

National Energy  
Board



Office national  
de l'énergie

File OF-Fac-Oil-T260-2013-03 02  
1 December 2016

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Dear Mr. Denstedt, Ms. Oleniuk, Ms. Matthews and Ms. Schlecker:

**Hearing Order OH-001-2014  
Trans Mountain Pipeline ULC (Trans Mountain)  
Application for the Trans Mountain Expansion Project dated 16 December 2013  
Certificate OC-064, Amending Orders AO-003-OC-2 and AO-002-OC-49**

Following the National Energy Board Report for OH-001-2014, the National Energy Board is pleased to attach, for your records, a copy of the Certificate OC-064, Amending Orders AO-003-OC-2 and AO-002-OC-49, in both languages, which the Governor in Council approved on 29 November 2016 and directed the National Energy Board to issue.

Yours truly,

*Original signed by*

Sheri Young  
Secretary of the Board

Attachments

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**CERTIFICATE OC-064**

**IN THE MATTER OF** the *National Energy Board Act* (the NEB Act) and the regulations made thereunder; and

**IN THE MATTER OF** the *Canadian Environmental Assessment Act, 2012*, (CEA Act) and the regulations made thereunder; and

**IN THE MATTER OF** an application pursuant to sections 52, 58 and 21 of the NEB Act and section 44 of the *National Energy Board Onshore Pipeline Regulations*, dated 16 December 2013, by Trans Mountain Pipeline ULC (Trans Mountain) to construct and operate the Trans Mountain Expansion Project (Project) between Edmonton, Alberta, and Burnaby, British Columbia, filed with the National Energy Board (NEB or Board) under File OF-Fac-T260-2013-03 02.

**BEFORE** the Board on 3 May 2016.

**WHEREAS** the application included a request for a Certificate pursuant to s.52 of the NEB Act for authorization to:

- transfer from the existing Trans Mountain Pipeline system and put into service on Line 2:
  - active 150 km NPS 36 pipeline segment from Hinton to Hargreaves;
  - active 43 km NPS 30 pipeline segment from Darfield to Black Pines;
- construct and operate new docks and berths to expand the Westridge Marine Terminal (WMT);
- construct and operate two new parallel NPS 30 delivery pipelines from the Burnaby Terminal to the WMT;
- construct and operate the following segments of the Line 2 pipeline:
  - 339 km NPS 36 pipeline from Edmonton, Alberta to Hinton, Alberta
  - 121 km NPS 42 pipeline from Hargreaves (near Rearguard, B.C.) to Blue River, B.C.
  - 158 km NPS 36 pipeline from Blue River, B.C. to Darfield, B.C.
  - 368 km NPS 36 pipeline from Black Pines, B.C. to the Burnaby Terminal in Burnaby, B.C.

(collectively Line 2 Work).

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**AND WHEREAS** the Board held a public hearing in respect of the Project pursuant to Hearing Order OH-001-2014;

**AND WHEREAS** the Panel had regard to all considerations that were directly related to the Project and were relevant, including environmental matters, pursuant to Part III of the NEB Act, and conducted an environmental assessment of the Project pursuant to the CEA Act;

**AND WHEREAS** the Board’s recommendations and decisions on the application for the Project, and reasons, are set out in the OH-001-2014 National Energy Board Report (Report);

**AND WHEREAS** the Board submitted its Report to the Minister recommending that a new Certificate be issued and two existing Certificates be amended for the Project pursuant to subsections 52(1) and 21(2) of the NEB Act;

**AND WHEREAS** the attached Schedule A describes all pipe segments that will form Line 2 upon Project completion, and specifications for Line 2 Work;

**AND WHEREAS** the Governor in Council by Order in Council No. P.C. 2016-1069, dated the 29 November 2016, directed the Board, pursuant to section 54 of the NEB Act, to issue, to Trans Mountain, a Certificate of Public Convenience and Necessity OC-064 approving Line 2 Work, subject to the conditions marked as applicable in the “CPCN” column below.

**NOW THEREFORE**, pursuant to section 54 of the NEB Act, the Board hereby issues this Certificate in respect of Line 2 Work.

In these conditions, the following terms are defined as:

<b>Appropriate Government Authorities</b>	Federal, Provincial, Regional or Municipal government departments or agencies with jurisdiction, statutory obligations, regulatory oversight or a decision-making role in relation to the subject-matter of the specific condition. For location-specific conditions or phased filings, this is limited to those with such a role in relation to the geographic location to which the condition filing applies. (Aboriginal groups are treated separately and listed separately in each applicable condition.)
<b>Commencing operations</b>	The Project is opened for oil storage and transmission. Unless otherwise specified, “prior to commencing operations” means an action must be completed prior to commencing operation of <b>any</b> component of the Project, and “after commencing operations” means an action must be completed after <b>all</b> components of the Project are operating.

<p><b>Construction</b></p>	<p>Any in-field activity that may have an effect on the environment and that is necessary for installing, deactivating, reactivating<sup>1</sup> or decommissioning, or preparing to install, deactivate, reactivate<sup>1</sup> or decommission, <b>any</b> component of the Project. Construction activities include, clearing, mowing, grading, trenching, drilling, boring, and blasting. Construction activities <u>do not</u> include activities associated with routine surveying operations or data collection activities, such as geotechnical investigations (e.g., geophysical surveys, bore holes, and test pits), activities required to obtain integrity information on the reactivation pipeline segments, or operations and maintenance activities (to which NEB “Operations and Maintenance Activities on Pipelines under the <i>National Energy Board Act</i> – Requirements and Guidance Notes” apply).</p> <p>Construction at the Westridge Marine Terminal also includes construction activities occurring in the marine environment that are necessary for installing, or preparing to install, any component of the Westridge Marine Terminal expansion. This includes dredging, blasting, and pile drilling.</p>
<p><b>Consultation</b></p>	<p>Unless otherwise specified in a condition, Trans Mountain’s consultation must be carried out in a manner that:</p> <ol style="list-style-type: none"> <li>a) provides, to those to be consulted:             <ol style="list-style-type: none"> <li>i) notice of the matter in sufficient form and detail to allow them to prepare their views or information on the matter;</li> <li>ii) a reasonable period for them to prepare those views or information; and</li> <li>iii) an opportunity to present those views or information to Trans Mountain; and</li> </ol> </li> <li>b) considers, fully and impartially, the views or information presented;</li> <li>c) provides, to those in a) who request it, a draft summary of the consultation undertaken with that party, and a reasonable period for them to provide feedback to Trans Mountain; and</li> <li>d) provides, to those in a) who request it, a copy of the NEB filing receipt for, or notice of, the condition filing to which the consultation pertained.</li> </ol>
<p><b>Dry commissioning</b></p>	<p>Dry commissioning involves the systematic inspection and testing of mechanical, piping, electrical, instrumentation, control, and communications systems, <b>prior to the introduction of process fluids</b>, to ensure that they are ready for the introduction of fluids and are expected to function as intended.</p>
<p><b>For approval</b></p>	<p>Where a condition requires a filing or filings for NEB approval, Trans Mountain must not commence the indicated activity until the NEB issues its written approval of that filing or filings.</p>
<p><b>Including</b></p>	<p>Use of this term, or any variant of it, is not intended to limit the elements to just those listed. Rather, it implies minimum requirements with the potential for augmentation, as appropriate.</p>
<p><b>Line 1</b></p>	<p>After the expansion, the 1,147 km Line 1 pipeline will consist of, combined, the following pipeline segments, including segments to be reactivated and currently operating TMPL segments:</p> <ul style="list-style-type: none"> <li>• the existing 229 km of 609.6 mm outside diameter (NPS 24) and 89 km of 762.0 mm outside diameter (NPS 30) pipeline segments from Edmonton, AB, to Hinton, AB;</li> <li>• the reactivated 150 km of NPS 24 pipeline segment from Hinton, AB, to Hargreaves, B.C. (built in 1957);</li> <li>• the existing 273 km of NPS 24 pipeline segment from Hargreaves, B.C., to Darfield, B.C.;</li> <li>• the reactivated 43 km of NPS 24 pipeline segment from Darfield, B.C., to Black Pines, B.C. (built in 1953);</li> <li>• the existing 325 km of NPS 24 and 38 km of NPS 30 pipeline segments from Black Pines, B.C., to the Burnaby Terminal, B.C..</li> </ul>

<sup>1</sup> Excluding engineering assessment and operations and maintenance activities required to meet Conditions 19 and 31.

<b>Line 2</b>	<p>After the expansion, the approximately 1,180 km Line 2 pipeline will consist of, combined, the new transmission pipeline segments and the two currently operating TMPL segments transferring to Line 2 service:</p> <ul style="list-style-type: none"> <li>• approximately 339 km of new 914 mm outside diameter (NPS 36) pipeline from Edmonton, AB, to Hinton, AB;</li> <li>• the existing 150 km of NPS 36 pipeline segment from Hinton, AB, to Hargreaves, B.C. (built in 2008);</li> <li>• approximately 121 km of new 1067 mm outside diameter (NPS 42) pipeline from Hargreaves, B.C., to Blue River, B.C.;</li> <li>• approximately 158 km of new NPS 36 pipeline from Blue River, B.C., to Darfield, B.C.;</li> <li>• the existing 43 km of NPS 30 pipeline segment from Darfield to Black Pines (built in 1957); and</li> <li>• approximately 368 km of new NPS 36 pipeline from Black Pines, B.C., to the Burnaby Terminal.</li> </ul>
<b>Monitoring</b>	<p>Observing the environmental and socio-economic effects of the Project for the purposes of assessing and measuring the effectiveness of mitigation measures undertaken, identifying unanticipated environmental and socio-economic issues, and, based on the results of these activities, determining any remedial actions required.</p> <p>From an engineering perspective, monitoring involves regularly observing pipelines, terminals and pump stations (e.g., through surveys, patrols, inspections, testing, instrumentation) to ensure their operation is within defined parameters, with the goal of identifying any issues or potential concerns (e.g., pipeline integrity, geohazards, erosion, security) that may compromise the protection of the pipelines, terminals, pump stations, property, persons, and the environment.</p>
<b>Monthly (in relation to a condition filing or posting)</b>	<p>Unless otherwise specified in a condition, a monthly filing shall be made on the 5<sup>th</sup> working day of the calendar month following the month to which the filing pertains.</p>
<b>NEB or Board</b>	<p>National Energy Board</p>
<b>New delivery pipelines</b>	<p>Collectively, the two new NPS 30 oil delivery lines between Trans Mountain’s Burnaby Terminal and its Westridge Marine Terminal (approximately 2.6 km for the tunnel option and 3.6 km for the street option).</p>
<b>Officer of the company</b>	<p>Where a condition requires a filing to be signed by an officer of the company, the filing must include a statement confirming that the signatory to the filing is an officer of the company duly authorized for that purpose.</p>
<b>Project</b>	<p>The Trans Mountain Expansion Project in all its components, including pipeline construction, reactivation, and changes to operating conditions resulting in operation as Line 1 and Line 2; deactivation, reactivation, construction and operation of or at the respective pump stations; decommissioning of 2 tanks and construction and expanded operation at the existing Edmonton, Sumas and Burnaby Terminals and the Westridge Marine Terminal; construction and operation of the new delivery pipelines; and all infrastructure.</p> <p>The Project does <b>not</b> include Project-related marine shipping.</p>
<b>Quarterly (in relation to a condition filing or posting)</b>	<p>Unless otherwise specified in a condition, a quarterly filing shall be made on the 10<sup>th</sup> working day of the quarter following the quarter to which the filing pertains.</p>

<b>Temporary infrastructure</b>	All structures or sites necessary for pipeline, terminal and pump station construction, reactivation, deactivation, modification and expansion approved as part of the Project. Examples of infrastructure include construction camps, stockpile sites, contractor yards, laydown areas, temporary work space, borrow pits, roads, bridges, snow pads, and temporary power supply lines necessary for operating infrastructure and equipment during the construction phase.
<b>Third party (in relation to a report, review or assessment)</b>	An independent consultant, expert, or contractor that, except for receiving payment for acting as a third party, is unaffiliated with Trans Mountain, Kinder Morgan Canada Inc., the principal consultants of either, or any other corporate entity with a financial interest in the Project. A third party is, because of their knowledge, training, and experience, qualified and competent to perform an assessment or review, and was not involved in developing the manual, report, plan, program, or policy being assessed or reviewed.
<b>TMPL</b>	The existing operating Trans Mountain Pipeline system.
<b>Trans Mountain</b>	Trans Mountain Pipeline ULC, as general partner of Trans Mountain Pipeline L.P.

Government authorities are mentioned in certain conditions. If a particular authority's name changes in the future, Trans Mountain's requirements relating to that authority would rest with its successor. Similarly, if a particular authority's function is assumed by another authority, Trans Mountain's requirements relating to that function would rest with the new authority.

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
No.	<b>Overarching conditions</b>								
1	<b>Condition compliance</b> Trans Mountain must comply with all of the [certificate/order] conditions, unless the NEB otherwise directs.	X	X	X	X	X	X	X	X
2	<b>Compliance with commitments</b> Without limiting Conditions 3, 4 and 6, Trans Mountain must implement all of the commitments it made in its Project application or to which it otherwise committed on the record of the OH-001-2014 proceeding.	X	X	X	X	X	X	X	X
3	<b>Environmental protection</b> Trans Mountain must implement or cause to be implemented, at a minimum, all of the policies, practices, programs, mitigation measures, recommendations, and procedures for the protection of the environment included or referred to in its Project application or to which it otherwise committed on the record of the OH-001-2014 proceeding.	X	X	X	X	X	X	X	X
4	<b>Engineering and safety</b> Trans Mountain must cause the Project to be designed, located, constructed, installed, and operated in accordance with, at a minimum, the specifications, standards, policies, mitigation measures, procedures, and other information included or referred to in its Project application or to which it otherwise committed on the record of the OH-001-2014 proceeding.	X	X	X	X	X	X	X	X
5	<b>Certificate expiration (sunset clause)</b> Unless the NEB otherwise directs <b>prior to 30 September 2021</b> , this [certificate/order] will expire on <b>30 September 2021</b> , unless construction of the Project has commenced by that date.	X	X	X	X	X	X	X	X
<b>Conditions with initial filings due prior to commencing construction, or prior to commencing construction of specified Project component(s)</b>									
6	<b>Commitments tracking table</b> Without limiting Conditions 2, 3 and 4, Trans Mountain must implement the commitments contained within its commitments tracking table and must: a) file with the NEB, at the following times, an updated commitments tracking table including the status of each commitment: i) <b>within 3 months after the [certificate/order] date;</b> ii) <b>at least 30 days prior to commencing construction;</b> iii) <b>monthly, from the commencement of construction until the first month after commencing operations;</b> and iv) <b>quarterly thereafter until:</b> 1. <b>all commitments on the table are satisfied</b> (superseded, complete or otherwise closed), at which time Trans Mountain must file confirmation, signed by an officer of the company, that the commitments on the table have been satisfied; or 2. <b>6 years after commencing operations</b> , at which time Trans Mountain must file with the NEB a summary of any outstanding commitments and a plan and implementation timeline for addressing these commitments; whichever comes earlier; and	X	X	X	X	X	X	X	X

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
	<p>b) post on its company website the same information required by a), using the <b>same indicated timeframes</b>; and</p> <p>c) maintain at each of its construction offices:</p> <p>i) the relevant environmental portion of the commitments tracking table listing all of Trans Mountain’s regulatory commitments, including those from the Project application and subsequent filings, and environmental conditions or site-specific mitigation or monitoring measures from permits, authorizations, and approvals for the Project issued by federal, provincial, or other permitting authorities;</p> <p>ii) copies of any permits, authorizations, and approvals referenced in i); and</p> <p>iii) copies of any subsequent variances to permits, authorizations, and approvals referenced in i).</p>								
7	<p><b>Environmental and socio-economic assessment - route re-alignments</b></p> <p>As applicable, Trans Mountain must file with the NEB for approval, <b>concurrent with its filing of the Plan, Profile and Book of Reference pursuant to section 33 of the <i>National Energy Board Act</i></b>, an environmental and socio-economic assessment for each proposed detailed route re-alignment that extends beyond the applied-for corridor width of Trans Mountain’s preferred route in proximity to:</p> <ul style="list-style-type: none"> <li>• Ohamil Indian Reserve 1;</li> <li>• Tzeachten Indian Reserve 13; and</li> <li>• Surrey Bend Regional Park.</li> </ul> <p>Any assessment must include:</p> <p>a) environmental alignment sheets at an appropriate scale, clearly depicting the proposed route re-alignments;</p> <p>b) results of any pre-construction surveys within the areas that were not previously subject to such surveys, and an indication of potential residual effects;</p> <p>c) all associated mitigation measures that are beyond those identified during the OH-001-2014 proceeding;</p> <p>d) analysis supporting the use of the measures in c), including any supplementary reports;</p> <p>e) confirmation that Trans Mountain will update the relevant Environmental Protection Plan(s) to include any relevant information based on any supplemental surveys completed; and</p> <p>f) a summary of consultations with Appropriate Government Authorities, potentially affected Aboriginal groups and affected landowners/tenants, as well as copies of all written comments that may be provided to Trans Mountain by those consulted. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those consulted, into the assessment.</p>	X			X				
8	<p><b>Design temperatures – terminals and pump stations</b></p> <p>Trans Mountain must file with the NEB, <b>at least 3 months prior to ordering pipe for terminals and pump stations</b>, confirmation, with rationale, that:</p> <p>a) the selected maximum and minimum design temperatures are in accordance with CSA Z662-15, Clause 5.2.1;</p> <p>b) the selected design temperatures are based on historical, location-specific extreme daily maximum and minimum temperatures, as opposed to average temperatures; and</p> <p>c) the extent of the historical weather data used is commensurate with the expected operational life of the Project.</p>	X				X	X	X	

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
9	<p><b>Quality Management Plan</b>                      Trans Mountain must file with the NEB, <b>at least 4 months prior to manufacturing any pipe and major components for the Project</b>, a Project-specific Quality Management Plan that includes:</p> <ul style="list-style-type: none"> <li>a) material/vendor qualification requirements;</li> <li>b) quality control and assurance of pipe, fittings, and components that ensure all materials meet Trans Mountain’s specifications (i.e., processes, procedures, specifications, random testing, inspection, and test reports);</li> <li>c) mandatory documentation of process conditions during manufacture and verification of the conformance of manufacturer material test reports with Trans Mountain’s requirements;</li> <li>d) mandatory inspection requirements, inspector competency training, and qualifications;</li> <li>e) non-conformance reporting and correction procedures;</li> <li>f) change management process;</li> <li>g) commissioning requirements; and</li> <li>h) material handling requirements during transportation.</li> </ul>	X				X	X	X	
10	<p><b>Phased filings</b>                      Due to the Project’s large spatial extent, Trans Mountain may wish to commence Project construction activities at specific locations at different times (i.e., using a phased approach). This may entail doing so on the basis of pipeline spreads of defined lengths, or by regions, or work areas of Trans Mountain’s choosing (such as terminals or pump stations). If Trans Mountain intends to use a phased approach for Project construction, it must undertake the following:</p> <ul style="list-style-type: none"> <li>a) Trans Mountain must file with the NEB, <b>at least 7 months prior to commencing construction</b>, a complete list of construction spreads, regions, or work areas that, for the duration of Project construction, will serve as the basis by which Trans Mountain may submit condition filings in a phased approach. Each spread, region, or work area must be clearly delineated (e.g., by kilometre posts).</li> <li>b) <b>As part of its filing for a)</b>, to aid the NEB in anticipating future submissions, Trans Mountain must indicate the specific conditions and related spread(s), region(s) or work area(s) for which it expects to apply this phased approach. Trans Mountain must file updates to this list <b>as they are available</b>.</li> <li>c) When submitting a filing for any condition using this phased approach, Trans Mountain must clearly indicate which spread(s), region(s), or work area(s) that filing applies to.</li> <li>d) Construction of a particular spread, region, or work area <b>must not</b> proceed until all pre-construction conditions using this phased approach have been satisfied for that spread, region, or work area. Prior to commencing construction of the initial spread, region, or work area, all applicable conditions with more general pre-construction timing elements must also be satisfied.</li> </ul>	X	X	X	X	X	X	X	X
11	<p><b>Aboriginal, local, and regional skills and business capacity inventory</b>                      a) Trans Mountain must file with the NEB, <b>at least 6 months prior to commencing construction</b>, an Aboriginal, local, and regional skills and business capacity inventory for the Project. The skills and capacity inventory must include:</p> <ul style="list-style-type: none"> <li>i) a description of the information and data sources;</li> </ul>	X							

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
	<ul style="list-style-type: none"> <li>ii) a summary of Aboriginal, local, and regional skills and business capacity;</li> <li>iii) an analysis of the Aboriginal, local and regional capacity for employment and business opportunities for the Project;</li> <li>iv) plans for communicating employment and business opportunities to Aboriginal, local, and regional communities;</li> <li>v) a description of identified or potential skills and business capacity gaps, and any proposed measures to address them or to support or increase skills or capacity; and</li> <li>vi) plans for communicating identified gaps regarding skills and business capacity with Aboriginal, local, and regional communities and businesses, and any proposed measures to support or increase skills or capacity.</li> </ul> <p>b) Trans Mountain must file with the NEB, <b>at least 3 months prior to commencing construction</b>, any updates to the elements of the inventory described in a) i) through vi).</p>								
12	<p><b>Training and Education Monitoring Plan</b></p> <p>a) Trans Mountain must file with the NEB for approval, <b>at least 6 months prior to commencing construction</b>, a plan for monitoring the implementation and outcomes of Aboriginal, local, and regional training and education measures and opportunities for the Project. The plan must include:</p> <ul style="list-style-type: none"> <li>i) a description of, and rationale for selecting, the indicators that will be monitored to track the implementation of training and education measures and opportunities;</li> <li>ii) the monitoring methods and schedule, including information and data sources for the indicators being monitored; and</li> <li>iii) plans for consulting and reporting on the implementation and outcomes of training and education measures and opportunities with Appropriate Government Authorities, potentially affected Aboriginal groups, business, industry, and education and training organizations; and</li> <li>iv) a summary of consultations with Appropriate Government Authorities, potentially affected Aboriginal groups, business, industry, and education and training organizations on the development of the plan.</li> </ul> <p>b) Trans Mountain must file with the NEB, <b>at least 3 months prior to commencing construction</b>, any updates to the elements of the Training and Education Monitoring Plan described in a)i) through iii) above.</p>	X							
13	<p><b>Socio-Economic Effects Monitoring Plan</b></p> <p>Trans Mountain must file with the NEB for approval, <b>at least 6 months prior to commencing construction</b>, a plan for monitoring potential adverse socio-economic effects of the Project during construction. The plan must include the following:</p> <ul style="list-style-type: none"> <li>a) the factors or indicators to be monitored;</li> <li>b) the methods and rationale for selecting the factors or indicators;</li> <li>c) a description of the baseline, pre-construction socio-economic conditions;</li> <li>d) the monitoring methods and schedule, including third party data source identification;</li> <li>e) data recording, assessment, and reporting details;</li> <li>f) a discussion of how measures will be implemented to address any identified adverse effects, including: <ul style="list-style-type: none"> <li>i) the criteria or thresholds that will require measures to be implemented;</li> </ul> </li> </ul>	X	X		X	X	X	X	

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
	<ul style="list-style-type: none"> <li>ii) how monitoring methods and measures implementation to address adverse effects, as necessary, are incorporated into Construction Execution Plans; and</li> <li>iii) a description of the roles and responsibilities of construction prime contractors, sub-contractors, and community relations staff in monitoring socio-economic effects and implementing measures to address adverse effects;</li> <li>g) a summary of its consultations with Appropriate Government Authorities, potentially affected Aboriginal groups and affected landowners/tenants. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those consulted, into the Plan; and</li> <li>h) plans for regular consultation and reporting on effects during construction with potentially affected communities, Aboriginal groups, local and regional authorities, and service providers.</li> </ul>								
14	<p><b>Technical working group (TWG) – Terms of Reference</b>            Trans Mountain must file with the NEB, <b>at least 6 months prior to commencing construction</b>, Terms of Reference for TWGs established in order to address specific technical and construction issues with affected municipalities. The terms of reference must be developed in consultation with participating municipalities, and facility owners and operators that will be affected by the Project. The Terms of Reference must, at a minimum:</p> <ul style="list-style-type: none"> <li>a) identify how TWG membership will be determined;</li> <li>b) identify the TWG structure;</li> <li>c) identify an officer of the company who will be accountable for implementing the Terms of Reference; and</li> <li>d) describe the scope and mandate to be addressed or implemented by the TWG, including:               <ul style="list-style-type: none"> <li>i) the TWG’s goals;</li> <li>ii) the issues and activities that will be within the TWG’s mandate;</li> <li>iii) the protocols and mechanisms for implementing TWG recommendations or decisions; and</li> <li>iv) the protocols for reporting and communicating with TWG members, and other potentially-affected or interested parties; and</li> </ul> </li> <li>e) provide a summary of any outstanding concerns raised by participating municipalities, and facility owners and operators regarding the Terms of Reference.</li> </ul>	X							
15	<p><b>Pipeline risk assessment</b>            Trans Mountain must file with the NEB, <b>at least 6 months prior to commencing construction</b>, the following information for Line 2 and the new delivery pipelines:</p> <ul style="list-style-type: none"> <li>a) the results of the updated risk assessment in a tabular format similar to that provided in its Line 2 Consequence Report (Filing <a href="#">A3Z8G5</a>). The risk assessment tables must also include:               <ul style="list-style-type: none"> <li>i) any updates to High Consequence Areas;</li> <li>ii) the risk mitigation method(s);</li> <li>iii) the mitigated Environmental Risk Scores;</li> <li>iv) pre-mitigation maximum outflow volumes; and</li> </ul> </li> </ul>	X							

