

Appendix K
Line 3 Replacement Project
Incremental Impacts by Resource

This information was not previously submitted as part of the Enbridge Energy, Limited Partnership Application for a Pipeline Routing Permit on April 24, 2015.

Line 3 Replacement Project Incremental Impacts by Resource

This appendix presents the incremental impacts associated with L3R where it is co-located with SPP east of the Clearbrook Terminal. This EAW, and all impact discussions contained herein, assume that SPP would be constructed before L3R and, as such, the primary disturbance of the construction workspace, ATWS, and permanent ROW are attributed to SPP. As presented in Figures 6-2a through 6-2f, L3R would generally be installed next to the SPP pipeline at a standard offset of 25 to 40 feet where co-located with SPP east of the Clearbrook Terminal. The impacts presented for SPP in the following tables are based on the 120-foot-wide (uplands) and 95-foot-wide (wetlands) construction workspace and ATWS for temporary impacts and the SPP 50-foot-wide permanent ROW for permanent impacts. Impacts presented for L3R are based on the additional 10- to 45-foot-wide construction workspace and ATWS for temporary impacts and the additional 25- to 40-foot-wide permanent ROW for permanent impacts. Calculations presented in the tables below for the area of potential cumulative effect, are based on the combined SPP and L3R 130- to 145-foot-wide (uplands) and 105- to 140-foot-wide (wetlands) construction workspace and ATWS for temporary impacts and the 75- to 90-foot-wide combined SPP and L3R permanent ROW for permanent impacts.

Table H-1 Soil Characteristics for the Line 3 Replacement Project and Sandpiper Pipeline Project Where Co-Located East of Clearbrook - Pipeline									
County	Total Footprint Acreage	Prime Farmland	Hydric Soils	Compact Prone	Highly Erodible		Reveg. Concerns	Stony/ Rocky	Shallow to Bedrock ^a
					Water	Wind			
Acres									
Clearwater									
L3R ^b	46.0	22.1	11.4	8.4	9.2	26.1	11.8	0.0	0.0
SPP ^c	443.3	233.1	71.2	44.4	97.7	239.2	80.8	0.0	0.0
Cumulative ^d	489.3	255.2	82.6	52.8	106.9	265.3	92.6	0.0	0.0
Hubbard									
L3R ^b	73.8	4.0	12.4	9.9	23.9	70.6	41.4	0.0	0.0
SPP ^c	661.7	44.1	59.8	43.9	211.3	642.1	322.0	0.0	0.0
Cumulative ^d	735.5	48.1	72.2	53.8	235.2	712.8	363.3	0.0	0.0
Wadena									
L3R ^b	24.3	0.3	5.9	3.8	1.2	23.3	23.8	0.0	0.0
SPP ^c	104.6	1.8	19.0	11.9	6.1	101.2	101.9	0.0	0.0
Cumulative ^d	128.8	2.1	24.9	15.7	7.3	124.5	125.7	0.0	0.0
Cass									
L3R ^b	83.9	22.3	26.5	14.6	13.7	68.3	42.4	0.0	0.0
SPP ^c	696.3	178.3	155.1	69.1	147.5	604.8	343.3	0.0	0.0
Cumulative ^d	780.2	200.6	181.6	83.8	161.2	673.1	385.7	0.0	0.0
Crow Wing									
L3R ^b	5.6	1.2	1.8	0.1	0.4	3.8	3.1	0.7	0.0
SPP ^c	71.3	16.7	20.1	0.8	4.1	50.3	37.4	9.2	0.0
Cumulative ^d	76.9	17.8	21.9	1.0	4.5	54.2	40.5	9.9	0.0
Aitkin									
L3R ^b	131.3	48.0	85.4	54.4	5.6	96.3	68.2	0.0	0.0

