



Trans Mountain Expansion Project – Trans Mountain System

A Sophisticated Modelling Tool

Trans Mountain is proposing to expand its pipeline system from Alberta to British Columbia, which involves completion of the **tripling of the 1,150 km pipeline and adding tank storage at terminal facilities.**

The system currently delivers 300,000 barrels per day of crude oil and refined products to terminals and refineries in British Columbia, as well as to refineries in Washington State via connection to the Puget Sound Pipeline System. The expansion project would increase deliveries to 890,000 barrels per day by 2018.

Trans Mountain engaged Ausenco to validate the operating capacity, storage requirements and marine shipping constraints. To accomplish this we developed a dynamic simulation model of the Trans Mountain System from the originating terminal in Edmonton to the receiving refineries and Westridge Marine Terminal on the west coast. The model also captured the interaction of Westridge tankers with thousands of other vessels along the Burrard Inlet.

The sophisticated simulation model was built with Ausenco’s industry-leading Transportation Logistics Simulation (TLS) software.

The model was used to balance the segregation requirements for different types of commodities and the capacity of the existing and proposed tanks at the facilities. It also accounted for a number of marine-related variables including water depth, tidal current, visibility, and other restrictions on tanker movements through the Second Narrows.

The software is capable of streamlining thousands of complex simulations allowing what would normally take engineers months of analysis, to take place in just a few hours. These simulations verified that the proposed pipeline expansion, including the marine transportation component, will operate efficiently, and that pipeline stoppages will be minimal. The flexibility of the simulation model also enabled a wide variety of possible operating scenarios to be tested.

Project	Trans Mountain Expansion Project Simulation Model
Location	Western Canada
Business line	Process Infrastructure
Client	Trans Mountain
Timeframe	2014
Scope	Validation of operating capacity, storage requirements and shipping constraints
Services	Simulation modelling