

ATTACHMENT A

Natural Resource and Water Supply Summary Tables and Figures

Line 3 Replacement Project Route Alternative (RA)-08

DRAFT

Table 1 Line 3 Replacement Project – RA-08-L3 Summary of Public Waters Inventory Streams Crossed by the Proposed Route Alternative Centerline and within the 2,000-ft-wide Route 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
Clearwater	7	3.1
Clearwater	7	3.1
Mississippi Headwaters	10	3.9
Beltrami	5	0.9
Cass	1	3.0
Itasca	4	7.0
Leech Lake	5	2.6
Cass	2	1.3
Hubbard	3	3.0
Prairie-Willow	6	2.7
Itasca	6	2.7
St. Louis	10	3.6
St. Louis	8	2.6
Carlton	2	1.1
Grand Total ^c	38	20.3
<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 alternative centerline. b Total miles of Public Waters Inventory stream segment(s) crossed by the 2000-ft-wide route alternative corridor. c Numbers may not total consistently due to rounding.		

Table 2
Line 3 Replacement Project - RA-08-L3
Summary of Waterbodies Crossed by the Proposed Route Alternative Centerline
and within the 2,000-ft-wide Route 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
Clearwater	5	5	-	10	2.1	3.0	0.0	5.2
Clearwater	5	5	-	10	2.1	3.0	0.0	5.2
Mississippi Headwaters	12	10	12	34	8.5	6.1	7.3	21.9
Itasca	5	3	5	13	4.0	1.5	3.9	9.5
Clearwater		3	-	3	-	1.5	-	1.5
Beltrami	6	3	4	13	2.8	2.5	2.2	7.6
Hubbard	-	-	1	1	-	0.1	0.4	0.5
Cass	1	1	2	4	1.7	0.4	0.7	2.8
Leech Lake	3	8	7	18	1.6	7.5	4.1	13.2
Beltrami	-	2	-	2	-	0.9	-	0.9
Hubbard	-	4	1	5	-	3.6	0.4	4.0
Cass	3	2	6	11	1.6	3.0	3.7	8.3
Prairie-Willow	4	5	3	12	1.9	2.1	1.6	5.6
Itasca	4	5	3	12	1.9	2.1	1.3	5.3
Aitkin	-	-	-	-	-	-	0.3	0.3
St. Louis	12		14	26	4.7	0.6	6.4	11.7
Aitkin	-	-	5	5	-	-	2.2	2.2
St. Louis	8	-	7	15	2.4	0.6	3.4	6.4
Carlton	4	-	2	6	2.3	-	0.9	3.2
Grand Total ^c	36	28	36	100	18.8	19.3	19.5	57.6
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 alternative centerline.								
b Miles of NHD stream segment(s) crossed by the 2000-ft-wide route alternative corridor.								
c Numbers may not total consistently due to rounding.								

Table 3
Line 3 Replacement Project – RA-08-L3
Summary of USFWS National Wetlands Inventory Crossed by the Proposed Route Alternative Centerline
and within the 2,000-ft-wide Route 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
Clearwater	1.5	0.9	0.1	2.5	274.3	189.4	55.2	519.0
Clearwater	1.3	0.8	0.1	2.1	245.0	176.4	54.9	476.3
Beltrami	0.2	0.1	<0.1	0.4	29.4	13.0	0.3	42.6
Mississippi Headwaters	3.6	7.1	0.8	11.5	912.5	1872.3	197.5	2982.3
Clearwater	0.2	<0.1	-	0.2	55.6	23.6	-	79.3
Beltrami	0.6	0.4	<0.1	1.0	187.4	273.4	48.3	509.1
Hubbard	0.0	0.1	-	0.1	6.7	14.0	0.1	20.9
Cass	0.5	0.3	0.3	1.0	124.2	187.9	60.5	372.6
Itasca	2.4	6.3	0.5	9.2	538.5	1373.4	88.6	2000.5
Leech Lake	5.3	5.0	0.1	10.3	478.2	2218.5	84.8	2781.4
Beltrami	-	-	-	-	3.9	3.2	0.9	8.0
Hubbard	0.1	1.6	<0.1	1.7	80.3	384.0	2.6	466.9
Cass	5.2	3.4	0.1	8.6	394.0	1831.3	81.3	2306.6
Prairie-Willow	0.3	9.7	0.5	10.6	122.8	2253.2	174.5	2550.6
Itasca	0.3	8.9	0.5	9.7	122.8	1977.8	174.5	2275.2
Aitkin	-	0.8	-	0.8	-	275.4	-	275.4
St. Louis	0.6	21.0	0.2	21.9	149.4	5012.1	15.0	5176.5
Itasca	-	1.1	-	1.1	0.9	272.7	-	273.6
Aitkin	-	3.4	-	3.4	-	749.8	-	749.8
St. Louis	0.1	10.7	-	10.8	40.1	2622.0	-	2662.1
Carlton	0.5	5.9	0.2	6.6	108.4	1367.6	15.0	1491.0
Kettle	0.5	0.2	<0.1	0.8	51.4	78.4	1.4	131.1
Carlton	0.5	0.2	<0.1	0.8	51.4	78.4	1.4	131.1
Beartrap-Nemadji		-	-	-	-	0.4	0.9	1.3
Carlton		-	-	-	-	0.4	0.9	1.3
Grand Total ^d	11.8	44.0	1.8	57.5	1988.7	11624.2	529.4	14142.3
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 alternative centerline.								
b Total acres of NWI within the 2000-ft-wide route 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-08-L3 Summary of Public Waters Inventory Wetlands and Basins Crossed by the Proposed Route Alternative Centerline and within the 2,000-ft-wide Route Alternative Corridor in Minnesota				
Watershed County	Miles Crossed by the Route Alternative Centerline ^a		Acres Within the Route Alternative Corridor ^b	
	Wetlands	Basins	Wetlands	Basins
Clearwater	0.1	0.4	88.0	61.6
Clearwater	0.1	0.4	88.0	61.6
Mississippi				
Headwaters	0.1	1.4	52.5	354.0
Beltrami	0.1	0.0	52.5	24.1
Hubbard	-	0.0	-	0.2
Cass	-	0.2	-	42.6
Itasca	-	1.2	-	287.0
Leech Lake	0.2	0.3	42.7	108.0
Cass	0.2	0.3	42.7	108.0
Prairie-Willow	0.0	0.4	26.9	138.0
Itasca	0.0	0.4	26.9	138.0
Grand Total ^c	0.4	2.4	210.2	661.5
<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 alternative centerline. b Total acres of PWI wetlands and basins crossed by the 2000-ft-wide route alternative corridor. c Numbers may not total consistently due to rounding.				

Table 5 Line 3 Replacement Project – RA-08-L3 Summary of Trout Streams Crossed by the Proposed Route Alternative Centerline and within the 2,000-ft-wide Route 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
Leech Lake	3	3.1
Hubbard	3	3.1
St. Louis	1	1.4
Carlton	1	1.4
Grand Total ^c	4	4.5
<i>Trout Stream Data Source: https://gisdata.mn.gov/dataset/env-trout-stream-designations</i> a Number of trout streams crossed by the route alternative centerline. b Total miles of trout stream segment(s) crossed by the 2000-ft-wide route alternative corridor. c Numbers may not total consistently due to rounding.		

Table 6 Line 3 Replacement Project – RA-08-L3 Wells within the 2,000-ft-wide Route Alternative Corridor in Minnesota^a				
Watershed Name	County	Well Type	Distance from Centerline (feet)	Total Number of Wells
Clearwater	Clearwater	Domestic	859	5
			681	
			490	
			880	
			888	
		Industrial	502	2
			413	
		Monitoring	40	2
			292	
		Test Well	559	3
			558	
			587	
		Unknown	312	1
Mississippi Headwaters	Beltrami	Domestic	879	29
			561	
			157	
			299	
			297	
			331	
			677	
			783	
			443	
			165	
			780	
			574	
			170	
			867	
			477	
			682	
			659	
			175	
			863	
			632	
			278	
			143	
			666	
			236	
			405	
			624	

Mississippi Headwaters (cont.)	Beltrami (cont.)	Domestic (cont.)	246	29 (cont.)
			508	
			695	
		Test Well	745	1
Leech Lake	Beltrami	Domestic	217	2
			205	
		Scientific Investigation	513	1
	Hubbard	Domestic	562	20
			480	
			508	
			197	
			405	
			173	
			367	
			149	
			365	
			130	
			705	
			464	
			460	
			247	
			331	
			174	
			309	
			218	
			719	
			53	
		Test Well	180	1
Mississippi Headwaters	Hubbard	Domestic	402	1
Leech Lake	Cass	Domestic	920	1
Mississippi Headwaters	Cass	Domestic	586	2
			975	
Leech Lake	Cass	Domestic	340	1
Mississippi Headwaters	Cass	Domestic	343	1
Leech Lake	Cass	Domestic	297	1
Mississippi Headwaters	Cass	Domestic	779	1
Leech Lake	Cass	Domestic	577	3
			649	
			687	
		Test Well	156	1
Mississippi Headwaters	Itasca	Domestic	253	18
			242	
			323	
			221	

Mississippi Headwaters (cont.)	Itasca (cont.)	Domestic (cont.)	381	18 (cont.)
			73	
			324	
			366	
			375	
			151	
			167	
			332	
			129	
			669	
			377	
			724	
			328	
			354	
		Industrial	830	1
Prairie-Willow	Itasca	Domestic	900	57
			728	
			302	
			439	
			255	
			265	
			494	
			225	
			123	
			375	
			101	
			597	
			256	
			442	
			403	
			577	
			506	
			695	
			654	
			800	
			337	
			944	
			440	
			846	
			569	
			950	
			814	
			421	
			912	

