



Canada Energy
Regulator

Régie de l'énergie
du Canada

Suite 210
517 Tenth Avenue SW
Calgary, Alberta
T2R 0A8

517, Dixième Avenue S.-O.
bureau 210
Calgary (Alberta)
T2R 0A8

LETTER DECISION

File OF-Fac-Oil-T260-2013-03 63

30 June 2021

To: All participants in Detailed Route Hearing MH-010-2020

**Trans Mountain Pipeline ULC (Trans Mountain)
Trans Mountain Expansion Project (TMEP)
Certificate of Public Convenience and Necessity (Certificate) OC-065
Detailed Route Hearing MH-010-2020 – Chilliwack School District #33¹
School District), District Parent Advisory Council (DPAC), and City of
Chilliwack (Chilliwack)
Decision of the Commission of the Canada Energy Regulator (Commission)**

1	BACKGROUND	2
2	PROCESS CHANGES DUE TO THE COVID-19 PANDEMIC.....	4
3	DETAILED ROUTE HEARING MH-010-2020.....	4
3.1	OVERVIEW OF THE PROPOSED ROUTE ON THE LANDS	8
4	IS TRANS MOUNTAIN'S PROPOSED ROUTE THE BEST POSSIBLE DETAILED ROUTE?.....	10
4.1	HAS TRANS MOUNTAIN ADEQUATELY ADDRESSED CONCERNS WITH THE PROXIMITY OF THE PROPOSED ROUTE TO WATSON ELEMENTARY SCHOOL?.....	10
4.2	WHAT IS THE RISK TO THE SARDIS-VEDDER AQUIFER AND ASSOCIATED WATER WELLS?.....	14
4.3	DID TRANS MOUNTAIN APPLY ITS ROUTING CRITERIA APPROPRIATELY?.....	19
4.4	WHO HAS THE BURDEN OF PROOF WITH RESPECT TO ALTERNATE ROUTES?	24
4.5	CONSIDERING CHILLIWACK'S ALTERNATE ROUTES, IS TRANS MOUNTAIN'S PROPOSED ROUTE THE BEST POSSIBLE ROUTE?	26
4.6	CONSIDERING DPAC'S SUBMISSIONS REGARDING ALTERNATE ROUTES, INCLUDING ITS SUPPORT OF THE WATERWEALTH PROPOSED ALTERNATE ROUTE, IS TRANS MOUNTAIN'S PROPOSED ROUTE THE BEST POSSIBLE ROUTE?.....	30
4.7	THE COMMISSION: TRANS MOUNTAIN'S PROPOSED DETAILED ROUTE IS THE BEST POSSIBLE DETAILED ROUTE.....	33
5	ARE TRANS MOUNTAIN'S PROPOSED METHODS OF CONSTRUCTING THE TMEP PIPELINE THE MOST APPROPRIATE?	33
5.1	THE COMMISSION'S DECISION: TRANS MOUNTAIN'S PROPOSED METHODS OF CONSTRUCTION ARE THE MOST APPROPRIATE FOR THE LANDS	35
6	IS TRANS MOUNTAIN'S PROPOSED TIMING OF CONSTRUCTING THE TMEP PIPELINE THE MOST APPROPRIATE?	35
6.1	THE COMMISSION: TRANS MOUNTAIN'S PROPOSED TIMING OF CONSTRUCTION IS THE MOST APPROPRIATE FOR THE LANDS.....	36
7	CONCLUSION	38

¹ This Statement of Opposition Filer has also been referred to in the Commission's detailed route hearing processes as the Chilliwack Board of Education.

1 Background

On 16 December 2013, Trans Mountain filed an application with the National Energy Board (NEB or Board) under section 52 of the *National Energy Board Act*² (NEB Act) for a Certificate authorizing the construction and operation of the TMEP.

The TMEP includes twinning the existing 1,147-kilometre-long Trans Mountain Pipeline (TMPL) system in Alberta and British Columbia (BC) with approximately 981 kilometres of new buried pipeline; new and modified facilities, such as pump stations and additional tanker loading facilities at the Westridge Marine Terminal in Burnaby; and reactivating 193 kilometres of the existing pipeline between Edmonton and Burnaby. Trans Mountain requested approval of a 150-metre-wide corridor for the TMEP pipeline's general route.

Upon receipt of the application, the NEB commenced a public Certificate hearing process. Following the Certificate Hearing, on 19 May 2016, the NEB issued its OH-001-2014 Recommendation Report ([A77045](#)) recommending that the Governor in Council (GIC) approve the TMEP and its general pipeline corridor.

The TMEP was approved by Order in Council (OIC) P.C. 2016-1069 in November 2016. The NEB issued Certificate OC-064 and began work on various regulatory processes, including the 2017/18 detailed route approval process.

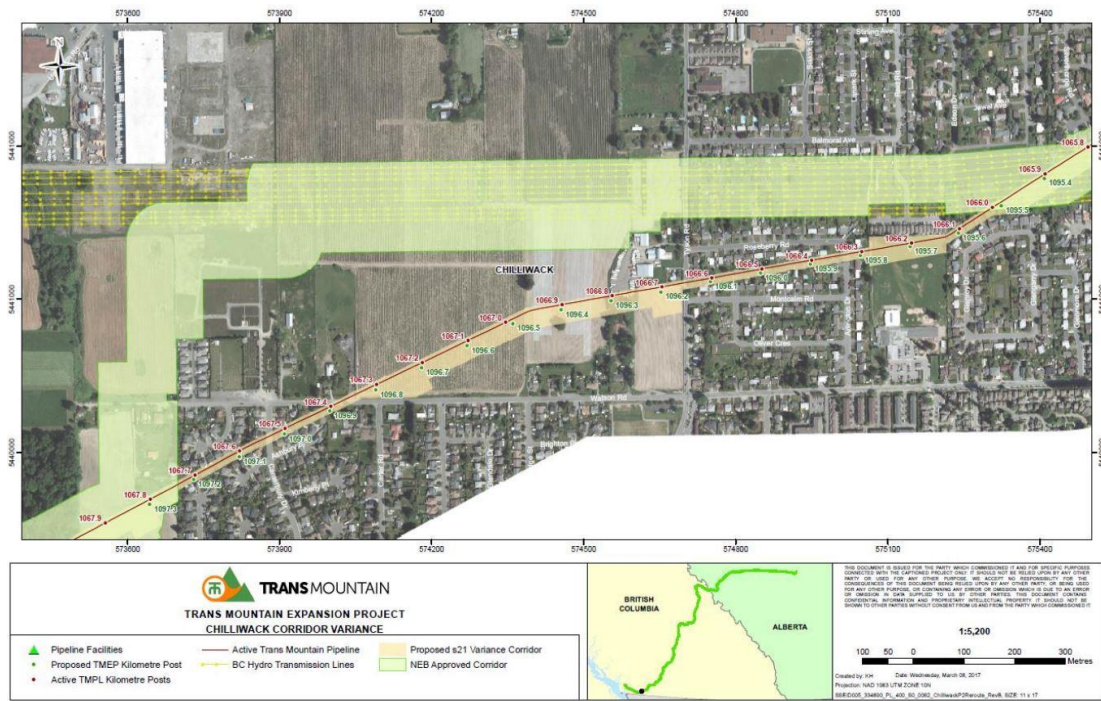
Certificate OC-064 included approval of a corridor through Chilliwack that followed BC Hydro transmission lines for some distance (Original Corridor). On 27 March 2017, Trans Mountain applied for the Chilliwack BC Hydro Route Realignment ([A82269](#)) in order to vary the NEB-approved corridor through Chilliwack (Chilliwack Realignment). A public hearing (OH-001-2017) was held. Chilliwack, the S'ólh Téméxw Stewardship Alliance (STSA), and The WaterWealth Project (WaterWealth) participated as intervenors and the NEB received 11 letters of comment.

The Chilliwack Realignment was to vary the pipeline corridor for a short section, relocating the TMEP away from the BC Hydro lines and to within the existing TMPL right-of-way (RoW). The realignment was outside the Original Corridor for approximately 1.8 kilometres. In April 2018, the NEB issued its OH-001-2017 Report ([A91053](#)) [Realignment Report] in which it recommended approval of the application to vary the corridor (Approved Corridor). On 21 June 2018, the GIC, via OIC P.C. 2018-859, approved the issuance of Order AO-007-OC-064 to vary Certificate OC-064 to reflect the Chilliwack Realignment, subject to conditions. This Order was issued on 4 July 2018 ([A92817](#)).

The Original Corridor and Approved Corridor related to the Chilliwack Realignment are shown in **Figure 1** below.

Figure 1 – Original Corridor and Approved Corridor in the Chilliwack Realignment (Source: [A91053](#))

² R.S.C., 1985, c. N-7 (repealed).



On 30 August 2018, the Federal Court of Appeal (FCA) issued its decision in *Tsleil-Waututh Nation v. Canada (Attorney General)*³ (FCA Decision), setting aside OIC P.C. 2016-1069 and remitting the matter back to the GIC for appropriate action. Following the FCA Decision, the NEB reconsidered the matter of TMEP-related marine shipping and the Government of Canada reinitiated consultations with Indigenous⁴ peoples.

Following a second public hearing process, the NEB issued its MH-052-2018 Reconsideration Report ([A98021](#)) in February 2019. Canada's Crown Consultation and Accommodation Report ([C00219-5](#)) was issued in June 2019. The GIC approved the TMEP again in June 2019 via OIC P.C. 2019-820 ([C00219](#)) and the NEB subsequently issued Certificate OC-065 ([C00061](#)).

On 19 July 2019, following a public comment process, the NEB set out how it would resume the TMEP detailed route approval process ([C00593](#)). The NEB directed Trans Mountain to file its Plan, Profile and Book of Reference (PPBoR) for the entire proposed TMEP route. Trans Mountain served landowners along the length of the TMEP with a notice that the detailed route approval process was underway, and placed notices in local publications. The NEB placed Trans Mountain's published notices on the NEB's website. The notices indicated that landowners and Indigenous peoples with a continued or new objection to the proposed detailed route, or to the methods or timing of construction, were required to file a Statement of Opposition (SOO). Notices advised interested persons (other than an owner of lands) who anticipated their lands may be adversely affected by the proposed detailed route, the methods of construction, and/or the timing of construction that they could file a SOO, indicated the timeline for doing so, and described how to obtain further information or assistance.

³ 2018 FCA 153.

⁴ The use of the term "Indigenous" has the meaning assigned by the definition of "aboriginal peoples of Canada" in subsection 35(2) of the *Constitution Act, 1982* which states:

In this Act, "aboriginal Peoples of Canada" includes the Indian, Inuit, and Métis Peoples of Canada.

In addition, on 23 August 2019, the NEB notified by letter 70 Indigenous communities,⁵ whose rights and interests could be potentially affected by the TMEP detailed route approval process in Segments 6 and 7, of the detailed route approval process ([C01164](#), [C01167](#)). All notices advised that interested Indigenous communities could file a SOO in relation to the proposed detailed route, the methods of construction, and/or the timing of construction; indicated the timeline for doing so; and described how to obtain further information or assistance.

Landowners and Indigenous peoples whose 2017/18 detailed route hearings were put on hold following the FCA Decision were required to file a new SOO to continue with their detailed route hearings. Landowners and Indigenous peoples seeking a new detailed route hearing (i.e., those who did **not** have a 2017/18 detailed route hearing underway at the time of the FCA Decision) were required to file SOOs that demonstrated a material change in circumstances in relation to the proposed route or to the methods or timing of construction. Only SOOs that were filed on time, made in good faith, not withdrawn, and not frivolous or vexatious were accepted.

On 28 August 2019, the *Canadian Energy Regulator Act*⁶ (CER Act) came into force, repealing the NEB Act. As a result, the Commission is considering approval of the PPBoR under the provisions of the CER Act.

2 Process changes due to the COVID-19 pandemic

The detailed route hearing processes began prior to the COVID-19 pandemic and contemplated an oral cross-examination portion, as well as optional site visits by the Commission to the lands subject to each hearing. After the pandemic struck, the Commission issued a Procedural Direction on 21 April 2020 ([C05817](#)) for in-progress detailed route hearings, modifying its processes to exclude steps that involved in-person contact. Oral cross-examination was replaced with rounds of written questions (called information requests or IRs) and answers. Site visits were replaced with the opportunity for parties to file photographs or videos with their written evidence.

As explained in the Procedural Direction, the process changes were aimed at finding alternative ways to ensure that the detailed route hearings could continue in a manner that is fair and transparent, while protecting the health of those involved.

3 Detailed Route Hearing MH-010-2020

3.1 Hearing participants

In September 2019, both the School District ([C01612](#)) and DPAC ([C01642](#)) filed a SOO.

On 13 and 16 September 2019, Chilliwack filed SOOs ([C01654](#) and [C01655](#)) seeking to resume its 2017/2018 detailed route hearing ([MH-020-2018](#)).

On 23 September 2019, the CER received a SOO from the STSA ([C01778](#)) opposing the proposed detailed route and the methods and timing of construction throughout various

⁵ In referring to Indigenous communities, the Commission is using this term to describe the individual First Nations, treaty associations, tribal councils, local and provincial Métis associations, and Métis settlement governing bodies that were identified as being potentially impacted by the TMEP.

