

ATTACHMENT A

Natural Resource and Water Supply Summary Tables and Figures

Line 3 Replacement Project Route Segment Alternative (RSA)-37

DRAFT

<p align="center">Table 1 Line 3 Replacement Project – RSA-37-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</p>		
Watershed County	Number Crossed by the Proposed Route Segment Alternative Centerline^a	Miles Within the 2,000-ft-wide Route Segment Alternative Corridor^b
Kettle	2	0.9
Carlton	2	0.9
Prairie-Willow	6	2.2
Kanabec	6	2.2
St. Louis	2	1.1
Pine	2	1.1
Grand Total^c	10	4.1
<p><i>Public Waters Inventory (PWI) Stream Data Source: https://gisdata.mn.gov/dataset/water-mn-public-waters</i></p> <p>a Number of Public Waters Inventory streams crossed by the proposed Route Segment Alternative centerline.</p> <p>b Total miles of Public Waters Inventory stream segment(s) crossed by the 2000-ft-wide Route Segment Alternative corridor.</p> <p>c Numbers may not total consistently due to rounding.</p>		

Table 2
Line 3 Replacement Project – RSA-37-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	6	3	3	12	2.3	1.9	1.6	5.8
Aitkin	-	1	2	3	0.1	0.3	1.1	1.6
Carlton	6	2	1	9	2.2	1.6	0.5	4.2
Kettle	2	1	6	9	1.0	0.3	1.8	3.1
Carlton	2	1	6	9	1.0	0.3	1.8	3.1
St. Louis	2	-	2	4	1.2	-	1.6	2.7
Carlton	2	-	2	4	1.2	-	1.6	2.7
Grand Total ^c	10	4	11	25	4.4	2.2	5.0	11.6

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-37-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	4.3	3.3	0.3	7.9	775.0	974.7	91.9	1841.6
Aitkin	3.9	0.7	-	4.6	720.5	269.2	9.6	999.2
Carlton	0.4	2.6	0.3	3.3	54.5	705.6	82.3	842.4
Kettle	0.1	3.3	-	3.4	25.1	788.3	3.8	817.3
Carlton	0.1	3.3	-	3.4	25.1	788.3	3.8	817.3
St. Louis	0.3	4.5	0.2	5.0	74.2	1031.3	64.6	1170.0
Carlton	0.3	4.5	0.2	5.0	74.2	1031.3	64.6	1170.0
Beartrap-Nemadji	-	-	-	-	-	0.4	0.9	1.3
Carlton	-	-	-	-	-	0.4	0.9	1.3
Grand Total ^d	4.8	11.1	0.5	16.3	874.3	2794.7	161.2	3830.2

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-37-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	0.20	0.14	17.30	73.20
Carlton	0.20	0.14	17.30	73.20
Kettle	-	-	-	7.89
Carlton	-	-	-	7.89
St. Louis	0.11	0.18	13.16	55.36
Carlton	0.11	0.18	13.16	55.36
Grand Total ^c	0.31	0.32	30.46	136.45
<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-37-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
Kettle	1	0.48
Carlton	1	0.48
St. Louis	1	1.36
Carlton	1	1.36
Grand Total^c	2	1.84
<i>Trout Stream Data Source: https://gisdata.mn.gov/dataset/env-trout-stream-designations</i> a Number of trout streams crossed by the 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.		

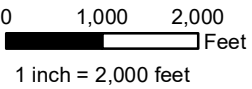
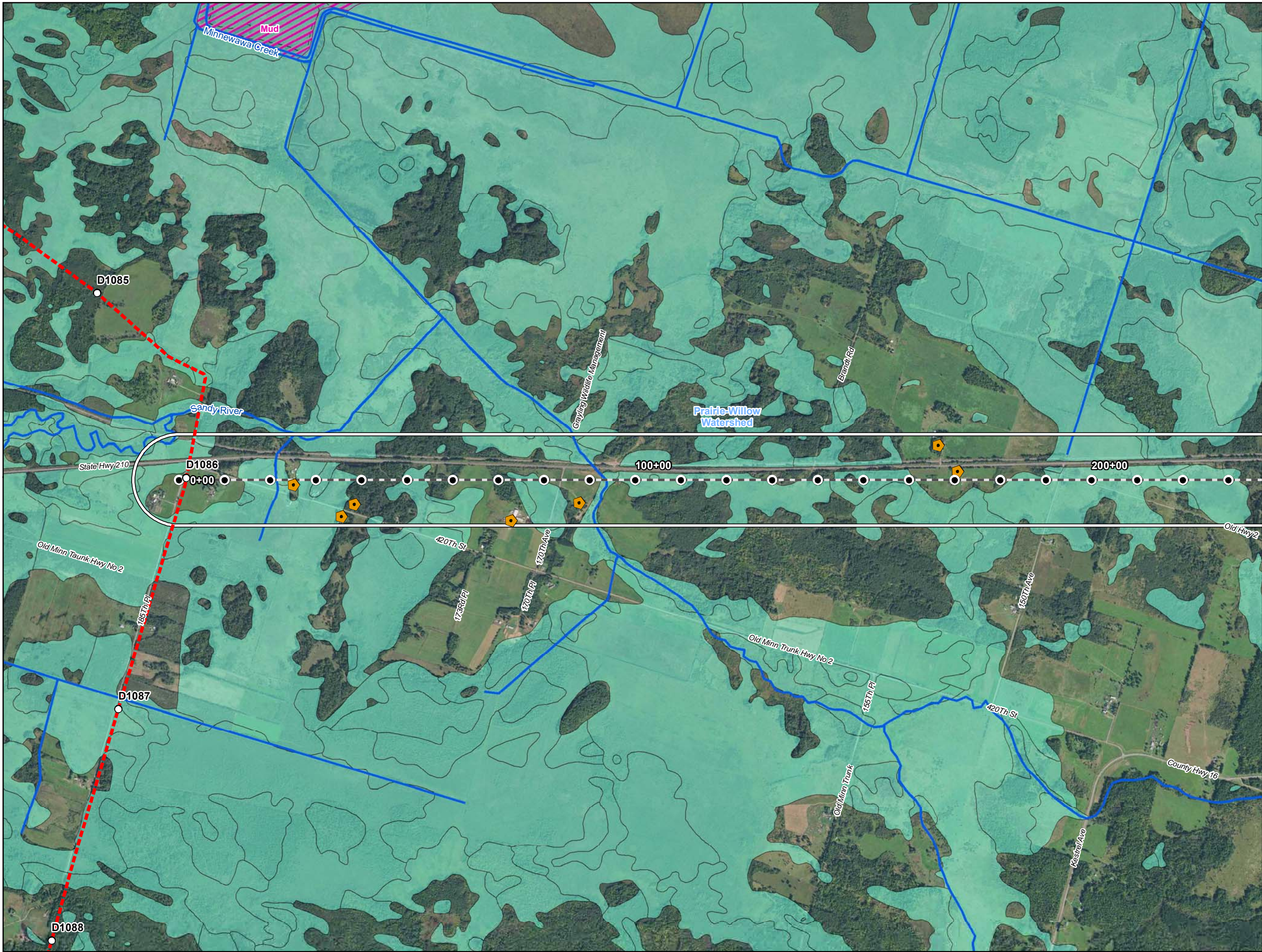
Table 6 L3 Replacement Project – RSA-37-L3 Wells within the 2,000-ft-wide Route Segment Alternative Corridor in Minnesota^a				
Watershed Name	County	Well Type	Distance from Centerline (feet)	Total Number of Wells
Prairie-Willow	Aitkin	Abandoned	621	2
			960	
		Domestic	91	8
			786	
			516	
			875	
			486	
			776	
			199	
			983	
		Exploration	756	1
	Carlton	Abandoned	48	6
			776	
			663	
			716	
			540	
			570	
		Domestic	293	18
			16	
			278	
			807	
			469	
			765	
			89	
			289	
			585	
			88	
			590	
			60	
			838	
			527	
			12	
			266	
			787	
			998	
		Monitoring	408	1
Kettle	Carlton	Domestic	886	4
			669	
			734	

Kettle (cont.)	Carlton (cont.)	Domestic (cont.)	753	4 (cont.)
St. Louis	Carlton	Domestic	206	3
			945	
			824	
Kettle	Carlton	Abandoned	330	1
		Domestic	151	2
			545	
St. Louis	Carlton	Domestic	921	14
			364	
			115	
			94	
			561	
			293	
			435	
			21	
			892	
			655	
			576	
			254	
			147	
			35	
		Other	56	1
		Unknown	414	1

