

**Trans Mountain Pipeline ULC
Trans Mountain Expansion Project
NEB Hearing Order OH-001-2014
Responses to Information Request from
National Energy Board**

Alternative pipeline corridors under consideration – Burnaby Terminal to Westridge Marine Terminal segment

Reference:

- i) [A3S1L4](#), Application Volume 5A, Environmental and Socioeconomic Assessment – Biophysical, PDF page 14 of 39
- ii) [A3W9H8](#), Trans Mountain response to Board IR 1.40, PDF pages 246 to 247 of 421
- iii) [A3W9H8](#), Trans Mountain response to Board IR 1.40, PDF page 251 of 421
- iv) [A3W9Q8](#), Trans Mountain response to Board IR 1.84a, Attachment 1, PDF page 2 of 2
- v) [A3W9H8](#), Trans Mountain response to Board IR 1.12, PDF pages 107 and 108 of 421
- vi) [A3W9H8](#), Trans Mountain response to Board IR 1.40, PDF page 250 of 421

Preamble:

In Reference i), Trans Mountain states that, from the Burnaby Terminal to the Westridge Marine Terminal, the proposed pipeline corridor follows alongside Burnaby Mountain Parkway, Hastings Street, and Cliff Avenue before turning east into the marine terminal. Reference i) further states that other more direct alternatives involving partial or total trenchless (horizontal direction drill [HDD] or tunnel) methods of construction are also under consideration.

In Reference ii), under the heading “Trans Mountain’s Preferred Pipeline Corridor for Burnaby to Westridge Delivery Lines,” Trans Mountain states that the alternative pipeline corridor options have been further examined since the Application was filed in December 2013. The results of this further study indicate that the route options where trenchless construction methodologies would be used are preferred over the previously proposed pipeline corridor and an alternative to the previously proposed pipeline corridor.

The options outlined in Reference ii) include the previously proposed pipeline corridor and a proposed revised pipeline corridor (hereinafter, the Preferred Corridor) that includes two route options: a Burnaby Mountain HDD route option that would use two separate HDDs to install the pipelines between the Burnaby Terminal and the Westridge Marine Terminal, and a trenchless direct route option where a tunnel would be used to install the pipelines through Burnaby Mountain.

In Reference iii), Trans Mountain states that, of the two options that would include trenchless construction techniques, the Burnaby Mountain HDD option is preferred due to the lower construction cost. Reference iii) also states that additional geotechnical studies in this area are needed to complete and confirm the feasibility of installing the pipelines using either of the trenchless construction options. Reference iii) further states that, to date, the City of Burnaby has not entered into a dialogue with Trans Mountain regarding these routing options, nor has the City allowed access onto City-owned land for Trans Mountain’s engineers and other

specialists to conduct the necessary studies (e.g., geotechnical, constructability, environmental, cultural) needed to complete the assessment of these pipeline corridors.

Reference iv) is a map showing the proposed pipeline corridors that includes the Burnaby Terminal to Westridge Marine Terminal segment. It includes the Preferred Corridor, the proposed alternative pipeline corridor, and the previously proposed pipeline corridor.

Reference v) seems to indicate that Trans Mountain began public consultation about the Preferred Corridor in April 2014.

Reference vi) states that, assuming access is granted for Trans Mountain representatives to conduct surveys on City-owned lands, environmental and cultural baseline studies (including vegetation, soils, archaeology, and wildlife) are scheduled to be conducted along the Preferred Corridor throughout 2014. Reference v) also states that information gathered from baseline studies for the Preferred Corridor will be assessed using the same criteria that were used for the assessment of the proposed pipeline corridor in the Environmental and Socio-Economic Assessment that was included in the Application.

Request:

- a) Please confirm whether or not Trans Mountain is seeking approval of the Preferred Corridor, as defined in the preamble above.**

Response:

Confirmed.

b) If a) is confirmed, please:

- b.1) describe how Trans Mountain would, should the City of Burnaby continue to restrict the company's access to Burnaby Mountain, complete the required studies and assessments in accordance with the Board's Filing Manual for the Preferred Corridor. Trans Mountain's response should address, but not be limited to, studies and assessments in the following subject areas:**

- **Engineering;**
- **Environment;**
- **Socio-economics;**
- **Economics; and**
- **Geotechnical matters.**

Response:

In order for Trans Mountain Pipeline ULC (Trans Mountain) to meet the necessary requirements for the Project, Trans Mountain must file certain information with the National Energy Board (NEB or the Board), including engineering, environmental, socio-economic and geotechnical information regarding the Preferred Corridor on Burnaby Mountain, as noted in Table b.1-1. Trans Mountain has attempted to work with the City of Burnaby in a cooperative and collaborative manner to collect such information. Trans Mountain's extensive efforts to engage with the City of Burnaby can be seen in the attached consultation summary (Appendix A) and consultation records (Appendix B). Despite these extensive efforts, the City of Burnaby has refused to meet with Trans Mountain on these matters and has stated that it will not provide Trans Mountain with access or permits.