⁶ S.C. 2019, c. 28, s. 10.

segments of the TMEP, including the lands at issue in this detailed route hearing. The STSA filed amended SOOs on 1 and 16 October 2019 ([C02000](#), [C02290](#)).

No other notified Indigenous community filed a SOO regarding the proposed detailed route for the lands at issue in this hearing (described below).

On 29 November 2019, the Commission issued SOO Decision No. 4 ([C03323](#)) outlining its consideration of all SOOs that had been filed with respect to Segments 5, 6, and 7 of the TMEP, and reasoning for deciding which SOOs met its assessment criteria and were set down for detailed route hearings.

On 31 January 2020, the Commission issued the Hearing Order ([C04466](#)) for all Segment 6 detailed route hearings that overlapped geographically with Chilliwack's opposition. SOO Filers the School District, DPAC, and Chilliwack were granted this Detailed Route Hearing MH-010-2020 with respect to Tract 2307 in Segment 6.3, as shown on PPBoR Sheet M002-PM03016-001 ([C00974-4](#)) [the Lands].

On 6 May 2020, the STSA filed a letter ([C06175](#)) requesting leave to substitute Semá:th First Nation (Semá:th) in the place of the STSA for the purposes of representing their own interests in the SOOs filed by the STSA for Segments 5, 6, and 7. The STSA explained that all original signatory communities, with the exception of Semá:th, had withdrawn their signatures from the SOOs.

On 13 May 2021, the Commission granted the STSA's substitution request ([C06261](#)). On 16 April 2021, Trans Mountain filed a letter ([C12443](#)), to which a letter from Semá:th was attached, notifying the Commission that Semá:th was withdrawing its SOOs.

3.2 Overlap with other Chilliwack-area detailed route hearings

On 31 January 2020, the Commission issued a Procedural Direction ([C04458](#)) explaining that there are a number of instances where the geographical focus of one detailed route hearing overlaps with that of one or more other hearings. Pursuant to section 203 of the CER Act, the Commission makes detailed route decisions for specific tracts of land and/or PPBoR sheets. This Detailed Route Hearing **MH-010-2020** relates Tract 2307 only, which is in Segment 6.3. All other tracts of land in Segments 6.2, 6.3, and 6.4 are the subject of other detailed route hearings (**MH-011-2020**, **MH-013-2020**, **MH-015-2020**, and **MH-026-2020**). These five hearings are referred to collectively as the "Chilliwack-Area Hearings." The following table identifies the SOO Filers and intervenors involved in these hearings, and the lands at issue in each.

Table – Chilliwack-Area Hearings

Hearing	Subject lands	SOO Filers	Intervenors
MH-026-2020	Segments 6.2, 6.3, and 6.4 (except Tracts 2307, 2352, 2410, and 2438)	<ul style="list-style-type: none"> Chilliwack 	<ul style="list-style-type: none"> WaterWealth
MH-010-2020	Tract 2307 (Segment 6.3)	<ul style="list-style-type: none"> School District DPAC Chilliwack 	
MH-011-2020	Tract 2352 (Segment 6.3)	<ul style="list-style-type: none"> Christine Bloom Chilliwack 	

Hearing	Subject lands	SOO Filers	Intervenors
MH-013-2020	Tract 2410 (Segment 6.4)	<ul style="list-style-type: none"> Rudolf and Debra Enns Chilliwack 	
MH-015-2020	Tract 2438 (Segment 6.4)	<ul style="list-style-type: none"> Michael Hale (Yarrow Ecovillage) Chilliwack 	

This Letter Decision is based on the record of this proceeding (MH-010-2020) only, considers its own evidentiary record and unique issues, and applies to specific tracts of land. Likewise, all other Chilliwack-Area Hearing decisions are based on their own separate evidentiary records and apply to specific tracts of land unique to each hearing. However, in some cases, parties cross-referenced and adopted evidence from other Chilliwack-Area Hearings, and/or repeated similar evidence and argument in more than one hearing. For example, similar proposed alternate routes were being considered in several of the Chilliwack-Area Hearings. The Chilliwack-Area Hearings also shared common parties. Chilliwack was a party to all Chilliwack-Area Hearings, given that its geographical interests span across all relevant tracts. Therefore, the Commission's Letter Decisions for all Chilliwack-Area Hearings are related; they collectively decide the detailed route, methods of construction, and timing of construction for the Chilliwack area, and are therefore being released concurrently.

3.3 Hearing record and scope

As explained in the Hearing Order, because Chilliwack was resuming its 2017/18 detailed route hearing, the Commission decided that it would bring forward and adopt the entirety of that previous record. The exhibits from Detailed Route Hearing MH-020-2018 ([C04578-1](#)) form part of the MH-010-2020 hearing record.

In this hearing, Trans Mountain, the School District, DPAC, and Chilliwack filed written evidence, asked and replied to IRs, and Trans Mountain filed reply evidence. Chilliwack's written evidence filed in this Detailed Route Hearing MH-010-2020 duplicated the written evidence filed in Detailed Route Hearing MH-026-2020.

Final argument was provided as follows:

- Trans Mountain filed written argument on 18 November 2020 ([C09683](#));
- DPAC provided argument by videoconference on 24 November 2020, for which a transcript was produced ([C09853-1](#)), with corrections ([C09956](#));
- The School District filed written argument on 26 November 2020 ([C09930](#));
- Chilliwack filed written argument on 26 November 2020 ([C09932](#)); and
- Trans Mountain filed written reply argument on 3 December 2020 ([C10152](#)).

On 3 December 2020, Trans Mountain filed a notice of motion requesting that its 27 August 2020 reply evidence filed in Detailed Route Hearing MH-026-2020 be included on the record of each of the other Chilliwack-Area Hearings. On 4 January 2021, the Commission issued a ruling ([C10670](#)) granting the motion for the reasons provided, and set out additional procedural opportunities that resulted in the following filings:

- The School District filed supplemental written on 21 January 2021 ([C11084](#));

- DPAC filed supplemental written argument on 21 January 2021 ([C11091](#)); and
- Trans Mountain filed supplemental written reply argument on 28 January 2021 ([C11271](#)).

The written record of Detailed Route Hearing MH-010-2020 can be found in the CER's online public registry, in the hearing's dedicated folder (Folder [3891002](#)).

The three issues to be decided in this detailed route hearing are:

- 1) Is Trans Mountain's proposed detailed route for the TMEP pipeline the best possible detailed route? (see **Section 4**).
- 2) Are Trans Mountain's proposed methods of constructing the TMEP pipeline the most appropriate? (see **Section 5**).
- 3) Is Trans Mountain's proposed timing of constructing the TMEP pipeline the most appropriate? (see **Section 6**).

Trans Mountain bears the onus to prove its case with respect to these issues on a balance of probabilities.

In the Hearing Order, the Commission stated that each party's evidence must be relevant to specified tract(s) of land and issue(s) determined to be in scope for that party. As explained in the Hearing Order, the determination of which issues are in scope for each party was based on whether the party's SOO demonstrated a material change in circumstances for each issue. The Hearing Order specified the "in-scope issues" to be route location for the School District, and route location and timing of construction for DPAC. The Commission only considered submissions made by these parties in relation to these respective issues.

As explained in the Hearing Order, evidence not related to the route location, or to the methods or timing of construction (as applicable), or that is not site-specific was **not** considered. The Commission clarified that it would **not** consider the following topics:

- Matters that were addressed in the completed hearings that pertained to Trans Mountain's application to construct and operate the TMEP,⁷ such as the need for the TMEP, risks and impacts of accidents or malfunctions (i.e., spills), overall pipeline design, or the broader environmental or socio-economic impacts of the TMEP.
- Issues that relate to the existing pipeline.
- Landowner compensation matters.

Some matters were raised in this detailed route hearing that are outside the scope of the issues being considered. For example, the Commission finds that DPAC's submissions related to human health risks associated with inhalation of volatile compounds to be outside the scope of this hearing. These issues were general in nature (i.e., not site-specific) and were addressed in detail in the Certificate hearing and, in particular, in Chapter 10 of the NEB's MH-052-2018 Reconsideration Report.

In its written argument, Chilliwack acknowledged that there is no evidence that it has any ownership interest in the Lands. Chilliwack's concerns specific to its Municipal Lands (such as its operational plans, roads, utility crossings, notice with respect to Charter Lands) are

⁷ For example, Hearing OH-001-2014 related to Trans Mountain's 2013 application for the TMEP, and Hearing MH-052-2018 related to the reconsideration of TMEP-related marine shipping.

outside the geographic scope of this hearing. Issues related to Chilliwack's Municipal Land interests are considered in the MH-026-2020 Letter Decision. The Commission notes that these concerns were included on this hearing's record by virtue of Chilliwack duplicating the evidence it filed in Detailed Route Hearing MH-026-2020. These issues were considered where relevant and in scope.

3.4 Overview of the proposed route on the Lands

As described previously, the Lands at issue in this Detailed Route Hearing MH-010-2020 are limited to Tract 2307 in Segment 6.3, as shown on PPBoR Sheet M002-PM03016-001.

The following figures depict Trans Mountain's proposed detailed route, as well as alternate routes proposed by DPAC, the School District, and Chilliwack:

- **Figure 2** shows Trans Mountain's proposed route (in yellow) on the Lands.
- **Figure 3** shows Trans Mountain's proposed route (in red); Chilliwack's alternate routes (in dark blue); DPAC's preferred route, which is WaterWealth's alternate route (in green); Watson Elementary School, and other features in the area of the Lands.
- **Figure 4** shows Trans Mountain's proposed route (in red) and Chilliwack's alternate routes (in purple and yellow). Chilliwack has proposed an alternate route generally following the Trans-Canada Highway. From the Trans-Canada Highway, before reverting to the TMPL, Chilliwack's alternate route considers two potential alignments: (i) an optional alignment through Lickman Road; and (ii) an optional alignment through Hopedale Road.

Figure 2 – Trans Mountain's proposed route on the Lands (C04948)

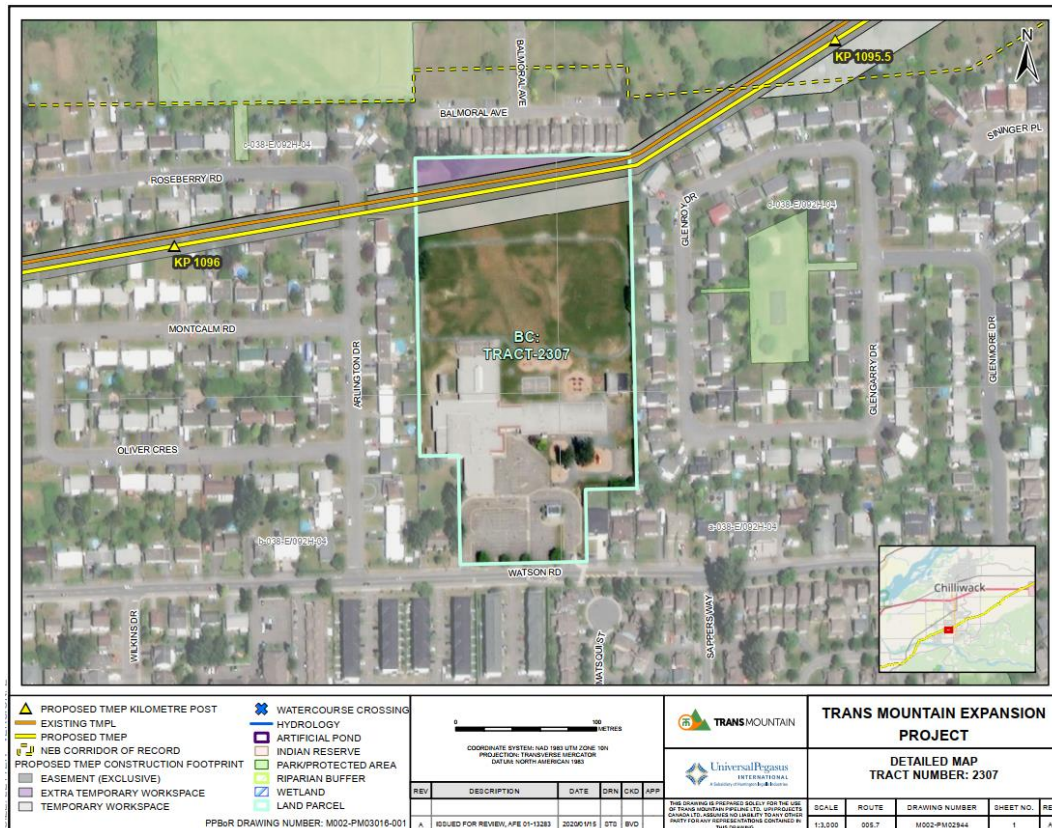


Figure 3 - Trans Mountain's proposed route, Chilliwack's alternate routes, DPAC's preferred route, and Watson Elementary School (C07675-2)