Prairie-Willow (cont.)	Itasca (cont.)	Domestic (cont.)	566	57 (cont.)
			508	
			51	
			812	
			38	
			691	
			950	
			451	
			494	
			942	
			707	
			773	
			455	
			444	
			695	
			653	
			207	
			140	
			427	
			147	
			238	
			258	
			323	
			486	
			557	
			519	
			921	
			331	
		Exploration	46	8
			45	
			106	
			31	
			150	
			605	
			806	
			560	
		Irrigation	385	2
			978	
		Unknown	870	1
St. Louis	St. Louis	Domestic	357	3
			876	
			699	
		Monitoring	56	5
			108	

St. Louis (cont.)	St. Louis (cont.)	Monitoring (cont.)	388	5 (cont.)
			274	
			386	
	Carlton	Domestic	4	17
			824	
			904	
			634	
			609	
			515	
			94	
			561	
			293	
			435	
			21	
			892	
			655	
			576	
			254	
			147	
			35	
		Monitoring	752	4
			693	
			747	
			841	
		Other	56	1

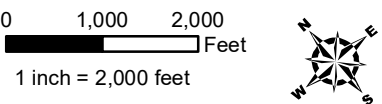
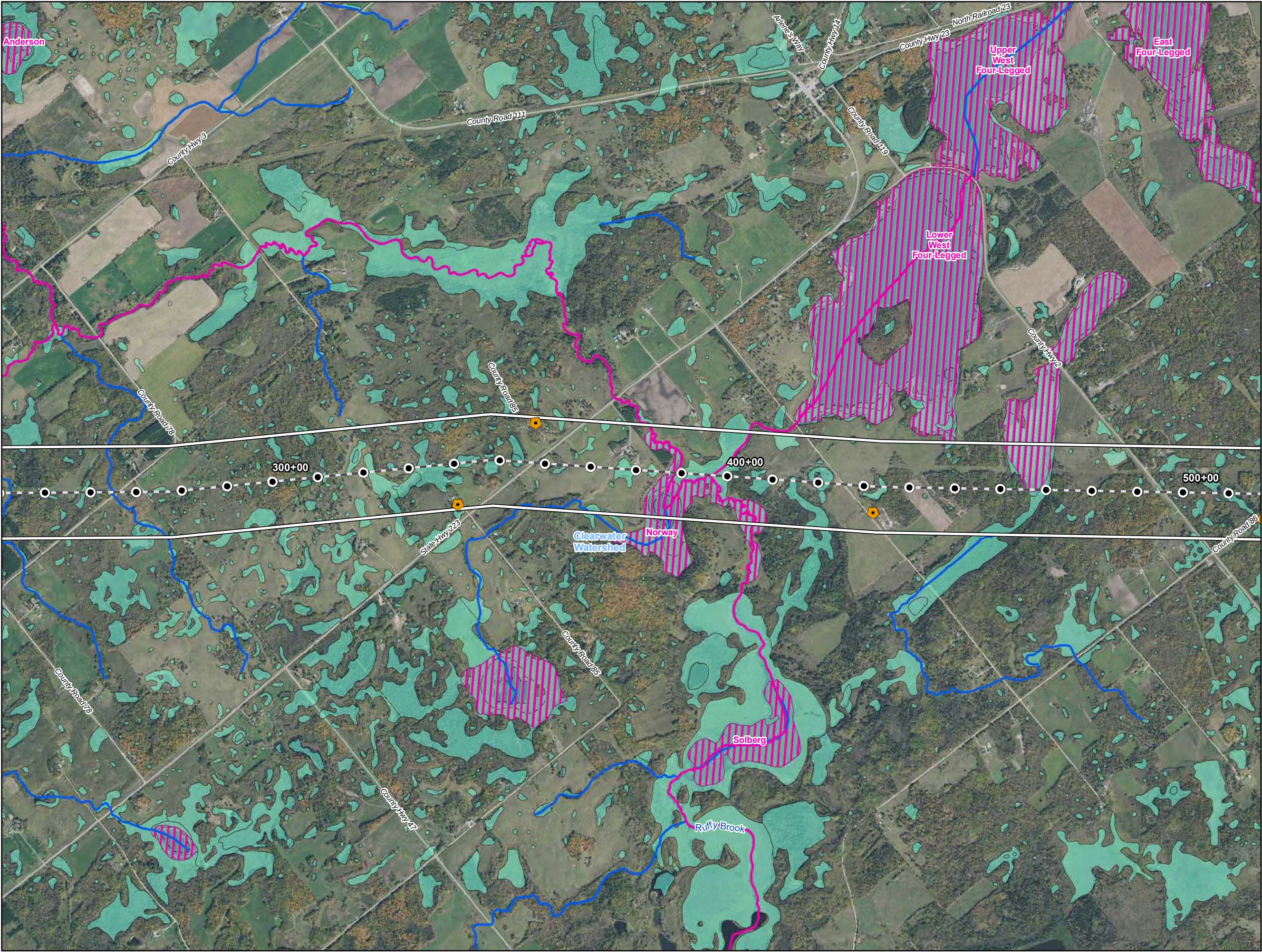
County Well Index (CWI) Data Source: ftp://mgssun6.mngs.umn.edu/pub2/cwi4/cwilocs_nps.zip

a Municipal wells are not included in the source data.

Table 7 Line 3 Replacement Project – RA-08-L3 Drinking Water Supply Management Areas (DWSMA) and Wellhead Protection Areas (WHPA) Crossed by the Proposed Route Alternative Centerline and within the 2,000-ft-wide Route Alternative Corridor in Minnesota					
Watershed	County	Approximate Stationing ^a	Name	Miles Crossed by the Route Alternative Centerline ^b	Acres Within the Route Alternative Corridor ^c
Mississippi Headwaters	Itasca	5132+00	Grand Rapids Central WHPA	0.1	20.7
		5142+00	Grand Rapids DWSMA	0.31	76.84
Prairie Willow	Itasca	5173+00	Grand Rapids Central WHPA	2.6	651.9
		5212+00	(3 crossings)		
		5213+00	Grand Rapids 2 WHPA	3.16	733.36
		5236+00	Grand Rapids DWSMA		
DWSMA Data Source: https://qisdata.mn.gov/dataset/water-drinking-water-supply WHPA Data Source: https://qisdata.mn.gov/dataset/water-wellhead-protection-areas a Stationing for features not crossed by the centerline are interpolated based on the closest route alternative centerline stationing. b Total miles of DWSMA and WHPA crossed by the route alternative centerline. c Total acres of DWSMA and WHPA crossed by the 2000-ft-wide route alternative corridor.					

Table 8 Line 3 Replacement Project – RA-08-L3 Surface Water Intakes within the 2,000-ft-wide Route Alternative Corridor in Minnesota^a				
Watershed Name	County	Permit Type	Permit Status	Total
Clearwater	Clearwater	General Permit Authorization	Active	1
			Inactive	1
		Individual Permit	Active	1
			Inactive	15
Mississippi Headwaters	Clearwater	Individual Permit	Inactive	1
Clearwater	Beltrami	Individual Permit	Inactive	1
Mississippi Headwaters	Beltrami	Individual Permit	Active	2
			Inactive	4
Leech Lake	Hubbard	General Permit Authorization	Inactive	4
		Individual Permit	Inactive	2
	Cass	General Permit Authorization	Inactive	15
		Individual Permit	Inactive	4
Mississippi Headwaters	Cass	General Permit Authorization	Inactive	12
	Itasca	General Permit Authorization	Inactive	13
		Individual Permit	Active	1
			Inactive	9
Prairie-Willow	Itasca	General Permit Authorization	Active	1
			Inactive	10
		Individual Permit	Active	2
			Inactive	11
St. Louis	Itasca	General Permit Authorization	Inactive	1
	Aitkin	General Permit Authorization	Inactive	1
		Individual Permit	Inactive	1
	St. Louis	General Permit Authorization	Inactive	13
		Individual Permit	Inactive	2
	Carlton	General Permit Authorization	Active	4
			Inactive	10

