

ATTACHMENT A

Natural Resource and Water Supply Summary Tables and Figures

Line 3 Replacement Project Route Alternative (RA)-03AM

DRAFT

Table 1 Line 3 Replacement Project – RA-03AM-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
Crow Wing	6	5.7
Wadena	5	4.7
Todd	1	1.0
Redeye	3	3.0
Wadena	3	3.0
Long Prairie	2	2.1
Todd	2	2.1
Elk-Nokasippi	3	2.5
Morrison	3	2.5
Platte-Spunk	3	3.0
Morrison	3	3.0
Rum	7	9.3
Morrison	1	0.6
Benton	3	6.7
Mille Lacs	3	2.1
Snake	12	8.7
Kanabec	7	5.9
Pine	5	2.8
Kettle	5	6.9
Pine	3	1.7
Carlton	2	5.1
Grand Total ^c	41	41.2
<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 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-03AM-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
Crow Wing	6	5	4	15	5.1	3.0	2.0	10.1
Wadena	1	1	1	3	0.9	0.6	0.3	1.7
Todd	5	4	3	12	4.2	2.4	1.7	8.3
Redeye	5	3	4	12	3.9	3.0	1.9	8.9
Wadena	5	3	4	12	3.9	3.0	1.9	8.9
Long Prairie	2	3	2	7	2.2	1.2	1.1	4.4
Todd	2	3	2	7	2.2	1.2	1.1	4.4
Elk-Nokasippi	4	3	1	8	2.6	2.4	0.5	5.5
Morrison	4	3	1	8	2.6	2.4	0.5	5.5
Platte-Spunk	3	6	6	15	2.5	4.0	6.9	13.4
Morrison	3	6	6	15	2.5	4.0	6.9	13.4
Rum	5	9	6	20	5.9	8.1	4.5	18.5
Morrison	-	1	3	4	-	2.6	1.8	4.3
Benton	2	3	-	5	3.5	2.6	0.3	6.4
Mille Lacs	3	5	3	11	2.4	2.9	2.5	7.8
Snake	10	3	7	20	7.4	1.6	2.8	11.9
Mille Lacs	-	1	-	1	-	0.5	-	0.5
Kanabec	6	1	5	12	5.2	0.7	2.0	7.9
Pine	4	1	2	7	2.2	0.4	0.8	3.5
Kettle	5	15	7	27	7.3	10.9	4.7	22.9
Pine	3	13	6	22	2.3	9.1	4.3	15.7
Carlton	2	2	1	5	5.0	1.8	0.4	7.2
Grand Total ^c	40	47	37	124	36.9	34.2	24.4	95.6

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-03AM-L3
Summary of USFWS National Wetlands Inventory Crossed by the Route Alternative Proposed 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
Crow Wing	1.3	1.9	-	3.3	457.0	764.4	18.2	1239.6
Hubbard	-	-	-	-	0.4	---		0.4
Todd	0.4	0.7	-	1.2	190.8	269.6	5.0	465.5
Wadena	0.9	1.2	-	2.1	265.7	494.8	13.2	773.7
Redeye	1.0	2.2	-	3.2	240.3	588.3	1.5	830.0
Wadena	1.0	2.2	-	3.2	240.3	588.3	1.5	830.0
Long Prairie	0.6	1.4	0.1	2.1	182.1	384.9	47.5	614.6
Morrison	-	0.3	-	0.3	32.3	81.7	35.8	149.7
Todd	0.6	1.2	-	1.8	149.9	303.2	11.8	464.8
Elk-Nokasippi	0.9	1.7	0.2	2.7	269.6	568.6	70.0	908.3
Morrison	0.9	1.7	0.2	2.7	269.6	568.6	70.0	908.3
Platte-Spunk	2.1	0.3	-	2.5	568.6	254.4	39.5	862.6
Morrison	2.1	0.3	-	2.5	568.6	254.4	39.5	862.6
Rum	3.0	0.1	0.1	3.2	934.7	219.4	21.9	1176.0
Morrison	1.8	-	-	1.8	489.3	61.3	2.5	553.1
Benton	0.3	0.1	-	0.4	119.9	107.0	3.4	230.3
Mille Lacs	0.9	0.1	-	1.0	325.5	51.1	16.0	392.7
Snake	1.9	0.7	0.1	2.7	829.2	480.0	41.6	1350.8
Mille Lacs	0.1	-	-	0.1	31.8	5.0		36.8
Kanabec	0.7	0.5	0.1	1.3	422.9	287.3	39.1	749.2
Pine	1.0	0.2	-	1.3	374.6	187.8	2.5	564.9
Kettle	2.4	6.0	0.1	8.5	716.6	1861.3	98.1	2676.0
Pine	2.2	2.7	0.1	5.0	630.0	850.1	97.1	1577.2
Carlton	0.2	3.4	-	3.6	86.7	1011.1	1.0	1098.8
Grand Total ^d	13.2	14.4	0.6	28.2	4198.1	5121.3	338.4	9657.8

