

Metro North Transmission Project Update

October 2016

Project Update

Earlier in 2016, we let you know we were doing more technical work and consultation on Alternative 2 (see our May 2016 update). After completing that work and speaking with impacted property owners and other important stakeholders, we are moving forward with Alternative 2 as the leading alternative for the Metro North Transmission Project.

When compared to the other alternatives studied, Alternative 2 has:

- Fewer overall residents and property owners potentially impacted by construction;
- Lower seismic and construction risks; and
- Provides the most capacity for the investment.

But we still have more work to do. For example, our team needs to do additional environmental and engineering field studies, and further consultation will be ongoing. Ultimately, a Certificate of Public Convenience and Necessity (CPCN) from the BC Utilities Commission is needed before we can start building the line.

Over the coming months, we'll be doing survey and field work to inform access and tree removal requirements for the overhead portion of the line. Preliminary environmental studies are complete and additional fieldwork will get underway in 2017.

Additional geotechnical drilling is planned in Burnaby along Barnet Highway and on Second Ave near the Horne Payne Substation. This will help ensure the stability of the underground route along Barnet Highway in the event of an earthquake, and help us design the route underneath Highway 1.

In Vancouver, we'll be doing some geotechnical drilling to help us determine a reliable route along city streets, including across the Grandview Cut, for the underground cable. Preliminary environmental studies are complete and additional fieldwork will get underway in 2017.

Metro North Transmission Project to Meet Demand

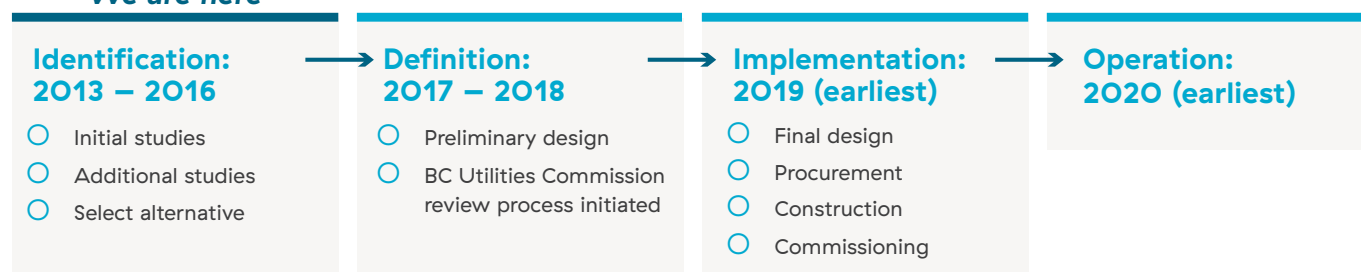
An additional transmission line between Coquitlam and Vancouver is needed to address the growing demand for electricity resulting from the region's increasing population.

We're working to ensure the line is in place as early as 2020¹ to improve the Metro Vancouver transmission network by increasing electrical transmission capacity and strengthening the reliability of the network.

Our current transmission system is at its limit and without these improvements the network faces reduced service reliability. Under certain conditions this reduced reliability could mean outages for about 30,000 homes and businesses and service interruption for about 90,000 homes and businesses.

¹ Required in service date is influenced by load forecast, which is monitored annually.

