



## DECISION

File OF-Fac-Oil-T260-2013-03 19  
15 February 2018

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Dear Mr. McDade, Mr. Stoness, Mr. Denstedt and Ms. Oleniuk:

**Trans Mountain Pipeline ULC (Trans Mountain)  
Trans Mountain Pipeline Expansion - Certificate OC-064  
Decision for Detailed Route Hearing MH-033-2017 – Tunnel Section  
City of Burnaby (Burnaby)**

### 1. Background

On 19 May 2016, the National Energy Board (NEB or Board) issued its Report recommending that Governor in Council (GIC) approve the Trans Mountain Expansion Project (TMEP), subject to 157 conditions ([A77045](#)).

The TMEP included twinning the existing 1,147 kilometre long Trans Mountain Pipeline (TMPL) system in Alberta (AB) and British Columbia (BC) with approximately 981 kilometres of new buried pipeline; new and modified facilities, such as pump stations; additional tanker loading facilities at the Westridge Marine Terminal in Burnaby; and reactivating 193 kilometres of existing pipeline between Edmonton and Burnaby. Trans Mountain requested approval of a 150 metre-wide corridor for the TMEP pipeline's general route. On 29 November 2016, GIC

directed the Board to issue the Certificate of Public Convenience and Necessity (Certificate) OC-064 ([A80871](#)), the effect of which was to approve the TMEP, including the proposed 150 metre-wide corridor.

On 3 and 17 March 2017, Trans Mountain applied to the Board for Segment 7 of its TMEP detailed route, submitting the Plan, Profile, and Book of Reference (PPBoR). Under section 34 of the *National Energy Board Act* (NEB Act), Trans Mountain made available for public viewing copies of its PPBoR, served notices on owners of lands proposed to be acquired for the proposed detailed route<sup>1</sup>, and published notices in newspapers in the vicinity of the proposed detailed route<sup>2</sup>.

In all detailed route hearings, the Board considers the following issues<sup>3</sup>:

- 1) the best possible detailed route of the pipeline;
- 2) the most appropriate method of constructing the pipeline; and
- 3) the most appropriate timing of constructing the pipeline.

In its 4 October 2017 Letter of Decision ([A86548](#)), the Board stated that it would not consider the issue of compensation to be paid to landowners as that matter is not within its jurisdiction.

In its 16 January 2018 Procedural Update No. 4 ([A89245](#)), the Board reminded parties of the above three issues that it would consider and stated,

Issues raised should be site-specific to the proposed detailed route of the pipeline. Topics such as individual compensation, the specific terms of easement agreements and general design and safety already considered at the certificate hearing are out of scope and not relevant to the detailed route hearing.

## **2. Detailed Route Hearing MH-033-2017 (Tunnel Section)**

This decision relates only to the Tunnel Section identified in the statements of opposition. The Tunnel Section is defined as the TMEP pipeline route between the Burnaby Terminal and the Westridge Marine Terminal. Decisions on the remainder of Burnaby's statements of opposition will follow in due course.

Burnaby is the registered owner or occupier of lands located at various locations proposed to be crossed by the proposed detailed route of the TMEP pipeline in Segment 7.

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<sup>1</sup> As required by paragraph 34(1)(a) of the NEB Act.

<sup>2</sup> As required by paragraph 34(1)(b) of the NEB Act.

<sup>3</sup> As set out in subsection 36(1) of the NEB Act

Burnaby filed statements of opposition on 23 April 2017 and 24 July 2017<sup>4</sup>, stating that it is opposed to the proposed detailed route and methods and timing of construction in relation to all sections served by Trans Mountain.

In its written statement of opposition, Burnaby identifies the Tunnel Section through a listing of parcel identifiers and segments of municipal roadways. Regarding current land use, Burnaby indicated that the Tunnel Section passes beneath Burnaby Mountain Conservation Area and important municipal infrastructure on Burnaby Mountain.

