Victoria to Esquimalt Cable Replacement Project

Virtual Community Open House #2

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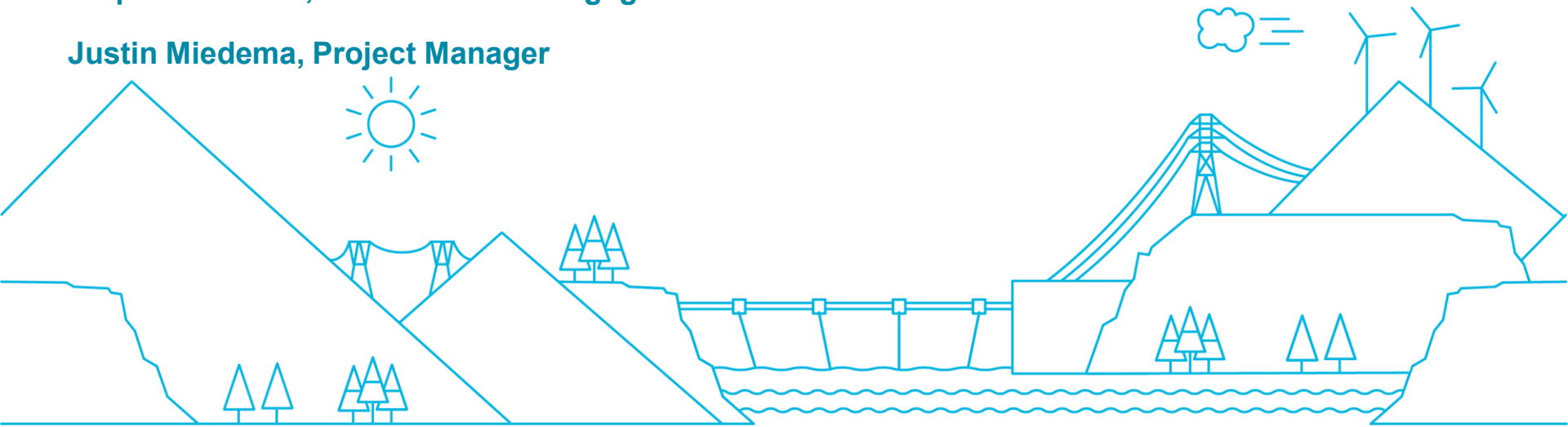

Date: January 30, 2025

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Virtual meeting etiquette

- We are not recording this session, and kindly ask that others do not record
- The group will be placed on mute during the presentation
- Please put your questions in the chat box
- After the presentation, the group will be unmuted. Please mute your microphone when not speaking
- Please don’t use a virtual background with video to save bandwidth
- Share air space so that everyone can participate
- Challenge ideas, not people

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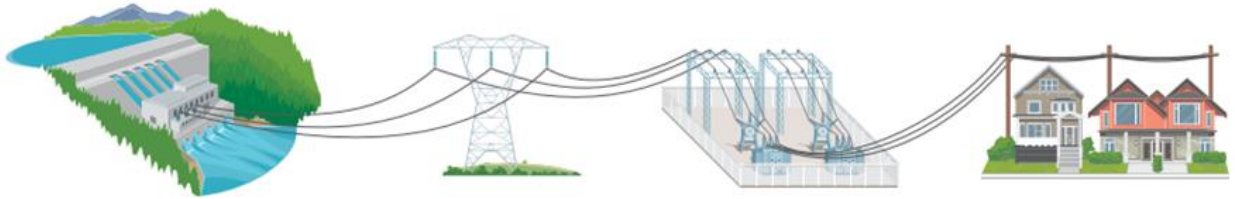
Agenda

- How we deliver electricity to Greater Victoria customers
- Project background
- Project progress since February 2024 virtual open house
  - Gorge Waterway studies, design and planning
- Project construction schedule
  - Includes old cable removal
- First Nation consultation and community engagement
- Questions and answers

Background on how we deliver electricity to Greater Victoria customers

Delivering electricity to our customers

Our electricity system



Generation

Electricity is generated by BC Hydro and independent power producers.