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-03AM-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
Crow Wing	0.4	0.1	81.4	29.1
Todd	0.4	0.1	74.4	27.2
Wadena	-	-	7.0	1.9
Redeye	-	-	9.1	-
Wadena	-	-	9.1	-
Long Prairie	-	-	20.6	0.1
Todd	-	-	1.5	0.1
Morrison	-	-	19.1	
Elk-Nokasippi	-	-	13.4	9.5
Morrison	-	-	13.4	9.5
Platte-Spunk	-	-	40.6	-
Morrison	-	-	40.6	-
Snake	-	-	-	2.1
Kanabec	-	-	-	2.1
Kettle	-	-	2.1	62.5
Pine	-	-	2.1	62.5
Grand Total ^c	0.4	0.1	167.2	103.2
<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-03AM-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
Crow Wing	2	2.5
Wadena	2	2.5
Redeye	1	0.5
Wadena	1	0.5
Snake	1	0.4
Pine	1	0.4
Kettle	-	0.1
Carlton	-	0.1
Grand Total ^c	4	3.5
<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-03AM-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
Crow Wing	Wadena	Abandoned	386	1
		Domestic	81	15
			587	
			676	
			117	
			137	
			545	
			626	
			818	
			940	
			111	
			351	
			461	
			680	
			811	
			711	
		Irrigation	596	5
			825	
			283	
			190	
			763	
Redeye	Wadena	Abandoned	910	1
		Domestic	463	21
			596	
			432	
			386	
			982	
			299	
			652	
			364	
			301	
			528	
			589	
			597	
			779	
			682	
			553	
			472	
			576	
			912	
			365	
			530	

Redeye (cont.)	Wadena (cont.)	Domestic (cont.)	929	21 (cont.)
		Irrigation	88	6
			149	
			828	
			426	
			658	
			560	
		Test Well	937	1
Crow Wing	Wadena	Abandoned	451	6
			188	
			870	
			4	
			315	
			839	
		Domestic	476	9
			464	
			503	
			260	
			532	
			326	
			726	
			763	
			130	
		Industrial	198	1
		Irrigation	649	6
			813	
			849	
			762	
			989	
			134	
		Test Well	297	1
	Todd	Abandoned	103	15
			105	
			131	
			129	
			13	
			29	
			8	
			42	
			40	
			81	
			3	
			85	
			243	
			15	
			21	

Crow Wing (cont.)	Todd (cont.)	Domestic	968	3
			146	
			299	
Long Prairie	Todd	Abandoned	53	3
			48	
			58	
		Domestic	338	7
			162	
			74	
			766	
			355	
			397	
			333	
		Monitoring	907	6
			752	
			379	
			720	
			351	
			383	
		Scientific Investigation	590	2
			728	
	Morrison	Domestic	956	5
			657	
			924	
			144	
			142	
Elk-Nokasippi	Morrison	Abandoned	741	1
		Domestic	421	23
			126	
			476	
			330	
			716	
			554	
			174	
			293	
			219	
			604	
			764	
			613	
			768	
			500	
			990	
			423	
			826	
			383	
			807	
			639	

Elk-Nokasippi (cont.)	Morrison (cont.)	Domestic (cont.)	537	23 (cont.)
			169	
			87	
		Exploration	868	22
			43	
			70	
			73	
			71	
			389	
			25	
			308	
			3	
			270	
			17	
			41	
			223	
			202	
			184	
			5	
			2	
			47	
			27	
			51	
			940	
			319	
		Irrigation	264	3
			476	
			229	
		Unknown	962	16
			982	
			559	
			637	
			649	
			590	
			663	
			612	
			677	
			778	
			692	
			777	
			863	
			772	
			875	
			875	
Platte-Spunk	Morrison	Abandoned	978	1
		Domestic	323	22
			308	