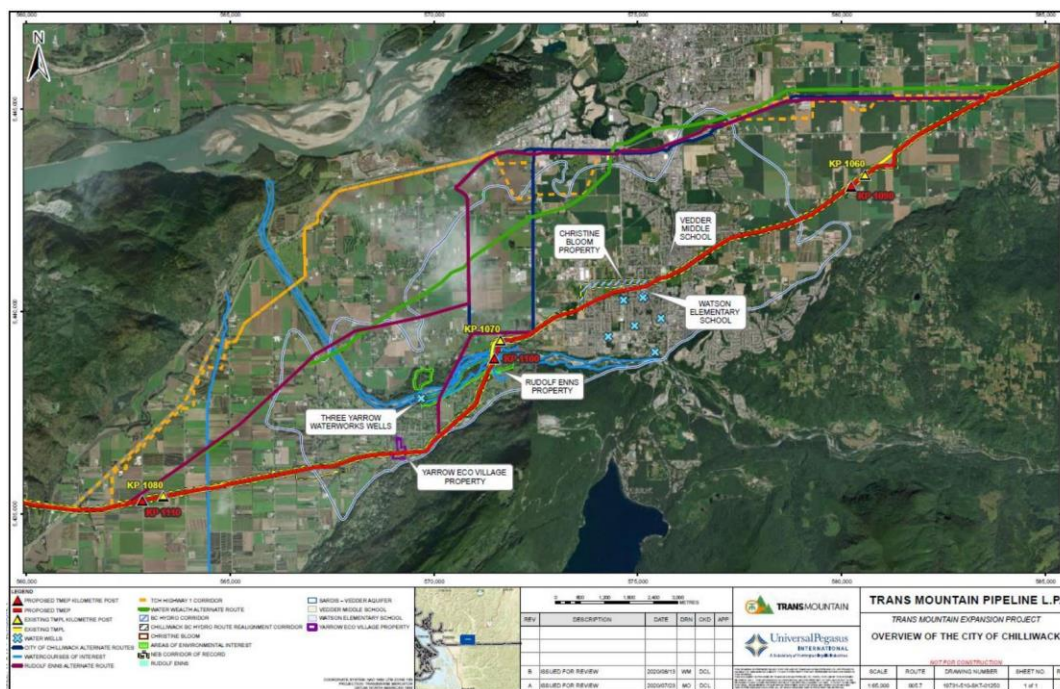
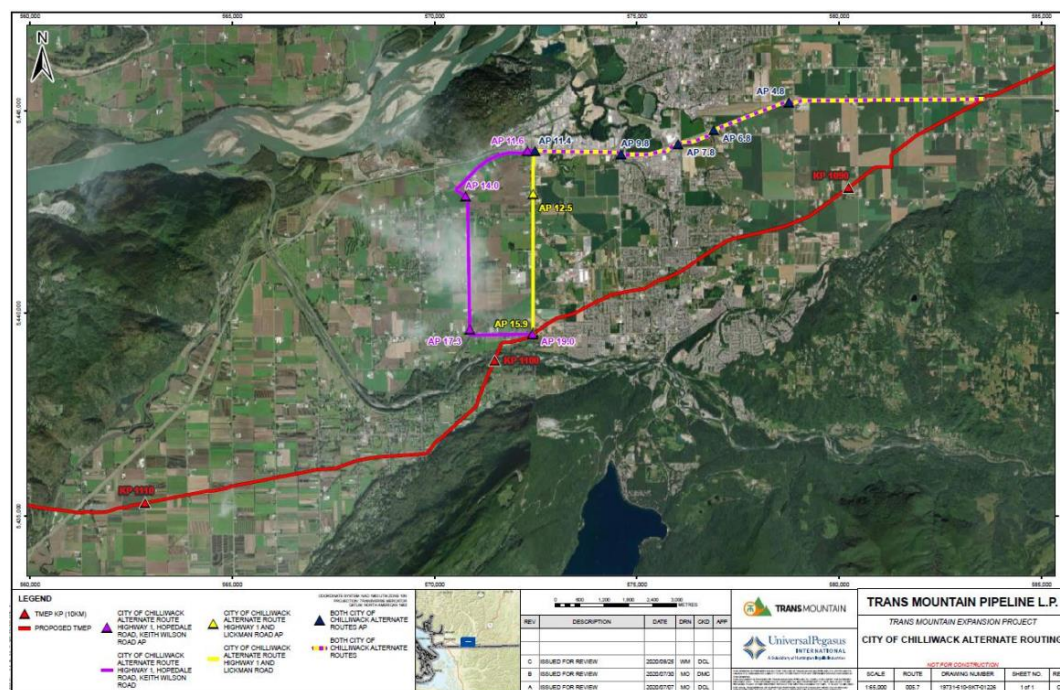


Figure 4 – Trans Mountain’s proposed route and Chilliwack’s alternate routes (Source: [C08698](#))



3.4.1 Was Trans Mountain's notice to Indigenous peoples sufficient?

As noted in **Section 1** above, 70 Indigenous communities whose rights and interests could be potentially affected by the TMEP detailed route approval process in Segments 6 and 7 were notified of the detailed route approval process by NEB letter dated 23 August 2019. This followed a public comment process regarding the resumption of the TMEP regulatory processes, as well as notices that Trans Mountain was directed to, and did, place in local publications, and the publication of notices on the NEB's website.

The Commission is of the view that there has been appropriate notification provided to Indigenous communities regarding the TMEP detailed route approval process and that potentially impacted Indigenous communities have been provided the opportunity to participate in that process.

4 Is Trans Mountain's proposed route the best possible detailed route?

4.1 Has Trans Mountain adequately addressed concerns with the proximity of the proposed route to Watson Elementary School?

DPAC's submissions

- Trans Mountain's proposed route crosses Watson Elementary School. The TMPL was built in 1952-53, driven at least in part by the United States' strategic interests on the Pacific Coast and the Korean War (*Canadian Energy Chronology*, R. Toombs, 1998, Energy Policy Branch, Energy Sector, Natural Resources Canada). Watson Elementary School was built in that location in 1955 to serve "Camp Chilliwack," the Royal Canadian School of Military Engineering. Co-location of schools and infrastructure in the 1950s may have been seen differently than in the present. Crossing an elementary school with a major pipeline is simply not appropriate.
- Trans Mountain says that engagement with the School District – the owner for the lands – started in October 2012. Nearly eight years have passed with no evidence that follow-up took place to establish relationships to a degree sufficient to make sure appropriate emergency planning and actual measures were in place.
- A coordinated and systematic approach will be necessary should Watson Elementary School be faced with a spill scenario. The level of engagement has been wholly inadequate for an elementary school with roughly 450 young students and 50 adults. In a pipeline crisis, the speed of communication is critical, particularly with the staff, student, and parent community.
- Schools have not been prepared for a pipeline-related emergency. Emergency planning and practice related to all possible oil spills needs to be at least an annual occurrence due to the large turnover of students and staff that take place during the year, and from year to year. It would have to include after-school and summer programs as well to ensure that staff and volunteers are prepared if a spill does happen. To date, this planning and practice has not taken place and, in fact, there is little public awareness of the operating pipeline's location.

The School District's submissions

- The School District adopts and supports Chilliwack's submissions.

- Whether or not one uses Trans Mountain's routing criteria, it is obvious that the TMEP route through the school lands is not the best possible detailed route. As of February 2020, Watson Elementary School had 438 students and 37 staff. The school is, by its nature, not conducive to industrial activities such as the construction and operation of a high-pressure pipeline for the transportation of petrochemicals. As noted in DPAC's evidence, the proposed route through the school will result in significant impacts on the school and those who use it. The only access to the construction site will be through the school parking lot. It would also require moving some portable classrooms.
- The fact that the existing TMPL is located on the school lands does not justify exacerbating and compounding what is an already unacceptable situation by also locating the TMEP through those lands.
- Trans Mountain has referred to a number of engagement activities, including meetings with Chilliwack staff, the Mayor of Chilliwack, attendance at unidentified community events, and offering "digital engagement" opportunities to citizens of Chilliwack. Trans Mountain has not identified meetings with representatives of the School District. With the exception of one workshop dated 3 March 2020, all of the identified engagement activities took place between 2012 and 2017, whereas the Realignment Report was released in April 2018.

Trans Mountain's submissions

- The TMEP will be installed within the existing TMPL RoW for the entirety of the route crossing the Lands.
- Trans Mountain has adequately addressed concerns in relation to Watson Elementary School, and its proposed route has been accepted by the majority of affected landowners. Trans Mountain has undertaken considerable technical analysis, regulatory processes, and engagement efforts in respect of the proposed TMEP route for Chilliwack. These efforts have proven successful; Trans Mountain has achieved agreements with approximately 90 per cent of all affected landowners within Segment 6.3 of the TMEP.
- Mitigation measures in relation to the TMEP's construction through school yards were set out during the Chilliwack Realignment proceeding.⁸ The NEB considered Trans Mountain's specific mitigation measures to avoid impacts on Watson Elementary School, which included the following:
 - Scheduling pipeline construction activities for the months of July and August to minimize the impact on students.
 - Restricting access to the construction zone with fencing and clear marking.
 - Ensuring contractor adherence to avoidance of certain zones and posted speed limits.
 - Ensuring that contractor vehicles, equipment, or deliveries have a spotter when backing up. The NEB ultimately decided that it was "satisfied that the mitigation measures proposed by Trans Mountain help reduce the risk of damage to the pipeline and any consequential leaks and ruptures for the Chilliwack Realignment."
- Engagement with school representatives has been adequate. Respectfully, the School District's comments about Trans Mountain's failure to identify meetings with the School District are incorrect. Trans Mountain has attended approximately seven

⁸ Trans Mountain's submissions in **Section 5** of this Letter Decision provide these mitigation measures.

in-person meetings to discuss project details, gather a full understanding of the School District's concerns, and answer their questions. Trans Mountain has also made approximately 10 phone calls and has sent approximately two letters or emails to the School District. Moreover, Trans Mountain has made opportunities available for interested parties to participate in engagement activities, including open houses and workshops, and has made its *Pipeline Emergency Response Guidelines for Schools* publicly available.

- Contrary to DPAC's assertions, Trans Mountain has a robust Training and Exercise Program, and holds a variety of exercises throughout the year with entities that participate directly in emergency response and public safety activities. In sum, Trans Mountain is of the opinion that its engagement with school representatives to date has been appropriate, and that its commitments to continue this engagement are adequate.
- Contrary to DPAC's statements, Trans Mountain is of the view that it has adequately and sufficiently engaged with school representatives. Between 2012 and 2017, Trans Mountain held 3 open houses, 6 workshops (2 focused on routing), 34 meetings with Chilliwack staff, 8 meetings with the Mayor, and 8 meetings and 10 presentations with community organizations; attended 14 community events; and offered 9 digital engagement opportunities for residents of Chilliwack to provide input into construction planning. These engagements included the following:
 - Letters to school representatives offering an opportunity to meet.
 - Routing workshops to which school representatives were invited.
 - Presentations and/or meetings with community organizations, including DPAC and school representatives along the TMEP RoW. In particular, Trans Mountain notes that DPAC attended an emergency management-specific workshop on 3 March 2020.
 - Meetings with school representatives to discuss Trans Mountain's Emergency Management Program and to share response activities the schools are to take in the unlikely event of a pipeline incident in the vicinity of one of the schools along the TMEP RoW.
- Despite the mitigation measures approved in the Chilliwack Realignment hearing in respect of schools such as Watson Elementary School, Trans Mountain has undertaken significant efforts to engage with school representatives to address concerns. These efforts include committing to engage with DPAC on issues outside the scope of the hearing – namely, the methods for constructing the pipeline. Trans Mountain will engage with DPAC regarding its construction-related concerns prior to construction.
- The School District did not file evidence, nor did it express support for DPAC's evidence. Under the *School Act*, DPAC is not in an equal position to the School District and is not afforded the same powers as the School District. Under the *School Act*, DPAC has an advisory role within a limited scope: DPAC "may advise the [School District] on any matter relating to education in the school district."
- Based on the feedback received during engagement with schools and school districts, Trans Mountain created a resource – titled *Pipeline Emergency Response Guidelines for Schools* (School Guidelines) – that is specific to pipeline safety and emergency response in order to supplement school emergency plans. The School Guidelines are publicly available online. Trans Mountain has committed to provide School Guidelines every two years and to offer a meeting annually to the principals of Watson Elementary School in order to review emergency protocols and pipeline

safety. Moreover, in compliance with Certificate Condition 90, engagement with stakeholders, including school districts and other school representatives, will continue throughout the TMEP's lifecycle. In addition, in compliance with Certificate Condition 117, prior to commencing operations, Trans Mountain will report on improvements to Trans Mountain's Emergency Management Program, including a summary of parties that were consulted and how their comments and feedback were considered in improving the program.

4.1.1 The Commission: Trans Mountain has adequately addressed concerns with the proximity of the proposed route to Watson Elementary School

The Commission declines to draw a conclusion that DPAC's submissions are not "equal" to that of the School District, based on the terms of the *School Act*.⁹ The Commission appreciates DPAC's participation in this Detailed Route Hearing MH-010-2020 and the oral argument presented by its representative, Ms. Goodman. The Commission has given DPAC's submissions equal weight as the submissions of all other parties.

The Commission agrees with Trans Mountain that DPAC's submissions regarding engagement in paragraphs 3167 to 3168 of its final argument ([C09853](#)) constitute new evidence. In its 2 June 2020 ([C06617](#)) and 31 July 2020 ([C07624](#)) Procedural Directions, the Commission stated, and emphasized, that new evidence cannot be provided in argument. Therefore, the Commission disregarded this portion of DPAC's argument.