Transmission

Electricity is moved from where it's produced to where it's used.

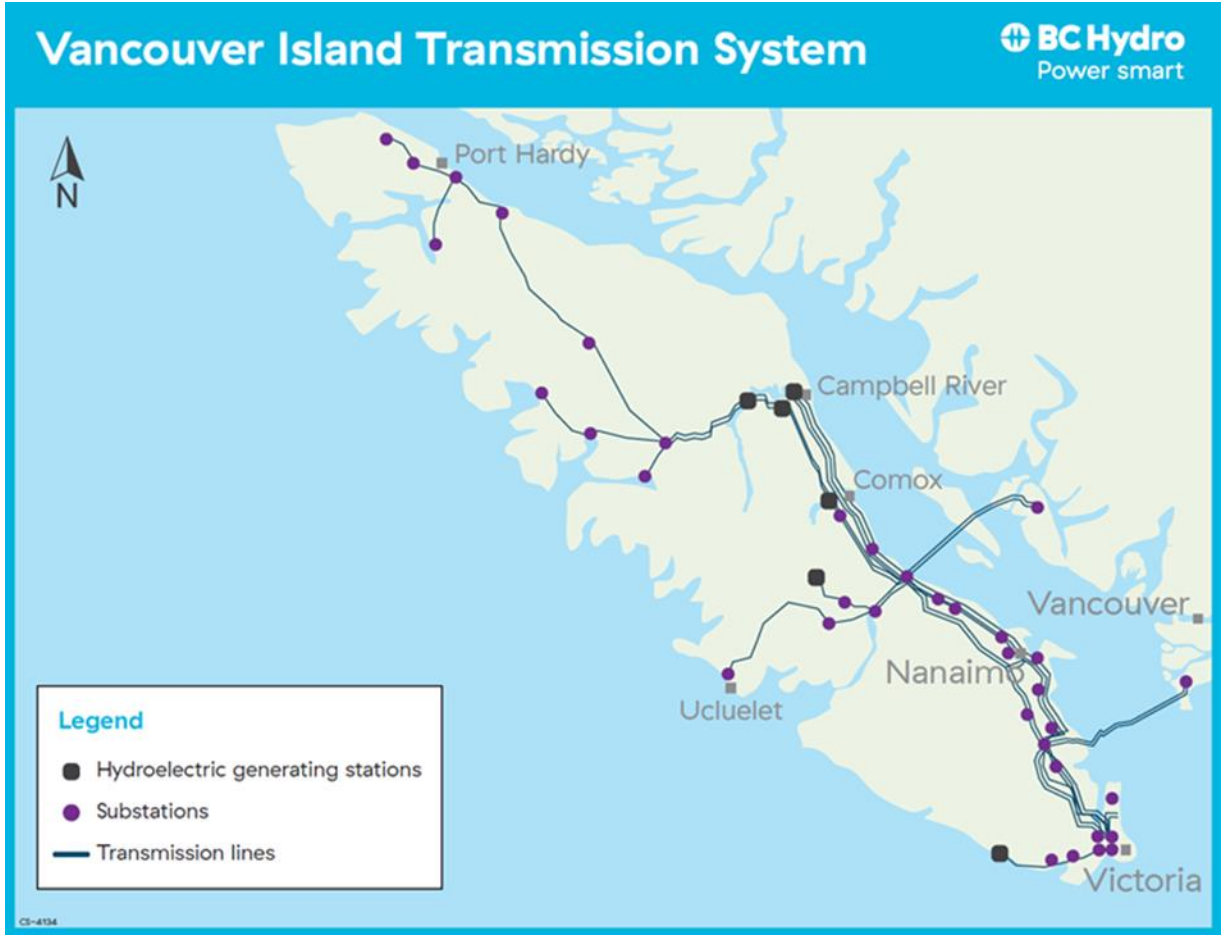
Substations

Voltage is reduced at substations to provide power suitable for use in your home or business.