Platte-Spunk (cont.)	Morrison (cont.)	Domestic (cont.)	255	22 (cont.)
			992	
			627	
			577	
			798	
			775	
			279	
			140	
			279	
			431	
			450	
			506	
			810	
			928	
			856	
			186	
			586	
			152	
			315	
			814	
		Irrigation	357	2
			237	
		Other	396	1
		Unknown	961	1
Rum	Morrison	Domestic	93	11
			463	
			355	
			529	
			380	
			361	
			102	
			155	
			843	
			530	
			905	
	Benton	Domestic	636	10
			958	
			281	
			801	
			325	
			144	
			203	
			708	
			693	
	Mille Lacs	Abandoned	441	7
			504	
			791	

Rum (cont.)	Mille Lacs (cont.)	Abandoned (cont.)	263	7 (cont.)
			547	
			751	
			274	
			805	
		Domestic	64	16
			395	
			445	
			595	
			99	
			236	
			304	
			38	
			182	
			507	
			640	
			345	
			279	
			278	
			309	
			952	
		Monitoring	414	14
			417	
			379	
			453	
			399	
			407	
			444	
			587	
			576	
			746	
			431	
			497	
			499	
			503	
Snake	Mille Lacs	Domestic	824	3
			602	
			514	
	Kanabec	Abandoned	908	9
			114	
			253	
			271	
			203	
			241	
			132	
			163	
			91	

Snake (cont.)	Kanabec (cont.)	Domestic	213	98
			394	
			774	
			510	
			431	
			914	
			339	
			325	
			426	
			691	
			413	
			245	
			169	
			634	
			642	
			906	
			824	
			158	
			27	
			21	
			337	
			615	
			892	
			372	
			338	
			834	
			138	
			211	
			564	
			201	
			256	
			824	
			270	
			553	
			722	
			431	
			342	
			355	
			96	
			438	
			271	
			471	
			222	
			892	
			258	
			420	
			237	

Snake (cont.)	Kanabec (cont.)	Domestic (cont.)	171	98 (cont.)
			114	
			99	
			716	
			232	
			879	
			740	
			107	
			246	
			179	
			957	
			573	
			474	
			882	
			913	
			430	
			382	
			233	
			221	
			950	
			21	
			530	
			306	
			931	
			956	
			553	
			381	
			328	
			624	
			433	
			729	
			492	
			131	
			755	
			302	
			739	
			162	
			365	
			117	
			280	
			186	
			686	
			115	
			847	
			126	
			151	
			519	

Snake (cont.)	Kanabec (cont.)	Domestic (cont.)	704	98 (cont.)
			109	
			262	
			171	
		Irrigation	913	1
		Monitoring	199	7
			224	
			164	
			252	
			584	
			258	
			172	
		Observation	272	1
		Test Well	1	7
			178	
			4	
			407	
			622	
			951	
			57	
		Unknown	6	5
			315	
			288	
			27	
			159	
	Pine	Abandoned	448	9
			498	
			430	
			547	
			882	
			737	
			775	
			717	
			820	
		Commercial	136	1
		Domestic	734	22
			422	
			148	
			913	
			978	
			960	
			739	
			915	
			758	
			101	
			19	
			420	