The Commission finds that Trans Mountain's engagement with the School District has been adequate. The Commission puts significant weight on the fact that, in response to feedback received through its engagement with school representatives along the TMEP route, Trans Mountain created the School Guidelines to supplement school emergency planning, and that Trans Mountain has committed to providing it every two years and to make it publicly available. The Commission accepts that Trans Mountain has engaged with the School District and provided opportunities for interested parties to participate in open houses and workshops. The Commission encourages the School District to collaborate with DPAC, including communicating information about the TMEP and any future opportunities for engagement with Trans Mountain.

Similarly, in response to DPAC's concern about communication in the event of an emergency, the Commission encourages the School District to engage with DPAC to discuss communication protocols for their school emergency planning, so that staff, students, parents, volunteers, and any interested parties are informed as appropriate. The Commission expects Trans Mountain to support Watson Elementary School and the School District in readying themselves to respond to a pipeline emergency. The Commission reminds Trans Mountain that it committed, during the Certificate hearing, to working with individual schools and school districts to fully support their safety efforts and ensure their Emergency Response Plans and Trans Mountain's are coordinated. The Commission encourages Watson Elementary School and the School District to communicate with, and support, DPAC, as explained above.

The Commission also put weight on Trans Mountain's commitment to offer a meeting annually to the principals of Watson Elementary School in order to review emergency protocols and pipeline safety, and its commitment to engage with DPAC prior to construction regarding construction-related concerns. The Commission reminds all parties that

⁹ RSBC 1996, c412, s. 8.5.

engagement with stakeholders, including school districts and other school representatives, will continue throughout the TMEP's lifecycle, pursuant to Certificate Condition 90.

The Commission shares the view of the School District and DPAC that the safety of school children and others is the primary concern. The Commission is of the view that the concerns raised by the School District and DPAC regarding routing through Watson Elementary School are not new concerns, but were previously considered by the NEB in its Realignment Report. In the Chilliwack Realignment hearing, the NEB found that Trans Mountain's proposed mitigation during construction appropriately addresses the potential safety concerns associated with constructing in densely populated areas, and that construction can therefore be undertaken safely. These mitigation measures include:

- scheduling construction activities on certain lands between the months of July and August to avoid impacts on schools;
- restricting access to the construction zone by fencing the entire construction area;
- implementing traffic management plans; and
- measures relating to project vehicles and equipment.

The Commission agrees that Trans Mountain's proposed mitigation sufficiently addresses potential safety concerns associated with the proposed route through the Watson Elementary School property.

No new evidence was submitted in this hearing relating to these safety concerns and no evidence was submitted to describe specific impacts beyond those previously addressed in the Chilliwack Realignment hearing. Nonetheless, the Commission considers the School District's and DPAC's concerns as a disadvantage of Trans Mountain's proposed route. The Commission recognizes that, while safety concerns on the Lands will be sufficiently mitigated, locating the pipeline in Chilliwack causes residual effects, including difficulties and disruptions for Watson Elementary School, which the Commission has taken into consideration in weighing the evidence.

Trans Mountain's proposed methods of construction are discussed in **Section 5** below.

4.2 What is the risk to the Sardis-Vedder Aquifer and associated water wells?

Realignment Report

The Chilliwack Realignment hearing (OH-001-2017) considered Trans Mountain's variance application to move the pipeline corridor from the Original Corridor (the BC Hydro alignment) to instead follow the TMPL (see **Figure 1** above). That hearing included detailed consideration of risks to the Sardis-Vedder Aquifer and Chilliwack water wells for the purpose of approving the corridor.

As the parties referred to these considerations extensively in this Detailed Route Hearing MH-010-2020, the following is a brief summary of the Realignment Report¹⁰ as it relates to the topics of the Sardis-Vedder Aquifer and associated water wells for the purpose of background and context:

- The NEB noted that, although some evidence was presented regarding alternate routes (such as along the Trans-Canada Highway), those routes were not the subject of the variance application. The NEB noted that, if the variance were approved, the

¹⁰ Refer to the Realignment Report directly for a full understanding of its recommendations.

detailed routing provisions of the NEB Act would remain to be satisfied, including determining the best possible detailed route. The NEB, therefore, declined to order Chilliwack's requested examination of other alternate routes.

- The NEB noted that oil from a pipeline leak or spill would reach Chilliwack's water wells if it enters one of their capture zones, although there are inherent uncertainties in modelling the extent of capture zones. The NEB included an excerpt from a draft 2017 Golder Report (Golder Report) filed by Chilliwack in that hearing showing, for example, the overlap between estimated capture zones for a 1,095 litres/second (l/s) well-pumping scenario and the realignment corridor.
- The NEB found that for leaked or spilled oil to reach the wells, all of the following would have to occur:
 - either existing modelling would have to be underestimating the extent of the capture zones, or Chilliwack would have to increase pumping;
 - the underlying capture zone would have to extend vertically up to the water table, which the NEB found to be unlikely, but not certain;
 - a pipeline leak or spill would have to occur in the relatively short distance where the realignment is above the capture zone and such a zone extends up to the water table, despite Trans Mountain's integrity management program and other preventative mitigation;
 - the leak or spill would have to continue for long enough to provide a large enough source of oil to reach the water table, despite Trans Mountain's leak detection and spill remediation measures, and the depth of the unsaturated zone; and
 - degradation of the oil constituents would have to leave sufficient contaminants in the groundwater by the time it reaches the wells.
- The NEB stated that it considered the probability of the above sequence of events all happening to be minimal, but not zero.
- The NEB declined to grant Chilliwack's request to require Trans Mountain to carry out further detailed analysis of the capture zones, given the multiple analyses already conducted, including the Golder Report.

DPAC's submissions

- The Sardis-Vedder Aquifer and Chilliwack's wells are concerns during every stage of the project. Chilliwack was very specific about the wells on Watson Elementary school property (PID 013-574-728) in its SOO.
- The aquifer supplies water to 98 per cent of all schools and family homes in the district, and the TMEP should be routed away from Chilliwack's aquifer and wells.

Chilliwack's submissions

- The proposed route between Watson Road and Silverthorne Road is within the capture zone for Chilliwack's wells that supply potable water from the aquifer. The aquifer provides excellent quality water, but is unconfined and is categorized in the BC Aquifer Mapping System as highly vulnerable.
- Water from Chilliwack's wells is used for drinking water and other domestic uses. It is also used for fire protection. While drinking water can theoretically be provided with bottled water or water that is trucked to temporary storage, fire protection can only be

provided by maintaining full reservoirs. If reservoirs are not full, Chilliwack's ability to provide adequate fire protection would become impaired. Chilliwack's reservoirs are sized to provide flows for between 4 and 10 hours of fire suppression. Thus, the ability to provide sufficient water for fire protection can be quickly compromised if water supply is reduced.

- Chilliwack has established a Development Permit Area in the aquifer area to protect its wells from possible contamination.
- Chilliwack's prime objective is to protect the aquifer and wells that are supplied by it. No further infrastructure posing contamination risk should be added through the well capture zones.
- Chilliwack is permitted to operate its wells at up to 845 l/s, as long as the monthly average does not exceed 700 litres/second (l/s). Therefore, 845 l/s is the appropriate pumping rate to consider when estimating capture zone.
- Chilliwack has decreased the groundwater extraction license it is seeking under the provincial *Water Sustainability Act* from approximately 27 to 20 million cubic metres per year (m³/year) in order to address beneficial uses of existing water extractions. However, the Province of BC's issuance of a license to Chilliwack does not prevent Chilliwack from making further applications for additional capacity if it is needed.
- Trans Mountain referred to a 912 l/s scenario from the Golder Report that avoids overlap with its proposed route, but that scenario is based on a faulty assumption. It assumes that three of Chilliwack's northern wells would be operating at a fraction of their maximum pumping rates. However, these wells are not fitted with variable drives. The maximum flow rate that can be achieved with these three wells not in operation, and the fourth northern well pumping at 50 per cent of capacity to avoid overlap with a spill, is 685 l/s. This would not meet peak demands that Chilliwack anticipates seeing before 2040, or earlier dates in response to fire demand.
- It is Chilliwack's view that the evidence filed in this proceeding shows that the risk of using Trans Mountain's proposed route as the pipeline route is unacceptable. To the extent the risk is viewed as uncertain, Chilliwack submits that the only reasonable and prudent decision that can be made is to act in a precautionary manner and not permit the pipeline route to cross those parts of the aquifer that are risk.
- Chilliwack submitted evidence concerning a secondary containment system consisting of an impermeable liner for containing leaks in the area of the aquifer. Noting that it would require further design work, achieving a cathodic protection system inside the liner zone is possible with three available actions:
 - a) increasing the size for the liner zone to a minimum of twice the pipeline diameter;
 - b) installing a separate cathodic protection system; or
 - c) installing a different liner material, such as bentonite or clay.

Trans Mountain's submissions

- Trans Mountain has proposed comprehensive mitigation measures to protect the aquifer, which were accepted by the NEB, including those identified in Certificate Condition 72 filings.
- Trans Mountain has adopted a series of comprehensive measures to mitigate risks to all aquifers that may arise as a result of TMEP construction and operation, some of which are outlined in Trans Mountain's Groundwater Management Plan.

- Trans Mountain has also incorporated supplemental mitigation measures, exceeding regulatory requirements, to provide added protection to the aquifer. Some of these measures include (i) limiting trenching of ditches for open-trench construction to the dry season; (ii) treating construction activities over the aquifer as a water crossing; and (iii) adding a pipeline valve upstream of the aquifer and an enhanced leak detection system to be able to respond to potential leaks and ruptures. In its Realignment Report, the NEB considered and subsequently approved Trans Mountain's enhanced measures to protect the aquifer, Chilliwack's wells, and their capture zones.
- Issues relating to pipeline safety and integrity in the aquifer area, and protection of the aquifer, are outside the scope of this hearing, as they were previously considered and addressed by the NEB in its Realignment Report. The relevant circumstances have not materially changed since the issuance of the Realignment Report and the NEB's analysis regarding pipeline safety and integrity in the aquifer area and potential impacts on the aquifer remains applicable and correct.
- Trans Mountain relies on the record of the Chilliwack Realignment proceeding in response to concerns regarding the pipeline's effect on the aquifer. In its reply evidence in that proceeding, it stated that it is committed to rectifying any impacts on the municipal water supply that result from the unlikely event of a pipeline release.
- The decreased volume of extraction Chilliwack seeks in its BC groundwater license application (down from 27 to 20 million m³/year) is now equivalent to 635 l/s averaged over a year, and this means the size of the capture zones are expected to be smaller than previously suggested, and so the capture zones are unlikely to extend under the TMEP route.
- The size of a well's capture zone is determined by, among other factors, pumping rates, applicable licence requirements, and the period of time for which a well or well field is pumped. Chilliwack expressed the opinion that the most representative scenario for estimating capture zones is a total pumping rate of 845 L/s. Trans Mountain disagrees. Chilliwack's future licence, if any, will only permit Chilliwack to pump their wells at a rate of 845 L/s for a limited period of time.
- The risk analysis completed for the TMEP (considering all applicable risks) has determined that the highest failure frequency within the study area is estimated to be 0.0000574 failures/kilometre*year. This failure risk probability is considered very unlikely.
- Regarding Chilliwack's request to install an impermeable liner as secondary containment between Kilometre Post (KP) 1095 and KP 1097, Trans Mountain is of the view that installing a secondary liner will only increase the risk of a failure on the pipe, is redundant in providing leak detection capabilities, and will create issues on any future maintenance activities on the pipe.

4.2.1 The Commission: Trans Mountain's proposed route does pose some risk to the aquifer and associated water wells, but there will be substantial mitigation in place to minimize that risk

Some topics that were considered for the purpose of approving the TMEP's general corridor (or realignment of that corridor) may also be relevant to the consideration of the proposed detailed route. Accordingly, all matters that were considered for the purpose of approving the general corridor (or realignment) are not necessarily out of scope for this Detailed Route Hearing MH-010-2020. The Commission has considered matters that it considers relevant to the issues being decided in this hearing.

In these circumstances, given that risks to the aquifer and water wells are a specific potential burden of Trans Mountain's proposed route, and alternate routes could potentially avoid such risks, protection of the aquifer and water wells are relevant to the consideration of best routing. Therefore, the Commission disagrees with Trans Mountain that these matters are not in the scope of the present hearing. While the Commission is considering evidence and argument related to protection of the aquifer and water wells that was also raised and considered in the Chilliwack Realignment hearing, the evidence and argument relates to the detailed route issues at hand, including the proposed alternate route(s).

As noted in the NEB's MH-052-2018 Reconsideration Report, risk is a product of likelihood and consequences.

