

**APPENDICES To FLOW PUBLIC COMMENTS ON THE JOINT APPLICATION OF
ENBRIDGE ENERGY TO OCCUPY GREAT LAKES BOTTOMLANDS FOR ANCHORING
SUPPORTS TO TRANSPORT CRUDE OIL IN LINE 5 PIPELINES IN THE STRAITS OF
MACKINAC AND LAKE MICHIGAN [2RD-DFDK-Y35G]**

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Map: Another Major Tar Sands Pipeline Seeking U.S. Permit

Canadian energy giant Enbridge is quietly building a 5,000-mile network of new and expanded pipelines that would achieve the same goal as the Keystone.

By Lisa Song, InsideClimate News

Jun 3, 2013



Canadian company Enbridge Inc. is expanding its network of pipelines to carry thousands of additional barrels of oil to and through the United States each day. Credit: Paul Horn.

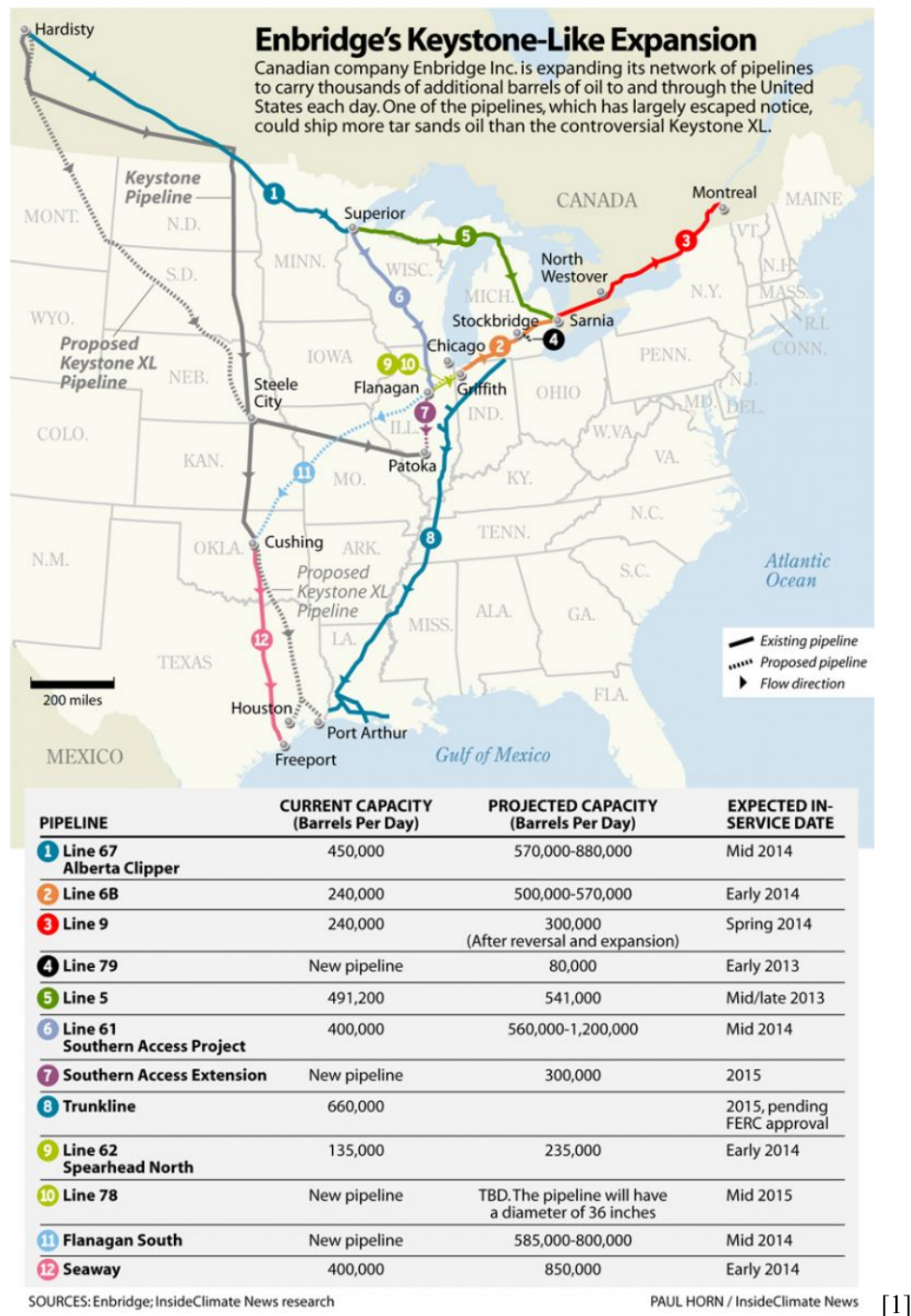
While all eyes are on TransCanada's Keystone XL pipeline, another Canadian company is quietly building a 5,000-mile network of new and expanded pipelines that would achieve the same goal as the Keystone. In fact, the project by Enbridge, Inc., Canada's largest transporter of crude oil, would bring even more Canadian oil into the U.S. than the much-debated Keystone project.