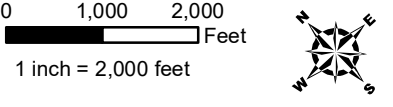
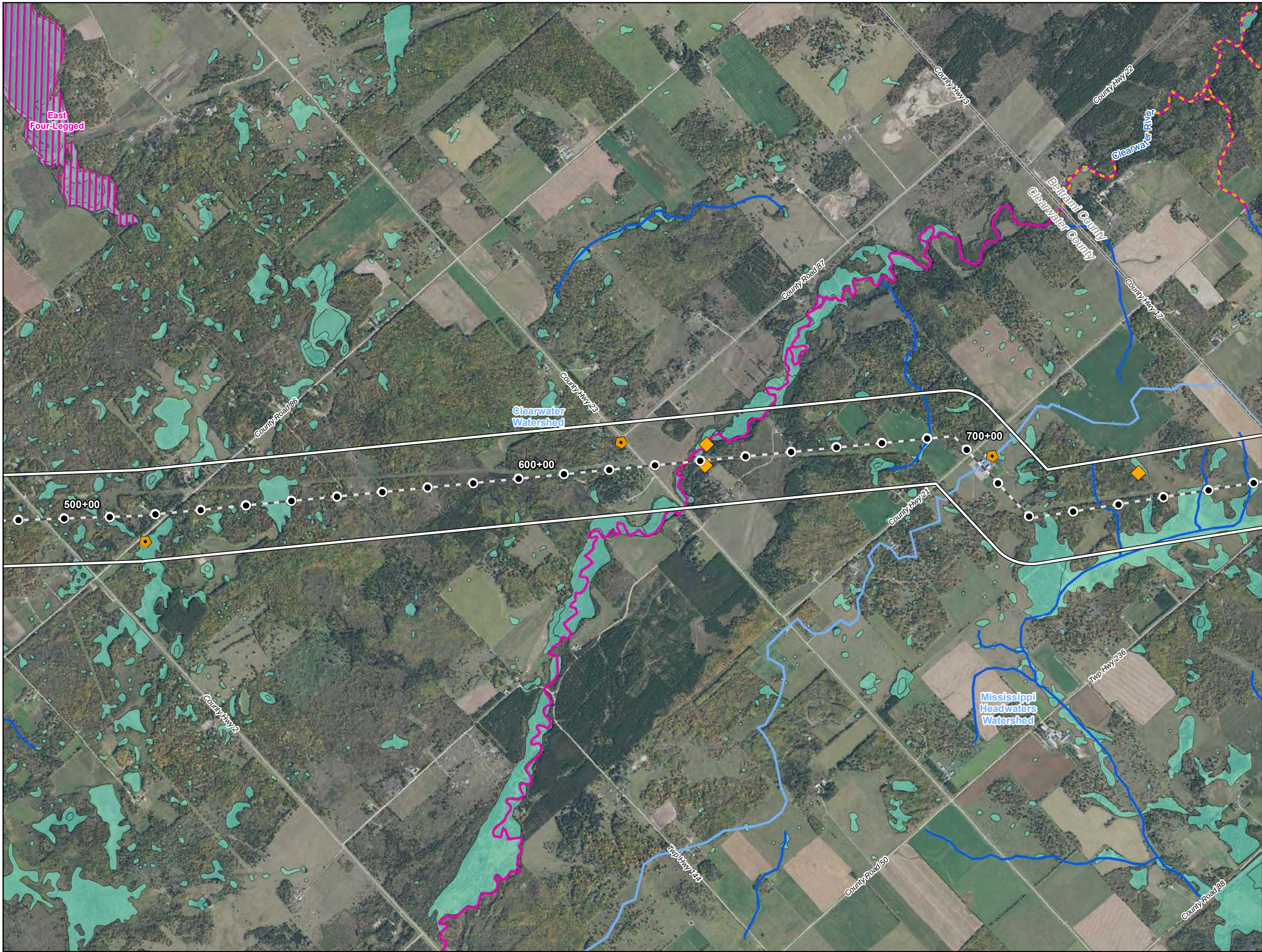
Kettle	Carlton	General Permit Authorization	Inactive	1
St. Louis	Carlton	General Permit Authorization	Inactive	4
		Individual Permit	Inactive	4
MPARS Minnesota DNR, Ecological and Water Resources, Sean Hunt, 651-259-5679				
a Municipal wells are not included in the source data.				



- 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

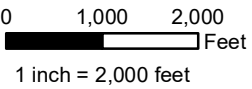
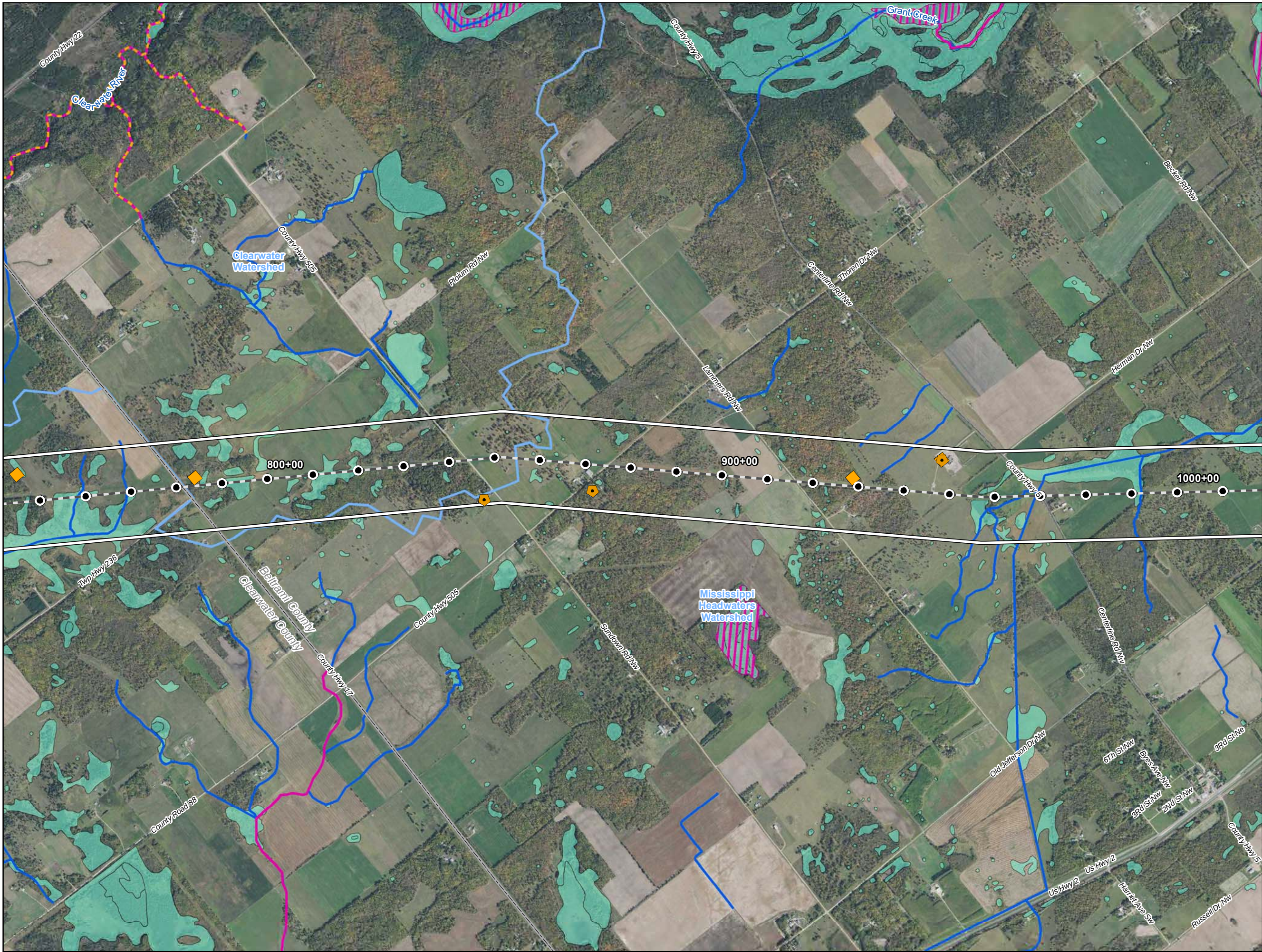
Figure 2
Line 3 Replacement Project
RA-08-L3
Enbridge
Clearwater County, Minnesota





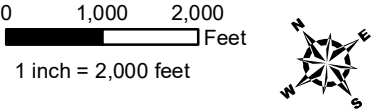
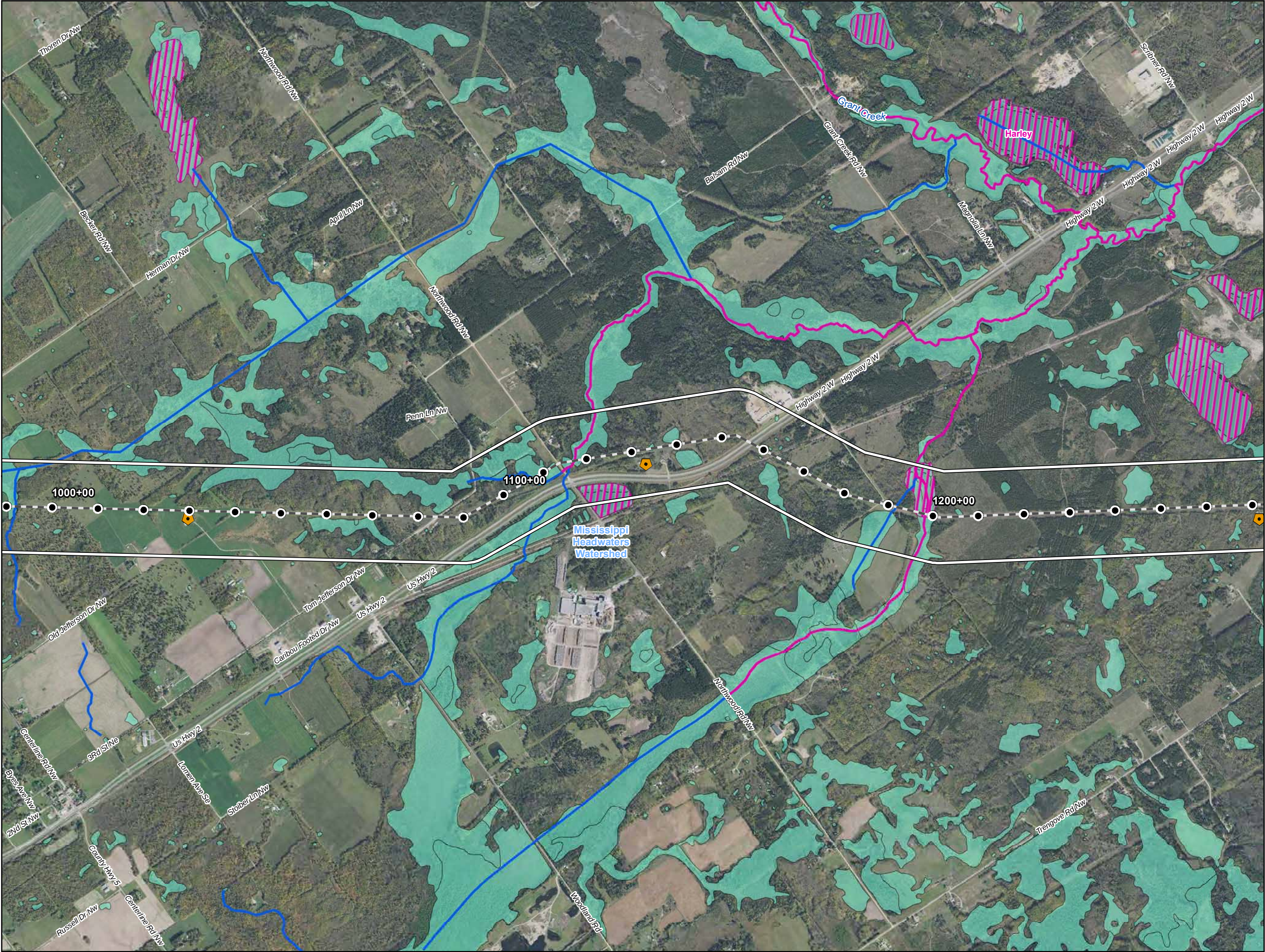
- Water Well
- Surface Water Intake
- Calcareous Fen
- Line 3 Milepost
- Alternative Stationing
- Proposed Line 3 Replacement Pipeline
- Alternative Centerline
- 2,000 ft Alternative Corridor
- Trout Stream
- PWI Stream
- NHD Stream
- PWI Basin
- NWI
- Watershed Boundary
- WHPA
- DWSMA
- County Boundary

