3 Replacement Project
RSA-21-L3
Enbridge
St. Louis County, Minnesota



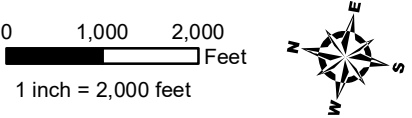
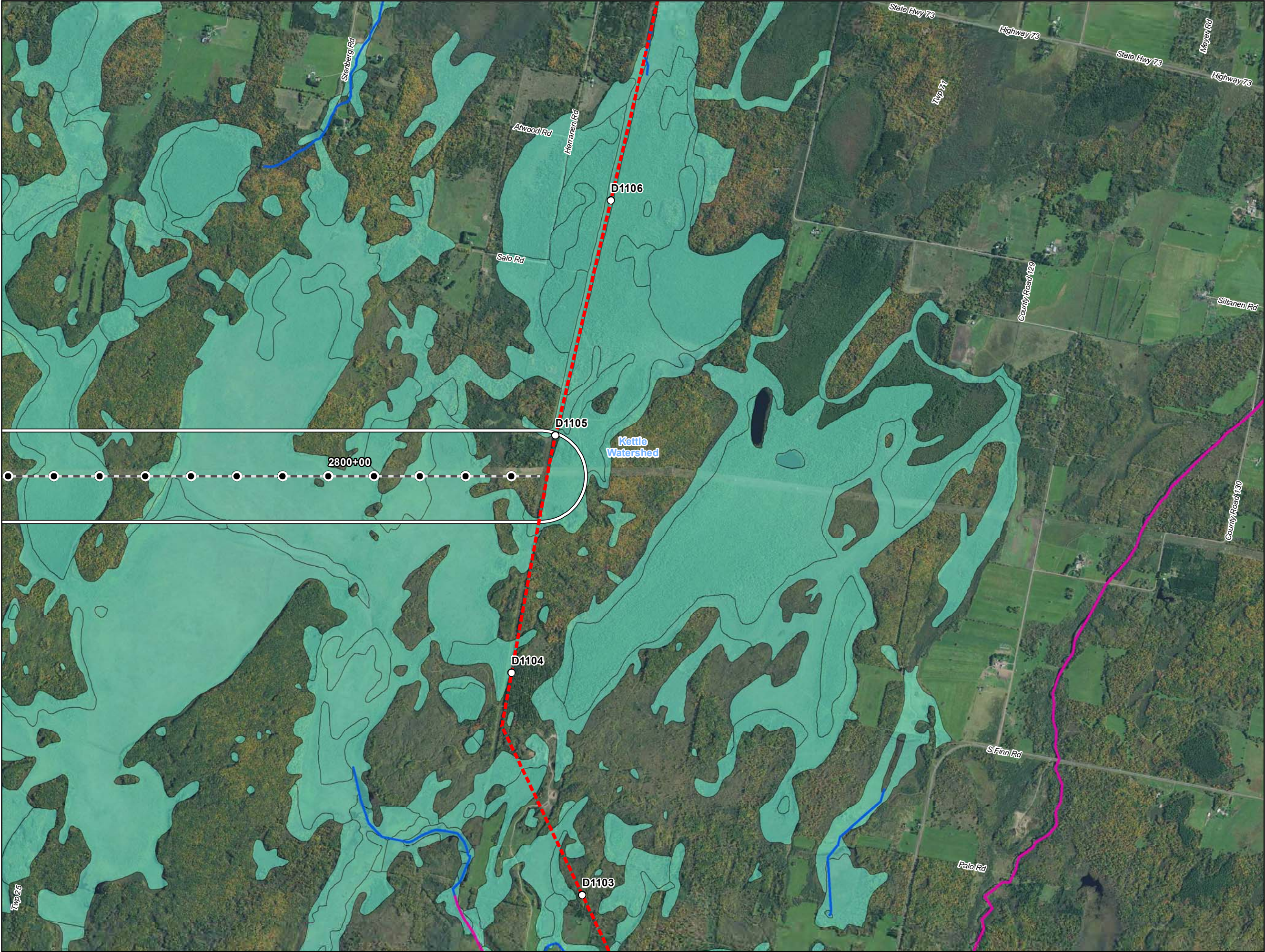
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Figure 10
Line 3 Replacement Project
RSA-21-L3
Enbridge
Carlton County, Minnesota