Line 3 Replacement Project Incremental Impacts by Resource

Table H-1 Soil Characteristics for the Line 3 Replacement Project and Sandpiper Pipeline Project Where Co-Located East of Clearbrook - Pipeline									
County	Total Footprint Acreage	Prime Farmland	Hydric Soils	Compact Prone	Highly Erodible		Reveg. Concerns	Stony/Rocky	Shallow to Bedrock ^a
					Water	Wind			
Acres									
SPP ^c	679.1	266.8	389.9	244.2	48.5	509.4	315.0	0.0	0.0
Cumulative ^d	810.4	314.8	475.4	298.6	54.1	605.7	383.2	0.0	0.0
Carlton									
L3R ^b	74.7	10.0	24.2	24.2	17.1	36.2	43.9	1.1	0.0
SPP ^c	559.5	91.2	126.6	126.6	161.5	281.4	332.0	10.7	0.0
Cumulative ^d	634.2	101.2	150.8	150.8	178.6	317.6	375.9	11.8	0.0
Total									
L3R^b	439.5	107.8	167.6	115.5	71.2	324.7	234.6	1.8	0.0
SPP^c	3,215.8	832.0	841.7	540.9	676.6	2,428.4	1,532.3	19.9	0.0
Cumulative^d	3,655.3	939.8	1,009.4	656.4	747.8	2,753.1	1,766.9	21.6	0.0
^a	As stated in Section 10a, there is potential for shallow bedrock along approximately 20 miles of the L3R route between MPs 1108 and 1128 (SPP MPs 593 and 595). This information was not reflected in NRCS soils data.								
^b	Calculations based on the incremental impacts of the L3R 10- to 45-foot-wide temporary workspace and ATWS where L3R is co-located with SPP east of the Clearbrook Terminal.								
^c	Calculations based on the SPP 120-foot-wide construction workspace (uplands) and 95-foot-wide construction workspace (wetlands) and ATWS for temporary impacts inclusive of the SPP 50-foot permanent ROW.								
^d	Calculations based on a combined L3R and SPP 130- to 145-foot-wide construction workspace (uplands) and 105- to 140-foot-wide construction workspace (wetlands) and ATWS inclusive of the combined L3R and SPP 75- to 90-foot-wide permanent ROW.								

Line 3 Replacement Project Incremental Impacts by Resource

Table H-2 Wetland Impacts for the Line 3 Replacement Project and Sandpiper Pipeline Project by Watershed – Pipeline										
Watershed Name	Temporary Impacts (acres) ^a					Permanent Conversion (acres) ^{a, b}				
	PEM	PSS ^c	PFO	PUB	Total	PEM	PSS	PFO	PUB	Total
Clearwater River										
L3R ^d	3.4	1.2	-	0.3	4.9	-	2.7	5.9	-	8.6
SPP ^e	51.1	10.5	-	1.7	63.3	-	6.2	29.5	-	35.7
Cumulative ^f	56.8	7.7	-	2.0	66.6	-	12.4	36.3	-	48.6
Wild Rice River										
L3R ^d	1.4	1.2	-	-	2.6	-	2.0	3.5	-	5.5
SPP ^e	17.6	3.1	-	0.2	20.9	-	1.5	3.2	-	4.7
Cumulative ^f	19.0	2.4	-	0.2	21.5	-	3.5	4.6	-	8.1
Mississippi River – Headwaters										
L3R ^d	3.1	1.4	-	-	4.5	-	2.7	8.5	-	11.2
SPP ^e	19.8	4.3	-	0.2	24.3	-	3.0	15.6	-	18.7
Cumulative ^f	22.9	3.1	-	0.3	26.2	-	5.7	19.5	-	25.2
Crow Wing River										
L3R ^d	13.8	4.2	-	0.1	18.1	-	7.4	11.2	-	18.5
SPP ^e	51.5	11.2	-	0.5	63.2	-	12.4	19.5	-	31.9
Cumulative ^f	65.4	9.5	-	0.7	75.5	-	19.8	25.0	-	44.8
Pine River										
L3R ^d	7.9	2.7	-	0.5	11.2	-	4.9	12.3	-	17.2
SPP ^e	47.0	8.8	-	2.7	58.4	-	9.1	26.1	-	35.2
Cumulative ^f	54.9	6.6	-	3.3	64.8	-	14.0	30.3	-	44.3
Leech Lake River										
L3R ^d	-	-	-	-	-	-	-	0.2	-	0.2
SPP ^e	-	-	-	-	-	-	-	0.6	-	0.6
Cumulative ^f	-	-	-	-	-	-	-	0.6	-	0.6
Mississippi River – Grand Rapids										
L3R ^d	23.3	15.4	-	0.2	38.9	-	19.0	52.1	-	71.2
SPP ^e	98.5	35.5	-	0.6	134.5	-	36.8	100.0	-	136.8
Cumulative ^f	122.0	32.7	-	0.7	155.4	-	55.7	125.1	-	180.8
Mississippi River – Brainerd										
L3R ^d	6.4	6.5	-	-	12.9	-	7.1	9.4	-	16.6
SPP ^e	26.3	12.2	-	-	38.4	-	12.4	19.6	-	31.9
Cumulative ^f	32.4	11.5	-	-	44.0	-	19.5	24.1	-	43.6
Kettle River										
L3R ^d	3.4	8.8	-	-	12.3	-	13.4	31.1	-	44.5
SPP ^e	19.7	21.9	-	0.1	41.7	-	23.5	61.1	-	84.5
Cumulative ^f	23.2	17.3	-	0.1	40.6	-	36.8	73.1	-	109.9

