



**ENVIRONMENTAL PLANS
VOLUME 7 RESOURCE SPECIFIC MITIGATION TABLES
WESTRIDGE DELIVERY LINES
FOR THE TRANS MOUNTAIN PIPELINE ULC
TRANS MOUNTAIN EXPANSION PROJECT
NEB CONDITION 72**

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Prepared for:



TRANSMOUNTAIN

Trans Mountain Pipeline ULC

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INTRODUCTION

These Resource-Specific Mitigation Tables (Volume 7 of the Environmental Plans) have been developed to communicate the locations of environmental and socio-economic features and site-specific mitigation measures found along the Westridge Delivery Lines construction footprint, which includes the Burnaby Mountain Tunnel, construction of tunnel portals at Westridge Marine Terminal and Burnaby Terminal, the installation of two new delivery pipelines (Westridge Delivery Lines) and the relocation of the existing delivery line. General mitigation measures are included in the Environmental Alignment Sheet Notes (EAS Notes), the Burnaby Mountain Tunnel Environmental Protection Plan (Volume 9 of the Environmental Plans), and the Pipeline Environmental Protection Plan (Volume 2 of the Environmental Plans). These Resource-Specific Mitigation Tables are to be used during construction and reclamation of the Westridge Delivery Lines and serve as a guide to avoid or reduce potential adverse environmental effects. This version (Revision 4; released February 2018) is the most current and complete version of the Resource-Specific Mitigation Tables. The information incorporated into this document has been derived from detailed engineering design and construction execution planning, results from ongoing biophysical and cultural surveys, continuing consultation, the National Energy Board (NEB) regulatory review process and other permitting requirements.

The Resource-Specific Mitigation Tables for the Burnaby Mountain Tunnel EPP (Volume 9 of the Environmental Plans) and the Pipeline EPP (Volume 2 of the Environmental Plans) are comprised of the following Sections.

- **Section 1.0 Socio-Economics and Agriculture** provides approximate locations and details for socio-economic features, agricultural features, and biosecurity concerns found on or in the vicinity of the Westridge Delivery Lines footprint and candidate locations for access management.
- **Section 2.0 Heritage Resources** provides approximate locations (buffered) for heritage features.
- **Section 3.0 Traditional Land and Resource Use** provides approximate locations (buffered) and mitigation measures for traditional land and resource use features that are being considered in ongoing discussions with applicable regulators and communities.
- **Section 4.0 Wildlife and Wildlife Habitat** provides locations and site-specific mitigation measures for wildlife features and habitat areas, as well as information on timing restrictions (where applicable), recommended setback distances as well as identified species at risk.
- **Section 5.0 Vegetation** provides locations and site-specific mitigation measures for rare plant and rare ecological communities, locations and details for Old Growth Management Areas (OGMAs), as well as areas with high density weeds.
- **Section 6.0 Wetlands** provides locations and site-specific mitigation for wetland features. This section also includes information on wetland class, area of wetland in the Westridge Delivery Lines footprint and other pertinent information.
- **Section 7.0 Watercourses/Hydrology** provides location and names of watercourses crossed by the pipeline route. This section also includes information on watercourse class, sensitivity rating, water quality monitoring requirement, fish presence, Least Risk Biological Window, pipeline and vehicle crossing methods, riparian reserve zone and other pertinent information to watercourses. This section also includes information on location and mitigation measures for groundwater features and water wells identified in the vicinity of the Westridge Delivery Lines.
- **Section 8.0 Soils/Geology/Contamination** provides locations and details on soil types encountered and their characteristics. This section also includes locations with potential for acid-generating rock. Moderate and high potential contaminated site are included in this section
- **Section 9.0 Reclamation – Seed Mix** provides locations and details of the reclamation units including corresponding Biogeoclimatic (BCG), subzones, and descriptions of land use and setting as well as recommended seed mixes.
- **Section 10.0 Coarse Woody Debris Volumes** provides locations and volumes for the placement of coarse woody debris following construction.

1.0 SOCIO-ECONOMICS AND AGRICULTURE

1.1 Parks and Protected Areas

No park or protected areas are expected to be impacted by the Westridge Delivery Lines footprint.

1.2 Agricultural Operations

No agricultural operations are expected to be impacted by the Westridge Delivery Lines footprint.