- Water Well
- Surface Water Intake
- Calcareous Fen
- Line 3 Milepost
- Alternative Stationing
- Proposed Line 3 Replacement Pipeline
- Alternative Centerline
- 2,000 ft Alternative Corridor
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- DWSMA
- County Boundary

Figure 11
Line 3 Replacement Project
RSA-21-L3
Enbridge
Carlton County, Minnesota



- Water Well
- Surface Water Intake
- Calcareous Fen
- Line 3 Milepost
- Alternative Stationing
- Proposed Line 3 Replacement Pipeline
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Figure 12
Line 3 Replacement Project
RSA-21-L3
Enbridge
Carlton County, Minnesota

ATTACHMENT A

Natural Resource and Water Supply Summary Tables and Figures

Line 3 Replacement Project Route Segment Alternative (RSA)-22

DRAFT

Table 1 Line 3 Replacement Project – RSA-22-L3 Summary of Public Waters Inventory Streams Crossed by the Proposed Route Segment Alternative Centerline and within the 2,000-ft-wide Route Segment Alternative Corridor in Minnesota		
Watershed County	Number Crossed by the Proposed Route Segment Alternative Centerline^a	Miles Within the 2,000-ft-wide Route Segment Alternative Corridor^b
Prairie-Willow	5	3.3
Aitkin	5	3.3
St. Louis	5	2.9
St. Louis	3	1.8
Carlton	2	1.1
Grand Total^c	10	6.2
<i>Public Waters Inventory (PWI) Stream Data Source: https://gisdata.mn.gov/dataset/water-mn-public-waters</i> a Number of Public Waters Inventory streams crossed by the proposed Route Segment Alternative centerline. b Total miles of Public Waters Inventory stream segment(s) crossed by the 2000-ft-wide Route Segment Alternative corridor. c Numbers may not total consistently due to rounding.		

Table 2
Line 3 Replacement Project – RSA-22-L3
Summary of Waterbodies Crossed by the Proposed Route Segment Alternative Centerline
and within the 2,000-ft-wide Route Segment Alternative Corridor in Minnesota

Watershed County	Number Crossed by the Proposed Route Segment Alternative Centerline ^a				Miles Within the 2,000-ft-wide Route Segment Alternative Corridor ^b			
	Perennial	Intermittent	Canal/Ditch/ Artificial Path/ Connector	Total ^c	Perennial	Intermittent	Canal/Ditch/ Artificial Path/ Connector	Total ^c
Prairie-Willow	5	2	4	11	3.2	1.0	2.6	6.8
Aitkin	5	2	4	11	3.2	1.0	2.6	6.8
St. Louis	10	1	8	19	5.3	0.8	6.7	12.8
Aitkin	1	1	1	3	0.3	0.5	3.3	4.1
St. Louis	5	-	5	10	2.8	0.3	2.4	5.5
Carlton	4	-	2	6	2.3	-	0.9	3.2
Grand Total ^c	15	3	12	30	8.5	1.8	9.3	19.6

USGS National Hydrography Dataset (NHD) Data Source: <ftp://nhdftp.usgs.gov/DataSets/Staged/States/FileGDB/HighResolution/>

a Number of NHD waterbodies crossed by the proposed Route Segment Alternative centerline.

b Miles of NHD stream segment(s) crossed by the 2000-ft-wide Route Segment Alternative corridor.

c Numbers may not total consistently due to rounding.

