

BEFORE THE MICHIGAN HOUSE GOVERNMENT OPERATIONS COMMITTEE
S-1197 - Tunnel in Straits

Statement of Leonard Page, Vice-Chair, Straits of Mackinac Alliance
December 11, 2018

My name is Leonard Page. I live in Cheboygan and am the Vice-Chair of the Straits of Mackinac Alliance. (straitsalliance.org) The Alliance is a group of citizens living on or near the Straits who are very concerned about the impact of an oil spill at "the very worst place possible" for such a disaster. We are currently appealing the Michigan DEQ's decision granting anchor supports for Line 5 where stronger than predicted currents continue to create gaps of more than 75 feet under those pipelines. We are here to express our opposition to this tunnel legislation.

First, I need to complain about this process. This is a very crucial matter for the long term future of everything that is "Pure Michigan". It needs full hearings with expert testimony and perhaps even subpoena power to gather information on the alleged benefits versus the serious risks to Michigan from Line 5. Cramming down this issue in lame duck session makes the sausage-making alternative very attractive by comparison.

Good facts make for good legislation. We are very troubled by the claim by many sponsors that Line 5 is vital for our energy needs. There is no truth to this claim.

As we have been saying for years, 95% or more of the 23 million gallons of crude going daily through the Straits is delivered to Sarnia, Ontario. Only about 3-5% of Line 5 oil is used as feedstock by the Detroit Marathon refinery. That amount can easily be made up from other Enbridge pipelines currently feeding Marathon. So the Alberta crude of Line 5 - which is 80% of the product sent through Line 5, is clearly not essential to Michigan gasoline production..

Let's turn to the issue of Grandmas freezing in the UP if Line 5 is closed or a rupture occurs. Natural Gas Liquids (NGL) are sent down Line 5 about 20% of the time. At Rapid River, less than 2% percent is extracted for the Plains Midstream depropanization facility for use in the UP. Let me repeat, when NGL is coming down Line 5 from Canada, less than 2% by volume is used in the UP. Put another way, Enbridge Line 5 supplies approximately 25-26,000 gallons a day of UP propane. That means one railcar, or about three propane trucks a day. We have been broadcasting these facts for years without rebuttal by Enbridge or the State. Various studies confirm the fact the Line 5 provides very little propane to the UP. (See London Economics International (LEI) Study at <http://bit.ly/Line5PropaneReport>, and the attached papers by Gary Street dated February 19, 2018 and today, also published at the FLOW and OWDM websites, and "A Life Without Line 5" by Geist, July 30, 2018, Great Lakes Echo)

The facts thus show that over over 95% of the crude oil and 98% of the NGL going thru Line 5 is pumped to Sarnia. You have to suffer from severe cognitive dissonance to echo Enbridge's lies about its alleged benefits to Michigan.

If the law of supply and demand works, I would also underscore that both the Dynamic Risk Study of 2017 and the LEI study found that a closure of Line 5 would increase the price per gallon of gasoline and propane in Michigan by only several pennies. Both gasoline and propane are priced a little over \$2 a gallon right now.

I submit that the facts therefore clearly show that Line 5 plays almost no vital role in supplying gasoline and propane to Michigan. This committee now has an absolute duty to check these facts. You cannot rely on Enbridge's misleading half-truths. For a company claiming to support transparency, Enbridge has consistently been hiding readily available data on volumes of crude oil and propane actually delivered from Line 5 to directly to Michigan.

Let's look at another Enbridge transparency problem. Enbridge claims to have "umbrella" insurance policies covering oil spills in an amount somewhat less than a billion dollars. However, that amount is totally inadequate to cover damages in a worst-case spill. The Minnesota Department of Commerce had a risk manager review these policies this year. In August, 2018, it concluded that these policies did not cover oil-spill damages. My FOIA request to Michigan disclosed that the policies were not in the possession of Michigan (as required by the 1953 Easement). Even worse, the policies only reimbursed Enbridge after it had paid claims to injured parties. (See Enbridge letter to State AG's office of August 24, 2018).

Section J of the 1953 Easement required that Enbridge provide separate funds to pay all claims from an oil spill through a bond, surety, or insurance policy.