1.3 Biosecurity

No known locations with biosecurity concerns are located along the Westridge Delivery Lines footprint.

1.4 Candidate Access Management

No candidate access management is under consideration for the Westridge Delivery Lines footprint.

2.0 HERITAGE RESOURCES

No known heritage features are located along the Westridge Delivery Lines. In the event that suspected heritage resource sites are discovered during construction, suspend work immediately in the vicinity (*i.e.*, within 30 m) of any newly identified archaeological, palaeontological or historical resource sites (*e.g.*, modified bone, pottery fragments, fossils, etc.) and implement Heritage Resources Discovery Contingency Plan (see Appendix B of the Burnaby Mountain Tunnel EPP). Site-specific mitigation will be confirmed through review and approval by the appropriate regulator.

3.0 TRADITIONAL LAND AND RESOURCE USE

No known Traditional Land and Resource Use features are expected to be impacted along the Westridge Delivery Lines footprint.

4.0 WILDLIFE AND WILDLIFE HABITAT

4.1 Wildlife Features

No known wildlife habitat features are expected to be impacted by the Westridge Delivery Lines footprint.

4.2 Provincially Identified Wildlife Habitat Areas

Detailed site information for provincially identified wildlife areas and ECCC migratory bird nesting zones can be found in Table 4.2-2. General mitigation measures can be found in Section 7.0 of the Burnaby Mountain Tunnel EPP (Volume 9 of the Environmental Plans).

TABLE 4.2-2

PROVINCIALY IDENTIFIED WILDLIFE AREAS AND ECCC MIGRATORY BIRD NESTING ZONES IN BRITISH COLUMBIA

Feature ID	Feature ¹	Wildlife Area / Nesting Zone	Legal/PNG Notation	KP Range	Recommended Timing Window	Site-Specific Mitigation ³
--	Migratory Bird Nesting Zones	Migratory Bird Nesting Zone A1	A-025-D/092-G-07 to D-047-D/092-G-07	0.00 to 3.40	August 18 to March 25; avoiding the nesting period of March 26 to August 17 ²	<ul style="list-style-type: none"> Schedule clearing and construction activities outside of the migratory bird nesting period, where feasible. In the event clearing or construction activities are scheduled to occur within the migratory bird nesting period, Wildlife Resource Specialists will use non-intrusive methods to conduct an area search within 7 days of activity for evidence of nesting (e.g., presence of territorial males, alarm calls, distraction displays, adults carrying nesting material/food). In the event an active nest is found, it will be subject to site-specific mitigation measures (e.g., clearly marked species-specific buffer around the nest or non-intrusive monitoring). Engage a Wildlife Resource Specialist to monitor the nest during activity to ensure disturbance to nesting is avoided where site-specific circumstances may permit a reduction in the protective buffer (e.g., adequate barrier exists between the nest and Project activities that effectively reduces sensory disturbance from the Westridge Delivery Lines). If monitoring indicates Project activities are causing disturbance of an active nest (i.e., considerable behavioural changes from baseline), work will be modified or temporarily halted and corrective measures will be implemented (e.g., increase in protective buffer, modification of Project activities within the buffer). The appropriate mitigation measures will be selected by an Environmental Inspector, in consultation with a Wildlife Resource Specialist.
WFA-45	Important Bird Area	English Bay and Burrard Inlet (BC020)	C-046-D/092-G-07 to D-047-D/092-G-07	2.74 to 3.40	August 18 to March 25; avoiding the nesting period of March 26 to August 17 ²	<p>Prior to Clearing/Construction</p> <ul style="list-style-type: none"> Schedule clearing and construction activities outside the migratory bird nesting period of March 26 to August 17. This IBA supports many coastal and marine bird species (e.g., western grebe, Barrow's goldeneye and surf scoter; great blue heron). <p>During Clearing/Construction</p> <ul style="list-style-type: none"> In the event clearing or construction activities are scheduled to occur within the migratory bird nesting period, Wildlife Resource Specialists will use non-intrusive methods to conduct an area search within 7 days of activity for evidence of nesting (e.g., presence of territorial males, alarm calls, distraction displays, adults carrying nesting material/food). In the event an active nest is found, it will be subject to site-specific mitigation measures (e.g., clearly marked species-specific buffer around the nest or non-intrusive monitoring). Engage a Wildlife Resource Specialist to monitor the nest during activity to ensure disturbance to nesting is avoided where site-specific circumstances may permit a reduction in the protective buffer (e.g., adequate barrier exists between the nest and Project activities that effectively reduces sensory disturbance from the Westridge Delivery Lines). If monitoring indicates Project activities are causing disturbance of an active nest (i.e., considerable behavioural changes from baseline), work will be modified or temporarily halted and corrective measures will be implemented (e.g., increase in protective buffer, modification of Project activities within the buffer). The appropriate mitigation measures will be selected by an Environmental Inspector, in consultation with a Wildlife Resource Specialist.