Trans Mountain identified the tracts affected by the Tunnel Section in its PPBoR for Burnaby Segment 7.7, which was filed with the Board on 3 March 2017 ([A81972-2](#)) (see Figures 1 and 2 and Appendix I)<sup>5</sup>. The Tunnel Section appears on PPBoR drawings M002-PI03028-005 through M002-PI03028-009.

The Board granted Burnaby a detailed route hearing and issued a Hearing Order on 4 October 2017 which included hearing number MH-033-2017 ([A86549](#)). The Hearing Order set a January 2018 timeframe for the oral portion of the hearing.

The oral portion of the detailed route hearing was held from 23 to 25 of January 2018 in the City of Burnaby, BC (transcripts filed as [A89490](#), [A89535](#) and [A89557](#)). Both Trans Mountain and Burnaby presented witness panels, who were cross-examined by the respective parties and questioned by the Board.

Dr. Karen Kavanagh applied for, and was granted, intervenor status in this hearing. She did not file any written evidence or appear at the oral hearing. As discussed below, the Board ruled on her notice of motion in Ruling No. 3.

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<sup>4</sup> Burnaby's 24 July 2017 filing clarified that its previously-filed statement of opposition applied to two additional parcels, identified after a subsequent service step by Trans Mountain, but in all other respects was a re-filing of the April statement of opposition. Therefore the Board refers singularly to Burnaby's statement of opposition.

<sup>5</sup> Figure 1 and Figure 2 are maps filed by Trans Mountain as part of its evidence for detailed route hearing MH-033-2017 ([A89011-29](#)).



### ***Views of Trans Mountain***

Trans Mountain's proposed route through the Tunnel Section starts at the western side of the Burnaby Terminal and continues under the Burnaby Mountain Conservation Area to the Westridge Marine Terminal. Trans Mountain stated that, using its routing criteria, it determined that the tunnel route was the best possible route as a result of community consultation in order to avoid more densely populated areas. Trans Mountain stated that the tunnel option was the preferred option of the two possible routes (tunnel and street) in the Decision and Certificate for OH-001-2014 for the TMEP application.

Trans Mountain said that it had engaged with Burnaby as early as April 2012 on the Project. In March 2014, Burnaby staff indicated that they did not have the support from City of Burnaby's council to engage regarding the Project. On route selection and construction, Trans Mountain said there were a number of engagement events it put on in 2016 and 2017 that Burnaby did not participate.

In August 2014, Trans Mountain initiated Technical Working Groups (TWG) with various municipalities as part of its engagement program. Burnaby declined to participate when they were initially established. After the Certificate was issued in 2016, Trans Mountain again invited Burnaby to participate, which it agreed to do if they were called "pre-TWG" meetings. More specific issues were to be dealt with in Sub-Working Groups (SWG), but Burnaby staff were not willing to fully participate in these meetings until after the detailed route process was complete and hearings concluded. Overall, Trans Mountain indicated it has only been able to discuss limited information in the pre-TWG and SWG meetings with Burnaby staff.

### ***Views of the City of Burnaby***

In its statement of opposition, Burnaby raised a number of concerns. This included concerns regarding terms of the easement agreement, indemnity, impacts on maintenance and regulatory control, impacts to critical infrastructure in the Barnet Highway corridor, surface access, impacts on parks and protected areas, and emergency response. Burnaby did not detail these concerns on a site-specific basis in its written evidence. It briefly cross examined and made argument on the Tunnel Section during oral argument.

Burnaby stated that Trans Mountain did not follow its routing criteria of following the existing route when it came to Burnaby-owned or affected lands. In Burnaby's statement of opposition it requested that the Board order that Trans Mountain be restricted from accessing the surface of the Tunnel Section and that Trans Mountain be ordered to develop a comprehensive construction and geological hazard mitigation plan.

Burnaby expressed a general dissatisfaction with Trans Mountain's consultation for route selection for all City of Burnaby sections. Burnaby was of the view that there has been a lack of diligence on the part of Trans Mountain to engage with the Burnaby community, its council, and the municipality. Burnaby also said that no public meetings were held in Burnaby for all

residents to attend freely and that it was not consulted on alternate route options for all City of Burnaby sections.