Enbridge has already begun growing its existing pipeline infrastructure to increase the flow of Canadian and U.S.-produced oil into refineries and ports in the Midwest, Gulf Coast and Northeastern Canada. The company's plans have largely escaped public scrutiny, in part because its expansion has proceeded in many segments and phases.

The linchpin of Enbridge's Canadian oil transport system is its proposal to increase the capacity of Line 67 (often referred to as the Alberta Clipper pipeline) to bring an additional 430,000 barrels a day of oil into the United States. Line 67 runs from Hardisty, Alberta to Superior, Wisc. and currently ships up to 450,000 barrels of oil a day. Enbridge wants to expand the line's capacity to 570,000 barrels a day, with the possibility of future growth to 880,000 barrels a day. That's larger than the Keystone XL's proposed daily capacity of 830,000 barrels.

Because Line 67 crosses the U.S.-Canada border, it needs a presidential permit from the State Department before it can be expanded. That's the same kind of permit TransCanada is seeking for the northern segment of Keystone XL. The Obama administration is expected to approve or deny the Keystone permit by the end of 2013. For Enbridge, the application process has just begun: the State Department is reviewing public comments on the scope of the environmental review.

Here's a breakdown of Enbridge's current and proposed pipeline projects:



****Click map to enlarge****

Line 67 (Alberta Clipper)

Expected in-service date: mid 2014

Origin and destination: Hardisty, Alberta to Superior, Wisc.

Length: 1,000 miles

Description: Expansion of an existing pipeline via construction of new pump stations. The project needs a presidential permit from the State Department. The agency is now reviewing public comments the scope of the Supplemental Environmental Impact Statement.

Current capacity: 450,000 barrels per day (bpd)

Expanded capacity: initial capacity of 570,000 bpd , with the possibility of future expansion to 880,000 bpd

Market: increase shipments of Canadian tar sands and conventional oil into the U.S. for refining and export

Line 6B

Expected in-service date: early 2014 (initial expansion), 2016 (additional expansion). Origin and destination: Griffith, Ind. to Sarnia, Ontario

Length: 293 miles

Description: Expansion via building a new pipeline next to the existing 6B, modifying pump stations and constructing new storage tanks. Construction began in 2012 and is ongoing.

Current capacity: 240,000 bpd

Expanded capacity: 500,000 bpd (initial), expected to be in-service in early 2014. An additional expansion from Griffith, Ind. to Stockbridge, Mich. will increase the capacity to 570,000 and is expected to be operational in 2016.

Market: refineries in and around Michigan

Line 9

Expected in-service date: spring 2014

Origin and destination: Sarnia, Ontario to Montreal, Quebec.

Length: 524 miles

Description: Reversing part of the existing Line 9 (from North Westover, Ontario to Montreal) to enable shipment of oil from Sarnia to Montreal. The Application is pending before the Canadian National Energy Board. Regulators approved the reversal of the Sarnia to North Westover segment last year. Total pipeline capacity will be expanded by injecting chemicals into the pipeline to reduce friction.

Current capacity: 240,000 bpd

Expanded capacity: 300,000 bpd

Market: Quebec refineries. Environmentalists and pipeline opponents say the Line 9 reversal would allow Enbridge to eventually access the Atlantic Coast and to export oil via new pipelines. In its Line 9 project description, Enbridge says it has "no plans, proposals or infrastructure for pipelines moving product further East than Montreal."

Line 79

Expected in-service date: early 2013

Origin and destination: Stockbridge, Mich. to Freedom Junction, Mich.

Length: 35 miles

Description: New pipeline, which will connect to an existing 29-mile pipeline that Enbridge will lease from Wolverine Pipe Line Company. The Wolverine pipeline runs from Freedom Junction to Romulus, Mich. These two pipelines will allow Enbridge to ship oil from Stockbridge to Romulus.

Capacity in bpd: 80,000

Market: Michigan and Ohio refineries

Line 5

Expected in-service date: mid or late 2013

Origin and destination: Superior, Wisc. to Sarnia, Ontario.