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

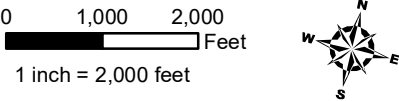
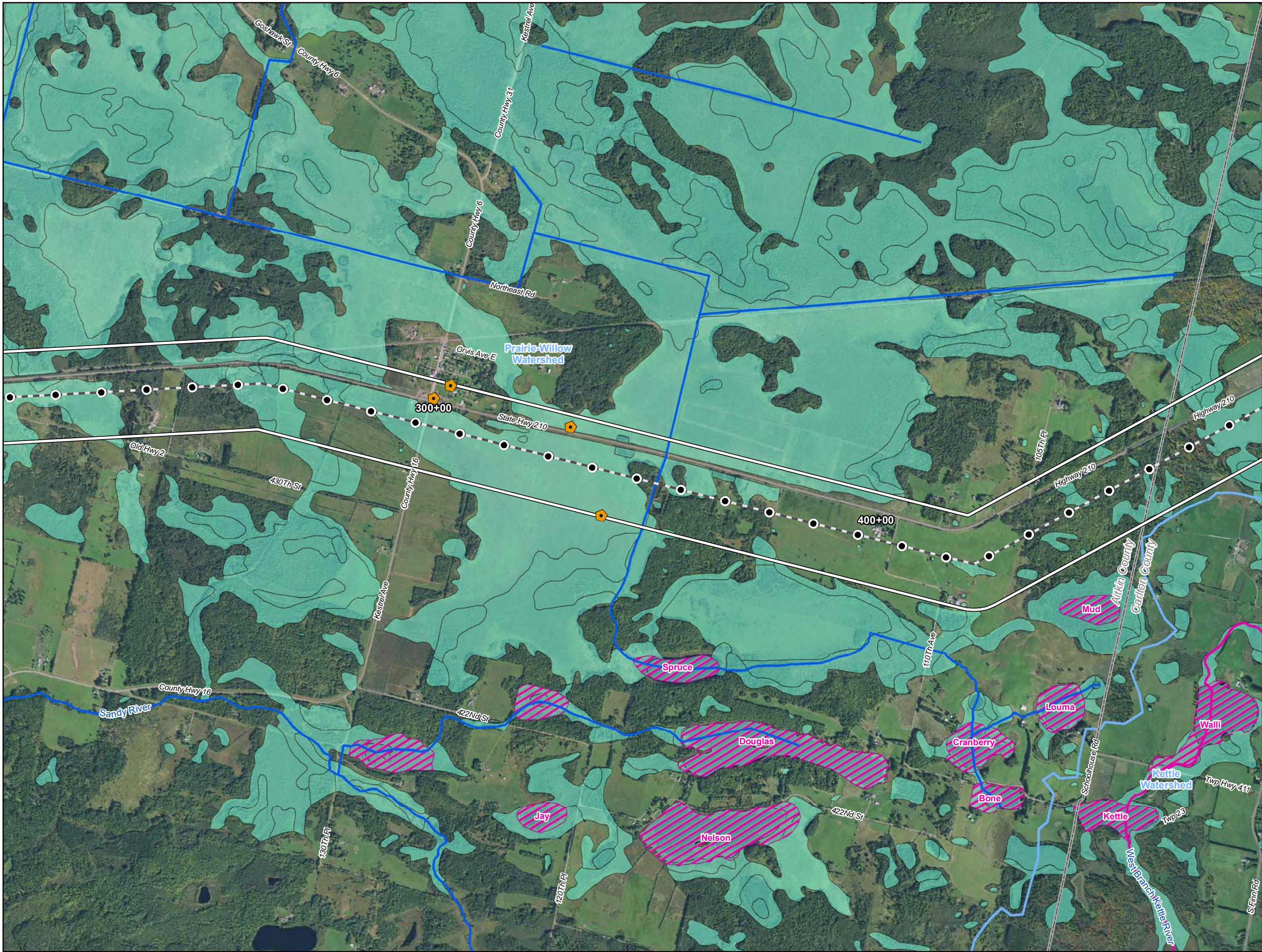
^a Municipal wells are not included in the source data

Table 7				
Line 3 Replacement Project – RSA-37-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
Prairie-Willow	Carlton	Individual Permit	Active	1
			Inactive	2
St. Louis	Carlton	Individual Permit	Inactive	1
Kettle	Carlton	Individual Permit	Inactive	1
St. Louis	Carlton	General Permit Authorization	Active	4
			Inactive	3
		Individual Permit	Inactive	1
MPARS Minnesota DNR, Ecological and Water Resources, Sean Hunt, 651-259-5679				
^a Municipal wells are not included in the source data.				



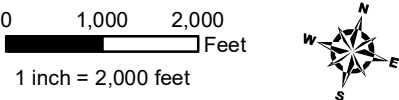
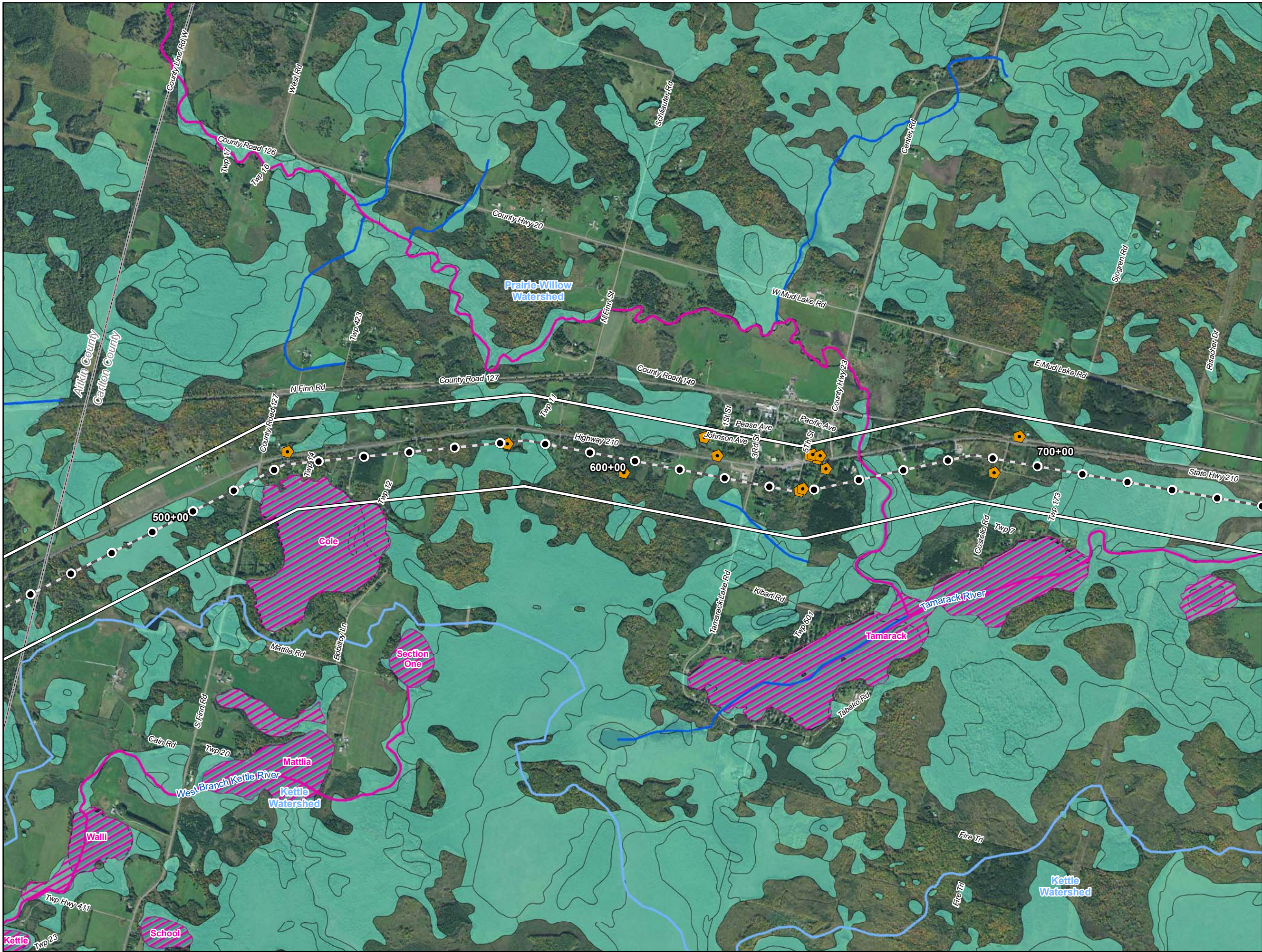
- Water Well
- Surface Water Intake
- Calcareous Fen
- Line 3 Milepost
- Alternative Stationing
- Proposed Line 3 Replacement Pipeline
- Alternative Centerline
- 2,000 ft Alternative Corridor
- Trout Stream
- PWI Stream
- NHD Stream
- PWI Basin
- NWI
- Watershed Boundary
- WHPA
- DWSMA
- County Boundary

Figure 1
Line 3 Replacement Project
RSA-37-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-37-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
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- WHPA
- DWSMA
- County Boundary