If the City of Burnaby continues to be unwilling to provide Trans Mountain with access to property owned by the City of Burnaby for the purposes of conducting these required and necessary surveys, Trans Mountain intends to make application to the Board pursuant to Section 73 of the *National Energy Board Act* for an order granting Trans Mountain temporary access to these lands. An order issued by the Board pursuant to Section 73 provides the legal authority for a pipeline company to enter onto lands to survey the proposed location of a pipeline or to conduct field studies, examinations and other work necessary to determine the location for a pipeline.

Trans Mountain would like to reiterate that its preference is to work in a collaborative manner with the City of Burnaby to access City lands to undertake the necessary field work for the trenchless route option on Burnaby Mountain. If the City of Burnaby would be willing to work with Trans Mountain in a timely manner to this end, Trans Mountain would not need to submit a Section 73 application to the Board.

Please see Table b.1-1 for a summary of the outstanding field studies Trans Mountain will undertake for the Preferred Corridor.

b.2) indicate when Trans Mountain expects to file these studies and assessments for the Preferred Corridor with the Board;

Response:

Please see Table b.1-1.

**Table b.1-1
Scope and Timing of Outstanding Studies for Preferred Corridor**

| Topic | Requirement | Scope | Status & Timing |
|---|--|---|--|
| Engineering & geotechnical | <ul style="list-style-type: none"> NEB Filing Manual, Chapter 4, Section A.1.2, #8, Table A-1 and A-2 (Physical and Meteorological environment) Conditions not specifically addressed in CSA Z662 such as seismic hazards and terrain stability. | Trans Mountain Pipeline ULC (Trans Mountain) confirms it will complete the following in support of a trenchless option via Burnaby Mountain: <ul style="list-style-type: none"> Geotechnical investigation including drilling of boreholes, surficial mapping of outcrops and the use of geophysics will provide an interpretation of the geology and subsurface condition along the Preferred Corridor. Preliminary horizontal directional drill (HDD) feasibility report detailing the assessment that was completed to determine that HDD could be successfully completed; HDD contingency plan; Update to Terrain Mapping and Geohazard Inventory Report in Appendix H, Volume 4A of Application. Update to Seismic Assessment Desktop Study in Appendix J, Volume 4A of Application | Trans Mountain submitted a request to the City of Burnaby for an Investigation Permit to undertake drilling to determine the geology along the Preferred Corridor via Burnaby Mountain on March 10, 2014. The permit was denied. Trans Mountain would like to undertake geotechnical surveys in summer 2014. Subject to getting access by July 2014 for geotechnical studies, the HDD feasibility report and contingency plan would be submitted by 30 November 2014. Subject to the same timing, an update to the relevant sections of Appendix H and J reports will be submitted November 30, 2014. |
| Environment | | | |
| Physical and Meteorological Environment | NEB Filing Manual; Chapter 4, Table A-1 and A-2 | <ul style="list-style-type: none"> The Preferred Corridor does not require additional work. Upon review of the Preferred Corridor, no new issues have been identified that were not already addressed in the Facilities Application. The conclusions of the ESA remain unchanged. | N/A |
| Soil and Soil Productivity | | <ul style="list-style-type: none"> Soil surveys are planned between the Burnaby Terminal and Westridge Marine | <ul style="list-style-type: none"> Soil surveys are planned for summer 2014 pending land access. |

| Topic | Requirement | Scope | Status & Timing |
|--|-------------|---|--|
| | | Terminal. <ul style="list-style-type: none"> Upon review of the Preferred Corridor, no new issues have been identified that were not already addressed in the Facilities Application. The results of the soil surveys will assist in development of site-specific mitigation, if warranted. It is expected that the conclusions of the ESA will remain unchanged. | <ul style="list-style-type: none"> The Environmental Protection Plan (EPP) will be updated if new mitigation measures are identified. |
| Water Quality and Quantity | | <ul style="list-style-type: none"> A series of vertical wells may be drilled prior to construction of the Preferred Corridor to ascertain groundwater conditions for the HDD. Upon review of the Preferred Corridor, no new issues have been identified that were not already addressed in the Facilities Application. The results from the vertical wells may assist in development of site-specific mitigation, if warranted. It is expected that the conclusions of the ESA will remain unchanged. | <ul style="list-style-type: none"> The EPP will be updated if new mitigation measures are identified. |
| Air and Greenhouse Gas (GHG) Emissions | | <ul style="list-style-type: none"> The Preferred Corridor does not require additional work. Upon review of the Preferred Corridor, no new issues have been identified that were not already addressed in the Facilities Application. The conclusions of the ESA remain unchanged. | N/A |
| Acoustic Environment | | <ul style="list-style-type: none"> The Preferred Corridor does not require additional work. Upon review of the Preferred Corridor, no new issues have been identified that were not already addressed in the Facilities Application. The conclusions of the ESA remain unchanged. | N/A |
| Fish and Fish Habitat | | <ul style="list-style-type: none"> No watercourses will be crossed by the Preferred Corridor; therefore, no additional work is required. | N/A |

