

Trans Mountain is seeking approval for a Certificate of Public Convenience and Necessity (CPCN) from the National Energy Board (NEB) for a \$5.4 billion expansion of its oil pipeline system from Strathcona County near Edmonton, Alberta to Burnaby, British Columbia.

Volume 5 of Trans Mountain's Application to the NEB is the Environmental and Socio-Economic Assessment (ESA) for the Project. Volume 5A includes the biophysical, or environmental, components of the Project, including the proposed pipeline corridor and associated facilities, as well as the expansion of Westridge Marine Terminal. The socio-economic component is provided in Volume 5B. Volumes 5C and 5D are comprised of technical reports.

## ENVIRONMENTAL ASSESSMENT

### Biophysical



Environmental elements potentially interacting with the Project include: physical and meteorological environment; soil and soil productivity; water quality and quantity; air emissions; greenhouse gas emissions; acoustic environment; fish and fish habitat; wetland loss or alteration; vegetation; wildlife and wildlife habitat; marine sediment and water quality; marine fish and fish habitat; marine mammals; marine birds; and species at risk.

To ensure that potential adverse environmental effects are reduced, the Application recommends both general and site specific measures to mitigate the effects. The recommendations are based upon current industry-accepted standards, consultation with government agencies, interested groups and individuals, engagement with Aboriginal communities and the professional judgment of the biophysical assessment team.

Most of the potential effects can be readily mitigated by standard measures common to pipeline projects in similar settings. There are no situations that meet the criteria of a significant adverse residual, or long-term, environmental effect. Overall, the cumulative environmental effects associated with the construction and operation of the Project are similar to those routinely encountered during pipeline and facility construction in western Canada.

## Greenhouse Gas Emissions

The only substantial source of greenhouse gas (GHG) emissions is currently from vapour flaring of fugitive emissions at the Westridge Marine Terminal. These emissions will be substantially reduced with the Project. The main sources of direct GHG emissions as a result of pipeline operations are aerial patrols for maintenance purposes. Since pipelines are buried underground, no fugitive emissions are expected to happen under normal operations.

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## Fish and Fish Habitat

In total, 800 potential watercourse crossings have been identified along the proposed pipeline corridor. There are currently 393 defined watercourse crossings within the BC portion of the proposed corridor including 202 fish-bearing watercourses, of those 116 are salmon-bearing.

Project components contributing to effects on fish and freshwater fish habitat include the construction and operations of the pipeline, temporary facilities (specifically temporary access roads), pump stations (including power lines), storage tanks (through hydrostatic testing) and pipeline reactivation activities (through hydrostatic testing).

By mitigating environmental effects during construction, and by conducting Project activities in accordance with federal and provincial regulations, the Project is not expected to interfere with goals and objectives of government management plans for fish and fish habitat.

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## Wildlife and Wildlife Habitat

Field surveys have focused on the new pipeline segments, as well as new facilities or existing facilities that required clearing of native vegetation. Field surveys included: general aerial reconnaissance and wildlife feature review; winter track survey; aerial waterbird surveys (breeding and fall staging); sharp-tailed grouse survey; snake survey; breeding bird survey; and common nighthawk, short-eared owl, yellow rail and spotted owl surveys; and pond and stream-dwelling amphibian surveys.

Mitigation measures for the Application align with government regulations and guidelines as well as regional management objectives and strategies.

# Trans Mountain Expansion Project

There are no wildlife or wildlife habitat situations reviewed for the Project that cannot be technically or economically mitigated. Consequently, it is concluded that the environmental effects of the Project on wildlife and wildlife habitat indicators will be not significant.

## Marine Mammals

Potential permanent or long-term environmental effect of the Project upon marine mammals can be technically or economically mitigated. Consequently, the environmental effects on marine mammals at Westridge Marine Terminal will be not significant.

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## Marine Birds

The combined effects of construction and operations of the Westridge Marine Terminal on marine birds include potential habitat loss from clearing and construction at the shoreline, nearshore foraging areas and disturbance from noise, night-lighting and human activities associated with development and expansions of terminal facilities. It is believed that the Project can meet the objectives for protection of marine bird species, species at risk, traditional use and regional biodiversity values, namely to minimize the potential for loss of habitat and wildlife disturbance, injury or mortality.