Figure 3

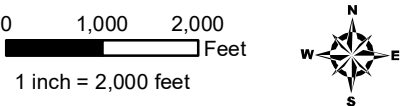
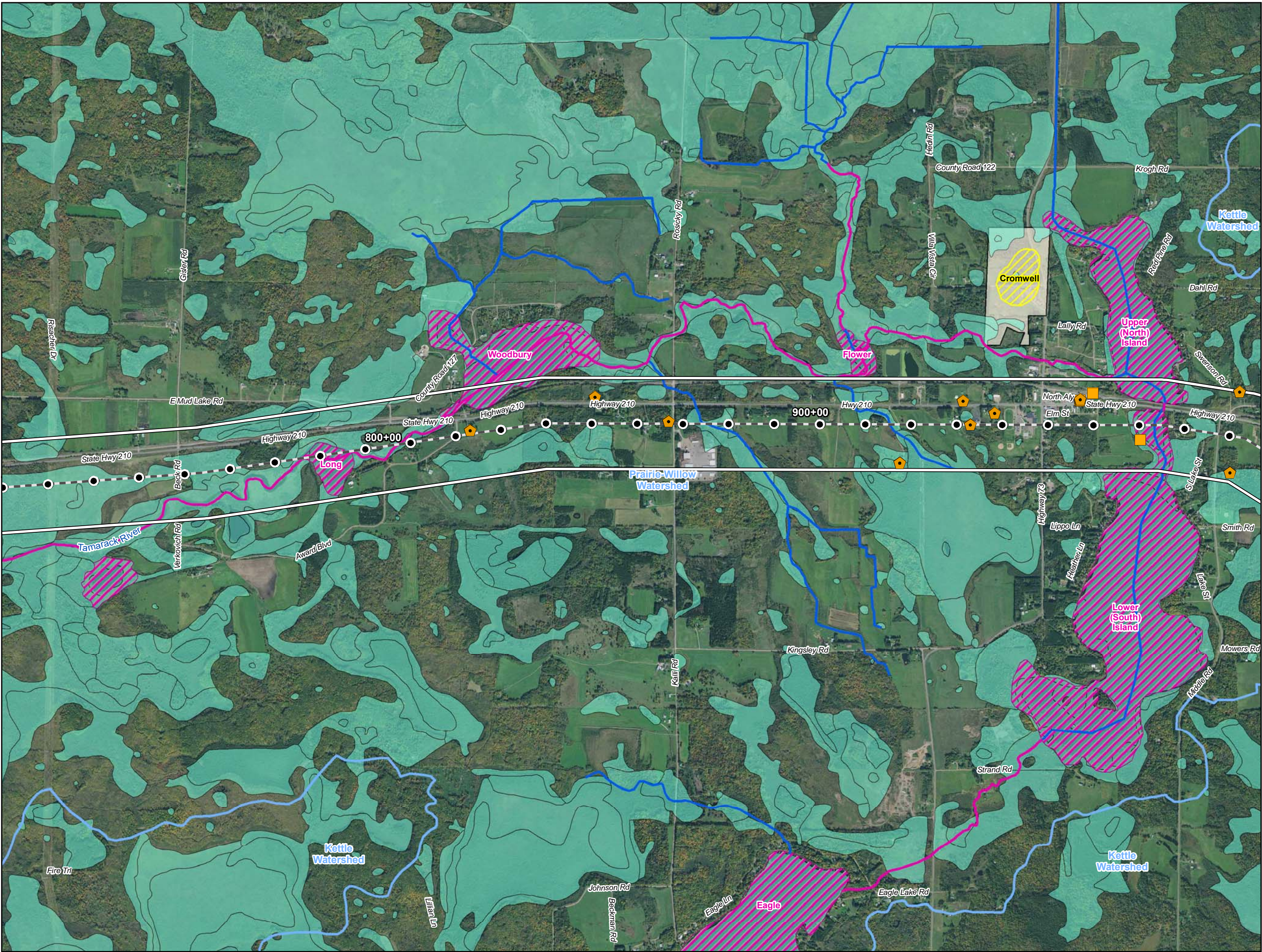
Line 3 Replacement Project

RSA-37-L3

Enbridge

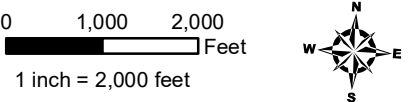
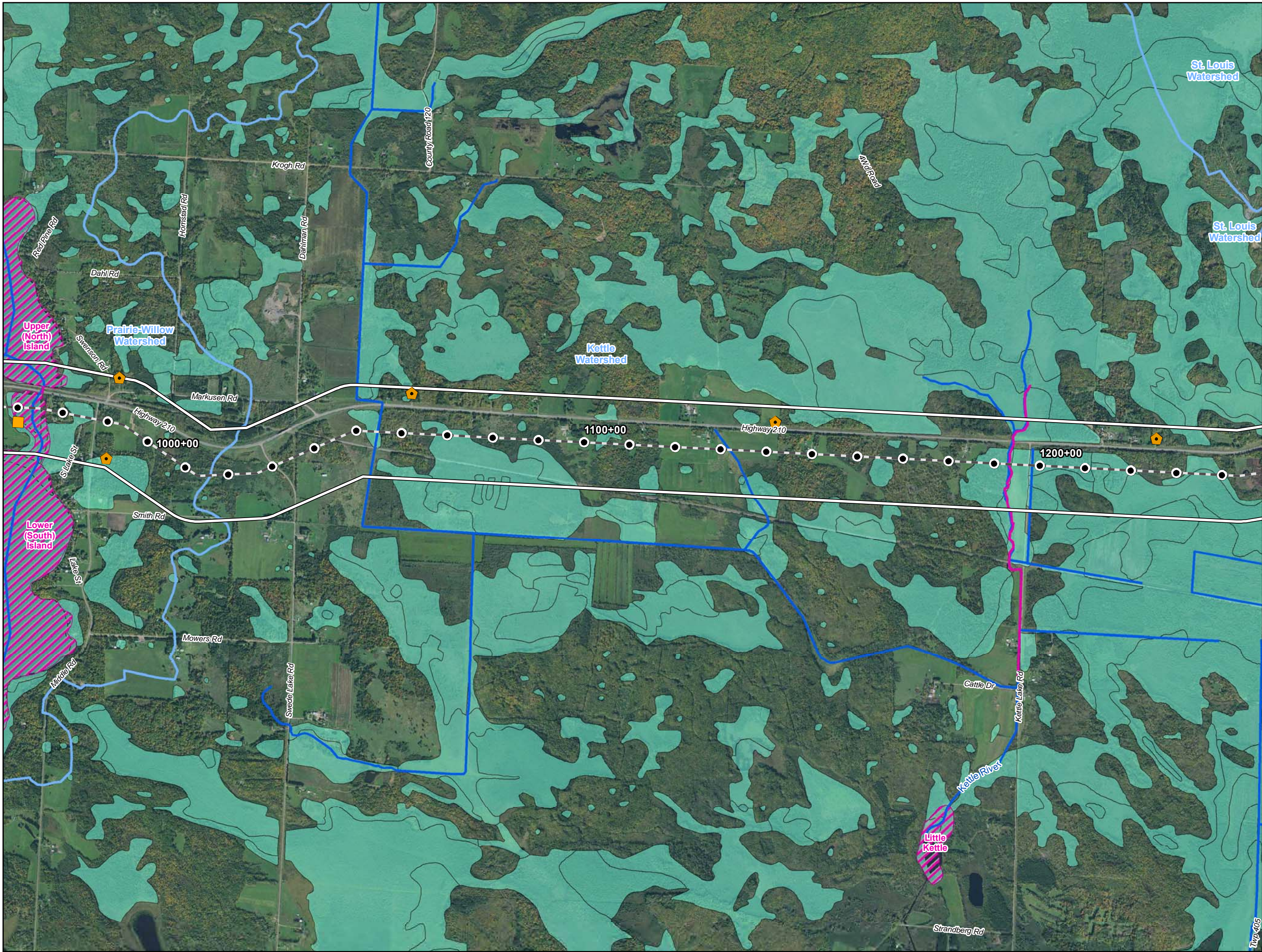
Carlton County, Minnesota





- Water Well
- Surface Water Intake
- Calcareous Fen
- Line 3 Milepost
- Alternative Stationing
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- Alternative Centerline
- 2,000 ft Alternative Corridor
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Figure 4
Line 3 Replacement Project
RSA-37-L3
Enbridge
Carlton County, Minnesota



- Water Well
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- Line 3 Milepost
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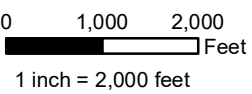
Figure 5