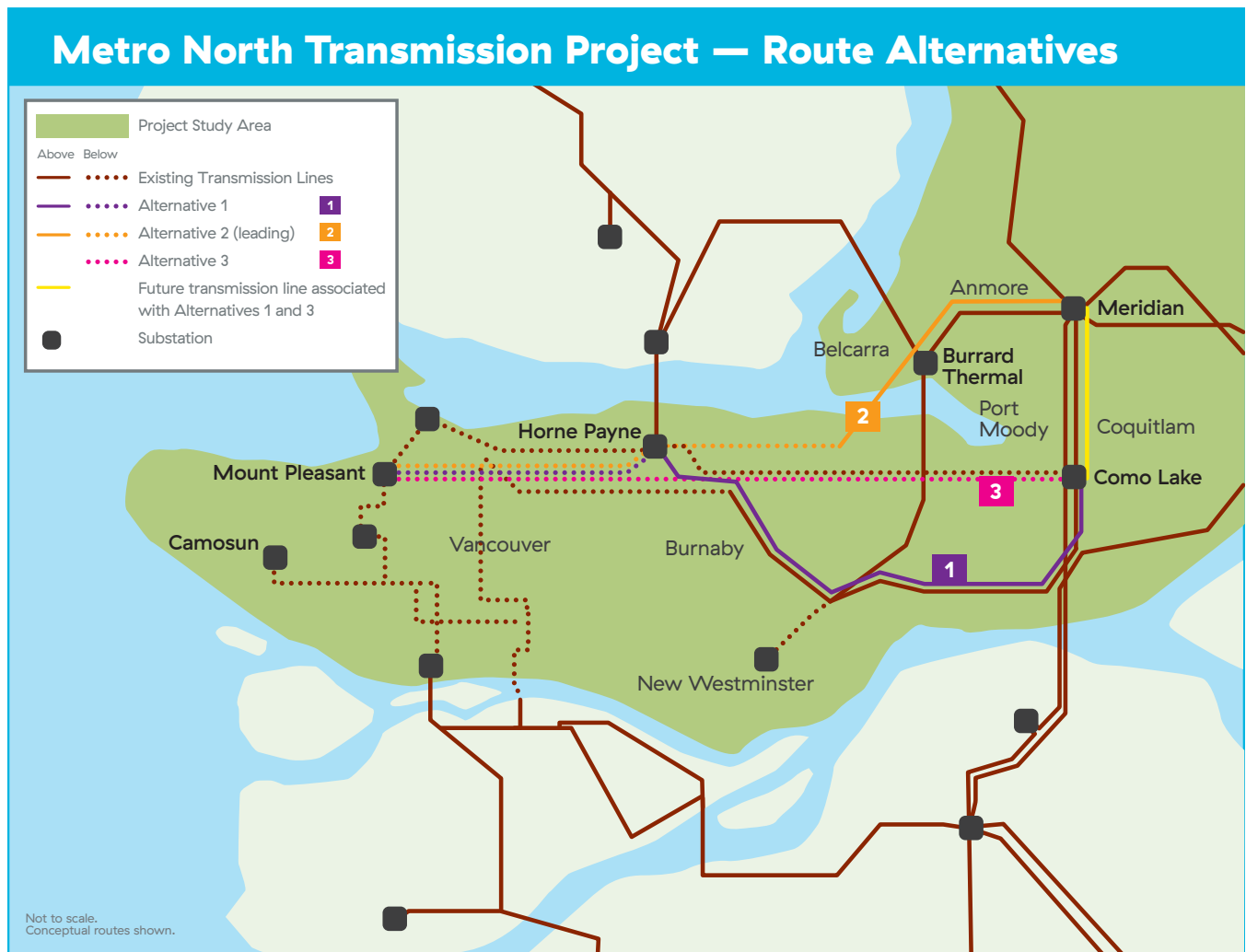
We are here



Alternative 2 overview

We anticipate this improvement will include:

- About 10 km of overhead lines and 20 km of underground cables from Meridian Substation in Coquitlam through Anmore, Port Moody and Burnaby to the Mount Pleasant Substation in Vancouver.
- Replacement of existing overhead lines in Anmore and Port Moody, resulting in fewer, taller poles than existing in these areas.
- An overhead crossing of Burrard Inlet, within the current right-of-way.
- A new underground route through Burnaby and Vancouver.



Here's what we've been working on:

Coquitlam

We've identified a route within the existing right-of-way from Meridian Substation that safely crosses an existing 500 kilovolt line. More work is still needed to finalize the design and placement of the structures.

Some tree removal will also be required to ensure the safety and reliability of the additional line. Our priority is to minimize the amount of clearing required.



Alternative 2 would run from the Meridian Substation (pictured), in Coquitlam, to the Mount Pleasant Substation in Vancouver.

Anmore

This spring, we were out talking to property owners and residents to get their feedback on the proposed line. Based on community feedback, we are taking a closer look at the monopole design and have reduced the height of the poles by four metres. A visual impact assessment is underway and we will hire a landscape architect to develop a landscape and restoration plan for properties that are receiving new infrastructure.