- Notes:
- IBAs are included in this Table (IBAs are an international conservation initiative coordinated by BirdLife International, and co-partners for the IBA Program in Canada are Bird Studies Canada and Nature Canada).
 - Recommended timing window is based on ECCC's migratory bird nesting periods (ECCC 2016) and consultation with Appropriate Government Authorities, where appropriate. The migratory bird nesting period is defined as the period when the majority (shown as 1-100% on the Environment Canada nesting calendars) of breeding bird species in a nesting zone are expected to be nesting. However, it should be noted that some species may nest earlier or later, and there may be a risk of incidental take outside of the identified periods (although much lower risk compared to activities scheduled during the identified nesting periods).
 - Does not include the complete list of recommended mitigation measures. Refer to Table 4.4-1 for this information.

4.3 Wildlife Critical Habitat as identified by ECCC

No known wildlife critical habitat, as identified by the ECCC, is encountered by the Westridge Delivery Lines footprint.

4.4 Wildlife and Wildlife Habitat Environmental Protection Measures

Additional general mitigation measures pertaining to the wildlife features and provincially-identified wildlife habitat areas can be found in Table 4.4-1.

TABLE 4.4-1

WILDLIFE AND WILDLIFE HABITAT ENVIRONMENTAL PROTECTION MEASURES

Concern	Recommended Mitigation
Great Blue Heron Nesting Colony	<ul style="list-style-type: none"> In the event a great blue heron nesting colony is discovered implement the appropriate buffer and schedule activities outside of the sensitive nesting season (see below). Great blue heron nests are protected year-round under the BC <i>Wildlife Act</i>. BC MOE (2014) recommends the following setback distances: 300 m (undeveloped), 200 m (rural), 60 m (urban) with an additional 200 m "quiet" buffer during the nesting season. The least risk window is from September 1 to January 15. If construction activities require the removal of a great blue heron colony, Trans Mountain Pipeline ULC (Trans Mountain) will work with the appropriate regulatory authorities to develop practical options and mitigation measures. Nest removal will only occur when the nests are inactive (i.e., scheduled outside of the nesting season).
Bats	<ul style="list-style-type: none"> In the event bat hibernacula or roosts are discovered contact the appropriate regulatory authority to discuss practical options and mitigation measures. Measures may include establishing protective buffers and/or modifying the construction schedule to avoid activity during sensitive periods (see below). Protect bat roosts from disturbance by humans and other sensory disturbances (BC MOE 2014). Implement a 125 m buffer from bat hibernacula (from October 1 to April 30) or maternity roost (from May 1 to August 31) (BC MWLAP 2004b). Consult with BC MFLNRORD where disturbance of a hibernacula or maternity roost is unavoidable to discuss practical options and mitigation measures. Do not blast, remove rock or talus, or construct new roads in the area surrounding a hibernacula or maternity roost unless there is no other practical option. Consult with BC MFLNRORD to discuss alternate mitigation (BC MWLAP 2004b). Schedule blasting that may occur within 1 km of Keen's long-eared myotis maternity roosts and hibernacula to occur outside the period from October 1 to May 31 (BC MWLAP 2004b). Consider applying this best practice to other bat species.
Mammal Den	<ul style="list-style-type: none"> Contact a Wildlife Resource Specialist to discuss the appropriate mitigation in the event an active den is discovered on or near the work site. Mitigation may include establishing protective buffers, monitoring the den and/or modifying the construction schedule to avoid activity until the den is no longer active.
Raptor Nest	<ul style="list-style-type: none"> Contact a Wildlife Resource Specialist to discuss the appropriate mitigation in the event an active raptor nest is discovered on or near the work site. Mitigation may include establishing protective buffers, monitoring the nest and/or modifying the construction schedule to avoid activity until the nest is no longer active. Active raptor nests have a 50 m to 500 m setback, depending on the surrounding land use and species (BC MOE 2013).