Table 3
Line 3 Replacement Project – RSA-22-L3
Summary of USFWS National Wetlands Inventory Crossed by the Proposed Route Segment Alternative Centerline
and within the 2,000-ft-wide Route Segment Alternative Corridor in Minnesota

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	PEM ^c	PFO/PSS ^c	Pond/Lake/ Riverine	Total ^d	PEM ^c	PFO/PSS ^c	Pond/Lake/ Riverine	Total ^d
Prairie-Willow	2.0	7.1	0.2	9.4	410.5	2152.5	51.4	2614.4
Aitkin	2.0	7.1	0.2	9.4	410.5	2152.5	51.4	2614.4
St. Louis	0.8	17.8	0.2	18.8	152.7	4504.7	21.8	4679.2
Aitkin	-	3.9	-	3.9	-	1126.1	2.2	1128.3
St. Louis	0.1	8.5	-	8.6	41.6	2008.8	3.9	2054.3
Carlton	0.7	5.5	0.2	6.3	111.1	1369.9	15.7	1496.6
Kettle	0.4	0.2	<0.1	0.6	48.9	70.2	1.4	120.5
Carlton	0.4	0.2	<0.1	0.6	48.9	70.2	1.4	120.5
Beartrap-Nemadji	-	-	<0.1	0.0	-	0.3	0.9	1.3
Carlton	-	-	<0.1	0.0	-	0.3	0.9	1.3
Grand Total ^d	3.3	25.1	0.4	28.8	612.1	6727.7	75.5	7415.3

USFWS National Wetlands Inventory (NWI) Data Source: <http://www.fws.gov/wetlands/data/Data-Download.html>

a Total miles of NWI crossed by the proposed Route Segment Alternative centerline.

b Total acres of NWI within the 2000-ft-wide Route Segment Alternative corridor.

c PEM = Palustrine Emergent; PSS = Palustrine Scrub Shrub; PFO = Palustrine Forested (Cowardin et al. 1979).

d Numbers may not total consistently due to rounding.

Table 4 Line 3 Replacement Project – RSA-22-L3 Summary of Public Waters Inventory Wetlands and Basins Crossed by the Proposed Route Segment Alternative Centerline and within the 2,000-ft-wide Route Segment Alternative Corridor in Minnesota				
Watershed County	Miles Crossed by the Proposed Route Segment Alternative Centerline ^a		Acres Within the Route Segment Alternative Corridor ^b	
	Wetlands	Basins	Wetlands	Basins
Prairie-Willow	-	0.2	-	50.5
Aitkin	-	0.2	-	50.5
Grand Total ^c	-	0.2	-	50.5
<i>PWI Wetland and Basin Data Source: https://gisdata.mn.gov/dataset/water-mn-public-waters</i> a Total miles of PWI wetlands and basins crossed by the proposed Route Segment Alternative centerline. b Total acres of PWI wetlands and basins crossed by the 2000-ft-wide Route Segment Alternative corridor. c Numbers may not total consistently due to rounding.				

Table 5 Line 3 Replacement Project – RSA-22-L3 Summary of Trout Streams Crossed by the Proposed Route Segment Alternative Centerline and within the 2,000-ft-wide Route Segment Alternative Corridor in Minnesota		
Watershed County	Number Crossed by the Proposed Route Segment Alternative Centerline^a	Miles Within the 2,000-ft-wide Route Segment Alternative Corridor^b
Prairie-Willow	1	0.9
Aitkin	1	0.9
St. Louis	1	1.3
Carlton	1	1.3
Grand Total^c	2	2.2
<i>Trout Stream Data Source: https://gisdata.mn.gov/dataset/env-trout-stream-designations</i> a Number of trout streams crossed by the proposed Route Segment Alternative centerline. b Total miles of trout stream segment(s) crossed by the 2000-ft-wide Route Segment Alternative corridor. c Numbers may not total consistently due to rounding.		