Distribution

Low voltage electricity is provided to neighbourhoods and businesses.

Background map



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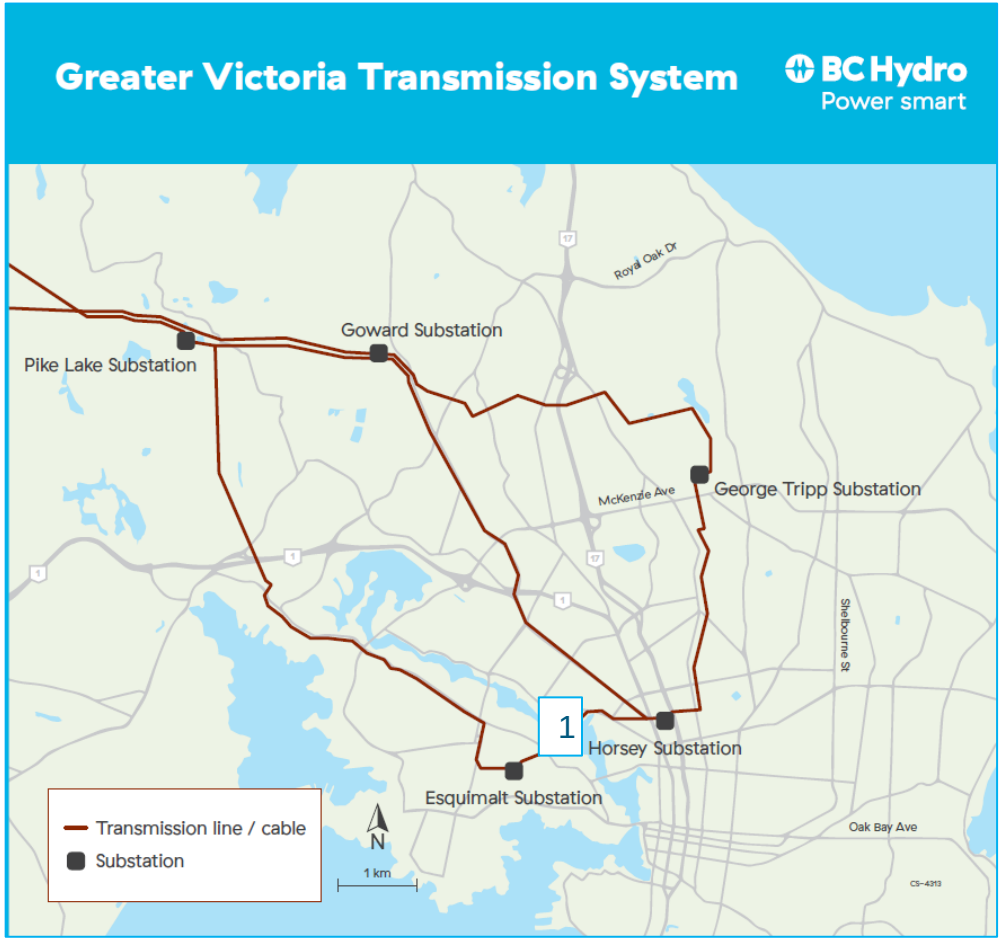
Project area