TABLE 4.4-1 Cont'd

Concern	Recommended Mitigation
Reptiles	<ul style="list-style-type: none"> • In the event an active snake hibernacula is identified, implement a 150 m buffer (BC MOE 2014), and avoid activity during the period of April 15 to September 30 (BC MWLAP 2004b), to the extent feasible. • Implement the Wildlife Conflict Management Plan (Section 6.5 in Volume 6 of the Environmental Plans) in the event a snake is encountered during Project activities.
Wildlife Discovery or Encounter	<ul style="list-style-type: none"> • Implement the Wildlife Species of Concern Encounter and Discovery Contingency Plan in the event that a wildlife species or habitat feature is identified during construction.

References

British Columbia Ministry of Environment. 2013. Guidelines for Raptor Conservation during Urban and Rural Land Development in British Columbia (2013). A companion document to Develop with Care 2012: website: http://www.env.gov.bc.ca/wld/documents/bmp/raptor_conservation_guidelines_2013.pdf. Accessed: February 2016.

British Columbia Ministry of Environment. 2014. Develop with Care 2014: Environmental Guidelines for Urban and Rural Development in British Columbia - Section 4 Environmentally Valuable Resources. Website: <http://www.env.gov.bc.ca/wld/documents/bmp/devwithcare/DWC-Section-4.pdf>. Accessed: February 2016.

British Columbia Ministry of Water, Land and Air Protection. 2004b. Wildlife Habitat Features Summary of Management Guidelines: Northern Interior Forest Region. British Columbia Ministry of Water, Land and Air Protection, Biodiversity Branch. Victoria, BC. 117 pp. British Columbia Oil and Gas Commission. 2015. Environmental Protection and Management Guidebook. October 2015. Website: <https://www.bcogc.ca/node/5899/download>. Accessed: February 2016.

4.5 Wildlife and Wildlife Habitat on Federal Lands

No federal lands are encountered by the Westridge Delivery Lines footprint

5.0 VEGETATION

5.1 Rare Plants, Rare Ecological Communities, and Critical Habitat

Information for rare plants, rare ecological communities, and critical habitat can be found in Table 5.1 (note that no rare plants or rare ecological communities have been observed on the Westridge Delivery Lines construction footprint). Adhere to the General Construction Mitigation Measures found in Section 7.0 of the Burnaby Mountain Tunnel EPP (Volume 9 of the Environmental Plans). Follow the Rare Ecological Community and Rare Plant Population Management Plan (see Section 5.3 in Volume 6 of the Environmental Plans), which contains information on critical habitat. Refer to the Rare Ecological Communities or Rare Plant Discovery Contingency Plan in the event that previously unidentified potential ecological communities or rare plants (vascular plant or bryophyte including moss or liverwort or lichens) are discovered on or within 30 m of the construction footprint prior to or during construction (Appendix B of the Burnaby Mountain Tunnel EPP). Final and Proposed critical habitat has been identified in a posted (final or proposed) Recovery Strategy. Where this has been mapped, ECCC is working to make the spatial boundaries publicly available. Detailed information on Candidate and Early Draft critical habitat (mapped areas) is not publicly available, but was provided to Trans Mountain by ECCC for Project planning purposes only. The status of critical habitat (*i.e.*, proposed, candidate, early draft) and the locations may change prior to Project activity. The information on Early Draft critical habitat provided in the Table below and on the Environmental Alignment Sheets was prepared by Trans Mountain based on data from ECCC and is provided with the permission of ECCC.