Table 6				
Line 3 Replacement Project – RSA-22-L3				
Wells within the 2,000-ft-wide Route Segment Alternative Corridor in Minnesota ^a				
Watershed Name	County	Well Type	Distance from Centerline (feet)	Total Number of Wells
Prairie-Willow	Aitkin	Domestic	734	2
			811	
		Exploration	64	1
St. Louis	St. Louis	Monitoring	56	5
			108	
			388	
			274	
			386	
	Carlton	Domestic	4	18
			732	
			985	
			904	
			634	
			609	
			515	
			94	
			561	
			293	
			435	
			21	
			892	
			655	
			576	
			254	
			147	
			35	
		Monitoring	752	4
			693	
			747	
			841	
		Other	56	3
	54			
	54			

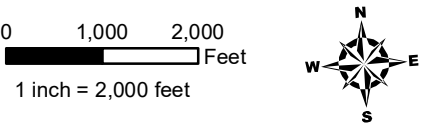
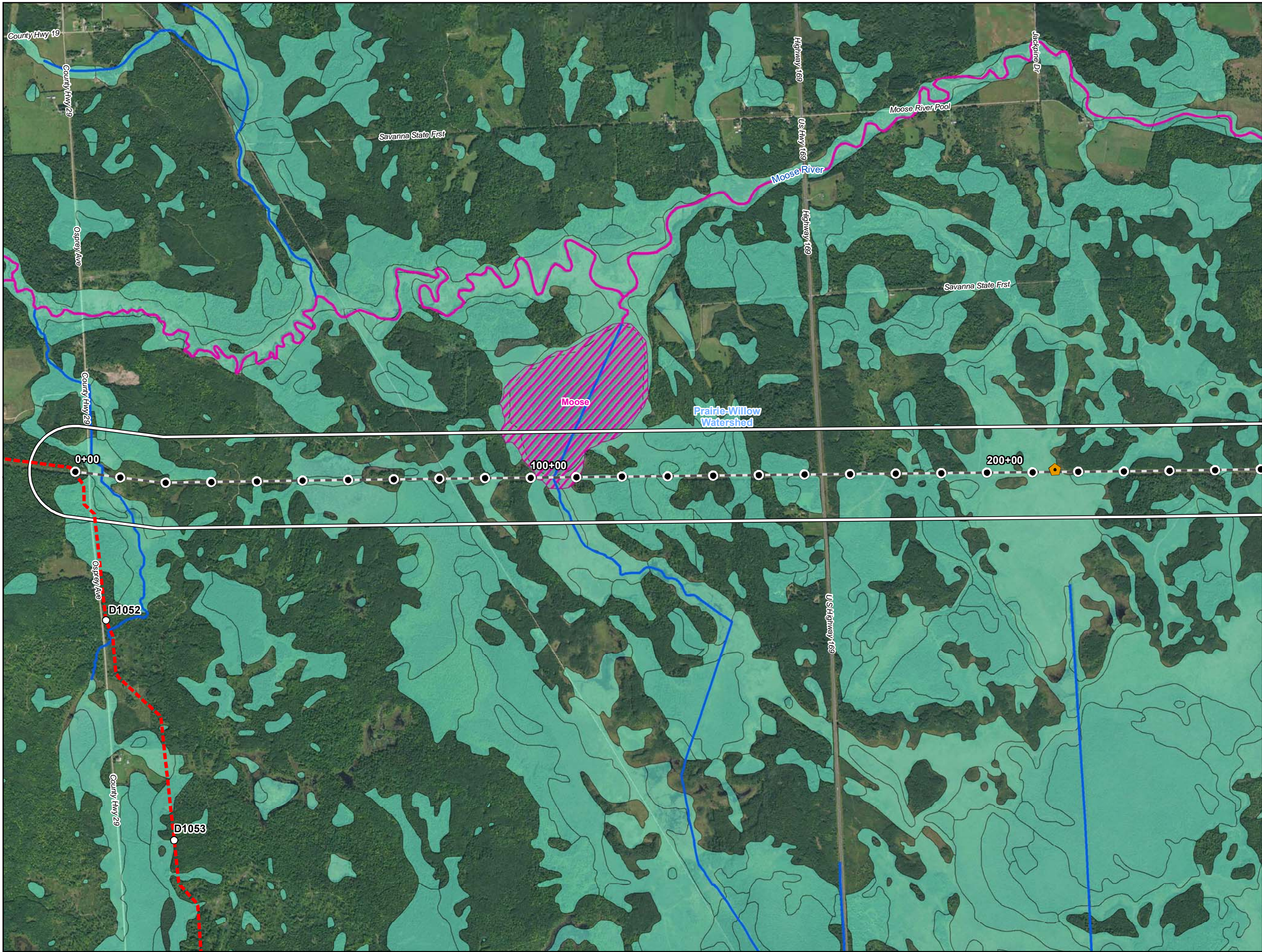
County Well Index (CWI) Data Source: ftp://mgssun6.mnngs.umn.edu/pub2/cwi4/cwilocs_nps.zip

