THE FUTURE OF CANADA’S TRANS MOUNTAIN PIPELINE

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Introduction

This paper highlights the history of the Trans Mountain pipeline and discusses the positive and negative impacts of the expansion that is currently planned. The purpose of the pipeline expansion is to transport a higher volume of Canadian produced oil to the west coast in order to ship it to international markets (most likely Asia). Given the recent controversies surrounding the social acceptance of pipelines, and analysis of the alternative methods of crude transportation will be explored. Additionally, Trans Mountain’s current status and potential of the expansion project is discussed, particularly focusing on timelines. Opposition to the Trans Mountain expansion will be introduced, as well as the consequences of this opposition to the future of the project. Major conflicts are outlined including: environmental risks, First Nations agreements, and political opposition. Finally, an opinion section will provide a discourse on the merits of the Trans Mountain pipeline expansion and the next steps that should be taken.

Background

Canada has an impressive network of over 840,000 kilometres (km) of pipeline infrastructure (Pipelines across Canada, 2016). Figure 1 highlights Canada’s major pipelines. Not only does pipeline network consists of major trunk lines such as those displayed in Figure 1, hundreds of thousands of kilometers of smaller gathering and local distribution lines criss-cross the country.

Figure 1: Network of major Canadian pipelines (https://www.nrcan.gc.ca/energy/facts/crude-oil/20064)
The Trans Mountain pipeline runs from Edmonton, Alberta (AB), to Burnaby, British Columbia (B.C.) (Figure 2). This pipeline was built in 1953 with initial specifications that would transport of 150,000 barrels of oil per day (bpd). Transport capacity been increased numerous times throughout Trans Mountain’s history, and today, the pipeline transports roughly double the original amount on a daily basis (Trans Mountain Expansion Project Media Relations [TMEPMR], 2018). There are currently 23 pump stations along the pipeline that helps to maintain its ~300,000 bpd capacity at a flow rate of 8 kilometres per hour (TMEPMR, 2018). Trans Mountain also possesses four terminals with storage and loading facilities in Edmonton, AB; Kamloops, B.C.; Abbotsford, B.C.; and, Burnaby, B.C. Additionally, the Abbotsford terminal is connected to a pipeline that sends crude oil to Washington State. Trans Mountain terminates at the Westridge Marine Terminal where oil is shipped to international markets via tanker.

In February 2012, Kinder Morgan Canada Ltd. (KM) announced plans to expand the Trans Mountain pipeline. The purpose of the expansion is to meet increasing world oil demands and help Canadian oil reach new markets. The latter is the main force for the proposed project as oil companies requested and committed to use the added capacity to reach these markets. Currently the majority of Canadian oil exports are shipped directly to the United States (U.S.) by pipeline. With the increased pipeline capacity to the B.C. coast, more oil tankers will be required to carry product to Asian markets. KM argues that this will help to broaden the consumer base for Canadian oil and help to strengthen Canada’s energy future.
In December 2013, KM submitted an application to the National Energy Board (NEB) to build a new pipeline beside the existing Trans Mountain line (i.e., “twinning” the existing pipeline). The estimated cost for the 980 km pipeline is approximately 7.4 billion Canadian dollars (CAD) (Clancy & Graney, 2018). In May 2016, the NEB approved KM’s proposal with conditions. KM faced many challenges after this approval (described below) in order to gain support and the necessary permits that would allow for construction to proceed. These challenges resulted in the suspension of the project, as KM did not fulfill requirements by their internally set deadline of May 31, 2018. On May 29, 2018, just prior to the KM deadline, the Government of Canada intervened, announcing the purchase of the pipeline for 4.5 billion CAD. At the time of purchase, the Government of Canada indicated their intent to find a buyer for the pipeline “at the right time and for the right price.” The nationalization of Trans Mountain resulted in controversy in many parts of the country.

**Current Status**

A total 157 conditions need to be met before the Trans Mountain Expansion Project (TMEP) can be allowed to proceed with construction. Updates and documentation is continuously being submitted to NEB for approval, and to date, 48 conditions have been accepted, 43 are under review, 50 have no filings/documents, six do not require any filing, and ten are under recurring filing (NEB, 2018). Additionally, the NEB has approved 66% of the detailed route plan (Stevenson, 2018). Currently there are hearings being held regarding the detailed route per segment. These hearings are meant to settle disputes with landowners and other affected stakeholders.