Line 3 Replacement Project

RSA-37-L3

Enbridge

Carlton County, Minnesota



- Water Well
- Surface Water Intake
- Calcareous Fen
- Line 3 Milepost
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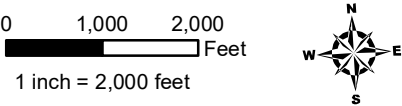
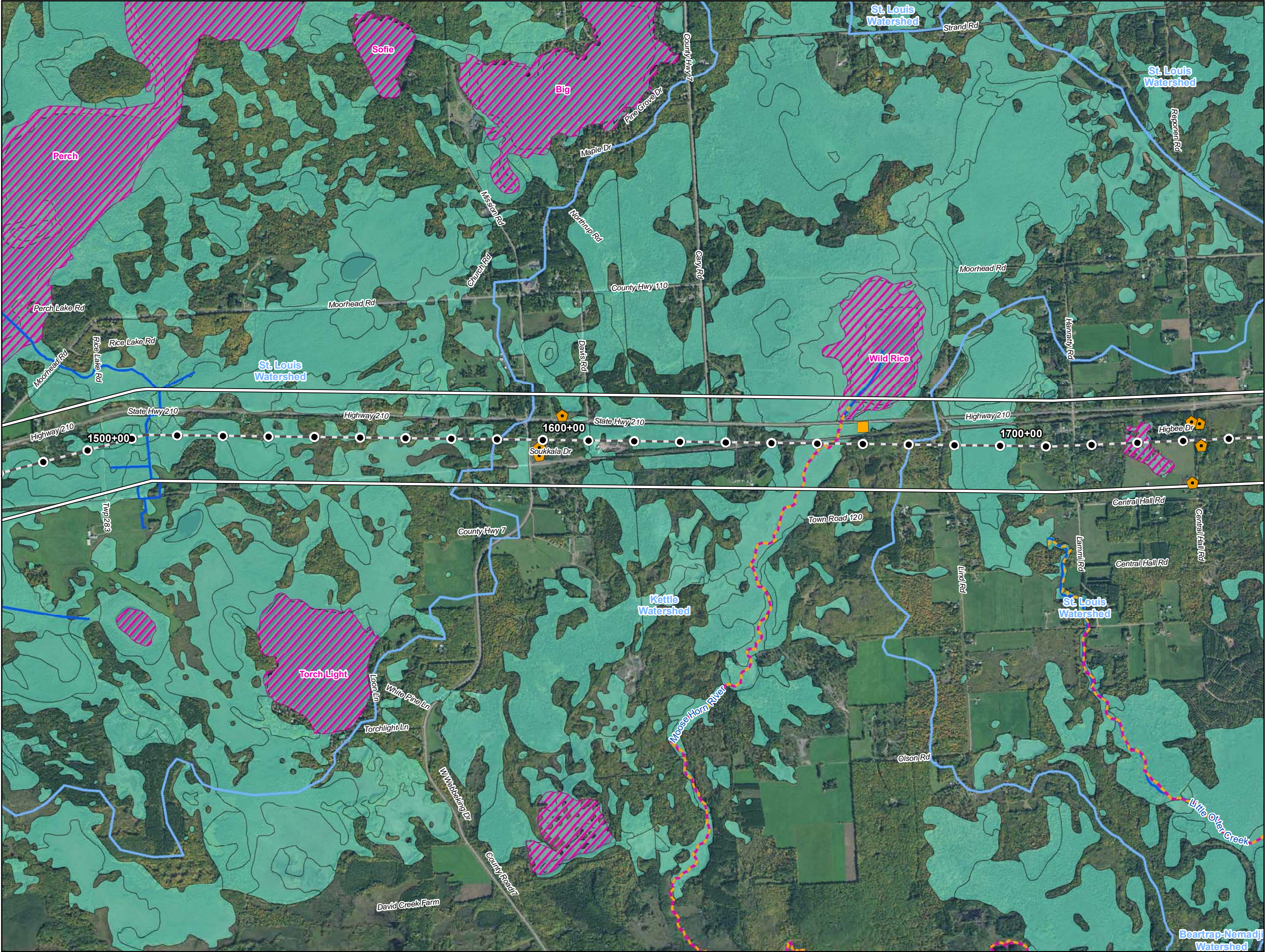
Figure 6

Line 3 Replacement Project

RSA-37-L3

Enbridge

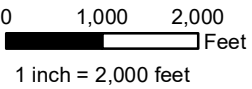
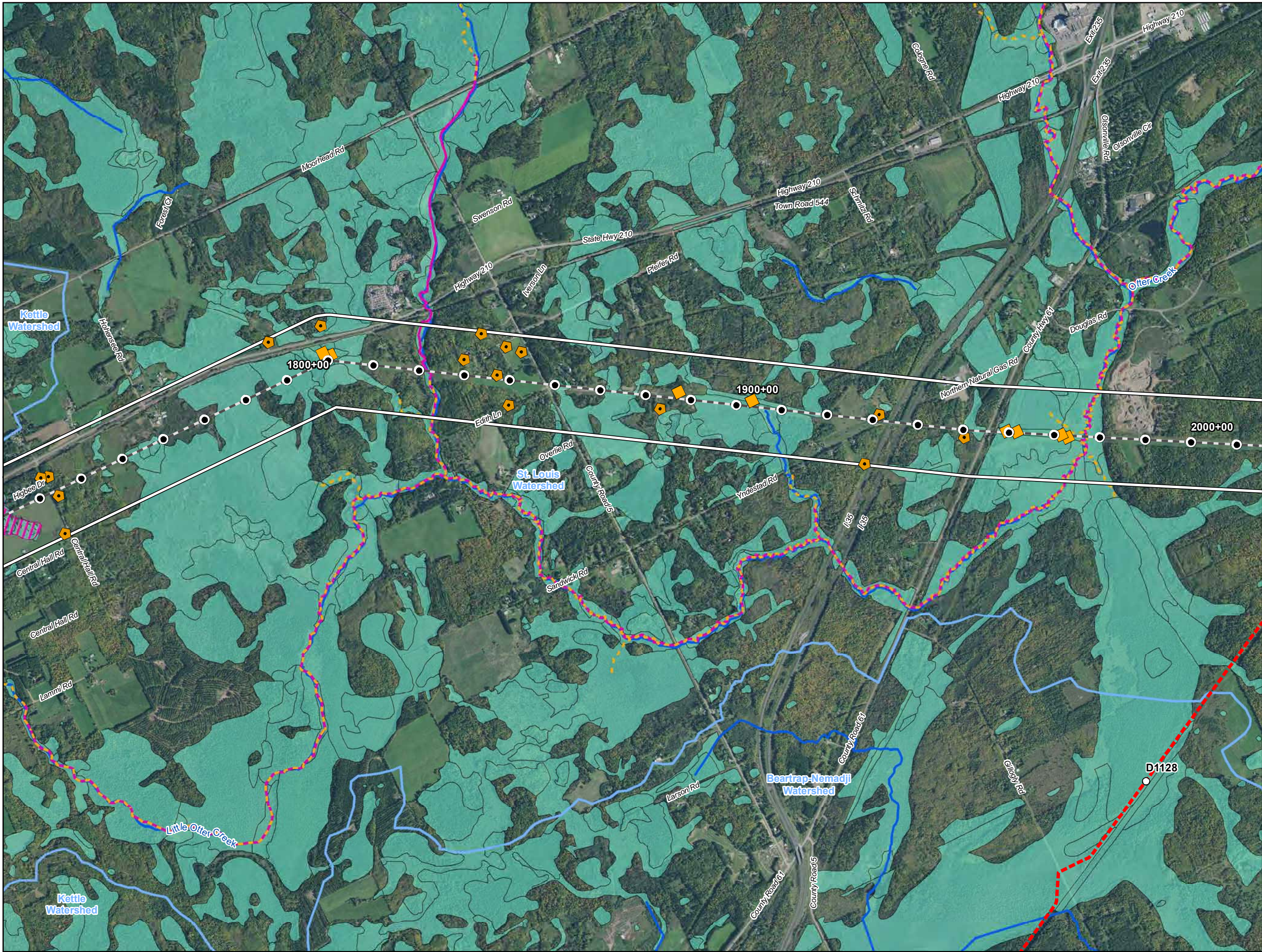
Carlton County, Minnesota



- Water Well
- Surface Water Intake
- Calcareous Fen
- Line 3 Milepost
- Alternative Stationing
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- 2,000 ft Alternative Corridor
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- PWI Basin
- NWI
- Watershed Boundary
- WHPA
- DWSMA
- County Boundary