Length: 645 miles

Description: Expansion via boosting power at pump stations

Current capacity: 491,200 bpd

Expanded capacity: 541,000 bpd

Market: Refineries in Ontario and Michigan

Line 61 (Southern Access Project)

Expected in-service date: mid 2014, 2016

Origin and destination: Superior, Wisc. to Flanagan, Ill.

Length: 454 miles

Description: Expansion via increased pumping horsepower and construction of new crude oil tanks.

Current capacity: 400,000 bpd

Expanded capacity: 560,000 bpd (initial). In Dec. 2012, Enbridge announced a further expansion, subject to regulatory review and approvals, to increase the capacity to 1.2 million bpd.

Market: Refineries near Chicago

Southern Access Extension

Expected in-service date: 2015

Origin and destination: Flanagan, Ill. to Patoka, Ill.

Length: 165 miles

Description: New proposed pipeline.

Capacity: 300,000 bpd.

Market: Refineries near Patoka

Trunkline

Expected in-service date: 2015, pending approval from the Federal Energy Regulatory Commission

Origin and destination: Patoka, Ill. to St. James, La. and Louisiana Coast.

Length: more than 700 miles

Description: Conversion of an existing natural gas pipeline to crude oil pipeline. Joint project between Enbridge and Energy Transfer

Capacity: 660,000 bpd

Market: Gulf Coast

Line 62 (Spearhead North)

Expected in-service date: early 2014

Origin and destination: Flanagan, Ill. to Griffith, Ind.

Length: 77 miles

Description: Expansion via increasing power at pump stations

Current capacity: 135,000 bpd

Expanded capacity: 235,000 bpd

Market: Midwest refineries

Line 78

Expected in-service date: mid-2015

Origin and destination: Flanagan, Ill. to Griffith, Ind.

Length: 77 miles

Description: New proposed pipeline parallel to the existing Line 62.

Capacity: TBD. The pipeline will have a diameter of 36 inches.

Market: Midwest refineries

Flanagan South

Expected in-service date: mid 2014

Origin and destination: Flanagan, Ill. to Cushing, Okla.

Length: 600 miles

Description: New pipeline

Capacity: 585,000 bpd (initial), with the possibility of increasing to 800,000 bpd.

Market: Gulf Coast

Seaway

Expected in-service date: early 2014

Origin and destination: Cushing, Okla. to Freeport, Texas

Length: 500 miles

Description: Reversal and expansion via building a new pipeline next to the existing Seaway pipeline. Joint project between Enbridge and Enterprise Partners.