Unfortunately, Governor Snyder chose to change this original promise to make Enbridge provide a mechanism to pay all damages. The agreement of October 3, at Section J, now provides for a Financial Assurance Mechanism. The mechanism is really a form of self-insurance. The amount is capped at \$1.9 billion and is not indexed for inflation. The mechanism is set to expire when the twin pipelines are decommissioned and the new authority becomes the owner of the tunnel. But the big problem is that the mechanism is primarily backed by a pledge of unsecured Enbridge equity. Such pledges of funds do not survive bankruptcy. Thus, in a worst-case spill, millions of gallons of oil could foul hundreds of miles of shoreline and wetlands. The Straits could also close to Great Lakes shipping for weeks of cleanup. Damage claims could well be over \$45 billion, as projected by MSU's Dr. Robert Richardson in his November 2018 study (See FLOW website for this report and attached story from yesterday's Lansing State Journal). So Enbridge would necessarily seek protection from such huge claims by filing bankruptcy. Michigan citizens and businesses would then stand in line for relief from a \$1.9 billion dollar mechanism backed primarily by unsecured Enbridge equity now quarantined by bankruptcy.

Even if you ignore the fact that Michigan has almost no need for Line 5, shouldn't Enbridge indemnify and hold us harmless from their oil spill in the Great Lakes and from any costs related to this tunnel project? Let's not forget that this bill apparently guarantees that the twin pipelines continue pumping oil for the proposed ten-year build. Taxpayers should not pay one cent for this tunnel to provide Ontario with this permanent shortcut. . Bottom Line: Neither this bill or the October 3 Agreement provide for payment of all damages, nor do they protect anyone from an Enbridge bankruptcy.. The only way to protect Michigan is through a third-party controlled fund like a surety, bond or insurance policy adequate to pay all claims in a worst-case spill. If you represent Michigan you have to do something to protect its citizens from any tunnel costs or damages from an Enbridge oil spill. We have no legal or moral duty to be Canada's oil shortcut.

leonard@thepages.net

Ensuring an Uninterrupted Propane Supply to Michigan's Upper Peninsula

By: Gary Street, M.S., P.E.

February 19, 2018

Enbridge claims that if its aging Line 5 pipeline through Michigan is shut down - for any reason – many residents of the Upper Peninsula will suffer^{1,2} from a loss of propane to heat their homes.

The following research refutes that assertion by pointing to propane supply alternatives that exist or could be readily developed to serve as a backup plan and eventual replacement for Line 5's supply.

This paper is limited to the issue of propane for the Upper Peninsula when Line 5 is shut down due to a rupture, governmental edict, or any other event.

Conclusions & Recommendations:

- 1. The State of Michigan must prioritize the paramount interests of its citizens by ensuring an uninterrupted and reliable propane supply to the residents of the Upper Peninsula. Several viable alternatives for this transition exist, including the following:**
 - a. An active rail line from a propane distribution hub in Superior, Wisconsin, comes within a few miles of the Plains All American Rapid River propane processing plant, which currently is supplied by Enbridge Line 5. Connecting the rail line to the plant would provide a reliable propane delivery system for the Upper Peninsula when Line 5 is shut down. One tank car per day would be needed to transport propane to Rapid River.**
 - b. Another alternative is to install a 4-inch propane pipeline from Superior, Wisconsin, to Rapid River, Michigan. This also would provide a reliable source of propane when Line 5 is shut down.**
 - c. A third alternative is to use 3-4 tank trucks per day to transport propane to Rapid River from Superior, Wisconsin.**

¹ ".....there are a lot of people that rely on what Line 5 supplies," said Enbridge regional communications supervisor Ryan Duffy". <http://greatlakesecho.org/2017/02/27/great-lakes-businesses-join-forces-against-oil-pipeline/>

² ".....Enbridge has routinely pointed to Line 5's delivery of propane to Michigan's Upper Peninsula as a critical public benefit that helps justify the risk of a spill at the straits".
<http://greatlakesecho.org/2017/02/27/great-lakes-businesses-join-forces-against-oil-pipeline/>

2. Any plan for ensuring an uninterrupted and reliable propane supply for the Upper Peninsula must be based on the best interests of residents of Michigan, not the best interests of Enbridge, the pipeline-owner and operator.
3. Currently there is no publicly available plan in the event Line 5 ruptures. Immediately developing and implementing a backup plan for supplying propane to the Upper Peninsula is essential.
4. The most prudent course of action is for the State of Michigan to immediately institute an emergency plan and make it publicly available while permanent viable alternatives are evaluated as part of a comprehensive Line 5 decommissioning plan. Such precautionary planning both prioritizes the citizens and the Great Lakes.