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
	<ul style="list-style-type: none"> <li>v) the outflow volumes after mitigation;</li> <li>b) Environmental Risk Score acceptance criteria, with supporting rationale; and</li> <li>c) a detailed description of the adequacy of the following from its Line 2 Consequence Report (Filing <a href="#">A3Z8G5</a>):                             <ul style="list-style-type: none"> <li>i) the coefficients used in the scoring system equations; and</li> <li>ii) the values from the scoring tables.</li> </ul> </li> </ul>								
<b>16</b>	<p><b>Quantitative Geohazard Frequency Assessment</b>                      Trans Mountain must file with the NEB, <b>at least 6 months prior to commencing construction</b>, an updated Quantitative Geohazard Frequency Assessment for the new Line 2 and delivery pipeline segments that contains a re-assessment of the Frequency of Loss of Containment (FLoC) values based on the results of site-specific field assessments and any required mitigation as determined in the detailed engineering and design process.</p> <p>Trans Mountain must provide in the assessment a plan to manage and mitigate geohazards at any location where the FLoC value is greater than <math>10^{-5}</math> events per year to reduce the level of risk to as low as reasonably practicable (ALARP), including a detailed explanation of how the ALARP level has been attained at each location.</p>	X							
<b>17</b>	<p><b>Valve locations on Line 2</b>                      Trans Mountain must file with the NEB for approval, <b>at least 6 months prior to commencing construction</b>, its final valve location assessment for Line 2. This assessment must include:</p> <ul style="list-style-type: none"> <li>a) a table showing each valve’s location, function, and description (the description must include valve type, valve closure time, and whether the valve can be remotely controlled by the control centre);</li> <li>b) confirmation that the valve closure times provided in a) will not cause unsafe transient pressures according to the final transient analysis, along with a summary of the analysis;</li> <li>c) calculated volume release and elevation plots in a format similar to that provided by Trans Mountain in its Oil Spill Outflow Model Results for Line 2 for May 2014 Route (Filing <a href="#">A3Z8G6</a>);</li> <li>d) clarification of how the Outflow Volume Score for Non-Watercourse Intersects (<math>S_{v,Nonwatercourse}</math>) is considered in identifying and prioritizing pipeline segments for valve optimization;</li> <li>e) for each 5-kilometre-long section of Line 2, information demonstrating that the release volumes are minimized to manage risks within the section to a level that is As Low As Reasonably Practicable (ALARP), based on the valve locations provided in a);</li> <li>f) an outflow volume versus chainage graph illustrating the effectiveness of the valve locations provided in a) showing the outflow limit in a format similar to that provided in Figure 4 of Attachment 2 to Trans Mountain’s response to NEB Information Request No. 3.050b) (Filing <a href="#">A4H2D7</a>);</li> <li>g) mitigation measures for the locations shown to exceed the outflow limit in the graph provided in f); and</li> <li>h) full-bore release and spill extent mapping that identifies and plots all geohazards with a Frequency of Loss of Containment (FLoC) greater than <math>10^{-5}</math> events per year after mitigation identified by Trans Mountain at the time of its submission, in a format and scale similar to the maps provided by Trans Mountain in Filing <a href="#">A3Z8G7</a></li> </ul>	X							
<b>18</b>	<p><b>Valve locations and upgrades – Line 1</b>                      Trans Mountain must file with the NEB for approval, <b>at least 6 months prior to commencing construction</b>, its final valve location assessment for Line 1. This assessment must include:</p>		X						

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
	<p>a) a plan for upgrading existing manual block valves to automated or remotely operable valves, and a plan for adding new valves, including initiation and completion dates for the required activities;</p> <p>b) a table showing each valve’s location, function, and description (the description must include valve type, valve closure time, and whether the valve can be remotely controlled by the control centre);</p> <p>c) confirmation that the valve closure times provided in b) will not cause unsafe transient pressures according to the final transient analysis, along with a summary of the analysis;</p> <p>d) calculated volume release and elevation plots in a format similar to that provided by Trans Mountain in its Oil Spill Outflow Model Results for Line 2 for May 2014 Route (Filing <a href="#">A3Z8G6</a>);</p> <p>e) an outflow volume versus chainage graph illustrating the effectiveness of the valve locations provided in b), in a format similar to that provided in Figure 4 of Attachment 2 to Trans Mountain’s response to NEB Information Request No. 3.050b) (Filing <a href="#">A4H2D7</a>); and</p> <p>f) full-bore release and spill extent mapping that identifies and plots all geohazards identified by Trans Mountain in its Natural Hazards Management Program or otherwise, at the time of its submission, in a format and scale similar to the maps provided by Trans Mountain in Filing <a href="#">A3Z8G7</a>; and</p> <p>g) the associated Line 1 risk assessment used to determine the new valve locations and planned valve upgrades in (a).</p>								
19	<p><b>Pipeline segment reactivation (Hinton to Hargreaves; Darfield to Black Pines) – engineering assessment and certificate</b>                      Trans Mountain must file with the NEB for approval, <b>at least 6 months prior to commencing construction</b>:</p> <p>a) an engineering assessment for the above two pipeline segments, in accordance with Canadian Standards Association (CSA) Z662-15, Clauses 3.3 and 10.15.2; and</p> <p>b) a certificate with a supporting report issued by an independent certification body,<sup>2</sup> stating unconditionally that the above two pipeline segments:</p> <p>i) are fit for service for the specified operating conditions;<sup>3</sup></p> <p>ii) meet all applicable requirements of CSA Z662-15; and</p> <p>iii) will meet the hydrostatic test requirements outlined in CSA Z662-15, Clause 8, at any time during the certified period.</p> <p>The certificate must be valid for at least 5 years and be validated on an annual basis during the certified period.                      The supporting report must include the qualifications of the independent certification body, the justification used to grant the certificate, and the expiry date of the certificate.</p>		X						
20	<p><b>Existing NPS 24 delivery pipeline location</b>                      Trans Mountain must file with the NEB, <b>at least 6 months prior to commencing construction</b>, its decision on</p>	X							

<sup>2</sup> For Conditions 19, 122 and 152, an” independent certification body” is an internationally recognized company or organization, such as Lloyd’s Register or Det Norske Veritas, which is able to certify compliance to statutory requirements. The independent certification body must have expertise in pipeline integrity. The NEB reserves the right to accept or reject the certificate. In addition, the NEB’s decision is not contingent on the results of the certificate.

<sup>3</sup> For Conditions 19, 122 and 152, “operating conditions” must include the Project-specific operating conditions, possible transient flow conditions, slack flow conditions, and effects on operating pressure due to temperature changes.

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
	<p>whether it intends to “relocate” the existing NPS 24 delivery pipeline to the Burnaby Mountain tunnel (i.e., replace it with a new third pipeline in the Burnaby Mountain tunnel) and, if so, provide:</p> <p>a) details of any required changes to the design, construction, and operation of the proposed Burnaby Mountain tunnel;</p> <p>b) a discussion of the factors Trans Mountain considered in deciding to replace/relocate the existing NPS 24 delivery pipeline; and</p> <p>c) an indication of when Trans Mountain expects to apply for NEB approval to relocate/replace the existing NPS 24 delivery pipeline.</p>								
21	<p><b>Transient hydraulic analysis on the existing NPS 24 delivery pipeline</b>                      Trans Mountain must file with the NEB, <b>at least 6 months prior to commencing construction</b>, the conclusions of the transient hydraulic analysis undertaken on the existing NPS 24 delivery pipeline from the Burnaby Terminal to the Westridge Marine Terminal. The filed conclusions must:</p> <p>a) demonstrate that the analysis considered the occurrences of maximum surge pressure in the existing NPS 24 delivery pipeline; and</p> <p>b) support Trans Mountain’s decision to either retain or eliminate the proposed relief tank at the Westridge Marine Terminal.</p>	X							
22	<p><b>Updated terminal risk assessments</b>                      Trans Mountain must file with the NEB for approval, <b>at least 6 months prior to commencing construction and at the same time as Trans Mountain’s filings for Conditions 23, 24 and 25</b>, updated risk assessments for the Edmonton Terminal West Tank Area, the Sumas Terminal, and the Burnaby Terminal. The updated risk assessments must quantify and/or include the following:</p> <p>a) the effect of any revised spill burn rates;</p> <p>b) the potential consequences of a boil-over;</p> <p>c) the potential consequences of flash fires and vapour cloud explosions;</p> <p>d) the cumulative risk based on the total number of tanks in the terminal, considering all potential events (pool fire, boil-over, flash fire, vapour cloud explosion);</p> <p>e) the domino (knock-on) effect caused by a release of the contents of one tank on other tanks within the terminal’s common impoundment area(s), or other tanks in adjacent impoundment areas; and</p> <p>f) risk mitigation measures, including ignition source control methods.</p> <p>For those risks that cannot be eliminated, Trans Mountain must demonstrate in each risk assessment that mitigation measures will reduce the risks to levels that are As Low As Reasonably Practicable (ALARP) while complying with the Major Industrial Accidents Council of Canada (MIACC) criteria for risk acceptability.</p>							X	

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
	The quantitative risk analysis must be based on recognized methodology, models, and software. Product release frequencies and event probabilities must be based on recent, documented data sources. The effect of mitigation measures on the risk results must be justified and documented.								
23	<p><b>Secondary containment – Edmonton Terminal</b>                      Trans Mountain must file with the NEB for approval, <b>at least 6 months prior to commencing construction</b>, the final design of the Edmonton Terminal West Tank Area, including a report demonstrating the following:</p> <p>a) the drainage system’s capability to rapidly and safely channel a significant release from any tank in the West Tank Area Common Impoundment to the Remote Impoundment Annex and Remote Impoundment at the same time that a design precipitation event is occurring, without overtopping the diked areas.</p> <p>b) the adequacy of the design in mitigating the following consequences of an accidental release and/or ignition of hydrocarbons, both within and beyond the Edmonton Terminal property boundary:</p> <p>i) harm to personnel and the public;</p> <p>ii) environmental damage; and</p> <p>iii) damage to facilities; and</p> <p>c) the ability of the Common Impoundment, Remote Impoundment Annex, and Remote Impoundment to contain a release of hydrocarbons from a rupture of the largest tank within the West Tank Area concurrent with a 1-in-100 year, 24-hour storm event. The scenario must include an allowance for water generated from potential firefighting activities and the maximum potential amount of standing water in all areas of the secondary containment system.</p>							X	
24	<p><b>Secondary containment – Burnaby Terminal</b>                      Trans Mountain must file with the NEB for approval, <b>at least 6 months prior to commencing construction</b>, the final design of the Burnaby Terminal, including a report demonstrating the following:</p> <p>a) the drainage system’s capability to rapidly and safely channel a significant release from either Tank 96, 97, or 98 to the Partial Remote Impoundment at the same time that a design precipitation event is occurring, without overtopping the diked areas.</p> <p>b) the adequacy of the proposed design in mitigating the following consequences of an accidental release and/or ignition of hydrocarbons, both within and beyond the Burnaby Terminal property boundary:</p> <p>i) harm to personnel and the public;</p> <p>ii) environmental damage; and</p> <p>iii) damage to facilities; and</p> <p>c) the ability of the individual secondary containment areas, Common Impoundment areas, Intermediate Stormwater Retention, Partial Remote Impoundment, and Tertiary Containment to contain a release of hydrocarbons from a multiple-tank rupture scenario concurrent with a 1-in-100 year, 24-hour storm event. The scenario must include an allowance for water generated from potential firefighting activities and the maximum potential amount of standing water in all areas of the secondary containment system. The assessment may include a calculation of the probability of exceedance of on-site containment considering all possible tank rupture combinations, excluding</p>							X	

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
	those tanks with sufficient individual secondary containment. The calculation may be based on a tank utilization histogram most representative of the expanded terminal operations, similar to that provided in Attachment 1 of Trans Mountain’s response to NEB Information Request No. 4.24a) (Filing <a href="#">A4K4X3</a> ).								
25	<p><b>Secondary containment – Sumas Terminal</b>            Trans Mountain must file with the NEB for approval, <b>at least 6 months prior to commencing construction</b>, the final design of the Sumas Terminal, including a report demonstrating the following:</p> <p>a) the adequacy of the proposed design in preventing the following consequences of an accidental release and/or ignition of hydrocarbons, both within and beyond the Sumas Terminal property boundary:</p> <ul style="list-style-type: none"> <li>i) harm to personnel and the public;</li> <li>ii) environmental damage; and</li> <li>iii) damage to facilities; and</li> </ul> <p>b) the ability of the secondary containment system to contain a release of hydrocarbons from a multiple-tank rupture scenario concurrent with a 1-in-100 year, 24-hour storm event. The scenario must include an allowance for water generated from potential firefighting activities and the maximum potential amount of standing water in all areas of the secondary containment system. The assessment may include a calculation of the probability of exceedance of on-site containment considering all possible tank rupture combinations, excluding those tanks with sufficient individual secondary containment. The calculation may be based on a tank utilization histogram most representative of the expanded terminal operations, similar to that provided in Attachment 1 of Trans Mountain’s response to NEB Information Request No. 4.24b) (Filing <a href="#">A4K4X4</a>).</p>							X	
26	<p><b>Burnaby Mountain tunnel option – design, construction, and operation</b>            For the tunnel between the Burnaby Terminal and the Westridge Marine Terminal and related delivery pipelines, <b>at least 6 months prior to commencing Burnaby Mountain tunnel construction activities</b>, Trans Mountain must:</p> <p>a) file with the NEB for <u>approval</u>:</p> <ul style="list-style-type: none"> <li>i) a description of the selected tunnel lining method with the rationale for its selection; and</li> <li>ii) tunnel confined space entry procedures during construction and visual inspection, and, if applicable, following construction; and</li> </ul> <p>b) file with the NEB:</p> <ul style="list-style-type: none"> <li>i) the results of any geotechnical or geophysical feasibility surveys completed since the evidence filed in the OH-001-2014 hearing;</li> <li>ii) a description of the tunnel portals and permanent road access, if applicable;</li> <li>iii) a description of the selected tunnel excavation method with rationale for its selection;</li> <li>iv) a description of the tunnel backfilling method with rationale for its selection;</li> <li>v) a description of the methods to be used for pipe handling and welding;</li> <li>vi) a discussion on the adequacy of the pipe support methods for the new delivery pipelines during construction, commissioning, hydrostatic testing and operation, if applicable;</li> <li>vii) a discussion on the adequacy of the selected leak detection methods;</li> </ul>	X							

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
	<p>viii) information demonstrating how the precautionary design of the new delivery pipelines would mitigate issues related to limited accessibility for future maintenance and repairs; and</p> <p>ix) the final tunnel cross-sectional design drawings.</p>								
27	<p><b>Burnaby Mountain tunnel option – backfilling</b>                      Trans Mountain must file with the NEB, <b>at least 6 months prior to commencing Burnaby Mountain tunnel construction activities</b>, the following information on backfilling the tunnel between the Burnaby Terminal and the Westridge Marine Terminal:</p> <p>a) a discussion of the adequacy of the measures to be taken during tunnel backfilling to eliminate or mitigate potential damage to the delivery pipelines;</p> <p>b) the method(s) that will be used to confirm the consistency and continuity of the tunnel backfill (i.e., backfilling is completed without any spatial gaps);</p> <p>c) the method(s) that will be used for holiday detection and coating repair prior to backfilling;</p> <p>d) the methods that will be used to confirm the integrity of the delivery pipelines in the tunnel, both prior to and after backfilling, but prior to commissioning; and</p> <p>e) the methods that will be used for monitoring, maintaining, and repairing backfill during operations, considering conditions such as fill deterioration and a potential increase in permeability.</p>	X							
28	<p><b>Burnaby Mountain tunnel option – cathodic protection</b>                      Trans Mountain must file with the NEB, <b>at least 6 months prior to commencing Burnaby Mountain tunnel construction activities</b>, the following information on the cathodic protection system for the delivery pipelines in the tunnel between the Burnaby Terminal and the Westridge Marine Terminal:</p> <p>a) a description of the cathodic protection system design;</p> <p>b) risk mitigation measures for all potential cathodic protection performance issues, such as shielding from the backfill material; and</p> <p>c) a method for verifying the effectiveness of the cathodic protection system during operations.</p>	X							
29	<p><b>Burnaby Mountain tunnel option – rock mass and waste rock management</b>                      Trans Mountain must file with the NEB for approval, <b>at least 6 months prior to commencing Burnaby Mountain tunnel construction activities</b>, the following details on rock mass expected to be encountered during construction of the tunnel between the Burnaby Terminal and the Westridge Marine Terminal:</p> <p>a) the characterization of the rock mass quality;</p> <p>b) waste rock management methods during construction and operations, if applicable;</p> <p>c) proposed acid rock mitigation measures, such as the treatment or disposal of acid rock, if encountered;</p> <p>d) the locations, sizes, and designs of all confirmed waste rock disposal areas; and</p> <p>e) plans for disposing any waste rock that is not expected to be stored in the confirmed waste rock disposal areas.</p>	X							
30	<p><b>Power system protection for pump stations and terminals</b>                      Trans Mountain must file with the NEB the following details of its electrical power system design for each pump station and each of the following: Westridge Marine Terminal, Burnaby Terminal, Edmonton Terminal, and Sumas Terminal:</p>	X				X	X	X	

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
	<p>a) Descriptions of the overcurrent and ground fault protection schemes including:</p> <ul style="list-style-type: none"> <li>i) a summary of coordination studies between the upstream and downstream protective devices, <b>at least 3 months prior to commencing dry commissioning;</b></li> <li>ii) relay settings and time-current curves, <b>at least 3 months prior to commencing dry commissioning;</b></li> <li>iii) the specification of neutral grounding resistors, <b>at least 6 months prior to commencing construction;</b></li> <li>iv) specifications of contactors, fuses, and circuit breakers, <b>at least 6 months prior to commencing construction;</b> and</li> <li>v) a description of other electrical protections, relay settings, and trip characteristics, <b>at least 3 months prior to commencing dry commissioning.</b></li> </ul> <p>b) Consistent with the NEB’s Safety Advisory SA-2015-03, dated 4 May 2015, <b>at least 6 months prior to commencing construction</b>, information confirming that Trans Mountain has performed the ground fault and arcing fault protection designs for each pump station and terminal, including:</p> <ul style="list-style-type: none"> <li>i) a means to clear ground faults without intentional time delay if the fault currents exceed the design limit set by the neutral grounding resistance; and</li> <li>ii) a means to block the stored energy from other running motors from feeding an electrical fault in another motor running from the same bus.</li> </ul> <p>This filing must include a description of the ground fault and arcing fault protection designs including the above measures.</p> <p>c) <b>At least 6 months prior to commencing construction</b>, either:</p> <ul style="list-style-type: none"> <li>i) a written confirmation that Trans Mountain determined during detailed design that electrical faults will not exceed their design limits and migrate to an arcing fault; or</li> <li>ii) for a station or a terminal for which Trans Mountain determined during detailed design that an electrical fault could exceed its design limit and migrate to an arcing fault, the electrical configuration of that station or terminal and the additional equipment and devices that will be used to mitigate the adverse effects of such arcing faults.</li> </ul> <p>d) Single-line diagrams of the electrical power systems, <b>at least 6 months prior to commencing construction.</b></p>								
31	<p><b>Reactivation of the Niton Pump Station</b>            Trans Mountain must file with the NEB for approval, <b>at least 6 months prior to commencing any pump station construction</b>, an engineering assessment for the Niton Pump Station, in accordance with CSA Z662. The engineering assessment must demonstrate that the pump station is fit for its intended service, and meets all applicable requirements of CSA Z662.</p>		X						
32	<p><b>Sumas Terminal Geotechnical Report</b>            Trans Mountain must file with the NEB, <b>at least 6 months prior to commencing construction at the Sumas Terminal</b>, a geotechnical report that provides feasibility-level geotechnical design recommendations for the proposed expansion at the Sumas Terminal.</p>							X	
33	<p><b>Westridge Marine Terminal Onshore Geotechnical Report</b>            Trans Mountain must file with the NEB, <b>at least 6 months prior to commencing construction at the Westridge Marine Terminal</b>, a geotechnical report that provides feasibility-level geotechnical design recommendations for the</p>	X							

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
	proposed new onshore facilities at the Westridge Marine Terminal, including consideration of the potential for seismic damage.								
34	<b>Westridge Marine Terminal Offshore Geotechnical Report</b> Trans Mountain must file with the NEB, <b>at least 6 months prior to commencing construction at the Westridge Marine Terminal</b> , the final Preliminary Geotechnical Report on the offshore portion of the Westridge Marine Terminal, based on the selected pile design option, including consideration of the potential for seismic damage.	X							
35	<b>Marine Sediment Management Plan</b> Trans Mountain must file with the NEB, <b>at least 6 months prior to commencing construction at the Westridge Marine Terminal</b> , confirmation whether or not dredging is required at the Westridge Marine Terminal. In the event that dredging is determined to be unavoidable during the expansion of the Westridge Marine Terminal, Trans Mountain must file with the NEB for approval, <b>at least 4 months prior to commencing construction</b> , and also include as part of its Westridge Marine Terminal Environmental Protection Plan, a Marine Sediment Management Plan. This plan must include:  a) a summary of any supplemental marine sediment survey results; b) quantification of the area and the volume of marine sediment to be dredged along with an explanation of the measures that have been taken to eliminate or reduce the dredge footprint and volume proposed for disposal at sea; c) results of sediment plume modelling for any areas to be dredged; d) options for dredged sediment management, including the volumes of sediment that will be re-used or disposed of at sea or on land, as well the criteria and methods for determining how the dredged sediment will be disposed of at sea or on land; e) criteria and methods for determining how the dredged sediment will be managed recognizing that any proposed disposal at sea will only be considered for approval under the <i>Canadian Environment Protection Act, 1999</i> , if it is demonstrated to be the most technically and environmentally preferable option; f) confirmation that Trans Mountain will update the Westridge Marine Terminal Environmental Protection Plan to include any relevant information from the Marine Sediment Management Plan; g) details of monitoring that will be undertaken during construction; h) details of monitoring (both abiotic and biotic parameters) that will be undertaken during operations, including a discussion on evaluating the level of contaminants in the marine environment and any changes from pre-construction levels, as well as a proposed reporting schedule; and i) a summary of its consultations with Appropriate Government Authorities and potentially affected Aboriginal groups. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those consulted, into the plan.	X							
36	<b>Pre-construction caribou habitat assessment</b> Trans Mountain must file with the NEB, <b>at least 6 months prior to commencing construction of any Project component potentially affecting each caribou range</b> , a detailed caribou habitat assessment of the Project right-of-way through each caribou range traversed by the Project, including a 500 metre buffer on either side. The framework of the habitat assessment must use the updated critical habitat polygons delineated by the Southern Mountain Caribou Recovery Team and components of critical habitat outlined in the <i>Recovery Strategy for the Woodland Caribou</i> ,	X	X		X	X	X		

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
	<p><i>Southern Mountain Population in Canada (2014)</i>. The habitat assessment must include:</p> <ul style="list-style-type: none"> <li>a) map(s) indicating the location of the habitat;</li> <li>b) a description of the amount of habitat and the existing habitat alteration, in hectares;</li> <li>c) a description of how Trans Mountain has taken available and applicable Aboriginal traditional ecological knowledge into consideration into the assessment including demonstration that those Aboriginal persons and groups that provided Aboriginal traditional ecological knowledge, as reported during the OH-001-2014 proceeding and/or pursuant to Condition 97, had the opportunity to review and comment on the information;</li> <li>d) a description of how Trans Mountain has incorporated input from Appropriate Government Authorities and species experts into the assessment methodology; and</li> <li>e) a description of the type of habitat characterized by the biophysical attributes of critical habitat, as defined in the applicable Recovery Strategy.</li> </ul>								
37	<p><b>Caribou Habitat Restoration Plan (CHRP)</b>                      Trans Mountain must file with the NEB for approval, in accordance with the timelines below, preliminary and final versions of a CHRP for each caribou range potentially affected by the Project.</p> <ul style="list-style-type: none"> <li>a) Preliminary CHRP – to be filed <b>at least 6 months prior to commencing construction of any Project component potentially affecting each caribou range</b>. This version of the CHRP must include the following:                             <ul style="list-style-type: none"> <li>i) the CHRP’s goals and measureable targets for each caribou range, including the goal of avoidance of critical habitat destruction;</li> <li>ii) a detailed description of measures that will be used to avoid or lessen Project activities that impact critical habitat, and the rationale for selecting the measures;</li> <li>iii) a list of criteria used to identify potential caribou habitat restoration sites;</li> <li>iv) conceptual decision-making tree(s) or decision framework(s) that will be used to identify and prioritize potential caribou habitat restoration sites, and mitigative actions to be used at different types of sites, including consideration of typical site factors that may constrain implementation;</li> <li>v) a literature review upon which the decision-making tree(s) or decision framework(s) are based, including:                                     <ul style="list-style-type: none"> <li>1) an identification of applicable temporal and spatial caribou habitat restoration methodologies;</li> <li>2) an assessment of the relative effectiveness of the identified methodologies; and</li> <li>3) a detailed methodology of how the literature review was conducted.</li> </ul> </li> <li>vi) the quantifiable targets and performance measures that will be used to evaluate the extent of predicted residual effects, CHRP effectiveness, the extent to which the goals and measurable targets have been met, and the need for further measures to offset unavoidable and residual effects on caribou habitat;</li> <li>vii) a schedule indicating when mitigation measures will be initiated and their estimated completion dates;</li> <li>viii) a description of how Trans Mountain has taken available and applicable Aboriginal traditional ecological knowledge studies into consideration in identifying potential caribou habitat restoration sites including demonstration that those Aboriginal persons and groups that provided Aboriginal traditional land use information and traditional ecological knowledge, as reported during the OH-001-2014 proceeding and/or pursuant to Condition 97, had the opportunity to review and comment on the information; and</li> </ul> </li> </ul>	X	X		X	X	X		

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
	<p>ix) a summary of its consultations with Appropriate Government Authorities and any potentially affected Aboriginal groups. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those consulted, into the preliminary CHRP.</p> <p>b) Final CHRP – to be filed <b>on or before 1 November after the first complete growing season after completing final clean-up</b>. This version of the CHRP must include the following:</p> <p>i) the preliminary CHRP, with any updates identified in a revision log that includes the rationale for any changes to decision-making criteria;</p> <p>ii) a complete tabular list of caribou habitat restoration sites, including locations, spatial areas, habitat quality descriptions, site-specific restoration activities, and challenges;</p> <p>iii) a description of how selected restoration measures are consistent with the <i>Recovery Strategy for the Woodland Caribou, Southern Mountain Population in Canada (2014)</i>;</p> <p>iv) maps or updated Environmental Alignment Sheets showing the site locations;</p> <p>v) specification drawings for the implementation of each restoration method;</p> <p>vi) a qualitative and quantitative and assessment of the total area of direct and indirect disturbance to caribou habitat that will be restored, the duration of spatial disturbance, and the area-based extent of the resulting unavoidable and residual effects to be offset, including indirect disturbance; and</p> <p>vii) a summary of its consultations with Appropriate Government Authorities and any potentially affected Aboriginal groups. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those consulted, into the final CHRP.</p>								
38	<p><b>Sowaqua Spotted Owl Mitigation Plan</b>            Trans Mountain must file with the NEB for approval, <b>at least 6 months prior to commencing construction of any Project component within the Sowaqua spotted owl wildlife habitat area</b>, a Sowaqua Spotted Owl Mitigation Plan that includes:</p> <p>a) a summary of results from supplemental surveys conducted in the Sowaqua spotted owl wildlife habitat area;</p> <p>b) the area of habitat potentially directly and indirectly affected by the Project;</p> <p>c) a description of how an avoidance, mitigation, and offset hierarchy was considered in the plan;</p> <p>d) mitigation measures to be implemented, including all relevant measures committed to throughout the OH-001-2014 proceeding, any new mitigation measures resulting from supplementary surveys, detailed criteria using clear and unambiguous language that describes the circumstances under which each measure will be applied, and measurable goals for evaluating mitigation success;</p> <p>e) an evaluation of offset options within or outside of the Sowaqua spotted owl wildlife habitat area, an indication of the selected option, and the rationale for the selected option;</p> <p>f) details on post-construction monitoring of mitigation measures and offset measures, including survey methods, corrective measures, detailed criteria using clear and unambiguous language that describes the circumstances under which each measure will be applied, any adjustments to the offset measures, and a proposed reporting schedule;</p>	X	X		X	X	X		