Current capacity: 400,000 bpd

Expanded capacity: 850,000 bpd

Market: Gulf Coast

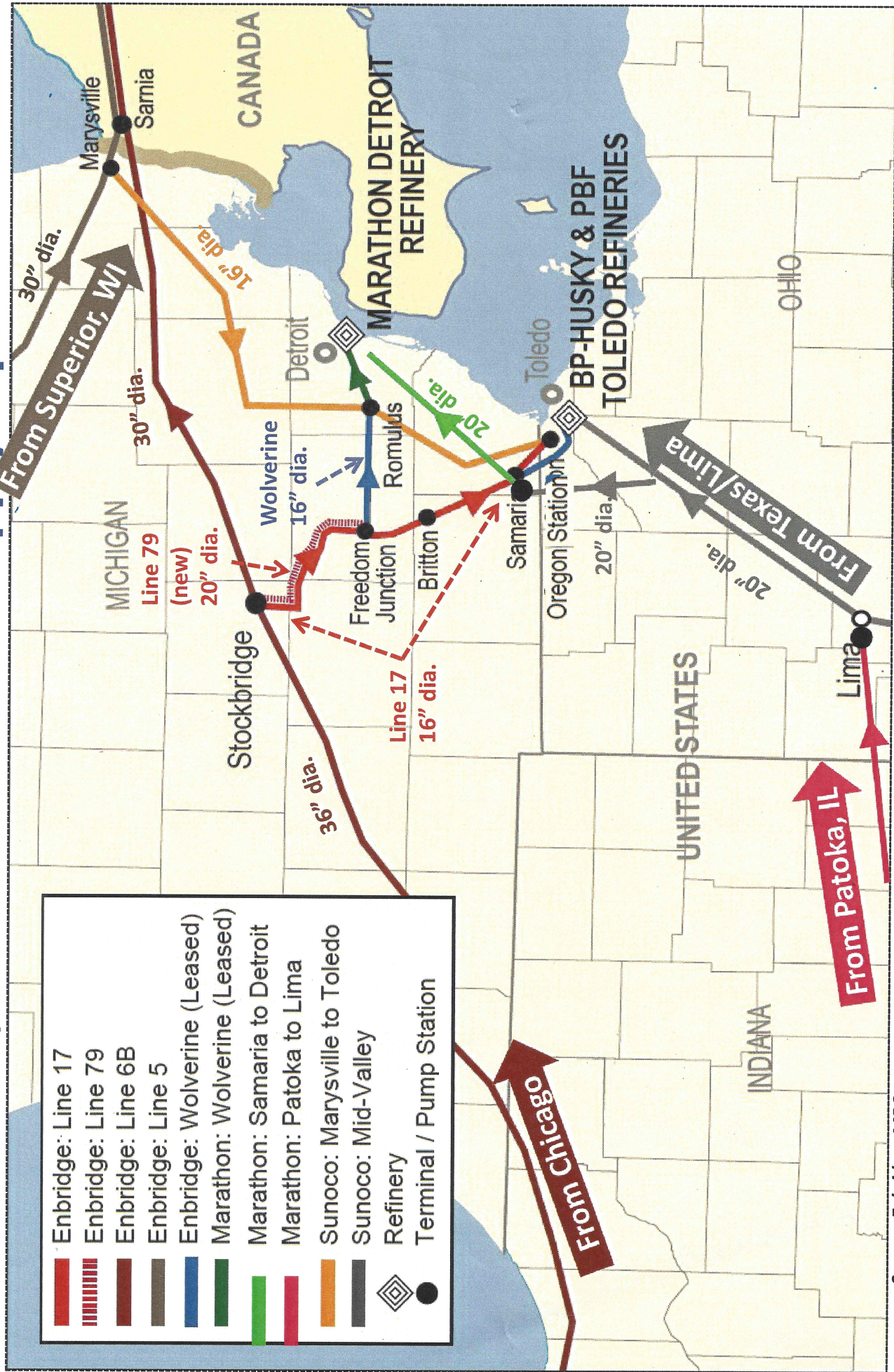
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Source URL: <https://insideclimatenews.org/news/20130603/map-another-major-tar-sands-pipeline-seeking-us-permit>

Links

[1] <https://insideclimatenews.org/sites/default/files/assets/2013-05/OilPipelines.jpg>

Detroit/Toledo Crude Oil Supply Pipelines



- Enbridge: Line 17
- Enbridge: Line 79
- Enbridge: Line 6B
- Enbridge: Line 5
- Enbridge: Wolverine (Leased)
- Marathon: Wolverine (Leased)
- Marathon: Samaria to Detroit
- Marathon: Patoka to Lima
- Sunoco: Marysville to Toledo
- Sunoco: Mid-Valley
- Refinery
- Terminal / Pump Station

Source: Enbridge, MPC



Enbridge Plans \$1B Plus Investment

Image Not Available

1.

Zacks Equity Research

May 14, 2012

Enbridge Inc. (ENB) – the general partner of Enbridge Energy Partners L.P. (EEP) – aims to expend \$1.3 billion on its Line 6B in response to the surge in demand from refiners for Canadian crude.

The project involves the replacement of 160 miles of existing pipeline in Michigan as well as another 50 miles of line in Indiana. This comprises the second phase of a replacement plan of the line – stretching from Griffith, Indiana, to Sarnia, Ontario.

The first phase, comprising alternation of 75 miles of pipeline segment, is due for completion later in 2012. Line 6B was closed down for two months following a July 2010 oil spill incident that poured more than 20,000 barrels of crude oil into Michigan river.

In mid-April, Enbridge filed an application with the Michigan Public Service Commission for the replacement of 160 miles of pipeline. The altered line would encompass 110 miles of a 36-inch pipe and 50 miles of a 30-inch pipe. Additionally, 50 miles of pipeline is expected to be altered in Indiana.

Notably, the latest replacement is expected to nearly double the daily capacity of Line 6B to 500,000 barrels of crude oil from the present 240,000 barrels. This will eventually aid eastern Canadian refineries in response to growing crude supplies. The ongoing refinery upgrades and expansion in Michigan and Ohio would also lend support to the growing light crude production at Bakken Shale and Alberta.

Calgary, Alberta based Enbridge Inc. is Canada's No. 2 pipeline operator. It remains engaged in energy transportation and distribution.