TABLE 5.1

SUMMARY OF RARE PLANTS, RARE ECOLOGICAL COMMUNITIES, AND CRITICAL HABITAT

Feature ID	Feature Type Species Code	Feature	PNG Notation	UTM Coordinates	KP Range ¹	Abundance and Distribution	Relation to Footprint	Site-Specific Mitigation
VG-208	Early Draft Critical Habitat BROTROE	Roell's brotherella moss early draft critical habitat	d-015-D/092-G-07 to d-025-D/092-G-07	--	0 to 1.00	No specimens of Roell's brotherella moss were observed during ground surveys within the pipeline construction footprint.	A Roell's brotherella moss early draft critical habitat polygon spans the width of the Westridge Delivery Lines footprint and extends off in both directions as well as intersecting the footprint of the Burnaby Terminal.	The extent of early draft critical habitat is not publicly available and is provided with the permission of ECCC. Inform all users of the KP range within which to apply the associated site-specific mitigation and access restrictions. A portion of the Early Draft Critical Habitat on the Westridge Delivery Lines footprint will be avoided by the construction of the Burnaby Mountain Tunnel. The remaining portion of Early Draft Critical Habitat on the Westridge Delivery Lines footprint is located in the Burnaby Terminal.
VG-230	Potential Federally Listed Species Habitat BROTROE_ECOLATR8-2	Area that possesses the ecological attributes required for Roell's brotherella moss within Roell's brotherella moss early draft critical habitat	c-025-D/092-G-07	10U 504620E, 5457870N 10U 504607E, 5457919N	0.88 to 0.91	Identified through desktop review of ecological attributes.	Area with ecological attributes for Roell's brotherella moss is present on the Burnaby Mountain Tunnel portion of the Westridge Delivery Lines based on desktop reviews.	This area of potential habitat will be avoided by construction of the Burnaby Mountain Tunnel.

Source: Government of Canada 2015

¹ All KPs are approximate.

5.2 Old Growth Management Areas

No Old Growth Management Areas (OGMAs) are encountered by the Westridge Delivery Lines footprint.

5.3 High Weed Density Areas

No known locations with high weed density are located along the Westridge Delivery Lines footprint. For more information about weed mitigation, refer to the Weed and Vegetation Management Plan provided in Section 5.5 of Volume 6 of the Environmental Plans, as well as the general mitigation measures in Section 7.0 of the Burnaby Mountain Tunnel EPP (Volume 9 of the Environmental Plans).

5.4 Cryptogamic Crust Salvage Areas

No Cryptogamic crust salvage areas are encountered by the Westridge Delivery Lines footprint.

6.0 WETLANDS

No wetlands are crossed by the Westridge Delivery Lines footprint.

7.0 WATERCOURSES/HYDROLOGY

Information for watercourses crossed are presented in Table 7.1-2. For more information about the pipeline and vehicle crossing methods, see Section 14 of the Pipeline EPP (Volume 2 of the Environmental Plans).

7.1 Watercourses

**TABLE 7.1-2
SUMMARY OF WATERCOURSES IDENTIFIED**

Feature ID (PXID)	KP (005) ¹	Watercourse Name/ Classification	UTM Coordinates	Fish Presence	Least Risk Biological Window Proposed	Proposed Primary Pipeline	Proposed Pipeline Contingency	Vehicle Crossing Method	Riparian Reserve Zone	Reclamation	Site-Specific Comments
BC-785h	0.40 (WDL)	Unnamed Drainage [S6]	10U 504767E 545755N	--	Open	Isolation (with temporary flow diversion)	Open-cut if dry or frozen to bottom	Existing or Ramp and Culvert or Clear-Span Bridge	0 m	A or B	Concrete ditch which drains SE along an existing KMC access road; conveys seasonal runoff from adjacent hillside; discharges directly into an outfall structure downstream from access road; no fish habitat potential.
BC-785e (W1824.3)	0.90 (WDL)	Unnamed Channel [S6]	10U 504608E 5457898N	--	Open	Trenchless (Tunnel)	NA	NA	10 m	NA	Seasonal watercourse with low fish habitat potential; steep gradient (~18%), numerous bed drops, and multiple perched culverts; dry in August and October 2014, and no fish were captured or observed in October 2016.
BC-785f (W1825.3)	1.23 (WDL)	Unnamed Drainage [NCD]	10U 504494E 5458210N	--	Open	Trenchless (Tunnel)	NA	NA	--	NA	Ditch drainage that parallels Centennial Way; dry at the time of survey; no continuous defined channel and no fish habitat potential; steep gradient (20%) upslope and downslope from the preferred pipeline crossing (PPC).
BC-785f1 (W12321.0)	1.31 (WDL)	Unnamed Channel [S6]	10U 504466E 5458278N	--	Open	Trenchless (Tunnel)	NA	NA	10 m	NA	Small seasonal watercourse with minimal flow, shallow depths, and steep gradient (20%); converges with BC-785g (NFB) approx. 50 m downstream; no fish were captured or observed in reach downstream from Burnaby Mountain Parkway (October 2016).
BC-785g (W1826.3)	1.37 (WDL)	Unnamed Channel [S6]	10U 504442E 5458338N	--	Open	Trenchless (Tunnel)	NA	NA	10 m	NA	Seasonal watercourse with minimal flow, shallow depths and steep gradient (17-25%); converges with BC-785f1 (NFB) approx. 75 m downstream; dry in August 2014, and no fish were captured or observed in reach downstream from Burnaby Mountain Parkway (October 2016).
BC-789 (W2165.0)	3.18 (WDL)	Unnamed Channel [S6]	10U 503432E 5459540N	--	Open	Isolation (with temporary flow diversion)	Open-cut if dry or frozen to bottom	Existing or Ramp and Culvert or Clear-Span Bridge	10 m	C or D	Small perennial drainage from Burnaby Mountain. Seepage from hillside emerges downslope of Hwy 7a, then traverses downslope through Westridge facility via sections of culvert. No direct connectivity to Burrard Inlet.