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	<p>g) a commitment to include results of the monitoring in the post-construction environmental monitoring reports filed under Condition 151;</p> <p>h) details on how the mitigation and monitoring measures are consistent with applicable recovery strategies and action plans;</p> <p>i) a description of how Trans Mountain has taken available and applicable Aboriginal traditional land use and traditional ecological knowledge into consideration in developing the mitigation plan including demonstration that those Aboriginal persons and groups that provided Aboriginal traditional land use information and traditional ecological knowledge, as reported during the OH-001-2014 proceeding and/or pursuant to Condition 97, had the opportunity to review and comment on the information;</p> <p>j) a summary of its consultations with Appropriate Government Authorities, any species experts and potentially affected Aboriginal groups. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those consulted, into the Mitigation Plan; and</p> <p>k) confirmation that Trans Mountain will update the relevant Environmental Protection Plan(s) to include any relevant information from the mitigation plan.</p>								
39	<p><b>Hydrogeological study at Coldwater Indian Reserve (IR) No. 1</b>            Trans Mountain must file with the NEB, <b>at least 6 months prior to commencing construction between Veale Road and Kingsvale Pump Station</b>, a hydrogeological report relating to the aquifer at Coldwater IR No. 1 in British Columbia. The report must:</p> <p>a) describe the methodology and information sources used, including any field investigations;</p> <p>b) delineate the extent of the aquifer in the area of Coldwater IR No. 1;</p> <p>c) characterize the aquifer recharge sources and aquifer confinement;</p> <p>d) characterize the direction and speed of groundwater movement to wells on Coldwater IR 1;</p> <p>e) quantify the risks posed to groundwater supplies on Coldwater IR No. 1 in the event of leaks, accidents or malfunctions from the Project;</p> <p>f) based on the assessment of risks, describe proposed measures to address identified risks, including but not limited to considerations related to routing, project design, operational measures, or monitoring;</p> <p>g) provide justification for the measures proposed to address identified potential risks to groundwater supplies on Coldwater IR No. 1; and</p> <p>h) include a summary of consultations undertaken with the Coldwater First Nation and Appropriate Government Authorities, as well as copies of all written comments that may be provided to Trans Mountain by the Coldwater First Nation or Appropriate Government Authorities. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from the Coldwater First Nation or Appropriate Government Authorities, into the assessment.</p>	X			X		X		
40	<p><b>Rare Ecological Community and Rare Plant Population Management Plan</b>            Trans Mountain must file with the NEB for approval, <b>at least 5 months prior to commencing construction</b>, an updated Rare Ecological Community and Rare Plant Population Management Plan for ecological communities of concern, rare plants and lichens, and early draft, candidate, proposed, or final critical habitat for plant and lichen</p>	X	X		X	X	X	X	

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<p>species under the <i>Species at Risk Act</i>, that are potentially affected directly or indirectly by the Project during construction or operations, that includes:</p> <ul style="list-style-type: none"> <li>a) a summary of supplementary survey results, and a demonstration of the overall adequacy of the rare ecological community and rare plant surveys, including the adequacy for the identification of biophysical attributes for any early draft, candidate, proposed, or final critical habitat under the <i>Species at Risk Act</i>;</li> <li>b) avoidance and mitigation measures to be implemented during construction and operations, including all relevant measures committed to throughout the OH-001-2014 proceeding and any new measures resulting from supplementary surveys, with rationales and unambiguous criteria explaining under what circumstances each measure will be applied, and measurable goals against which the success of each measure will be evaluated;</li> <li>c) a description of how the avoidance, mitigation, and offset hierarchy was considered in developing the plan, with rationales for progressing from avoidance to mitigation to offsets;</li> <li>d) details on post-construction monitoring, including survey methods, the appropriate number of years of monitoring to determine the success of each type of avoidance and mitigation measure, corrective actions that might be necessary, and the circumstances under which each such action would be taken;</li> <li>e) a Preliminary Rare Ecological Community and Rare Plant Population Offset Plan for any ecological communities and rare plant and lichen species that have an at-risk status of S1, S1S2 or S2, or that are listed under federal or provincial legislation for protection, and for any early draft, candidate, proposed, or final critical habitat under the <i>Species at Risk Act</i>, and that, after five years of operations, have ongoing effects. This preliminary plan must include: <ul style="list-style-type: none"> <li>i) a rationale for why the community, species, or critical habitat cannot be avoided by a sufficient distance to avoid both direct and indirect residual effects;</li> <li>ii) the expected residual effects on that community, species, or critical habitat, including a discussion of the potential for time lags between when Project effects occur and when mitigation measures would become fully functional, and taking into account the success on past projects of the proposed mitigation and corrective measures in b) and d) above;</li> <li>iii) an analysis of the appropriateness of offsets for the community, species or critical habitat, taking their specific features into account, and of any potential limitations on offset effectiveness;</li> <li>iv) a description of how the avoidance, mitigation, monitoring, corrective and offset measures are consistent with any applicable recovery, action or management strategies or plans for the community, species or critical habitat;</li> <li>v) an explanation with rationales of how the need for offset measures will be determined and how quantitative offset objectives will be developed, including the use and selection of offset ratios, with the aim of achieving no-net-loss;</li> <li>vi) the potential types of offset measures, the process for selecting which will be implemented, an estimation of the probability of their success, and how compensation sites will be selected; and</li> <li>vii) a discussion of how the effectiveness of offset measures will be monitored, assessed, and reported on, and problems corrected;</li> </ul> </li> </ul>								

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	<p>f) a description of how Trans Mountain has taken available and applicable Aboriginal traditional land use and traditional ecological knowledge into consideration in developing the plan, including demonstration that those Aboriginal persons and groups that provided Aboriginal traditional land use information and traditional ecological knowledge, as reported during the OH-001-2014 proceeding and/or pursuant to Condition 97, had the opportunity to review and comment on the information;</p> <p>g) a summary of its consultations with Appropriate Government Authorities, any species experts and any potentially affected Aboriginal groups. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those consulted, into the plan; and</p> <p>h) confirmation that Trans Mountain will update the relevant Environmental Protection Plan(s) to include any relevant information from the Rare Ecological Community and Rare Plant Population Management Plan, including confirmation that the avoidance, mitigation, monitoring, corrective, and offset measures in the Rare Ecological Community and Rare Plant Population Management Plan will be implemented to the extent feasible in the case of discovery via their inclusion in the Rare Ecological Communities or Rare Plant Species Discovery Contingency Plan.</p>								
41	<p><b>Wetland Survey and Mitigation Plan</b>            Trans Mountain must file with the NEB for approval, <b>at least 5 months prior to commencing construction</b>, a pre-construction Wetland Survey and Mitigation Plan for wetlands potentially affected directly or indirectly by the Project during construction or operations, that includes:</p> <p>a) a summary of supplementary survey results and a demonstration of the overall adequacy of the wetland surveys;</p> <p>b) a description of any wetlands for which ground-based surveys were not possible, an explanation as to why not, attempts made to obtain access, and what further information on each wetland will be collected immediately prior to or during construction;</p> <p>c) a description of the functional condition of each wetland for comparison during post-construction monitoring, including individual functional conditions (e.g., habitat, hydrology and biogeochemistry, including the presence and abundance of migratory birds and species at risk), and a description of the methods used to determine the type and amount of each individual wetland function and the overall functional condition;</p> <p>d) a description of the crossing methods, mitigation measures and reclamation measures to be implemented during construction and operations, with rationales and unambiguous criteria explaining under what circumstances each such method and measure will be applied;</p> <p>e) measurable goals against which the success of wetland mitigation and reclamation will be evaluated, including a description of how such goals incorporate the aim of returning wetlands to their original functionality while allowing for reasonable natural variation, and including measurable goals for each of the first-, third- and fifth-year post-construction monitoring reporting stages for any wetland to which no-net-loss under the Federal Policy on Wetland Conservation applies;</p> <p>f) a description of how the</p> <p>i) avoidance, mitigation, and offset hierarchy, and</p> <p>ii) the goal of no-net-loss of wetland function,</p> <p>were considered in developing the plan, with rationales for progressing from avoidance to mitigation to offsets;</p>	X	X		X	X	X	X	

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	<p>g) details of the post-construction monitoring plan for wetlands for the first five years of operations, including corrective actions that might be necessary and the circumstances under which each such action would be taken;</p> <p>h) a Preliminary Wetland Offset Plan for any wetland that has not achieved reclamation success in terms of overall wetland function after five years of operations, and for any wetland to which no-net-loss under the Federal Policy on Wetland Conservation applies and that has had a temporary or ongoing loss in any individual functional condition – this plan must include:</p> <p>i) the expected residual effects on the wetland, including a discussion of the potential for time lags between when Project effects occur and when mitigation measures would become fully functional, taking into account the success on past projects of the proposed mitigation, reclamation and corrective measures in d) and g) above;</p> <p>ii) an analysis of the appropriateness of offsets for the wetland, taking its specific features into account, and of any potential limitations on offset effectiveness;</p> <p>iii) an explanation with rationales of how the need for offset measures will be determined and how quantitative offset objectives will be developed, including the use and selection of offset ratios and indicator species, with the aim of achieving no-net-loss;</p> <p>iv) the potential types of offset measures, the process for selecting which will be implemented, an estimation of the probability of their success, and how compensation sites will be selected;</p> <p>v) a discussion of how the effectiveness of offset measures will be monitored, assessed, and reported on, and problems corrected; and</p> <p>vi) for any wetland to which no-net-loss under the Federal Policy on Wetland Conservation applies, details with rationales on the offset measures that will be implemented before or during the first five years of operations to compensate for expected temporary or ongoing losses to individual functional conditions, including the amount and type of offsets required, the selection of compensation sites, identification of the parties involved in planning and implementation and their respective roles and responsibilities, a timeline for implementation, and the methods and schedule for monitoring and reporting to demonstrate offset success;</p> <p>i) a description of how Trans Mountain has taken available and applicable Aboriginal traditional land use and traditional ecological knowledge into consideration in developing the plan, including demonstration that those Aboriginal persons and groups that provided Aboriginal traditional land use information and traditional ecological knowledge, as reported during the OH-001-2014 proceeding and/or pursuant to Condition 97, had the opportunity to review and comment on the information;</p> <p>j) a summary of its consultations with Appropriate Government Authorities, potentially affected Aboriginal groups and affected landowners/tenants. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those consulted, into the plan; and</p> <p>k) confirmation that Trans Mountain will update the relevant Environmental Protection Plan(s) to include any relevant information from the Wetland Survey and Mitigation Plan.</p>								
42	<p><b>Grasslands Survey and Mitigation Plan</b>            Trans Mountain must file with the NEB for approval, <b>at least 5 months prior to commencing construction</b>, a pre-construction Grasslands Survey and Mitigation Plan for native grasslands in the British Columbia interior that are</p>	X	X		X	X	X		

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<p>potentially affected directly or indirectly by the Project during construction or operations, that includes:</p> <ul style="list-style-type: none"> <li>a) a summary of survey results for such grasslands, including but not limited to native plant species diversity, species at risk, the density and distribution of existing invasive plant species, and the presence of cryptogamic crust, together with a demonstration of the adequacy of such surveys and a summary of existing and ongoing land management impacts;</li> <li>b) a description (including quantification) of overlap of the Project with grasslands and of expected residual effects;</li> <li>c) a description of the mitigation and reclamation measures to be implemented for grasslands during construction and operations, including the extent to which native seed will be used, with rationales and unambiguous criteria explaining under what circumstances each such measure will be applied;</li> <li>d) measurable goals against which the success of grassland mitigation and reclamation will be evaluated, including goals related to cryptogamic crust recovery, invasive species control, and access control, and how existing and ongoing land management impacts and land-use changes by landowners outside the control of Trans Mountain will be taken into account;</li> <li>e) a description of how the             <ul style="list-style-type: none"> <li>i) avoidance, mitigation, and offset hierarchy, and</li> <li>ii) the goal of no-net-loss for grasslands,</li> </ul>             were considered in developing the plan, with rationales for progressing from avoidance to mitigation to offsets;</li> <li>f) details of the post-construction monitoring plan for grasslands for the first ten years of operations, including corrective actions that might be necessary and the circumstances under which each such action would be taken;</li> <li>g) a Preliminary Grasslands Offset Plan for those grasslands that, after ten years of operations, have not achieved reclamation success. This plan must include:             <ul style="list-style-type: none"> <li>i) expected residual effects on the grasslands, including a discussion of the potential for time lags between when Project effects occur and when mitigation measures would become fully functional, taking into account the success on past projects of the proposed mitigation, reclamation and corrective measures in c) and f) above;</li> <li>ii) an analysis of the appropriateness of offsets for the grasslands, taking their specific features into account, and of any potential limitations on offset effectiveness;</li> <li>iii) an explanation with rationales of how the need for offset measures will be determined and how quantitative offset objectives will be developed, including the use and selection of offset ratios, with the aim of achieving no-net-loss;</li> <li>iv) the potential types of offset measures, the process for selecting which will be implemented, an estimation of the probability of their success, and how compensation sites will be selected; and</li> <li>v) a discussion of how the effectiveness of offsets measures will be monitored, assessed, and reported on, and problems corrected;</li> </ul> </li> </ul>								

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	<p>h) a description of how Trans Mountain has taken available and applicable Aboriginal traditional land use and traditional ecological knowledge into consideration in developing the plan, including demonstration that those Aboriginal persons and groups that provided Aboriginal traditional land use information and traditional ecological knowledge, as reported during the OH-001-2014 proceeding and/or pursuant to Condition 97, had the opportunity to review and comment on the information;</p> <p>i) a summary of its consultations with Appropriate Government Authorities, any species experts, potentially affected Aboriginal groups and affected landowners/tenants. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those consulted, into the plan; and</p> <p>j) confirmation that Trans Mountain will update the relevant Environmental Protection Plan(s) to include any relevant information from the Grasslands Survey and Mitigation Plan.</p>								
43	<p><b>Watercourse crossing inventory</b>            Trans Mountain must file with the NEB, <b>at least 5 months prior to commencing <u>any</u> watercourse crossing construction activities</b>, the following:</p> <p>a) an updated inventory of all watercourses to be crossed, including, for each crossing:</p> <ul style="list-style-type: none"> <li>i) the name of the watercourse being crossed and an identifier for the crossing;</li> <li>ii) the location of the crossing;</li> <li>iii) the primary and contingency crossing methods;</li> <li>iv) planned construction timing;</li> <li>v) information on the presence of fish and fish habitat;</li> <li>vi) information on the composition of riparian habitat;</li> <li>vii) the provincial instream work window ;</li> <li>viii) the proposed least risk biological window and the rationale to support the proposed least risk biological window if it differs from the provincial instream work window; and</li> <li>ix) an indication of whether any of Fisheries and Oceans Canada’s applicable “Measures to Avoid Causing Harm to Fish and Fish Habitat” cannot be implemented;</li> </ul> <p>b) detailed generic design drawings of trenchless, dry open-cut, frozen open-cut, and isolation crossings of various watercourse types;</p> <p>c) site-specific information for each watercourse crossing where <b>any</b> of Fisheries and Oceans Canada’s applicable “Measures to Avoid Causing Harm to Fish and Fish Habitat” cannot be implemented for the primary pipeline construction method:</p> <ul style="list-style-type: none"> <li>i) detailed crossing-specific design drawings;</li> <li>ii) photographs up-stream, down-stream, and at the crossing location;</li> <li>iii) a description of the fish species and habitat that is present at the crossing location, and if fish spawning is likely to occur within the immediate area;</li> </ul>	X	X						

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	<ul style="list-style-type: none"> <li>iv) a description of the composition of the riparian habitat at the crossing location and an indication if the riparian habitat has a limiting effect on the productive capacity of the watercourse, and if its removal or disturbance represents a potential influence on fish communities;</li> <li>v) the site-specific mitigation and habitat enhancement measures to be used to minimize impacts;</li> <li>vi) any potential residual effects;</li> <li>vii) proposed reclamation measures; and</li> <li>viii) a discussion of the potential impacts to local fisheries resources within the immediate area as a result of the crossing's construction;</li> </ul> <ul style="list-style-type: none"> <li>d) a description of how Trans Mountain has taken available and applicable Aboriginal traditional land use and traditional ecological knowledge into consideration in developing the inventory, including demonstration that those Aboriginal persons and groups that provided Aboriginal traditional land use information and traditional ecological knowledge, as reported during the OH-001-2014 proceeding and/or pursuant to Condition 97, had the opportunity to review and comment on the information; and</li> <li>e) a summary of consultations with Appropriate Government Authorities, potentially affected Aboriginal groups and affected landowners/tenants. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those consulted.</li> </ul>								
44	<p><b>Wildlife Species at Risk Mitigation and Habitat Restoration Plans</b>            Trans Mountain must file with the NEB for approval, <b>at least 4 months prior to commencing construction</b>, Wildlife Species at Risk Mitigation and Habitat Restoration Plans for each species whose draft, candidate, proposed, or final critical habitat is directly or indirectly affected by the Project. Each plan must include:</p> <ul style="list-style-type: none"> <li>a) a summary of supplementary pre-construction survey results, including surveys for biophysical attributes of critical habitat;</li> <li>b) the location and type of critical habitat, for those wildlife species with early draft and candidate critical habitat, including a description of the biophysical attributes, potentially directly and indirectly affected by the Project;</li> <li>c) the location, types and total spatial area for each type of critical habitat for those wildlife species with proposed or final critical habitat, including a description of the biophysical attributes, potentially directly and indirectly affected by the Project;</li> <li>d) a detailed description of measures that will be used to avoid the destruction of critical habitat;</li> <li>e) a detailed description of mitigation and habitat restoration measures to be implemented to reduce direct and indirect Project effects on critical habitat, including all relevant measures committed to throughout the OH-001-2014 proceeding, any new mitigation measures resulting from supplementary surveys, detailed criteria using clear and unambiguous language that describes the circumstances under which each measure will be applied, and measurable targets for evaluating mitigation and critical habitat restoration success;</li> <li>f) identification and review of alternative mitigation and habitat restoration measures to avoid or lessen direct and indirect Project effects on critical habitat, and the rationale for the selected measure(s);</li> </ul>	X	X		X	X	X		

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	<p>g) detailed description of how selected mitigation and critical habitat restoration measures address the potential for time lags between when the Project impacts occur and when mitigation and critical habitat restoration measures are implemented and are fully functional;</p> <p>h) details on post-construction monitoring of mitigation measures and critical habitat restoration measures, including survey methods, corrective measures, detailed criteria using clear and unambiguous language that describes the circumstances under which each measure will be applied, and a proposed reporting schedule;</p> <p>i) details on how the mitigation, critical habitat restoration measures, and monitoring measures are consistent with applicable recovery strategies and action plans;</p> <p>j) a commitment to include the results of the monitoring in the post-construction environmental monitoring reports filed under Condition 151;</p> <p>k) a description of how Trans Mountain has taken available and applicable Aboriginal traditional land use and traditional ecological knowledge into consideration in developing the plans including demonstration that those Aboriginal persons and groups that provided Aboriginal traditional land use information and traditional ecological knowledge, as reported during the OH-001-2014 proceeding and/or pursuant to Condition 97, had the opportunity to review and comment on the information;</p> <p>l) a summary of its consultations with Appropriate Government Authorities, any species experts, potentially affected Aboriginal groups and affected landowner/tenants. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those consulted, into the plan; and</p> <p>m) confirmation that Trans Mountain will update the relevant Environmental Protection Plan(s) to include any relevant information from the Wildlife Species at Risk Mitigation and Habitat Restoration Plans.</p>								
45	<p><b>Weed and Vegetation Management Plan</b>            Trans Mountain must file with the NEB for approval, <b>at least 4 months prior to commencing construction</b>, an updated Weed and Vegetation Management Plan for the Project that includes:</p> <p>a) a summary of supplementary survey results, including pre-construction weed surveys, and a demonstration of the adequacy of such surveys;</p> <p>b) measurable goals;</p> <p>c) criteria describing when and where problem vegetation will be managed for each project phase, including pre-construction, construction, post-construction, and operations;</p> <p>d) a description of potential adverse effects related to treatment measures;</p> <p>e) management procedures and a decision-making framework for selecting appropriate prevention and treatment measures, including a description of relevant specific habitats, land uses and land management plans and how each will be considered and kept up-to-date in selecting prevention and treatment measures;</p> <p>f) the methods and schedule for short- and long-term vegetation monitoring;</p> <p>g) a summary of its consultations with Appropriate Government Authorities, invasive plant councils or committees, potentially affected Aboriginal groups and affected landowners/tenants. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those consulted, into the plan; and</p>	X	X	X	X	X	X	X	X

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	h) confirmation that Trans Mountain will update the relevant Environmental Protection Plan(s) to include any relevant information from the Weed and Vegetation Management Plan.								
46	<p><b>Contamination Identification and Assessment Plan</b>                      Trans Mountain must file with the NEB for approval, <b>at least 4 months prior to commencing construction</b>, a Contamination Identification and Assessment Plan that includes:</p> <p>a) a description of the procedures that have been implemented to-date, and that will be implemented prior to or during construction, to identify and assess pre-existing solid, liquid or gaseous contamination that could be disturbed by, or affect, the Project, including whether site investigations have been or will be undertaken;</p> <p>b) a demonstration of the adequacy of the procedures in a) with reference to relevant standards, guidelines, and best practices, including how historical land use has been taken into account and a discussion of the potential for chemicals of concern to not be detectable by smell or by sight;</p> <p>c) the information that has been or will be reported by Trans Mountain, including to whom and when, concerning pre-existing contamination; and</p> <p>d) a summary of its consultations with Appropriate Government Authorities, potentially affected Aboriginal groups and affected landowners/tenants. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those consulted, into the plan; and</p> <p>e) confirmation that Trans Mountain will update the relevant Environmental Protection Plan(s) to include any relevant information from the Contamination Identification and Assessment Plan.</p>	X	X	X	X	X	X	X	X
47	<p><b>Access Management Plan(s)</b>                      Trans Mountain must file with the NEB for approval, <b>at least 4 months prior to commencing construction</b>, an Access Management Plan(s) to be included within the updated Environmental Protection Plans required by Conditions 72 and 78. Each plan must address issues related to soil, vegetation, fish and fish habitat, and wildlife and wildlife habitat. Each plan must also describe access control measures proposed to control both human and predator access during construction and operations, and include:</p> <p>a) objectives of the plan;</p> <p>b) measurable goals for evaluating the plan's success in achieving its objectives;</p> <p>c) a summary of any related baseline information that has been or will be collected to aid in evaluating the plan's success, and justification of the adequacy of this baseline information, or a rationale if no baseline information has or will be collected;</p> <p>d) a list of sites where access control measures will be implemented for construction and those that will remain in place throughout operations, the control measure(s) proposed at those sites, and the rationale for selecting those sites and measures;</p> <p>e) the methods for monitoring the effectiveness of access control measures implemented during construction and operations, and justification of the adequacy of such monitoring;</p> <p>f) a description of available adaptive management measures and of the criteria Trans Mountain will use to determine if and when adaptive management measures are warranted based on monitoring results;</p>	X	X		X	X	X		

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	<p>g) a commitment to report, as part of Trans Mountain’s post-construction environmental monitoring reports (required by Condition 151), on the control measures implemented, monitoring undertaken, and the success of control measures in meeting Access Management Plan goals and objectives, as well as a schedule, with rationale, for reporting throughout operations;</p> <p>h) a description of how Trans Mountain has taken available and applicable Aboriginal traditional land use and traditional ecological knowledge studies into consideration including demonstration that those Aboriginal persons and groups that provided Aboriginal traditional ecological knowledge, as reported during the OH-001-2014 proceeding and/or pursuant to Condition 97, had the opportunity to review and comment on the information; and</p> <p>i) a summary of its consultations with Appropriate Government Authorities, potentially affected Aboriginal groups and affected landowners/tenants. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those consulted, into the Plan/Report.</p>								
48	<p><b>Navigation and navigation safety plan</b>            Trans Mountain must file with the NEB, for approval, <b>at least 4 months prior to commencing construction</b>, a Navigation and Navigation Safety Plan that includes:</p> <p>a) an updated list of navigable waterways to be crossed by or affected by the Project (including power lines, marine terminal, temporary or permanent bridge crossings, or other ancillary works that are physically or operationally connected to the Project);</p> <p>b) an updated listing of effects of the Project on navigation and navigation safety for each of the identified waterways identified in a);</p> <p>c) proposed mitigation measures to address Project effects on navigation and navigation safety for each of the identified waterways, including adherence to codes and standards (such as the Canadian Standards Association); and</p> <p>d) a summary of its consultations with Appropriate Government Authorities, potentially affected Aboriginal groups and waterway users, regarding their navigational use of each of the identified waterways. In its summary, Trans Mountain must:</p> <p>i) describe the Appropriate Government Authorities, potentially affected Aboriginal groups, and commercial and recreational waterway users consulted;</p> <p>ii) describe how Trans Mountain identified those consulted; and</p> <p>iii) provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those consulted, into the plan.</p>	X	X		X	X	X		
49	<p><b>Technical working group (TWG) reports</b>            Trans Mountain must file with the NEB, <b>at least 4 months prior to commencing construction and every 6 months thereafter until after commencing operations</b>, a report describing the activities undertaken by the TWGs during the reporting period and the outcomes of these activities. The reports must include, at a minimum:</p> <p>a) a list of all members of each TWG;</p> <p>b) the methods, dates and location of all TWG activities or meetings;</p> <p>c) a summary of all issues or concerns raised or addressed during the TWG activities;</p>	X							