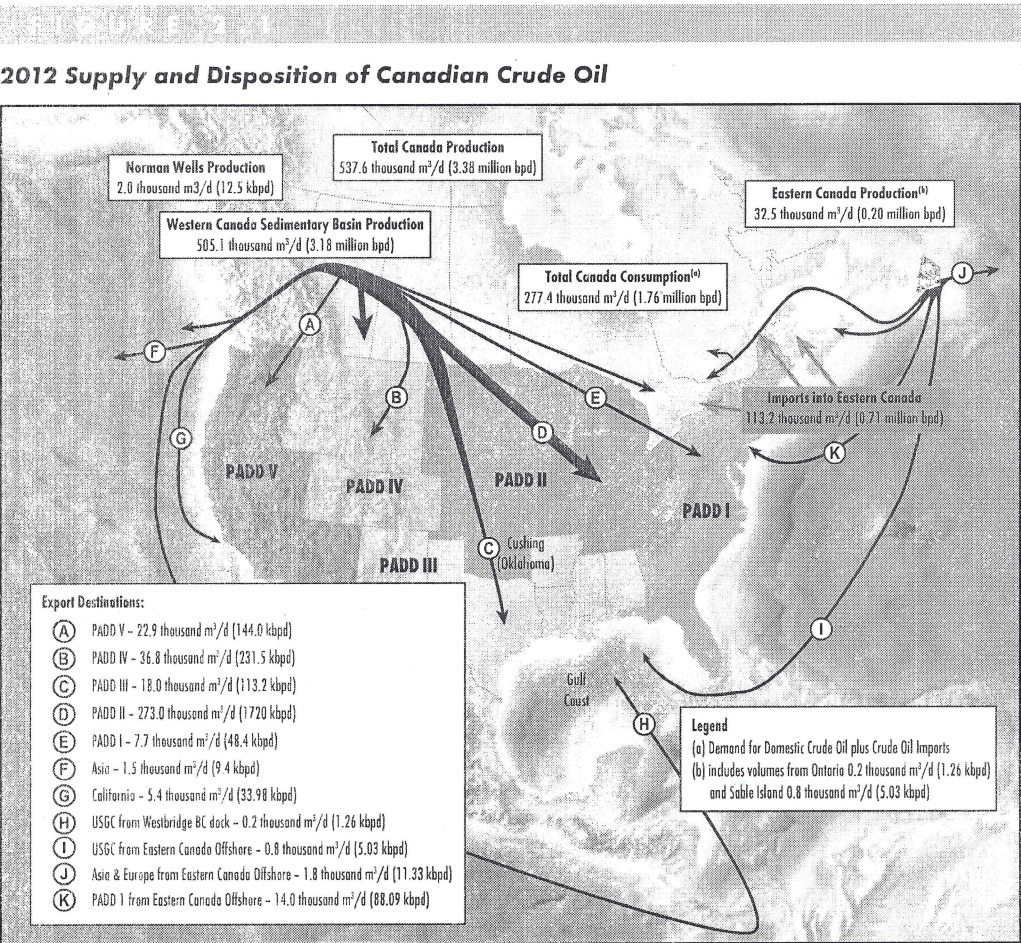
Houston, Texas-based Enbridge Energy Partners is engaged in the gathering, processing and transmission of natural gas and crude oil. The partnership is best known for its ownership of the Lakehead System, one of the world's longest petroleum pipeline systems. This system is the U.S. portion of the main artery for crude oil supply from Western Canada to refining centers in the Upper Midwest of the U.S. and Ontario in Canada.

Enbridge Inc. hold a Zacks #4 Rank (short-term Sell rating) and Enbridge Energy holds a Zacks #3 Rank, which is equivalent to a short-term Hold rating.

SUPPLY AND DISPOSITION OF CANADIAN OIL AND NATURAL GAS

In 2012, Canada produced over 537 000 cubic meters per day (m³/d) or 3.38 million barrels per day (MMb/d) of crude oil, most of which was shipped via pipeline from western provinces to markets in other provinces or the U.S. (See Figure 2.1)

Canadian natural gas production averaged almost 400 million m³/d or 13.9 billion cubic feet per day (Bcf/d). The vast majority originated in Western Canada and was transported by pipelines to consumers in other parts of Canada and the U.S. as shown in Figure 2.2.