The Chilliwack Realignment hearing considered in detail the risk that the Approved Corridor (and thus of Trans Mountain's proposed route) posed to the Sardis-Vedder Aquifer and Chilliwack's water wells. Relatively little new evidence was submitted in this Detailed Route Hearing MH-026-2020 concerning that risk, although the Commission finds the following:

- The yearly annual groundwater extraction that Chilliwack seeks in its license application to the Province of BC has been reduced from approximately 27 to 20 million m³/year (equivalent to 635 l/s averaged over a year). In addition, the monthly average is not to exceed 700 l/s. Given that the overall extent of a capture zone is related to the sustained rate of extraction, these monthly and yearly maximums are expected to result in reduced capture zone size compared to other scenarios that considered higher sustained rates of extraction (such as the 1,095 l/s scenario excerpted in the NEB's Realignment Report). This will therefore tend to reduce overlap between the capture zones and the proposed route, and thus reduce the likelihood of Chilliwack's water wells being contaminated.
- Chilliwack noted that three of its four northern wells do not have variable drives, and that they would have to be taken out of operation entirely to avoid overlap with a spill. This would decrease Chilliwack's water pumping rate and thus increase the consequences of a spill. However, Chilliwack stated that, in such a case, it could still pump up to 685 l/s. Thus, the shortfall in water supply as a result of a spill is not expected to be the total Chilliwack demand (up to 845 l/s, as long as the monthly average does not exceed 700 l/s), but rather the difference between that demand and what can still be pumped. The Commission also notes Trans Mountain's commitment in the Chilliwack Realignment hearing to rectify any impacts to municipal water supply that result from the unlikely event of a pipeline release. As Trans Mountain is already bound by this commitment pursuant to Condition 1 of Order AO-007-0C-065, the Commission considers there to be suitable mitigation in place.

The Chilliwack Realignment hearing process that led to the NEB's Realignment Report included the filing of written evidence (including technical evidence from hydrogeologists) and IRs, oral Indigenous knowledge, oral cross-examination, and argument. The Commission considers that hearing process, together with this detailed route hearing process, to be adequate for the purposes of considering whether Trans Mountain's proposed route is the best possible detailed route, including consideration of the proposed alternate routes.

The Realignment Report concluded that the risk to Chilliwack's wells is minimal, but not zero. The Commission agrees. The substantial mitigation summarized above will both reduce the likelihood of a spill, and the consequences should one occur. The Commission considers this suite of mitigation to be appropriate for Trans Mountain's proposed route.

Nevertheless, some risk will remain, and the Commission takes it into account in its consideration of proposed alternate routes below, and ultimate consideration of evidence in making its detailed route decision.

The Commission will not direct Trans Mountain to install a trench liner as a secondary containment measure to provide protection to Chilliwack's water wells and their capture zones.

The Commission finds that a trench liner would likely introduce pipeline integrity challenges. As stated in Chilliwack's Secondary Containment Engineering Assessment included in its written evidence ([C06893](#)), a trench liner would create a more corrosive environment for the pipeline by containing any soil contaminants within the liner zone; the liner integrity may be compromised after installation; and it may create false indications of leaks. While the Commission acknowledges that Chilliwack proposed mitigation to address these issues (e.g., increase the liner zone size, install a separate cathodic protection system, or use a different liner system), the Commission is of the view that such mitigation poses additional technical challenges. The Commission agrees with Trans Mountain that there are no best practices, or studies upon which to rely, for using trench liners with pipelines. There is not enough evidence indicating that placing a pipeline directly on top of the liner will not cause liner damage during installation or pipeline operation.

Further, the Commission is of the view that a trench liner is unnecessary. As noted in the Realignment Report, the TMEP will rely on a three-tiered leak detection system with built-in redundancies to monitor for potential leaks. The Commission is satisfied that this leak detection system minimizes the risk of potential leaks, especially considering the specific mitigations that have been committed to and approved to protect the aquifer. This mitigation includes limiting ditch trenching for open-trench construction to the dry season, treating construction activities over the aquifer as a water crossing, using 14.7 millimetre heavy-wall pipe, increasing the depth of cover to between 0.9 and 1.2 metres to reduce the risk of third-party damage, installing a marker tape to indicate the presence of the pipeline to third parties, and adding a remote mainline block valve upstream of the aquifer.

The Commission finds that the net effect is that the trench liner would add little-to-no benefit, but risk other complications to pipeline integrity.

4.3 Did Trans Mountain apply its routing criteria appropriately?

Trans Mountain's submissions

- The TMEP corridor, as approved by Certificate OC-065, was developed based on a standard set of routing criteria designed to enable the pipeline to be installed safely, and to reinforce the protection and integrity of the pipeline while minimizing the adverse effects of pipeline installation and operation to the extent practicable.
- During the route selection process undertaken by Trans Mountain, a hierarchy of routing options was established. In descending order of preference, these were:
 - 1) where practicable, co-locate the TMEP on or adjacent to the existing TMPL easement to:
 - reduce land use fragmentation;
 - reduce the use of unencumbered lands by using the existing TMPL RoW for the location of the TMEP pipeline and construction workspace; and

- leverage the existing pipeline protection program and landowner knowledge of the location and nature of the existing TMPL to optimize pipeline integrity and safety;
- 2) where co-location with the TMPL is not practicable, minimize the creation of new linear corridors by installing the TMEP segments adjacent to existing easements or RoWs of other linear facilities, including other pipelines, power lines, highways, roads, railways, fibre-optic cables, and other utilities;
- 3) if co-location with an existing linear facility is not feasible, install the TMEP segments in a new easement selected to balance safety, engineering, construction, environmental, cultural, and socio-economic factors; and
- 4) in the event a new easement is necessary, minimize the length of the new easement before returning to the TMPL easement or other RoWs.
- To determine the location of the pipeline alignment, the easement, and temporary workspace on a specific land parcel, Trans Mountain employed the same process and criteria as was used in determining the location of the proposed pipeline corridor. Where possible, the TMEP easement was fixed within the overlapping easement. Required temporary workspace was located as much as possible on open and undeveloped lands to avoid proximity to residences, treed areas, and areas of environmental or cultural sensitivity.
- As a practice, determining routing feasibility for the entire TMEP included consideration of a range of factors including constructability; long-term geotechnical stability; and environmental, cultural, and socio-economic suitability.
- In addition to adhering to the routing criteria and corridor selection strategy, the following guidelines were used to enable and maintain consistent decision-making regarding route and corridor selection:
 - minimize the length of the TMEP pipeline;
 - avoid areas that have significant environmental or cultural value or restrictions;
 - minimize routing through areas of extensive urban development;
 - be consistent with established land use planning;
 - avoid areas of potential geotechnical or geological hazards;
 - avoid areas of extremely rough terrain or areas that have limited access;
 - minimize the number of watercourse, highway, road, railway, and utility crossings; and
 - establish the crossing of watercourses at as close as practical to right angles.
- To determine the location of the pipeline alignment, the easement, and temporary workspace on a specific land parcel, Trans Mountain employed the same process and criteria as was used in determining the location of the proposed pipeline corridor. Where possible, the TMEP easement was fixed within the overlapping easement. Required temporary workspace was located as much as possible on open and undeveloped lands to avoid proximity to residences, treed areas, and areas of environmental or cultural sensitivity.
- In accordance with Trans Mountain's routing principles, the proposed route on the Lands is located entirely within the existing TMPL RoW.
- Trans Mountain's preferred criterion of paralleling the TMPL pursues the goals of reducing land use fragmentation, avoiding the use of previously undisturbed lands, reducing the use of unencumbered lands, and leveraging the existing pipeline protection program and landowner knowledge of the location and nature of the existing TMPL to optimize pipeline integrity and safety.

- The NEB has repeatedly recognized that paralleling existing infrastructure is a key method to reduce environmental impacts. In its Reconsideration Report, the NEB held that “aligning the majority of the proposed pipeline route alongside, and contiguous to, existing linear disturbances is reasonable, as this would minimize the environmental and socio-economic impacts of the Project.” Further, while recognizing that certain interested parties disagreed with Trans Mountain’s application of its routing criteria for the TMEP route in Segment 6.3, the NEB ultimately found in its Realignment Report that such application had been appropriate.
- Trans Mountain’s proposed route for the Chilliwack area is consistent with its routing criteria, adequately addresses concerns in relation to Watson Elementary School, and has been accepted by the majority of affected landowners. Mitigation measures in relation to the TMEP’s construction through school yards was set out as part of the Chilliwack Realignment proceeding. Construction mitigation is outlined in **Section 5** below.

DPAC’s submissions

- The first routing criterion having been found to be not feasible in the original route selection (Certificate hearings), and the second routing criterion having subsequently been found to be not feasible (Chilliwack Realignment hearing), the next routing criterion in Trans Mountain’s stated order of preference would have been to install the Line 2 segments in a new easement. However, instead of following the hierarchy of routing criteria, Trans Mountain reverted to the TMPL easement that had previously been rejected. This put the TMEP across the elementary school property, through a densely developed residential area with extremely restricted access, and even closer to multiple Chilliwack drinking water wells, including two on the elementary school property. Trans Mountain’s proposed route in Segment 6.3, including on the elementary school property, contradicts its own original assessment, which rejected using the TMPL for Line 2 in the segment. It fails to follow their own hierarchy of route selection criteria, the logic of which, as stated in the project application, would result in a new easement being found.
- Trans Mountain’s proposed route across the Lands is contrary to its routing guideline to “avoid areas that have significant environmental or cultural value or restrictions.” Its proposed route in the vicinity of Watson Elementary School crosses an area of significant environmental value as it is within Chilliwack’s protected groundwater zone, over top of the source of the community’s drinking water, and within capture zones of Chilliwack’s wells. Schools are of significant cultural importance within a community, with hundreds of children attending each year and schools also acting as community hubs. These uses can be expected to continue and grow through the working lifetime of the TMEP and beyond.
- Trans Mountain’s proposed route across the Lands is contrary to its routing criterion to “minimize routing through areas of extensive urban development.” Its proposed route encounters issues with extensive urban development as it passes through the back fields of Watson Elementary School which, aside from the fact of it being an elementary school, are bordered on three sides by residential development.
- Trans Mountain’s proposed route across the Lands is contrary to its routing criterion to “be consistent with established land use planning.” Present day land use planning would not place an elementary school over a major pipeline. Nor should a major pipeline be placed where there is an elementary school when an alternative is available.

The School District's submissions

- The School District adopts and supports Chilliwack's submissions.
- For the reasons set out in Chilliwack's argument, the School District does not believe that Trans Mountain's routing criteria are an appropriate basis for the TMEP's route selection.
- If the routing criteria are applied, the School District submits that Trans Mountain has not applied them in relation to Watson Elementary School in a coherent or supportable manner, or in a manner consistent with the criteria. Trans Mountain earlier concluded that routing the TMEP through the school lands was not "viable" or "feasible." It has not provided any explanation for why its earlier conclusion to not route the TMEP through the school lands should not still be followed. It is not an answer to say that the routing through the school lands is justified by the Realignment Report because, in that decision, the NEB noted that alternate routes were not considered and that "the detailed routing provisions of the NEB Act would remain to be satisfied," including the best possible route.
- Applying Trans Mountain's routing criteria on its own terms (i.e., in descending order of preference) and in a principled manner would result in the TMEP not being routed through the school lands (since that was already rejected by Trans Mountain for not being "viable" or "feasible"), but instead along other existing easements for linear infrastructure, such as Chilliwack's alternate routes.

Chilliwack's submissions

- Trans Mountain's routing criteria focus on abstract concepts that fail to provide sufficient, or even any, recognition of specific impacts from the TMEP. Trans Mountain submits that its route selection criteria operate "in descending order of preference." A "descending order of preference" is predictable and free from variation.
- In using routing criteria that have a descending order of preference, if the first preference cannot be met, the next one is selected. Once it is determined that a higher criteria is unacceptable, it is "spent," and the next available criteria is to be used to determine the best possible detailed route. The "spent" nature of a criteria is particularly so in the case where Trans Mountain's first criterion, co-location on the TMPL RoW, was initially not selected by Trans Mountain. That is, once the routing was found to be unsuitable under the first criterion, Trans Mountain must go to the next descending criterion; there is no going back or "ascending" to the first one. If Trans Mountain's routing criteria are going to be given any weight, they have to be applied in the manner they are intended to be applied, and that is to go from higher criteria to lower criteria, and not vice versa.
- Applying Trans Mountain's routing criteria, Trans Mountain had determined that the TMPL RoW between KP 1095.5 and KP 1097.3 was not appropriate for the TMEP's routing. Trans Mountain then applied its routing criteria and went in descending order to the second principle, which was to co-locate the TMEP adjacent to other linear facilities' existing easements or RoWs; in this case, a BC Hydro transmission corridor. Trans Mountain determined that routing to also be problematic. Applying the "descending order of preference" to Trans Mountain's routing criteria would then result in applying the third principle, which is to "install the TMEP segments in a new easement selected to balance safety, engineering, construction, environmental, cultural and socio-economic factors."

4.3.1 The Commission: Trans Mountain applied its routing criteria appropriately

Following the Certificate hearings, and the issuance of the NEB's OH-001-2014 Recommendation Report and OH-001-2017 Realignment Report, the GIC approved the TMEP and its general pipeline corridor. The criteria proposed by Trans Mountain were found to be appropriate for determining the pipeline's general route. In assessing whether a proposed detailed route is the best possible detailed route, the Commission considers how the proponent has applied its routing criteria, while also considering the concerns of affected parties, including any measures the proponent has taken to avoid or mitigate those concerns.

The majority of Trans Mountain's proposed route through the Chilliwack area follows the existing TMPL, with most of the route through Chilliwack being constructed within the existing TMPL RoW, such that the first routing criterion applies.

The Commission has considered Chilliwack's, the School District's, and DPAC's submission that, since Trans Mountain's originally proposed corridor deviated from the TMPL in the Chilliwack area and instead followed the BC Hydro route (i.e., moved from the first criterion to the second), Trans Mountain cannot now revert back to the first criterion. The Commission cannot accept this argument.

