

## Decommissioning Line 5 Adds More Jobs, Earnings, and Economic Value than Tunnel According to Line 5 Alternatives Analysis

Hired by the State of Michigan, Dynamic Risk Assessment Systems, Inc. performed an independent analysis of alternatives to the existing Line 5 pipelines in the Straits in 2016-17. The scope of work outlined in the State’s Request for Information and Proposals for this project was “to provide the State of Michigan and other interested parties with an independent, comprehensive analysis of alternatives to the existing Straits Pipelines, and the extent to which each alternative promotes the public health, safety and welfare and protects the public trust resources of the Great Lakes.”

The Alternatives Analysis Final Report evaluated six alternatives contemplated by the State, including Alternative 6: abandonment/decommissioning of Line 5, and Alternative 4b: building a tunnel. This analysis included the economic impacts of each alternative, including jobs.

As Table ES-2 below shows, the report found decommissioning Line 5 would create more jobs (2,188 jobs) than the tunnel alternative (1,763 jobs). Decommissioning Line 5 also would create more earnings (\$104.3 million) than the tunnel alternative (\$91.3 million).

**Alternatives Analysis for the Straits Pipelines**

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Executive Summary

**Table ES-2: Economic Evaluation Summary**

	Alt 5 Existing Operations (Base Case)	Alt 4a New Trenched Crossing	Alt 4b New Tunnel Crossing	Alt 6 Abandon Line 5 & Crossing	Alt 1 New Pipeline	Alt 3 Alt Transport (Rail)
Total Construction Cost (\$Million)	0.0	27.3	152.9	212.1	2,025.2 <sup>(a)</sup>	907.8 <sup>(a)</sup>
Construction Cost – Michigan (\$Million)	0.0	27.3	152.9	183.5	585.8	0.0
Total Operating Costs (\$Million/y)	95.0	95.0	95.0	0	225.0 – 165.0 <sup>(b)</sup>	1,220.0
Operating Costs – Michigan (\$Million/y)	83.0	83.0	83.0	0	67.5 – 49.5 <sup>(b)</sup>	184.1
Construction Period (y)	0	2	2	1	5	3
System Tariff Superior – Sarnia/Marysville Area (\$/bbl)	Oil: 1.50, NGL: 1.32					
Line 5 Tariff Superior-Rapid River (\$/bbl)	NGL: 0.55					
Line 5 Tariff Lewiston-Marysville (\$/bbl)	Oil: 0.60					
Levelized Cost New Infrastructure (\$/bbl) <sup>(c)</sup>	0.000	0.009	0.046	0.067	1.628	6.492
<b>Construction Impacts (Michigan)<sup>(d)</sup></b>						
Jobs (#)	N/A	413	1,763	2,188	8,110	0
Earnings (\$Million)	N/A	21.0	91.3	104.3	369.2	0.00
Output (\$Million)	N/A	71.0	328.5	362.1	1,307.5	0.00
Value Added (\$Million)	N/A	23.0	93	189.6	395.7	0.00
Government Revenues (\$Million)	N/A	1.0	<4.4	<5.0	<17.7	0.00
<b>Operations Impacts (Michigan)</b>						
Jobs (#)	913	913	913	0	399	1,491
Earnings (\$Million/y)	45.2	45.2	45.2	0	23.9	84.3
Output (\$Million/y)	136.5	136.5	136.5	0	79.7	323.6
Value Added (\$Million/y)	80.6	80.6	80.6	0	42.5	173
Government Revenues (\$Million/y)	7.17-9.17	7.17-9.17	7.17-9.17	0	6.15 – 11.15	12.15

It is important to note the type of jobs created and lost matter to labor unions. All 2,188 jobs created by decommissioning Line 5 would be construction jobs. The tunnel alternative would create fewer construction jobs (413 jobs) but would create about 913 operations jobs. The operating engineers care about those operations jobs and the 400 current jobs connected to pipeline maintenance, as do the unions representing laborers.

The Appendix of the Alternatives Analysis Final Report provides more detail and documents that the **total value added to the Michigan economy from decommissioning is \$100 million more than the tunnel.**

Construction spending for the tunnel alternative amounts to \$153 million, with \$92 million going toward Michigan purchases. The total economic output would amount to \$329 million for Michigan, with an estimated \$93 million of value added to Michigan’s economy.

Decommissioning Line 5 amounts to \$148 million in construction spending, all in Michigan, with total labor earnings around \$100 million. Total output from the construction expense could be \$362 million, for a value added for Michigan of \$190 million.

**Table Q-9: Alternative 4b: Tunnel Pipeline Crossing Construction**

<b>Alternative 4b: Tunnel Pipeline for Line 5 Straits of Mackinac Crossing</b>			
Construction Expenditures			\$153 million
Michigan-sourced Construction Purchases			\$92 million
<b>Impact Area</b>	<b>Employment (jobs)</b>	<b>Labor Earnings (million \$)</b>	<b>Output (million \$)</b>
<b>Prosperity Regions 1,2,3,5,6</b>			
Direct	769	41.9	152.9
Indirect	519	29.7	125.2
Induced	210	7.2	27.9
Total Impact	1,498	78.8	306.0
<b>Michigan</b>			
Direct	814	44.3	152.9
Indirect	635	35.8	139.8
Induced	314	11.1	35.8
Total Impact	1,763	91.3	328.5
Value Added for Michigan: \$93 million			
Notes: Economic contribution results derived using BEA RIMS II Multipliers.			

**Table Q-10: Alternative 6: Abandonment of Line 5**

<b>Alternative 6: Abandonment Expenditures Related to Line 5</b>			
Abandonment Expenditures for all of Line 5 –terrestrial plus Straits Crossing			\$212 million
Abandonment Expenditures for all of Line 5 – terrestrial in MI plus Straits Crossing			\$184 million
<b>Impact Area</b>	<b>Employment (jobs)</b>	<b>Labor Earnings (million \$)</b>	<b>Output (million \$)</b>
<b>Corridor Counties</b>			
Direct	790	43.1	183.5
Indirect	247	11.9	58.4
Induced	389	14.0	47.1
Total Impact	1,426	68.9	289.0
<b>Prosperity Regions 1,2,3,5,6</b>			
Direct	923	50.3	183.5
Indirect	324	16.6	69.6
Induced	487	16.1	52.2
Total Impact	1734	83.0	305.2
<b>Michigan</b>			
Direct	977	53.2	183.5
Indirect	450	24.1	91.6
Induced	761	26.9	87.0
Total Impact	2188	104.3	362.1
Value Added for Michigan: \$190 million			
Notes: Economic contribution results derived using BEA RIMS II Multipliers.			

One caveat to comparing economic and jobs impacts between these two alternatives is that the Dynamic Risk analysis of the tunnel envisioned a tunnel design somewhat different than what Enbridge is currently proposing. For example, the Dynamic Risk study was of a tunnel designed to encase Line 5 in concrete; Enbridge’s design is for Line 5 to not be encased in concrete. There are also differences in boring approaches. However, there is no reliable economic and jobs data available on the Enbridge tunnel design.

**Sources:**

[Alternatives Analysis for the Straits Pipelines Final Report](#). Prepared for State of Michigan by Dynamic Risk Assessment Systems, Inc. October 26, 2017

Appendix Q – Alternatives Analysis for the Straits Pipelines Draft Final Report. Prepared for State of Michigan by Dynamic Risk Assessment Systems, Inc. June 29, 2017.



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