Figure 3
Line 3 Replacement Project
RA-08-L3
Enbridge
Clearwater County, Minnesota



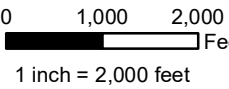
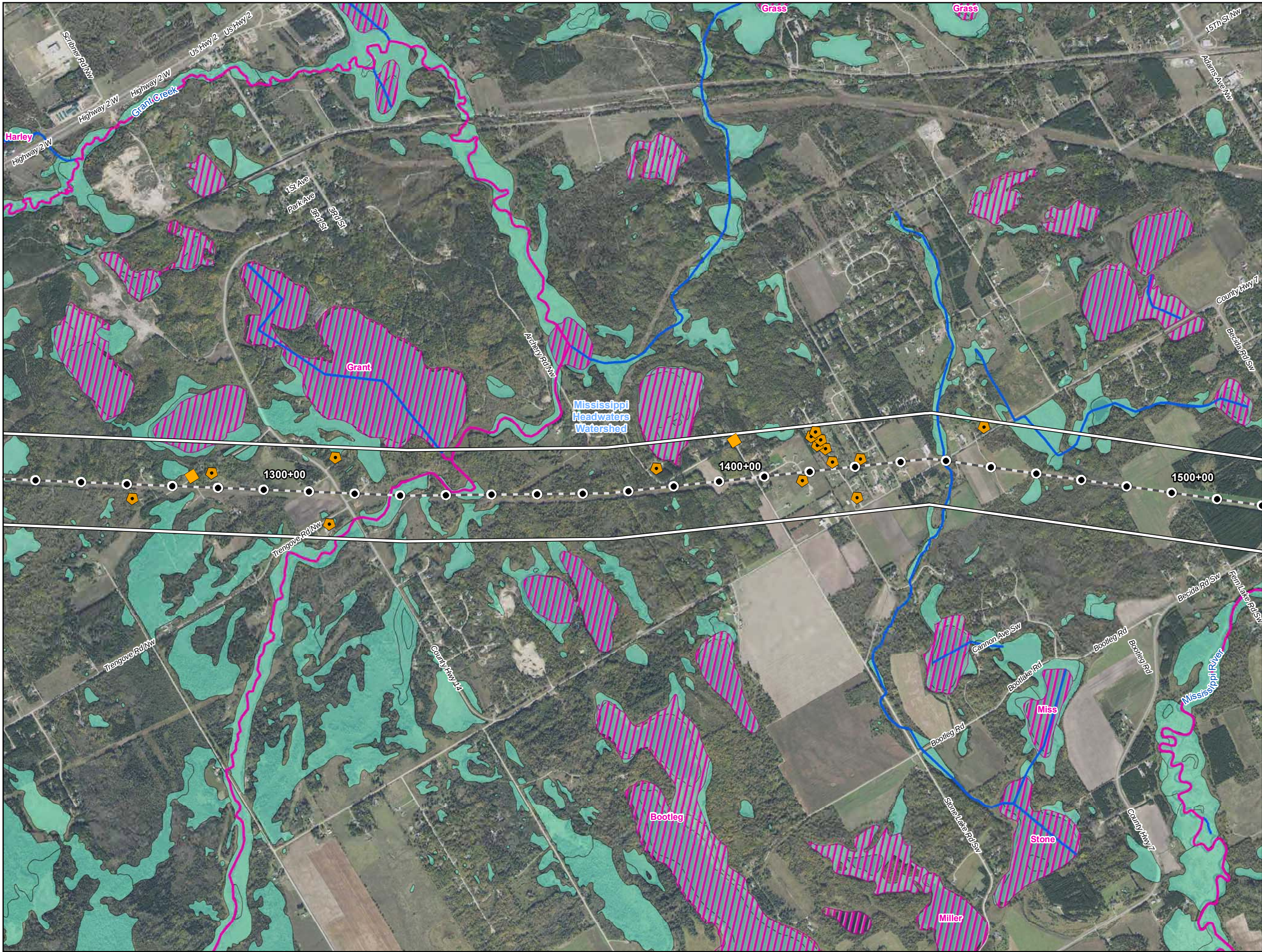
-  Water Well
-  Surface Water Intake
-  Calcareous Fen
-  Line 3 Milepost
-  Alternative Stationing
-  Proposed Line 3 Replacement Pipeline
-  Alternative Centerline
-  2,000 ft Alternative Corridor
-  Trout Stream
-  PWI Stream
-  NHD Stream
-  PWI Basin
-  NWI
-  Watershed Boundary
-  WHPA
-  DWSMA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

Figure 4
Line 3 Replacement Project
RA-08-L3
Enbridge
Beltrami County, Minnesota



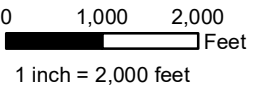
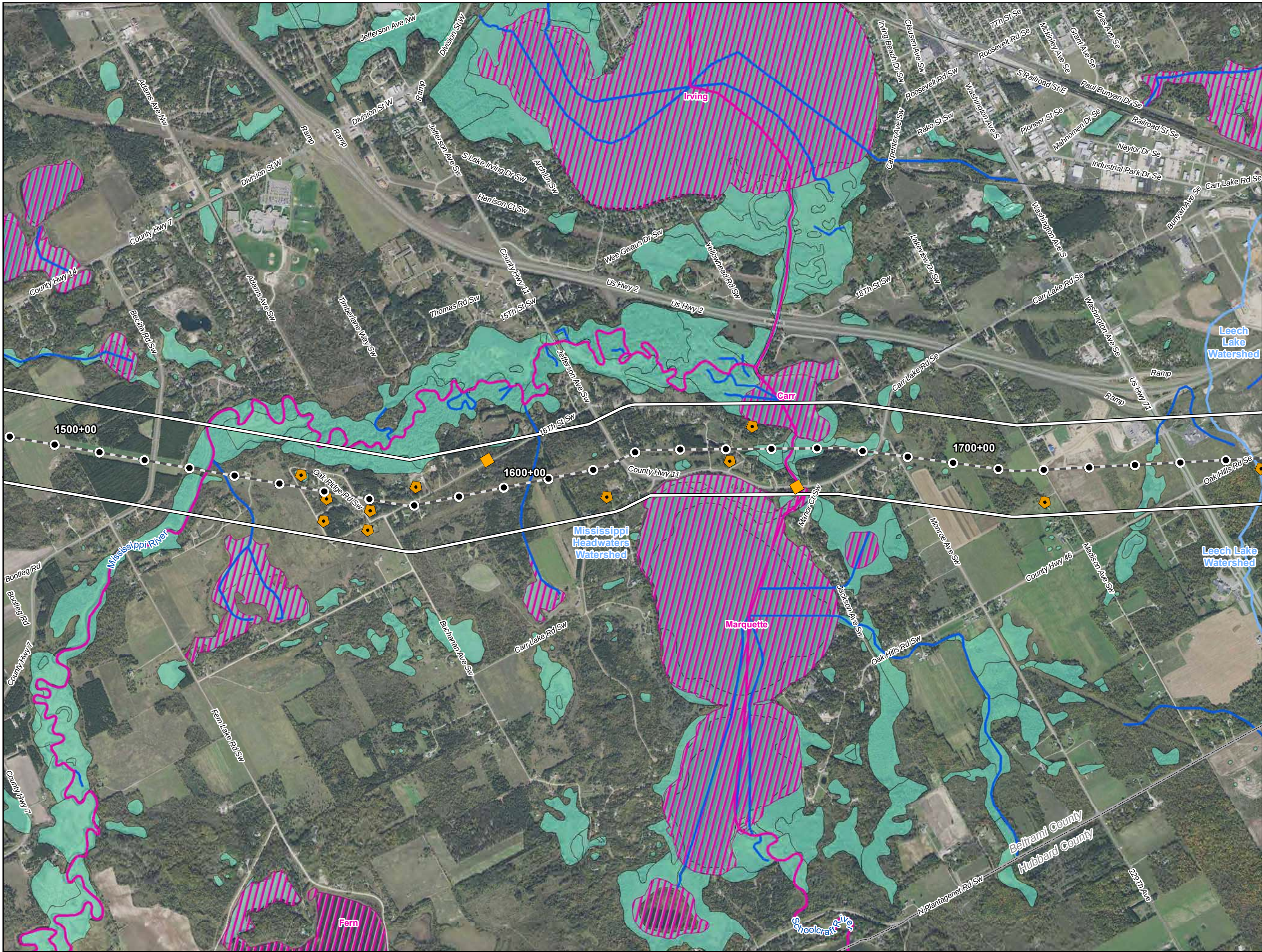
- Water Well
- Surface Water Intake
- Calcareous Fen
- Line 3 Milepost
- Alternative Stationing
- Proposed Line 3 Replacement Pipeline
- Alternative Centerline
- 2,000 ft Alternative Corridor
- Trout Stream
- PWI Stream
- NHD Stream
- PWI Basin
- NWI
- Watershed Boundary
- WHPA
- DWSMA
- County Boundary