Figure 7
Line 3 Replacement Project
RSA-37-L3
Enbridge
Carlton County, Minnesota

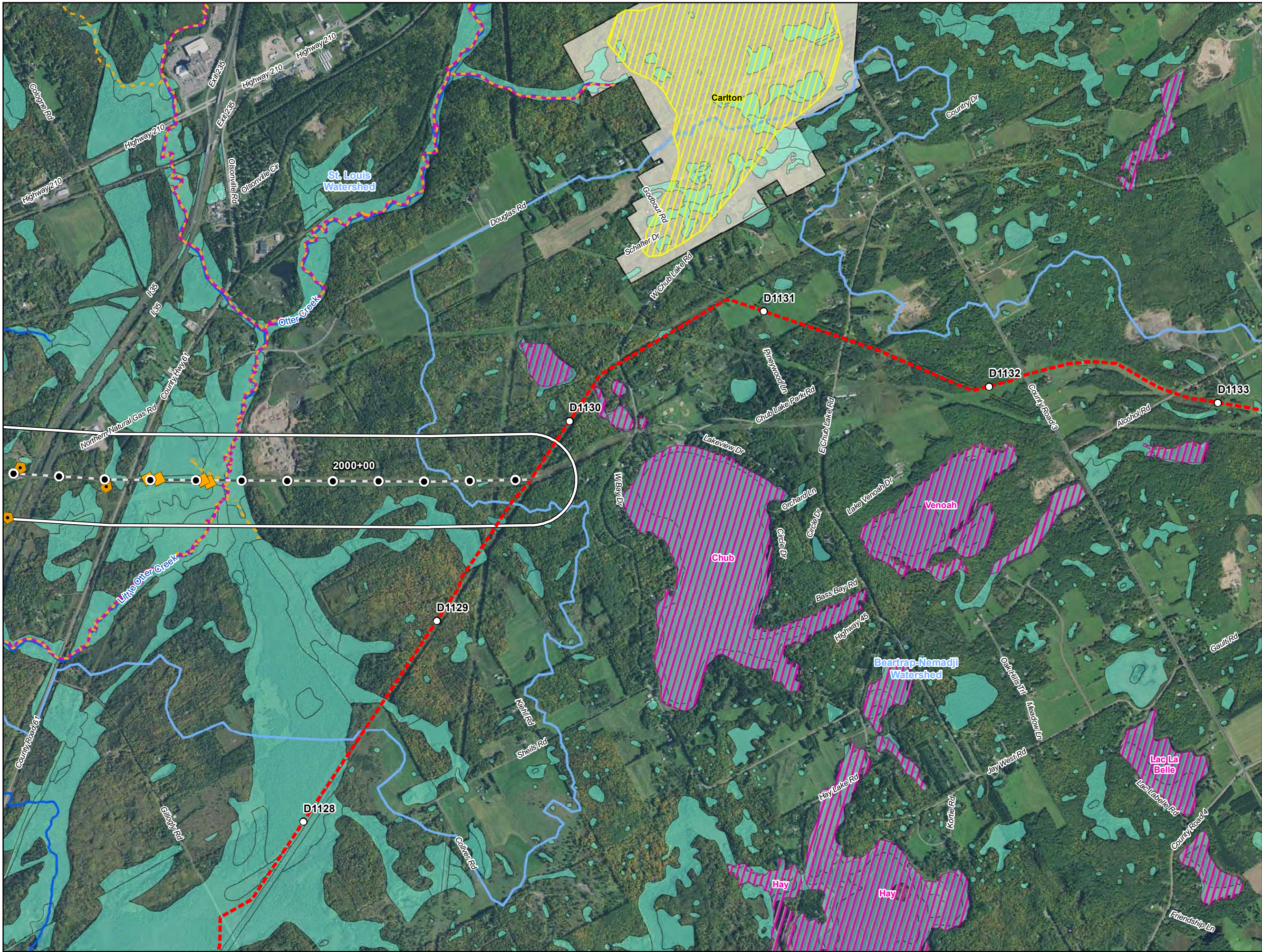




- Water Well
- Surface Water Intake
- Calcareous Fen
- Line 3 Milepost
- Alternative Stationing
- Proposed Line 3 Replacement Pipeline
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- County Boundary

Figure 8
Line 3 Replacement Project
RSA-37-L3
Enbridge
Carlton County, Minnesota





0 1,000 2,000
Feet
1 inch = 2,000 feet



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

Figure 9

Line 3 Replacement Project

RSA-37-L3

Enbridge

Carlton County, Minnesota



ATTACHMENT A

Natural Resource and Water Supply Summary Tables and Figures

Line 3 Replacement Project Route Segment Alternative (RSA)-42

DRAFT

Table 1 Line 3 Replacement Project – RSA-42-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
Kettle	1	2.47
Carlton	1	2.47
Grand Total^c	1	2.47
<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 - RA-42-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
Kettle	1	1	1	3	2.5	0.7	1.0	4.1
Carlton	1	1	1	3	2.5	0.7	1.0	4.1
Beartrap-Nemadji	-	-	-	-	0.4	-	-	0.4
Carlton	-	-	-	-	0.4	-	-	0.4
Grand Total ^c	1	1	1	3	2.9	0.7	1.0	4.5

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-42-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
Kettle	0.7	1.1	-	1.8	57.1	288.1	-	345.1
Carlton	0.7	1.1	-	1.8	57.1	288.1	-	345.1
Beartrap-Nemadji	0.0	0.4	-	0.4	6.1	112.4	-	118.5
Carlton	0.0	0.4	-	0.4	6.1	112.4	-	118.5
Grand Total ^d	0.7	1.5	0.0	2.2	63.1	400.5	0.0	463.6

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.

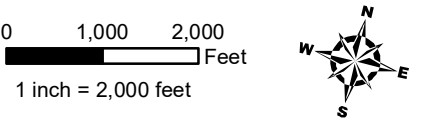
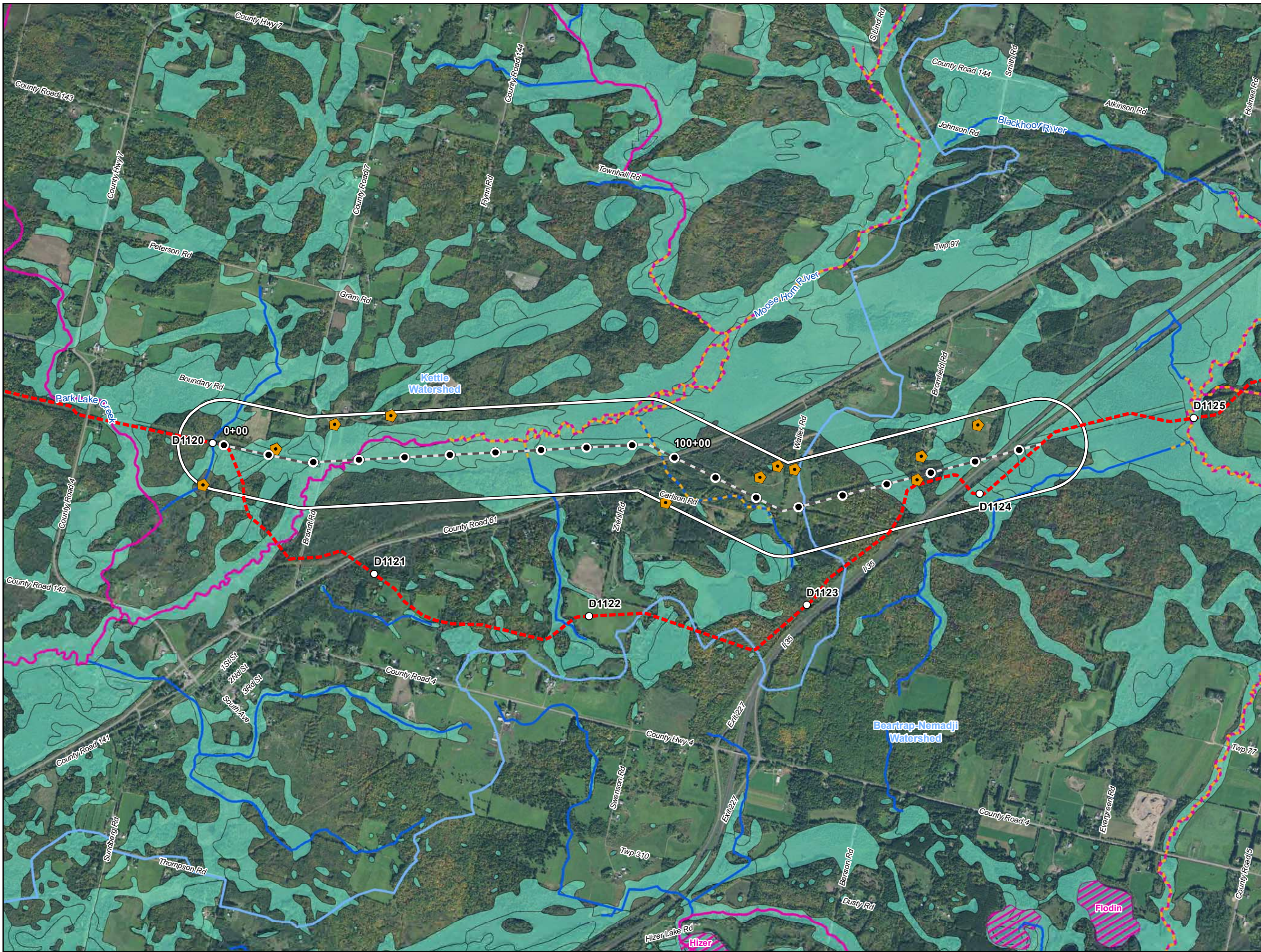
b Total acres of NWI within the 2000-ft-wide Route Segment Alternative corridor.

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-42-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
Kettle	2	2.45
Carlton	2	2.45
Grand Total^c	2	2.45
<i>Trout Stream Data Source: https://gisdata.mn.gov/dataset/env-trout-stream-designations</i> a Number of trout streams crossed by the 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 5				
Line 3 Replacement Project – RSA-42-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
Kettle	Carlton	Domestic	811	6
			936	
			964	
			445	
			635	
			381	
		Exploration	976	2
			162	
Beartrap-Nemadji	Carlton	Domestic	406	3
			68	
			760	
County Well Index (CWI) Data Source: ftp://mgssun6.mnrgs.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
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- PWI Stream
- NHD Stream
- PWI Basin
- NWI
- Watershed Boundary
- WHPA
- DWSMA
- County Boundary

Figure 1

Line 3 Replacement Project

RSA-42-L3

Enbridge

Carlton County, Minnesota

ATTACHMENT A

Natural Resource and Water Supply Summary Tables and Figures

Line 3 Replacement Project Route Segment Alternative (RSA)-43

DRAFT

Table 1 Line 3 Replacement Project – RSA-43-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
Kettle	-	0.59
Carlton	-	0.59
Grand Total^c	-	0.59
<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.		

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Summary of Waterbodies Crossed by the Proposed Route Segment Alternative Centerline
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Carlton	-	1	1	2	0.6	0.5	1.0	2.1
Beartrap-Nemadji	-	-	-	-	0.4	-	-	0.4
Carlton	-	-	-	-	0.4	-	-	0.4
Grand Total ^c	-	1	1	2	1.0	0.5	1.0	2.5

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.