First, the NEB's Realignment Report recommended approving Trans Mountain's application to move the corridor from the BC Hydro route (the Original Corridor) to follow the existing TMPL (the Approved Corridor), and so the NEB and GIC, at that time in the context of that variance application, found it acceptable to revert to the first routing criterion.

Second, routing through a highly populated area is a complex and complicated constraint mapping activity. It involves weighing the interests and concerns of various stakeholders and careful consideration of site-specific risks and impacts to find the best possible detailed route. As noted in the MH-018-2020 Letter Decision ([C09840](#)), the approved routing criteria are a hierarchy that follow a descending order of preference. However, this does not mean a pre-determined, strict sequencing, or descending-only approach to applying the routing criteria. The weight attributed to each routing criterion is informed on a case-by-case basis, having regard to the site-specific facts and circumstances. Applying the criteria otherwise would be inappropriately rigid; it could quickly exhaust all possible routing locations and result in the best possible detailed route not being found because it would deny the opportunity to consider all available criteria for the next-best option if a route under consideration is found to be unsatisfactory. This point also applies to DPAC's submission that Trans Mountain's routing criteria include the avoidance of areas of significant environmental or cultural value or restrictions. That is, through constraint mapping, this guideline, along with all of the other guidelines listed above, form part of the route planning.

The Commission finds it appropriate that, in applying the criteria, Trans Mountain considered site-specific factors (such as constructability; long-term geotechnical stability; and environmental, cultural, and socio-economic suitability) and its own routing guidelines. The strength or weight of these factors depends on the facts and circumstances unique to the Lands. The Commission expects proponents to engage with potentially affected parties and take all of their concerns, as well as potential risks and effects, into account in routing. This requires flexibility in applying the routing criteria to settle on the best possible detailed route, and address remaining concerns through mitigation.

The Commission expects Trans Mountain to justify the application of its criteria. This should include explaining why it has followed a certain criterion (with reference to the relative importance of that criterion), consideration of site-specific factors associated with its proposed route in the circumstances, and consideration of its own guidelines, which it states it used to enable and maintain consistent decision-making regarding route and corridor selection. There is no notion of a criterion being “spent,” as suggested by Chilliwack, merely on the basis of past consideration or past circumstances.

The Commission is of the view that Trans Mountain appropriately applied its routing criteria in this flexible manner in this case. Trans Mountain’s Original Corridor applied the second general criterion (routing alongside an existing RoW), as Trans Mountain was attempting to avoid the site-specific densely populated area associated with the first general criterion (routing alongside the existing TMPL). However, when even more substantial site-specific engineering challenges with the Original Corridor came to light, circumstances changed, and Trans Mountain considered that the next-best option was to apply the first criterion.

The Commission notes that the NEB’s OH-001-2014 Recommendation Report placed weight on the fact that the TMEP would be co-located with the TMPL. The NEB stated:

The Board further finds that aligning the majority of the proposed pipeline route alongside, and contiguous to, existing linear disturbances is reasonable, as this would minimize the environmental and socio-economic impacts of the [TMEP].

Having considered the parties’ submissions, for the reasons set out in this section, the Commission finds that Trans Mountain applied its routing criteria appropriately. The Commission has considered the alternate routes proposed by Chilliwack and DPAC, as discussed in **Sections 4.5 and 4.6** below. The Commission is of the view that using the first criterion, in these circumstances, carries greater weight than the third or fourth criterion, considering all of the site-specific advantages and disadvantages of each, and application of the guidelines.

4.4 Who has the burden of proof with respect to alternate routes?

DPAC’ submissions

- The closing paragraph of the Hearing Order says that “Trans Mountain has the burden of proving that its proposed detailed route is the best possible detailed route.” It is not enough that Trans Mountain show on a balance of probabilities that, with its proposed mitigation measures and other safety-related factors, the proposed route is possible to construct. Trans Mountain must show that its proposed route is preferable to alternatives.

The School District’s submissions

- There is no dispute that Trans Mountain bears the onus of showing that its proposed route is the best possible detailed route for the new TMEP pipeline.

Chilliwack’s submissions

- Trans Mountain has the onus of showing that its proposed route is the best possible detailed route.

- While Chilliwack is under no legal obligation to prove this, the routing it proposed in its evidence is superior to Trans Mountain's proposed route.

Trans Mountain's submissions

- Trans Mountain acknowledges that it has the onus of proving, on a balance of probabilities, that its proposed route is the best possible detailed route.
- Landowners and intervenors are required to file details of an alternate route as part of their written evidence, and any deficiencies in the evidence will be considered by the Commission in determining whether they have successfully challenged the proposed route.
- The NEB has suggested that Trans Mountain's burden is not to exhaustively review alternate routes that are clearly inferior, but to conduct an appropriate and practical technical review in order to determine whether alternate routes present challenges and have more negative impacts when compared to the route proposed by Trans Mountain.

4.4.1 The Commission: The burden of proof with respect to alternate routes

There is no disagreement among the parties that Trans Mountain has the onus (or burden) to prove, on a balance of probabilities, that its proposed route is the best possible detailed route, and that its proposed methods and timing of construction are the most appropriate.

There is no requirement in a detailed route hearing for SOO Filers or intervenors to identify an alternate route. Trans Mountain's citation of the Commission's 21 April 2020 Procedural Direction in its reply argument is best understood when the sentence is read in its entirety:

As stated in the Hearing Orders, if a SOO Filer and/or intervenor wishes to identify an alternate pipeline route for the Commission's consideration in determining whether Trans Mountain's proposed route is the best possible route, they must file details of the alternate route as part of their written evidence.

A party who advocates a particular position has an evidentiary burden; that is, it bears the onus of producing evidence in support of its position, to persuade the decision-maker. If a SOO Filer or intervenor presents an alternate route for consideration, the alternate route must be described in sufficient detail for the proponent and Commission to understand where it would be located and how it would address the SOO Filer's or intervenor's concerns. However, the Commission does not necessarily require SOO Filers or intervenors to undertake engineering or other field studies, or to consult with all landowners along a proposed alternate route, to persuade the Commission that Trans Mountain's proposed route is not the best possible detailed route. The Commission recognizes that SOO Filers and intervenors are typically individual landowners, Indigenous peoples, and companies that may not have access to pipeline alignment experts with specialized knowledge of the proponent's project.

The proponent is generally the party with the best ability to design and propose a route for a pipeline project, and the proponent will always bear the ultimate burden to prove entitlement to the relief it seeks.

The Commission's consideration of the issues in a detailed route hearing is a highly fact-specific exercise. The amount of detail required to persuade the Commission on a balance of probabilities will depend on the facts and circumstances in any given case.

When alternate routes are raised, the Commission does not require a proponent to complete an exhaustive review of each proposed alternate route. Again, this will depend on the facts and circumstances, and the nature of the alternate route that has been presented. The Commission echoes the NEB's statement in the Burnaby Residents Decision,¹¹ ([A91504](#)) which was cited by Trans Mountain:

There is no need for Trans Mountain to exhaustively review routes that clearly present significant challenges and have more negative impacts; further studies would only confirm this, are unnecessary and beyond the onus a proponent must meet.

The Commission adds, however, that if an alternate route presents a viable option, or an option with potentially less impacts than the proponent's proposed route, the proponent's evidentiary burden would be greater; such circumstances would require stronger evidence from the proponent to prove, on a balance of probabilities, that the proposed alternate route is inferior to its proposed route. In such circumstances, the proponent would be encouraged to file evidence to assist the parties and Commission in understanding the benefits and burdens of each.

The Commission is of the view that an alternate route should not be disregarded on the basis that aspects of that route present technical feasibility issues, especially if those feasibility issues could reasonably be avoided or mitigated with alterations or improvements by the proponent's technical specialists. As stated above, the Commission is mindful that the proponent is generally the party with the best ability to design and propose a route for a pipeline project.

4.5 Considering Chilliwack's alternate routes, is Trans Mountain's proposed route the best possible route?

Figure 4 above shows Chilliwack's alternate route options. Chilliwack proposes routing the TMEP north of the Approved Corridor and either routing along Highway 1 and Lickman Road, or along Highway 1, Hopedale Road, and Keith Wilson Road.

Chilliwack's submissions

- Protection of the aquifer as a water supply can be achieved by limiting the TMEP's rerouting to Hopedale Road as the most westerly leg, and rejoining the existing TMPL corridor at Keith Wilson Road. This eliminates the extensive crossing of the Vedder Canal and uncertainty associated with entering the neighbouring jurisdiction, the City of Abbotsford. The alignment could be set to avoid the center median of Highway 1 and offer as much clearance as possible from the existing edge of the pavement. While additional design work would be required, the alternate route involving the Highway 1 corridor is feasible and any conclusion to the contrary is premature.
- While Chilliwack is under no legal obligation to prove this, the routing it has proposed is superior to Trans Mountain's proposed route. Chilliwack's alternate routes avoid

¹¹ Pertaining to Detailed Route Hearings MH-049-2017, MH-050-2017, MH-051-2017, MH-052-2017, MH-057-2017, and MH-058-2017.

the risks and impacts of Trans Mountain's proposed route identified by the owners of the Lands.

- Chilliwack's alternate routes avoid the potential risks to Chilliwack's supply of water from the Sardis-Vedder Aquifer, while Trans Mountain's proposed route does not. This issue was canvassed by Chilliwack in its argument in MH-026-2020 and will not be repeated here other than to note that, when consideration is given to the impacts of Trans Mountain's proposed route on the Lands that would be avoided by using Chilliwack's alternate routes, the basis for refusing Trans Mountain's proposed route is reinforced.
- The major landowner potentially affected by Chilliwack's alternate routes is the Ministry of Transportation and Infrastructure (MOTI). To the extent that consent is relevant in determining the best possible detailed route, Trans Mountain has not provided any evidence from the MOTI saying that the MOTI would object to Chilliwack's alternate routes. The evidentiary and legal burden to show this lies with Trans Mountain. That is, as Trans Mountain has the burden of proof in this proceeding, then Trans Mountain has to lead evidence to that effect.

The School District's submissions

- The School District adopts and supports Chilliwack's submissions.
- Trans Mountain is incorrect that Chilliwack's alternate route Option 1 crosses a school. This reinforces the differences in the impacts on schools between Trans Mountain's proposed routing and Chilliwack's alternate because Trans Mountain's route actually crosses the Watson Elementary School.
- Trans Mountain's opinion that Chilliwack's alternate routes are not feasible is just that, an opinion, and it should not be given any weight. For example, Trans Mountain does not cite or otherwise identify direct evidence from anyone qualified in engineering to support its position regarding its interpretation of the MOTI's guidelines. In addition, while Trans Mountain notes that Chilliwack's alternate routes would entail certain challenges, such as constructing in congested residential and urban areas and encountering various utilities, so too would Trans Mountain's proposed route.

Trans Mountain's submissions

- There is no consensus among the SOO Filers on the best possible detailed route for the pipeline. Chilliwack and the School District support Chilliwack's alternate routes, while DPAC supports WaterWealth's alternate route proposed in Detailed Route Hearing MH-026-2020.
- As stated at paragraph 26 of the Chilliwack Realignment application, Trans Mountain initially selected a corridor identified as the "BC Hydro Corridor" "because of the limited impacts that this option would have to residents and built-up urban areas [...] when compared to the TMPL easement where residential properties have been developed since the original pipeline installation." Pursuing the BC Hydro Corridor required an agreement with BC Hydro with the assurances that electrical effects on the pipeline or pipeline impacts on BC Hydro's operations would be fully mitigated to the satisfaction of both companies. After consulting with BC Hydro for over two years, Trans Mountain found the BC Hydro Corridor to be not feasible from a technical and operational perspective based on the potential interaction between the TMEP and BC Hydro's infrastructure.

- Chilliwack submits that the prime objective of its alternate routes is to protect the aquifer and wells. The alternate routes are unnecessary to address Chilliwack's concerns because Trans Mountain has proposed comprehensive mitigation measures to protect the aquifer.
- Chilliwack's alternate routes do not eliminate the overlap with the aquifer. Contrary to Chilliwack's rationale, its alternate routes overlap with the aquifer.
- Trans Mountain has undertaken a detailed and comprehensive technical analysis of the alternate routes, including substantial mapping, and has identified major flaws in their design and various technical defects for both alternate routes which are analogous to those considered by the NEB in the Burnaby Residents Decision, such as non-adherence to Trans Mountain's routing criteria, conflicts with existing infrastructure, and lack of sufficient space to safely and efficiently construct the pipeline.
- Trans Mountain provided evidence supporting its opinion that major stakeholders affected by Chilliwack's alternate routes, such as the MOTI, TELUS, and BC Hydro, would not consent to those routes. Trans Mountain obtained this information through its engagement with these stakeholders in relation to the TMEP.
- Chilliwack's alternate routes are unfeasible from an engineering and constructability perspective for five main reasons:
 - i) they parallel the Trans-Canada Highway, and at times cross the highway, in contravention of the policies and guidelines of the MOTI;
 - ii) they do not allow for sufficient space to safely and efficiently construct the pipeline due to the presence of other linear infrastructure;
 - iii) they require third-party consents which are unlikely to be provided;
 - iv) they require trenchless crossings, at least some of which are unfeasible; and
 - v) they create conflicts with a MOTI overpass and a rail bridge, which cannot be avoided.
- In contravention of Trans Mountain's routing criteria, the alternate routes unnecessarily affect a large number of previously unencumbered and unaffected lands. As stated above, the alternate routes cross between 68 and 73 land parcels not previously affected by TMEP.
- Pursuing the alternate routes would result in major project delays of at least two years associated with submitting a variance application; engaging with and satisfying offset and other requirements from the MOTI, BC Hydro, and TELUS; obtaining necessary variances; engaging with other affected landowners and First Nations; and conducting requisite geotechnical studies and detailed engineering, which could take two to three years to complete.
- The School District is the only SOO Filer that has expressed support for Chilliwack's alternate routes, and only beginning with its written argument. The School District did not file any evidence in support of Chilliwack's alternate routes.
- The School District also argues that Chilliwack's alternate routes would affect fewer landowners than Trans Mountain's proposed route and that project delays associated with Chilliwack's alternate routes are Trans Mountain's responsibility.