Burnaby reiterated during the hearing that it is always willing to engage and recognized the importance of consultation. However, Burnaby expressed concern that, once Trans Mountain gets detailed route approval, all level of cooperation will be gone and concluded that “the reason we're before this Panel is that we're not satisfied that compromise is possible without an order of this Panel to go and find a new route.”

In questioning during the oral hearing, Burnaby said, “In many respects, we're still here to oppose many of the things that are going to be impacted.” Burnaby indicated that it had only limited engagement with Trans Mountain during the time period when detailed routing was being developed, although, it had provided comments through its counsel on reports that had been filed with the NEB.

#### ***Views of Dr. Karen Kavanagh and Trans Mountain’s Response to Dr. Kavanagh***

Dr. Karen Kavanagh, the sole intervenor in this hearing, filed a notice of motion raising concerns about vibrations from drilling and potential impacts to her work at Simon Fraser University in the Electron Imaging and Holography Facility using electron microscopes. In its response to her motion, Trans Mountain said that, given the facility is located a significant distance from the tunnel path, vibrations should not be discernible. Trans Mountain also committed to notifying Dr. Kavanagh a minimum of one week prior to starting tunneling operations to discuss the tunnel boring activities, timing and duration in relation to her research schedule.

Dr. Kavanagh did not reply to Trans Mountain’s response to her motion, did not file any further written evidence, and did not appear at the oral hearing. In the Board’s ruling on Dr. Kavanagh’s motion ([A89502](#))<sup>6</sup>, the Board concluded Trans Mountain has provided relevant information as to the anticipated potential impact of vibration and a commitment to consult and coordinate with Dr. Kavanagh.

#### **4. Location of the Route**

##### ***Views of Trans Mountain***

In selecting its 150 metre-wide corridor and detailed route for the new TMEP, Trans Mountain established a hierarchy of routing principles, which Trans Mountain set out in its written evidence and spoke to in the hearing. Trans Mountain said that the detailed route was developed in accordance with these routing principles, but noted that generally within the City of Burnaby, co-locating the expansion with the existing pipeline was not practicable because of the development that had taken place since the existing pipeline was installed. Trans Mountain said it also used feedback from landowners, stakeholders, and various levels of government and Aboriginal communities to optimize the proposed TMEP corridor.

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<sup>6</sup> Ruling No. 3, read orally on 23 January 2018.

With respect to the route selection process, where co-location was not practicable, other principles Trans Mountain set out took into account additional issues such as balancing safety, engineering, construction, environmental and socio-economic factors. While co-location with the existing TMPL pipeline was among those principles identified, Trans Mountain said urban development in Burnaby meant co-location was not practicable. As Trans Mountain indicated, the existing TMPL pipeline goes through the city streets and the proposed tunnel route was seen as a way to efficiently get to the Westridge Marine Terminal without having an effect on the more densely-populated areas to the west. Trans Mountain stated that the detailed route for this section was chosen based on consultation it had with communities.

Trans Mountain argued that Burnaby did not file evidence explaining its concerns with respect to routing through the Tunnel Section, and that the only written evidence on the record for the Tunnel Section is Trans Mountain's written evidence. Trans Mountain argued that its written evidence establishes that the proposed detailed route follows the best possible route.

Trans Mountain also said that it continues to be open to discussions with Burnaby around opportunities for improved mitigation and reclamation enhancement. Trans Mountain said that it has been diligent in its attempts to engage Burnaby in the routing, planning, and design of the proposed detailed route but success has been limited, and in its view, any alleged lack of information provided to Burnaby has been a result of Burnaby's lack of response to Trans Mountain efforts.

### ***Views of the City of Burnaby***

Burnaby expressed concerns about the route through the tunnel, and indicated the portals at either end could affect trail pathway routes and produce visual impacts. Burnaby said, any construction in greenways, from maintenance of the pipeline and construction could impact ecological value, vicarious enjoyment, and visual enjoyment in the Burnaby Mountain Conservation Area.