Construction is scheduled to start in Edmonton in August 2018. Trans Mountain has submitted a six-month construction plan to NEB with an aggressive target of completion in 2020. The six-month plan includes expanding the terminal in Burnaby, B.C., and developing a tunnel portal at the Westridge Marine Terminal. The company plans to start staking and flagging a 290 km stretch between Edmonton and Jasper National Park in August. In September, the same progress will start over 120 km in B.C. between Mount Robson Provincial Park and Blue River. Some protesting has occurred in B.C.; however, law enforcement has made it known that they will get involved if protestors actively restrict progress from being made on the project.

**Benefits and Drawbacks**

According to the Trans Mountain website, many national benefits can be realized if this project were to be constructed. As previously mentioned, one major benefit is increased access to global markets. Another benefit is the estimated 46.7 billion CAD in tax revenue that is estimated over the first 20 years for all levels of government. Alberta would receive most of the revenue at approximately 19.4 billion CAD followed by British Columbia with 5.7 billion CAD and the rest of Canada with 21.6 billion CAD. Municipal tax payments are an estimated 922 million CAD to B.C., and 124 million CAD to Alberta. These tax revenues would help to support public services in these jurisdictions and others across the country. The construction and operation of the pipeline will also provide many jobs. It is estimated that 15,000 jobs will be created each year during the construction phase, and 37,000 direct and indirect jobs per year during the operations phase. Over the 20-year project an estimated 800,000 jobs will be created.

Trans Mountain has agreements with 43 First Nations. These benefits associated with these agreements include job and training opportunities as well as funding for community initiatives. Some of the First Nations are also interested in partial ownership that would provide them with added revenues. Trans Mountain intends to provide resources and funding to other communities that may be impacted by
construction. These include improvements to emergency management, maintenance to trails and parks, upgrades to infrastructure, and funding to local education and training programs.

Trans Mountain has identified a total of 140 First Nations or Indigenous Groups that could be affected by its pipeline expansion plans. Fourteen of these groups are currently in legal battles with the project, and 85 have yet to reach an agreement with Trans Mountain (Owen, 2018). Of the 85, some prefer not to engage, some are opposed, and some are working on employment agreements. The 14 groups challenging the project are doing so citing the Crown’s duty to consult and a lack of accommodating Indigenous communities' constitutional rights. If the Federal Court of Appeal finds that consultation between the government, NEB, Trans Mountain and First Nations and Indigenous communities was insufficient it could halt the project. This dissent could harm relationships between some First Nations and Indigenous groups, the government and oil and gas industry during a time of prioritized reconciliation efforts.

Potential drawbacks include protests and political risk. Before the federal government stepped in there was a battle between Alberta and B.C. over the project. The Alberta government wanted to push the project ahead while B.C. resisted. Alberta Premier Rachel Notley hit B.C. with a wine embargo in an attempt to promote constructive dialogue between the two provinces. She was also on the verge of halting oil and gas flow into B.C. and looked into other retaliatory methods that would get the B.C. government to back down. B.C. Premier John Horgan is now pursuing an order that would allow them to control shipments of oil through the province under environmental grounds. The battle between the provinces was harsh, and it may have created a divide among the respective residents of each province. Some individuals may feel like Alberta and the federal government have bullied them. This could lead to political and civil unrest, and it could dissuade potential investors if they see this as too great a risk to the expansion project. Furthermore, international perceptions of the project and the Canadian oil and gas industry could be negatively impacted.

Protests have been occurring since plans to expand Trans Mountain were announced. A ramp-up of demonstrations occurred once the federal government purchased the pipeline, resulting in some arrests.

**Environmental Facts**

Of the 157 NEB conditions of approval, 43 pertain to environmental concerns related to air quality and greenhouse gases, water quality, fish and fish habitat, wildlife and wildlife habitat, soils, vegetation and wetlands, and other general topics dealing with environmental assessments and plans (NEB, 2018). The NEB is committed to ensuring the environment is protected during and after the pipeline is constructed and in operation.

The main risk to health and the environment are pipeline leaks and spills. These can occur in any part of the transportation process or from the holding tanks. The transportation methods posing a risk with the TMEP are pipeline leaks or tanker incidents resulting in fluid release into the ocean. These risks are discussed in the section below.