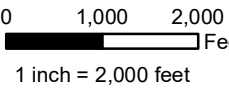
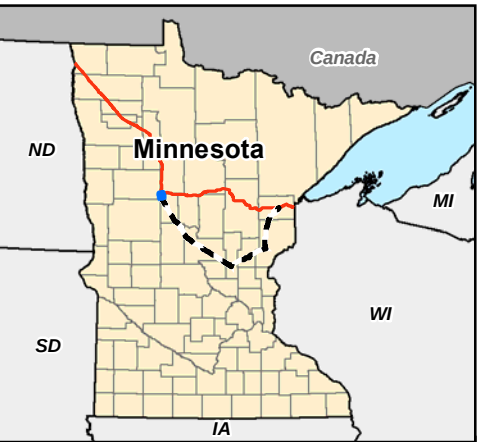
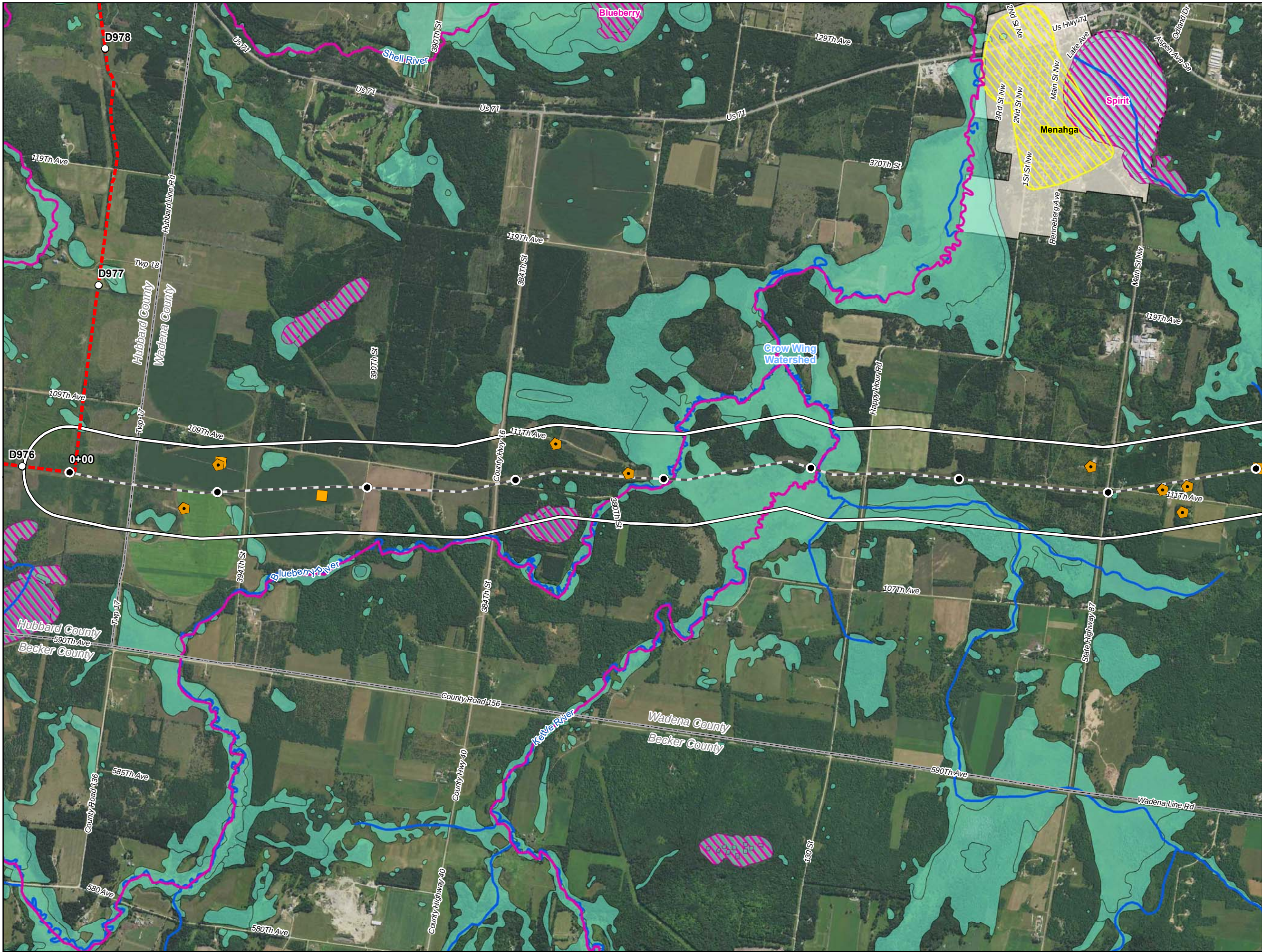
Snake (cont.)	Pine	Domestic	659	22 (cont.)
			518	
			131	
			528	
			64	
			227	
			354	
			444	
			613	
			699	
		Monitoring	889	16
			671	
			459	
			481	
			632	
			493	
			446	
			540	
			579	
			864	
			772	
			783	
			727	
			535	
Kettle	Pine	Abandoned	474	2
			736	
		Domestic	528	19
			504	
			955	
			907	
			753	
			373	
			397	
			808	
			424	
			44	
			45	
			304	
			173	
			64	
			85	
			711	
			644	
			695	
			315	
Snake	Pine	Monitoring	894	2
			904	

Kettle	Pine	Domestic	976	21
			784	
			477	
			418	
			223	
			138	
			512	
			338	
			172	
			617	
			615	
			272	
			740	
			826	
			472	
			510	
			788	
			315	
			994	
			214	
			589	
	Carlton	Abandoned	166	6
			543	
			605	
			643	
			648	
			601	
		Domestic	829	36
			212	
			518	
			593	
			563	
			361	
			942	
			885	
			162	
			925	
			367	
			322	
			492	
			870	
			715	
			410	
			201	
			743	
			902	
			870	

Kettle (cont.)	Carlton (cont.)	Domestic (cont.)	117	36 (cont.)
			233	
			372	
			225	
			194	
			769	
			303	
			265	
			564	
			129	
			515	
			668	
			498	
			444	
			663	
			123	
			Exploration	
		613		
		Other	789	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.				

