



For Immediate Release January 18, 2022

Trans Mountain fails to explain to Regulator why its Fraser River Tunnel collapsed

Unceded kʷikʷəłəm Territory (Coquitlam, BC) - Three local environmental groups are renewing calls for the Canada Energy Regulator (CER) to deny Trans Mountain Pipeline's proposal to relocate and redrill 350 metres of its new pipeline tunnel under the Fraser River after parts of the tunnel collapsed in November. Six NDP Members of Parliament have added their voices [in a letter](#) to the CER and Minister Jonathon Wilkinson.

Members of the PipeUp Network, BC Environmental Network and Protect the Planet filed [Statements of Opposition](#) with the CER two weeks ago over concerns the company was taking shortcuts and ignoring the advice of its own consulting engineers thereby endangering the safety of the Fraser River. Trans Mountain responded to those concerns in a [submission to the CER on January 13](#), claiming that it had already informed CER of its plans and did not intend to do any more studies.

PipeUp Network spokesperson, Lynn Perrin, said "The [tunnelling failure, effluent leaks and sinkholes](#) are all new information that illustrate the significance of the risks predicted in the 2015 reports. Trans Mountain must believe that CER will look the other way, because these issues all point to a need for more studies and testing."

Protect the Planet spokesperson, Dr. Tim Takaro, added: "Even the Company's own consultant, BGC Engineering, recommended the Company drill more bore holes tests to study the soil in the Fraser River before proceeding". The area of the River crossing is known to have very unstable soil, with one area considered a "flow failure zone". [The BC Government had to drill 84 test bore holes in the 1950's](#) to get enough information to properly design the first Port Mann Bridge. "All indications reveal that Trans Mountain ignored its consultants' advice and did not drill any bore holes in the River crossing area", said Dr. Takaro. "If they did drill some bore holes, then they are keeping the information secret, possibly

because the results show the crossing is not safe for a pipeline. This is not good enough for the Fraser River, the main artery of our Province”.

The BC Environmental Network (BCEN) demanded CER require Trans Mountain post a bond for cleaning up any spills in the Fraser. Trans Mountain replied that a bond is not needed since it has \$750 million insurance to pay for spills. BCEN Chair, Rod Marining, called that outrageous. “A bond held by the CER is the only thing that makes sense because it allows clean-up to start immediately without having to wait for approval from an insurance company. [The Kalamazoo River oil spill](#) cost over \$1.2 billion to clean up, and yet diluted bitumen still lines the bottom of the river with serious consequences. The amount Trans Mountain is quoting is not anywhere near enough.”

These concerns have drawn the support of six NDP Members of Parliament. On January 14, they submitted an [open letter to CER and to Minister of Natural Resources, Jonathon Wilkinson](#), requesting the rejection of Trans Mountain’s plans until the background studies are done. The MPs also called Trans Mountain to task for not consulting a number of First Nations in the area. The tunnel exit in Coquitlam is directly adjacent to a registered aboriginal archeological site.

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Detailed review of TMX response filed with CER 13-Jan-2022

1) TM's response of January 13, 2022 ignores the recommendations of its own BGC engineering report of 2015 which recommended drilling test bores. Instead, Trans Mountain tries to assert that nothing has changed to warrant more studies. That is incorrect. The failure of the tunnel, the sink holes and effluent releases are new information that indicates that risks predicted in the 2015 reports are significant and warrant updated studies.

Environmental groups believe Trans Mountain should drill test bores at the crossing site, as recommended by its engineers in 2015. The tunneling which the company did in the fall of 2021 may provide some information about the soil, but an independent geological engineering firm needs to study that data.

Trans Mountain used soil data from test drilling conducted by other groups but those sites were at least 276 metres downstream.

2) The BGC report that TM relies on to justify its tunneling approach submitted to CER is titled a “preliminary” report. The Musqueam First Nation pointed this out in writing to TM and the CER in 2018. Musqueam expected to get updated information from TM to reply. However, updated geological information about the lands at Fraser River crossing has not been provided to the CER nor to the Musqueam Nation. A finalized BGC report has not been filed with the CER.

3) TM also relies on the 2015 Hatch Mott McDonald (HMM) Report also submitted to the CER. However, that report is also titled a preliminary report. A finalized HMM report has not been filed with the CER.

4) The soil in the River crossing area is very unstable. The Province had to drill 84 bore holes to properly design its first Port Mann bridge. Metro Vancouver also drilled test bores before installing its water line under the river. Trans Mountain only drilled one bore hole and that was in Coquitlam, not at the River crossing. At one point TM acknowledged the need to drill more bore holes along the river, and even had a permit to drill 2 bore holes in the Fraser River in 2017.