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## Marine Fish and Fish Habitat

The evaluation considered the combined effects of construction and operations of the Westridge Marine Terminal on primary marine fish and fish habitat indicators: marine riparian habitat; intertidal habitat; subtidal habitat; Dungeness crab; inshore rockfish; and Pacific salmon.

If warranted, the implementation of a marine fish habitat compensation program will ensure there is no net loss of productive capacity. The objective of the compensation program will be to increase the productive capacity of fish habitats in Burrard Inlet through the creation of high-value habitats with direct benefits to a variety of ecologically, economically and culturally important species.

## SOCIO-ECONOMIC ASSESSMENT

### Project Economics

There are two significant positive residual socio-economic effects identified, namely provincial and national economic benefits as well as increased municipal taxes in communities directly along the Project corridor.

The capital cost of the Project is estimated at \$5.4 billion (\$2012), with the expenditures taking place over a seven-year period, from 2012 to 2018. The bulk of the spending activity is expected to take place in 2016 and 2017, during construction.

### Development Economics

Overall, the proposed expansion will enhance Canada's ability to reach diversified markets with its oil, while also increasing tax revenues that can be used to fund government projects and services Canadians depend on such as health care, education, roads and infrastructure.



Development of the Project generates direct impacts in the construction sector, supply chain impacts such as purchase of equipment and induced effects which occur when wages from the direct and supply chain effects are spent.

Trans Mountain expects to create 108,000 person years of employment from construction plus the first 20 years of operations across Canada. At least 66,000 person years of employment will be in BC and at least 25,000 will be in AB, including direct, supply chain and induced jobs.

At the peak of activity (anticipated to be July 2017), it is estimated the Project will require more than 4,475 direct construction workers in AB and BC combined. The Metro Vancouver region will have the largest workforce requirements, with construction activities anticipated during the full construction period. The required workforce in the Metro Vancouver region will average about 655 workers and will peak about 1,200 workers in October 2016.

Project development is anticipated to generate almost \$3.3 billion in labour income across Canada (direct, indirect and induced effects combined). Of this, approximately 58 per cent (or \$1.9 billion of labour income) will be generated in BC and approximately 30 per cent (\$974 million) will be generated in Alberta. The total labour income associated with direct Project-related employment during construction is anticipated to be approximately \$1.8 billion, of which approximately \$1.2 billion will be in BC and approximately \$556 million will be in Alberta.

# Trans Mountain Expansion Project

The proposed expanded operations are anticipated to create 40 new full-time permanent positions in AB and 50 new full-time permanent positions in BC.

Trans Mountain plans to spend \$5.4 billion by the end of 2017 to construct the line and associated facilities, and a further \$2.4 billion to operate it for the first 20 years. BC's economy is forecast to grow by \$2.8 billion (GDP) through construction-related spending, and up to \$11.3 billion including Project operations through to 2037.

## Tax Revenues

The estimated tax revenues to the Government of Canada are \$2.1 billion over the life of the Project.

The Project is also anticipated to generate substantial provincial and municipal tax revenue. Provincial governments' revenues associated with the Project are anticipated to be in the order of \$1.7 billion, with BC provincial government receiving \$1 billion in provincial taxes and Alberta receiving over \$0.4 billion in provincial taxes.

Municipal tax revenues that can support community services and infrastructure are estimated to increase approximately \$23 million annually or \$460 million over 20 years of operations. In Alberta, municipal property taxes are estimated to increase approximately \$3.4 million annually or \$68 million over 20 years of operations.

In communities along the proposed pipeline corridor, annual property tax payments to more than 20 local governments and more than 24 Aboriginal communities would jump to \$52.4 million from \$25.9 million per year at present.

The city of Burnaby is projected as the single largest beneficiary of municipal taxes as a consequence of the Project. In 2013, Trans Mountain paid annual taxes of \$7.022 million to Burnaby. That is forecast to rise to \$13.243 million per year after construction of Trans Mountain Expansion Project. Abbotsford (\$3.369 million annually) is projected as the second-largest beneficiary, followed by Kamloops (\$2.856 million), Yellowhead County, AB (\$2.284 million), Strathcona County (\$1.481 million), Chilliwack (\$1.608 million), Hope (\$1.274 million) and Surrey (\$1.015 million).

*This brief is intended as a general review of content from the December 16, 2013, Trans Mountain Expansion Project submission to the National Energy Board, and not a substitute for the actual content of the submission. Please refer to the submission for a full description of the Project.*