| Topic | Requirement | Scope | Status & Timing |
|-------------------------------|-------------|--|---|
| | | <ul style="list-style-type: none"> There will be no interaction with fish and fish habitat for the construction and operations of the pipelines between the Burnaby Terminal and Westridge Marine Terminal along the Preferred Corridor. | |
| Wetland Loss or Alteration | | <ul style="list-style-type: none"> No wetlands will be crossed by the Preferred Corridor; therefore, no additional work is required. There will be no interaction with wetlands for the construction and operations of the pipelines between the Burnaby Terminal and Westridge Marine Terminal along the Preferred Corridor. | N/A |
| Vegetation | | <ul style="list-style-type: none"> Vegetation surveys are planned between the Burnaby Terminal and Westridge Marine Terminal. Upon review of the Preferred Corridor, no new issues have been identified that were not already addressed in the Facilities Application. The results of the vegetation surveys will assist in development of site-specific mitigation, if warranted. It is expected that the conclusions of the ESA will remain unchanged. The vegetation survey would focus on the entry and exit points of the trenchless option, where ground disturbance would occur. | <ul style="list-style-type: none"> Vegetation surveys are planned for summer 2014 pending land access. The EPP will be updated if new mitigation measures are identified. |
| Wildlife and Wildlife Habitat | | <ul style="list-style-type: none"> Wildlife surveys are planned between the Burnaby Terminal and Westridge Marine Terminal. Upon review of the Preferred Corridor, no new issues have been identified that were not already addressed in the Facilities Application. The results of the wildlife surveys will assist in development of site-specific mitigation, if warranted. It is expected that the conclusions of the ESA will remain unchanged. The wildlife survey would focus on the | <ul style="list-style-type: none"> Wildlife surveys are planned for summer 2014 pending land access. The EPP will be updated if new mitigation measures are identified. |

| Topic | Requirement | Scope | Status & Timing |
|---|---|--|--|
| | | entry and exit points of the trenchless option, where ground disturbance would occur. | |
| Species at Risk | | <ul style="list-style-type: none"> See fish and fish habitat, vegetation and wildlife and wildlife habitat rows of this table. | <ul style="list-style-type: none"> See fish and fish habitat, vegetation and wildlife and wildlife habitat rows of this table. |
| Socio-economic | | | |
| Heritage Resources | NEB Filing Manual; Chapter 4, Table A-1 and A-3 | <ul style="list-style-type: none"> Archaeological surveys planned between the Burnaby Terminal and Westridge Marine Terminal. Upon review of the Preferred Corridor, no new issues have been identified that were not already addressed in the Facilities Application. The results of the archaeological surveys will assist in the development of site-specific mitigation, if warranted. It is expected that the conclusions of the ESA will remain unchanged. | <ul style="list-style-type: none"> Archaeological surveys are planned between summer and fall 2014 pending land access. The EPP will be updated if new mitigation measures are identified. |
| Traditional Land and Resource Use / Traditional Marine Resource Use | | <ul style="list-style-type: none"> The Preferred Corridor crosses private land and does not require additional work. Upon review of the Preferred Corridor, no new issues have been identified that were not already addressed in the Facilities Application. The conclusions of the ESA remain unchanged. | N/A |
| Human Occupancy and Resource Use | | <ul style="list-style-type: none"> An update on the human occupancy and resource use element in consideration of the Preferred Corridor will be provided Technical Update No. 1, to be submitted to the NEB in Q3 2014. Upon review of the Preferred Corridor, no new issues have been identified that were not already addressed in the Facilities Application. The conclusions of the ESA remain unchanged. | <ul style="list-style-type: none"> Trans Mountain will submit an update on the HORU element of the ESA to the NEB with Technical Update No. 1 in Q3 2014. |
| Navigation and | | <ul style="list-style-type: none"> There are no navigable watercourses | N/A |

| Topic | Requirement | Scope | Status & Timing |
|---|---|--|-----------------|
| Navigation Safety | | <p>crossed by the Preferred Corridor or the previously proposed pipeline corridor; therefore, no additional work is required.</p> <ul style="list-style-type: none"> • There will be no interaction with navigation and navigation safety for the construction and operation of the pipelines between the Burnaby Terminal and Westridge Marine Terminal. | |
| Infrastructure Services; Employment and Economy; Community Health; Social and Cultural Well Being | | <ul style="list-style-type: none"> • The Preferred Corridor does not require additional work and is not expected to change the conclusions of the ESA for the infrastructure services, employment and economy, community health and social and cultural well-being elements. • Upon review of the Preferred Corridor, no new issues have been identified that were not already addressed in the Facilities Application. The conclusions of the ESA remain unchanged. | N/A |
| Economics | NEB Filing Manual; Chapter 4, Section A.3 | There would be no change in the information required in the NEB Filing Manual related to supply, transportation matters, markets and financing provided in the Application related to the Preferred Corridor. | |

b.3) provide details of the notice of the Preferred Corridor provided, or proposed to be provided, to potentially affected persons or groups;