**Alternative Transportation Methods**

Oil is also transports by rail car. As shown in Figure 3, in 2016 it was estimated that 1 million barrels per day were moved out of western Canada by rail. However, this method of transportation has been shown
to be dangerous. In June 2018, a train carrying oil from Alberta derailed in Iowa causing a spill. Of the 32 rail cars carrying crude, 14 of them leaked an estimated 871,000 litres (approximately 5500 barrels). This derailment was the result of flooded tracks. Another rail includes includes the 2013 tragedy that occurred in Lac-Mégantic, Quebec, where 47 people were killed after 6 million litres of oil ignited in the town after train derailment. Although derailment is not a common occurrence, the consequences can be hazardous to humans, wildlife, and aquatic life. Even though crude by rail transportation possesses risks, the benefit of existing infrastructure is appealing to oil producers with limited options at getting their products to market.

![QUARTERLY VOLUMES OF CRUDE OIL EXPORTED TO THE U.S. BY RAIL](https://www.nrcan.gc.ca/energy/facts/crude-oil/20064)

Figure 3: Canadian crude oil exports via rail (https://www.nrcan.gc.ca/energy/facts/crude-oil/20064)

With a carrying capacity of less than one third of a rail car, transport trucks lack the carrying capacity for transporting significant volumes of oil. Increasing transportation by truck will increase traffic and greenhouse gas emissions. Vehicular accidents are also the most common type of transportation accident when compared to rail, air, and sea. However, the environmental and health risk is lower as the amount a truck can carry is small; and therefore, the impact of a spill would be significantly less than that associated with a rail car or oil tanker.

The completion of the TMEP would result in elevated tanker traffic on the west coast. Tankers have contributed to many large oil spills throughout history, with half of the top 10 largest oil spills associated with tankers. Human error has been determined to play a significant part in these incidents, and new technologies have helped to reduce human error induced incidents. In order to help prevent the release of fluid as a result of a tanker incident, the use of double hulls has become a requirement in Canadian waters. This requirement helps to reduce the risk of leaks, as there is a lower chance of puncturing through both hulls during an impact.

According to the Transportation Safety Board of Canada (TSB), federally regulated pipelines have a good safety record. In 2015 and 2016, there were no pipeline accidents. As shown in figure 4, in 2017 there
was a jump to five accidents, four of which released product. TSB states that no fatalities have occurred due to any accidents since its inception in 1990.

In comparison, the U.S. had 25 major accidents, and 297 incidents in 2017 that resulted in eight fatalities (Pipeline Incident 20 Year Trends, 2017). Pipelines are becoming safer with constant monitoring and new technology is allowing for better detection leaks. Pipelines are an easy, quick, and relatively affordable method of transportation. In general they are the safest method when compared to other transportation alternatives.

Opinion

Canadians are divided on the social acceptance of pipeline infrastructure. One reason for a lack of support may be due to the fact that many do not recognize the benefits and the opportunities that will arise from supplying an energy hungry Asian market with Canadian crude. This growing oil demand will be met one way or another, so it only makes sense that Canada’s ethically produced oil fill as much of this market as possible. As well, international perceptions of Canada’s investment risk could be negatively impacted if the Trans Mountain expansion project is not approved. Failure to deliver would hurt many industry stakeholders and all levels of government, which in turn is detrimental to Canadians. One way to build support for the Trans Mountain project is to educate citizens on the full details of this pipeline, including all of its associated costs and benefits.
Canada works ethically, responsibly and safely to produce and transport its oil, making it one of the best options for supplying international markets. Furthermore, evaluations of other oil producing regions indicate that they are not as ethical or environmentally responsible as Canada. The Canadian government, citizens, oil companies and local First Nation communities want to see this project succeed. The socio-economic benefits appear to outweigh the risks especially considering the additional tax and royalty revenues, and the jobs that the project will create during its construction and operation periods.

Since it became operational (circa 1953), Trans Mountain has yet to record a tanker-related spill. Trans Mountain should be expanded, but the federal government should sell it as this large purchase was not budgeted, will result in a substantial increase to the national deficit.

Conclusion

Construction of the Trans Mountain expansion will commence shortly, and holding capacity and storage facilities are already being increased. With 66% of the project approved, and plans being made for acquiring final permits, it appears that the project will go ahead. Many individuals see this project as a great benefit to the country, myself included, and a careful evaluation of the full scope of this expansion project makes it clear that the benefits associated with pipeline construction and operation vastly outweigh social and environmental risks. However, at this moment we must patiently await results from the legal battles that are currently under way between First Nations and Indigenous groups, environmental special interest groups, the federal government, provincial governments and Trans Mountain Corporation. If the courts rules in favour of the First Nations and environmental groups that oppose the project it may never be expanded.
References


