

RECLAMATION IN RESIDENTIAL AREAS

Trans Mountain will re-landscape any private properties disturbed by construction activities in residential areas.





- Certain planting and building restrictions apply to residential properties containing a permanent right-of-way
- Trans Mountain will work with residents to design reclamation features that accommodate the easement and owner's use
- Our objective is to return the landscaping to as good as or better than what existed prior to construction





RECLAMATION OF PARKS AND SENSITIVE AREAS

Trans Mountain takes steps to protect sensitive habitats and ecosystems when conducting construction and reclamation activities in parks and environmentally sensitive areas such as wetlands and critical habitat. Primary considerations include protection of rare plant species, reestablishment of native plant communities and important wildlife features, and scheduling activities to adhere to wildlife timing constraints to the extent feasible.



 There will be an option to fence off rare plant communities so they can be avoided. Rare plants that cannot be avoided will be salvaged or propagated and returned to the site after construction.



 Native plant communities will be reestablished. Treatments may include native seed applications and installations of native plant stock of grasses, shrubs and trees. Wetland soils will be salvaged and replaced after construction. Wetland species regenerate from the salvaged soil. Wetlands may be seeded if they contain weeds or issues are identified during monitoring. Rare wetland plants may be salvaged or propagated and returned to the wetland after construction.



- Reclamation activities will be scheduled to adhere to wildlife timing constraints to the extent feasible.
- A positive legacy of successful reclamation in Jasper National Park and Mount Robson Provincial Park on Anchor Loop Project completed in 2008.





RECLAMATION AND MITIGATION

Urban/Residential Areas



Trans Mountain will re-landscape any private properties disturbed by construction activities in residential areas with the goal to return the landscaping to as good as or better than that which existed prior to construction.

Agricultural Land



On agricultural lands, the primary considerations for reclamation are the management and preservation of top soil and preventing the spread of weeds and invasive species.

Parks and Sensitive Areas



Trans Mountain takes steps to protect sensitive habitats and ecosystems when conducting construction and reclamation activities in parks and environmentally sensitive areas such as wetlands. Primary considerations include protection of rare plant species, re-establishment of native plant communities and scheduling activities to adhere to wildlife timing constraints to the extent feasible.







MINIMIZING DISRUPTION DURING CONSTRUCTION

Trans Mountain and its Contractors will work to limit noise, dust and night lighting during construction in order to minimize disruption to communities.

Where practical, Trans Mountain will meet or exceed expectations outlined in applicable municipal and provincial permits and bylaws. Trans Mountain will continue to engage and communicate regarding construction activities before and during construction and will establish a community liaison in each affected community.

Light

Lights are used to enhance worker safety and job site security. Trans Mountain will seek to minimize light disturbance through measures such as directional lighting, diffusion, coating on bulbs and turning off lights when not in use. Some lights will be left on during night hours for security reasons.



Dust

Trans Mountain will use a number of techniques in urban, rural and agricultural settings to minimize dust created by construction vehicles and activities. These measures may include speed control, site watering, use of dust suppressants, as well as physical measures to limit the spread of dust.



Viewscapes

The Environmental Protection Plan (EPP) identifies measures to limit visual disturbance including screening, replacement of ornamental trees and vegetation, as well as reclamation techniques to ensure regrowth blends with nearby vegetation.

Noise

The Noise Control Plan identifies techniques to minimize noise effects including construction scheduling, equipment selection and maintenance, vehicle operation, position of noisy equipment and use of enclosures and baffles. The Noise Control Plan also outlines how Trans Mountain will monitor and report on the effectiveness of these measures.

Construction Scheduling

Construction will typically take place 5-6 days per week for 10-12 hours during the day. In special circumstances more night-time or weekend hours may be required to complete a critical construction activity.

These images are representative of urban pipeline construction in general. Trans Mountain construction activities may vary depending on the location.





GROUNDWATER PROTECTION

Trans Mountain understands communities are concerned about the protection of groundwater during Project construction.

As part of Project planning, a great deal of work has gone into identifying environmental impacts associated with construction and determining mitigation methods to reduce those effects.