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	PEM ^c	PFO/PSS ^c	Pond/Lake/ Riverine	Total ^d	PEM ^c	PFO/PSS ^c	Pond/Lake/ Riverine	Total ^d
Kettle	-	0.5	-	0.5	2.7	139.9	-	142.6
Carlton	-	0.5	-	0.5	2.7	139.9	-	142.6
Beartrap-Nemadji	-	0.4	-	0.4	6.1	112.4	-	118.5
Carlton	-	0.4	-	0.4	6.1	112.4	-	118.5
Grand Total ^d	0.0	0.9	0.0	0.9	8.7	252.4	0.0	261.1

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).

Numbers may not total consistently due to rounding.

Table 4 Line 3 Replacement Project – RSA-43-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
Kettle	1	1.44
Carlton	1	1.44
Grand Total^c	1	1.44
<i>Trout Stream Data Source: https://gisdata.mn.gov/dataset/env-trout-stream-designations</i> a Number of trout streams crossed by the 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 5				
Line 3 Replacement Project – RSA-43-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
Kettle	Carlton	Domestic	123	7
			711	
			819	
			964	
			445	
			635	
			381	
Beartrap-Nemadji	Carlton	Domestic	406	3
			68	
			760	
County Well Index (CWI) Data Source: ftp://mgssun6.mngs.umn.edu/pub2/cwi4/cwilocs_nps.zip				
^a Municipal wells are not included in the source data.				

ATTACHMENT A

Natural Resource and Water Supply Summary Tables and Figures

Line 3 Replacement Project Route Segment Alternative (RSA)-44

DRAFT

Table 1 Line 3 Replacement Project – RSA-44-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
Kettle	-	1.3
Carlton	-	1.3
St. Louis	2	1.1
Carlton	2	1.1
Grand Total^c	2	2.4
<i>Public Waters Inventory (PWI) Stream Data Source: https://gisdata.mn.gov/dataset/water-mn-public-waters</i> <i>a</i> Number of Public Waters Inventory streams crossed by the proposed Route Segment Alternative centerline. <i>b</i> Total miles of Public Waters Inventory stream segment(s) crossed by the 2000-ft-wide Route Segment Alternative corridor. <i>c</i> Numbers may not total consistently due to rounding.		

Table 2
Line 3 Replacement Project - RSA-44-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
Kettle	-	1	1	2	1.3	0.5	0.4	2.1
Carlton	-	1	1	2	1.3	0.5	0.4	2.1
Beartrap-Nemadji	2	1	-	3	1.0	0.5	-	1.5
Carlton	2	1	-	3	1.0	0.5	-	1.5
St. Louis	2	-	-	2	1.0	-	-	1.0
Carlton	2	-	-	2	1.0	-	-	1.0
Grand Total ^c	4	2	1	7	3.3	1.0	0.4	4.7

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-44-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
Kettle	0.1	1.4	-	1.5	10.2	274.3	-	284.5
Carlton	0.1	1.4	-	1.5	10.2	274.3	-	284.5
Beartrap-Nemadji	-	1.1	-	1.1	16.5	170.2	1.5	188.2
Carlton	-	1.1	-	1.1	16.5	170.2	1.5	188.2
St. Louis	-	1.0	-	1.0	16.8	177.0	1.4	195.2
Carlton	-	1.0	-	1.0	16.8	177.0	1.4	195.2
Grand Total ^d	0.1	3.5	-	3.6	43.5	621.4	3.0	667.9

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.

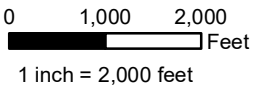
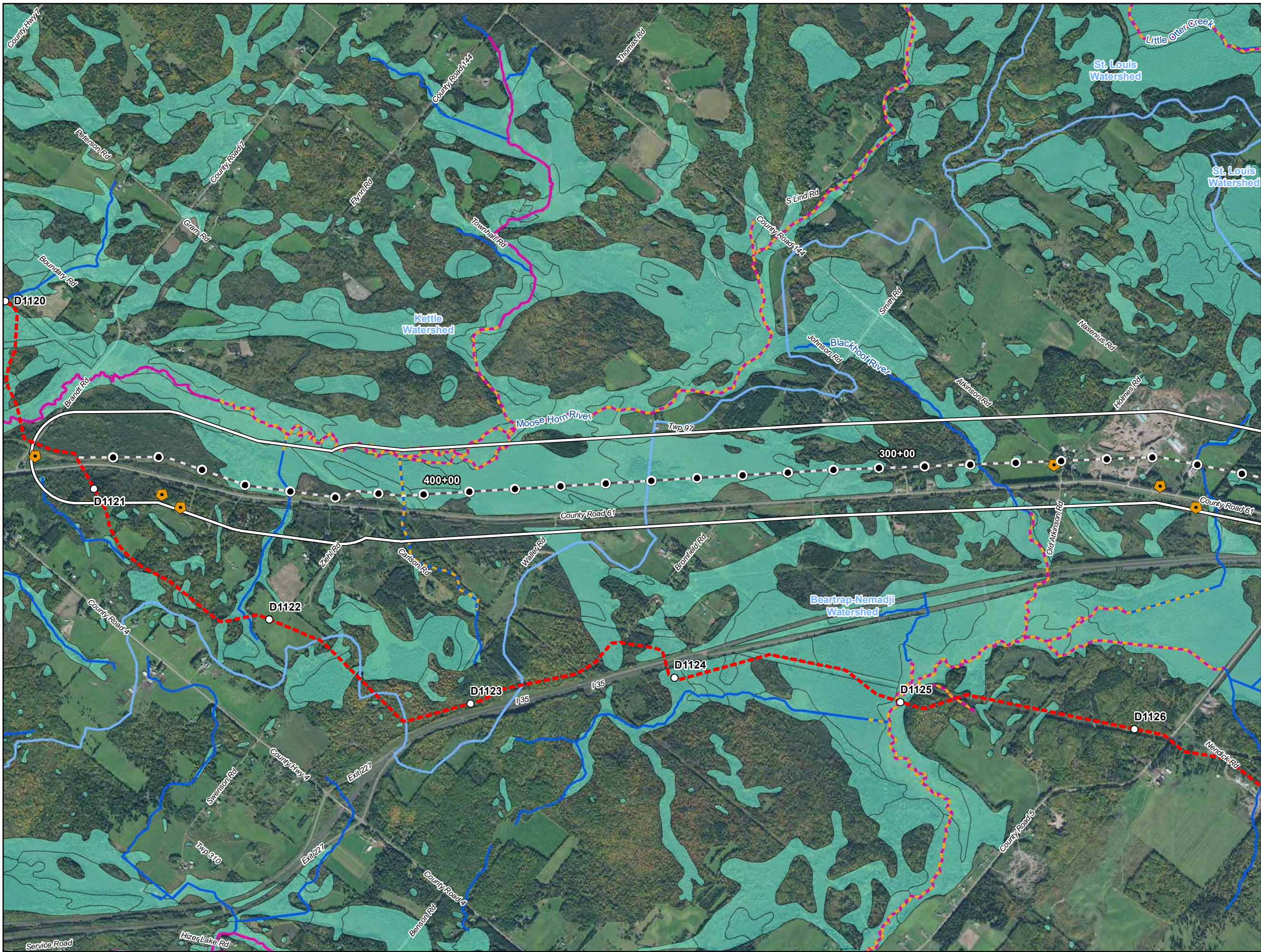
c PEM = Palustrine Emergent; PSS = Palustrine Scrub Shrub; PFO = Palustrine Forested (Cowardin et al. 1979).

d Numbers may not total consistently due to rounding.

Table 4 Line 3 Replacement Project – RA-44-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
Kettle	1	1.7
Carlton	1	1.7
St. Louis	2	1.5
Carlton	2	1.5
Grand Total^c	3	3.2
<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.		