Response:

Contrary to Reference v) of this Information Request, please see Appendix A and Figures 1-3 and Appendix B for a summary of consultation activities on the Preferred Corridor, which began in February 2013 and will continue throughout the regulatory review phase.

Of particular note are the following meetings and/or correspondence with the City of Burnaby regarding routing (please also see Appendix B):

- January 24, 2013
- February 14, 2013
- July 31, 2013 (Trans Mountain's initial request to the City of Burnaby for permitting information for a trenchless option via Burnaby Mountain)
- September 10, 2013 (Trans Mountain introduces trenchless option using a tunnel via Burnaby Mountain to the City of Burnaby)
- March 11, 2014
- March 30, 2014

b.4) discuss Trans Mountain's views on whether or not the Board's consideration of the Preferred Corridor would have implications for the Board's [2 April 2014 Ruling on Participation](#).

Response:

Trans Mountain confirms it provided the National Energy Board Notice of Application to Participate to all landowners on the proposed pipeline corridor and alternate corridors defined in the Application, which included the Preferred Corridor. The landowner for the Preferred Corridor is the City of Burnaby. There are no other new landowners affected by the Preferred Corridor who would not have received a Notice of the Application to Participate from Trans Mountain in January 2014.

c) Please file a table of appropriate size to clarify corridor options from the Burnaby Terminal to Westridge Marine Terminal, as follows:

Response:

- c) Table c.1-1 describes the three route options within the Preferred Corridor (Trans Mountain refers to the Preferred Corridor as the Proposed Revised Pipeline Corridor in its response to NEB IR No. 1.84a) under consideration for the Burnaby to Westridge

delivery pipelines. The three routes described in Table c.1-1 are shown on the attached Map D.1 with corresponding labels for route option 1, 2 and 3.

TABLE c.1-1

| Proposed Revised Pipeline Corridor (identified by the NEB as the Preferred Corridor) | |
|---|---|
| Proposed Revised Pipeline Corridor/ Preferred Corridor | <ul style="list-style-type: none"> Contains trenchless options (Route Options 1 and 2 in this table) between Burnaby and Westridge crossing the Burnaby Mountain Conservation Area. Supports both horizontal directional drill (HDD) and tunnel options. Shown as Proposed Revised Pipeline Corridor on the route maps attached to the response to NEB IR No. 1.84a. |
| Route Option 1 (see Map D.1) | <ul style="list-style-type: none"> Horizontal directional drill (HDD) option. Requires two HDD drills for each of the two pipelines for a total of 4 HDD drills. 2 longer parallel 1950 m long drills between Burnaby Terminal and Kask Brothers site, pipe lay-up within the Burnaby Terminal property. 2 shorter parallel 375 m long drills between Kask Brothers site and the Westridge Marine Terminal, pipe lay-up to the east along north side of Kask Brothers site. Trenched construction within the Westridge Marine Terminal site. |
| Route Option 2 (see Map D.1) | <ul style="list-style-type: none"> Tunnel option. A single 2.35 km long tunnel connecting Burnaby Terminal and Westridge Marine Terminal. Trenched construction within the Westridge Marine Terminal site. |
| Proposed Alternate Pipeline Corridor | |
| Route Option 3 (see Map D.1) | <ul style="list-style-type: none"> Shown previously as the Proposed Pipeline Corridor in the December 2013 Application route maps (Appendix E, Volume 4A). Shown as Proposed Alternate Pipeline Corridor on the route maps attached to the response to NEB IR No. 1.84a. Trenched route following city streets Exit northwest corner of the Burnaby Terminal Travel along Burnaby Mountain Parkway, Hastings, Cliff Avenue, then east through backyards on north side of Northcliffe Crescent Enter Westridge Marine Terminal on the west side. |

d) Please provide a larger-scale map of the Burnaby Terminal to Westridge Marine Terminal project segment that includes, and clearly identifies, each of the following:

- the pipeline corridor that was originally proposed in the Application;
- the Preferred Corridor;
- any other alternative corridors currently under consideration;
- route options within each corridor; and
- the locations of the start and end points for the tunnel and HDD options through Burnaby Mountain.

Response:

d) Please see attached Map D.1.