During final argument, Burnaby said there was no evidence from Trans Mountain about why it is not practicable to route through residential properties and business property rather than through Burnaby lands, including parks and conservation areas. Burnaby did not file any alternate route nor did it detail in evidence the potential site-specific impacts it indicated for the Tunnel Section.

## **5. Methods of Construction**

Trans Mountain said that the proposed detailed route was established to accommodate a trenchless construction technique using a tunnel boring machine. Trans Mountain stated that these techniques would minimize or eliminate tree clearing within the Burnaby Mountain Conservation Area and impacts on the surrounding community and residents.

Trans Mountain also stated in its written evidence that its routing corridor with respect to the Tunnel Section was established to accommodate multiple alignment options based on different

construction techniques. Specifically, from Kilometre Post 0.70 through Kilometre Post 3.15, the proposed right-of-way is based on an alignment that is to be constructed using a tunnel boring machine. The tunnel will have a depth of cover ranging from about 10 metres to 150 metres.

Trans Mountain provided a detailed Site-Specific Construction Plan for tunnel construction purposes in its written evidence that addressed construction methods, public safety, impacts from noise and vibration, and potential geologic hazards. Specifically for noise and vibration, Trans Mountain said as tunnel construction progresses, it would implement additional mitigation measures as required, and implement a community consultation and complaint investigation process.

In cross-examination, Burnaby questioned Trans Mountain about potential geotechnical risks at the tunnel exit near the Barnet Highway, particularly sinkholes. In response, Trans Mountain indicated they had undertaken geotechnical investigations in the area and adjusted the tunnel alignment to be further below the highway and selected a tunnel boring machine that can maintain proper earth pressures.

As part of its written evidence, Burnaby filed a technical memorandum titled, *Suggested Practices within Urban Areas*, undertaken by Associated Engineering. These are introduced as "... a collection of recommendations ..." developed for the construction of TMEP, and include a small number of suggestions for the Tunnel Section. Trans Mountain replied to the memorandum with site-specific comments on the suggestions and described why its proposed methods were most appropriate. At the oral hearing, Burnaby indicated its Associated Engineering report had not taken into account any condition compliance filings from Trans Mountain. Similarly, Burnaby indicated that it had not been actively involved or monitoring condition filings other than keeping a general list.

## **5.1 Access to the Surface of the Lands**

### ***Views of Trans Mountain***

Trans Mountain said that it has no plans to access the tunnel from the surface. Site clearing will be limited to Trans Mountain's property for tunnel construction purposes. Trans Mountain acknowledged that there will be the need for some monitoring and surveying, but said that it would not be invasive in the park area.

Burnaby asked Trans Mountain whether the company would require access to the Burnaby Mountain Conservation Area in the event there is an emergency resulting from the pipelines in the tunnel. Trans Mountain said the need to access the Burnaby Mountain Conservation Area is very unlikely, particularly for the deeper segments where it would not be feasible to conduct repair work from the surface, and it would not need to maintain a cleared right-of-way on the surface for line patrol. However, if issues around access arise following operations, Trans Mountain would work with Burnaby to minimize impact on the surface and if there was any impact, it would be fully restored as required by the Board.

Trans Mountain said that the terms of the proposed easement and Trans Mountain's right to surface access between the tunnel portals is outside the scope of the detailed route hearing as it does not deal with pipeline routing, or methods or timing of construction.

### *Views of the City of Burnaby*

In its statement of opposition, Burnaby said that the easement associated with the Tunnel Section must not encumber the surface lands associated with the tunnel alignment, nor should it provide Trans Mountain rights of access to these lands for maintenance, emergency response, remediation or otherwise. Burnaby argued that it prefers to see an easement that deals with only the subsurface, but at the surface from portal to portal it is critical that there be no surface easement.

### **6. Timing of Construction**

Trans Mountain provided a detailed schedule of when tunneling construction would occur, including for tunnel setup, tunneling, and cleaning and maintenance. This would consist of various shifts, including activities during the night. Burnaby stated that it opposed the timing of construction although it did not raise any specific issues or concerns regarding timing.