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	<p>d) a description of outcomes or measures that were or will be implemented to address the issues identified or concerns raised; or, if any measures will not be implemented, a rationale for why not; and</p> <p>e) a description of any unresolved issues or concerns, and a description of how these will be addressed, or a rationale for why no further measures will be required.</p>								
50	<p><b>High-voltage alternating current (AC) interference</b>                      Trans Mountain must file with the NEB, <b>at least 4 months prior to commencing construction:</b></p> <p>a) a report confirming that Trans Mountain has achieved an engineered solution to mitigate possible damage to pipeline segments caused by the power line fault current from power line footings and other below ground fault current discharge facilities of B.C. Hydro’s unshielded transmission power lines that are located less than 30 metres from those segments. The report must include:</p> <p>i) a summary of the above-mentioned engineered solution and an explanation of how the engineered solution adequately mitigates possible damage to the pipeline;</p> <p>ii) a list of pipeline segments where mitigation will be applied; and</p> <p>iii) an explanation of measures taken by Trans Mountain to reach an agreement with B.C. Hydro towards implementing the engineered solution.</p> <p>Trans Mountain must provide a copy of the report to B.C. Hydro at the same time that it is filed with the NEB;</p> <p>b) a report detailing how Trans Mountain’s design reduces hazardous induced voltages on its pipeline segments to meet a maximum 15 VAC under all steady state operating conditions; and</p> <p>c) a report demonstrating how Trans Mountain would comply with the requirements of IEEE Standard 80 to limit touch and step potentials to all points of contacts to pipeline segments due to power line faults or switching surges, and include a list of affected pipeline segments.</p>	X							
51	<p><b>Field changes manual for geohazard mitigation</b>                      Trans Mountain must file with the NEB for approval, <b>at least 4 months prior to commencing construction</b>, a field changes manual for geohazard mitigation. This manual must include:</p> <p>a) decision criteria for implementing mitigation for any geohazards identified during construction;</p> <p>b) specific criteria for implementing changes to the designs, grading, special materials, protective structures, burial depth, installation procedures, erosion mitigation measures, and monitoring; and</p> <p>c) details regarding the required qualifications of the field staff that will implement the manual.</p>	X							
52	<p><b>Air Emissions Management Plan for the Westridge Marine Terminal</b>                      Trans Mountain must file with the NEB for approval, <b>at least 4 months prior to commencing construction at the Westridge Marine Terminal</b>, an Air Emissions Management Plan for the Westridge Marine Terminal that includes:</p> <p>a) locations of air monitoring sites (on a map or diagram), including the rationale for the locations selected;</p> <p>b) confirmation that the new fixed air monitoring stations will be installed and operating at least one year prior to commencing operations at the Westridge Marine Terminal to establish robust local baseline data;</p>	X							

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	<p>c) the methods and schedule for ambient monitoring of contaminants of potential concern in air (e.g., particulate matter [including diesel particulate matter and speciation of PM<sub>2.5</sub>], nitrogen oxides (including NO<sub>2</sub>), sulphur dioxide, hydrogen sulphide, ozone, mercaptans, reduced visibility and volatile organic compounds) following a recognized protocol (e.g. National Air Pollution Surveillance program or U.S. Environmental Protection Agency), and emissions source tracking;</p> <p>d) representative meteorological data (e.g. wind speed, wind direction, air temperature and relative humidity) for the monitoring period;</p> <p>e) description of monitoring equipment and procedures for monitoring station data recording, assessment, quality assurance and reporting details, including a description of how the real time and non-continuous air quality monitoring data will be made available to the public;</p> <p>f) a particulate matter management plan;</p> <p>g) a description of the public and Aboriginal communication and complaint response processes;</p> <p>h) the criteria or thresholds that, if triggered or exceeded, would require implementing additional mitigation measures;</p> <p>i) a description of additional mitigation measures that would be implemented as a result of the monitoring data or ongoing concerns; and</p> <p>j) a summary of its consultations with Appropriate Government Authorities, potentially affected Aboriginal groups and affected landowners/tenants. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those consulted, into the plan.</p>								
53	<p><b>Fugitive Emissions Management Plan for the Westridge Marine Terminal</b>            Trans Mountain must file with the NEB for approval, <b>at least 4 months prior to commencing construction at the Westridge Marine Terminal</b>, a Fugitive Emissions Management Plan for the Westridge Marine Terminal that includes:</p> <p>a) a description of the sources of the fugitive emissions that will be generated from the Westridge Marine Terminal during construction and operations;</p> <p>b) a description of the emission and odour controls that will be employed to reduce fugitive emissions during tanker loading and other sources identified in a);</p> <p>c) procedures for verifying, tracking, and reporting on:</p> <p>i) fugitive emissions during tanker loading;</p> <p>ii) volatile organic compound collection efficiency;</p> <p>iii) the vapour recovery unit's hydrogen sulphide and mercaptan removal efficiency, as well as its BTEX reduction efficiency; and</p> <p>iv) the vapour combustion unit's hydrogen sulphide and mercaptan; removal efficiency, as well as its combustion efficiency;</p> <p>d) procedures for identifying any leaks or equipment malfunctions during operation of the vapour recovery and vapour combustion units;</p>	X							

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	<p>e) methods for quantifying emissions of particulate matter and volatile organic compounds (with vapour recovery and vapour combustion units in operation);</p> <p>f) any additional mitigation measures that will be employed to further reduce fugitive emissions;</p> <p>g) a description of Trans Mountain’s program for addressing complaints with respect to fugitive emissions, including a communication and notification plan; and</p> <p>h) a summary of its consultations with Appropriate Government Authorities. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those consulted, into the plan.</p>								
54	<p><b>Fugitive Emissions Management Plan for Edmonton, Sumas and Burnaby Terminals</b>            Trans Mountain must file with the NEB for approval, <b>at least 4 months prior to commencing construction at each Terminal</b>, a Fugitive Emissions Management Plan for the Edmonton, Sumas, and Burnaby Terminals. This plan must include:</p> <p>a) a description of the fugitive emission sources within the terminals during construction and operations;</p> <p>b) a description of the emission and odour controls that will be employed to reduce fugitive emissions from the tanks, and any other sources identified in a);</p> <p>c) procedures for verifying the capture and destruction efficiency of tank vapour activation units or any other emission or odour control units at the terminals;</p> <p>d) quantification of fugitive emissions during operations, including the methods used;</p> <p>e) any additional mitigation measures that will be employed to further reduce the fugitive emissions;</p> <p>f) a description of Trans Mountain’s program for addressing complaints with respect to fugitive emissions, including a public and Aboriginal communication and complaint response process; and</p> <p>g) a summary of its consultations with Appropriate Government Authorities, potentially affected Aboriginal groups and affected landowners/tenants. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those consulted, into the plan.</p>							X	
55	<p><b>Fugitive Emissions Management Plan for pump stations</b>            Trans Mountain must file with the NEB for approval, <b>at least 4 months prior to commencing construction at any pump stations</b>, a Fugitive Emissions Management Plan for the pump stations associated with the Project that includes:</p> <p>a) a description of the procedures implemented for leak detection and the criteria used in selecting target leaking components;</p> <p>b) quantification methods considered and the rationale for the selected method(s);</p> <p>c) monitoring frequency for each target leaking component and the parameters that will be measured;</p> <p>d) a decision framework that will be implemented to repair or replace leaking components;</p> <p>e) a description of record-keeping procedures; and</p> <p>f) a discussion of additional mitigation measures that will be employed to minimize fugitive emissions.</p>		X			X	X		
56	<b>Grizzly Bear Mitigation Plan</b>	X	X		X	X	X		

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	<p>Trans Mountain must file with the NEB for approval, <b>at least 4 months prior to commencing construction in each vulnerable grizzly bear population unit / grizzly bear management area</b>, a Grizzly Bear Mitigation Plan for each of these areas. Trans Mountain must provide a rationale for why any vulnerable grizzly bear population units / grizzly bear management units potentially affected by the Project are not addressed in the plan. The Grizzly Bear Mitigation Plan(s) must include:</p> <ul style="list-style-type: none"> <li>a) a summary of results from any supplemental surveys conducted;</li> <li>b) potential direct and indirect effects of Project activities on vulnerable grizzly bear population units and grizzly bear management units;</li> <li>c) mitigation measures to be implemented, including all relevant measures committed to throughout the OH-001-2014 proceeding, any new mitigation measures resulting from supplementary surveys, detailed criteria using clear and unambiguous language that describes the circumstances under which each measure will be applied, and measurable targets for evaluating mitigation success;</li> <li>d) details on post-construction monitoring of mitigation measures, including survey methods, corrective measures, detailed criteria using clear and unambiguous language that describes the circumstances under which each measure will be applied, and a proposed reporting schedule;</li> <li>e) a commitment to include results of the monitoring in the post-construction environmental monitoring reports filed under Condition 151;</li> <li>f) a description of how Trans Mountain has taken available and applicable Aboriginal traditional land use and traditional ecological knowledge into consideration in developing the plan including demonstration that those Aboriginal persons and groups that provided Aboriginal traditional land use information and traditional ecological knowledge, as reported during the OH-001-2014 proceeding and/or pursuant to Condition 97, had the opportunity to review and comment on the information;</li> <li>g) a summary of its consultations with Appropriate Government Authorities, any species experts and potentially affected Aboriginal groups. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those consulted, into the Plan; and</li> <li>h) confirmation that Trans Mountain will update the relevant Environmental Protection Plan(s) to include any relevant information from the Grizzly Bear Mitigation Plan, including confirmation that the mitigation, monitoring, and corrective measures in this plan will be implemented in the case of discovery via their inclusion in Trans Mountain's Wildlife Species of Concern Discovery Contingency Plan.</li> </ul>								
57	<p><b>Commercial Support for the Project</b>            Trans Mountain must file with the Board, <b>at least 3 months prior to commencing construction</b>, confirmation, signed by an officer of the company, that:</p> <ul style="list-style-type: none"> <li>a) the Project has secured agreements or contracts that remain in force with shippers for a minimum term of 15-years for no less than 60 per cent of its total capacity (890,000 barrels per day); and</li> <li>b) any rights to terminate held by shippers that may have existed in any agreements or contracts between Trans Mountain and shippers (which may have reduced the Project's contracted total capacity to less than 60 per cent for a minimum term of 15 years) have lapsed and or expired because their conditions precedent have been satisfied or waived.</li> </ul>	X							

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58	<p><b>Training and education monitoring reports</b></p> <p>a) Trans Mountain must file with the NEB, <b>at least 3 months prior to commencing construction, and every 6 months thereafter until after commencing operations</b>, monitoring reports for the implementation and outcomes of Aboriginal, local, and regional training and education measures and opportunities for the Project. The reports must include the following:</p> <ul style="list-style-type: none"> <li>i) A description of each training and education measure and opportunity indicator that was monitored, including duration, participant groups, education and training organization, and intended outcomes.</li> <li>ii) A summary and analysis of the progress made toward achieving intended outcomes of each training and education measure and opportunity, including an explanation for why any intended outcomes were not achieved.</li> <li>iii) A description of identified or potential training or education gaps, and any proposed measures to address them or to support or increase training and education measures and opportunities.</li> </ul> <p>b) Trans Mountain must file with the NEB, <b>within 6 months after commencing operations</b>, a final report.</p>	X							
59	<p><b>Worker accommodation strategy</b></p> <p>Trans Mountain must file with the NEB for approval, <b>at least 3 months prior to commencing construction</b>, a worker accommodation strategy, developed in consultation with appropriate municipal or provincial authorities. The strategy must include:</p> <ul style="list-style-type: none"> <li>a) a final summary of all proposed accommodations, including the location of any temporary camp(s);</li> <li>b) the number of workers that will be housed; and</li> <li>c) a description of how the strategy addresses any concerns or requests raised in consultation with municipal or provincial authorities.</li> </ul> <p>In the event that temporary camp(s) are to be used, the strategy must also include:</p> <ul style="list-style-type: none"> <li>i) a description of how the potential environmental and socio-economic impacts have been assessed, and a description of all associated mitigation measures;</li> <li>ii) copies of, or reference to, any mitigation or operational plans that will be required or implemented for the camp(s), including a description of how Trans Mountain has incorporated any additional mitigation measures into relevant Environmental Protection Plan(s);</li> <li>iii) copies of any necessary municipal or provincial permits for any camp(s) that have been received 3 months prior to construction. If camp permits are not yet in place 3 months prior to commencing construction, provide: <ul style="list-style-type: none"> <li>1) a list of the outstanding camp permits and a schedule for when these camp permits will be in place; and</li> <li>2) copies of any outstanding camp permits prior to commencing construction;</li> </ul> </li> <li>iv) copies or excerpts of all policies relating to the rules of conduct for workers housed at the camp(s);</li> <li>v) confirmation that all policies relating to the camp(s) will be provided to workers;</li> <li>vi) confirmation that all policies relating to the camp(s) were made available to all local communities and other relevant service providers in proximity to any camp(s) that will be used for the Project; and</li> </ul>	X	X		X	X	X	X	

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	<p>vii) a summary of its consultations with affected landowners/tenants where any camp(s) will be located. Trans Mountain must provide:</p> <ol style="list-style-type: none"> <li>1) a description of the information provided to landowners/tenants; and</li> <li>2) description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those consulted, into the Strategy.</li> </ol>								
<b>60</b>	<p><b>Environmental and socio-economic assessment - s.58 temporary construction lands and infrastructure</b>            Trans Mountain must file with the NEB for approval, <b>at least 3 months prior to commencing construction</b>, an environmental and socio-economic assessment for all temporary construction lands and infrastructure approved pursuant to this Order. The assessments must include:</p> <ol style="list-style-type: none"> <li>a) a list of the locations and dimensions of all temporary construction lands and infrastructure;</li> <li>b) environmental alignment sheets or as-built drawings at an appropriate scale, clearly depicting temporary construction lands and infrastructure;</li> <li>c) results of any pre-construction surveys within the areas that were not previously subject to such surveys, and an indication of potential residual effects;</li> <li>d) all associated mitigation measures that are beyond those identified during the OH-001-2014 proceeding;</li> <li>e) analysis supporting the use of the measures in d), including any supplementary reports;</li> <li>f) confirmation that Trans Mountain will update the relevant Environmental Protection Plan(s) to include any relevant information based on any supplemental surveys completed; and</li> <li>g) a summary of consultations with Appropriate Government Authorities, potentially affected Aboriginal groups and affected landowners/tenants, as well as copies of all written comments that may be provided to Trans Mountain by those consulted. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those consulted, into the assessment.</li> </ol>				X				
<b>61</b>	<p><b>List of temporary infrastructure sites</b>            Trans Mountain must file with the NEB, <b>at least 3 months prior to commencing construction</b>, a complete list of all temporary infrastructure sites to be constructed for the Project, and must file any <b>updates as they become available</b>. This list must include information on each site's location, structures to be installed, the anticipated date for commencing construction, and activities involved in its construction. The initial list and any updates must also include the condition numbers (those under the "prior to commencing construction" phase heading) that are applicable to each site and an indication of whether each of those conditions has been or remains to be satisfied.</p>				X				
<b>62</b>	<p><b>Construction schedule</b>            Trans Mountain must file with the NEB, <b>at least 3 months prior to commencing construction</b>, a construction schedule identifying the major construction activities expected and, <b>on a monthly basis, on the first working day of each calendar month from the commencement of construction until after commencing operations</b>, updated detailed construction schedules.</p>	X	X	X	X	X	X	X	X
<b>63</b>	<p><b>Security Management Programs</b>            Trans Mountain must file confirmation, signed by an officer of the company:</p>	X	X	X	X	X	X	X	X

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
	<p>a) <b>at least 3 months prior to commencing construction</b>, that it has developed a Security Management Program for the construction phase of the Project; and</p> <p>b) <b>at least 3 months prior to commencing operations</b>, that it has amended its operations phase Security Management Program to include operation of the Project;</p> <p>pursuant to the <i>National Energy Board Onshore Pipeline Regulations</i> and CSA Z246.1 (as amended from time to time).</p>								
64	<p><b>Construction safety manuals</b> Trans Mountain must file with the NEB:</p> <p>a) <b>at least 3 months prior to commencing construction</b>, the Health and Safety Management Plan for the Project; and</p> <p>b) <b>at least 2 months prior to commencing construction</b>, Construction Safety Manuals (Project-Specific Safety Plans) for the applicable Project components. These must include separate Construction Safety Manuals for pipeline construction, terminal and pump station construction, Burnaby Mountain tunnel construction, and Westridge Marine Terminal construction.</p> <p>These manuals must address routine construction activities, as well as blasting, tunneling, avalanche safety, safe work in proximity to operational pipelines and facilities, and special access procedures that may be required in areas subject to activities other than Project construction.</p>	X	X	X	X	X	X	X	X
65	<p><b>Hydrology – notable watercourse crossings</b> Trans Mountain must file with the NEB, <b>at least 3 months prior to commencing construction</b>, revised flood frequency estimates for all notable watercourse crossings, as defined by Trans Mountain in its application. These estimates must incorporate the results of field investigations and bathymetric surveys completed since the Project application was filed, and be presented in a format similar to that presented in Application Volume 4A, Appendix I – Route Physiography and Hydrology Report, Appendix B – Notable Water Crossing Catchment Details (Filing <a href="#">A56000</a>).</p>	X							
66	<p><b>Risk Management Plan for geohazards</b> Trans Mountain must develop and file with the NEB, <b>at least 3 months prior to commencing construction</b>, an updated Risk Management Plan for addressing the threats of existing and potential geohazards during construction of the Project.</p> <p>This plan must be updated as additional site-specific geotechnical information is obtained through detailed investigations, and modified as geohazards are encountered during construction. Trans Mountain must make any updates or modifications available to the NEB <b>upon request</b>.</p>	X			X				
67	<p><b>Outstanding horizontal directional drilling geotechnical and feasibility reports</b> Trans Mountain must file with the NEB, <b>at least 3 months prior to commencing construction</b>, Geotechnical Reports and Horizontal Directional Drilling Feasibility and Design Reports, along with final design drawings, for each of the following crossings:</p> <p>a) Coldwater River 4 crossing;</p> <p>b) North Thompson River 6 crossing;</p> <p>c) North Thompson River 7 crossing;</p>	X							

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
	d) Pembina River crossing. e) Raft River crossing; f) Sumas River crossing (suitability for Direct Pipe® installation); g) any additional river crossing along the new Line 2 pipeline segments where horizontal directional drilling or other trenchless crossing method is being considered; and h) the Coquitlam Landfill, if Horizontal Directional Drilling or other trenchless crossing method is being considered.								
68	<b>Seismic reports – liquefaction potential</b> Trans Mountain must file with the NEB, <b>at least 3 months prior to commencing construction</b> , a final report that identifies all sites along the Project, that have “Very High,” “High,” and “Moderate” liquefaction-triggered ground movement potential, and that describes how the potential for liquefaction-triggered ground movement will be mitigated at each site.	X							
69	<b>Fault studies</b> Trans Mountain must file with the NEB, <b>at least 3 months prior to commencing construction</b> , the results of fault-mapping studies that were ongoing during or undertaken after the OH-001-2014 proceeding, for use in the detailed design of the Project. This filing must include conclusions regarding possible seismic activity during the Holocene epoch for Sumas Fault, Vedder Mountain Fault, Fraser River-Straight Creek Fault and Rocky Mountain Trench, and other possible hidden faults, as well as the potential for compounding risks due to the proximity of the Vedder Mountain and Sumas Faults.	X							
70	<b>Strain-based design</b> Trans Mountain must file with the NEB, <b>at least 3 months prior to commencing construction</b> , the following information related to strain-based design, where it is applied: a) the location and rationale for selecting strain-based design in each location; b) a report summarizing the adequacy of the strain-based design for various loading scenarios during pipeline construction and operation for each location provided in a); and c) a list of standards and Project-specific specifications, including testing procedures, used in the strain-based design.	X							
71	<b>Riparian Habitat Management Plan</b> Trans Mountain must file with the NEB for approval, <b>at least 3 months prior to commencing construction</b> , a Riparian Habitat Management Plan that would apply to all defined watercourses crossed by the Project. The plan must be supported with rationales and unambiguous criteria explaining under what circumstances each such measure and strategy would apply, and must include the following. a) a description of the methods used to determine pre-construction functionality (e.g., for fish, wildlife, and rare plants) of the riparian habitat, including a justification how such functionality is assessed; b) a description of the mitigation measures and the watercourse reclamation strategies (reclamation method, reclamation measures, and application criteria) for the range of defined watercourses crossed by the Project; c) a description of the generalized vegetation planting plans for the range of defined watercourses crossed by the Project; that includes the diversity and density of species to be planted, planting locations, and application criteria;	X	X						

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	<p>d) clearly defined measureable reclamation goals and targets for years 1, 3, and 5, post-construction, to determine whether riparian habitat has returned, or is on a sufficient trajectory to return, to pre-construction functionality;</p> <p>e) a discussion of how the mitigation measures, reclamation strategies, and vegetation planting plans are anticipated to return riparian habitat to pre-construction functionality, using the goals and targets provided in d);</p> <p>f) a summary of the information in a)-d) for each defined watercourse crossing, that includes:</p> <ul style="list-style-type: none"> <li>i) watercourse crossing ID;</li> <li>ii) a defined riparian habitat buffer;</li> <li>iii) a catalogue of the pre-construction species diversity and density of the riparian habitat;</li> <li>iv) classification of riparian habitat functionality;</li> <li>v) area of the riparian habitat to be impacted;</li> <li>vi) the mitigation measures, reclamation strategy, and vegetation planting plan to be implemented; and</li> <li>vii) the measureable goals and targets.</li> </ul> <p>g) details of the post-construction monitoring plan for the first five years of operations, including evaluations of reclamation activities, and potential corrective actions and enhancement measures that might be necessary and the circumstances under which each such action would be taken;</p> <p>h) a Preliminary Riparian Habitat Offset Plan, that would apply to all defined watercourse crossings located in watersheds identified as being above the riparian habitat disturbance threshold (&gt;18 per cent of riparian habitat disturbed in the watershed) or classified as High Sensitive fish-bearing by Trans Mountain during the OH-001-2014 proceeding, and, where, after the fifth complete growing season, riparian habitat has not returned, or is not trending towards sufficient pre-construction functionality. The plan must include:</p> <ul style="list-style-type: none"> <li>i) how the need for offset measures will be determined, including offset ratios;</li> <li>ii) potential offset measures, the process for selecting which will be implemented, and an evaluation of the probability of their success; and</li> <li>iii) how the effectiveness of offset measures will be assessed, monitored, and reported on;</li> </ul> <p>i) a description of how Trans Mountain has taken available and applicable Aboriginal traditional land use and traditional ecological knowledge into consideration in developing the plan, including demonstration that those Aboriginal persons and groups that provided Aboriginal traditional land use information and traditional ecological knowledge, as reported during the OH-001-2014 proceeding and/or pursuant to Condition 97, had the opportunity to review and comment on the information; and</p> <p>j) a summary of consultations with Appropriate Government Authorities, potentially affected Aboriginal groups and affected landowners/tenants. In its plan, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those consulted, into the plan of updates.</p>								
72	<p><b>Pipeline Environmental Protection Plan</b>            Trans Mountain must file with the NEB for approval, <b>at least 3 months prior to commencing construction</b>, an updated Project-specific Pipeline Environmental Protection Plan for the construction of the pipeline.</p>	X	X						

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	<p>The updated Environmental Protection Plan must be a comprehensive compilation of all environmental protection procedures, mitigation measures, and monitoring commitments, as set out in Trans Mountain’s Project application, its subsequent filings, or as otherwise committed to during the OH-001-2014 proceeding. The updated plan must describe the criteria for implementing all procedures and measures using clear and unambiguous language that confirms Trans Mountain’s intention to implement all of its commitments.</p> <p>The updated Environmental Protection Plan must include the following:</p> <ul style="list-style-type: none"> <li>a) environmental procedures (including site-specific plans), criteria for implementing these procedures, mitigation measures, and monitoring applicable to all Project phases and activities;</li> <li>b) policies and procedures for environmental training and the reporting structure for environmental management during construction, including the qualifications, roles, responsibilities, and decision-making authority for each job title identified in the updated Environmental Protection Plan;</li> <li>c) any additional measures arising from supplemental pre-construction studies and surveys;</li> <li>d) updated contingency plans and management plans;</li> <li>e) updated alignment sheets;</li> <li>f) a description of how Trans Mountain has taken available and applicable Aboriginal traditional land use and traditional ecological knowledge into consideration in developing the plan, including demonstration that those Aboriginal persons and groups that provided Aboriginal traditional land use information and traditional ecological knowledge, as reported during the OH-001-2014 proceeding and/or pursuant to Condition 97, had the opportunity to review and comment on the information; and</li> <li>g) a summary of its consultations with Appropriate Government Authorities, potentially affected Aboriginal groups and affected landowners/tenants. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those consulted, into the plan.</li> </ul>								
73	<p><b>Traffic Control Plans for public roadways</b>            Trans Mountain must file with the NEB, <b>at least 3 months prior to commencing construction of the pipeline and at least 2 months prior to commencing construction at each terminal and pump station</b>, traffic control plans for the use of public roadways for the Project. The plans must include:</p> <ul style="list-style-type: none"> <li>a) information regarding the timing and location of key construction activities (including equipment mobilization and staging, pipe stockpiling, pipeline and pump station construction, and equipment demobilization);</li> <li>b) current traffic volumes and anticipated traffic volumes during the construction period for both day and night times;</li> <li>c) a description of the predicted traffic flows, including vehicle types and volumes, at key construction points, marshalling areas, access roads, and public roadways;</li> <li>d) an assessment of the potential impacts associated with the increased volume of construction-related traffic (e.g., safety hazards, noise, light, dust, etc.) and associated mitigation measures; and</li> </ul>	X	X	X	X	X	X	X	X