Note: 1 KP locations indicate the center point.

7.2 Hydrology

No known groundwater features have been identified along the Westridge Delivery Lines footprint.

7.3 Water Wells

No known water wells have been identified in the vicinity of the Westridge Delivery Lines footprint.

8.0 SOILS/GEOLOGY

Soils and geological features are outlined in the section below. This section includes soils and soils properties as well as geologic features (*i.e.* potential acid rock drainage).

8.1 Soils

Soil classifications and properties can be found in Table 8.1-2.

**TABLE 8.1-2
SUMMARY OF SOIL CHARACTERISTICS**

Soil Symbol	Soil Name	Soil Classification	Parent Material	Texture Class	Topsoil Depth Range (cm)	Drainage Class	Colour Differentiation Between Topsoil and Subsoil	Erosion Rating ¹		Susceptible to Compaction and Rutting	Susceptible to Trench Instability	Comments/Mitigation
								Wind	Water			
BZN	Buntzen	Durric Ferro-Humic Podzol	till	loam-gravelly sandy loam	0	well to moderately well	--	M	M-H	--	--	No topsoil in treed areas. Cemented layer at about the 70 cm depth.
DL	Disturbed Land	--	--	--	0-20	--	--	--	--	--	--	Depth of topsoil to be salvaged is indicated in the map unit designation.
shBZN	Shallow Buntzen	Duric Ferro-Humic Podzol	till/rock	loam-gravelly sandy loam/rock	0	well to moderately well	--	M	M-H	--	--	No topsoil in treed areas. Hard rock at shallow depths.

Sources: Mentiga Pedology Consultants Ltd. 2015. Supplemental Soil Report. Prepared for TERA, a CH2M HILL company. Edmonton, Alberta.

Notes: 1 Erosion Hazard Ratings: S = slight; M = moderate; H = high

8.2 Geology

No locations identified as having moderate or high potential for acid rock drainage were identified along the Westridge Delivery Lines footprint. For management and disposal of acid rock unexpectedly discovered during construction activities, refer to NEB Condition 29: Burnaby Mountain Tunnel Option – Rock Mass and Waste Rock Management.

8.3 Contamination

Table 8.3-2 summarizes the locations that have been identified as having moderate or high potential for contamination along the Westridge Delivery Lines footprint. Refer to Section 7.0 of the Burnaby Mountain Tunnel EPP for mitigation under the heading "Contamination". The Mitigation Decision Framework, as well as mitigation monitoring and reporting measures, can be found in the Contamination Identification and Assessment Plan (Section 3.0 of Volume 6 of the Environmental Plans).