Figure 5
Line 3 Replacement Project
RA-08-L3
Enbridge
Beltrami County, Minnesota



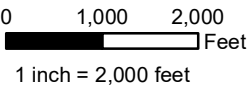
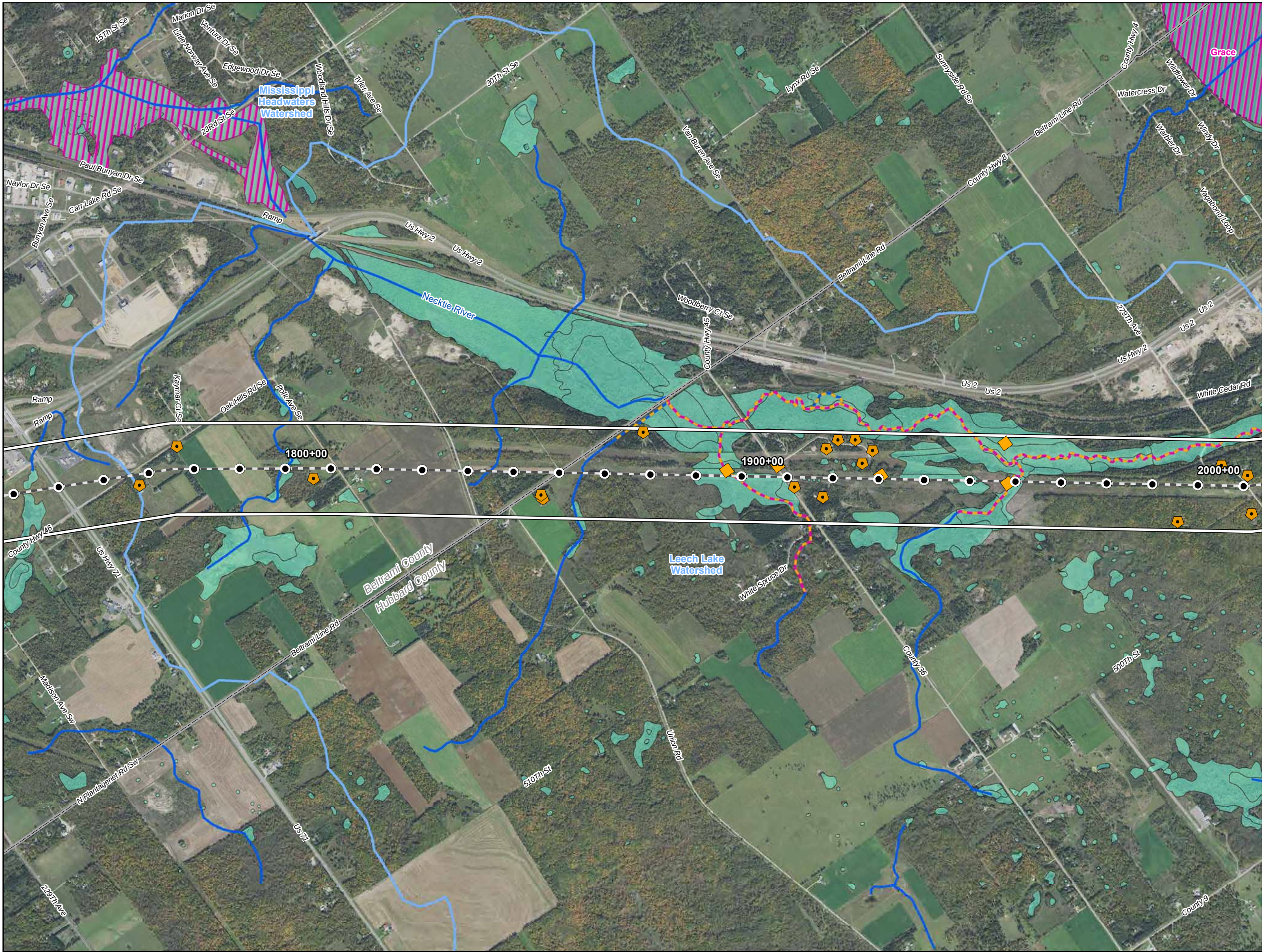
- Water Well
- Surface Water Intake
- Calcareous Fen
- Line 3 Milepost
- Alternative Stationing
- Proposed Line 3 Replacement Pipeline
- Alternative Centerline
- 2,000 ft Alternative Corridor
- Trout Stream
- PWI Stream
- NHD Stream
- PWI Basin
- NWI
- Watershed Boundary
- WHPA
- DWSMA
- County Boundary

Figure 6
Line 3 Replacement Project
RA-08-L3
Enbridge
Beltrami County, Minnesota



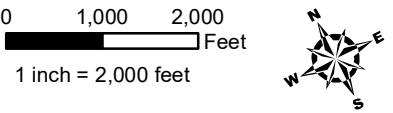
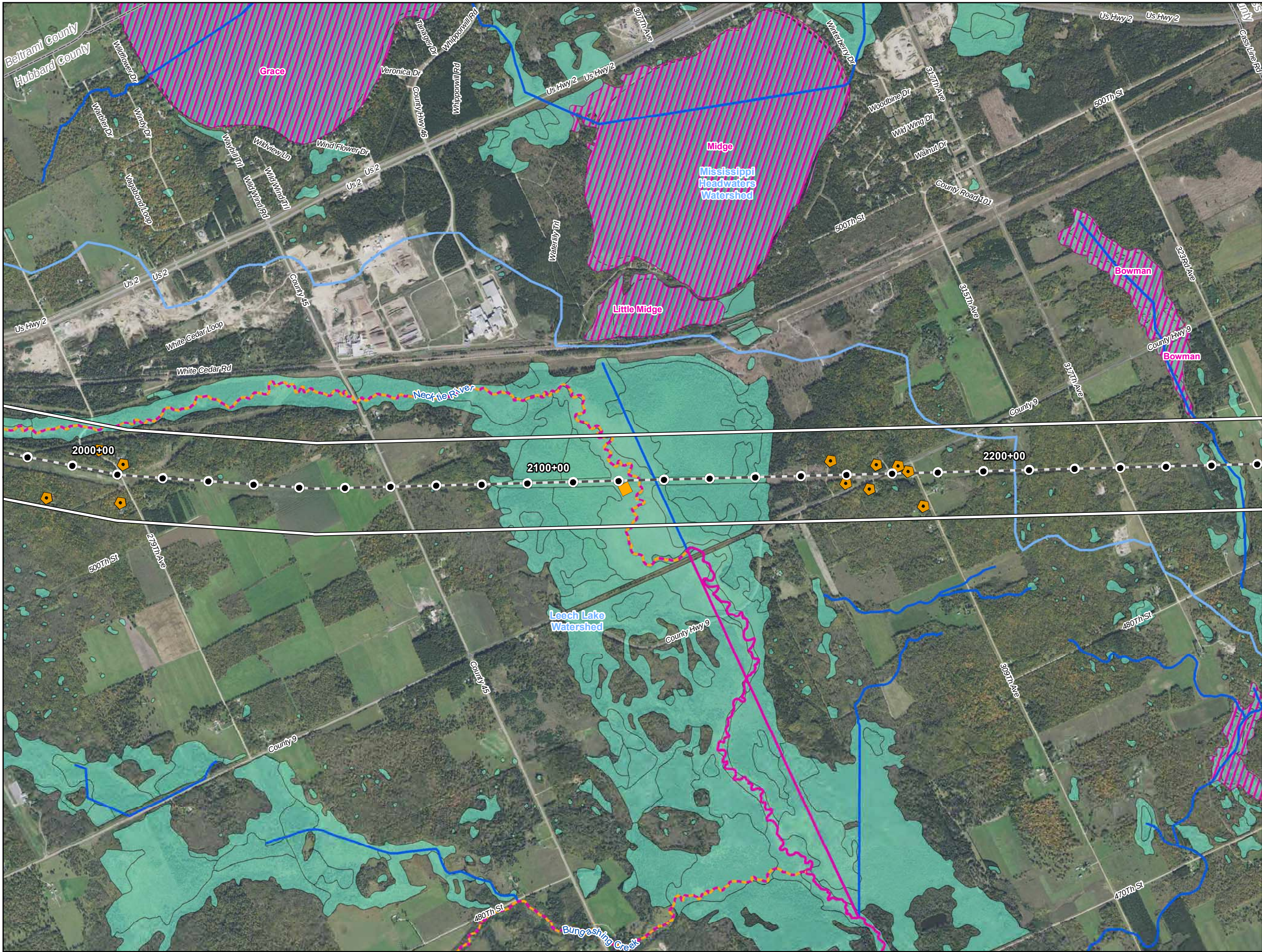
- Water Well
- Surface Water Intake
- Calcareous Fen
- Line 3 Milepost
- Alternative Stationing
- Proposed Line 3 Replacement Pipeline
- Alternative Centerline
- 2,000 ft Alternative Corridor
- Trout Stream
- PWI Stream
- NHD Stream
- PWI Basin
- NWI
- Watershed Boundary
- WHPA
- DWSMA
- County Boundary