1: Victoria to Esquimalt Cable Replacement Project

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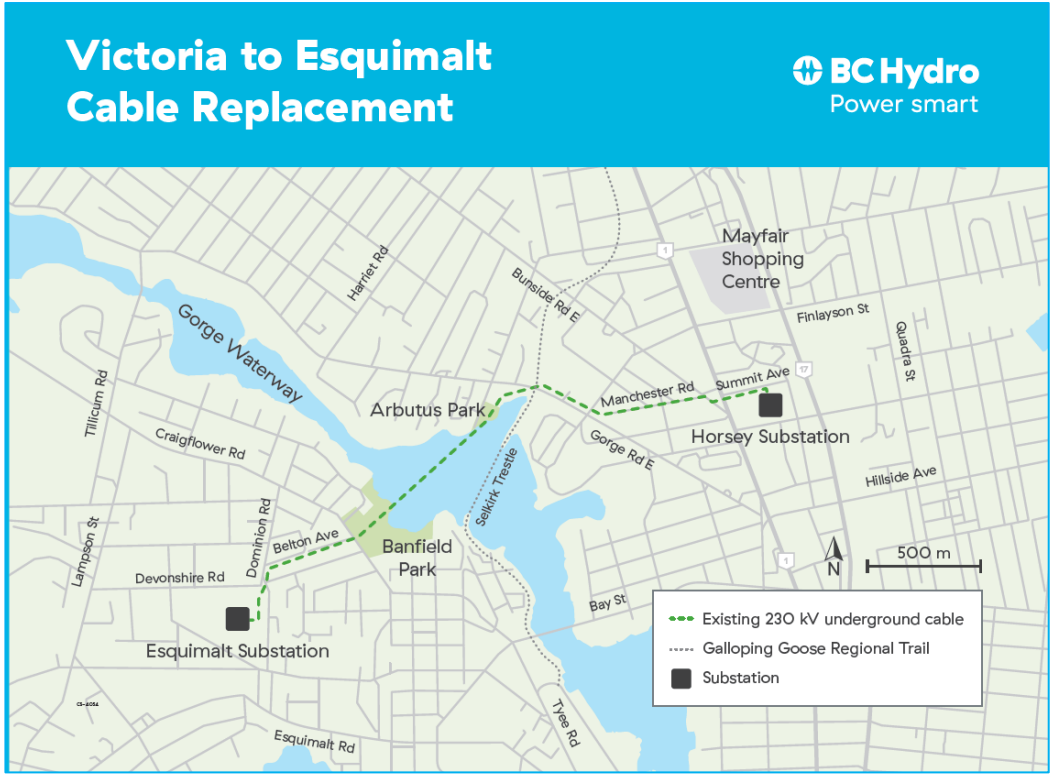
Project background and overview

Project overview

- We are committed to delivering safe and reliable electricity to our customers across the province.
- During an August 2023 cable repair beside the Gorge Waterway, we found widespread corrosion with the transmission cables that connect Victoria and Esquimalt.
- An emergency project was then initiated in 2023 to replace the 230 kilovolt, direct buried, mineral oil-filled transmission cables.



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Project benefits

The project is an emergency project to maintain transmission system reliability. There are also other benefits:

- Capacity
- Seismic Resiliency
- Environment

Cross sections of a polyethylene cable (left) and an oil-filled cable (right).