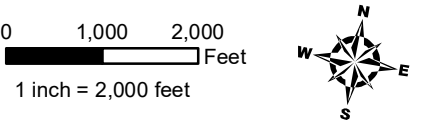
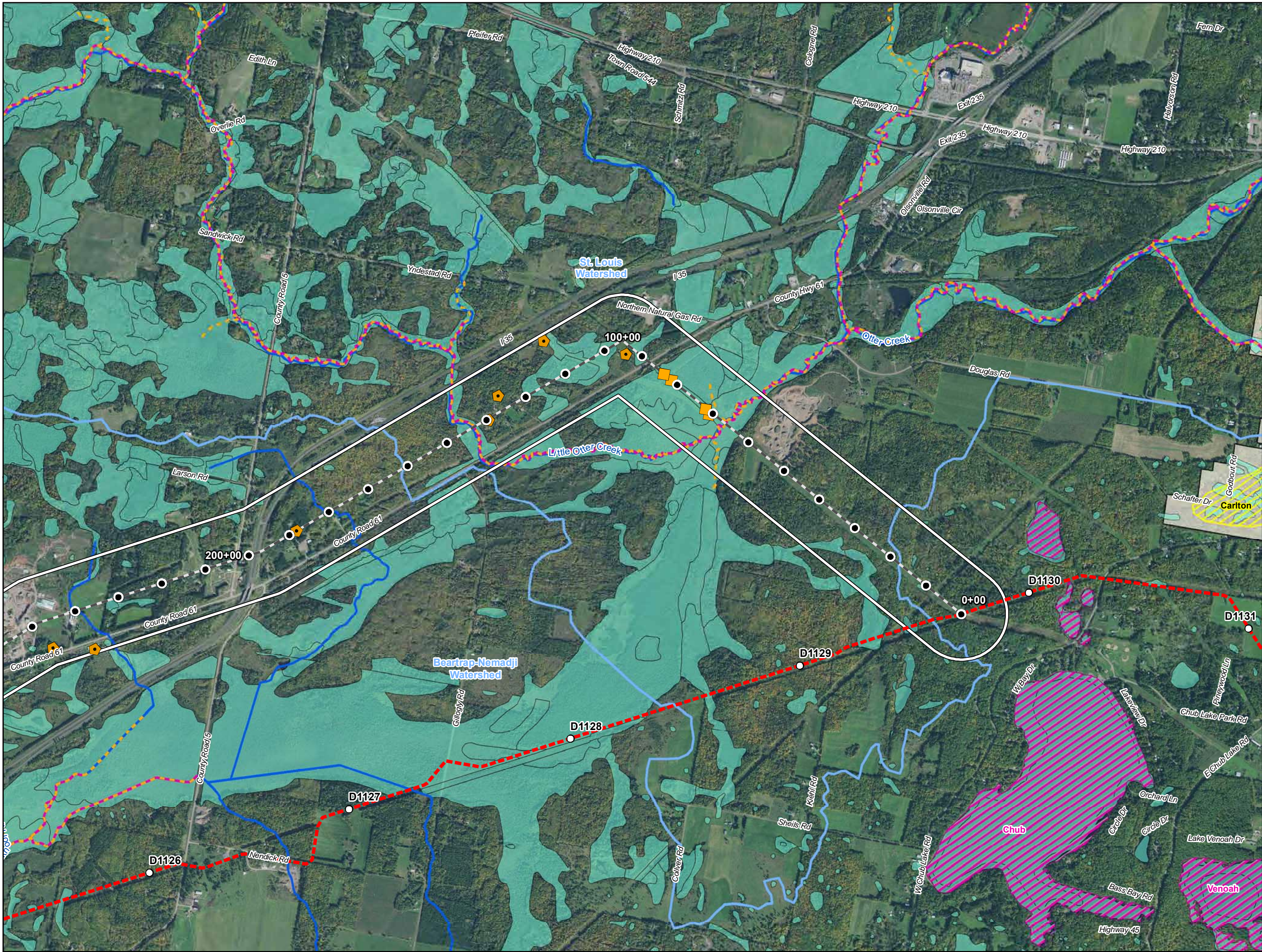
Table 5				
Line 3 Replacement Project - RSA-44-L3				
Wells within the 2,000-ft-wide Route Segment Alternative Corridor in Minnesota ^a				
Watershed Name	County	Well Type	Distance from Centerline (feet)	Total Number of Wells
Kettle	Carlton	Domestic	123	3
			711	
			819	
Beartrap-Nemadji	Carlton	Domestic	68	4
			610	
			743	
			15	
St. Louis	Carlton	Domestic	23	3
			338	
			35	
		Other	54	1
County Well Index (CWI) Data Source: ftp://mgssun6.mngs.umn.edu/pub2/cwi4/cwilocs_nps.zip				
^a Municipal wells are not included in the source data.				

Table 6				
Line 3 Replacement Project – RSA-44-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	Carlton	General Permit Authorization	Active	3
			Inactive	1
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-44-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
- Trout Stream
- PWI Stream
- NHD Stream
- PWI Basin
- NWI
- Watershed Boundary
- WHPA
- DWSMA
- County Boundary

Figure 2

Line 3 Replacement Project

RSA-44-L3

Enbridge

Carlton County, Minnesota

ATTACHMENT A

Natural Resource and Water Supply Summary Tables and Figures

Line 3 Replacement Project Route Segment Alternative (RSA)-45

DRAFT

Table 1 Line 3 Replacement Project – RSA-45-L3 Summary of Public Waters Inventory Streams Crossed by the Proposed Route Segment Alternative Centerline and within the 2,000-ft-wide Route 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
Kettle	-	0.6
Carlton	-	0.6
Beartrap-Nemadji	1	0.4
Carlton	1	0.4
St. Louis	2	1.7
Carlton	2	1.7
Grand Total^c	3	2.7
<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-45-L3
Summary of Waterbodies Crossed by the Proposed Segment Route 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
St. Louis	2	-	-	2	1.4	-	-	1.4
Carlton	2	-	-	2	1.4	-	-	1.4
Beartrap-Nemadji	2	1	-	3	1.6	0.4	-	2.1
Carlton	2	1	-	3	1.6	0.4	-	2.1
Kettle	-	1	1	2	0.6	0.5	1.0	2.0
Carlton	-	1	1	2	0.6	0.5	1.0	2.0
Grand Total ^c	4	2	1	7	3.6	0.9	1.0	5.5

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-45-L3
Summary of USFWS National Wetlands Inventory Crossed by the Route Segment Alternative Proposed 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
Kettle	0.0	0.5	0	0.5	2.0	139.2	0	141.3
Carlton	0.0	0.5	0	0.5	2.0	139.2	0	141.3
Beartrap-Nemadji	0.2	2.0	0	2.2	45.1	406.0	2.0	453.1
Carlton	0.2	2.0	0	2.2	45.1	406.0	2.0	453.1
St. Louis	0.1	0.5	0	0.7	20.9	175.2	1.4	197.5
Carlton	0.1	0.5	0	0.7	20.9	175.2	1.4	197.5
Grand Total	0.3	3.1	0	3.4	68.0	720.4	3.5	791.9

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.

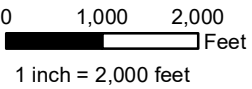
c PEM = Palustrine Emergent; PSS = Palustrine Scrub Shrub; PFO = Palustrine Forested (Cowardin et al. 1979).

d Numbers may not total consistently due to rounding.

Table 4 Line 3 Replacement Project – RSA-45-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 Alternative Centerline ^a	Miles Within the 2,000-ft-wide Route Alternative Corridor ^b
St. Louis	2	2.0
Carlton	2	2.0
Beartrap-Nemadji	1	0.5
Carlton	1	0.5
Kettle	1	1.4
Carlton	1	1.4
Grand Total ^c	4	3.9
<i>Trout Stream Data Source: https://gisdata.mn.gov/dataset/env-trout-stream-designations</i> ^a Number of trout streams crossed by the 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 5				
Line 3 Replacement Project – RSA-45-L3				
Wells within the 2,000-ft-wide Route Segment Alternative Corridor in Minnesota				
Watershed Name	County	Well Type	Distance from Centerline (feet)	Total Number of Wells
Kettle	Carlton	Domestic	123	7
			711	
			819	
			964	
			445	
			635	
			381	
Beartrap-Nemadji	Carlton	Domestic	530	15
			406	
			376	
			820	
			193	
			440	
			760	
			955	
			902	
			488	
			880	
			743	
			521	
			506	
			378	
County Well Index (CWI) Data Source: ftp://mgssun6.mnms.umn.edu/pub2/cwi4/cwilocs_nps.zip				
^a Municipal wells are not included in the source data.				