4.5.1 The Commission: Chilliwack's alternate routes are inferior to Trans Mountain's proposed route

As noted in **Section 4.4** above, Trans Mountain's burden of proof requires consideration of proposed alternate routes, considering reasonable modifications, to prove on a balance of probabilities that they are unfeasible or inferior to its own proposed route. The Commission is of the view that Trans Mountain has undertaken sufficient technical analyses with respect to Chilliwack's alternate routes to meet this burden.

As previously mentioned, Chilliwack's evidence filed in this hearing duplicated the evidence it filed in Detailed Route Hearing MH-026-2020. Several potential benefits of Chilliwack's alternate routes relate to the avoidance of impacts on Chilliwack's Municipal Land interests. These potential benefits were considered in detail in Detailed Route Hearing MH-026-2020.

As stated in **Section 4.2** above, risks to the aquifer and Chilliwack's water wells resulting from the proposed route on the Lands were considered to be in scope for this hearing, given that the Lands are located within the estimated extent of the aquifer and Chilliwack's water wells draw water from the aquifer. As noted above, the Commission is of the view that the risk to Chilliwack's wells is minimal, but not zero.

Although Chilliwack's alternate routes still cross the aquifer (see **Figure 3** above), they do so significantly downgradient of Chilliwack's water wells, and there is no suggestion that the capture zones of those wells extend to the location of the alternate routes. Thus, while the alternate routes could pose some risk to the aquifer and uses of it downgradient from those alternate routes, the risk to the current Chilliwack water wells would effectively be eliminated. The Commission finds this to be a potential benefit of the alternate routes proposed in this hearing.

With respect to application of routing criteria, the Commission notes that Chilliwack's alternate routes would not carry the benefits associated with co-locating the pipeline with the TMPL, as discussed in **Section 4.3**. Chilliwack's alternate routes depart from the first criterion of the routing criteria and would cross lands previously unencumbered by a pipeline RoW, which would introduce land fragmentation. The Commission is of the view that this is inconsistent with the approved routing criteria, and is a notable disadvantage of Chilliwack's alternate routes. The potential benefit of eliminating risk to Chilliwack's water wells is outweighed by the disadvantage of departing from the first criterion and the resulting land fragmentation. Therefore, the Commission finds Chilliwack's alternate routes to be inferior to Trans Mountain's proposed route.

Trans Mountain argued that pursuing Chilliwack's alternate routes would result in major project delays and require it to engage with many affected landowners, whereas it has reached agreements with 90 per cent of all affected landowners with respect to its proposed route. The Commission did not consider project delays and inconvenience associated with a denial of Trans Mountain's proposed route to be relevant factors in assessing whether it is the best possible detailed route. While agreement with affected landowners could be a relevant factor in comparing the advantages and disadvantages of proposed routes and alternate routes, the strength or weight of this factor depends on the facts and circumstances unique to the Lands. In these circumstances, this factor was not determinative. The Commission found that, regardless of landowner consent, further land fragmentation associated with Chilliwack's alternate routes was a material disadvantage in this case, which was not justified.

4.6 Considering DPAC's submissions regarding alternate routes, including its support of WaterWealth's alternate route, is Trans Mountain's proposed route the best possible route?

Figure 3 above illustrates WaterWealth's alternate route. DPAC supports this alternate route, which WaterWealth proposed in its written evidence in Detailed Route Hearing MH-026-2020.

DPAC's submissions

- DPAC has identified significant concerns with the TMEP following the TMPL alignment. Other routes are possible and preferable across Chilliwack. WaterWealth has said that its alternate route is "...shorter than the 1953 route. It has no schools, residential areas, city wells, significant salmon habitat enhancement areas, and has half as many private wells within the 150 metre inventory distance required by project condition 93. It should be easier to construct, more easily accessible for maintenance and more quickly accessible for emergency response."
- DPAC's support for WaterWealth's alternate route is with an understanding, based on paragraph 66 of WaterWealth's written evidence, that this route:
 - is only one example among potential alternate routes founded on the Trans-Canada Highway generalization and superior to the TMPL across Chilliwack; and
 - was presented with further refinement curtailed by the deadline for submitting WaterWealth's written evidence.
- Trans Mountain's proposed route in the vicinity of Watson Elementary School crosses an area of significant environmental value as it is within Chilliwack's protected groundwater zone, over top of the source of the community's drinking water, and within capture zones of Chilliwack's wells. The Sardis-Vedder Aquifer supplies water to 98 per cent of all schools and family homes in the district, and the TMEP should be routed away from the aquifer and Chilliwack's water wells. It is not necessary for an alternate route to eliminate overlap with the aquifer in order to protect the most critical parts of the aquifer.

Trans Mountain's submissions

- There is no consensus between the SOO Filers on the best possible route for the pipeline: DPAC supports the alternate route proposed by WaterWealth; Chilliwack and the School Board support Chilliwack's alternate routes.
- Trans Mountains relies on Trans Mountain's Reply Evidence for WaterWealth (C08071), as applicable to DPAC's Alternate Route.
- As described in section 3.2 of Trans Mountain's Reply Evidence for WaterWealth, the WaterWealth alternate route is unfeasible, contrary to TM's routing criteria by affecting multiple previously unencumbered lands, would cause major Project delays and would significantly increase overall costs (including delays, engagement with affected stakeholders and landowners, construction costs, additional mobilization and demobilization costs, detailed engineering and design costs, and geotechnical investigations) which would total approximately \$20,000,000 to 25,000,000.

Land fragmentation

- Trans Mountain's preferred criterion of paralleling the TMPL pursues the goals of reducing land use fragmentation, avoiding the use of previously undisturbed lands, reducing the use of unencumbered lands, and leveraging the existing pipeline protection program and landowner knowledge of the location and nature of the existing TMPL to optimize pipeline integrity and safety. In its Realignment Report, the NEB recognized that Trans Mountain's preferred criterion of paralleling the TMPL is conducive to achieving these goals, where it stated that, "[...] by choosing to use the existing TMPL [RoW], the Chilliwack Realignment minimizes the potential area of environmental disturbance and involves residents who are already familiar with living in proximity to the existing TMPL which has safety benefits."
- WaterWealth has proposed an alternate route which, for the most part, does not parallel any existing linear infrastructure.

Feasibility

- After DPAC's preferred route (i.e., WaterWealth's alternate route) passes along Kerr Avenue near Vedder Road, it then continues southwest to the intersection of Evans Parkway and Yale Road West, passing through a crowded commercial area and under a portion of the Mr. Liquidator commercial building.
- After DPAC's preferred route (i.e., WaterWealth's alternate route) turns south, crossing the Trans-Canada Highway approximately 200 metres west of Evans Road, it then turns southwest, going diagonally across several fields, and continues in a westward direction to pass through backyards and private fields to the intersection of Adams Road and Lickman Road. The route then crosses Lickman Road and continues southwest across private fields for approximately 1.7 kilometres. It then crosses Hopedale Road and South Sumas Road, weaving between several homes.
- WaterWealth's alternate route is unfeasible because:
 - i) it is not supported by Chilliwack;
 - ii) it relies on an unfeasible crossing of the Trans-Canada Highway;
 - iii) it creates various conflicts with existing infrastructure; and
 - iv) it does not allow for sufficient space to safely and efficiently construct the pipeline.

4.6.1 The Commission: WaterWealth's alternate route, which is supported by DPAC, is inferior to Trans Mountain's proposed route

While WaterWealth was not a participant in this Detailed Route Hearing MH-010-2020, the Commission considered the alternate route proposed by WaterWealth in Detailed Route Hearing MH-026-2020 because DPAC adopted that route on the record of this hearing. DPAC supports WaterWealth's alternate route as an example of a route that avoids the Lands, and specifically the Sardis Vedder Aquifer, Chilliwack's water wells, and the Watson Elementary School property.

Avoidance of Watson Elementary School

DPAC's preferred route (i.e., WaterWealth's alternate route) would avoid Watson Elementary School, while the proposed route would be close to the school. As the Commission found in **Section 4.1.1** above, Trans Mountain has sufficiently addressed potential safety concerns associated with the proposed route through the Watson Elementary School property.

The Commission recognizes that, while safety concerns on the Lands will be sufficiently mitigated, locating the pipeline in Chilliwack causes residual effects, including difficulties and disruptions for Watson Elementary School.

Avoidance of risk to Chilliwack's water wells

Although DPAC's preferred route (i.e., WaterWealth's alternate route) crosses the aquifer (see **Figure 3** above), it does so significantly downgradient of Chilliwack's water wells, and there is no suggestion that the capture zones of those wells extend to the location of the alternate route. Thus, while the alternate route could pose some risk to the aquifer and uses of it downgradient from that route, the risk to the current Chilliwack wells would effectively be eliminated.

As the Commission found in **Section 4.2.1** above, the proposed route would result in minimal risk to Chilliwack's water wells. Substantial mitigation will both reduce the likelihood of a spill, and the consequences should one occur. The Commission considers this suite of mitigation to be appropriate for Trans Mountain's proposed route.

Land fragmentation

The Commission finds that DPAC's preferred route (i.e., WaterWealth's alternate route) would cross lands previously unencumbered by a pipeline RoW, which would introduce land fragmentation. The Commission is of the view that this is not consistent with the approved routing criteria and is a notable disadvantage of the alternate route. As discussed in **Section 4.3.1** above, the Commission places weight on the benefits of co-locating the TMEP with the TMPL to the extent possible, consistent with Trans Mountain's first routing criterion. While WaterWealth's alternate route may address DPAC's concerns, and while the Commission recognizes this alternate route may have other potential benefits, the Commission is of the view that adding a second RoW would increase, not decrease, overall impacts. This alternate route would impact many previously unencumbered parcels of land.

Feasibility

As the Commission found in its MH-026-2020 Letter Decision, DPAC's preferred route (i.e., WaterWealth's alternate route) involves construction and engineering challenges that the Commission finds to be insurmountable.

DPAC's preferred route (i.e., WaterWealth's alternate route) involves using Direct Pipe¹² to cross the intersection of the Trans-Canada Highway and Evans Road (Evans Interchange Crossing). Trans Mountain argues the alternate route is not feasible because the potential crossing alignments pass directly under buildings, could conflict with a gas station underground facilities, and/or cross roads at oblique angles. Further, Trans Mountain's previous geotechnical studies completed at other locations in the Fraser Valley, such as the TMPL's crossing of the Vedder River, found soil conditions unsuitable for a successful horizontal directional drill. Trans Mountain is of the view that, without a feasible contingency plan for the Direct Pipe construction methodology and a suitable alignment, the Evans Interchange Crossing is not feasible.

¹² Direct Pipe is a construction methodology that combines elements of micro-tunneling and horizontal directional drilling.

The Commission accepts Trans Mountain submission that, without a suitable construction methodology for the Evans Interchange Crossing, WaterWealth's alternate route is not feasible.

The cost, or economic feasibility, of the alternate route was not determinative in this case. Incremental cost associated with an alternate route (e.g., the cost associated with building a longer pipeline, or performing technical studies unique to that route) is a relevant consideration. The weight to be given to such cost is a matter to be decided by the Commission, considering the circumstances of each case.

In this case, Trans Mountain submits that the alternate route would cost more than the proposed route for several reasons, which include incremental costs associated with the alternate route. While the Commission accepts there may be incremental cost associated with the alternate route, cost was not a significant factor in the Commission's decision.

Conclusion

Upon considering the potential benefits of DPAC's preferred route (i.e., WaterWealth's alternate route) and feasibility challenges, as well as the disadvantages of constructing a second pipeline RoW, the Commission finds that Trans Mountain's proposed route is superior to WaterWealth's alternate route. Given this finding, the Commission did not find it necessary to further examine other potential adverse environmental and socio-economic effects of the alternate route in more detail.

4.7 The Commission: Trans Mountain's proposed detailed route is the best possible detailed route

The Commission has considered the proposed route, including assessing and weighing its feasibility in light of concerns raised about its proximity to Watson Elementary School and potential difficulties and disruptions for the school, as well as the risk to the Sardis-Vedder Aquifer and associated water wells. Finding that Trans Mountain appropriately applied the approved routing criteria in the circumstances, the Commission also considered and weighed the benefits and feasibility of the alternate routes, and issues that Chilliwack, the School District, and DPAC sought to address in proposing those routes, again weighing the benefits and burdens of Trans Mountain's proposed route.

For the reasons provided, the Commission is of the view that, on a balance of probabilities, Trans Mountain's proposed route, along with the commitments and conditions that apply to it, is the best possible detailed route.