**TABLE 8.3-2
LIST OF POTENTIAL MODERATE AND HIGH CONTAMINATION AREAS**

KP From ¹	KP To ¹	UTM Coordinates ²	Description ³	Potential Contaminants of Concern (PCOCs)	Risk Classification	Confirmed by Investigation	Mitigation
0.00	0.85	10U 504716E 5457424N	Historic spill is located at KP 0.1. The Burnaby Terminal is an existing industrial site, which has a moderate potential for presence of contaminants throughout.	Petroleum hydrocarbons (PHCs), metals, polycyclic aromatic hydrocarbons (PAHs)	Moderate	--	Follow the mitigation Decision Framework and associated mitigation measures for handling or disposing contaminated soils found in the Contamination Identification and Assessment Plan.
3.1	3.40	10U 503452E 5459322N	Historic spill is located at KP 3.20. The Westridge Terminal is an existing industrial site, which has a moderate potential for presence of contaminants throughout.	PHCs, metals, PAHs	Moderate	--	

Notes: 1 KPs are approximate. KPs are based on SSEID005.1.

2 Northing and Easting of areas of interest are provided for the approximate middle point of the area of interest.

3 Description is interpreted from aerial imagery.

9.0 RECLAMATION

Descriptions of the Reclamation Units encountered by the Westridge Delivery Lines footprint are presented below. Recommended seed mixes as well as seeding rates for each reclamation unit are included.

9.1 Reclamation Unit 1

This section is intentionally left empty.

9.2 Reclamation Unit 2

This section is intentionally left empty.

9.3 Reclamation Unit 3

This section is intentionally left empty.

9.4 Reclamation Unit 4

This section is intentionally left empty.

9.5 Reclamation Unit 5

This section is intentionally left empty.

9.6 Reclamation Unit 6

This section is intentionally left empty.

9.7 Reclamation Unit 7

RU Number	RU Name	KP Start	KP End	Main BGC Zone	Land Use and Setting Description
7.1	Lower Fraser	0	3.4	Southern Dry Maritime Coastal Western Hemlock (CWHxm1/CWHdm)	95% Urban and 5% bog wetland ¹ and wet Forest.

Notes: 1 Bog wetland is not encountered by the Westridge Delivery Lines footprint

Urban Non-Native Sod Forming	
Species	% WT
Turf-type tall fescue	40
Hard fescue	40
Turf-type perennial ryegrass	20
<i>Total</i>	<i>100</i>
Seeding Rate (kg/ha)	
Broadcast	25
Drill	15
Erosion Control Hydroseed	50 to 75
Area of Use	
Burnaby Terminal	
Westridge Marine Terminal	

10.0 COARSE WOODY DEBRIS VOLUMES

Recommended coarse woody debris volumes for watercourses are found in Table 10.1-3. More information on measures related to coarse woody debris can be found in the Reclamation Management Plan (Section 9.0 of Volume 6 of the Environmental Plans).

The target volumes in this table are provided to guide material retention volumes and storage placement of coarse woody debris during clearing, and replacement during reclamation. Target volumes are calculated by desktop assessment and aligned with BC wildfire hazard abatement guidelines for forested ecosystems. Actual volumes will vary depending on existing site conditions (e.g., material availability, compatibility with surrounding land use, and storage space), which will be assessed and verified during clearing.

Coarse woody debris is defined as pieces of woody material greater than 7.5 cm in diameter with minimum lengths of 2 m; where available, larger diameter and longer pieces are preferable. Coarse woody debris pieces may include large branches, sections of tree boles, or stumps with root wads. Where available and compatible with existing surrounding land use, coarse woody debris will be salvaged from non-merchantable wood within the Project Footprint. Coarse woody debris will not be retained in areas identified as having forest health issues such as insect pests and diseases that are associated with downed wood. Coarse woody debris retained for use during reclamation will be stored in cleared areas of the Project Footprint and replaced on the Project Footprint at locations in proximity to the storage locations.

TABLE 10.1-3

COARSE WOODY DEBRIS TARGET VOLUMES FOR WATERCOURSES

Watercourse ID	Watercourse Name	KP Start	Reclamation Target Riparian Habitat Function	Riparian Buffer Width (m)	Target Volume of Coarse Woody Debris on each side (m ³) ¹	Minimum target # of Stumps for each side	Notes
BC-789	Unnamed Channel	3.18	TBD (rating is pending further review)	10	5	4	Retain CWD if available and compatible with surrounding land use.