^a Municipal wells are not included in the source data.

Table 7				
Line 3 Replacement Project – RSA-22-L3				
Surface Water Intakes within the 2,000-ft-wide Route Segment Alternative Corridor in Minnesota ^a				
Watershed Name	County	Permit Type	Permit Status	Total
St. Louis	St. Louis	General Permit Authorization	Inactive	10
		Individual Permit	Inactive	1
	Carlton	General Permit Authorization	Inactive	11
		Individual Permit	Inactive	3
Kettle	Carlton	General Permit Authorization	Inactive	1
St. Louis	Carlton	General Permit Authorization	Active	4
			Inactive	3
		Individual Permit	Inactive	2

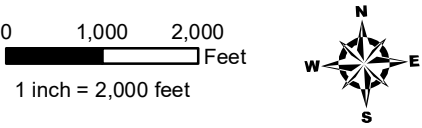
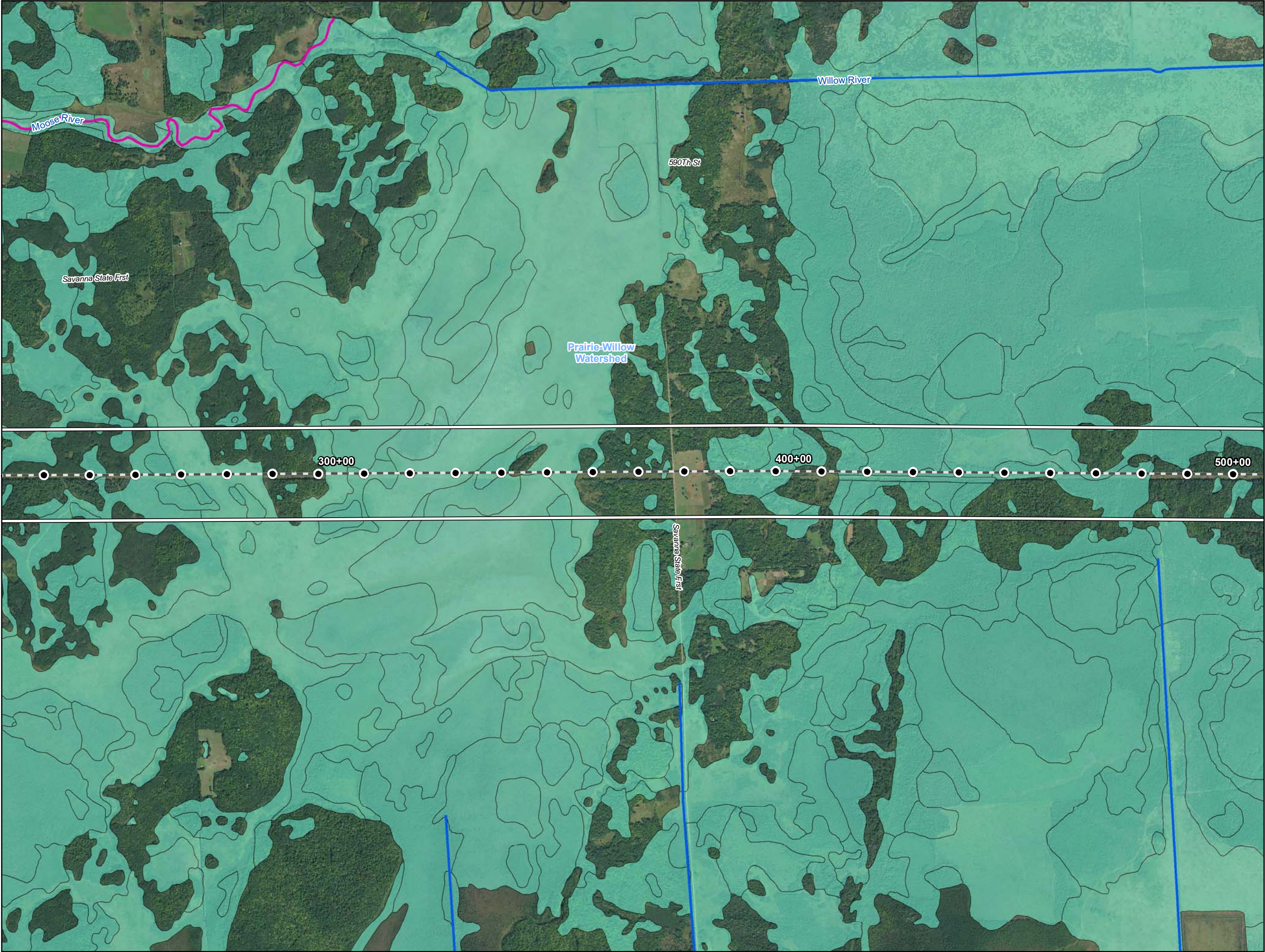
MPARS Minnesota DNR, Ecological and Water Resources, Sean Hunt, 651-259-5679