3.1 Oil and Liquids

3.1.1 Oil and Liquids Pipelines Capacity Utilization and Apportionment

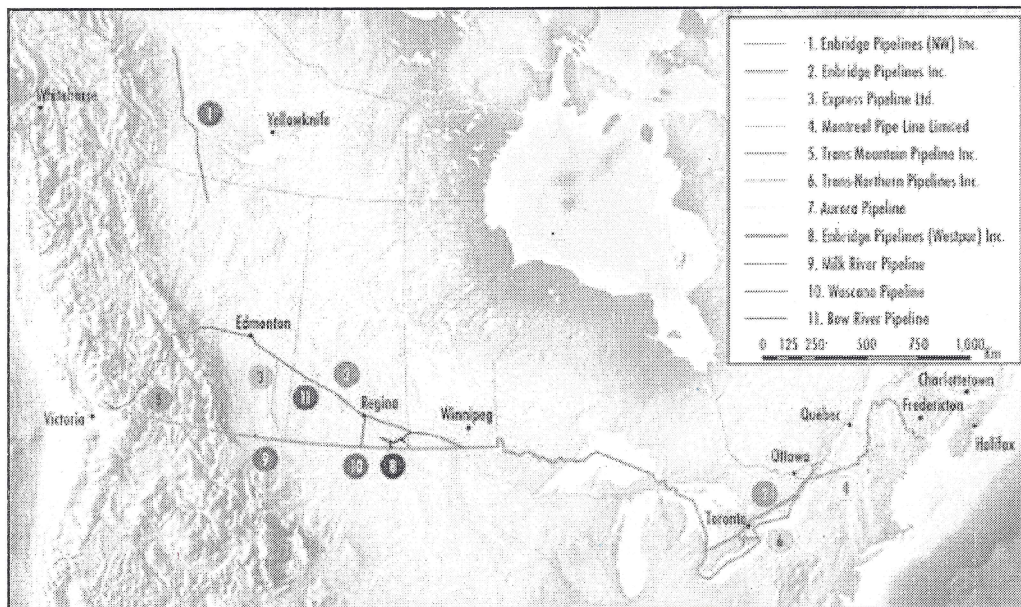
Figure 3.1 shows the major oil pipelines regulated by the National Energy Board. Some oil pipelines operate as common carriers: each month, shippers nominate volumes for delivery into the pipeline. In a given month, if shippers nominate more volume than the pipeline can transport then each shipper's nominated volume is apportioned or reduced by the same percentage. Apportionment can be driven by growing oil supply, increased oil demand, pipeline reconfigurations and reduced pipeline capacity. Recently Enbridge and Trans Mountain significantly apportioned volumes.

Some oil and petroleum products pipelines had spare capacity; however, overall capacity out of Canada was constrained as indicated by significant apportionment on the Enbridge and Trans Mountain systems. Rapid growth in Western Canadian oil sands and U.S. tight oil production created a surplus of oil in the mid continent since 2011, exacerbated by limited pipeline capacity to coastal markets. Oil pipeline capacity has recently been added out of Western Canada; however, constraints on connecting pipelines and capacity reductions on major lines limited capacity from 2010 to 2013. See Appendix 2 for detailed information on oil pipeline use and apportionment.

Rail became an increasingly important alternative method for transporting western Canadian crude oil to higher value markets. From January through November 2013, an average of 19 585 m³/d or 123 thousand barrels per day (Mb/d) of crude oil was exported to the U.S. by rail. Most of this oil, 17 217 m³/d (108 Mb/d), went to PADD I and PADD III. During the same period of time, 20 444 m³/d (129 Mb/d) travelled by pipeline to PADD I and PADD III. (See Figure 2.1 for the locations of PADD I and PADD III.)