5 Are Trans Mountain's proposed methods of constructing the pipeline the most appropriate?

Trans Mountain proposes to construct the TMEP on the Lands with a conventional open trench construction methodology.

Trans Mountain's submissions

- The SOO Filers oppose the proposed route on the basis that it crosses the grounds of the Watson Elementary School and creates unnecessary risks to students, staff, and parents.

- Some concerns raised in the hearing are similar to those considered at length by the NEB in the MH-052-2018 Reconsideration and Chilliwack Realignment hearings. In those hearings, Trans Mountain provided overarching mitigation related to such concerns, including reference to its:
 - Pipeline Protection Program, including aerial surveillance and ground surveys;
 - Public Awareness Program, to communicate with the affected public, landowners, residents, contractors/excavators, emergency responders, elected officials, and government employees; and
 - Emergency Management and Response Program.
- With respect to crossing school yards, as part of the Chilliwack Realignment hearing, Trans Mountain proposed various mitigation measures, including:
 - scheduling construction activities between the months of July and August;
 - restricting access to the construction zone by using fencing around the entire construction area;
 - implementing traffic management plans; and
 - measures relating to project vehicles and equipment.
- The NEB approved these mitigation measures in its Realignment Report.
- Specifically with respect to the Lands:
 - Trans Mountain will install a semi-permanent 1.8-metre-tall fence along all site boundaries with locked vehicle gates at each road crossing. Man gates will be installed at regular intervals to ensure proper access and egress in case of emergency.
 - In response to DPAC's request for a commitment to keep an access route open for students during construction, in the unlikely event that Trans Mountain determines that construction cannot be completed within the proposed timing, Trans Mountain will work in collaboration with the School District to provide paths open for students and other persons to safely access the school. Trans Mountain will provide signs to indicate any detour to ensure that students and other persons are aware of the closures and safe access through the construction site.
 - Night security will be used to monitor the site and deter public access afterhours.
 - All gates and vehicles will be locked when construction personnel are not present.
- If Trans Mountain determines that construction cannot be completed in July/August once construction activities have begun, Trans Mountain will secure and monitor the site to ensure that it cannot be accessed by students, and will defer construction to an alternate timing. Measures Trans Mountain will employ to secure the site may include:
 - upgrading the semi-permanent chain-link fence to a permanent one;
 - locking access and egress gates for the duration of the shutdown period;
 - installing and maintaining warning signage along the fence perimeter and including information about hazards and contact information in case of an emergency;
 - providing 24-hour security personnel to monitor the site at regular intervals; and
 - engaging with the School District to provide details on the site plan, potential hazards, protective measures, and generally raise awareness with the community.

5.1 The Commission's decision: Trans Mountain's proposed methods of constructing the pipeline are the most appropriate for the Lands

The Commission finds that Trans Mountain's proposed methods of constructing the pipeline on the Lands (i.e., using conventional open-trench construction methodology) are the most appropriate.

The Commission is of the view that access control and general construction safety oversight with respect to students and the public is of paramount importance. The Commission expects Trans Mountain to implement the measures and mitigation established through the Certificate hearings and this Detailed Route Hearing MH-010-2020 to address potential impacts during construction.

6 Is Trans Mountain's proposed timing of constructing the pipeline the most appropriate?

Trans Mountain is proposing to construct the pipeline between July and August 2021, backfilling the trench prior to students returning to school in September 2021 to the extent practicable.

DPAC's submissions

- DPAC has concerns regarding contingency if construction cannot be completed in the proposed timing, mainly because school fields and playgrounds are important for children's structured and unstructured play, socialization, and executive function.
- DPAC has concerns about access control and general construction safety oversight with respect to students and the public.
- Workspace and the proposed ROW span the school property and extra workspace takes the entire property north of the proposed RoW. The extra workspace, proposed RoW, and workspace all potentially block access to the school via the path from the north. The proposed RoW also overlaps the path between Arlington Drive and the school, as well as Arlington Drive where the entrance to the path is. If both paths were closed, students who walk, cycle, or skateboard to school from those residential areas to the north or west would be forced to access the school via the much busier Watson Road, which has no sidewalk on its north side. Students would also be arriving at and leaving the school at the same time that traffic on Watson Road peaks, with parents driving students to and from school. If only one of these paths were to be closed for construction, a detour is possible via a path between Balmoral Park and Roseberry Road. Students may not be aware of that possible detour. DPAC seeks a commitment from Trans Mountain to keep at least one of the paths from Arlington Drive or Balmoral Park open for students to safely access the school.

Trans Mountain's submissions

- In Trans Mountain's view, its proposed timing of construction is the most appropriate timing, as it adequately minimizes disruptions to Watson Elementary School students, staff, and parents. In order to address the SOO Filers' concerns in relation to the timing of construction, Trans Mountain has (i) given assurances that its proposed timing can be met, and (ii) in the highly unlikely event that such timing cannot be met, proposed alternate mitigation measures.

- Trans Mountain selected the July/August timing with the objective of (i) avoiding interference with use of the Lands during the school year and (ii) securing the TMEP construction site to avoid student access. From a construction point of view, Trans Mountain is confident that construction activities can be completed in July/August. References in Trans Mountain's evidence to construction activities occurring between July and August 2021 "to the extent practicable" were made in relation to any non-construction delay, such as regulatory constraints. Notwithstanding the above, prior to commencing construction activities in July 2021, Trans Mountain will complete a pre-construction assessment to determine whether the July/August timing can be met. If Trans Mountain concludes that construction activities cannot be completed within July/August 2021, it will defer construction until summer 2022.
- In the highly unlikely event that Trans Mountain determines, once construction activities have begun, that construction cannot be completed within the proposed timing, it will secure and monitor the construction site to ensure that it cannot be accessed by children and it will defer construction until summer 2022.
- In argument, DPAC and the School District objected to Trans Mountain's above-noted proposed contingency plan. DPAC stated that this proposal would be "an unacceptable situation for the students, as they will need full access to the fields throughout their entire school year in order to help facilitate learning and to fulfill their curricular requirements in physical education." These statements were first introduced in argument and, in Trans Mountain's view, should be disregarded by the Commission.
- Trans Mountain confirmed that it is confident that construction activities can be completed in July/August 2021, and that the need to defer construction is "highly unlikely." Trans Mountain has reiterated this understanding throughout the hearing. This conclusion is reasonable considering that Trans Mountain has committed to complete a pre-construction assessment to determine whether the July/August 2021 timing can be met, prior to commencing construction. Trans Mountain notes that neither DPAC nor the School District has proposed alternative mitigation measures to address their concerns relating to TMEP construction on the Watson Elementary School lands.

6.1 The Commission: Trans Mountain's proposed timing of constructing the pipeline is the most appropriate for the Lands

The Commission finds that Trans Mountain's proposed timing of constructing the pipeline across the Lands is the most appropriate.

Chilliwack's submissions with respect to the timing of constructing the pipeline relate to concerns and interests that are outside of the Lands. Chilliwack did not provide site-specific submissions regarding the timing of construction on the Lands.

The Commission agrees with Trans Mountain that DPAC's submission from paragraph 3188 of its final argument ([C09853-1](#)) that "[students] will need full access to the fields throughout their entire school year in order to help facilitate learning and to fulfill their curricular requirements in physical education" constitutes new evidence. Therefore, the Commission disregarded this portion of DPAC's argument. However, the Commission also notes that DPAC has expressed concern with Trans Mountain's timing and contingency plan throughout its evidence and argument, which the Commission considered.

The Commission agrees with DPAC regarding the importance of school fields and playgrounds for children in the community, but also notes that impacts to the school fields and outdoor spaces caused by construction timing is temporary and reversible. Based on the detailed map, it does not appear that the playground itself will be affected, but rather a northern portion of the school field farthest away from the school will be unusable.

The Commission views commitments made by companies to be significant, and not trivial, matters. In this case, Trans Mountain's commitments may further reduce potential impacts on DPAC and the School District. The Commission expects Trans Mountain to fulfill the commitments it made in this detailed route hearing. The Commission is of the view that several of Trans Mountain's proposed mitigation measures are particularly responsive to DPAC and the School District's concerns, including the site-specific construction, access, and safety mitigation measures. The Commission places significance on Trans Mountain's commitment to complete a pre-construction assessment to determine whether the July/August 2021 timing can be met and, if it is determined that it cannot, to defer construction until July/August 2022. The Commission recognizes that the timing of this Letter Decision may affect the assessed construction dates in any event.

Nonetheless, if Trans Mountain determines in its pre-construction assessment that the July/August 2021 timing can be met, and construction commences in July 2021 but it is apparent that construction cannot be completed by the time school resumes in September 2021, the Commission accepts that Trans Mountain has made sufficient contingency mitigation commitments to safely secure and monitor the site until construction resumes in summer 2022. However, the Commission is mindful of DPAC's concern that starting and deferring construction until summer 2022 would result in an inactive construction site for an extended period of time. The Commission is of the view that, while most of the school field and outdoor spaces would remain available to students under this contingency scenario, there would still be an inconvenience placed on Watson Elementary School's students for the duration of the 2021/2022 school year.

The Commission is of the view that neither DPAC nor the School District requested any specific mitigation measures that could mitigate this concern under this contingency scenario. However, if the contingency scenario were to materialize, the Commission expects Trans Mountain to mitigate such inconvenience to Watson Elementary School and its students. The Commission expects Trans Mountain to continue its engagement with the School District prior to construction in order to discuss specific concerns and potential alternative mitigation measures for this contingency scenario, if applicable.

To remain informed on construction progress, engagement activities, and contingency planning with respect to the Watson Elementary School property, the Commission will include, on any Order approving PPBoR Sheet M002-PM03016-001, the following condition:

Watson Elementary School schedule contingency

- a) Trans Mountain must file with the CER, **within 15 days of the release of this Order, a pre-construction update** including the outcome of Trans Mountain's pre-construction assessment to determine whether construction will begin in July or August 2021 as planned.
- b) If construction began in July or August 2021, Trans Mountain must provide a **construction progress update by 27 August 2021** that either:
 - i) confirms that Trans Mountain has completed its planned works; or
 - ii) confirms that Trans Mountain has determined it cannot complete construction as planned.
- c) If construction has begun but cannot be completed in August 2021 prior to the new school year, Trans Mountain must provide **a construction contingency plan by 27 August 2021**, including:
 - i) an update on construction progress to date, what construction works remain and the planned dates to complete the remaining works;
 - ii) an update on engagement activities with the School District regarding the contingency planning, including dates and methods of engagement;
 - iii) a summary of the concerns raised by the School District and any alternative mitigation measures they propose for the contingency scenario, and how Trans Mountain proposes to address concerns and mitigate any inconveniences to students caused by the restricted use of a portion of the school field associated with the contingency construction timing scenario; and
 - iv) a description of which concerns are outstanding and how Trans Mountain intends to address those concerns, or an explain why no further steps will be taken.

7 Conclusion

The Commission appreciates the time and effort spent by those from the School District, DPAC, Chilliwack, and Trans Mountain in providing their presentations of evidence and argument for consideration in this detailed route hearing.

The Commission has decided that Trans Mountain's proposed route is the best possible detailed route on the Lands, and the proposed methods and timing of constructing the pipeline are the most appropriate, subject to the commitments made by Trans Mountain and ongoing compliance with the Certificate OC-065 conditions. The Commission has arrived at this conclusion having considered the obligations under the CER Act and finds that its determinations are consistent with those obligations.

The Commission will not direct Trans Mountain to install a secondary containment (or trench liner) between KP 1095 and KP 1097. The Commission finds that Trans Mountain enhanced leak detection system along with the other approved mitigation (i.e., limiting ditch trenching for open-trench construction to the dry season, treating construction activities over the aquifer as a water crossing, and adding a pipeline valve upstream of the aquifer) would minimize the risk of potential leaks and would outweigh the benefits of adding a trench liner.

Having decided that Trans Mountain's proposed route is the best possible detailed route on the Lands, and that its proposed methods and timing of construction are the most appropriate, the Commission will issue an Order approving the PPBoR for the Lands. Any future Order approving the PPBoR for the Lands will include conditions requiring Trans Mountain to list and fulfill the commitments it made in the course of this Detailed Route Hearing MH-010-2020, to file updated environmental and construction alignment sheets, and to maintain a copy of the Order and condition filings at its construction office(s)

The Commission reminds Trans Mountain that it has articulated in this Letter Decision a number of expectations that Trans Mountain is expected to meet. The Commission also reminds Trans Mountain that the relevant conditions of approval in Certificate OC-065 apply to the construction and operation of the TMEP pipeline on the Lands.

Finally, as the Commission has communicated in previous correspondence in this hearing, under Part 6 of the CER Act, parties may apply to the Commission to determine compensation disputes in relation to land matters. The CER's [Land Use Compensation webpage](#) provides further information about when compensation may be available.

The CER offers alternative dispute resolution (ADR) services to assist parties in reaching resolution of outstanding issues outside of the regulatory process. To take advantage of ADR, both parties must agree to take part. This process is voluntary and facilitated by trained CER mediators, or by another neutral third party mediator. If interested in using the CER's ADR services or learning more information about ADR options, please email ADR-RED@cer-rec.gc.ca or call 1-800-899-1265.

Yours sincerely,

Signed by

Jean-Denis Charlebois
Secretary of the Commission

c.c. Trans Mountain Canada Inc., General inbox, Email info@transmountain.com