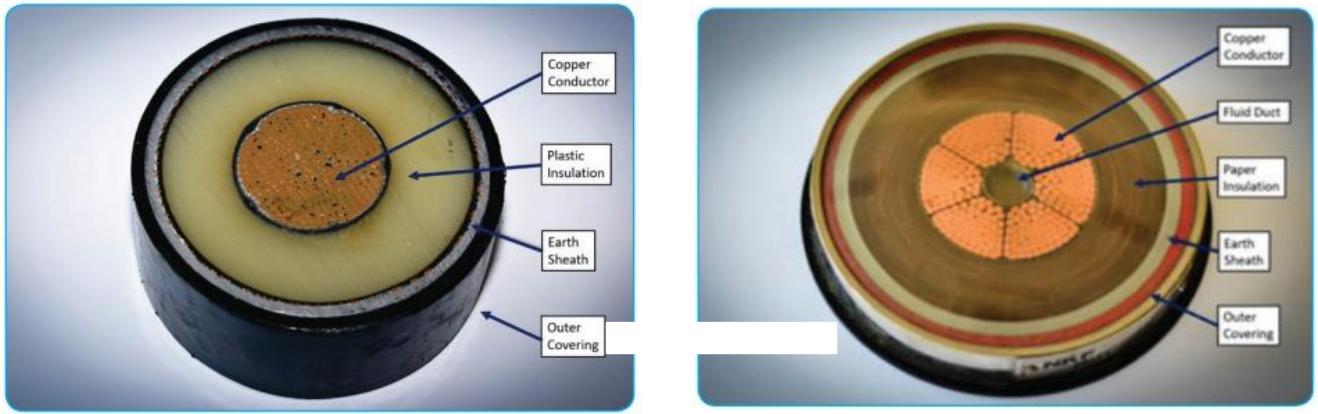

Figure 4 Modern 220 kV XLPE Plastic Cable

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Existing cable routing – Horsey Substation and Summit Ave

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Existing cable routing – Manchester Road

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Existing cable routing – Gorge Road

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Existing cable routing – Arbutus Park and Gorge Waterway

Existing cable routing – Arbutus Park and Gorge Waterway

Existing cable routing – Gorge Waterway and Banfield Park

16 Underwater cable crossing

Land buried cable

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Existing cable routing – Banfield Park

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Existing cable routing – Belton Avenue

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Existing cable routing – Dominion Road and Esquimalt Substation

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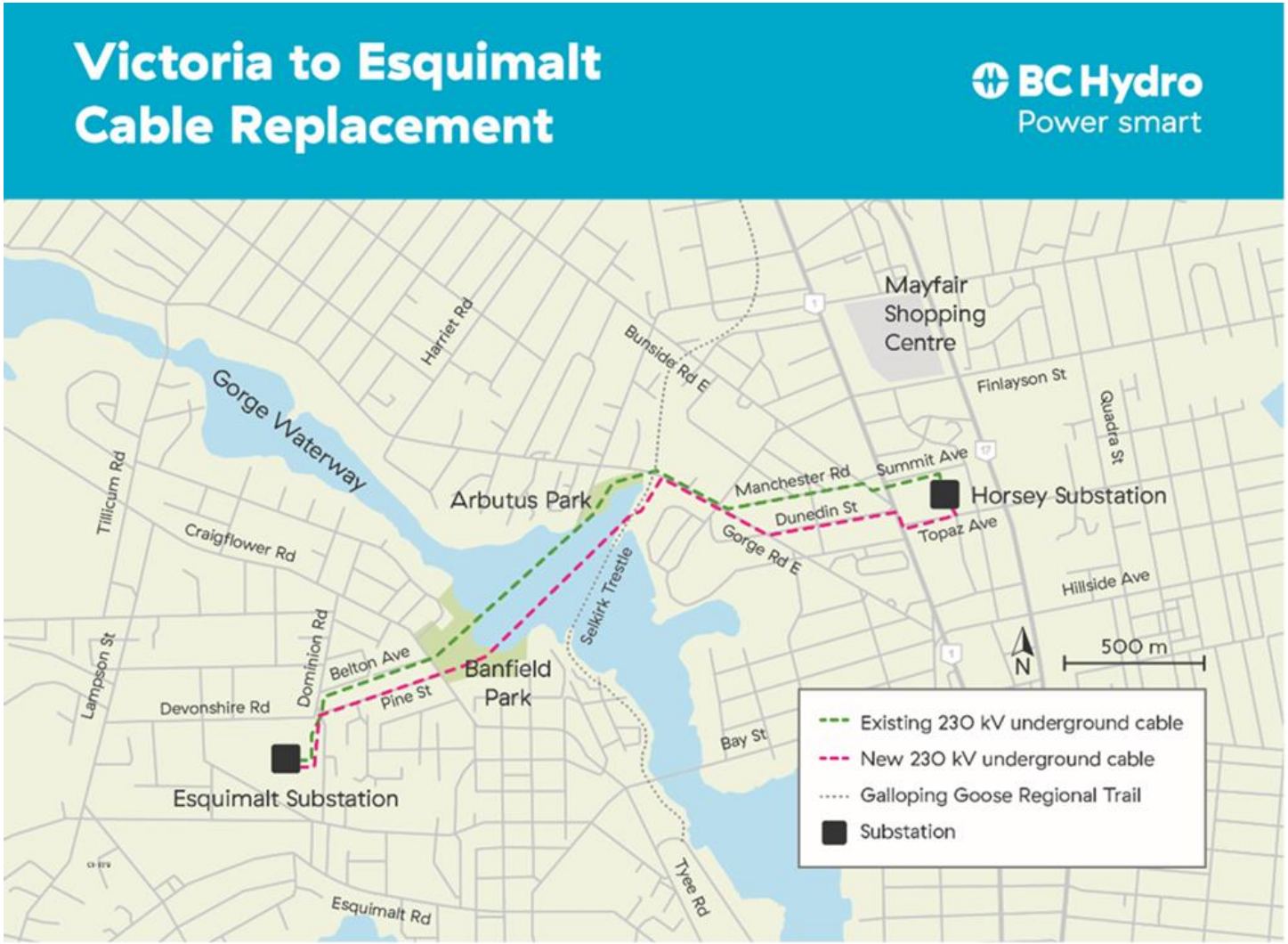
How the project has advanced since the February 2024 virtual open house