Who Currently Supplies Propane for the Upper Peninsula?

Natural Gas Liquids (NGLs) are primarily a by-product of crude oil production. Among other compounds, NGLs contain propane. Typically, the amount of propane³ in the NGLs is 28%.

In the case of Line 5, the NGLs originate primarily in Alberta, Canada, with some also coming from the Bakken formation in North Dakota.

Enbridge transports NGLs to other locations via Line 5. A small amount of the propane in the NGLs is removed at Rapid River, Michigan, in the central Upper Peninsula by Plains All American. They utilize NGLs from Enbridge Line 5 to separate and purify propane.

The remaining propane in Line 5, along with the rest of the NGLs is sent primarily to Sarnia for purification and sale as propane, and as a chemical feedstock.

Enbridge currently claims that 65% of the propane⁴ in the Upper Peninsula is supplied^{5,6} by Line 5. In the recent past, they claimed as much as 85%. Data from the U.S. Census Bureau⁷ does not support either of these claims; the actual amount of propane supplied to customers in the Upper Peninsula that originates with Line 5 is about 45-50%. Nevertheless, whether it is 85% or 65% or 45%, the customers in the Upper Peninsula who rely on propane must be assured of an uninterrupted supply.

³https://www.eia.gov/conference/ngl_virtual/eia-ngl_workshop-anne-keller.pdf, p. 17

⁴http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_14_5YR_B25040&prodType=table

⁵As late as January 2016, Enbridge claimed that 85% of the homes in the Upper Peninsula were supplied with propane coming from Line 5. Six months later, in June of 2016, they reduced this amount to 65%. They have not reduced it further since then.

⁶Typical reference: <http://bridgemi.com/2016/01/enbridge-line-5-pipeline-is-vital-to-michigan/>

⁷http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_14_5YR_B25040&prodType=table

Per the U.S. Census Bureau, 17.7% of the homes in the Upper Peninsula use propane⁸. Continuing with data from the U.S. Census Bureau, the total usage is about 47,300 gallons per day. However, one must keep in mind that only about 45%-50% of the U.P.'s propane is supplied by Line 5. Other propane suppliers serve the Upper Peninsula.

If Line 5 were shut down, due to another leak or governmental edict or some other event, propane must remain continuously available to those in the Upper Peninsula

Role of Plains All American at Rapid River, Michigan

While Enbridge and Plains All American are separate commercial entities, they sometimes work closely together. For example, the facility for separating and purifying propane at Rapid River, Michigan, in the central Upper Peninsula is owned and operated by Plains All American. However, the raw NGLs⁹, containing roughly 28% propane, and are the feedstock for Rapid River, arrive by Line 5, which is owned and operated by Enbridge. After Plains All American has removed a small portion of propane at Rapid River¹⁰, the remaining NGLs, including most of the propane, are re-injected into Line 5, with nearly all being sent to Sarnia¹¹.

Role of Plains All American at Kincheloe, Michigan

In addition to the Rapid River processing site, Plains All American operates a propane storage facility at Kincheloe¹², Michigan, in the eastern Upper Peninsula. Propane is shipped to this site by rail from Alberta¹³, Canada, and enters the U.S. at Sault Ste. Marie, Ontario. Propane from Kincheloe is distributed to local propane companies by truck in the eastern Upper Peninsula. Shutting down Line 5, therefore, would have no impact on this source of propane for the Upper Peninsula.

How much of the propane for the Upper Peninsula comes from Line 5?

Line 5 has a capacity of roughly 23 million gallons per day. Since Line 5 is block operated, this means that when it is transporting NGLs 20% of the time, it is transporting at a rate of 23

⁸http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_14_5YR_B25040&prodType=table

⁹ Typical amount of propane in the raw NGLs arriving at Rapid River: Propane: 28%,
https://www.eia.gov/conference/ngl_virtual/eia-ngl_workshop-anne-keller.pdf, p. 17

¹⁰ Less than 2%, See Figure 1

¹¹ Dynamic Risk, **Alternatives Analysis for the Straits Pipelines**, Doc. no.:SOM-2017-01-RPT-001 Project no.:SOM-2017-01 Rev. no.: 2, p. 4-4 (or p. 282)

¹² Kincheloe is a small unincorporated community about 20 miles southwest of Sault Ste. Marie, MI.