Figure 7
Line 3 Replacement Project
RA-08-L3
Enbridge
Beltrami County, Minnesota



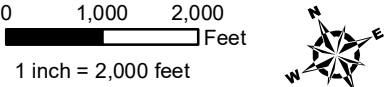
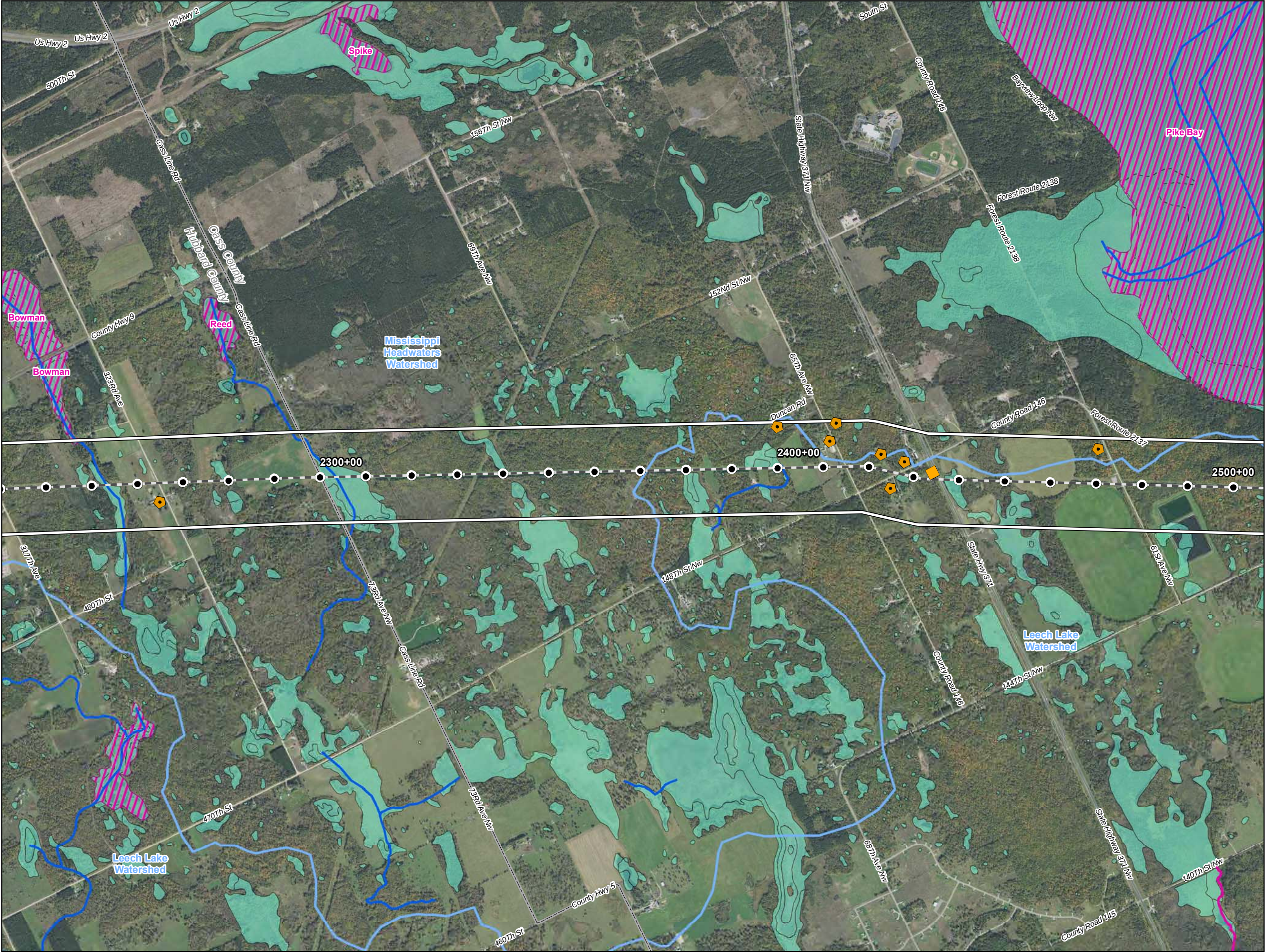
- Water Well
- Surface Water Intake
- Calcareous Fen
- Line 3 Milepost
- Alternative Stationing
- Proposed Line 3 Replacement Pipeline
- Alternative Centerline
- 2,000 ft Alternative Corridor
- Trout Stream
- PWI Stream
- NHD Stream
- PWI Basin
- NWI
- Watershed Boundary
- WHPA
- DWSMA
- County Boundary

Figure 8
Line 3 Replacement Project
RA-08-L3
Enbridge
Hubbard County, Minnesota



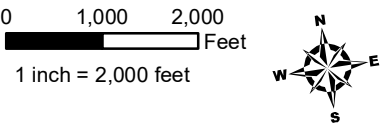
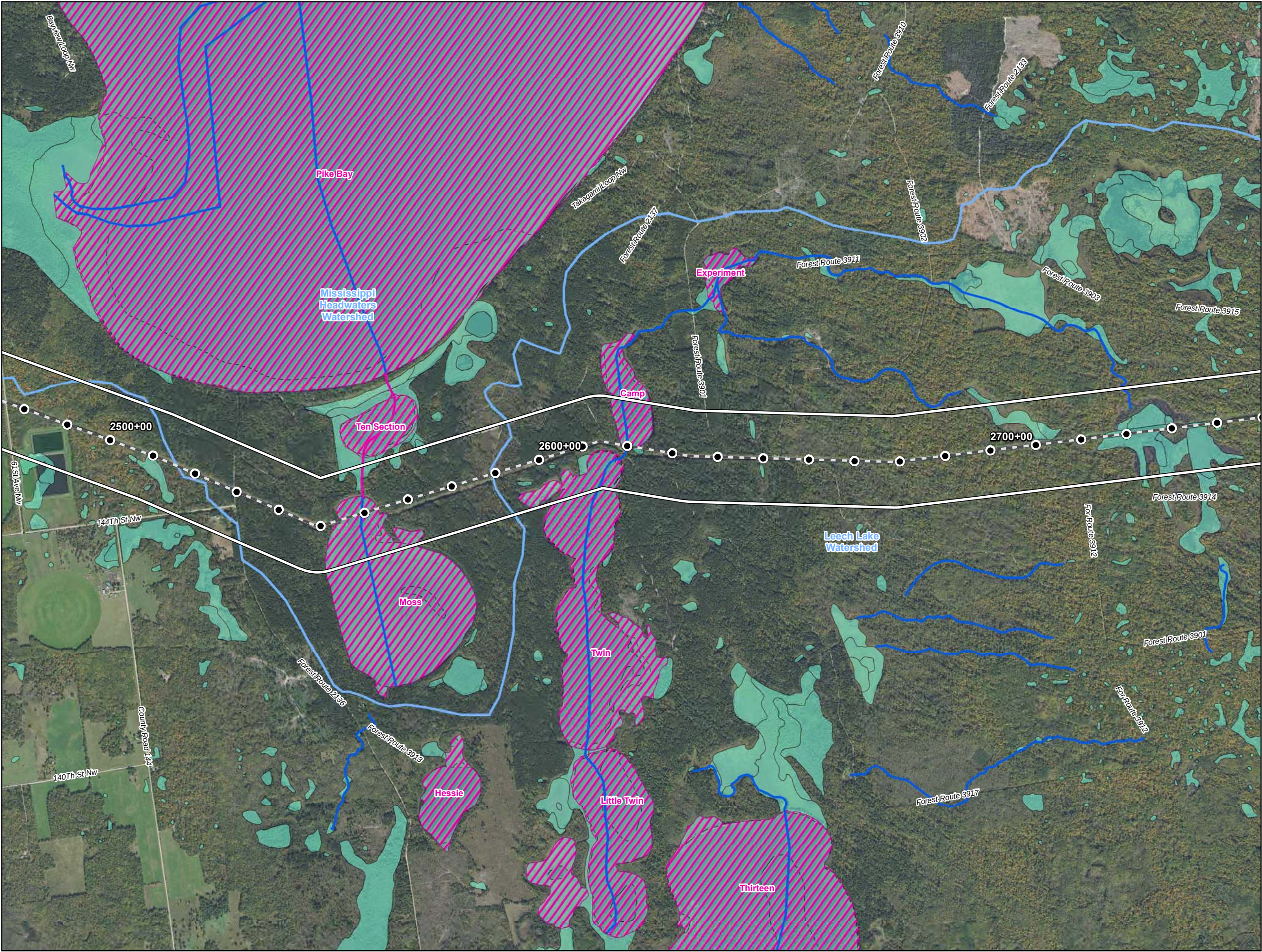
- Water Well
- Surface Water Intake
- Calcareous Fen
- Line 3 Milepost
- Alternative Stationing
- Proposed Line 3 Replacement Pipeline
- Alternative Centerline
- 2,000 ft Alternative Corridor
- Trout Stream
- PWI Stream
- NHD Stream
- PWI Basin
- NWI
- Watershed Boundary
- WHPA
- DWSMA
- County Boundary