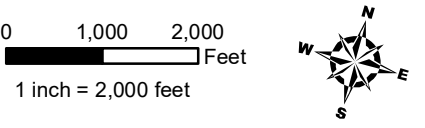
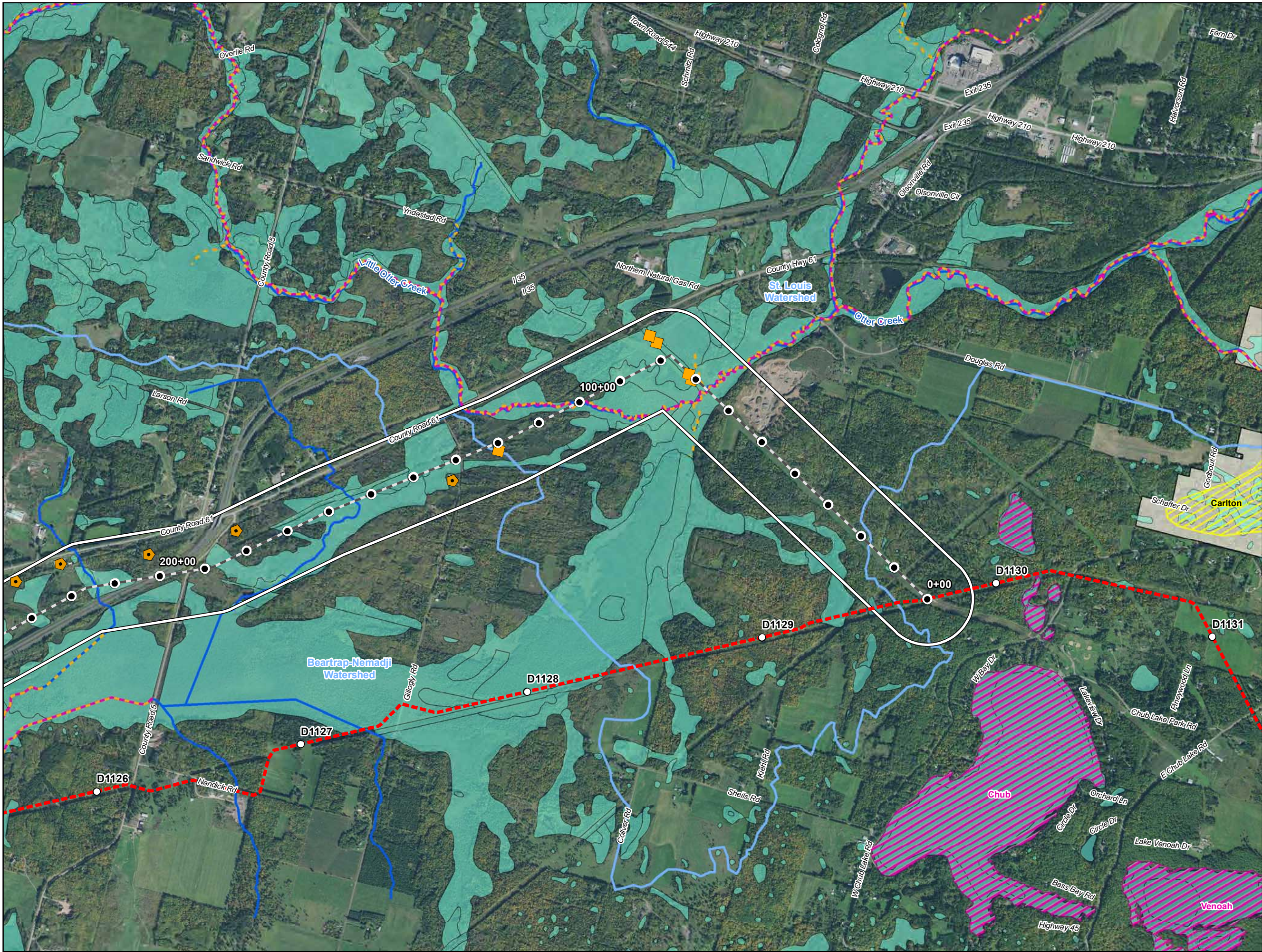
Table 6				
Line 3 Replacement Project – RA-45-L3				
Surface Water Intakes within the 2,000-ft-wide Route Segment Alternative Corridor in Minnesota ^a				
Watershed Name	County	Permit Type	Permit Status	Total
St. Louis	Carlton	General Permit Authorization	Active	3
			Inactive	1
		Individual Permit	Inactive	1
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-45-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
- Trout Stream
- PWI Stream
- NHD Stream
- PWI Basin
- NWI
- Watershed Boundary
- WHPA
- DWSMA
- County Boundary

Figure 2
Line 3 Replacement Project
RSA-45-L3
Enbridge
Carlton County, Minnesota

ATTACHMENT A

Natural Resource and Water Supply Summary Tables and Figures

Line 3 Replacement Project Route Segment Alternative (RSA)-46

DRAFT

Table 1
Line 3 Replacement Project - RSA-46-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 Alternative Centerline ^a				Miles Within the 2,000-ft-wide Route Alternative Corridor ^b			
	Perennial	Intermittent	Canal/Ditch/ Artificial Path/ Connector	Total ^c	Perennial	Intermittent	Canal/Ditch/ Artificial Path/ Connector	Total ^c
Kettle	-	-	-	-	-	0.8	-	0.8
Carlton	-	-	-	-	-	0.8	-	0.8
Grand Total ^c	-	-	-	-	-	0.8	-	0.8

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 2
Line 3 Replacement Project – RSA-46-L3
Summary of USFWS National Wetlands Inventory Crossed by the Route Segment Alternative Proposed Centerline
and within the 2,000-ft-wide Route Segment Alternative Corridor in Minnesota

Watershed County	Miles Crossed by the Proposed Route Alternative Centerline ^a				Acres Within the 2,000-ft-wide Route Alternative Corridor ^b			
	PEM ^c	PFO/PSS ^c	Pond/Lake/ Riverine	Total ^d	PEM ^c	PFO/PSS ^c	Pond/Lake/ Riverine	Total ^d
Kettle	0	0.4	0	0.4	2.1	56.7	0	58.8
Carlton	0	0.4	0	0.4	2.1	56.7	0	58.8
Beartrap-Nemadji	0	0.2	0	0.2	0	38.1	0	38.1
Carlton	0	0.2	0	0.2	0	38.1	0	38.1
Grand Total	0	0.6	0	0.6	2.1	94.8	0	96.9

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

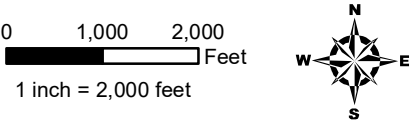
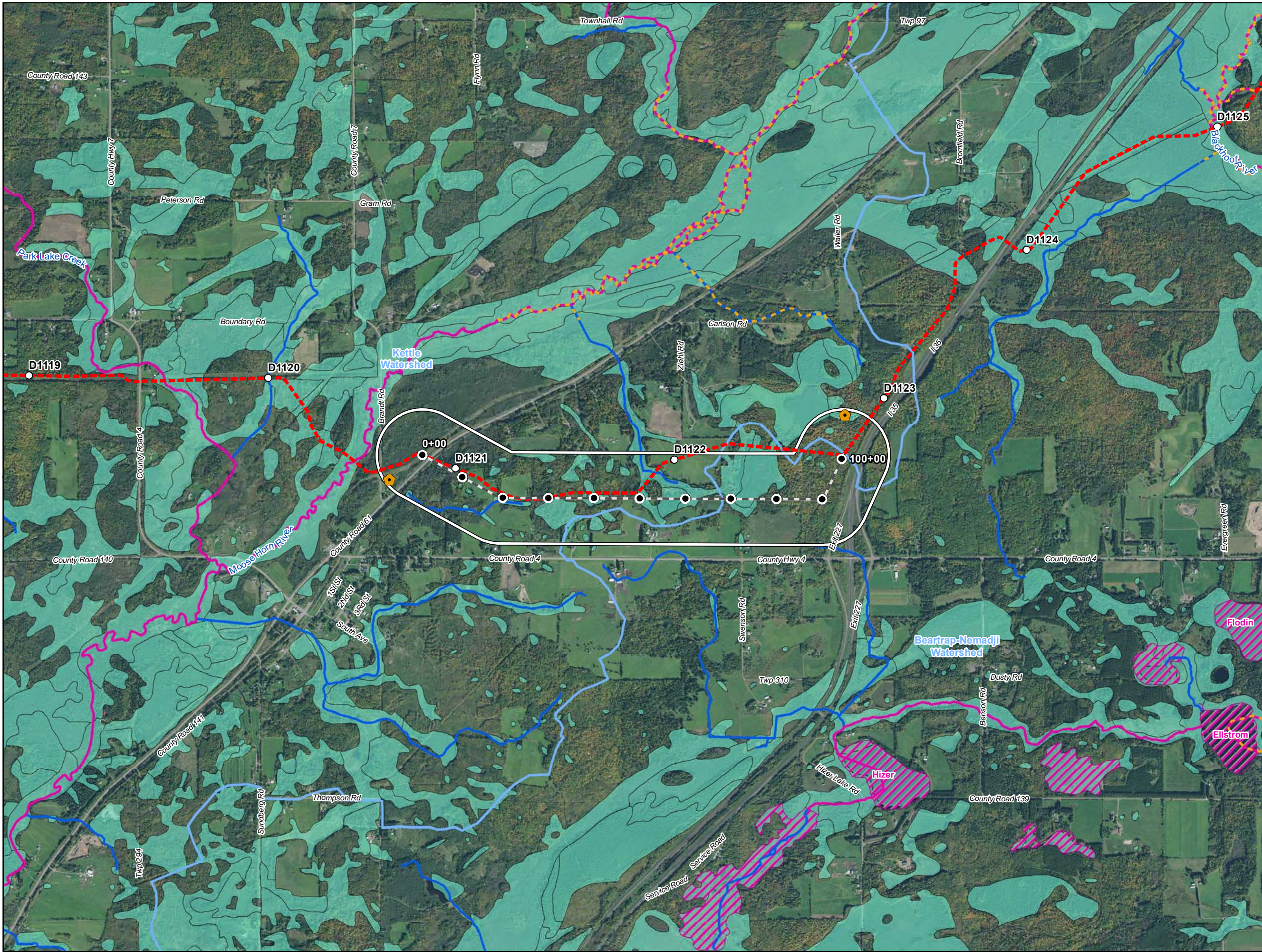
a Total miles of NWI crossed by the proposed route segment alternative centerline.

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 3 Line 3 Replacement Project – RSA-46-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
Kettle	Carlton	Domestic	123	1
		Exploration	883	1
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
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- Proposed Line 3 Replacement Pipeline
- Alternative Centerline
- 2,000 ft Alternative Corridor
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- PWI Stream
- NHD Stream
- PWI Basin
- NWI
- Watershed Boundary
- WHPA
- DWSMA
- County Boundary

Figure 1
Line 3 Replacement Project
RSA-46-L3
Enbridge
Carlton County, Minnesota