Some residents also asked why we can't build the additional line underground through Anmore. We examined this and determined that building the transmission line underground is not feasible due to:

- **Significant technical challenges within the existing right-of-way and the need to acquire underground rights:**
 - It is difficult to excavate a trench in uneven, rocky terrain along the entire existing right-of-way, especially at the west end where the topography is very steep.
 - Extensive blasting would be required for new cable and casing.
 - The crossing of the creek at the west end of the right-of-way (west of Fern Drive) would require horizontal directional drilling.
 - The cable would require terminal stations and manholes (12 metres long x three metres wide x three metres deep) within the right-of-way, potentially on private land.
- **Technical challenges along city streets:**
 - The cable length would be about four kilometres to replace three kilometres of overhead line.
 - We would need to build a large termination station just east of Legget Drive to transition from an overhead line to an underground cable.
 - We would also have to build a second large termination station so the cable can transition to an overhead line and travel along this right-of-way to cross Burrard Inlet.

○ Increased costs:

- It would cost about \$35 million* to build an underground cable in city streets versus about \$9 million* to overhead the line through Anmore.

It would be difficult for us to justify the significant cost increase to underground the line when there is sufficient space in an existing-right-of-way for an overhead line. Further, even if the additional line was built underground, the three transmission lines that exist today would still remain overhead.

Electric and Magnetic Fields

Electrical equipment and appliances produce electric and magnetic fields (EMF). We recognize that there's public concern about EMF and possible health effects. The magnetic field levels from our power lines are at levels far below the recognized guideline of 2,000 mG, endorsed by Health Canada and the World Health Organization. We're guided specifically by the findings of Health Canada and the World Health Organization that EMF from power lines doesn't cause any known health effects. If you would like to learn more about EMF visit our website at bchydro.com/emf.

For the new overhead transmission line through Anmore, we're arranging the order of the lines to result in lower overall magnetic fields at the north edge of the right-of-way. This allows some magnetic field emissions from the wires to cancel each other, also known as transposed phasing. For more information on this check out the EMF profiles report in the Information Centre or our project website at bchydro.com/mnt.

* Costing is based on a conceptual level estimate (+100/-35 percent)

Port Moody/Burrard Inlet Crossing

Through Port Moody the alignment would generally be within our existing right-of-way in-and-adjacent to Belcarra Regional Park.

We've arrived at a route for the new 230 kilovolt line south of Sasamat Lake. We'll be consolidating three existing 69 kilovolt lines with the additional line onto fewer but taller poles. We still need to design the towers and determine their exact placement within the right-of-way.

This route allows us to avoid a third aerial crossing of Burrard Inlet.



Existing Burrard Inlet crossing,
looking south

Burnaby

The additional 230 kilovolt line will cross Burrard Inlet from Admiralty Point land (at Burns Point) in Port Moody to BC Hydro-owned land south of Barnet Highway. We'll take a look at tree removal requirements for this land and do some environmental field studies to arrive at mitigation options.

We've also been working with city staff on some routing options for the underground cable. Over the coming months we'll continue to explore these options.

Vancouver (Mount Pleasant Substation)

From the Horne Payne Substation in Burnaby (Lougheed and Gilmore) an additional 230 kilovolt underground cable will go to the Mount Pleasant Substation (6th and Alberta), using city streets. We will continue to work with city staff as we determine the exact routing for the cable, including the crossing of the Grandview Cut.

Engaging with Communities

Since July 2013, we have had more than 60 meetings with local and regional governments, transportation authorities, community groups and others to discuss the need for transmission improvements and the alternatives. At the same time, engagement has also been ongoing with First Nations. Information about previous engagement can be found on bchydro.com/mnt.

We will continue working with local and regional governments, including Burnaby, Anmore, Belcarra, Port Moody, Coquitlam, Vancouver and Metro Vancouver, property owners, residents, stakeholders and the public to provide opportunities for you to receive up-to-date information, as well as provide your feedback, ask questions or express interests or concerns.

More information will be available on bchydro.com/mnt and we encourage you to email us at stakeholderengagement@bchydro.com to sign-up for updates.

Contact information

604 623 4472
stakeholderengagement@bchydro.com
bchydro.com/mnt

BC Hydro Stakeholder Engagement
Metro North Transmission Study
15th floor, 333 Dunsmuir Street
Vancouver, BC, V6B 5R3

 **BC Hydro**
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