a Municipal wells are not included in the source data.



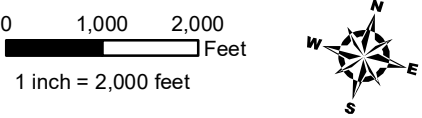
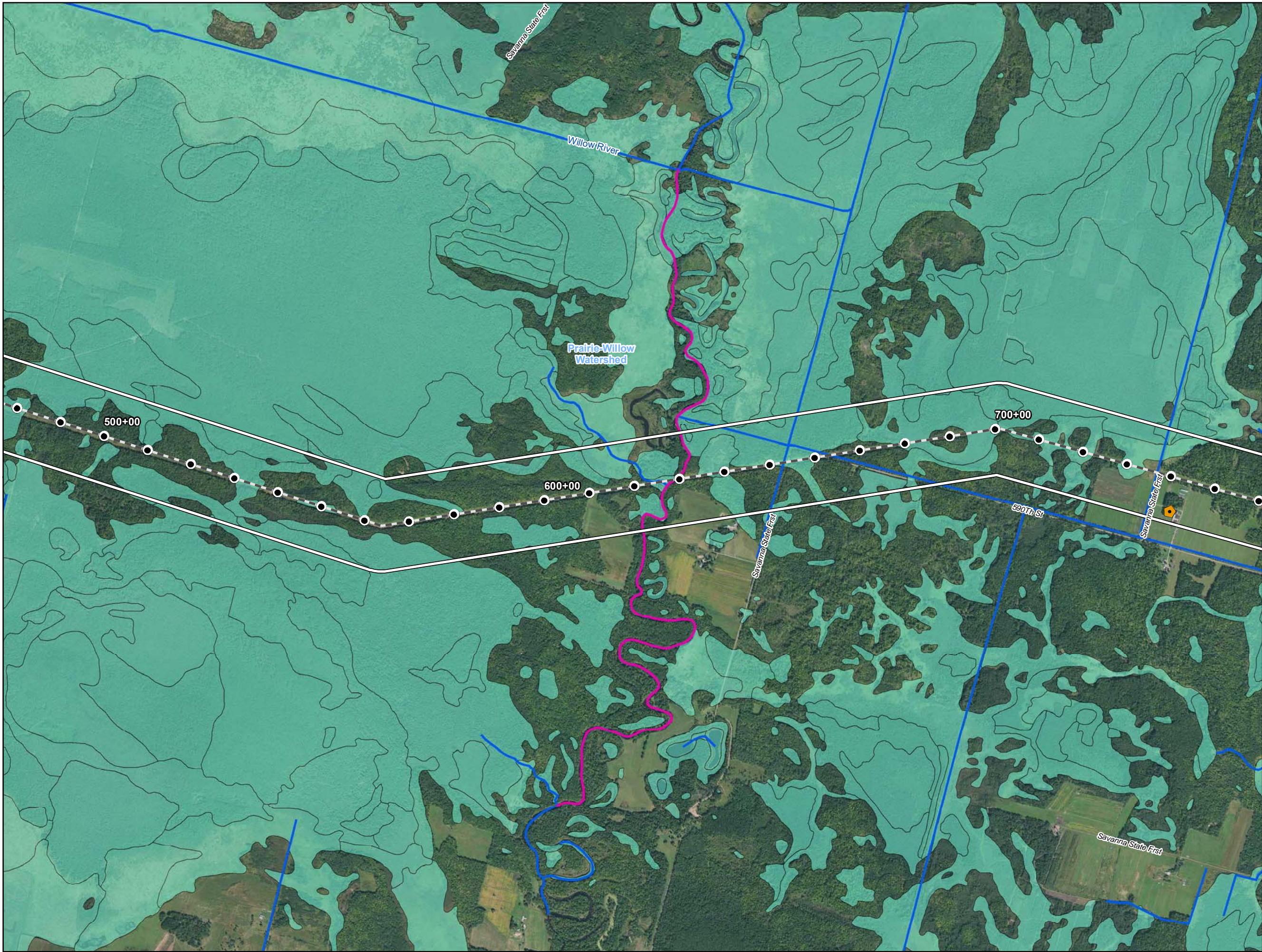
- Water Well
- Surface Water Intake
- Calcareous Fen
- Line 3 Milepost
- Alternative Stationing
- Proposed Line 3 Replacement Pipeline
- Alternative Centerline
- 2,000 ft Alternative Corridor
- Trout Stream
- PWI Stream
- NHD Stream
- PWI Basin
- NWI
- Watershed Boundary
- WHPA
- DWSMA
- County Boundary

Figure 1
Line 3 Replacement Project
RSA-22-L3
Enbridge
Aitkin County, Minnesota



- Water Well
- Surface Water Intake
- Calcareous Fen
- Line 3 Milepost
- Alternative Stationing
- Proposed Line 3 Replacement Pipeline
- Alternative Centerline
- 2,000 ft Alternative Corridor
- Trout Stream
- PWI Stream
- NHD Stream
- PWI Basin
- NWI
- Watershed Boundary
- WHPA
- DWSMA
- County Boundary

Figure 2
Line 3 Replacement Project
RSA-22-L3
Enbridge
Aitkin County, Minnesota



- Water Well
- Surface Water Intake
- Calcareous Fen
- Line 3 Milepost
- Alternative Stationing
- Proposed Line 3 Replacement Pipeline
- Alternative Centerline
- 2,000 ft Alternative Corridor
- Trout Stream
- PWI Stream
- NHD Stream
- PWI Basin
- NWI
- Watershed Boundary
- WHPA
- DWSMA
- County Boundary

Figure 3
Line 3 Replacement Project
RSA-22-L3
Enbridge
Aitkin County, Minnesota