The Company's 2017 liquefaction and lateral displacement study noted that bore hole BH06-01 - SCPT06-01 had a high LD of 7.2 and the borehole is located "within a flow failure zone". Will the "flow failure zone" cause a pipeline leak in the future. Only additional soil studies at the site of the proposed pipeline will provide an answer.

CER should not allow Trans Mountain to proceed without drilling bore tests in the Fraser River for something as significant as a pipeline, intended to operate for years and with risks of leaking of diluted bitumen (dilbit) into the Fraser River.

5) Trans Mountain should submit a report about Direct Pipe or Microtunneling methods for the redrill because conventional Horizontal Directional Drilling (HDD) has not worked. Those are safer methods and since the drilling would only be 350 metres long it should be much easier. TM maintains that HDD worked for 80% of the tunnel, and it will work for the remainder. It has provided no independent engineering reports which support this view. Trans Mountain has also not disclosed details of what went wrong the first time necessitating a relocation and redrill.

6) On Trans Mountain Quality Assurance report of December 2021, they report on non-conformance number S7-KLTP-NCR-0151 the “damage to a section of product pipe during extraction of Fraser River HDD section”. On their request to redrill they claim “mechanical failure of the HDD pipe as it was pulling the product pipe into the bore hole.” Trans Mountain may have done a root cause analysis of the tunneling failure and should provide the report to the CER. If it has not done a root cause analysis, then it should do so immediately, including

verifying the current state of the 80% already drilled hole, as some sections may have collapsed and will impede pipe pulling back again.

In 2015, Hatch Mott MacDonald Engineering warned that hydraulic fracturing might happen on the Coquitlam side and suggested the HDD contractor use drill intersect method (Drill Intersect is drilling from both sides and meeting in the middle). In 2018, Trans Mountain was advised by Thurber Engineering that HDD without drilling intercept and casing posed concerns for the Fraser and the bypass. Thurber Engineering identified other safer methods such as microtunneling. The root cause analysis can help determine if the tunneling method or the soil structure caused the tunneling failure and it might provide useful information for planning a pipeline to never leak.

7) Trans Mountain should investigate and report on the stress effects on the long-term safety of the pipe due to the relocation of part of the pipe 8 metres to the west.

Hatch Mott MacDonald Engineering reviewed the stresses on the pipeline design anticipating the pipe would only have an up/down vertical bend. Adding a horizontal bend of 26 feet requires further study. The bend stresses might cause dilbit leaks in the river 5 years from now.

Trans Mountain admits the relocation will increase certain stresses. However, it also suggested to the CER that there was an “assumed” pipe thickness of 19mm and it asserts the 21.5mm pipe now being used addresses stresses adequately”. However, the liquefaction and lateral spreading report of 2017 states that a thicker 21.5mm pipe will be used because of the soil structure. Trans Mountain attempted to install a 21.5mm pipe but the attempt failed. By Trans Mountain’s own logic, the pipe should be thicker than 21.5 in order to accommodate additional stresses from the horizontal bend which is being added to the pipeline. Further, moving the HDD exit point closer to the Fraser River and a decreased length of 86 meters for the revised route will tighten the vertical radius, further increasing the stresses on the steel pipe.

Trans Mountain asserts the redesign reduces the pipe stress due to the original bend, but it has provided no evidence to support this assertion. Trans Mountain also says it has done some internal analysis of pipe bend stresses. Trans Mountain should file its internal reports containing the analysis of the pipe bend stresses with the CER.

The Drilling Permit Mystery

In March 2017 Trans Mountain applied to the Vancouver and Fraser Port Authority for a permit to drill two bore holes at the River crossing. The Port issued the permit on May 15, allowing Trans Mountain to drill the bore holes by November 30, 2017. Did Trans Mountain drill the bore holes?

Trans Mountain has not filed any information about bore holes drilled in 2017 with the CER. Protect the Planet has phoned and emailed Trans Mountain on several occasions to confirm if it drilled bore holes in the river in 2017 but the Company has refused to answer. Is Trans Mountain hiding anything? Did it drill and discover the area is unsafe for a pipeline?

The Mystery of the Trans Mountain - Musqueam Exchange

In 2018, Musqueam First Nations informed the CER that it was concerned about Trans Mountain's proposal to drill the Fraser River tunnel and it requested more time to hire its own engineering firm to review the Company's reports. Musqueam hired Higher Ground Consulting.