FIGURE 3.1

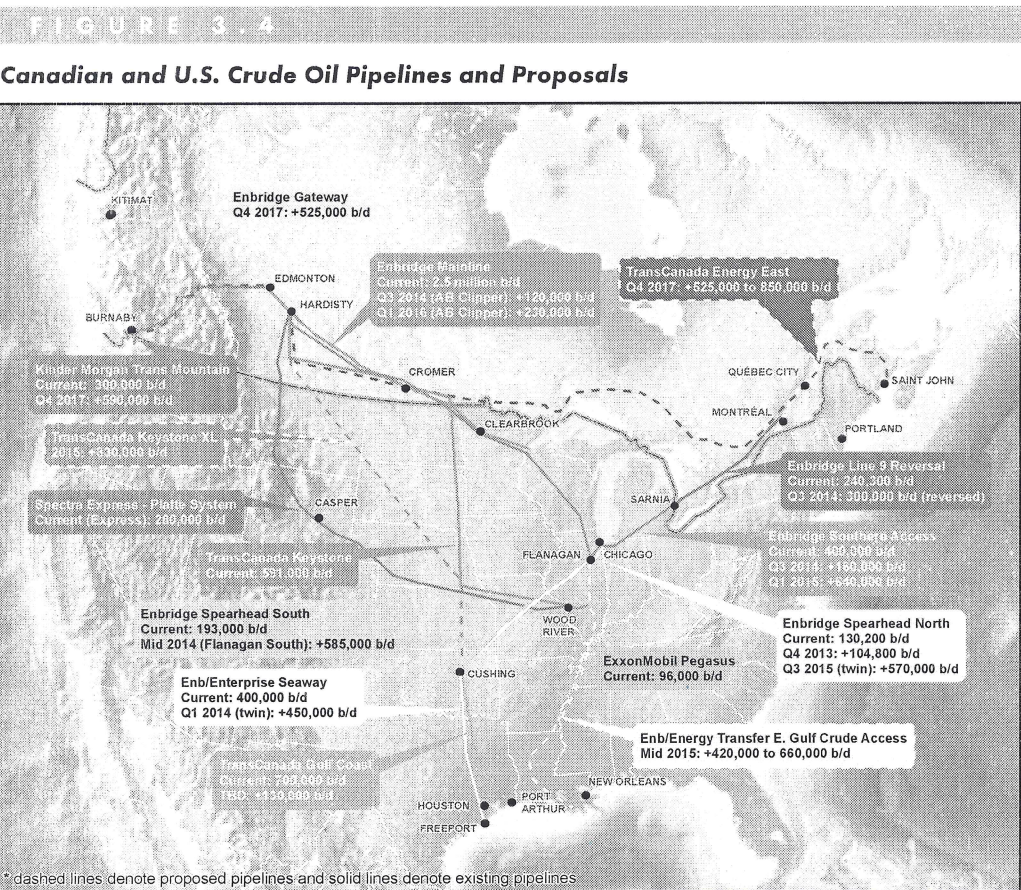
Major Oil Pipelines Regulated by the NEB



By December 2012, WTI was discounted \$22 per barrel compared to Brent⁴. Edmonton Par was further discounted \$12 per barrel (therefore \$34 less than Brent). In February 2013, the Western Canadian Select discount from WTI reached \$40 per barrel⁵. Canadian and U.S. Midcontinent crude oil prices began to increase in the second half of the year with new pipeline takeaway capacity from Cushing, increased crude-by-rail volumes, and fewer refineries undergoing maintenance. However, going into the winter season discounts began to increase again.

The price discounts on Canadian crude oils greatly exceed the cost of pipeline transportation between the markets, and generally exceed the cost of rail transportation. The tolls to ship oil from Edmonton/Hardisty to Cushing are about \$5 to \$6.55 per barrel, depending on type of oil and which pipeline systems are used. It costs approximately another \$3 per barrel to reach the Gulf Coast from Cushing; however, some of these lines require long term committed contracts. Rail costs are roughly double or triple the pipeline tolls.

Price differentials that are higher than tolls provide an incentive to apply to build new pipeline capacity, but it takes many years from the time a pipeline is conceived of to the time it may be put into service. Figure 3.4 shows the many proposed pipelines that are in various stages of development, including the proponents' proposed in-service dates. These proposals are evidence of the market responding to the recent constraints in oil pipeline capacity.



4 Historically, WTI has traded at a slight premium to Brent.

5 Historically, Western Canadian Select has been discounted around \$18 from WTI, a reflection of pipeline tolls and Western Canadian Select being heavy and sour.



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October 22, 2014

RECEIVED

OCT 23 2014

EXECUTIVE SECRETARY

Ms. Mary Jo Kunkle
Executive Secretary
Michigan Public Service Commission
4300 W. Saginaw
Lansing, MI 48917-2171

RE: Enbridge Energy, Limited Partnership
Final As-Built Map for Line 6B (Replacement)
MPSC Docket Nos. U-17020
U-16838
U-16856
U-17478

Dear Ms. Kunkle:

Enbridge Energy, Limited Partnership ("Enbridge") hereby submits as Attachment A to this correspondence, the Final As-Built Map for Line 6B (Replacement). Through a series of replacement segments beginning in 2012, Enbridge has installed approximately 125 miles of new 36-inch diameter pipeline and 100 miles of new 30-inch diameter pipeline, all of which replace the former crude oil and petroleum pipeline known as Line 6B in the counties of Berrien, Cass, St. Joseph, Kalamazoo, Calhoun, Jackson, Ingham, Oakland, Macomb and St. Clair, in the state of Michigan.

Line 6B originates at Griffith, Indiana and extends to the east to traverse the border between Indiana and Michigan, to ultimately cross the US-Canadian International Border at Marysville, Michigan, where it terminates at an affiliated Enbridge terminal in Sarnia, Ontario.

Should the Commission or its Staff require further information or have any questions regarding this submission, I am available at the contact numbers identified above.