Figure 9
Line 3 Replacement Project
RA-08-L3
Enbridge
Hubbard County, Minnesota



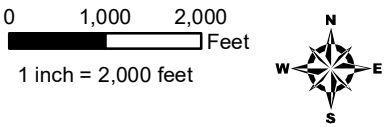
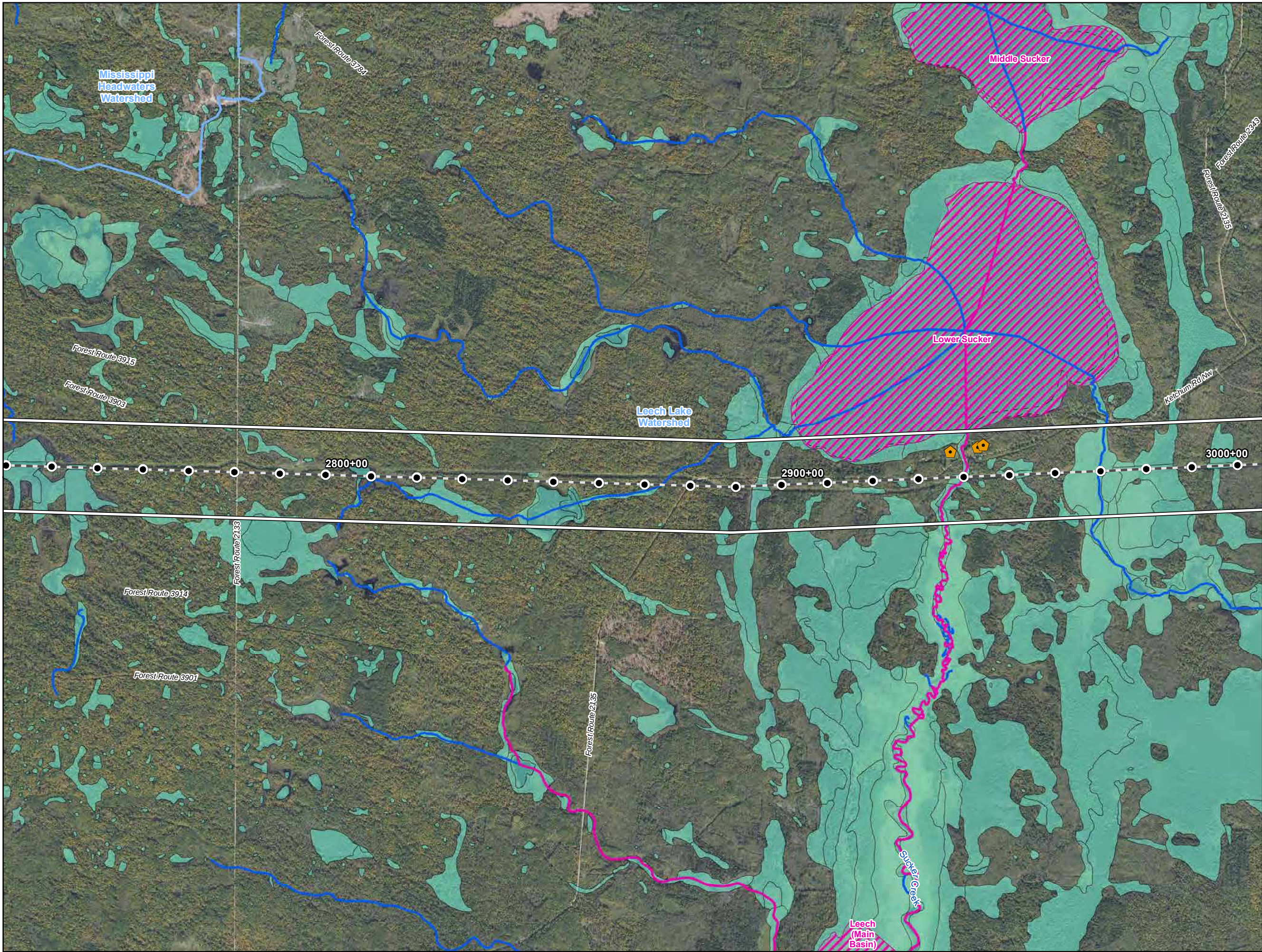
- Water Well
- Surface Water Intake
- Calcareous Fen
- Line 3 Milepost
- Alternative Stationing
- Proposed Line 3 Replacement Pipeline
- Alternative Centerline
- 2,000 ft Alternative Corridor
- Trout Stream
- PWI Stream
- NHD Stream
- PWI Basin
- NWI
- Watershed Boundary
- WHPA
- DWSMA
- County Boundary

Figure 10
Line 3 Replacement Project
RA-08-L3
Enbridge
Cass County, Minnesota



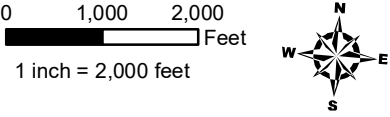
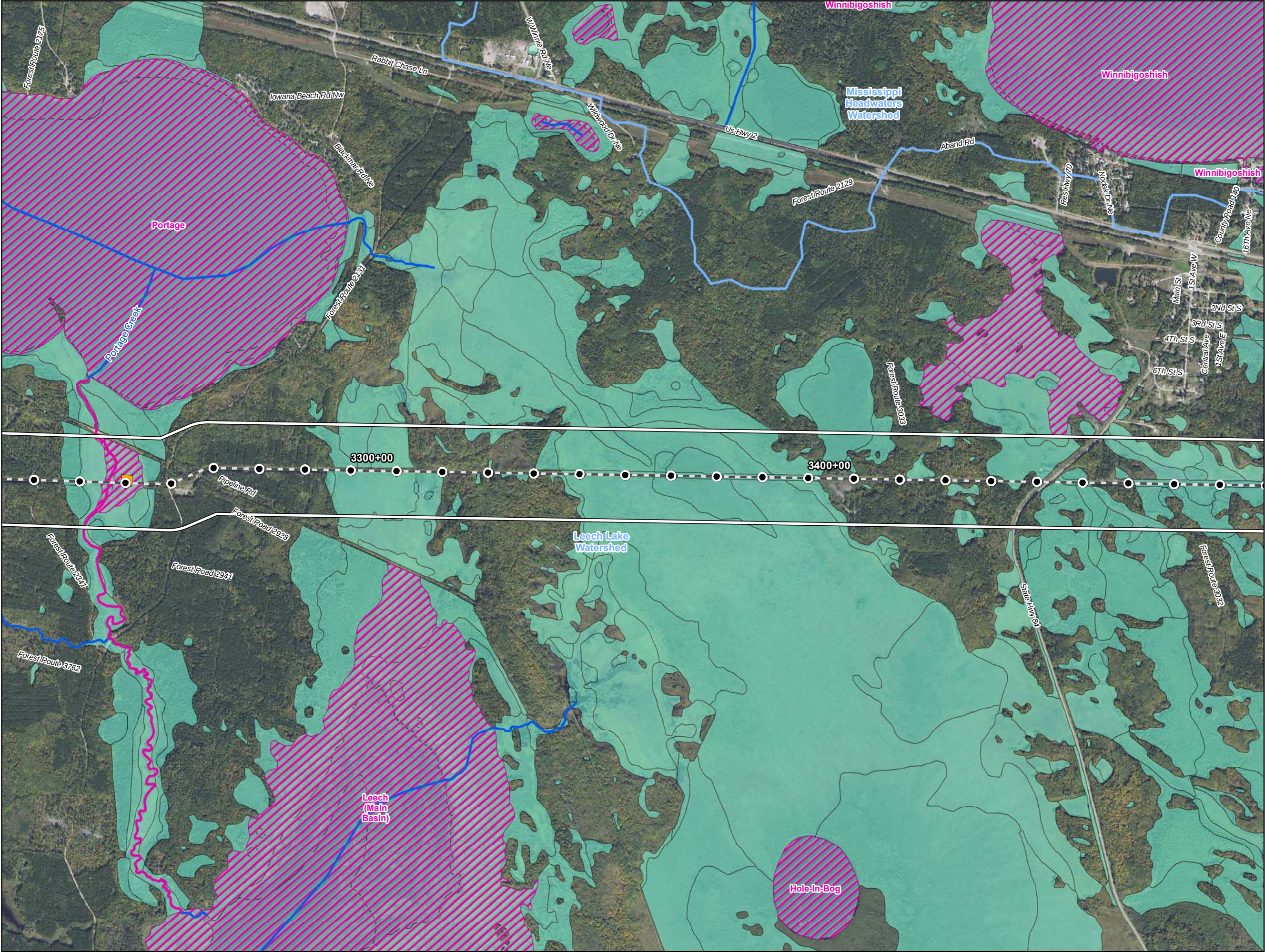
- Water Well
- Surface Water Intake
- Calcareous Fen
- Line 3 Milepost
- Alternative Stationing
- Proposed Line 3 Replacement Pipeline
- Alternative Centerline
- 2,000 ft Alternative Corridor
- Trout Stream
- PWI Stream
- NHD Stream
- PWI Basin
- NWI
- Watershed Boundary
- WHPA
- DWSMA
- County Boundary