### **7. Board Views and Decision for Detailed Route Hearing MH-033-2017 (Tunnel Section Only)**

The Board appreciates the time spent by both Burnaby and Trans Mountain in discussing their filings and concerns during this detailed route hearing. Although Dr. Karen Kavanagh did not attend the oral hearing, the Board has considered her filings in making its decision. Largely, though, the specific issues Dr. Kavanagh raised were addressed in the Board's ruling on her notice of motion. Trans Mountain also committed to consult and coordinate with Dr. Kavanagh. The Board notes that the issue of vibration from tunneling was the main focus of detailed route hearing MH-055-2017.

### The Best Possible Route

The 150 metre-wide corridor and the tunnel routing option were discussed at length in the original Certificate hearing for the TMEP. Trans Mountain has committed to meeting the conditions and commitments it made related to the tunnel during that hearing. The Board accepts that Trans Mountain's routing principles allow flexibility to reduce a variety of potential impacts of the TMEP pipeline. Consistent with the views of the Board during the Certificate hearing, the Board is of the view that by avoiding densely populated urban areas, the proposed route through the tunnel limits the nature and extent of impacts of construction and operations activities for residents while balancing safety, engineering, and environmental factors.

The Board notes that there are extensive views provided on these issues in the NEB Report ([A77045](#)), and that the Board imposed numerous conditions. Burnaby did not appear to take into account such conditions in its evidence. To some extent, this lowered the weight the Board

assigned to particular evidence for the Tunnel Section, including the Associated Engineering report which Burnaby included in its evidence. Within the report was a section titled, *Suggested Practices within Urban Areas*, which contained a collection of practices for a pipeline constructed within the city. The collection of practices did not indicate how legislative requirements for federally regulated pipelines were incorporated into the engineering analysis. At times Burnaby's argument appeared to suggest that it preferred some type of pipeline route through residential streets and properties rather than the Tunnel Section route proposed by Trans Mountain, although an alternative route was never formally put forward. While there is no requirement to file an alternative route, and ultimately Trans Mountain has the overall onus, the lack of an alternative route proposal made it difficult for Burnaby to credibly suggest that a street route through residential and business property may be a better route. To the extent such an argument was made, the Board did not find it persuasive.

For all these reasons, the Tunnel Section proposed is the best route of the pipeline.

#### The Most Appropriate Method of Construction

Burnaby's suggestions related to construction methods were provided in the Associated Engineering technical memorandum and related filings. However, the Board finds that Trans Mountain adequately replied to the concerns raised in regards to its proposed methods.

The use of a tunnel boring machine to undertake this section of the TMEP was not explicitly questioned by Burnaby. Burnaby made a general statement that the proposed methods of construction are not the most appropriate without elaborating on its opposition. Given that the proposed method was accepted in the Certificate process, and nothing new was raised in this proceeding, the Board finds at the detailed routing stage that this continues to be the most appropriate method of construction. Reasons for this finding include that the boring method of construction took into consideration Trans Mountain's geo-technical investigation, and will minimize impacts on the Burnaby Mountain Conservation Area and nearby residents. The Board is satisfied that safety and protection to the environment is adequately addressed in Trans Mountain's Site-Specific Construction Plan.

#### The Most Appropriate Timing of Construction

Although this issue was largely not contested by Burnaby, the Board considered the schedule proposed by Trans Mountain and agrees that it is appropriate to follow its proposed schedule. Such a schedule will minimize the duration of an already lengthy construction operation and is the most appropriate timing of construction.

#### Consultation and Engagement during Detailed Route Process

The Board acknowledges Trans Mountain's commitment to continue engagement with Burnaby as well as Burnaby's interest in effective consultation and cooperation after the detailed route hearings are finalized. The Board expects affected parties, including municipalities, to engage with Trans Mountain by communicating their concerns to the company and making themselves

available to discuss potential solutions. The Board encourages Trans Mountain and Burnaby to collaborate in order to address issues of interest to both parties, including concerns relating to the pipeline's location and the potential impacts on Burnaby's long-term plans.