Groundwater Management Plan

The Groundwater Management Plan (GWMP) identifies vulnerable aquifers along the pipeline route and also outlines construction mitigation measures for working around:

- Springs
- Water wells
- Shallow groundwater
- Unconfirmed aquifers

The GWMP includes:

- A list of potential groundwater related effects of the Project
- Mitigation measures to minimize potential effects identified
- Procedures for monitoring groundwater quantity and/or quality

Here are a few examples of construction mitigation measures to protect groundwater:

- Drinking water sources within the construction footprint will be flagged and fenced prior to construction
- Groundwater flow patterns will be maintained through sub-drain installation and using suitable backfill, where applicable
- On-site environment experts will monitor for signs of potential ground water contamination

Trans Mountain is committed to ongoing engagement on groundwater. Trans Mountain will file consultation reports related to the protection of municipal water sources two months prior to construction, each year during construction and for five years after commencing operations.

Learn more about Trans Mountain's commitments to protecting water sources at www.transmountain.com/watercourses-and-water.







ENVIRONMENTAL PROTECTION

Commitment to Minimizing Impact to Environment

As part of the Trans Mountain Expansion Project, substantial work has gone into determining environmental impacts and mitigation methods to reduce the impact to the environment.

Our goal is to protect the environment, have as little impact as possible and where we do have an impact, to ensure we are returning the land to its original function.

Where we disrupt land, we will ensure it is returned to pre-construction conditions. We also look for opportunities to leave a legacy for communities around the pipeline, potentially creating walking trails or other features for local residents to enjoy.

Field Studies and Analysis

Field studies were completed in 2012 and 2013 all along the proposed pipeline corridor. During these two years, many studies were undertaken, reported on and filed with the National Energy Board. The intent of these studies were to:

- Identify and describe the current biophysical and socio-economic setting of each element in the area where the Project occurs in order to establish the baseline for environmental conditions prior to any construction being carried out
- Determine the possible impacts of construction and operations
- Guide the protection and mitigation methods committed to by Trans Mountain

These studies cover environmental features such as: wildlife, fisheries, plants, species at risk or species of special status, soils, heritage resources or traditional land use and air and greenhouse gas emissions. Following the field studies identifying the baseline conditions, extensive analysis is conducted to predict the effects associated with the Project, including those that could be caused by construction,

operations, decommissioning or abandonment, as well as potential accidents and malfunctions.

 Volume 5A of the Facilities Application covers the biophysical studies conducted and the possible effects of construction. Volume 5B of the Facilities Application examines the socio-economic baseline conditions and effects of the Project.

Environmental Protection Plans

Trans Mountain is developing Environmental Protection Plans describing the mitigation measures and their adequacy for addressing the Project effects. As well, we will indicate how we will ensure commitments about mitigative measures will be communicated to the field team for implementation.

- Volume 6A presents plans for environmental compliance, including our commitment to environmental protection, pre-construction activities, environmental education for construction personnel, inspection and monitoring during construction, and post-construction monitoring. Volume 6B, 6C and 6D presents the environmental protection plans for the pipeline itself, the pipeline facilities and Westridge Marine Terminal, respectively.
- Environmental alignment sheets are produced as a means to communicate all elements of the environmental protection plan to the construction personnel while onsite. Volume 6E presents these sheets.



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ENVIRONMENTAL PROTECTION

Environmental Plans to Meet National Energy Board Conditions

The National Energy Board (NEB) has established 157 Conditions that must be met in order for the Trans Mountain Expansion Project to proceed. Some of these Conditions relate to environmental protection. Trans Mountain is seeking your input to help refine our environmental plans and meet the Conditions set out by the National Energy Board. We encourage questions, feedback or comments on the draft plans. The plans are available on our website at www.transmountain.com/environmental-plans.

The plans address the following areas:

- Environmental Protection Plans (Trans Mountain's overall plans for mitigating and addressing impacts of the Project)
- Wildlife (detailed measures to protect specific species of wildlife and species at risk along the pipeline corridor)





- Watercourses, water ecosystems and marine (measures to protect rivers, streams, wetlands and aquatic/marine habitats)
- Vegetation (management and protection of rare and native plants, shrubs and trees)
- Air quality (measures to maintain air quality standards)
- Construction and workforce impacts (plans for addressing specific impacts of construction and the construction workforce)
- Other (Access Management Plan and Groundwater Management Plan)

The NEB Conditions can be found in the May 19, 2016 National Energy Board Report on the Trans Mountain Expansion Project (Appendix 3, starting on Page 413).

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