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	e) a summary of its consultations with Appropriate Government Authorities, potentially affected Aboriginal groups and affected landowners/tenants. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those consulted, into the Plans.								
74	<p><b>Horizontal directional drilling (HDD) Noise Management Plan</b>                      Trans Mountain must file with the NEB for approval, <b>at least 3 months prior to commencing construction of each HDD crossing</b>, a site-specific HDD Noise Management Plan that includes:</p> <p>a) proposed hours of daytime and nighttime work;</p> <p>b) baseline daytime and nighttime ambient sound levels at noise sensitive areas within 500 metres of the HDD entry and exit sites;</p> <p>c) predicted noise levels caused by HDD at the most affected receptors without mitigation measures implemented;</p> <p>d) proposed HDD noise mitigation measures, including all technologically and economically feasible mitigation measures;</p> <p>e) predicted noise levels at the most affected receptors with mitigation measures implemented, including noise contour map(s) showing potentially affected receptors;</p> <p>f) an HDD noise monitoring program, including locations, methodology, and schedule;</p> <p>g) a description of the public and Aboriginal communication and complaint response process;</p> <p>h) a contingency plan that contains proposed mitigation measures for addressing noise complaints, which may include the temporary relocation of specific residents; and</p> <p>i) confirmation that Trans Mountain will provide notice to nearby residents in the event that a planned blowdown is required, and that the planned blowdown will be completed during daytime hours whenever possible.</p>	X							
75	<p><b>Nooksack Dace and Salish Sucker Management Plan</b></p> <p>a) Trans Mountain must construct all watercourse crossings located within nooksack dace or salish sucker proposed or final critical habitat, as defined by Fisheries and Oceans Canada Recovery Strategies for the species, using trenchless crossing methods with entry and exit points located outside of the riparian habitat area, unless demonstrated to be not feasible.</p> <p>b) <b>At least 3 months prior to commencing construction of any watercourse crossing located within nooksack dace or salish sucker proposed or final critical habitat</b>, Trans Mountain must file a list of these watercourse crossings, and, for each, indicate whether or not a trenchless crossing method is feasible.</p> <p>c) For each watercourse crossing in b) where a trenchless crossing method is not feasible, <b>at least 3 months prior to commencing construction of that crossing</b>, Trans Mountain must file the following with the NEB for approval:</p> <p>i) a summary of the trenchless crossing feasibility studies completed and a discussion of the risks and constraints associated with the trenchless watercourse crossing, and the rationale for not employing a trenchless method;</p> <p>ii) the updated watercourse crossing method, location of crossing, planned construction timing, and the provincial instream work window;</p>	X							

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	<ul style="list-style-type: none"> <li>iii) any site-specific mitigation and reclamation measures, and species-specific habitat enhancement measures;</li> <li>iv) confirmation that Trans Mountain will update the relevant Environmental Protection Plan(s) to include measures listed in iii);</li> <li>v) a discussion of how the site-specific mitigation and reclamation measures, and species-specific enhancement measures, relate to Fisheries and Oceans Canada Recovery Strategies and Action Plans;</li> <li>vi) details on any monitoring to be undertaken and a commitment to include any results in the post-construction environmental monitoring reports filed under Condition 151;</li> <li>vii) a description of how Trans Mountain has taken available and applicable Aboriginal traditional land use and traditional ecological knowledge into consideration in developing the plan, including demonstration that those Aboriginal persons and groups that provided Aboriginal traditional land use information and traditional ecological knowledge, as reported during the OH-001-2014 proceeding and/or pursuant to Condition 97, had the opportunity to review and comment on the information; and</li> <li>viii) a summary of consultations with Appropriate Government Authorities and any species experts. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those consulted, into the plan.</li> </ul> <p>d) For any watercourse crossing identified in b) where Trans Mountain will employ a trenched contingency crossing method, Trans Mountain must file with the NEB, for approval, the information listed in c), <b>at least 30 days prior to commencing construction of the contingency watercourse crossing.</b></p>								
76	<p><b>Old Growth Management Areas Mitigation and Replacement Plan</b></p> <p>Trans Mountain must file with the NEB for approval, <b>at least 3 months prior to commencing construction within old growth management areas</b>, an Old Growth Management Areas Mitigation and Replacement Plan for these areas that are potentially affected directly or indirectly by the Project during construction or operations, that includes:</p> <ul style="list-style-type: none"> <li>a) avoidance and mitigation measures to be implemented during construction and operations, with rationales and unambiguous criteria explaining under what circumstances each measure will be applied, and measurable goals against which the success of each measure will be evaluated;</li> <li>b) a description of how the avoidance, mitigation, and offset hierarchy was considered in developing the plan, with rationales for progressing from avoidance to mitigation to offsets;</li> <li>c) details on post-construction monitoring, including corrective actions that might be necessary and the circumstances under which each such action would be taken;</li> <li>d) the expected residual effects (including quantification) on old growth management areas, including a discussion of the potential for time lags between when Project effects occur and when mitigation measures would become fully functional;</li> <li>e) replacement or other offset measures that will be implemented to compensate for residual effects with the aim of no-net-loss to old growth forests within old growth management areas overall, including: <ul style="list-style-type: none"> <li>i) discussion of the appropriateness of compensation for the old growth management area, taking its specific features into account, and of any potential limitations of the effectiveness of such replacement or offset measures;</li> </ul> </li> </ul>	X			X	X	X		

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	<ul style="list-style-type: none"> <li>ii) an explanation with rationales on the amount and type of replacements or other offsets required;</li> <li>iii) a timeline for their implementation;</li> <li>iv) the selection of compensation sites;</li> <li>v) identification of the parties involved in planning and implementation and their respective roles and responsibilities, and</li> <li>vi) a description of the methods and schedule for monitoring and reporting to demonstrate compensation success;</li> </ul> <p>f) a summary of its consultations with Appropriate Government Authorities and any potentially affected Aboriginal groups. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those consulted, into the plan; and</p> <p>g) confirmation that Trans Mountain will update the relevant Environmental Protection Plan(s) to include any relevant information from the Old Growth Management Areas Mitigation and Replacement Plan.</p>								
77	<p><b>Archaeological and cultural heritage assessment – Lightning Rock</b>            Trans Mountain must file with the NEB, <b>at least 3 months prior to commencing construction of the pipeline between the Sumas Terminal and the Sumas Pump Station</b>, a report on archaeological and cultural heritage field investigations undertaken to assess the potential impacts of Project construction and operations on the Lightning Rock site at Sumas, British Columbia. The report must include:</p> <ul style="list-style-type: none"> <li>a) a detailed description of the assessment plan that was developed, in consultation with the Stó:lō Collective, for the involvement of the Stó:lō Collective in designing and undertaking surveys;</li> <li>b) a description of the pre-construction archaeological and cultural heritage surveys conducted at the site, including:               <ul style="list-style-type: none"> <li>i) survey methodologies used; and</li> <li>ii) data and information sources, including information and Aboriginal traditional knowledge provided by the Stó:lō Collective;</li> </ul> </li> <li>c) a site description, including maps at appropriate scales and levels of detail, confirming the site boundaries;</li> <li>d) an assessment of the potential environmental and socio-economic impacts of project construction and operations on the archaeological resources and cultural heritage of the site;</li> <li>e) all associated mitigation measures that are beyond those identified during the OH-001-2014 proceeding to address any identified impacts;</li> <li>f) analysis supporting the use of the measures in e), including any additional relevant reports;</li> <li>g) confirmation that Trans Mountain will update the relevant Environmental Protection Plan(s) and Environmental Alignment Sheets to include any relevant information based on the surveys completed; and</li> <li>h) a summary of consultations undertaken with the Stó:lō Collective, and Appropriate Government Authorities, as well as copies of all written comments that may be provided to Trans Mountain by the Stó:lō Collective or government authorities. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from the Stó:lō Collective or government authorities, into the assessment.</li> </ul>	X			X				

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78	<p><b>Facilities Environmental Protection Plan</b>                      Trans Mountain must file with the NEB for approval, <b>at least 3 months prior to commencing construction at the facilities (terminals, pump stations, temporary facilities, and associated infrastructure)</b>, an updated Project-specific Facilities Environmental Protection Plan for the construction at the facilities.</p> <p>The updated Environmental Protection Plan must be a comprehensive compilation of all environmental protection procedures, mitigation measures, and monitoring commitments, as set out in Trans Mountain’s Project application, its subsequent filings, or as otherwise committed to during the OH-001-2014 proceeding. The updated plan must describe the criteria for implementing all procedures and measures using clear and unambiguous language that confirms Trans Mountain’s intention to implement all of its commitments.</p> <p>The updated Environmental Protection Plan must include the following:</p> <ul style="list-style-type: none"> <li>a) environmental procedures (including site-specific plans), criteria for implementing these procedures, mitigation measures, and monitoring applicable to all Project phases and activities;</li> <li>b) policies and procedures for environmental training and the reporting structure for environmental management during construction, including the qualifications, roles, responsibilities, and decision-making authority for each job title identified in the updated Environmental Protection Plan;</li> <li>c) any additional measures arising from supplemental pre-construction studies and surveys;</li> <li>d) updated contingency plans and management plans;</li> <li>e) updated facility drawings including relevant site-specific resources and mitigations;</li> <li>f) a description of how Trans Mountain has taken available and applicable Aboriginal traditional land use and traditional ecological knowledge into consideration in developing the plan, including demonstration that those Aboriginal persons and groups that provided Aboriginal traditional land use information and traditional ecological knowledge, as reported during the OH-001-2014 proceeding and/or pursuant to Condition 97, had the opportunity to review and comment on the information; and</li> <li>g) a summary of its consultations with Appropriate Government Authorities, potentially affected Aboriginal groups and affected landowners/tenants. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those consulted, into the plan.</li> </ul>		X	X	X	X	X	X	X
79	<p><b>Air Emissions Management Plan for the Edmonton, Sumas and Burnaby Terminals</b>                      Trans Mountain must file with the NEB for approval, <b>at least 3 months prior to commencing construction at each of the Edmonton, Sumas, and Burnaby Terminals</b>, an Air Emissions Management Plan for each of those terminals that includes:</p> <ul style="list-style-type: none"> <li>a) a description of the baseline, pre-construction conditions informed by relevant modelling results and recent existing monitoring data;</li> <li>b) descriptions of the locations of air monitoring sites (on a map or diagram), including the rationale for the locations selected;</li> <li>c) the timing for installing air monitoring stations;</li> </ul>							X	

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	<p>d) the methods and schedule for monitoring ambient ground-level concentrations of potential concern (e.g., volatile organic compounds, ozone, hydrogen sulphide, mercaptans, criteria air contaminants, secondary ozone and particulate matter, and reduced visibility) and emissions source tracking;</p> <p>e) procedures for monitoring station data recording, assessment, and reporting details, including a description of how the real time and non-continuous air quality monitoring data will be made available to the public;</p> <p>f) a description of the public and Aboriginal communication and complaint response process;</p> <p>g) the criteria or thresholds that, if triggered or exceeded, will require implementing additional emissions reduction measures;</p> <p>h) possible measures that will be implemented as a result of the monitoring data or ongoing concerns; and</p> <p>i) a summary of its consultations with Appropriate Government Authorities, potentially affected Aboriginal groups and affected landowners/tenants. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those consulted, into the plan.</p>								
80	<p><b>Noise Management Plan for construction at terminals and pump stations</b>                      Trans Mountain must file with the NEB for approval, <b>at least 3 months prior to commencing construction at each terminal and pump station</b>, a Noise Management Plan for construction, where residences are within 300 metres of the proposed construction activities. The plan must include:</p> <p>a) proposed hours of daytime and nighttime work;</p> <p>b) noise mitigation measures, including all technologically and economically feasible mitigation measures;</p> <p>c) a noise monitoring program, including locations, methodology, and schedule;</p> <p>d) a description of the public and Aboriginal communication and noise complaint response process; and</p> <p>e) a contingency plan that contains proposed mitigation measures for addressing noise complaints, which may include the temporary relocation of specific residents.</p>	X				X	X	X	
81	<p><b>Westridge Marine Terminal Environmental Protection Plan</b>                      Trans Mountain must file with the NEB for approval, <b>at least 3 months prior to commencing construction at the Westridge Marine Terminal</b>, an updated Project-specific Westridge Marine Terminal Environmental Protection Plan for the construction at the Terminal.</p> <p>The updated Environmental Protection Plan must be a comprehensive compilation of all environmental protection procedures, mitigation measures, and monitoring commitments, as set out in Trans Mountain's Project application, its subsequent filings, or as otherwise committed to during the OH-001-2014 proceeding. The updated plan must describe the criteria for implementing all procedures and measures using clear and unambiguous language that confirms Trans Mountain's intention to implement all of its commitments.</p> <p>The updated Environmental Protection Plan must include the following:</p> <p>a) environmental procedures (including site-specific plans), criteria for implementing these procedures, mitigation measures, and monitoring applicable to all Project phases and activities;</p>	X							

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	<p>b) policies and procedures for environmental training and the reporting structure for environmental management during construction, including the qualifications, roles, responsibilities, and decision-making authority for each job title identified in the updated Environmental Protection Plan;</p> <p>c) any additional measures arising from supplemental pre-construction studies and surveys;</p> <p>d) updated contingency plans and management plans;</p> <p>e) updated facility drawings including relevant site-specific resources and mitigations;</p> <p>f) a description of how Trans Mountain has taken available and applicable Aboriginal traditional land use and traditional ecological knowledge into consideration in developing the plan, including demonstration that those Aboriginal persons and groups that provided Aboriginal traditional land use information and traditional ecological knowledge, as reported during the OH-001-2014 proceeding and/or pursuant to Condition 97, had the opportunity to review and comment on the information; and</p> <p>g) a summary of its consultations with Appropriate Government authorities and any potentially affected Aboriginal groups. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those consulted, into the plan.</p>								
82	<p><b>Light Emissions Management Plan for the Westridge Marine Terminal</b>            Trans Mountain must file with the NEB, <b>at least 3 months prior to commencing construction at the Westridge Marine Terminal</b>, a Light Emissions Management Plan for the Westridge Marine Terminal that includes:</p> <p>a) a summary of the results of an area lighting study, including how potential impacts on surrounding communities and safety and operational requirements were considered;</p> <p>b) a description of the mitigation and best practice measures considered for the terminal lighting design and how the proposed design and operation will minimize the impacts from light on land-based residents and marine users;</p> <p>c) a summary of its consultations with Port Metro Vancouver, as well as copies of all written comments that may be provided to Trans Mountain by Port Metro Vancouver. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from Port Metro Vancouver, into the Plan; and</p> <p>d) a plan for how Trans Mountain will communicate its proposed terminal lighting design and associated mitigation measures to limit any nuisance lighting disturbances to land-based residents and marine users.</p>	X							
83	<p><b>Westridge Marine Terminal (offshore) – pile design</b>            Trans Mountain must file with the NEB, <b>at least 3 months prior to commencing construction at the Westridge Marine Terminal</b>, the final design basis for the offshore pile foundation layout of the Westridge Marine Terminal.</p>	X							
84	<p><b>Emergency release system at the Westridge Marine Terminal</b>            Trans Mountain must file with the NEB, <b>at least 3 months prior to commencing construction at the Westridge Marine Terminal</b>, its conclusions on the necessity of an emergency release system for the loading arms at the Westridge Marine Terminal. The conclusions must be supported by a comprehensive study describing the advantages and disadvantages of incorporating an emergency release system. This study must:</p> <p>a) consider the application of</p> <p>i) emergency release couplers; and</p>	X							

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	ii) an emergency release system, during both normal operating conditions and under abnormal conditions such as seismic events; and b) include a description of the final emergency release system design, if applicable.								
85	<b>Air Emissions Management Plan – Burnaby Mountain tunnel construction</b> Trans Mountain must file with the NEB for approval, <b>at least 3 months prior to commencing Burnaby Mountain tunnel construction activities</b> , an Air Emissions Management Plan for tunnel construction. The plan must include: a) proposed hours for daytime and nighttime work; b) sources that would generate air emissions; c) an Air Emissions and Dust Emissions Management Plan that includes mitigation measures, their predicted effectiveness, and implementation timeframes; and d) a description of Trans Mountain’s program for addressing complaints received during tunnel construction with respect to air and dust emissions, including a communication and notification plan.	X							
86	<b>Burnaby Mountain Tunnel Construction Noise Management Plan</b> Trans Mountain must file with the NEB for approval, <b>at least 3 months prior to commencing Burnaby Mountain tunnel construction activities</b> , a Burnaby Mountain Tunnel Construction Noise Management Plan that includes: a) proposed hours of daytime and nighttime work; b) baseline daytime and nighttime ambient sound levels at noise sensitive areas within 500 metres of the entry and exit sites for the tunnel; c) predicted noise levels at the most affected receptors caused by tunnel construction without mitigation measures implemented; d) proposed noise mitigation measures, including all technologically and economically feasible mitigation measures; e) predicted noise levels at the most affected receptors with mitigation measures implemented, including noise contour map(s) showing the potentially affected receptors; f) a tunnel construction noise monitoring program, including locations, methodology, and schedule; g) criteria that will be used to determine when tunnel construction would be shut down due to noise; h) a summary of its consultations with Appropriate Government Authorities and any potentially affected receptors (residences and businesses), as well as copies of all written comments that may be provided to Trans Mountain by those consulted. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those consulted, into the Plan; i) a description of the public and Aboriginal communication and noise complaint response processes; and j) a contingency plan that contains proposed mitigation measures for addressing noise complaints, which may include the temporary relocation of specific residents.	X							
87	<b>Groundwater Seepage Management Plan – Burnaby Mountain tunnel construction</b> Trans Mountain must file with the NEB for approval, <b>at least 3 months prior to commencing Burnaby Mountain tunnel construction activities</b> , a Groundwater Seepage Management Plan for tunnel construction. The plan must include:	X							

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	<p>a) an estimate quantifying the anticipated average and maximum amounts of groundwater seepage into the tunnel, and an assessment of any potential impacts on the water table;</p> <p>b) a discussion of Trans Mountain’s proposed pumping, treatment, and disposal options;</p> <p>c) a description of the potential effects of dewatering of bedrock aquifers, springs and streams on local groundwater and surface water resources, and of measures that Trans Mountain would implement to mitigate such effects; and</p> <p>d) a description of measures that Trans Mountain would implement during the operations phase in the event that there is groundwater seepage into the tunnel.</p>								
<b>88</b>	<p><b>Project organizational structure for Project construction</b>            Trans Mountain must file with the NEB, <b>at least 2 months prior to commencing construction</b>, a diagram of the Project’s organizational structure (i.e., project management, design, and field staff) that clearly identifies roles, accountabilities, responsibilities, and reporting relationships for construction of the applicable Project components.</p>	<b>X</b>							
<b>89</b>	<p><b>Emergency Response Plans for construction</b>            Trans Mountain must file with the NEB, <b>at least 2 months prior to commencing construction</b>, a Project-specific Emergency Response Plan, including the Trans Mountain Expansion Project Emergency Response Plan and site-specific Emergency Response Plans as referenced in Volume 4B, Section 5.4.2 of its Project application (Filing <a href="#">A3S1K6</a>), that would be implemented during the construction phase. The plan(s) must include spill contingency measures that Trans Mountain will employ in response to accidental spills attributable to construction activities, 24-hour medical evacuation, fire response, and security.</p>	<b>X</b>							
<b>90</b>	<p><b>Consultation on improvements to Trans Mountain’s Emergency Management Program</b>            Trans Mountain must file with the NEB, <b>at least 2 months prior to commencing construction</b>, a consultation plan for its review of its Emergency Response Plans and equipment (including its availability), as referenced in Volume 7, Section 4.8.2 of its Project application (Filing <a href="#">A3S4V5</a>). This plan must include:</p> <p>a) the consultation plan’s scope;</p> <p>b) the consultation plan’s objectives;</p> <p>c) a preliminary list of Appropriate Government Authorities, first responders, potentially affected Aboriginal groups and affected landowners/tenants with whom Trans Mountain will consult;</p> <p>d) a preliminary list of consultation locations and timing; and</p> <p>e) the methods that will be used to track commitments made during consultations and to incorporate them into Trans Mountain’s Emergency Management Program, including its Emergency Response Plans.</p>	<b>X</b>					<b>X</b>	<b>X</b>	
<b>91</b>	<p><b>Plan for implementing, monitoring, and complying with marine shipping-related commitments</b>            Trans Mountain must file with the NEB, <b>at least 2 months prior to commencing construction</b>, a plan describing how it will implement, monitor, and ensure compliance with its marine shipping-related commitments identified in Condition 133. The plan must be prepared in consultation with Transport Canada, the Canadian Coast Guard, the Pacific Pilotage Authority, Port Metro Vancouver, British Columbia Coast Pilots, Western Canada Marine Response Corporation, Fisheries and Oceans Canada and the Province of British Columbia, and must identify any issues or concerns raised and how Trans Mountain has addressed or responded to them.             Trans Mountain must provide the plan to the above-mentioned parties at the same time as it is filed with the NEB.</p>	<b>X</b>							
<b>92</b>	<p><b>Updates under the Species at Risk Act</b></p>	<b>X</b>	<b>X</b>		<b>X</b>	<b>X</b>	<b>X</b>		

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	<p>Trans Mountain must file with the NEB, <b>at least 2 months prior to commencing construction</b>, a summary of any relevant updates under the <i>Species at Risk Act</i>, including new Schedule 1 listings and new or amended Recovery Strategies, Action Plans, and Management Plans for species that have the potential to be affected by the Project. For each species-specific update, the summary must include:</p> <ul style="list-style-type: none"> <li>a) a discussion of the Project activities’ potential effects on the listed species or its critical habitat, including an explanation as to whether additional surveys are required to locate such critical habitat;</li> <li>b) identification of all reasonable alternatives to the Project activities referred to in a), including avoidance measures, and a discussion on the potential effects of the alternatives, the chosen approach, and the rationale for selecting the chosen approach;</li> <li>c) any additional site-specific mitigation;</li> <li>d) any monitoring to be undertaken and a commitment to include monitoring results as part of the post-construction environmental monitoring reports filed under Condition 151;</li> <li>e) an explanation as to how the responses to b), c) and d) above are consistent with applicable recovery strategies and actions plans; and</li> <li>f) a description of how Trans Mountain has taken available and applicable Aboriginal traditional land use and traditional ecological knowledge into consideration in developing the summary of updates, including demonstration that those Aboriginal persons and groups that provided Aboriginal traditional land use information and traditional ecological knowledge, as reported during the OH-001-2014 proceeding and/or pursuant to Condition 97, had the opportunity to review and comment on the information.</li> </ul>								
93	<p><b>Water well inventory</b></p> <p>Trans Mountain must file with the NEB, <b>at least 2 months prior to commencing construction</b>, an inventory of physically verified (“ground-truthed”) water wells that are within 150 metres of either side of the centre of the pipeline right-of-way.</p> <p>The filing must contain confirmation that Trans Mountain will maintain and update the inventory until the Project is abandoned or decommissioned pursuant to the NEB Act.</p> <p>The inventory must include a description of the methods used to identify and physically verify wells, including:</p> <ul style="list-style-type: none"> <li>a) each well’s location in proximity to the right-of-way, including its GPS coordinates;</li> <li>b) a description of each well’s type or use (e.g., drinking water, agricultural use, use by Aboriginal groups, any other uses);</li> <li>c) each well’s tenure or ownership (e.g., private, municipal, Aboriginal community);</li> <li>d) each well’s operational status, including abandoned or decommissioned wells, and information about each well, including well depth, lithology, and water depth, if available;</li> <li>e) a plan for updating the inventory over the life of the Project, including: <ul style="list-style-type: none"> <li>i) the methods for identifying and verifying abandoned or decommissioned wells, and new or replacement wells; and</li> <li>ii) the frequency of inventory updates;</li> </ul> </li> <li>f) a list of any properties or sections of the right-of-way that were not physically verified, including;</li> </ul>	X							

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	<ul style="list-style-type: none"> <li>i) the reason why properties or right-of-way sections were not physically accessed;</li> <li>ii) an estimate of the potential number of wells that have not been physically verified; and</li> <li>iii) a proposed schedule for accessing properties or right-of-way sections; and</li> <li>g) a description of Trans Mountain’s plans for communicating information about the locations of water wells to owners or affected users.</li> </ul>								
94	<p><b>Consultation reports – protection of municipal water sources</b>            Trans Mountain must file with the NEB, <b>at least 2 months prior to commencing construction, and on or before 31 January of each year during construction and of the first 5 years after commencing operations</b>, a report on Trans Mountain’s consultations with municipalities and regional districts, communities, and Aboriginal groups related to the protection of municipal and community water sources, including those sources currently relied upon and sources identified for potential future use. Each report must include:</p> <ul style="list-style-type: none"> <li>a) the name of the municipality, regional district, community, or Aboriginal group consulted;</li> <li>b) the methods, dates, and locations of all meetings or consultations;</li> <li>c) a summary of all issues or concerns raised; and</li> <li>d) a summary of any steps or measures that have been or will be undertaken, including groundwater modelling or monitoring, as a result of consultations with municipalities, regional districts, communities, or Aboriginal groups. This summary must include:               <ul style="list-style-type: none"> <li>i) any updates or amendments to maintenance policies, systems, programs, procedures, practices, and activities aimed at preventing pipeline releases;</li> <li>ii) the criteria used to identify and select modelling or monitoring locations and parameters;</li> <li>iii) results of any modelling or monitoring;</li> <li>iv) any measures that have been taken to address modelling or monitoring results; and</li> <li>v) any measures to share or to make accessible to municipalities, regional districts, communities, or Aboriginal groups data or issues that arise regarding drinking water (aquifers, groundwater, and well water supplies); or in the alternative to i)-v) above, an explanation why no further action is required to address or respond to issues or concerns raised</li> </ul> </li> </ul>	X	X			X	X	X	
95	<p><b>Visual Impact Plan</b>            Trans Mountain must file with the NEB, <b>at least 2 months prior to commencing construction</b>, a Visual Impact Plan that includes:</p> <ul style="list-style-type: none"> <li>a) the results of any supplemental visual modelling surveys conducted of select locations that are highly visible to the public, identified in consultation with Appropriate Government Authorities, and potentially affected Aboriginal groups and affected landowners/tenants, where the proposed pipeline corridor deviates from the existing TMPL system right-of-way; and</li> <li>b) mitigation measures to be implemented, including all relevant measures committed to throughout the OH-001-2014 proceeding, and any new mitigation measures resulting from supplementary surveys.</li> </ul>	X							
96	<p><b>Reports on engagement with Aboriginal groups – construction</b>            Trans Mountain must file with the NEB, <b>at least 2 months prior to commencing construction and every 6 months</b></p>	X	X	X	X	X	X	X	X