Having considered all the evidence regarding consultation opportunities during the detailed route process, the Board is of the view that Burnaby chose to not take full advantage of numerous opportunities offered by Trans Mountain. Outside of the limited pre-TWG process (sometimes referred to as the TWG process), and filings through counsel, Burnaby stopped its limited consultation with Trans Mountain around the point it filed its detailed routing objections. While it is Burnaby's right to do so, in the Board's view such an approach has the potential to result in less than optimal outcomes during this detailed design phase of the Project. It may be that Burnaby will choose to be more involved in subsequent phases. Considerable local knowledge and expertise could be contributed by Burnaby.

The Board is of the view that Burnaby and Trans Mountain can achieve more mutually acceptable outcomes by maintaining professional engagement on matters they are both responsible. The Board reminds both parties that it offers alternative dispute resolution services and technical support if either, or both parties, believe that additional support is needed.

#### Other Issues Raised

Burnaby brought up the issue of easement agreements and indemnity. The Board will not make decisions about this as both issues are outside of the scope of this detailed route hearing. Compensation concerns are also outside the jurisdiction of the Board. Further, the Board notes that concerns regarding impacts on maintenance and regulatory control, and critical infrastructure in the Barnet Highway Corridor, were only raised in the statement of opposition and not detailed on a site-specific basis by Burnaby. Burnaby did not provide further evidence to support these particular concerns.

Furthermore, Trans Mountain has said it does not anticipate any surface access during construction, and that potential monitoring and surveying operations would not be invasive in the Burnaby Mountain Conservation Area. The Board finds the need for Trans Mountain to access the Burnaby Mountain Conservation Area in the event of an emergency is highly unlikely, given the method of construction and the depth of the tunnel being proposed. The Board is satisfied with Trans Mountain's commitments to work with Burnaby if access to the surface, roads or Burnaby Mountain Conservation Area is ever needed and to restore the area in accordance with relevant guidelines and criteria. The Board is of the view that Trans Mountain's proposed mitigation measures and commitments, including the conditions in the Certificate, can effectively address any potential effects of the proposed detailed route related to location, timing or methods of construction. With respect to specific easement terms or an Order requested by Burnaby, the Board considers that to be outside the scope of the relevant issues in a detailed route hearing.

The Board acknowledges the concerns expressed by Burnaby regarding the additional burdens the proposed pipeline could have on its utilities, including the incurrence of additional costs as a

consequence of future infrastructure development and potential impacts on the Burnaby Mountain Conservation Area. However, the Board finds that Burnaby did not provide adequate evidence to support its concerns regarding the potential impacts of the proposed detailed route related to location, timing or methods of construction. Concerns related to the Tunnel Section were discussed briefly in the statement of opposition and during the oral hearing, but detailed site-specific evidence was not filed by Burnaby for the Tunnel Section. In any event, the Board is of the view that cost impacts related to the pipeline are compensation issues and outside the scope of the hearing and beyond the jurisdiction of the Board.

Regarding Burnaby's concern about emergency response for the Tunnel Section, no detailed site-specific concerns were provided. General concerns about emergency response are outside the scope of a detailed route hearing and are addressed by the Board through condition compliance.

### Conclusion

Having considered all of the evidence filed on the record by both Parties, the representations made at the oral portion of the detailed route hearing, and the matters described above, the Board finds that the route proposed by Trans Mountain is the best possible detailed route of the pipeline, and the methods and timing of constructing the pipeline are the most appropriate, subject to the commitments made by Trans Mountain.

Any approval by the Board of the PPBoR for Burnaby's Tunnel Section lands will include a condition requiring Trans Mountain to list and fulfill the commitments it made in the course of this detailed route hearing, and update its alignment sheets. Burnaby is entitled to seek remedy from the Board if the commitments are not being fulfilled.

Trans Mountain is reminded that the relevant conditions of approval in the Certificate apply to the construction and operation of the TMEP on the City of Burnaby's lands.