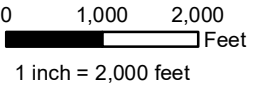
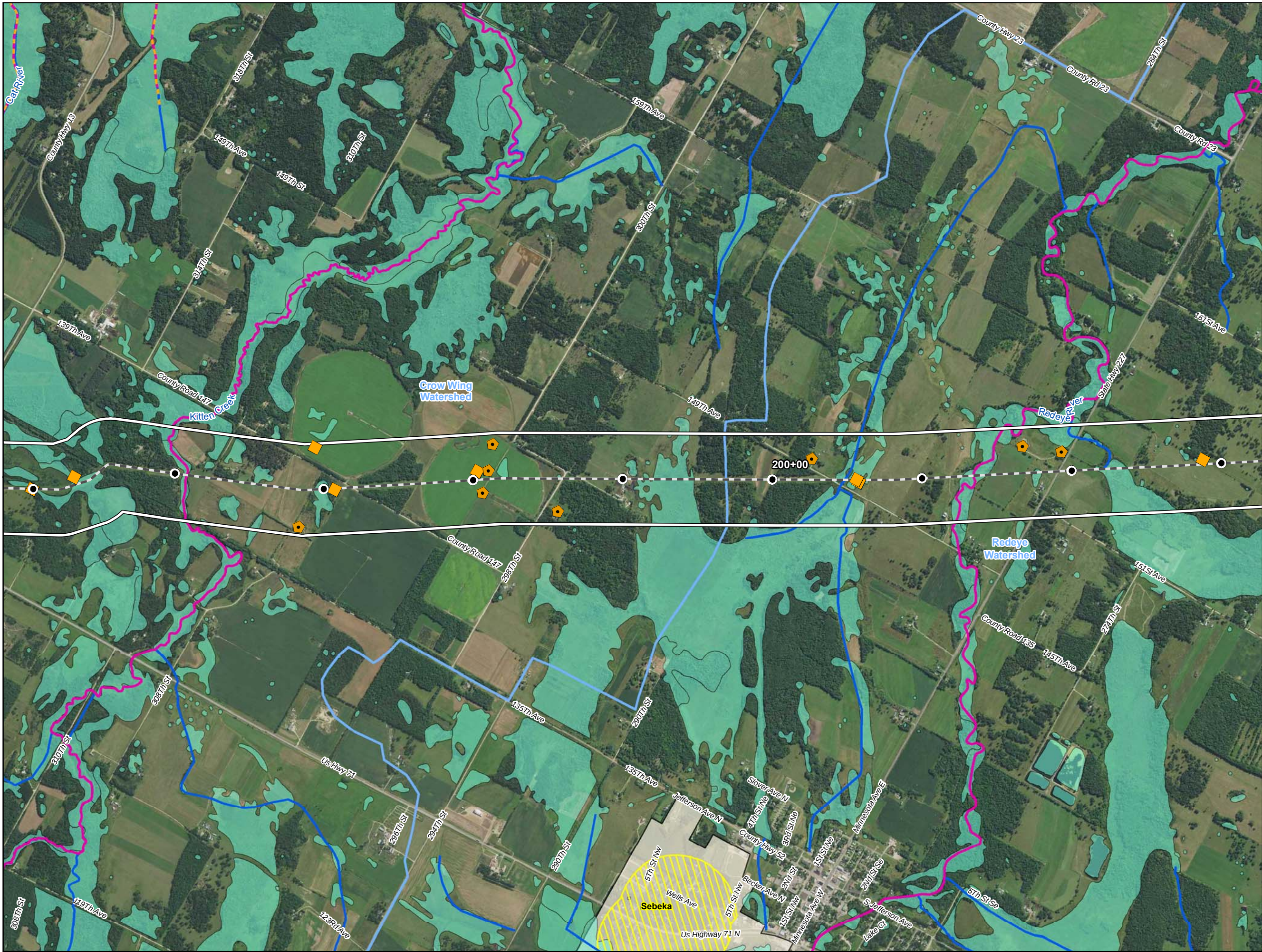
Table 7					
Line 3 Replacement Project – RA-03AM-L3					
Drinking Water Supply Management Areas (DWSMA) and Wellhead Protection Areas (WHPA)					
Crossed by the Proposed Route Alternative Centerline and within the 2,000-ft-wide Route Alternative Corridor in Minnesota					
Watershed	County	Approximate Stationing ^a	Name	Miles Crossed by the Route Alternative Centerline ^b	Acres Within the Route Alternative Corridor ^c
Rum	Mille Lacs	1718+00	Milaca WHPA	1.0	196.8
		1722+00	Milaca DWSMA	1.6	350.7
	Mille Lacs	1863+00	Bock WHPA	-	18.7
		1864+00	Bock DWSMA	-	40.2
Snake	Kanabec	1963+00	Ogilvie WHPA	-	32.5
		1964+00	Ogilvie DWSMA	-	75.1
Kettle	Pine	2462+00	Hinckley WHPA	0.3	93.9
			Hinckley DWSMA	0.8	183.7
	Carlton	3017+00	Moose Lake WHPA	-	19.9
		3022+00	Moose Lake DWSMA	0.4	103.3
DWSMA Data Source: https://gisdata.mn.gov/dataset/water-drinking-water-supply					
WHPA Data Source: https://gisdata.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-03AM-L3 Surface Water Intakes within the 2,000-ft-wide Route Alternative Corridor in Minnesota^a				
Watershed Name	County	Permit Type	Permit Status	Total
Crow Wing	Wadena	General Permit Authorization	Inactive	4
		Individual Permit	Active	4
			Inactive	2
Redeye	Wadena	General Permit Authorization	Inactive	13
		Individual Permit	Active	6
		Individual Permit	Inactive	6
Crow Wing	Wadena	General Permit Authorization	Inactive	10
		Individual Permit	Active	9
		Individual Permit	Inactive	3
	Todd	General Permit Authorization	Inactive	2
Long Prairie	Todd	General Permit Authorization	Inactive	5
		Individual Permit	Active	1
		Individual Permit	Inactive	3
	Morrison	General Permit Authorization	Inactive	3
Elk-Nokasippi	Morrison	Individual Permit	Active	3
		Individual Permit	Inactive	3
Platte-Spunk	Morrison	Individual Permit	Active	3
		Individual Permit	Inactive	3
Rum	Mille Lacs	Individual Permit	Inactive	1
Snake	Kanabec	Individual Permit	Active	3
	Pine	Individual Permit	Active	1
Kettle	Pine	Individual Permit	Inactive	3
MPARS Minnesota DNR, Ecological and Water Resources, Sean Hunt, 651-259-5679 ^a Municipal wells are not included in the source data.				