Figure 11
Line 3 Replacement Project
RA-08-L3
Enbridge
Cass County, Minnesota



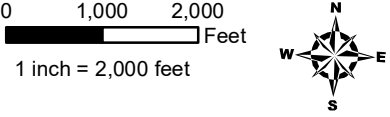
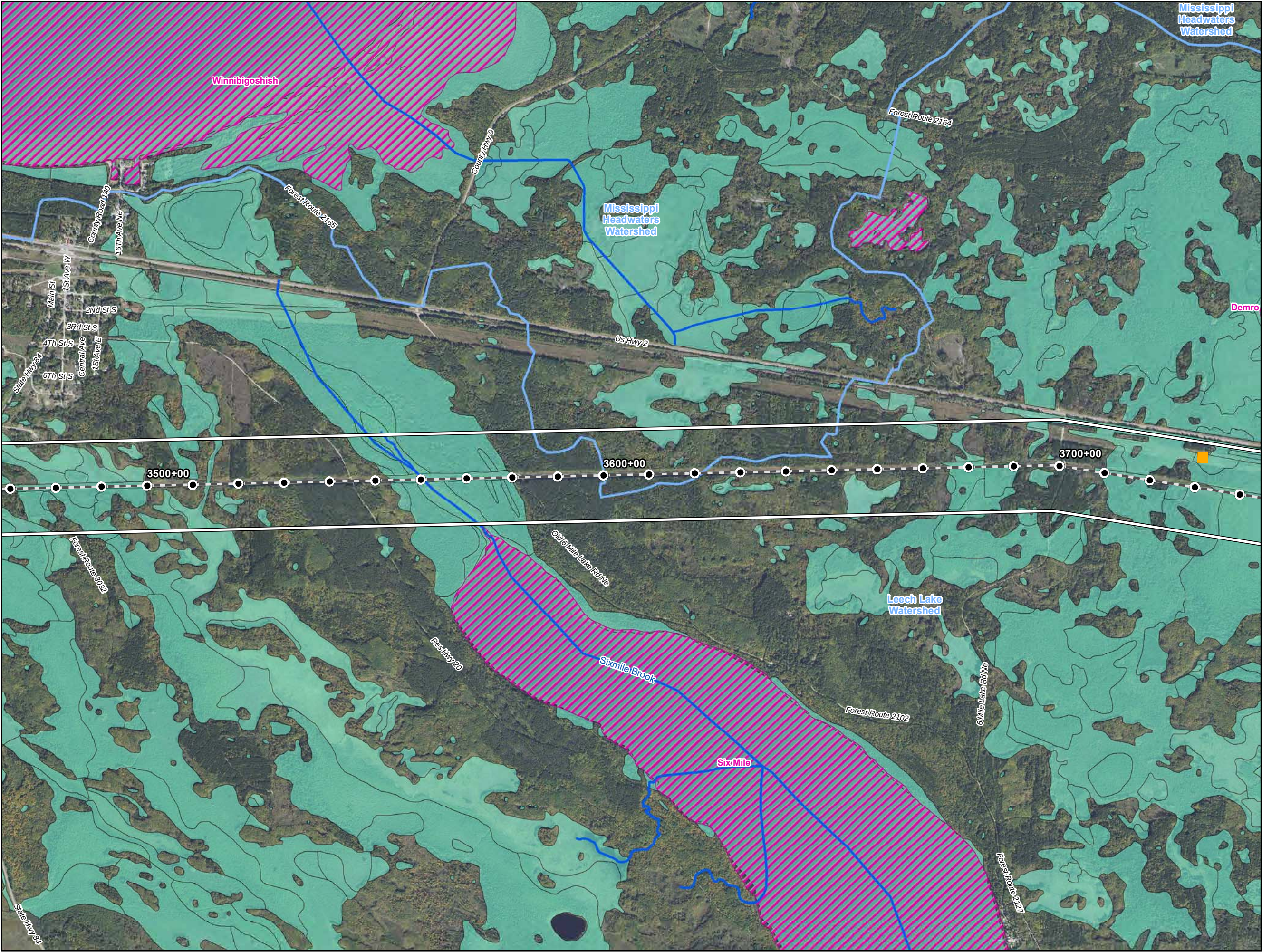
- Water Well
- Surface Water Intake
- Calcareous Fen
- Line 3 Milepost
- Alternative Stationing
- Proposed Line 3 Replacement Pipeline
- Alternative Centerline
- 2,000 ft Alternative Corridor
- Trout Stream
- PWI Stream
- NHD Stream
- PWI Basin
- NWI
- Watershed Boundary
- WHPA
- DWSMA
- County Boundary

Figure 12
Line 3 Replacement Project
RA-08-L3
Enbridge
Cass County, Minnesota



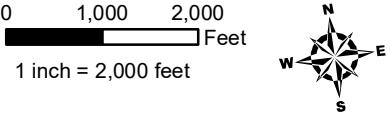
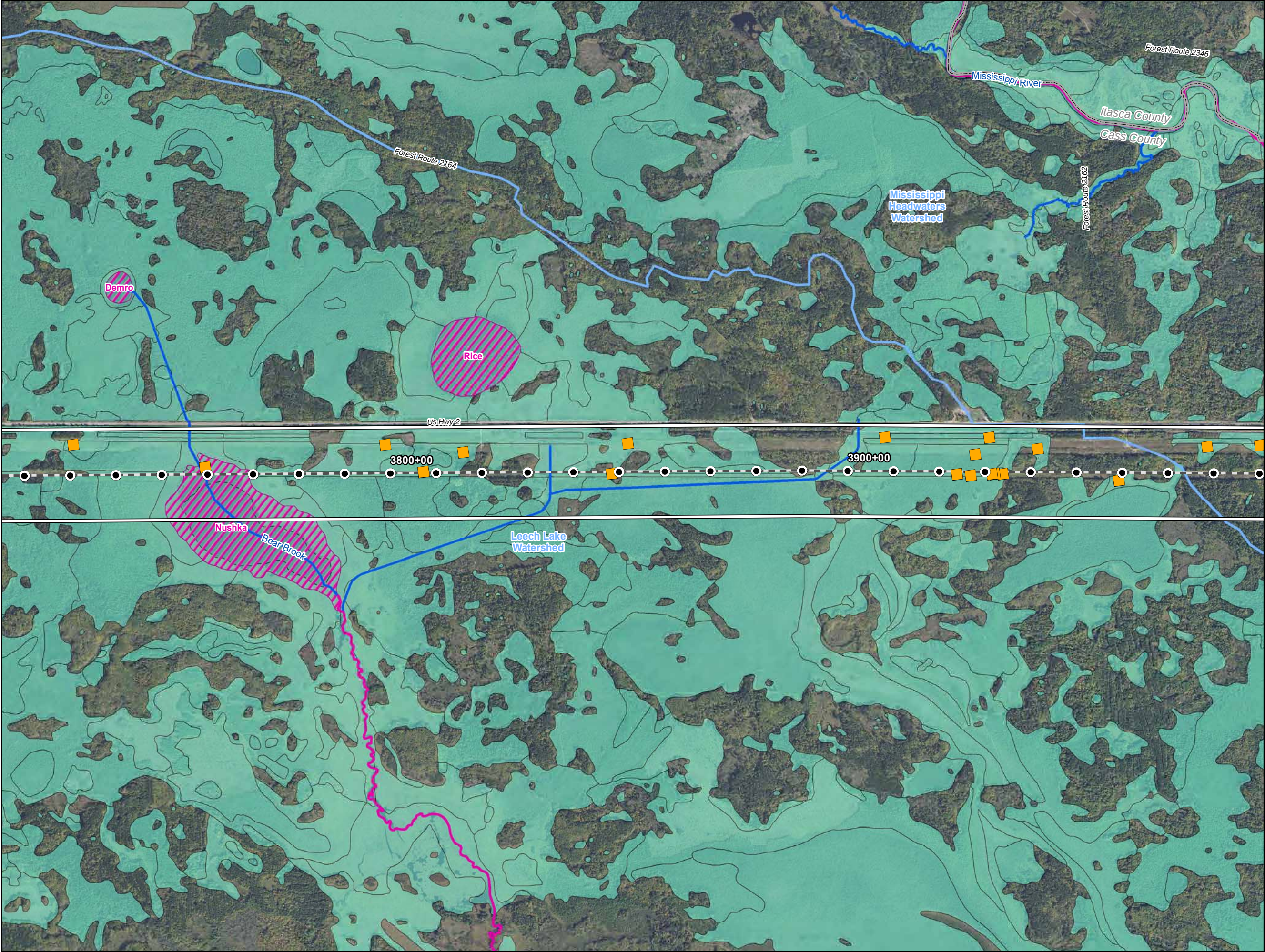
- Water Well
- Surface Water Intake
- Calcareous Fen
- Line 3 Milepost
- Alternative Stationing
- Proposed Line 3 Replacement Pipeline
- Alternative Centerline
- 2,000 ft Alternative Corridor
- Trout Stream
- PWI Stream
- NHD Stream
- PWI Basin
- NWI
- Watershed Boundary
- WHPA
- DWSMA
- County Boundary

Figure 14
Line 3 Replacement Project
RA-08-L3
Enbridge
Cass 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 15
Line 3 Replacement Project
RA-08-L3
Enbridge
Cass 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 16
Line 3 Replacement Project
RA-08-L3
Enbridge
Cass County, Minnesota