L. Mercier  
Presiding Member

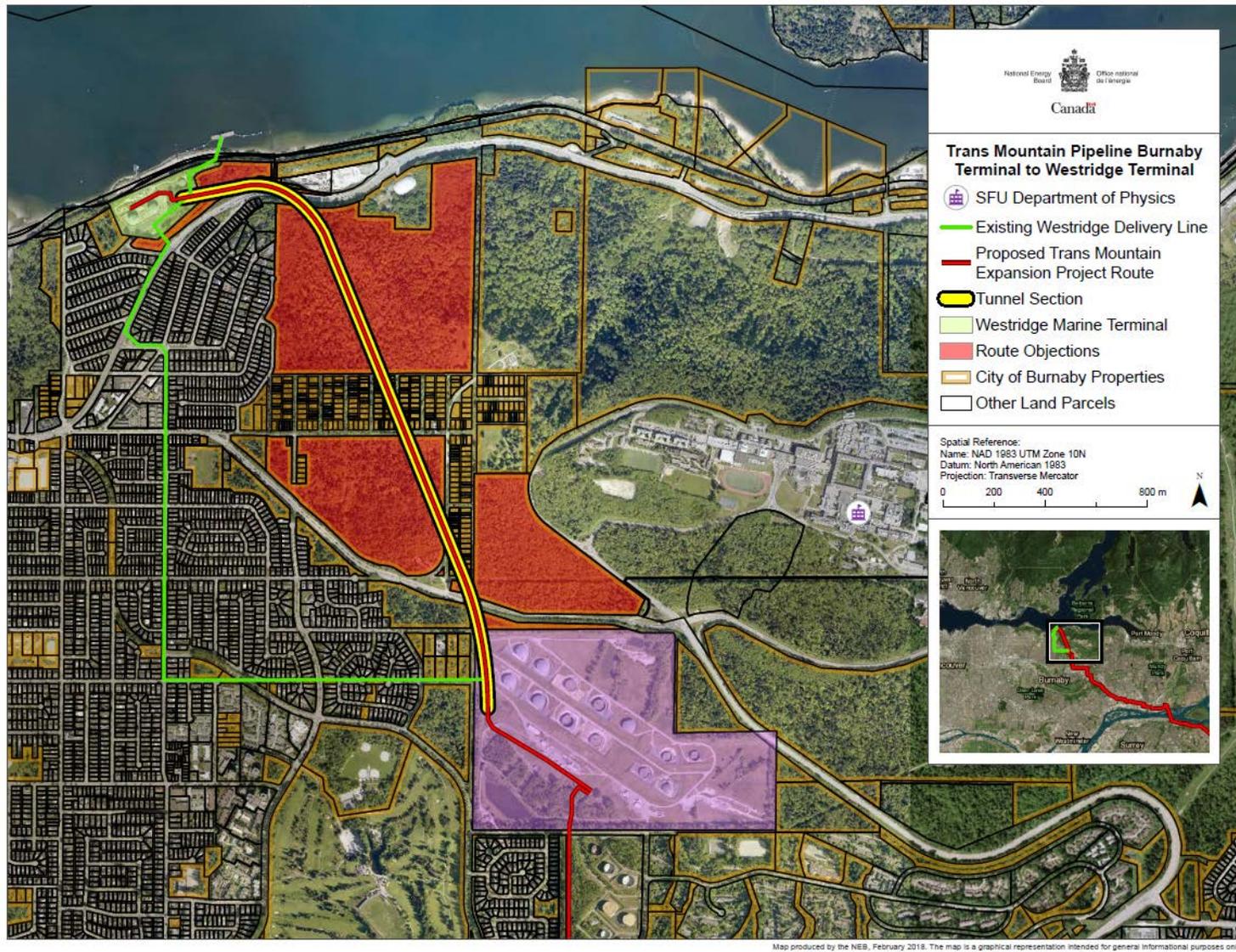


S. Parrish  
Member



J. Ballem  
Member

## Appendix I – Map of the Tunnel Section<sup>7</sup>



<sup>7</sup> This map was created by the NEB for illustrative purposes only.