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	<p><b>thereafter until after commencing operations</b>, a report on the engagement activities it has undertaken with potentially affected Aboriginal groups. Each report must include, at a minimum, for each Aboriginal group engaged:</p> <ul style="list-style-type: none"> <li>a) the name of the group;</li> <li>b) the method(s), date(s), and location(s) of engagement activities;</li> <li>c) a summary of any issues or concerns raised; and</li> <li>d) the measures taken, or that will be taken, to address or respond to issues or concerns, or an explanation why no further action is required to address or respond to issues or concerns.</li> </ul> <p>Trans Mountain must provide a copy of each report to each group engaged (and identified in a) above) at the same time that it is filed with the NEB.</p>								
97	<p><b>Traditional Land Use (TLU) and Traditional Marine Resource Use (TMRU) Investigation Report</b></p> <p>Trans Mountain must file with the NEB for approval, <b>at least 2 months prior to commencing construction</b>, a report describing pre-construction TLU and TMRU investigations that were not reported during the OH-001-2014 proceeding and that relate specifically to the Project (up to and including the foreshore lands and boundaries of the water lease for the Westridge Marine Terminal). The report must include:</p> <ul style="list-style-type: none"> <li>a) the name of the potentially affected Aboriginal group to which each investigation pertains;</li> <li>b) a description of any identified potentially affected TLU or TMRU sites, resources, or activities;</li> <li>c) the methods used to identify the potentially affected TLU or TMRU sites, resources or activities;</li> <li>d) a summary of any mitigation measures that Trans Mountain will implement to reduce or eliminate (to the extent possible) Project effects on TLU or TMRU sites, resources or activities;</li> <li>e) confirmation that Trans Mountain will update the relevant Environmental Protection Plan(s) to include mitigation measures (summarized in (d)) to reduce or eliminate (to the extent possible) Project effects on TLU or TMRU sites, resources or activities;</li> <li>f) a summary of consultations undertaken with or concerns raised by potentially affected Aboriginal groups regarding investigations on Project effects on the current use of lands and resources or marine resource use for traditional purposes, as well as copies of all written comments provided to Trans Mountain by potentially affected Aboriginal groups to which each investigation pertains. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those Aboriginal groups to which each investigation pertains, into the report;</li> <li>g) a description of any outstanding concerns raised regarding potential Project effects on the current use of lands and resources or marine resource use for traditional purposes, including a description of how Trans Mountain will or address or respond to them, or an explanation why it will not address or respond to them; and</li> <li>h) a summary of any outstanding TLU or TMRU investigations or follow-up activities that will not be completed prior to commencing construction, including estimated completion date(s), if applicable, and a description of how Trans Mountain has already identified, or will identify, any potentially affected TLU and TMRU sites, resources or activities for these outstanding investigations.</li> </ul> <p>Trans Mountain must provide a copy of the report to each potentially affected group identified in a) at the same time that it is filed with the NEB.</p>	X							

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98	<p><b>Plan for Aboriginal group participation in construction monitoring</b>                      Trans Mountain must file with the NEB, <b>at least 2 months prior to commencing construction</b>, a plan describing participation by Aboriginal groups in monitoring activities during construction for the protection of traditional land and resource use for the pipelines, terminals and pump stations, and traditional marine resource use at the Westridge Marine Terminal. The plan must include:</p> <ul style="list-style-type: none"> <li>a) a summary of engagement activities undertaken with Aboriginal groups to determine opportunities for their participation in monitoring activities;</li> <li>b) a list of potentially affected Aboriginal groups, if any, that have reached agreement with Trans Mountain to participate in monitoring activities;</li> <li>c) the scope, methodology, and justification for monitoring activities to be undertaken by Trans Mountain and each participating Aboriginal group identified in b), including those elements of construction and geographic locations that will involve Aboriginal Monitors;</li> <li>d) a description of how Trans Mountain will use the information gathered through the participation of Aboriginal Monitors; and</li> <li>e) a description of how Trans Mountain will provide the information gathered through the participation of Aboriginal Monitors to the participating Aboriginal group.</li> </ul> <p>Trans Mountain must provide a copy of the report to each potentially affected group identified in b) above at the same time that it is filed with the NEB.</p>	X	X		X	X	X	X	
99	<p><b>Landowner and tenant consultation reports</b>                      Trans Mountain must file with the NEB, <b>at least 2 months prior to commencing construction, and every 6 months thereafter until 5 years after commencing Project operations</b>:</p> <ul style="list-style-type: none"> <li>a) a description of landowner and tenant consultations, including the consultation methods, dates, and a summary of any issues or concerns raised by landowners and tenants;</li> <li>b) a summary of actions that Trans Mountain has undertaken to address or respond to each of the issues or concerns raised, or an explanation for why no actions were taken, and any outstanding concerns; and</li> <li>c) confirmation that Trans Mountain will make available to a landowner or tenant, upon request, a copy of the consultation records related to that landowner or tenant.</li> </ul>	X							
100	<p><b>Heritage resources</b>                      Trans Mountain must file with the NEB, <b>at least 2 months prior to commencing construction of individual Project components</b> as described in Condition 10(a):</p> <ul style="list-style-type: none"> <li>a) confirmation, signed by an officer of the company, that it has obtained all of the required archaeological and heritage resource permits and clearances from the Alberta Department of Culture and the British Columbia Ministry of Forests, Lands and Natural Resource Operations;</li> <li>b) confirmation that it has consulted with the British Columbia Ministry of Forests, Lands and Natural Resource Operations, and that the Ministry has reviewed and approved the mitigation measures for disturbance to impacted palaeontological sites within British Columbia;</li> </ul>	X	X	X	X	X	X	X	X

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
	<p>c) a description of how Trans Mountain will meet any conditions and respond to any comments and recommendations contained in the permits and clearances referred to in a) or obtained through the consultation referred to in b); and</p> <p>d) confirmation that Trans Mountain will update the relevant Environmental Protection Plan(s) to include any relevant information from the conditions or recommendations referred to in c).</p>								
101	<p><b>Uninterruptible Power Supply (UPS) and battery systems</b>                      Trans Mountain must file with the NEB, <b>at least 2 months prior to commencing construction at each terminal and pump station</b>, confirmation that the UPS system design and planned operation related to that facility, is in compliance with the requirements of Canadian Standards Association (CSA) 22.1 – No. 15 or other applicable standard(s) that exceeds the requirements of CSA 22.1 – No. 15. If another standard is used, this filing must include the name of the standard and an explanation of why the standard was used and how it meets or exceeds the requirements of CSA 22.1 No. 15.</p>	X				X	X	X	
102	<p><b>Landowner and tenant complaint process/system</b>                      Trans Mountain must file with the Board, <b>at least 30 days prior to commencing construction</b>, confirmation that it has created and will maintain, up until the Project is abandoned or decommissioned pursuant to the NEB Act, a process/system that chronologically tracks landowner and tenant complaints related to the Project.                      The filing must contain confirmation that the process/system will track:</p> <p>a) a description of each complaint;                      b) how each complaint was received (e.g., telephone, letter, email);                      c) the date each complaint was received;                      d) subsequent dates of all contact or correspondence with each complainant;                      e) records of any site visits, monitoring, or inspections;                      f) contact information for all parties involved in each complaint;                      g) the date of each complaint’s resolution; and                      h) if a complaint remains unresolved, a description of any further actions to be taken or an explanation for why no further action is required.</p> <p>Trans Mountain must make available to a landowner or tenant, <b>upon request</b>, the records related to the complaint(s) that the landowner or tenant made to Trans Mountain, including any investigations, reports or surveys conducted in relation to the complaint.</p>	X							
103	<p><b>Utility crossings</b>                      Trans Mountain must file with the Board, <b>at least 30 days prior to commencing construction</b>, a list of all underground utilities to be crossed by the Project. The list must include the location and owners of the utilities to be crossed, as well as confirmation that all the agreements or crossing permits for those utilities to be crossed have been acquired or will be acquired prior to construction.</p>	X			X				
<b>Conditions with initial filings due during construction / prior to commencing operations</b>									
104	<p><b>Updated engineering alignment sheets and drawings</b>                      Trans Mountain must file with the NEB, <b>at least 3 months prior to commencing pipe installation</b>, updated</p>	X							

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
	engineering alignment sheets and drawings and, <b>as they become available and prior to their implementation</b> , any modifications to those sheets and drawings.								
105	<b>Quality assurance verification</b> Trans Mountain must file <b>monthly summary reports, from commencing construction until after commencing operations</b> , outlining non-conformances with its design, materials, and construction specifications and the disposition of these non-conformances.	X				X	X	X	
106	<b>Construction progress reports</b> Trans Mountain must file with the NEB <b>monthly construction progress reports from commencing construction until after commencing operations</b> . The reports must include information on the progress of activities carried out during the reporting period, including: a) safety, environmental and security issues or non-compliances that occurred during the reporting period; b) measures undertaken to resolve safety and environmental issues or non-compliances identified in a); c) confirmation that security issues identified in a) have been addressed; d) a description and the location of any change made to geohazard mitigation measures pursuant to Condition 51; and e) the location of any pressure tests carried out during the reporting period and a description of any unsuccessful pressure tests, including the reasons for the lack of success of each.	X	X	X	X	X	X	X	X
107	<b>Aboriginal, local, and regional employment and business opportunity monitoring reports</b> a) Trans Mountain must file with the NEB, <b>within 3 months after commencing construction, and every 6 months thereafter until after commencing operations</b> , monitoring reports for Aboriginal, local, and regional employment and business opportunities for the Project. The reports must include: i) a summary of the elements or indicators monitored; ii) a summary and analysis of Aboriginal, local, and regional employment and business opportunities during the reporting period; and iii) a summary of Trans Mountain’s consultation, undertaken during the reporting period, with relevant Aboriginal groups and local, regional, community and industry groups or representatives, regarding employment and business opportunities. This summary must include any issues or concerns raised regarding employment and business opportunities and how Trans Mountain has addressed or responded to them. b) Trans Mountain must file with the NEB, <b>within 6 months after commencing operations</b> , a final report on employment during the construction phase.	X							
108	<b>Contingency watercourse crossings</b> a) For any watercourse crossing where Trans Mountain will employ a contingency crossing method instead of its proposed primary method, and where <b>any</b> of Fisheries and Oceans Canada’s applicable “Measures to Avoid Causing Harm to Fish and Fish Habitat” cannot be implemented, Trans Mountain must file with the NEB <b>at least 30 days prior to commencing construction of the contingency watercourse crossing</b> : i) confirmation of the contingency watercourse crossing method that will be employed, the rationale for employing that method, and a summary of the differences between the primary and contingency watercourse crossing methods; and	X							

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
	<p>ii) the following site-specific information:</p> <ol style="list-style-type: none"> <li>1. detailed crossing-specific design drawings;</li> <li>2. photographs up-stream, down-stream, and at the crossing location;</li> <li>3. a description of the fish species and habitat that is present at the crossing location, and if fish spawning is likely to occur within the immediate area;</li> <li>4. a description of the composition of the riparian habitat at the crossing location and an indication if the riparian habitat has a limiting effect on the productive capacity of the watercourse, and if its removal or disturbance represents a potential influence on fish communities;</li> <li>5. the site-specific mitigation and habitat enhancement measures to be used to minimize impacts;</li> <li>6. any potential residual effects;</li> <li>7. proposed reclamation measures; and</li> <li>8. a discussion of the potential impacts to local fisheries resources within the immediate area as a result of the crossing's construction; and</li> </ol> <p>b) For all other instances where a contingency crossing method will be employed and all of Fisheries and Oceans Canada's applicable "Measures to Avoid Causing Harm to Fish and Fish Habitat" will be implemented, Trans Mountain must file with the NEB a notification, <b>at least 15 days prior to commencing the contingency crossing</b>, that the contingency method will be employed. With this notification, Trans Mountain must explain why the contingency method is being employed and provide a summary of the differences between the primary and contingency watercourse crossing methods.</p> <p>c) Trans Mountain must confirm, <b>within 30 days after commencing operations</b>, that any contingency watercourse crossing(s) identified to the NEB pursuant to a) and b) were the only contingency watercourse crossing(s) implemented for the construction of the pipeline.</p>								
109	<p><b>Authorization(s) under paragraph 35(2)(b) of the Fisheries Act – Westridge Marine Terminal</b></p> <p>a) In the event that Fisheries and Oceans Canada determines that the Westridge Marine Terminal expansion requires Authorization under paragraph 35(2)(b) of the <i>Fisheries Act</i>, Trans Mountain must file with the NEB, <b>at least 10 days prior to commencing works specified in the respective Authorization(s)</b>, a copy of that Authorization; and</p> <p>b) Trans Mountain must confirm, <b>within 30 days after commencing operations</b>, that any <i>Fisheries Act</i> Authorization(s) required for the Westridge Marine Terminal expansion were obtained from Fisheries and Oceans Canada and filed with the NEB pursuant to a), or notify the Board if no Authorization(s) was required.</p>	X							
110	<p><b>Authorizations under paragraph 35(2)(b) of the Fisheries Act and Species at Risk permits – pipeline</b></p> <p>For instream activities, except for those related to the Westridge Marine Terminal:</p> <p>a) for any instream activities that will require Authorization under paragraph 35(2)(b) of the <i>Fisheries Act</i>, Trans Mountain must file with the NEB, <b>at least 10 days prior to commencing the respective instream activities</b>, a copy of the Authorization <i>under</i> paragraph 35(2)(b) of the <i>Fisheries Act</i>.</p> <p>b) for any instream activities that will require a permit under the <i>Species at Risk Act</i>, Trans Mountain must file with the NEB, <b>at least 10 days prior to commencing the respective instream activities</b>, a copy of the permit issued under the <i>Species at Risk Act</i>.</p>	X	X						

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
	<p>c) Trans Mountain must confirm, <b>within 30 days after commencing operations</b>, that:</p> <p>i) any required <i>Fisheries Act</i> Authorizations were obtained from Fisheries and Oceans Canada and filed with the NEB pursuant to a), or notify the Board if no Authorizations were required; and</p> <p>ii) any required <i>Species at Risk Act</i> permits were obtained from the competent minister under the <i>Species at Risk Act</i> and filed with the NEB pursuant to b), or notify the Board if no permits were required.</p>								
111	<p><b>Joining Programs</b>                      Trans Mountain must develop Joining Programs and file them with the NEB <b>at least 45 days prior to commencing welding of, respectively:</b></p> <p>a) field circumferential production, tie-in, and repair pipeline welds, including the tie-in welds between existing segments and Line 1 or Line 2; and</p> <p>b) terminals and pump stations.</p> <p>The Joining Programs must include:</p> <p>i) welder qualification requirements;</p> <p>ii) requirements for welding inspector qualifications and duties;</p> <p>iii) welding procedure specifications;</p> <p>iv) non-destructive examination (NDE) specifications;</p> <p>v) procedure qualification records for welding procedure specifications and NDE specifications;</p> <p>vi) a quality assurance program for field welds and welding procedures; and</p> <p>vii) any additional information that supports the Joining Program.</p>	X	X			X	X	X	
112	<p><b>Pressure testing</b></p> <p>a) Trans Mountain must pressure test the new and reactivated pipeline segments, terminals, and pump stations with a liquid medium.</p> <p>b) Trans Mountain must file with the NEB, <b>at least 3 months prior to commencing pressure testing</b>, a Pressure Testing Program that demonstrates compliance with applicable codes, standards, and regulatory requirements.</p>	X	X			X	X	X	
113	<p><b>Hydrostatic Testing Plan</b>                      Trans Mountain must file with the NEB, <b>at least 3 months prior to commencing pressure testing of any Project component</b>, a Hydrostatic Testing Plan for the Project that includes:</p> <p>a) the locations of all water withdrawal and discharge sites;</p> <p>b) a discussion of any clearing activities or any other associated works, if required, that will allow for the transportation of the hydrostatic test water;</p> <p>c) water withdrawal rates;</p> <p>d) water withdrawal volumes;</p> <p>e) the flow rate/volume of water at the withdrawal sites; and</p>	X	X			X	X	X	

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
	<p>f) site-specific mitigation measures to be implemented at the water withdrawal and discharge sites or at any other locations required to allow for the transportation of hydrostatic test water, including a description of the water quality monitoring methods to be used on hydrostatic testing water prior to discharge; and</p> <p>g) a description of how Trans Mountain has taken available and applicable Aboriginal traditional land use and traditional ecological knowledge into consideration in developing the plan, including demonstration that those Aboriginal persons and groups that provided Aboriginal traditional land use information and traditional ecological knowledge, as reported during the OH-001-2014 proceeding and/or pursuant to Condition 97, had the opportunity to review and comment on the information.</p>								
114	<p><b>NDE of final tie-in welds</b>            Trans Mountain must delay NDE of final tie-in welds (i.e.: welds which will not be subjected to hydrostatic testing) and any repairs to them <b>for at least 48 hours following weld completion</b>. Trans Mountain must include this requirement in the NDE specification of its Joining Program required by Condition 111.</p>	X	X			X	X	X	
115	<p><b>SCADA and leak detection system design</b>            Trans Mountain must file with the NEB, reports describing the final design of the expanded Trans Mountain Pipeline System's SCADA and leak detection systems. These reports must include:</p> <p>a) for the commercially available external leak detection systems resulting from Trans Mountain's participation in joint industry projects, <b>at least 45 days prior to commencing backfilling on Line 2 and the new delivery pipelines</b>, a status update, including a timeline for implementation; and</p> <p>b) <b>at least 3 months prior applying for leave to open the Project:</b></p> <p>i) a status update for the following complementary leak detection technologies that Trans Mountain is considering, including a timeline for implementation:</p> <ol style="list-style-type: none"> <li>1. a secondary Computational Pipeline Monitoring (CPM) system operating in parallel with the Project's proposed CPM; and</li> <li>2. aerial surveillance systems resulting from Trans Mountain's participation in joint industry projects;</li> </ol> <p>ii) an explanation of how Trans Mountain's complementary leak detection system(s) supports the leak detection capabilities of the primary CPM system(s);</p> <p>iii) for all leak detection systems applicable to the Project, performance targets for:</p> <ol style="list-style-type: none"> <li>1. sensitivity;</li> <li>2. accuracy;</li> <li>3. reliability; and</li> <li>4. robustness;</li> </ol> <p>iv) a validation plan for the performance targets in iii), including alarm testing, to be implemented within the first year of Project operation;</p> <p>v) rationale for the selected time windows(s) (i.e. averaging periods) for the CPM system(s);</p> <p>vi) a copy of Trans Mountain's public awareness program on recognizing and reporting leaks;</p> <p>vii) a description of how the leak detection system and its relevant procedures comply with CSA Z662 Annex E;</p>	X	X						

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
	<p>viii) a list of other best practices such as API (American Petroleum Institute) recommended practices related to leak detection and control centre management;</p> <p>ix) a description of how Trans Mountain’s revised procedures have introduced a rule directing the Control Centre Operator to perform a controlled shut down of the pipeline when a leak cannot be ruled out in a given time period; and</p> <p>x) a plan, including a timeline for implementation, for upgrading the existing measurement and data acquisition instrumentation to improve the leak detection performance of Line 1.</p>								
116	<p><b>Control system, SCADA, instruments, and communication</b>                      Trans Mountain must file with the NEB, <b>at least 2 months prior to completing dry commissioning activities</b>, the block diagrams of the control system for its proposed pipeline that include the interconnection between various devices and components such as:</p> <p>a) programmable logic controllers (PLCs);                      b) flow meters, and pressure and temperature measuring devices;                      c) critical protective elements;                      d) emergency shut-down systems (ESD);                      e) variable frequency drives (VFDs);                      f) control valves;                      g) block valves; and                      h) local human machine interface (HMI).</p> <p>The block diagrams must demonstrate the primary and backup communication systems, supervisory and control layers of software, firewalls, and how all elements are integrated with the SCADA system.</p>	X							
117	<p><b>Reporting on improvements to Trans Mountain’s Emergency Management Program</b>                      Trans Mountain must file with the NEB, <b>at least 2 years and 1 year prior to commencing operations</b>, detailed updates for the company’s review of its Emergency Management Program (toward meeting the requirements of Condition 124). This filing must include:</p> <p>a) a summary of work undertaken to-date;                      b) the approximate timing for completing remaining work; and                      c) a summary of parties that were consulted (Condition 90) and how their comments and feedback were considered in improving the program.</p>	X					X	X	
118	<p><b>Firefighting capacity at terminals</b>                      Trans Mountain must file with the NEB, <b>at least 1 year prior to commencing operations at the terminals</b>:</p> <p>a) the following information regarding developing appropriate firefighting capacity for a safe, timely, and effective response to a credible worst-case fire at the Westridge Marine Terminal and at the Edmonton, Sumas, and Burnaby Terminals:</p> <p>i) an assessment of necessary resources and equipment, including an explanation of how the assessment was informed by Trans Mountain’s terminal risk assessments;</p>	X						X	

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	<ul style="list-style-type: none"> <li>ii) a summary of Trans Mountain’s consultation with appropriate municipal authorities and first responders, that includes any issues or concerns raised regarding each municipality’s respective firefighting capacity and how Trans Mountain has addressed or responded to them;</li> <li>iii) a Firefighting Capacity Framework, informed by the assessment in i) and consultation in ii), and that includes a list of and timeline for completing key activities and milestones leading to the establishment of appropriate firefighting capacity; and</li> </ul> <p>b) a plan for responding to a fire exceeding a credible worst case scenario.</p>								
119	<p><b>Emergency Preparedness and Response Exercise and Training Program</b></p> <p>Trans Mountain must file with the NEB, <b>at least 1 year prior to commencing operations</b>, an Emergency Preparedness and Response Exercise and Training Program for the pipeline; the Edmonton, Sumas, and Burnaby Terminals; and the Westridge Marine Terminal. The program’s objective is to demonstrate the continual improvement of responder competencies (including control centre personnel) at all levels of the company to prepare for, respond to, recover from, and mitigate the potential effects of emergencies of any type, including tank fires and earthquakes. The program must include the following:</p> <ul style="list-style-type: none"> <li>a) a defined scope, other objectives in addition to those noted above, and program targets that address responder turn-over and ensure responders’ ongoing training and practice;</li> <li>b) a list of mandatory courses for responders;</li> <li>c) a discussion of how Trans Mountain will train its personnel to respond to all hydrocarbon spill scenarios in various seasons, including releases of hydrocarbons in mountain regions during winter conditions, into ice covered watercourses, into watercourses under varying flow conditions and into waterbodies (aquifers or streams) that are used as municipal water supply sources;</li> <li>d) a description of, and schedule for, all emergency response exercises (full-scale, tabletop, drills, functional) that Trans Mountain will conduct prior to operations to test a variety of scenarios;</li> <li>e) a plan, including rationales, for determining the schedule and frequency of all emergency response exercises (full-scale, tabletop, drills, functional) to test a variety of scenarios during the Project’s operational life;</li> <li>f) a discussion of how emergency response exercises will meet the objectives of testing Trans Mountain’s: <ul style="list-style-type: none"> <li>i) emergency response procedures;</li> <li>ii) company personnel training;</li> <li>iii) communications systems;</li> <li>iv) response equipment;</li> <li>v) safety procedures; and</li> <li>vi) the effectiveness of its liaison and continuing education programs;</li> </ul> </li> <li>g) a learnings implementation plan for exercises that considers how Trans Mountain will update and amend its Emergency Response Plans and related documents following exercises. The learnings implementation plan must consider three main purposes: <ul style="list-style-type: none"> <li>i) to validate plans;</li> </ul> </li> </ul>	X					X	X	

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	<ul style="list-style-type: none"> <li>ii) to develop Trans Mountain responder competencies (including control centre personnel) and provide them with the opportunity to carry out and understand their roles in emergency response;</li> <li>iii) to test Project-specific emergency response procedures;</li> <li>h) a plan for addressing the training requirements contained within the National Energy Board Onshore Pipeline Regulations; and</li> <li>i) confirmation that an independent third party has reviewed and assessed the Emergency Preparedness and Response Exercise and Training Program and that Trans Mountain has considered and incorporated the comments generated by that review and assessment into the program.</li> </ul>								
<b>120</b>	<p><b>Notification and reporting on emergency response exercises</b> For any tabletop, functional, and full-scale emergency response exercises undertaken as part of its Emergency Preparedness and Response Exercise and Training Program required by Condition 119:</p> <ul style="list-style-type: none"> <li>a) Trans Mountain must notify the NEB and all potential exercise participants and observers, including Appropriate Government Authorities, first responders and potentially affected Aboriginal groups, <b>at least 45 days prior to the date of each exercise</b>, of: <ul style="list-style-type: none"> <li>i) the exercise’s date and location(s);</li> <li>ii) the exercise’s objectives;</li> <li>iii) the participants in the exercise; and</li> <li>iv) the scenario for the exercise.</li> </ul> </li> <li>b) Trans Mountain must file with the NEB, and provide to Appropriate Government Authorities, first responders and potentially affected Aboriginal groups, <b>within 3 months after completing each</b> full-scale exercise, a report on the exercise that includes: <ul style="list-style-type: none"> <li>i) the results of the completed exercise;</li> <li>ii) areas for improvement; and</li> <li>iii) steps to be taken to correct deficiencies.</li> </ul> </li> </ul>	<b>X</b>					<b>X</b>	<b>X</b>	
<b>121</b>	<p><b>Financial Assurances Plan – operations phase</b></p> <ul style="list-style-type: none"> <li>a) Trans Mountain must file with the NEB for approval, <b>at least 6 months prior to applying for leave to open Line 2</b>, a Financial Assurances Plan that includes details of the financial resources and secured sources of funds that will be necessary to pay, without limitation, all actual loss or damage, costs and expenses, including cleanup and remediation, and loss of non-use value relating to non-use of a public resource associated with an unintended or uncontrolled release from the Project during the operations phase.<sup>4</sup> These costs may arise from, among other things, potential accidents, malfunctions, and failures during the Project operations phase, including all spills originating from the pipeline and the terminals.</li> </ul> <p>The Financial Assurances Plan must be signed by an officer of the company, verifying that it is accurate, complete, and, at a minimum, meets the criteria and coverage levels described below:</p> <ul style="list-style-type: none"> <li>i) Criteria for financial assurance instruments and plan:</li> </ul>	<b>X</b>	<b>X</b>			<b>X</b>	<b>X</b>	<b>X</b>	

<sup>4</sup> In the context of this condition, “operations phase” refers to the period after the Project receives leave to open approval and prior to it being fully abandoned.