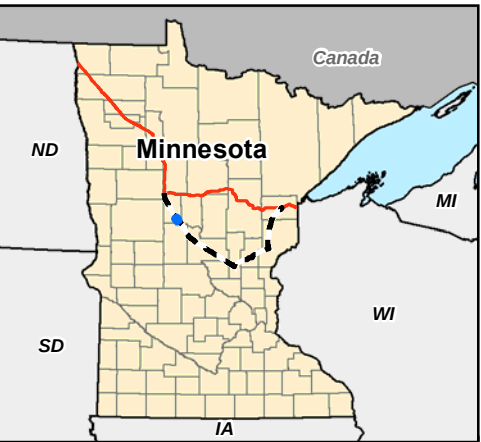
- Water Well
- Surface Water Intake
- Calcareous Fen
- Line 3 Milepost
- Alternative Stationing
- Proposed Line 3 Replacement Pipeline
- Alternative Centerline
- 2,000 ft Alternative Corridor
- Trout Stream
- PWI Stream
- NHD Stream
- PWI Basin
- NWI
- Watershed Boundary
- WHPA
- DWSMA
- County Boundary

Figure 1
Line 3 Replacement Project
RA-03AM-L3
Enbridge
Wadena 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-03AM-L3
Enbridge
Wadena County, Minnesota