¹³ Dynamic Risk, **Alternatives Analysis for the Straits Pipelines**, Doc. no.:SOM-2017-01-RPT-001 Project no.:SOM-2017-01 Rev. no.: 2, p. 4-25 (or p. 303)

million gallons per day of NGLs. The remaining 80% of the time it transports crude oil at a rate of 23 million gallons per day.

Less than 2% of the propane transported in Line 5 stays in the Upper Peninsula. (See Figure 1)

The small amount of propane going to the Upper Peninsula from Line 5 was indirectly confirmed in the recent Dynamic Risk report. Quoting the report¹⁴(emphases added):

*"On the Michigan Upper Peninsula, Line 5 delivers NGL to the Plains Midstream depropanization facility at Rapid River, Michigan. Propane is extracted from the NGL stream and the depropanized NGL stream returned to Line 5 for transport to Sarnia. **This extraction is only a small fraction of the total volume of product transported.....**"*

*Dynamic Risk further indirectly confirmed the amount of propane extracted from Line 5 at Rapid River with the following statement¹⁵: "**Of the NGLs transported in Line 5, less than 5% are delivered into Rapid River.**"*

In fact, a more accurate estimate of the amount of propane extracted at Rapid River from Line 5 is considerably less than the 5% reported by Dynamic Risk. It is no more than 2%.

If Line 5 is shut down, where will the Upper Peninsula's propane come from?

There are several viable paths by which propane can be supplied to the Upper Peninsula in the event Line 5 is shut down for any reason.

- 1) Roughly 50% of the propane supply to the Upper Peninsula is NOT dependent on Line 5. Should Line 5 be shut down, given adequate planning, alternative suppliers driven by free market economics would quickly fill the void left by Line 5.
- 2) Plains All American has a facility at Superior, Wisconsin, dedicated to separating and purifying propane from NGLs. The rated capacity of this facility is 10,000 bpd of NGL¹⁶ or 2,800 bpd of propane. While an incremental expansion of the capacity at Superior may, or may not, be needed, this would enable the shutdown of the facility at Rapid River, making it a distribution center only, and eliminate a frequently cited, but erroneous, justification for not shutting down Line 5.

¹⁴ Dynamic Risk, **Alternatives Analysis for the Straits Pipelines**, Doc. no.:SOM-2017-01-RPT-001 Project no.:SOM-2017-01 Rev. no.: 2, section 4.2.1.1 or pg. 282.

¹⁵ Dynamic Risk, **Alternatives Analysis for the Straits Pipelines**, Doc. no.:SOM-2017-01-RPT-001 Project no.:SOM-2017-01 Rev. no.: 2, section 4.2.2 or pg. 284.

¹⁶ EnCana Corporation, Superior Storage Facility and the Depropanizer: Private Company Information - Bloomberg

- 3) A new pipeline could be built to transfer propane from Superior to Rapid River. This line would be relatively small (per Dynamic Risk¹⁷, 4 inches in diameter). It could follow the existing route of Line 5, thus alleviating right of way concerns.
- 4) Besides a pipeline, other means of transporting propane from Superior, Wisconsin, to the Upper Peninsula are readily available:
 - a. Transport of propane by tank truck. In a joint study by Beth Wallace, a staff member of the National Wildlife Federation, and Gary Street, it was determined that 3-4 tank trucks per day could transport the entire amount of propane now being supplied by Rapid River¹⁸.
 - b. The same study found that 1 rail car¹⁹ per day could also do the job.²⁰
- 5) As mentioned earlier, propane is currently shipped by rail from Alberta to a storage and distribution facility owned by Plains All American at Kincheloe, Michigan. Shutting down Line 5 would have no impact on this facility as it does not utilize Line 5.