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<p>1) Any letter of credit that forms part of the Financial Assurances Plan must be unconditional and irrevocable, segregated from Trans Mountain's day-to-day business activities, and be dedicated to providing funds to cover the costs described in sub a) above, without limitation.</p> <p>2) Third party liability insurance must be current, and broad, respecting the scope of environmental damages covered by the policy; <u>the policy will be consistent with provisions available in the insurance market</u> (i.e., only exceptional/non-standard perils, taking into account the Project's nature and scope, would be excluded from coverage). Such insurance must be structured on a multi-year basis, recognizing potential loss of income by persons sustaining damage caused by Trans Mountain, over a reasonable number of years after the event.</p> <p>3) A portion of cash reserves or a portion of future cash flows of the Project may be included as instruments in the Financial Assurances Plan, provided they are secured by a commitment letter from an officer of the company confirming that the funds will be dedicated to the Financial Assurances Plan without restrictions for the period specified by the officer.</p> <p>4) Parental and other third party guarantors must be registered within a Canadian jurisdiction and must have financial strength that is demonstrated in balance sheet values and ratios and credit ratings. For example, total assets less total liabilities of the guarantor should be several multiples of the liability assumed in the Trans Mountain guarantee.</p> <p>ii) Financial assurance components and coverage levels:            Trans Mountain's Financial Assurances Plan must provide a total coverage, for the Project as a whole, of \$1.1 billion<sup>5</sup> for the costs described in sub a) above, without limitation. The plan should include the following components and minimum coverage levels:</p> <p>1) Ready cash: Trans Mountain must have unfettered access to at least \$100 million to cover costs, including compensation to third parties for losses and damages in the near term, while insurance claims are being processed. Once used, this source of cash must be replenished immediately to cover the costs of a potential future spill. This can be in the form of a letter of credit, surety bond or other form acceptable to the NEB.</p> <p>2) Core coverage: Trans Mountain must put in effect and maintain current at all times a core financial coverage of at least \$1 billion that includes third party liability insurance and other financial assurance instruments that comply with the criteria. Core coverage must be a portfolio approach with multiple financial instruments used and may not be composed of a single financial instrument (e.g., only third party liability insurance). At least one component of core coverage must be funds that are readily accessible to Trans Mountain (e.g., cash reserves held by the general partner and not distributed to the limited partners).</p> <p>Trans Mountain may use a number of financial and insurance instruments in its Financial Assurances Plan. However, sales of Project assets used for transporting hydrocarbon commodities will not be eligible candidates. Below are some illustrative financial and insurance instruments that could be potential candidates for the Financial Assurances Plan:</p>								

<sup>5</sup> The NEB's basis for any final coverage level is described in its report to Governor in Council.

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
	<ul style="list-style-type: none"> <li>• Irrevocable, unfettered letter of credit.</li> <li>• Secured line of credit.</li> <li>• Cash reserves held by the general partner and not distributed to the limited partners (and verifiable on Trans Mountain Pipelines Limited Partnership's balance sheet).</li> <li>• Internal cash flow, committed by Trans Mountain to financial assurances.</li> <li>• Industry pooled fund.</li> <li>• Third party liability insurance with exclusions for only exceptional/non-standard perils.</li> <li>• No fault third party liability insurance.</li> <li>• Parental and other third party guarantees provided by parties demonstrating financial strength through balance sheets and credit ratings.</li> <li>• Other instruments developed by Trans Mountain and the insurance and financial markets.</li> </ul> <p>b) Trans Mountain must file the following with the NEB:</p> <p>i) <b>At least 6 months prior to applying for leave to open Line 2</b>, a report from an independent third party that has assessed the Financial Assurances Plan and its key components against the criteria and actual experiences of industry damage claims. The report must summarize the key features of each financial and insurance instrument proposed for inclusion in the Financial Assurances Plan.</p> <p>ii) <b>At least 3 months prior to applying for leave to open Line 2</b>, a supplement to the report described in b)i) that provides verification of any third party liability insurance coverage, a copy of the insurance certificate, and a summary of the insurance policy's key features. This summary must include: limits on insurance coverage, deductible amounts, the risks and perils and properties covered by the insurance policy, the exclusions from coverage, Trans Mountain's obligations, effective dates, and names of insurers and reinsurers.</p> <p>iii) <b>With its first leave to open application for Line 2</b>, a report describing the steps it took to eliminate any deficiencies in its Financial Assurances Plan that were identified in the independent third party report referenced in b)i) and the NEB's subsequent review.</p> <p>iv) <b>On or before 31 January of each year after commencing operations</b>, a letter signed by an officer of the company verifying that all components of the Financial Assurances Plan remain as the NEB approved and sufficient to meet the financial assurance coverage levels described in ii).</p> <p>v) <b>At least 2 months prior to any intended change(s) to the Financial Assurances Plan during the Projects operations phase</b>, a letter, for approval, detailing the intended change(s) and how the change(s) provides the same or greater level of protection.</p> <p>vi) <b>Within 30 days after accessing any component of the Financial Assurances Plan</b>, a report detailing the component accessed, the reason for accessing it, and Trans Mountain's plan to ensure that it continues to meet the requirements of its NEB-approved Financial Assurances Plan.</p>								
122	<p><b>Changing pipeline segment operating conditions (Hinton to Hargreaves; Darfield to Black Pines)</b>            Trans Mountain must file with the NEB for approval, <b>at least 6 months prior to applying for leave to open Line 2</b>, the following:</p>	X							

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
	<p>a) An engineering assessment in accordance with CSA Z662 for the above two pipeline segments which Trans Mountain proposes to change from operating on the existing TMPL to the proposed Line 2. The engineering assessment must demonstrate that the two pipeline segments are fit for their intended service under the operating conditions of Line 2, and that they meet all relevant requirements of CSA Z662. The engineering assessment must include a schedule of planned integrity monitoring activities.</p> <p>b) A certificate with a supporting report issued by an independent certification body<sup>6</sup>, stating unconditionally that the 43-kilometre-long, 762 millimetre outside diameter (NPS 30) pipeline segment from Darfield to Black Pines, British Columbia is fit for its intended service under the operating conditions<sup>7</sup> of Line 2. The supporting report must include the qualifications of the independent certification body and the justification used to grant the certificate.</p>								
<b>123</b>	<p><b>Evacuation Plans</b></p> <p>a) Trans Mountain must file with the NEB, <b>at least 6 months prior to commencing operations at the terminals</b>, an Evacuation Plan for people present in areas potentially affected by an incident at each of Trans Mountain’s Edmonton, Sumas, and Burnaby Terminals as well as at the Westridge Marine Terminal. Each Evacuation Plan must, at a minimum:</p> <ul style="list-style-type: none"> <li>i) describe how areas for evacuation were determined;</li> <li>ii) describe the circumstances under which evacuation may be required, as well as the respective methods and procedures for public notification;</li> <li>iii) describe specific evacuation routes, methods, and destinations;</li> <li>iv) be prepared in consultation with Appropriate Government Authorities, first responders and potentially affected Aboriginal groups with the authority to issue evacuation or shelter in place orders during an emergency;</li> <li>v) state how input from Appropriate Government Authorities, first responders and potentially affected Aboriginal groups, with the authority to issue evacuation or shelter in place orders during an emergency, was considered in preparing the plan;</li> <li>vi) define the roles, responsibilities, and jurisdictional authority of all parties involved in implementing an evacuation; and</li> <li>vii) confirm that an independent third party has reviewed and assessed the plan and that Trans Mountain has considered and incorporated comments generated by the review and assessment into the plan.</li> </ul> <p>b) Trans Mountain must include with its Evacuation Plan for the Burnaby Terminal, a plan specific to Simon Fraser University that includes the requirements in a) i) to vii), above.</p>	<b>X</b>						<b>X</b>	

<sup>6</sup> For Conditions 19, 122 and 152, an “independent certification body” is an internationally recognized company or organization, such as Lloyd’s Register or Det Norske Veritas, which is able to certify compliance to statutory requirements. The independent certification body must have expertise in pipeline integrity. The NEB reserves the right to accept or reject the certificate. In addition, the NEB’s decision is not contingent on the results of the certificate.

<sup>7</sup> For Conditions 19, 122 and 152, “operating conditions” must include the Project-specific operating conditions, possible transient flow conditions, slack flow conditions, and effects on operating pressure due to temperature changes.

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
124	<p><b>Implementing improvements to Trans Mountain’s Emergency Management Program</b>                      Trans Mountain must file with the NEB, <b>at least 6 months prior to commencing operations</b>, a detailed summary of its review of its Emergency Response Plans (as noted in Conditions 125 and 126) and equipment (including its availability), as referenced in Volume 7, Section 4.8.2 of its Project application (Filing <a href="#">A3S4V5</a>). This filing must include a description of changes made to Trans Mountain’s Emergency Management Program, as required under the <i>National Energy Board Onshore Pipeline Regulations</i>, including changes to:</p> <ul style="list-style-type: none"> <li>a) the Pipeline Emergency Response Plan;</li> <li>b) Emergency Response Plans for the Edmonton, Sumas, and Burnaby Terminals, as well as the Westridge Marine Terminal; and</li> <li>c) site-specific plans and documents related to a) and b), such as Geographic Response Plans, Geographical Response Strategies, control point mapping, tactical plans for submerged and sunken oil and tactical plans for high consequence areas.</li> </ul> <p>The summary must demonstrate Trans Mountain’s ability to prepare for, respond to, recover from, and mitigate the potential effects of emergencies of any type and in any geographic region or season and must include the following:</p> <ul style="list-style-type: none"> <li>i) a discussion of how the updated plans conform to the requirements contained within the <i>National Energy Board Onshore Pipeline Regulations</i>;</li> <li>ii) a discussion of how the plans consider, and would allow coordination with relevant federal, provincial, municipal and Aboriginal community emergency response plans;</li> <li>iii) a discussion of how the results of research initiatives, such as the Scientific Advisory Committee work noted in Trans Mountain’s response to NEB Information Request No. 1.63 (Filing <a href="#">A3W9H8</a>) and other research noted during the OH-001-2014 proceeding, have been considered and incorporated into Trans Mountain’s emergency response planning;</li> <li>iv) a description of the models used in response planning, including oil trajectory, fate and behavior, and air dispersion models; and</li> <li>v) confirmation that an independent third party has reviewed and assessed the Emergency Response Plans and that Trans Mountain has considered and incorporated the comments generated by the review and assessment into the plans.</li> </ul>	X					X	X	
125	<p><b>Emergency Response Plans for the Pipeline and for the Edmonton, Sumas and Burnaby Terminals</b>                      Trans Mountain must file with the NEB, <b>at least 6 months prior to commencing operations</b>, updated Emergency Response Plans which must include:</p> <ul style="list-style-type: none"> <li>a) the following relevant emergency preparedness and response documents:                             <ul style="list-style-type: none"> <li>i) an Emergency Response Plan to include the pipeline expansion;</li> <li>ii) updated Emergency Response Plans for the Edmonton, Sumas, and Burnaby Terminals; and</li> <li>iii) all related and accompanying site-specific plans and documents, such as control point mapping, Geographic Response Plans, tactical response plans, volunteer management plans, and fire safety plans;</li> </ul> </li> <li>b) an emergency response and preparedness table for the pipeline (including facilities) indicating which plans and documents referenced in a) will be referred to in an emergency response for each 10-kilometre-long pipeline segment. For each pipeline segment, the table must also identify, at a minimum:</li> </ul>	X				X	X	X	

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
	<ul style="list-style-type: none"> <li>i) high consequence areas, including environmentally sensitive areas (e.g. wetlands), heritage sites and water supply wells (Condition 93);</li> <li>ii) potentially affected persons or groups;</li> <li>iii) available access to the right-of-way and high consequence areas;</li> <li>iv) nearest control point(s);</li> <li>v) nearest available equipment cache(s);</li> <li>vi) response times for deployment of equipment and Trans Mountain personnel, mutual aid personnel, and third party contractors;</li> <li>vii) the available equipment and trained personnel, whether employed by Trans Mountain, contracted, or available through mutual aid (including contact information); and</li> <li>viii) geological, meteorological, and geographical hazards (e.g., snow avalanche, mud slides, rock slides, and steep slopes); and</li> </ul> <p>c) maps depicting the information identified in b).</p>								
126	<p><b>Emergency Response Plan for the Westridge Marine Terminal</b>            Trans Mountain must file with the NEB, <b>at least 6 months prior to commencing operations at Westridge Marine Terminal</b>, an updated Emergency Response Plan for the Westridge Marine Terminal which must include:</p> <ul style="list-style-type: none"> <li>a) all related and accompanying site-specific plans and documents, such as Geographic Response Plans, Geographic Response Strategies, tactical response plans, volunteer management plans, and fire safety plans;</li> <li>b) a list of high consequence areas, including environmentally sensitive areas;</li> <li>c) a list of potentially affected persons or groups;</li> <li>d) nearest available equipment cache(s);</li> <li>e) response times for deployment of equipment and personnel to the incident location and high consequence areas;</li> <li>f) maps depicting the information identified in a) to e).</li> </ul>	X							
127	<p><b>Terminal fire protection and firefighting systems</b></p> <ul style="list-style-type: none"> <li>a) Trans Mountain must file with the NEB for approval, <b>at least 3 months prior to applying for leave to open of any Project component at each respective terminal</b>, an independent third party report confirming the adequacy of the proposed fire protection and firefighting systems implemented or planned to be implemented at the Edmonton Terminal West Tank Area, the Burnaby Terminal, the Sumas Terminal, and the Westridge Marine Terminal. The report must demonstrate that the resources and firefighting systems are capable of suppressing fires associated with all scenarios identified in the above-mentioned terminals' final risk assessments (required by Condition 129).</li> <li>b) Trans Mountain must file with the NEB for approval, <b>at least 2 months prior to beginning the assessment leading to the report in a)</b>, the name and qualifications of the proposed independent third party that will prepare the report in a).</li> </ul>	X						X	
128	<p><b>Offset Measures Plan for residual effects on caribou habitat</b>            Trans Mountain must file with the NEB for approval, in accordance with the timelines below, an Offset Measures Plan for each affected caribou range, the goal of which is to offset all unavoidable and residual direct and indirect</p>	X	X		X	X	X		

	CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
<p>Project-related effects on caribou habitat, after taking into account the implementation of the measures identified in the relevant Environmental Protection Plan(s) for the Project and the Caribou Habitat Restoration Plan (see Condition 37) measures. The Offset Measures Plan must include:</p> <p>a) A preliminary version, to be filed <b>at least 3 months prior to applying for leave to open</b>, with the plan’s criteria and measurable goals and that includes:</p> <ul style="list-style-type: none"> <li>i) an initial quantification of the area of caribou habitat directly and indirectly disturbed by the Project;</li> <li>ii) a list of the potential on-the-ground offset measures available;</li> <li>iii) each potential offset measure’s appropriate offset ratio, based on consultation with expert federal and provincial authorities and on a review of the scientific literature on conservation offsets;</li> <li>iv) each potential offset measure’s expected effectiveness including a discussion of uncertainty and how measures align with criteria specified in the scientific literature specific to conservation offsets;</li> <li>v) each potential offset measure’s relative qualitative and quantitative value toward achieving the offset; and</li> <li>vi) a conceptual decision-making tree(s) or decision framework(s) that will be used to select which specific potential offset measures and accompanying offset ratios will be used under what circumstances.</li> </ul> <p>b) A final version, to be filed <b>on or before 31 January after the second complete growing season after completing final clean-up</b>, including:</p> <ul style="list-style-type: none"> <li>i) the contents of the preliminary Offset Measures Plan, with any updates identified in a revision log that includes the rationale for any changes;</li> <li>ii) a tabular list of the potential offset measures and appropriate offset ratios to be implemented or already underway, including site-specific details and maps showing the locations, and an explanation of how they meet criteria in the scientific literature for offsets;</li> <li>iii) a description of factors considered when determining the location of offset measures, including consideration of how the measures could maximize benefits to landscape variables;</li> <li>iv) a schedule indicating when potential offset measures will be initiated and their estimated completion dates;</li> <li>v) either an assessment of the predicted offset measures’ effectiveness including a discussion of uncertainty and a quantitative compilation showing how the measures would offset the previously determined residual effects, or a plan for completing an assessment of the potential offset measures’ effectiveness and value; and</li> <li>vi) an update on the restoration success to support offset measure decisions.</li> </ul> <p>Both the preliminary and final versions of the plan must also include the following:</p> <ul style="list-style-type: none"> <li>1) a summary of its consultations with Appropriate Government Authorities and potentially affected Aboriginal groups. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those consulted, into the Offset Measures Plan;</li> </ul>								

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
	<p>2) a description of how Trans Mountain has taken any available and applicable Aboriginal traditional land use and traditional ecological knowledge studies into consideration in developing the plan including demonstration that those Aboriginal persons and groups that provided Aboriginal traditional land use information and traditional ecological knowledge, as reported during the OH-001-2014 proceeding and/or pursuant to Condition 97, had the opportunity to review and comment on the information; and</p> <p>3) evidence of Trans Mountain’s consideration of any updates to the applicable Recovery Strategy, as well as to range boundaries and identified critical habitat made prior and up to the date on which leave to open is granted.</p>								
129	<p><b>Final terminal risk assessments</b>            Trans Mountain must file with the NEB for approval, <b>at least 3 months prior to applying for leave to open for each terminal</b>, final risk assessments for the Edmonton Terminal West Tank Area, the Sumas Terminal, the Burnaby Terminal, and the Westridge Marine Terminal, respectively, including all implemented mitigation measures. Trans Mountain must demonstrate in each risk assessment that mitigation measures will reduce the risks to levels that are As Low As Reasonably Practicable (ALARP) while complying with the Major Industrial Accidents Council of Canada (MIACC) criteria for risk acceptability. The Edmonton Terminal West Tank Area, Sumas Terminal, and Burnaby Terminal must include the elements listed in Condition 22.</p>	X						X	
130	<p><b>Groundwater Monitoring Program</b>            Trans Mountain must file with the NEB for approval, <b>at least 3 months prior to commencing operations</b>, a Groundwater Monitoring Program that pertains to all terminals and pump stations, and for any vulnerable aquifers along the pipeline route. The program must include, at a minimum:</p> <p>a) locations of groundwater monitoring wells, their depths, the rationales for well locations (including how groundwater flow direction was considered), groundwater flow velocity, parameters to be monitored and frequency of monitoring;</p> <p>b) a description of any program changes required to meet this condition for facilities with an existing Groundwater Monitoring Program;</p> <p>c) methods, criteria and rationale for identifying vulnerable aquifers along the pipeline route;</p> <p>d) applicable regulatory criteria for comparing monitoring results, and a process outlining what steps will be followed should monitoring results indicate a negative change in groundwater quality; and</p> <p>e) a summary of its consultations with Appropriate Government Authorities, potentially affected Aboriginal groups and affected landowners/tenants. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those consulted, into the program.</p>	X	X			X	X	X	
131	<p><b>Marine Public Outreach Program</b>            Trans Mountain must file with the NEB, <b>at least 3 months prior to commencing operations</b>, a report describing completed activities and observed outcomes of Trans Mountain’s Marine Public Outreach Program, and any further planned activities for this program. The report must also include:</p> <p>a) a summary of Trans Mountain’s consultation with the Pacific Pilotage Authority regarding the scope of work and activities to be undertaken through the program, including:</p>	X							

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
	<ul style="list-style-type: none"> <li>i) the resources and information that Trans Mountain has provided or will provide to the Pacific Pilotage Authority to addresses the impacts of increased Project-related tanker traffic in the Salish Sea;</li> <li>ii) the activities or actions that Trans Mountain will undertake to communicate applicable information on Project-related vessel timing and scheduling to fishing industry organizations, commercial and recreational vessel operators, Aboriginal groups, and other affected , in conjunction with the Pacific Pilotage Authority’s activities; and</li> <li>iii) any issues or concerns raised by the Pacific Pilotage Authority and how Trans Mountain has or will address them;</li> </ul> <ul style="list-style-type: none"> <li>b) a description of the actions or activities that Trans Mountain has or will undertake to incorporate into its own public engagement efforts the activities of the Pacific Pilotage Authority and Transport Canada regarding enhanced safe boating practice education for small vessel operators;</li> <li>c) a plan and schedule for all ongoing and future activities and actions under the program, including anticipated completion dates; and</li> <li>d) a summary of its consultations with Transport Canada, the Canadian Coast Guard, the Chamber of Shipping for British Columbia, commercial and tourism associations and potentially affected Aboriginal groups.</li> </ul>								
132	<p><b>Marine Mammal Protection Program</b>            Trans Mountain must file with the NEB, <b>at least 3 months prior to commencing operations</b>, a Marine Mammal Protection Program that focuses on effects from the operations of Project-related marine vessels. The program must include:</p> <ul style="list-style-type: none"> <li>a) the goals and objectives of the program, including a discussion on how they align with the objectives of applicable Fisheries and Oceans marine mammal Recovery Strategies and Action Plans;</li> <li>b) a summary of the issues related to marine mammals from Project-related marine vessels;</li> <li>c) a summary of the initiatives that Trans Mountain has supported or undertaken to-date, including the goals of each initiative and how they relate to the objectives of the program;</li> <li>d) a discussion of the outcomes or progress updates of the initiatives identified in c), and how these outcomes have met or are contributing to the objectives of the program;</li> <li>e) a discussion of how any relevant outcomes of the initiatives identified in c) are being or will be applied to Project-related marine vessels;</li> <li>f) a summary of relevant initiatives that have been implemented or proposed from other national or international relevant jurisdictions to reduce effects from marine shipping on marine mammals, and an analysis or rationale for why these initiatives will or will not be incorporated into the program;</li> <li>g) any other initiatives that Trans Mountain intends to undertake or support in the future that are relevant to the program; and</li> <li>h) a description of how Trans Mountain has taken available and applicable Aboriginal traditional land use and traditional ecological knowledge into consideration in developing the Program, including demonstration that those Aboriginal persons and groups that provided Aboriginal traditional land use information and traditional ecological knowledge, as reported during the OH-001-2014 proceeding and/or pursuant to Condition 97, had the opportunity to review and comment on the information.</li> </ul>	X							

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
133	<p><b>Marine shipping-related commitments</b>                      Trans Mountain must file with the NEB, <b>at least 3 months prior to loading the first tanker at the Westridge Marine Terminal with oil transported by the Project</b>, confirmation, signed by an officer of the company, that it has implemented or caused to be implemented the following commitments related to oil tanker traffic and enhanced oil spill response:</p> <p>a) Enhanced tug escort through developing a tug matrix and including it as part of Trans Mountain’s Tanker Acceptance Standard. The tug matrix would prescribe minimum tug capabilities required to escort outbound laden tankers between the Westridge Marine Terminal and Buoy Juliet, as described in Section 5.3.2.1 of Volume 8A of Trans Mountain’s Project application (Filing <a href="#">A3S4Y4</a>), Trans Mountain’s response to NEB Information Request No. 1.59 (Filing <a href="#">A60392</a>), and Trans Mountain’s response to the NEB’s Information Request regarding the TERMPOL report (Filing <a href="#">A65273</a>).</p> <p>b) An enhanced marine oil spill response regime capable of delivering 20,000 tonnes of capacity within 36 hours of notification, with dedicated resources staged within the study area, as described in Volume 8A of Trans Mountain’s application and Trans Mountain’s response to NEB Information Request No. 1.64 (Filing <a href="#">A3W9H8</a>).</p> <p>Trans Mountain must also include and report on the above-noted marine shipping-related commitments in its commitments tracking table (required by Condition 6).</p>	X							
134	<p><b>Updated Tanker Acceptance Standard</b>                      Trans Mountain must file with the NEB, <b>at least 3 months prior to loading the first tanker at the Westridge Marine Terminal with oil transported by the Project, and thereafter on or before 31 January of each of the first five years after commencing operations</b>, an updated Tanker Acceptance Standard and a summary of any revisions made to the Standard.</p>	X							
135	<p><b>Slack line flow conditions</b>                      Trans Mountain must file with the NEB, <b>at least 2 months prior to commencing operation of Line 1, and at least 2 months prior to applying for leave to open Line 2, respectively</b>, the following:</p> <p>a) a list of locations having potential for slack line flow when each of the pipelines is operated at 100 per cent of its maximum operating pressure (MOP), 80 per cent of its MOP, and 50 per cent of its MOP; and</p> <p>b) a description of the following regarding detecting and preventing slack line flow conditions:</p> <p>i) operational measures on Line 1 and Line 2; and</p> <p>ii) design measures on Line 2.</p>	X	X						
136	<p><b>Pre-operations full-scale emergency response exercises</b></p> <p>a) <b>Prior to commencing operations</b>, Trans Mountain must complete a full-scale exercise for each of the following scenarios:</p> <p>i) a 160-cubic-metre diluted bitumen release into Burrard Inlet as a result of a release from the Westridge Marine Terminal. The exercise must also consider emergency preparedness and response planning for a release that exceeds a credible worst case scenario spill event; and</p> <p>ii) a credible worst-case release volume at the Burnaby Terminal.</p>	X						X	

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
	<p>b) Trans Mountain must notify the NEB and all potential exercise participants and observers, including Appropriate Government Authorities, first responders, and potentially affected Aboriginal groups, <b>at least 45 days prior to the date of each exercise in a)</b>, of:</p> <ul style="list-style-type: none"> <li>i) the exercise's date(s) and location(s);</li> <li>ii) the exercise's objectives;</li> <li>iii) the participants in the exercise; and</li> <li>iv) the scenario for the exercise.</li> </ul> <p>c) Trans Mountain must file with the NEB and provide to Appropriate Government Authorities, first responders and potentially affected Aboriginal groups, <b>within 3 months after completing each exercise in a)</b>, a report on the exercise that includes:</p> <ul style="list-style-type: none"> <li>i) the results of the completed exercise;</li> <li>ii) areas for improvement;</li> <li>iii) steps to be taken to correct deficiencies; and</li> <li>iv) confirmation that an independent third party has evaluated and assessed the emergency response exercises and that Trans Mountain will consider the comments generated for future exercises.</li> </ul>								
137	<p><b>Tank roof design for tanks at the Edmonton Terminal</b>                      Trans Mountain must install steel pontoon internal floating roofs and fixed roofs with odour control systems on all of its five proposed tanks at the Edmonton Terminal. Trans Mountain must file with the NEB, <b>at least 30 days prior to applying for leave to open the five proposed tanks</b>, a letter signed by an officer of the company that confirms that these roofs were installed.</p>							X	
138	<p><b>Confirmation of firefighting capacity at terminals</b>                      Trans Mountain must file with the NEB, <b>at least 30 days prior to commencing operations at the terminals</b>, confirmation that appropriate firefighting capacity, in accordance with Condition 118, is in place.</p>	X						X	
	<b>Conditions with initial filings due after commencing operations</b>								
139	<p><b>Project completion</b>                      Trans Mountain must file with the NEB, <b>within 30 days after commencing operations</b>, confirmation, signed by an officer of the company, that the Project was completed and constructed in compliance with all applicable [certificate/order] conditions. If compliance with any of the conditions cannot be confirmed, the officer of the company must include the reason(s) for this and the proposed course of action to achieve compliance.</p>	X	X	X	X	X	X	X	X
140	<p><b>Post-construction greenhouse gas (GHG) assessment report</b>                      Trans Mountain must file with the NEB for approval, <b>within 2 months after commencing operations</b>, an updated GHG assessment report specific to the Project. The report must include:</p> <ul style="list-style-type: none"> <li>a) the methodology used for the assessment, including the sources of GHG emissions, assumptions, and methods of estimation;</li> <li>b) the total direct GHG emissions generated from Project construction, including land-clearing;</li> <li>c) a breakdown of direct GHG emissions generated by the construction of individual Project components (pipeline, pump stations, tank terminals and Westridge Marine Terminal) and by land-clearing activities; and</li> </ul>	X			X	X	X	X	

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
	d) a comparison and discussion of the direct GHG emissions calculated in b) with the predicted emissions in Trans Mountain’s application and subsequent submissions.								
141	<b>Post-construction noise surveys</b> Trans Mountain must file with the NEB, <b>within 3 months after commencing operations</b> , the results of post-construction noise surveys conducted at the Sumas and Burnaby Terminals and at the Westridge Marine Terminal, demonstrating compliance with the British Columbia Oil and Gas Commission’s <i>British Columbia Noise Control Best Practices Guideline (2009)</i> , and any further mitigation that Trans Mountain will undertake to achieve compliance.	X						X	
142	<b>GHG Emissions Offset Plan – Project construction</b> Trans Mountain must file with the NEB for approval, <b>within 4 months after commencing operations</b> , a plan for providing offsets for all direct GHG emissions generated from Project construction, as determined in Condition 140. The plan must include: a) a list and discussion of all possible offset options considered; b) the criteria against which each option was assessed for viability; c) a description of the offset option(s) selected for direct GHG emissions generated from Project construction, and the rationale for selecting the option(s); d) confirmation that the selected offset option is registered under the approved quantification protocols and has been verified by an accredited “verification body <sup>8</sup> ,” e) a schedule indicating when the selected offset options(s) will be initiated; and f) an accounting of offsets confirming no net GHG emissions from Project construction.	X			X	X	X	X	
143	<b>Baseline inspections</b> a) Trans Mountain must conduct the following pipeline inspections on Line 2 and the new delivery pipelines, at the times indicated: i) a high-resolution in-line caliper inspection (i.e., a GEOPIG™ inspection) <b>within 6 months after commencing operations</b> to establish accurate pipeline position and to detect pipe deformations; ii) an in-line ultrasonic crack detection inspection <b>within 2 years after commencing operations</b> ; iii) an in-line corrosion magnetic flux leakage inspection in both the circumferential and longitudinal directions <b>within 2 years after commencing operations</b> ; iv) an in-line ultrasonic wall measurement inspection <b>within 2 years after commencing operations</b> ; and v) a close interval survey <b>within 2 years after commencing operations</b> . b) Trans Mountain must file with the NEB, <b>within 6 months after completing each inspection in a)</b> , a report that includes a summary of the inspection results, the proposed re-inspection interval, and mitigation measures for the anomalies detected through any of the inspections, if required.	X							
144	<b>Ongoing implementation of marine shipping-related commitments</b> Trans Mountain must file with the NEB, <b>on or before 31 January of each year after commencing operations</b> , a report, signed by an officer of the company, documenting the continued implementation of Trans Mountain’s marine	X							

<sup>8</sup> In these conditions, “verification body” means a competent and independent person, or persons, with responsibility for performing and reporting on the verification process (as defined by ISO 14064).