Line 3 Replacement Project Incremental Impacts by Resource

Table H-2 Wetland Impacts for the Line 3 Replacement Project and Sandpiper Pipeline Project by Watershed – Pipeline										
Watershed Name	Temporary Impacts (acres) ^a					Permanent Conversion (acres) ^{a, b}				
	PEM	PSS ^c	PFO	PUB	Total	PEM	PSS	PFO	PUB	Total
Nemadji River										
L3R ^d	0.5	1.9	-	-	2.5	-	3.1	9.3	-	12.4
SPP ^e	7.0	6.6	-	0.1	13.8	-	7.0	18.7	-	25.7
Cumulative ^f	7.6	5.6	-	0.1	13.2	-	10.1	23.0	-	33.1
St. Louis River										
L3R ^d	2.5	0.3	-	0.1	2.9	-	0.6	0.6	-	1.3
SPP ^e	2.2	1.4	-	0.4	3.9	-	0.8	0.8	-	1.5
Cumulative ^f	4.7	1.1	-	0.4	6.2	-	1.4	1.1	-	2.5
TOTAL ^h										
L3R ^d	65.9	43.5	-	1.4	110.8	-	62.9	144.2	-	207.1
SPP ^e	340.7	115.5	-	6.5	462.4	-	112.7	294.7	-	407.2
Cumulative ^f	408.9	97.5	-	7.8	514.0	-	178.9	362.7	-	541.5
GRAND TOTAL ^g										
L3R ^d	317.9									
SPP ^e	870.1									
Cumulative ^f	1,055.8									
^a	PEM = Palustrine Emergent; PSS = Palustrine Scrub-Shrub; PFO = Palustrine Forested; PUB = Palustrine Unconsolidated Bottom (Cowardin et al. 1979).									
^b	Permanent conversion consists of all PFO impacts and PSS impacts within the new SPP and L3R permanent ROWs where the pipeline corridor would be maintained by periodic clearing activities. In addition, all acres of PFO that would be cleared within the temporary construction workspace and ATWS are considered to be a permanent conversion of wetland type. There are no permanent conversion impacts to PEM and PUB wetland types as they would be allowed to naturally regenerate within the SPP and L3R permanent ROWs.									
^c	PSS impacts are only for the area within the temporary construction workspace and ATWS where woody vegetation would be allowed to naturally regenerate.									
^d	Calculations based on the incremental impacts of the L3R 10- to 45-foot-wide temporary workspace and ATWS for temporary impacts, and the L3R 25- to 40-foot permanent ROW for PSS permanent conversion where L3R is co-located with SPP east of the Clearbrook Terminal. PFO wetlands within the L3R 25- to 40-foot permanent ROW are assumed to have already be impacted by SPP temporary construction workspace; therefore, are presented as SPP permanent conversion.									
^e	Calculations based on the 95-foot-wide temporary workspace (wetlands) and ATWS for temporary impacts and SPP 50-foot-wide permanent ROW for permanent conversion where SPP is co-located with L3R east of the Clearbrook Terminal.									
^f	Calculations based on a combined SPP and L3R 105- to 140-foot-wide temporary workspace (wetlands) and ATWS for temporary impacts and the SPP and L3R 75- to 90-foot-wide permanent ROW.									
^g	The sum of addends may not total correctly due to rounding.									