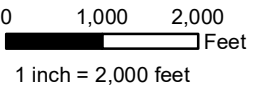
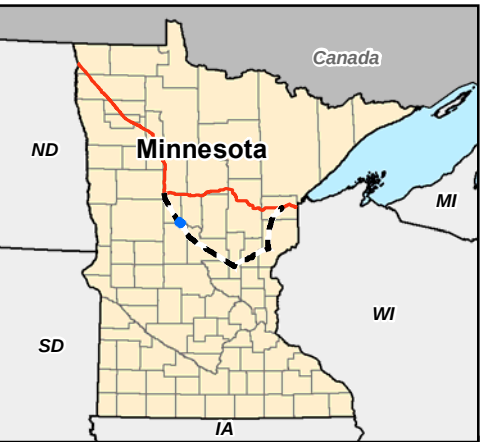
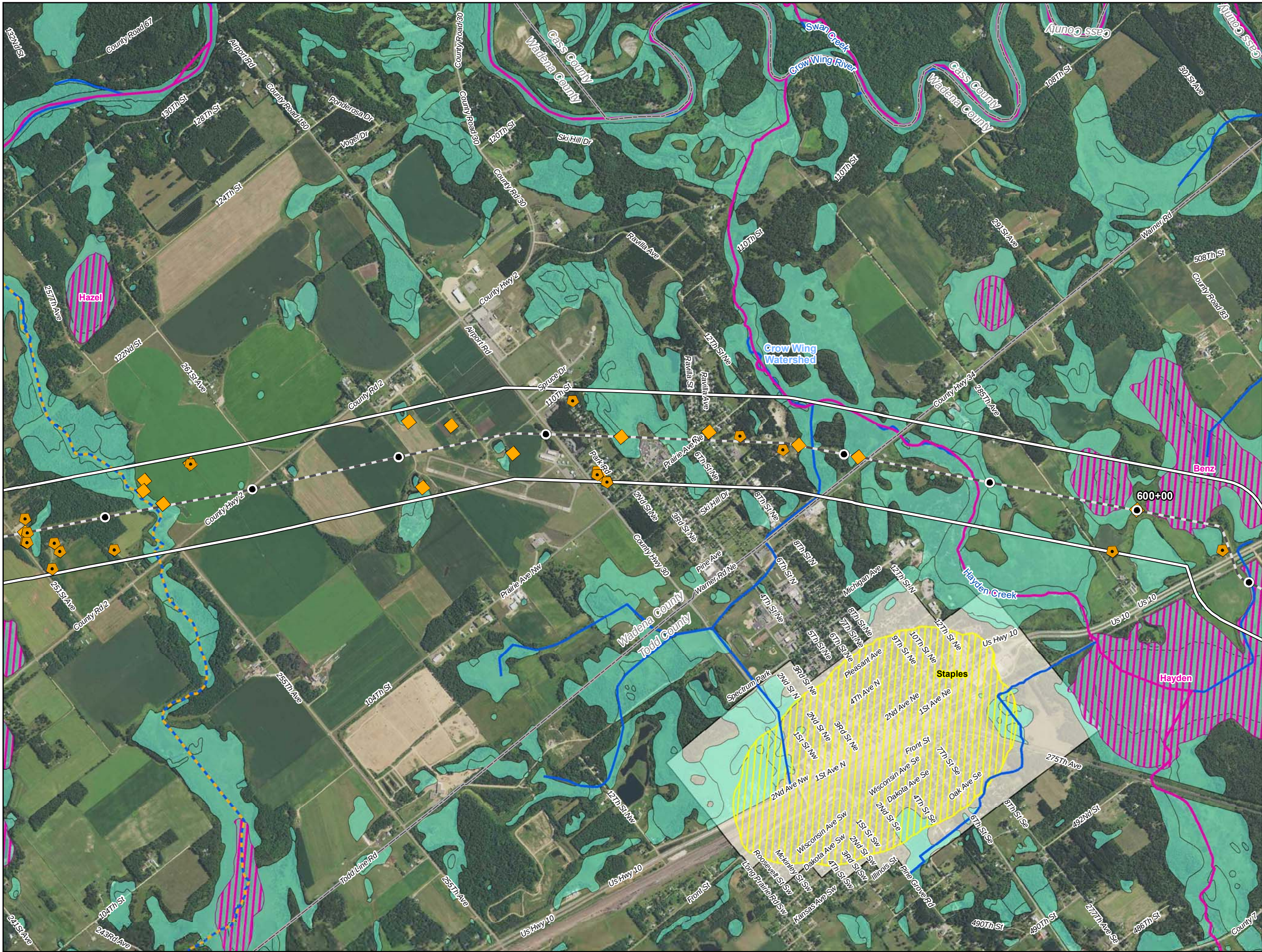
0 1,000 2,000
Feet
1 inch = 2,000 feet