We have had ongoing coordination meetings with:

- City of Victoria
- Capital Regional District
- Ministry of Transportation and Transit

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Cable route considerations along city streets and under the Gorge Waterway

- The new cable route has some deviations from the existing cable route because of the following considerations:
  - The existing cable needs to continue to operate until the replacement is in place.
  - Limited number of cable bends to maintain its electricity capacity rating.
  - Limited space under city streets due to existing underground utilities.
    - Example: shifted cable route to Pine Street and Dunedin Street. Room to place duct bank and a shorter and straighter route.
  - For trees, natural rock outcrops, and other environmental considerations within Viaduct Park, Banfield Park, and the Gorge Waterway .

Design and construction

- Developed the route and the 65% design of the duct bank and substation work.
- We are at 35% design for the Gorge Waterway section.
- Starting construction in February 2025 at the Esquimalt Substation and will work eastward.

Examples of cable construction work and placing cable.

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Project duct bank construction

Images for illustration only – this work will look different in this specific utility corridor.

Remove the road surface and dig a trench about 2.5 metres wide and 2.5 metres deep. (Exception is Pine Street.)

Create a form to hold the concrete in the right shape while it sets and add PVC ducts that will hold the cables.

Place in concrete, wait for it to set, then remove the form.

Refill the trench and repair the roadway.

Cables are placed once the duct bank is in place.

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New cable route – Pine Street

Worked closely with City of Victoria on tree protection. This resulted in:

- Lower construction height clearance by having a shallower excavation (1.2 metre depth)
- Test trenching along road in six locations confirmed negligible tree roots or tree impacts.

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New cable route – Banfield Park

- There will be trail detours during construction.
- Remediation will occur post-construction

New cable route

Cable vault for access to reel in cable

Construction access road for vault

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New cable route – Banfield Park

- We will not disturb the community garden.

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New cable route – Banfield Park

- There will be no long-term impact to the playground area.
- There may be some short-term construction-related impacts such as construction fencing and playground user access from the north gate.

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New cable route – Banfield Park

Vault location

- Construction will include cranes, trucks, excavators, etc.
- There will be trail detours as we route through Banfield Park.
- We will remediate the park area impacted by the construction. This will be done in coordination with the City of Victoria.
- The trail area shown will shift slightly northward once work is complete so the vault access lid is not in the middle of the trail.

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New cable route – Banfield Park

- We modified the route to avoid healthier fir removals and avoid a rock outcrop along the shoreline.
- Two fir trees will be removed.

