Agenda

• Project Overview
• TERMPOL
• Marine Risk Assessment
• Q & A

“Information provided in this presentation is not meant to prejudice or modify material contained in the facilities application submitted by Trans Mountain to the National Energy Board. For details on any of the items discussed here please refer to the application, including Termpol submission material.”
Proposed Expansion

- Expand capacity to 890,000 bpd
- Customer contracts for ~700,000 bpd on 15 and 20 year terms
- Increased demand from US west coast and Asia
- Twin remaining 987 Km of pipeline
- Increase pumping capability
- Increase storage capacity
- Increase in tanker traffic - not tanker size

Current Operations

- Operating since 1953
- Capacity: 300,000 bpd
- 1150 Km between Edmonton and Burnaby
- Ferndale and Anacortes
- Transports refined products, heavy and light crude oils including dilbit
- Last expanded in 2008
Westridge Marine Terminal

Today

Proposed

Proposed

Proposed

Proposed
Marine Transportation

Current Operations
About 5 tankers /month

Future Operations
Up to 34 partially laden Aframax /month

Same Route, Products, Vessel Size
Regulatory Review

TMEP is undergoing a review by the National Energy Board; the scope of which includes the marine effects of the Project:

• The potential environmental and socio-economic effects of marine shipping activities that would result from the proposed project, including the potential effects of accidents or malfunctions that may occur.
• Potential impacts of the project on Aboriginal interests.
• Contingency planning for spills, accidents or malfunctions, during construction and operation of the project.

TMEP requested a TERMPOL review and submitted these studies as part of its NEB application:

• TERMPOL – Technical Review Process of Marine Terminal Systems and Transhipment Sites;
• A voluntary review that focuses on the marine transportation components;
• Suite of studies submitted includes a Quantitative Risk Assessment by Det Norske Veritas;
• Transport Canada chairs a committee of federal agencies to review and report on the submission;
• Termpol Review Committee report was submitted to NEB in December 2014;
• Termpol Studies and the Review Committee form part of the record for the NEB hearing.
Marine Risk Assessment

Key components:

• Review global and regional casualty data;
• Review existing marine network;
• Identify Hazards within network (two HazID sessions);
• Quantify network traffic;
• Consider current safety measures;
• Forecast marine traffic (2018, 2028);
• Quantify current and future marine incident frequency;
• Quantify current and future cargo oil spill frequency;
• Determine hypothetical spill volumes – identify credible worst case;
• Research into fate and behaviour of oil cargo (Diluted Bitumen);
• Undertake spill modeling;
• Consider consequences of CWC oil spill;
• Propose additional precautionary measures to mitigate risk.
TERMPOL Review Committee for TMEP:

- Transport Canada;
- Fisheries and Oceans Canada;
- Canadian Coast Guard;
- Environment Canada;
- Canadian Hydrographic Service;
- Pacific Pilotage Authority Canada;
- British Columbia Coast Pilots; and
- Port Metro Vancouver.

TERMPOL Report was issued in December, 2014:

The TRC does not consider the overall increase in marine traffic levels to be an issue; however, it does support additional measures to promote shared safe use of the Project’s preferred shipping route. Many of the measures go beyond regulatory requirements, and include:

- Extended use of tethered and untethered tug escort;
- Extension of the pilot disembarkation zone;
- Safety calls by laden tankers when in transit …
TERMPOL Report

- Recommendations – 17
- Findings – 31
  
- Endorses expanded use of tethered and untethered tug escort;
  
- Endorses extension of pilot disembarkation zone;
  
- Recommends enhanced situational awareness (ESA);
  - Safety calls by laden tankers;
  - Notices to industry;
  - Engagement and awareness strategy led by PPA;
  - More use of AIS and radar reflector by smaller vessels.
  
- Does not endorse introduction of Moving Exclusion Zone.
Trans Mountain Tankers

- **Refined Quantitative Risk Assessment**
  - Refined modelling conducted in response to Round 1 Information Responses
  - Terpol endorsement of ESA instead of MEZ
  - Results filed with NEB on January 2, 2015

- Oil Cargo Spill frequency (Any size) estimated as 1 in 284 years;

- 16,500 m$^3$ Oil Cargo Spill frequency (CWC) estimated as 1 in 2841 years.
Global Tanker Safety Record

- Strong safety record
- Continuous improvement

Transportation Safety Board (Canada)
Regional Marine Network
Regional Marine Network

- Aframax tankers and larger vessels safely operate in the established network;

- 15 – 20% increase in ships between 2012 and 2018 (post TMEP)

- Currently ~ 600 tankers per year;
- Post 2018 ~1100 per year (all tankers);
- Increase of ~ 85%;

- Large commercial vessels currently transit Boundary Pass / Haro Strait on average about once every 96 minutes;

- With TMEP, in 2018, average transit frequency will be about once every 78 minutes
Shipping Route Review

- Highly effective CVTS;
- TSS separates opposing traffic;
- All vessels must follow CollReg.
- Tankers form a small percentage;
- Many small vessels (e.g. fishers);
- Several Traffic Crossing Locations;

- All vessels must remain situationally aware
Robust Marine Safety Measures Exist

- Must meet TM Tanker Acceptance;
- Must be Double Hulled;
- Must enroll to SiRe Program;
- Must comply with ALL International and Local laws/regulations (IMO, Transport Canada, PMV);
- Must have WCMRC agreement;
- Must advise CG prior/upon arrival;
- Must follow CVTS, use TSS;
- Must take licensed pilot
  - > 7 years experience, PPU
  - 2 pilots for laden tankers
- Must take tug escort (PPA/PMV);
- Must have ECDIS/Radar
- Must follow Best Practices (ISGOTT)
- Must be instructed by Loading Master
Conclusions

• Existing navigation route is well established with robust traffic management system in place;

• Route choke points are identified and well managed;

• Current risk reduction measures for TMEP tankers already of global standards - enhancements will further improve the regime;

• TMEP Termpol Report issued by Transport Canada:
  “The TRC does not consider the overall increase in marine traffic levels to be an issue; however, it does support additional measures to promote shared safe use of the Project’s preferred shipping route.”

“The existing Canadian marine laws and regulations, including international frameworks, complemented by the enhanced safety measures Trans Mountain has in place or is committed to implementing and the recommendations contained within this report will provide for safer shipping in support of the proposed Project.”
For details on any of the items discussed here please refer to the studies and information submitted by Trans Mountain to the Termpol Review Committee.