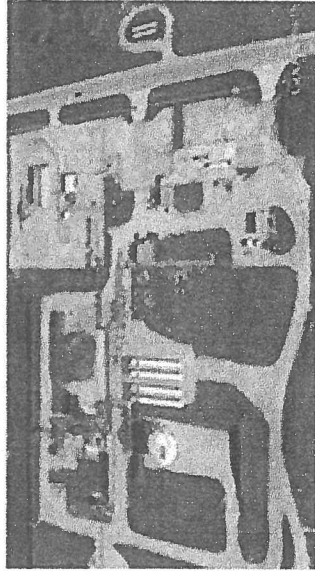
¹⁷ Dynamic Risk, **Alternatives Analysis for the Straits Pipelines**, Doc. no.:SOM-2017-01-RPT-001 Project no.:SOM-2017-01 Rev. no.: 2, Appendix K.4.1.

¹⁸ Per Wikipedia, large tank trucks may have a volume of up to 11,600 U.S. gallons.
https://en.wikipedia.org/wiki/Tank_truck

¹⁹ Per Wikipedia, rail tank cars have a maximum capacity of 34,500 U.S. gallons.
https://en.wikipedia.org/wiki/DOT-111_tank_car

²⁰ An active rail line is within a few miles of the Plains All American Rapid River processing plant. Connecting the rail line to the plant would provide a reliable delivery system. Extension of the rail line would be far less expensive than building a tunnel under the Straits of Mackinac.

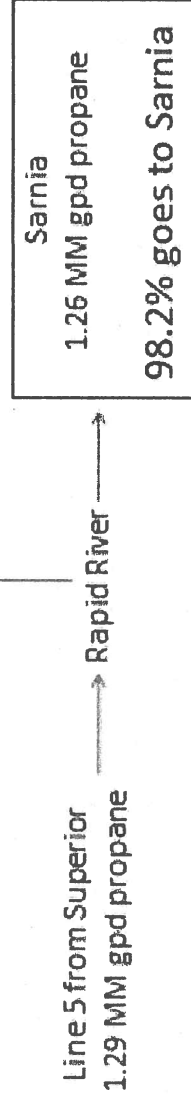
Figure 1



Plains All American Depropanizer, Storage and Truck Loading at Rapid River, MI

Since Enbridge supplies 45-50% of the Propane to the Upper Peninsula - this means that -----

Only 1.8 % of the Propane in Line 5 is extracted at Rapid River



Brugnone: Line 5 threatens the Great Lakes

Nathan Brugnone and Robert Richardson, guest writers

Published 5:30 a.m. ET Dec. 9, 2018



(Photo: Courtesy photo)

Continuing to move oil through Line 5 in the Straits of Mackinac is a gamble with the regional economy of the Great Lakes, threatening steel production, automobile manufacturing, and other vital industries. In a new study commissioned by FLOW (For Love of Water), we estimated that a rupture of Enbridge Line 5 could result in a 15-day closure of shipping routes and cause a negative economic impact of \$45 billion to the Great Lakes regional economy. These impacts would damage the economies of Michigan and neighboring states that are tightly integrated into the shipping economy.



Robert Richardson (Photo: Courtesy photo)

A significant oil spill from Line 5 would likely lead to the closure of shipping lanes across the Straits of Mackinac and through the Soo Locks. Simulations of a 25,000-barrel oil spill from Line 5 revealed off-shore impacts extending beyond the Straits and into Lake Michigan, Lake Huron, and the St. Marys River, which is adjacent to the Soo Locks, where freighters, barges, and tugboats traverse the 21-foot drop between Lake Superior and Lake Huron. Closure of these shipping routes would be necessary to avoid vessel interference during booming and related cleanup operations, and to prevent the transport of oil.

According to the U.S. Department of Homeland Security, closure of one of the two operational locks, the Poe, could send North America into prolonged recession and precipitate the loss of more than 10 million U.S. jobs. Estimates suggest closure of the Soo during the early shipping season would halt U.S. steel production and curtail production along steel-dependent value chains, including the automotive industry.

Impacts from a pipeline rupture would accelerate rapidly due to bottle-necking of vessel traffic, tight coupling and resource dependency along a capital-intensive value chain, lack of readily available capital substitutes, sensitivity of this manufacturing supply chain to missing parts (for example, cars cannot be sold with incomplete brake systems), compounding secondary economic impacts, and insufficient infrastructure to support transportation substitutes.

