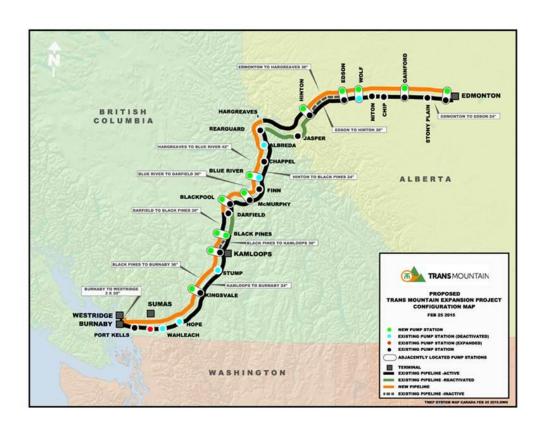


Trans Mountain Expansion Project Overview



Proposed Expansion Project

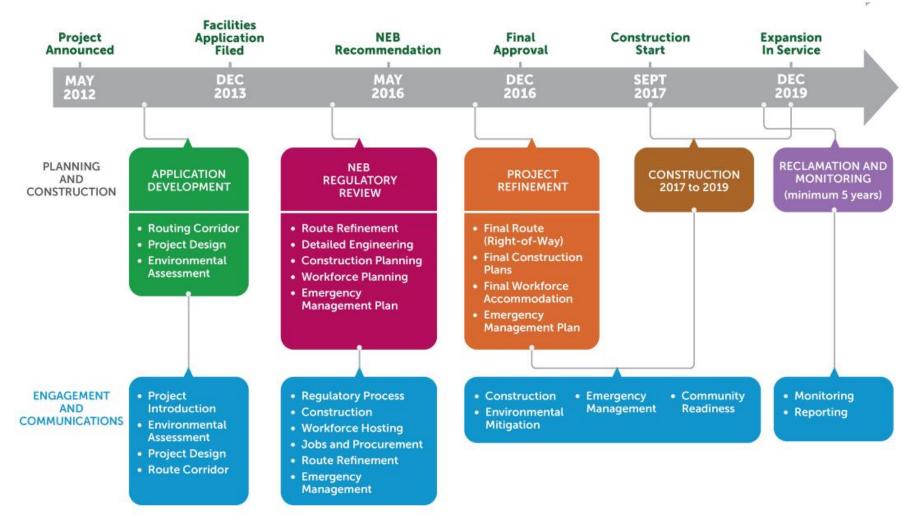




- \$6.8-billion capital cost
- Expand capacity to 890,000 bpd
- Project scope
- – 980 kms new pipe
- 12 new pump stations
- 19 new tanks
- 3 new tanker berths
- Increase in tanker traffic not tanker size
- Westridge and Burnaby Terminals construction
- Must meet 157 NEB conditions

Trans Mountain Expansion Schedule





This schedule is subject to change based on detailed construction planning and regulatory timelines.









Burnaby Terminal today



- No new land required expansion within existing property
- Proposed total of 26 tanks with secondary containment systems
- Fire protection and emergency response equipment
- New pipelines and piping
- Expanded manifold and metering equipment

Proposed Burnaby Mountain Tunnel



Westridge Delivery Pipeline

- Expansion requires two new 30" pipelines between Westridge and Burnaby terminals to load vessels
- Avoids construction through residential neighbourhoods
- A result of input and feedback received
- Tunnel portals on existing Trans Mountain facilities will reduce construction impact to neighbours
- Existing pipeline may be moved to tunnel, subject to separate regulatory application
- Alternate corridor through city streets remains until approval received and detailed design and engineering completed
 November 24, 2016











Detailed Design, Construction

Plans and Schedule: Burnaby Terminal

Burnaby Terminal Construction Schedule*





September 2017
Start Construction

September 2017 – December 2017

- Install environmental controls
- Complete site access roads and office laydown
- Install proposed Gaglardi Way access
- Relocate existing utility conflicts within site footprint
- Start east tank area excavation
- Relocate existing Silver and Eagle Creek into Culverts

January 2018 – December 2018

- Bulk excavation and shoring of tank areas
- Build tank foundations
- Start tank construction
- Install pipe headers, tank manifolds, electrical upgrades (includes pile driving)

January 2019 – December 2019

- Complete tank construction
- Complete piping & electrical scope
- Tie-in piping to Burnaby Mountain tunnel
- Final commissioning of new construction
- Final grading and hydro seeding within site

January 2020 – March 2020

- Final Grading and Hydro Seeding within Site
- Demob from Site

September 2017 - March 2018

 Tree removals within appropriate migratory bird windows

*Subject to receipt of all approvals



Construction: Anticipated Work Hours



- Monday to Friday, 7 am 6 pm
- Saturday work possible, 9 am 6pm
- Limited night work, reduced noise

Burnaby Terminal: Tank Colour







Burnaby Terminal



Sumas Terminal

- Industry standard: white tanks reflect colour and reduce potential odours
- Burnaby tanks are painted green to blend in with the mountain setting
- Odour mitigation manages odours for existing operations, all new tanks will have odour abatement installed
- Proposed tank colour for Burnaby Terminal is green

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Detailed Design, Construction Plans and Schedule: Burnaby Mountain Tunnel



Scope



- Excavate and support 2.6 km of 4-m diameter tunnel
- Excavation will be via Tunnel Boring Machine (TBM)
- Boring direction: Westridge to Burnaby Terminal
- Ground support will be precast concrete
- Portal excavation and support for launch and reception
- Install pipelines
- Backfill tunnel with grout





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Images for illustrative purposes only

Tunnel Construction: Hours of Work



- Five days per week
- Three shifts per day
 - Two production shifts
 - One Maintenance shifts
- Weekend work
 - Maintenance and/or extra production

Tunnel Construction Schedule*





September 2017 – December 2017

Procurement

- TBM Procurement
- Precast Concrete Segmental Lining Procurement

February 2018 – February 2019

• Tunnel excavation and support

August 2019 -October 2019

· Backfill tunnel and demob

February 2019 – October 2019

• Install and test pipelines

September 2017 – February 2018

Westridge Tunnel Portal Development

- Mobilize to site and fencing
- Tree removal
- Secant pile installation
- · Portal excavation and grading

*Subject to receipt of all approvals

Complaints Management Process: Principles



- Goals:
 - Address stakeholder concerns in a timely manner
 - Meet regulatory obligations
- Objectives and principles:
 - Provide multiple communication channels to address stakeholder communication needs
 - Promote process and communication channels through signage, print, online and social media as well as paid and unpaid media
 - Email, phone and voicemail access
 - Maintain a clear and discrete process for all emergency concerns and complaints
 - Provide contractors with process information
 - Ensure all inquiries and complaints receive timely responses
 - Track and report on all inquiries and complaints
 - Emergency contact availability at all times