- Water Well
- Surface Water Intake
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- Line 3 Milepost
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- Proposed Line 3 Replacement Pipeline
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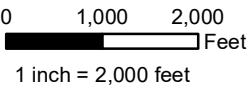
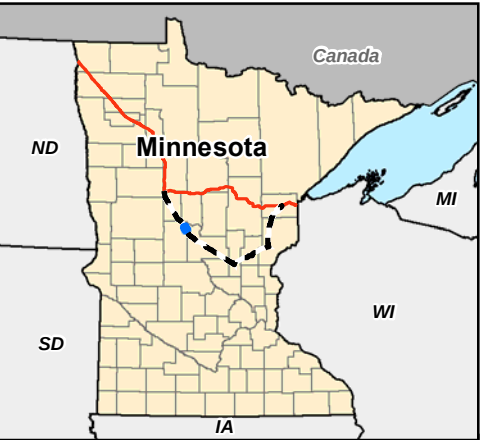
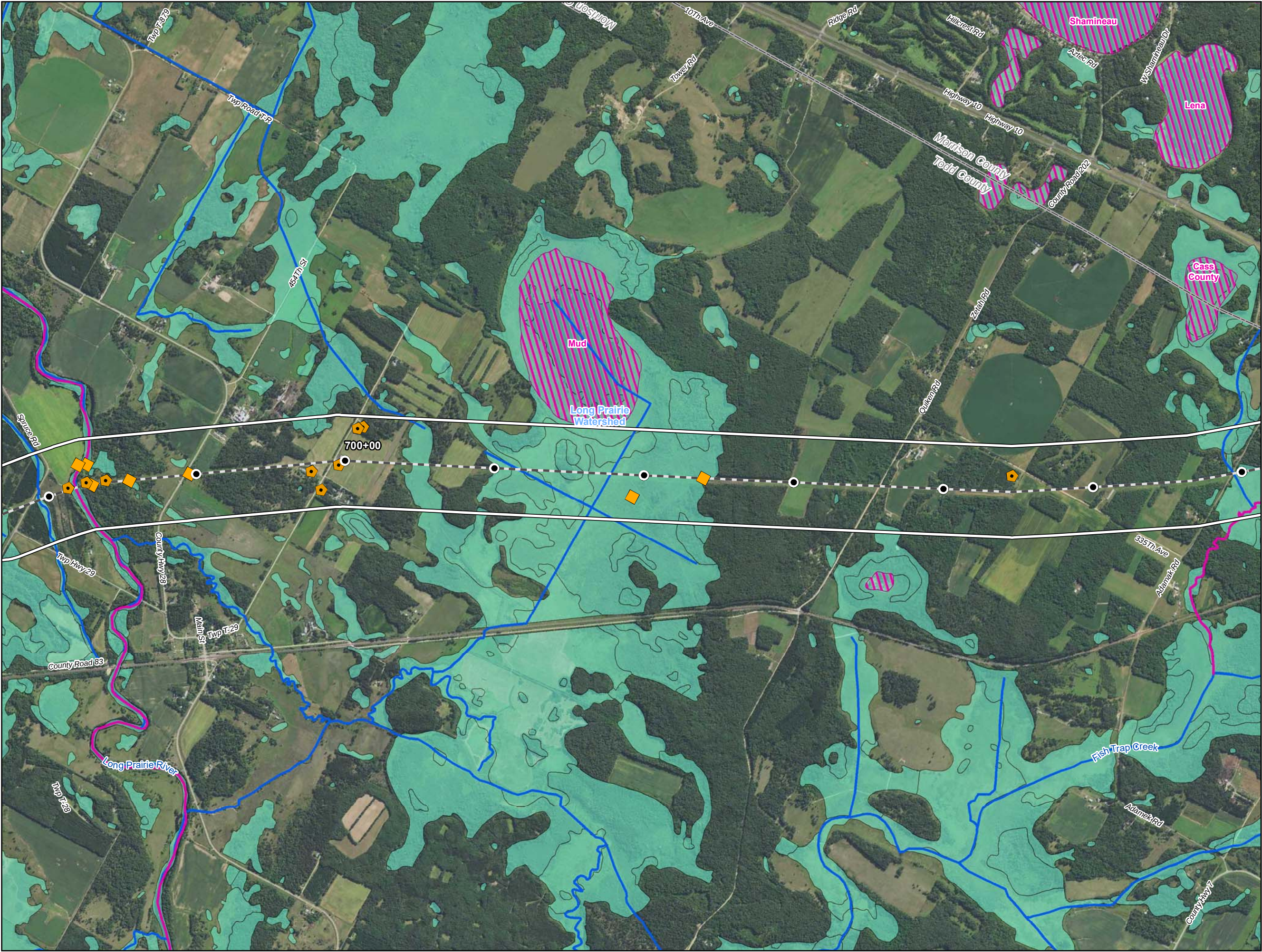
Figure 7
Line 3 Replacement Project
RA-03AM-L3
Enbridge
Wadena County, Minnesota





- 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
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- WHPA
- DWSMA
- County Boundary

Figure 8
Line 3 Replacement Project
RA-03AM-L3
Enbridge
Wadena 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-03AM-L3
Enbridge
Todd County, Minnesota