Very truly yours,

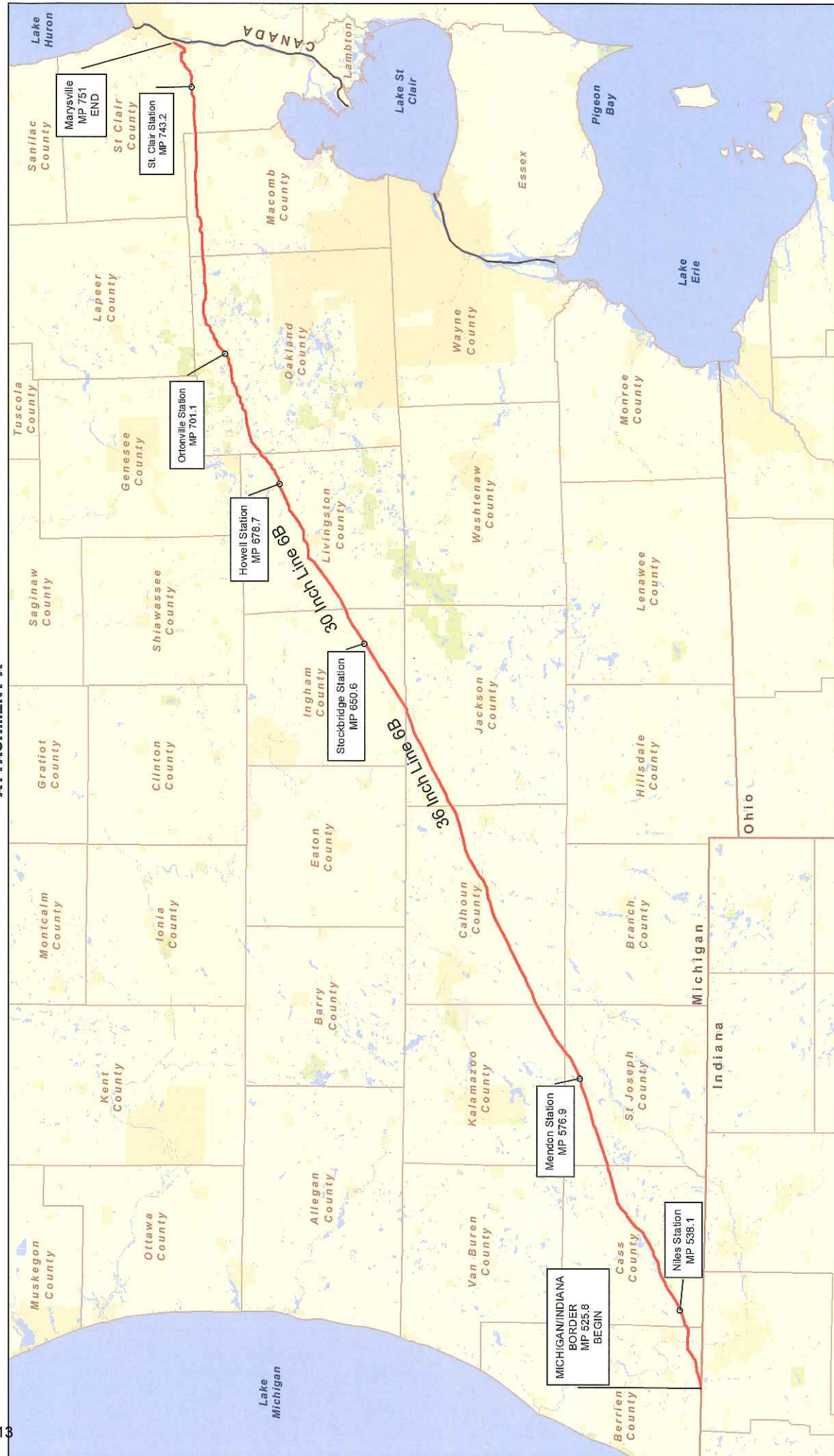
Claudia Schrull

Claudia Schrull
Sr. Manager,
Regulatory Pipeline Development
EUS Law

Attachment A: Final As-Built Map for Line 6B (Replacement)

cc: Mr. Travis Warner

ATTACHMENT A



NOTES:

Legend

Line 6B As-Built Pipeline

Station Location

0 10 20 Miles

DATE: 10/20/2010

BY: JLB

REV: 0

DESCRIPTION: MPSC Summary

DATE: 10/20/2010

BY: JLB

ENBRIDGE

Line 6B Replacement Project

Priority 1 Station Map

SCALE: 1 inch = 10 miles

DWG BY: JLB

REV: 0