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New Cable Route – Banfield Park

- The route is to the south of the small rock outcrop on the bottom left that's used by the public.

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New cable route – Galloping Goose Trail and Viaduct Park

- We anticipate no Galloping Goose Trail detour when building the vault and duct bank up to Gorge Road.
- A detour is needed within Viaduct Park when we construct the duct bank from the vault to the water.
- There will be some tree removals.
- Remediation work after construction.

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Galloping Goose Trail

- We will work to minimize trail use impacts to pedestrians and cyclists.
- Detours will be required through Viaduct Park and/or flaggers during construction.
- A trail management plan will be developed.

New cable route – Viaduct Park

- There will be a one-two month trail closure and detour during construction.
- The slope will be re-graded so the trail is accessible for all ages and abilities (request from CRD and City of Victoria).

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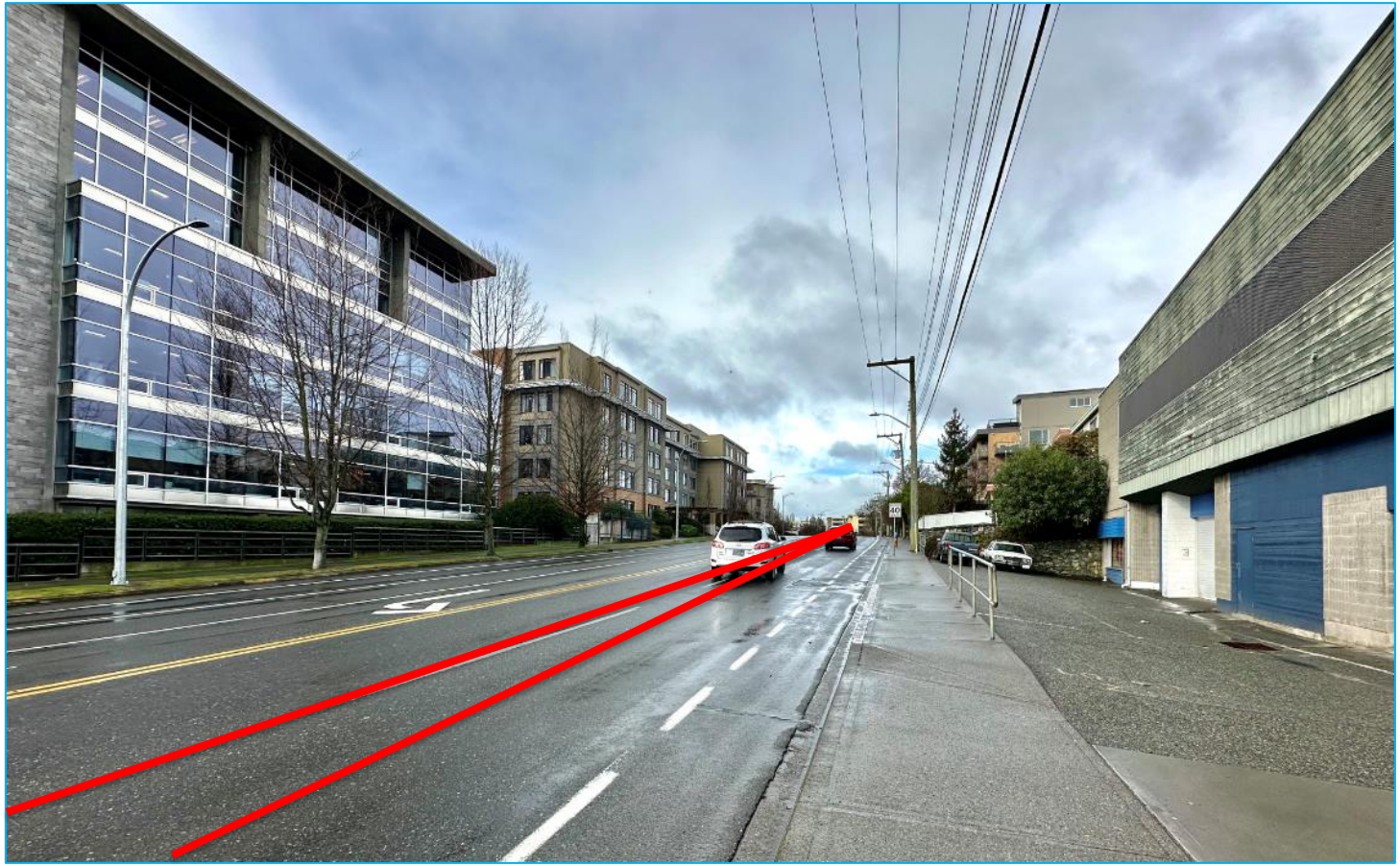
New cable route – Gorge Road