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
	<p>shipping-related commitments noted in Condition 133, any non-compliances with the requirements of these commitments, and the actions taken to correct these non-compliances.</p> <p>Trans Mountain must provide each report to Transport Canada, the Canadian Coast Guard, the Pacific Pilotage Authority, Port Metro Vancouver, British Columbia Coast Pilots, Western Canada Marine Response Corporation, Fisheries and Oceans Canada and the Province of British Columbia at the same time as it is filed with the NEB. If a particular party mentioned above requests that it not be provided the annual report, Trans Mountain may cease providing it to that party.</p>								
145	<p><b>Community Benefits Program progress reports</b></p> <p>Trans Mountain must file with the NEB, <b>on or before 31 January of each of the first 5 years after commencing operations</b>, a progress report summarizing the initiatives and activities undertaken as benefits that are in addition to compensation for access and potential impacts to community lands, and/or that exceed regulatory requirements. The report must summarize initiatives supported, at a minimum, in the areas of community programs and infrastructure improvements, environmental stewardship, and education and training during the reporting period, including local emergency management enhancements, improvements to community parks, as well as support for events.</p> <p>The filing must contain a commitment from Trans Mountain, and a description of how Trans Mountain will make progress reports publicly available until the Project is abandoned or decommissioned pursuant to the NEB Act.</p> <p>The progress reports must include:</p> <ol style="list-style-type: none"> <li>a description of the initiatives undertaken or supported;</li> <li>a list of participants or beneficiaries, including Aboriginal groups, local and regional communities, service providers, or others;</li> <li>an update on the timing, status, and outcomes of each initiative, including its estimated completion date, if applicable; and</li> <li>a summary of Trans Mountain’s consultation activities regarding the Community Benefits Program initiatives.</li> </ol>	X							
146	<p><b>Reports on engagement with Aboriginal groups – operations</b></p> <p>Trans Mountain must file with the NEB, <b>on or before 31 January of each of the first 5 years after commencing operations</b>, a report on the engagement activities it has undertaken with Aboriginal groups. Each report must include, at a minimum, for each Aboriginal group engaged:</p> <ol style="list-style-type: none"> <li>the name of the group;</li> <li>the method(s), date(s), and location(s) of engagement activities;</li> <li>a summary of any issues or concerns raised; and</li> <li>the measures taken, or that will be taken, to address or respond to issues or concerns, or an explanation why no further action is required to address or respond to issues or concerns.</li> </ol> <p>Trans Mountain must provide a copy of each report to each group engaged (and identified in a) above) at the same time that it is filed with the NEB.</p>	X	X		X	X	X	X	
147	<p><b>Natural hazard assessment</b></p> <p>Trans Mountain must file with the NEB, <b>within 1 year after commencing operations</b>:</p> <ol style="list-style-type: none"> <li>the results of the baseline natural hazard assessment for the Project; and</li> </ol>	X				X	X	X	

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	<p>b) confirmation that the natural hazard assessment will be:</p> <p>i) updated at intervals not exceeding 5 years; and</p> <p>ii) integrated into the existing Natural Hazard Management Program for the Trans Mountain Pipeline system.</p>								
148	<p><b>Pipeline Geographic Information System (radio) data</b>                      Trans Mountain must file with the NEB, <b>within 1 year after commencing operations</b>, Geographic Information System data in the form of an Esri® shape file that contains pipeline segment centre lines and right-of-way boundaries, where each pipeline segment has a unique outside diameter, wall thickness, MOP, external coating, field-applied girth weld coating, and pipe manufacturing specification. If the above values of the pipeline change at any point along the length of the Project, the pipeline(s) should be segmented at that point. Trans Mountain must also provide Geographic Information System locations and names of all Project pump stations, terminals, custody transfer meters, tunnel entrances, pipeline bridges, check valves, and block valves, as applicable.                      The datum must be NAD83 and projection must be geographic (latitudes and longitudes).</p>	X							
149	<p><b>Caribou Habitat Restoration and Offset Measures Monitoring Program</b>                      Trans Mountain must file with the NEB for approval, <b>on or before 31 January after the first complete growing season after commencing operations</b>, a program for monitoring and verifying the effectiveness of caribou habitat restoration and offset measures implemented as part of the final Caribou Habitat Restoration Plan (Condition 37) and the final Offset Measures Plan (Condition 128). This program must include:</p> <p>a) the scientific methods or protocols for short- and long-term monitoring of the restoration and offset measures, and effectiveness of the measures;</p> <p>b) monitoring frequency, timing, and locations, and the rationale for each;</p> <p>c) protocols for how restoration and offset measures will be adapted, as required, based on the monitoring results from the program's implementation;</p> <p>d) a summary of Trans Mountain's consultation with Appropriate Government Authorities and any species experts on the design of the monitoring program; and</p> <p>e) a proposed schedule for filing reports on monitoring results and adaptive management measures to the NEB, Environment and Climate Change Canada, and appropriate provincial authorities to be contained in the Caribou Habitat Restoration and Offset Measures Monitoring Program as well as at the beginning of each report filed.</p>	X	X		X	X	X		
150	<p><b>Caribou habitat restoration and offset measures monitoring report(s)</b>                      Trans Mountain must file with the NEB, <b>based on the approved schedule for the Caribou Habitat Restoration and Offset Measures Monitoring Program</b> (required by Condition 149), a report(s) outlining the monitoring program's results, including the observed effectiveness of habitat restoration and offset measures for each affected caribou range, and how those measures will be adapted, as required, based on monitoring results. Any proposed changes to the NEB-approved reporting schedule must be included within the relevant report prior to any reporting on a revised schedule.</p>	X	X		X	X	X		
151	<p><b>Post-construction environmental monitoring reports</b>                      Trans Mountain must file with the NEB, <b>on or before 31 January following the first, third, and fifth complete growing seasons after completing final clean-up</b>, a post-construction environmental monitoring report for the Project that must include:</p>	X	X	X	X	X	X	X	X

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
	<p>a) a description of the valued components or issues that were assessed or monitored;</p> <p>b) measurable goals for each valued component or issue;</p> <p>c) monitoring methods for each valued component or issue, results of the monitoring, and a comparison to the defined measurable goals;</p> <p>d) corrective actions taken, their observed success, and their current status;</p> <p>e) identification on a map or diagram of the locations where corrective actions were taken;</p> <p>f) any further corrective actions planned and a schedule for monitoring and reporting; and</p> <p>g) a summary of its consultations with appropriate government authorities and any potentially affected Aboriginal groups and affected landowners/tenants. In the environmental monitoring report filed after the fifth full growing season after completing clean-up,</p> <p>Trans Mountain must include:</p> <p>i) an assessment of the effectiveness of mitigative and corrective actions and how learnings have been or will be applied to Trans Mountain’s Environmental Protection Program;</p> <p>ii) a detailed description of all valued components or issues for which the measurable goals have not been achieved during the duration of the post-construction monitoring program; and</p> <p>iii) an evaluation of the need for any further corrective actions, measurable goals, assessments, or monitoring of valued components or issues, including a schedule for those.</p> <p>All filed post-construction environmental monitoring reports must address issues related, but not limited, to: soils; weeds; watercourse crossings; riparian vegetation; wetlands; rare plants, lichens and ecological communities; municipal tree replacement; wildlife and wildlife habitat; fish and fish habitat; marine fish and fish habitat; marine mammals; marine birds; and species at risk.</p>								
152	<p><b>Pipeline segment reactivation (Hinton to Hargreaves; Darfield to Black Pines) – new certificate and certificate validation</b></p> <p>Trans Mountain must file with the NEB, <b>before expiry of the previous certificate identified in Condition 19</b>, a new certificate with a supporting report issued by an independent certification body<sup>9</sup> for the two pipeline segments identified in Condition 19. The certificate and report must demonstrate that the two pipeline segments:</p> <p>a) are fit for service for the specified operating conditions<sup>10</sup>;</p> <p>b) meet all applicable requirements of CSA Z662; and</p> <p>c) will meet the hydrostatic test requirements outlined in CSA Z662, at any time during the certified period.</p> <p>The certificate must be valid for at least 5 years and be validated on an annual basis during the certified period.</p>		X						

<sup>9</sup> For Conditions 19, 122 and 152, an” independent certification body” is an internationally recognized company or organization, such as Lloyd’s Register or Det Norske Veritas, which is able to certify compliance to statutory requirements. The independent certification body must have expertise in pipeline integrity. The NEB reserves the right to accept or reject the certificate. In addition, the NEB’s decision is not contingent on the results of the certificate.

<sup>10</sup> For Conditions 19, 122 and 152, “operating conditions” must include the Project-specific operating conditions, possible transient flow conditions, slack flow conditions, and effects on operating pressure due to temperature changes.

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
	The supporting report must include the qualifications of the independent certification body, the justification used to grant the certificate, and the expiry date of the certificate.								
153	<p><b>Full-scale emergency response exercises during operations</b></p> <p>a) <b>Within 5 years after commencing operations</b>, Trans Mountain must complete full-scale exercises to test each of the following five scenarios:</p> <ul style="list-style-type: none"> <li>i) a full-bore rupture under ice and snow conditions in the Coquihalla Mountain Range;</li> <li>ii) a full-bore rupture into the Athabasca River during high spring flow conditions;</li> <li>iii) a full-bore rupture into Fraser River at the Port Mann Bridge, under peak flow conditions;</li> <li>iv) a full-bore rupture into the North Thompson River during high spring flow conditions; and</li> <li>v) a tank fire at the Burnaby Terminal.</li> </ul> <p>b) Trans Mountain must notify the NEB and all potential exercise participants and observers, including Appropriate Government Authorities, first responders and potentially affected Aboriginal groups <b>at least 45 days prior to the date of each exercise in a)</b>, of:</p> <ul style="list-style-type: none"> <li>i) the exercise’s date and location(s);</li> <li>ii) the exercise’s objectives;</li> <li>iii) the participants in the exercise; and</li> <li>iv) the scenario for the exercise.</li> </ul> <p>c) Trans Mountain must file with the NEB, and provide to Appropriate Government Authorities, first responders and potentially affected Aboriginal groups, <b>within 3 months after completing each exercise in a)</b>, a report on the exercise that includes:</p> <ul style="list-style-type: none"> <li>i) the results of the completed exercise;</li> <li>ii) areas for improvement;</li> <li>iii) steps to be taken to correct deficiencies; and</li> <li>iv) confirmation that an independent third party has evaluated and assessed the emergency response exercises and that Trans Mountain will consider the comments generated for future exercises.</li> </ul>	X						X	
154	<p><b>Riparian Habitat Reclamation Evaluation Report and Offset Plan</b></p> <p>Trans Mountain must file with the NEB for approval, <b>on or before 31 January after the fifth complete growing season after completing final clean-up</b>, a Riparian Habitat Reclamation Evaluation Report and Offset Plan.</p> <p>a) The report must include, for each defined watercourse crossed by the Project:</p> <ul style="list-style-type: none"> <li>i) an evaluation of performed reclamation activities against the identified measureable goals and targets (required by Condition 71), that includes an identification of the defined watercourses where riparian habitat that has not returned to, or trending towards a sufficient, pre-construction functionality;</li> <li>ii) a description of the proposed enhancement measures and corrective actions selected and the rationale for the selected option(s); and</li> <li>iii) a schedule for when the enhancement measures and corrective actions will be initiated and an estimated timeline for completion, including any monitoring that will be required.</li> </ul>	X	X						

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
	<p>b) The plan must include, for defined watercourses crossed by the Project located in watersheds identified as being above the riparian habitat disturbance threshold (&gt;18 per cent of riparian habitat disturbed in the watershed) or classified as High Sensitive fish-bearing by Trans Mountain, during the OH-001-2014 proceeding, and, where, after the fifth complete growing season, riparian habitat has not returned, or is not trending towards sufficient pre-construction functionality:</p> <ul style="list-style-type: none"> <li>i) a description of the proposed offset measures selected that includes details with rationales on the amount and type of offsets required, how the offset measures would be implemented, and the location of offset sites;</li> <li>ii) a schedule for when the offset measures will be initiated, an estimated timeline for completion, including any monitoring that will be required, and a schedule for when the results of the offsets monitoring will be filed with the Board that demonstrate offset success.</li> <li>iii) a description of how Trans Mountain has taken available and applicable Aboriginal traditional land use and traditional ecological knowledge into consideration in developing the report/plan, including demonstration that those Aboriginal persons and groups that provided Aboriginal traditional land use information and traditional ecological knowledge, as reported during the OH-001-2014 proceeding and/or pursuant to Condition 97, had the opportunity to review and comment on the information; and</li> <li>iv) a summary of consultations with Appropriate Government Authorities, potentially affected Aboriginal groups and affected landowners/tenants. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those consulted, into the report/plan.</li> </ul>								
155	<p><b>Rare Ecological Community and Rare Plant Population Mitigation Evaluation Report and Offset Plan</b>                      Trans Mountain must file with the NEB for approval, <b>on or before 31 January after the fifth complete growing season after completing final clean-up</b>, a Rare Ecological Community and Rare Plant Population Mitigation Evaluation Report and Offset Plan for ecological communities of concern, rare plants and lichens, and early draft, candidate, proposed, or final critical habitat for plant and lichen species under the <i>Species at Risk Act</i>, that includes:</p> <ul style="list-style-type: none"> <li>a) an evaluation of avoidance and mitigation success with reference to the measurable goals outlined in the Rare Ecological Community and Rare Plant Population Management Plan required by Condition 40;</li> <li>b) identification of communities, species, and critical habitats that have not yet achieved the intended degree of reclamation success, and an evaluation of the need for ongoing monitoring, reporting and corrective actions;</li> <li>c) identification of any ongoing effects to ecological communities and rare plant and lichen species that have an at-risk status of S1, S1S2 or S2, or that are listed under federal or provincial legislation for protection, or on any early draft, candidate, proposed, or final critical habitat under the <i>Species at Risk Act</i>;</li> <li>d) for the ongoing effects identified in c), a Final Rare Ecological Community and Rare Plant Population Offset Plan that updates the Preliminary Rare Ecological Community and Rare Plant Population Offset Plan required by Condition 40, and that also includes details with rationales on the amount and type of offsets required, the offset measures to be implemented, the selection of compensation sites, identification of the parties involved in planning and implementation and their respective roles and responsibilities, a timeline for implementation, and the methods and schedule for monitoring and reporting to demonstrate offset success;</li> </ul>	X	X		X	X	X	X	

		CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
	<p>e) a description of how Trans Mountain has taken available and applicable Aboriginal traditional land use and traditional ecological knowledge into consideration in developing the plan, including demonstration that those Aboriginal persons and groups that provided Aboriginal traditional land use information and traditional ecological knowledge, as reported during the OH-001-2014 proceeding and/or pursuant to Condition 97, had the opportunity to review and comment on the information; and</p> <p>f) a summary of its consultations with Appropriate Government Authorities, any species experts and potentially affected Aboriginal groups. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those consulted, into the report/plan.</p>								
156	<p><b>Wetland Reclamation Evaluation Report and Offset Plan</b>                      Trans Mountain must file with the NEB for approval, <b>on or before 31 January after the fifth complete growing season after completing final clean-up</b>, a Wetland Reclamation Evaluation Report and Offset Plan that includes:</p> <p>a) the extent (in hectares), by wetland type, that was impacted by Project construction and associated activities;</p> <p>b) for each wetland impacted, an evaluation of mitigation and reclamation success with reference to the measurable goals outlined in the Wetland Survey and Mitigation Plan required by Condition 41;</p> <p>c) identification of any wetlands that have not yet achieved the intended degree of reclamation success, and an evaluation of the need for ongoing monitoring, reporting and corrective actions;</p> <p>d) for any wetland to which no-net-loss under the Federal Policy on Wetland Conservation applies, an evaluation of any temporary or ongoing loss of any individual functional condition (e.g., habitat, hydrology and biogeochemistry);</p> <p>e) for any wetland that has not achieved reclamation success in terms of overall wetland function, and for any wetland to which no-net-loss under the Federal Policy on Wetland Conservation applies and that has had a temporary or ongoing loss in any individual functional condition, a Final Wetland Offset Plan that updates the Preliminary Wetland Offset Plan required by Condition 41, and that also includes details with rationales on the amount and type of offsets required, the offset measures to be implemented, the selection of compensation sites, identification of the parties involved in planning and implementation and their respective roles and responsibilities, a timeline for implementation, and the methods and schedule for monitoring and reporting to demonstrate offset success;</p> <p>f) a description of how Trans Mountain has taken available and applicable Aboriginal traditional land use and traditional ecological knowledge into consideration in developing the plan, including demonstration that those Aboriginal persons and groups that provided Aboriginal traditional land use information and traditional ecological knowledge, as reported during the OH-001-2014 proceeding and/or pursuant to Condition 97, had the opportunity to review and comment on the information; and</p> <p>g) a summary of its consultations with Appropriate Government Authorities, potentially affected Aboriginal groups and affected landowners/tenants. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those consulted, into the report/plan.</p>	X	X		X	X	X	X	
157	<p><b>Grasslands Reclamation Evaluation Report and Offset Plan</b>                      Trans Mountain must file with the NEB for approval, <b>on or before 31 January after the tenth complete growing</b></p>	X	X		X	X	X		

	CPCN	OC2	OC49	Temp	Pump1	Pump2	Tanks	Deact
<p><b>season after completing final clean-up</b>, a Grasslands Reclamation Evaluation Report and Offset Plan that applies to native grasslands in the British Columbia interior and that includes:</p> <ul style="list-style-type: none"> <li>a) the extent (in hectares) of grasslands that were impacted by Project construction and associated activities;</li> <li>b) an evaluation of reclamation success with reference to the measurable goals outlined in the Grasslands Survey and Mitigation Plan required by Condition 42;</li> <li>c) an identification of any grasslands that have not yet achieved the intended degree of reclamation success, and an evaluation of the need for ongoing monitoring, reporting and corrective actions;</li> <li>d) for those grasslands that have not yet achieved reclamation success, a Final Grasslands Offset Plan that updates the preliminary plan required by Condition 42, and that also includes details with rationales on the amount and type of offsets required, the offset measures to be implemented, the selection of compensation sites, identification of the parties involved in planning and implementation and their respective roles and responsibilities, a timeline for implementation, and the methods and schedule for monitoring and reporting to demonstrate offset success;</li> <li>e) a description of how Trans Mountain has taken available and applicable Aboriginal traditional land use and traditional ecological knowledge into consideration in developing the plan, including demonstration that those Aboriginal persons and groups that provided Aboriginal traditional land use information and traditional ecological knowledge, as reported during the OH-001-2014 proceeding and/or pursuant to Condition 97, had the opportunity to review and comment on the information; and</li> <li>f) a summary of its consultations with Appropriate Government Authorities, species experts, potentially affected Aboriginal groups and affected landowners/tenants. In its summary, Trans Mountain must provide a description and justification for how Trans Mountain has incorporated the results of its consultation, including any recommendations from those consulted, into the report/plan.</li> </ul>								

Issued at Calgary, Alberta on 1 December 2016.

NATIONAL ENERGY BOARD

*Original signed by*

Sheri Young  
Secretary of the Board

**SCHEDULE A**  
**National Energy Board Order OC-064**

Line 2 pipeline specifications

<b>Location</b>	Edmonton, AB to Hinton, AB	Hinton, AB to Hargreaves, BC	Hargreaves, BC to Blue River, BC	Blue River, BC to Darfield, BC	Darfield, BC to Black Pines, BC	Black Pines, BC to Burnaby Tank Terminal, BC
<b>Project Type</b>	New construction	Transfer existing segment	New construction	New construction	Transfer existing segment	New construction
<b>Approximate Length (km)</b>	339	150	121	158	43	368
<b>Wall Thickness (mm)</b>	11.8	11.8	13.8	11.8	11.13	11.8
<b>Outside Diameter</b>	914 mm (NPS 36)	914 mm (NPS 36)	1067 mm (NPS 42)	914 mm (NPS 36)	762 mm (NPS 30)	914 mm (NPS 36)
<b>Pipe Grade</b>	483 MPa	483 MPa (X70)	483 MPa	483 MPa	359 MPa (X52)	483 MPa
<b>Pipe Material Standard</b>	CSA Z245.1 Category II	API 5L	CSA Z245.1 Category II	CSA Z245.1 Category II	API 5L	CSA Z245.1 Category II
<b>External Coating</b>	Fusion bond epoxy (FBE)	FBE	FBE	FBE	Coal tar enamel	FBE
<b>Product</b>	Low vapour pressure crude oil					
<b>Maximum Operating Pressure (kPa)</b>	6 000 to 10 000 <sup>(i)</sup>	9 930 and 10 875	6 000 to 10 000 <sup>(i)</sup>	6 000 to 10 000 <sup>(i)</sup>	3 660 to 8 233 <sup>(i)</sup>	6 000 to 10 000 <sup>(i)</sup>

**SCHEDULE A (continued)**  
**National Energy Board Order OC-064**

New delivery pipelines specifications

<b>Options</b>	<b>Tunnel option</b>	<b>Streets option</b>
<b>Location</b>	Burnaby Terminal, BC to Westridge Marine Terminal, BC	
<b>Project Type</b>	New construction	
<b>Approximate Length (km)</b>	3.6 km, including 2.6 km tunnel (two pipelines)	3.1 km (two pipelines)
<b>Wall Thickness (mm)</b>	15.8	12.3
<b>Outside Diameter</b>	762 mm (NPS 30)	
<b>Pipe Grade</b>	To be established during detailed engineering and design, and in accordance with CSA Z662	483 MPa
<b>Pipe Material Standard</b>	CSA Z245.1 Category II	
<b>External Coating</b>	To be established during detailed engineering and design, and in accordance with CSA Z662	FBE
<b>Product</b>	Low vapour pressure crude oil	
<b>Maximum Operating Pressure (kPa)</b>	Approximately 4 950 kPa <sup>(i)</sup>	

**SCHEDULE A (continued)**  
**National Energy Board Order OC-064**

Westridge Marine Terminal specifications

Three new berths at the Westridge Marine Terminal, capable of handling Aframax class vessels, with the following specifications:

<b>Dock</b>	<b>Berth</b>	<b>Product</b>	<b>Trestle Length (m)</b>	<b>Pipe diameter</b>
1	1	Crude oil export Jet fuel import	250	Crude: 762 mm (NPS 30) Jet fuel: 305 mm (NPS 12)
2	2	Crude oil export	250	Crude: 914 mm (NPS 36)
	3	Crude oil export	290	Crude: 914 mm (NPS 36)
3	4	N/A – Utility dock	Gangway	N/A

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<sup>(1)</sup> Maximum Operating Pressure (MOP) is expected to be point-specific. Licensed MOPs are contingent on successful hydrostatic testing.