The engineer for Higher Ground and the Musqueam First Nation both told CER that they were informed by Trans Mountain on August 9, 2018 that it has new geological analysis of the crossing and they wanted to review the newer information rather than the older information. Higher Ground Consulting and the Musqueam staff member never received the information. Trans Mountain never filed any new information about this crossing with the CER.

Musqueam's discussions with the CER about the crossing were halted when aboriginal groups succeeded in court and the whole pipeline seemed in jeopardy of cancellation. There are no further records in the CER on this topic.

Did Trans Mountain do a new report? If affirmative, why has Trans Mountain not filed it with the CER? What is the content of this report? Perhaps it shows that the chosen location is unsafe for a pipeline.

Conclusion

Trans Mountain filed preliminary studies in 2015, which highlighted several risks with crossing with HDD on untested soils. One of those risks recently became reality. Trans Mountain still does not show a clear story of what happened, why it did not follow its own experts, and why those initial studies are not updated by the same engineers who highlighted those risks. Instead, Trans Mountain recites earlier approval from CER based on preliminary reports and incomplete information and this being a "minor" deviation.

We trust that CER, as a regulatory body, will do a full audit on the whole HDD plans history and look at all root causes and consequences of this latest event, before approving deviation to a plan that was flawed in the first place.

CER and TM should consider an alternative location for the Fraser tunnel or, at a minimum, Trans Mountain should conduct additional studies into the proposed crossing location. It goes without saying that the Fraser River tunnel should be done properly and safely.

GENERAL BACKGROUND on STOP TMX Coalition

The estimated \$20 billion pipeline project was purchased for \$4.5 billion from Texas oil giant Kinder Morgan by the federal government in 2018. This creates a conflict of interest for the federal government because the federal government is responsible for regulating pipelines through the Canada Energy Regulator (CER).

Costs on the pipeline have ballooned since the purchase requiring ever greater subsidies from the federal government. Trans Mountain has not provided a cost update since February 2020. This lack of transparency from Trans Mountain is not limited to finances. Trans Mountain's press release about the Thompson River tunnel redrill referred to "technical issues" as the cause of the need to redrill. Trans Mountain claims the Fraser River tunnel problem is due to a "mechanical failure", however the tunneling equipment performed as expected. The Fraser

tunnel problem has its origin in the Company's decision to not drill test bores at the crossing and to use HDD contrary to the advice of its experts.

The project is opposed by the Squamish Nation, Tsleil-Waututh Nation and Coldwater Indian Band, who were denied leave to appeal by the Supreme Court of Canada. It also conflicts with Canada's commitment under the Paris Climate Agreement to keep global temperatures from rising above 1.5 degree Celsius. The project crosses 1,300 streams and rivers and would impact numerous drinking water sources along the route, as well as Burnaby Mountain and Simon Fraser University. It would also spell a 7-fold increase in tanker traffic in Burrard Inlet and an increased threat to the endangered Southern Resident Orcas. The Province of British Columbia, the State of Washington, and 20 municipalities oppose the pipeline project, including the Cities of New Westminster and Burnaby.

The existing Trans Mountain pipeline is already a major environmental and public health hazard with a long history of disastrous spills. In June 2020, 50,000 gallons of crude oil spilled from a pump station located above an aquifer that supplies the Sumas First Nation with drinking water. The thirteen 67-year old tanks at the terminus of the pipeline are too close together to put out in the event of a fire, according to the Burnaby Fire Department. The tank farm expansion makes it more difficult for the Burnaby Fire Department to fight fires, according to [a recent affidavit from the Fire Chief](#). 240,000 people live within the 4.2 km radius of the site that is considered an evacuation zone including 32,000 members of the SFU community.

A growing number of insurers have pulled out of the pipeline project; those still involved are facing pressure to divest. In November 2020, the Canada Energy Regulator released a report stating that there is no need for any pipeline expansion if Canada takes measures to curb GHGs. In Sept 2020, [economists warned](#) that the TMX project was no longer financially viable. Indigenous groups, as well as the final report of the National Inquiry into Missing and Murdered Indigenous Women and Girls have pointed out the connection between resource extraction man-camps and [violence against Indigenous women](#).

The coalition of environmental groups opposing the TMX pipeline includes, but is not limited to, Protect the Planet Stop TMX (PPST), Mountain Protectors, Protect the Inlet, Extinction Rebellion Vancouver, STAND.earth, Burnaby Residents Opposing Kinder Morgan Expansion (BROKE), PipePup Network, Climate Convergence, Dogwood, Colony Farms Regional Park, BC Environmental Network, Babies for Climate Justice, Sustainabiliteens Vancouver, 350 Vancouver, 350 SFU, and Wilderness Committee.