We estimate lost economic output resulting from a 15-day closure of shipping to be \$45.8 billion. An Independent Risk Analysis led by Michigan Technological University estimated economic impacts of a worst-case oil spill to the shipping sector at only \$42 million. However, this estimate was based on daily operational costs for the ships only, rather than the impacts to the broader value chain. The report acknowledges that a stoppage of five days "will likely result in bottleneck delays in vessels along the Straits as well as at the Soo Locks, but these costs are not considered."

Our estimates are significantly greater due to the consideration of the costs of bottleneck delays, lost business revenue, secondary economic impacts, and the associated effects on steel mills, automobile manufacturing facilities, and related sectors.

A rupture of Line 5 could be easily triggered by the strike of a ship's anchor — such a strike occurred on April 1, but fortunately without rupturing the submerged pipeline. If such a spill were to release oil into the Straits of Mackinac and the St. Marys River, the impacts could be potentially catastrophic for the regional economy of the Great Lakes and beyond. These impacts include not only the rippling effects through shipping-dependent industries, but also the potential damages to natural resources, tourism, commercial fishing, coastal property values, and municipal water systems.

Nathan Brugnone is a Ph.D. student at Michigan State University. Robert B. Richardson is an associate professor in the department of community sustainability at MSU.

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December 10, 2018

Transportation of Northern Michigan Crude Oil to Southern Michigan

By: Gary Street, M.S., P.E.

Northern Michigan crude is currently produced in the Lewiston area and in the Kalkaska area. The crude is trucked from the well head to a site near Lewiston where it is injected into Enbridge Line 5. Once it enters Line 5, it goes mainly to Sarnia.

Per Enbridge, the amount of crude that comes from Lewiston is 14,000 bbls/day. London Economics Institute (LEI), however, estimates that amount at 10,000 bbls/day.¹

At 10,000 bbls/day, this amounts to 420,000 gpd. The nominal volume for a "large" tank truck is 10,500 gallons. Therefore, roughly 40 tank trucks per day would be needed to transport the crude from Lewiston, based on the LEI estimate. If the Enbridge estimate of 14,000 bbls/day is correct, the number jumps to 56 tank trucks/day.

As an alternative, rail could replace truck transport. A rail car has a nominal capacity of 34,500 gallons of crude, which translates to 13-17 tank cars per day. Lake State Railway has a line that runs from Gaylord to the Flint area where it connects with other rail connections that link to Detroit and Toledo.

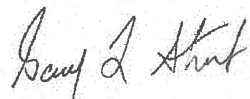
To make the rail option happen, a combination of the following would be needed:

1. Construct a new terminal facility at Gaylord.
2. Transport crude from Lewiston or Kalkaska by either ---
 - Truck
 - Pipeline

The plan suggested above will require a capital expenditure and time to complete.

Most importantly, however, it maintains the ability to transport crude oil from northern Michigan to nearby Michigan and Ohio refineries, and require far less time and capital than to construct a tunnel under the Straits.

Please contact me with any questions or comments.



231 529 6557

989 284 9596

¹ Ibis, p. 11

RAILROADS OPERATING IN MICHIGAN

- AGRI Auburn & Bi-State Railroad
- AMTK Amtrak (National Railroad Passenger Corporation)
- AA Ann Arbor Railroad
- CP Canadian Pacific Railway
- CSX Charlotte, Southern Railroad
- CR Conrail (Consolidated Rail Corporation) (Owned by CSX and NS)
- CSX CSX Transportation
- DECO Detroit Connecting Railroad
- ELS Erie & Lake Superior Railroad
- GRV Grand Rapids Eastern Railroad
- GLC Great Lakes Central Railroad
- HLE Huron & Eastern Railway
- IN Indiana Northwestern Railroad
- IO Indiana & Ohio Railroad
- LSI Lake Superior & Ishpeming Railroad
- LIRL Lapeer Industrial Railroad
- LSR Lake State Railway
- MOE Marquette Rail
- MAI Michigan Air-Line Railway
- MAM Mid-Michigan Railroad
- MS Michigan Shore Railroad
- MSO Midland Southern Railroad
- NS Norfolk Southern Railway
- WHM West Michigan Railroad
- WPS Western Passenger Rail Service (Amtrak)

◆ Lake State Railway Impoundment Point