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New cable route – Dunedin Street

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Gorge Waterway studies, design and planning

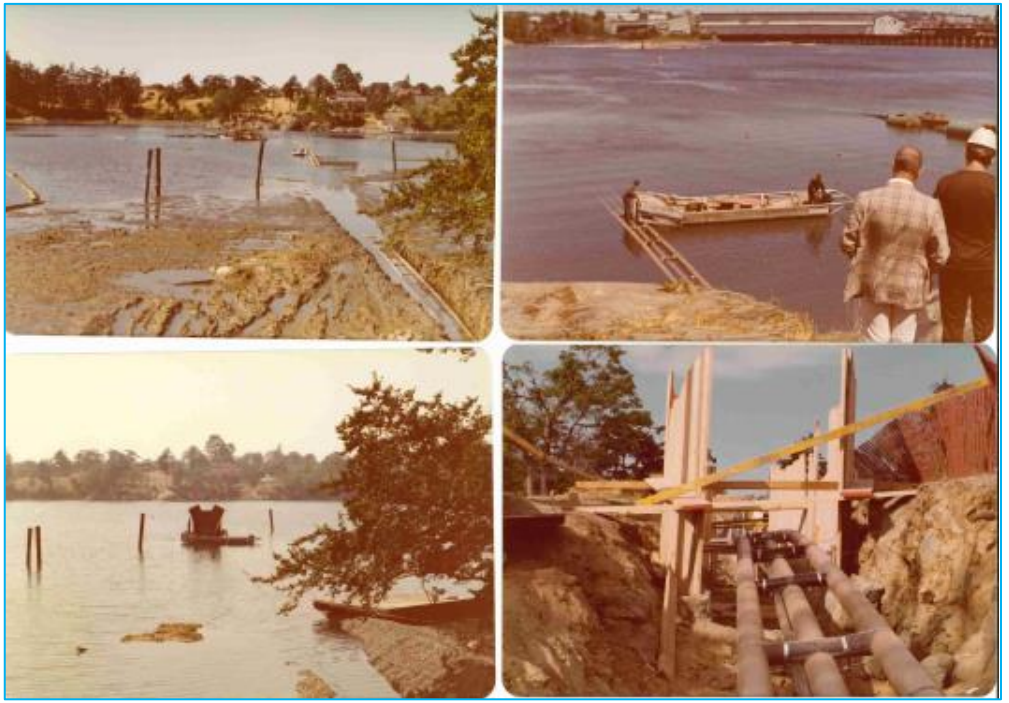
Best cable route under the Gorge Waterway?

Best way to place the new cable under the Gorge Waterway?

Horizontal Directional Drilling

Shallow Burial

Original cable construction within Gorge Waterway. In-service 1980.



Gorge Waterway studies: eelgrass survey

Eelgrass (green outline)
Eelgrass patches (green dots)

Photo of the May 2024 dive survey.

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Gorge Waterway studies: marine sediment trench test

We did investigative work in September 2024 in the Gorge Waterway to better understand subsurface conditions.

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Gorge Waterway Studies: marine geotechnical investigation

December 2024

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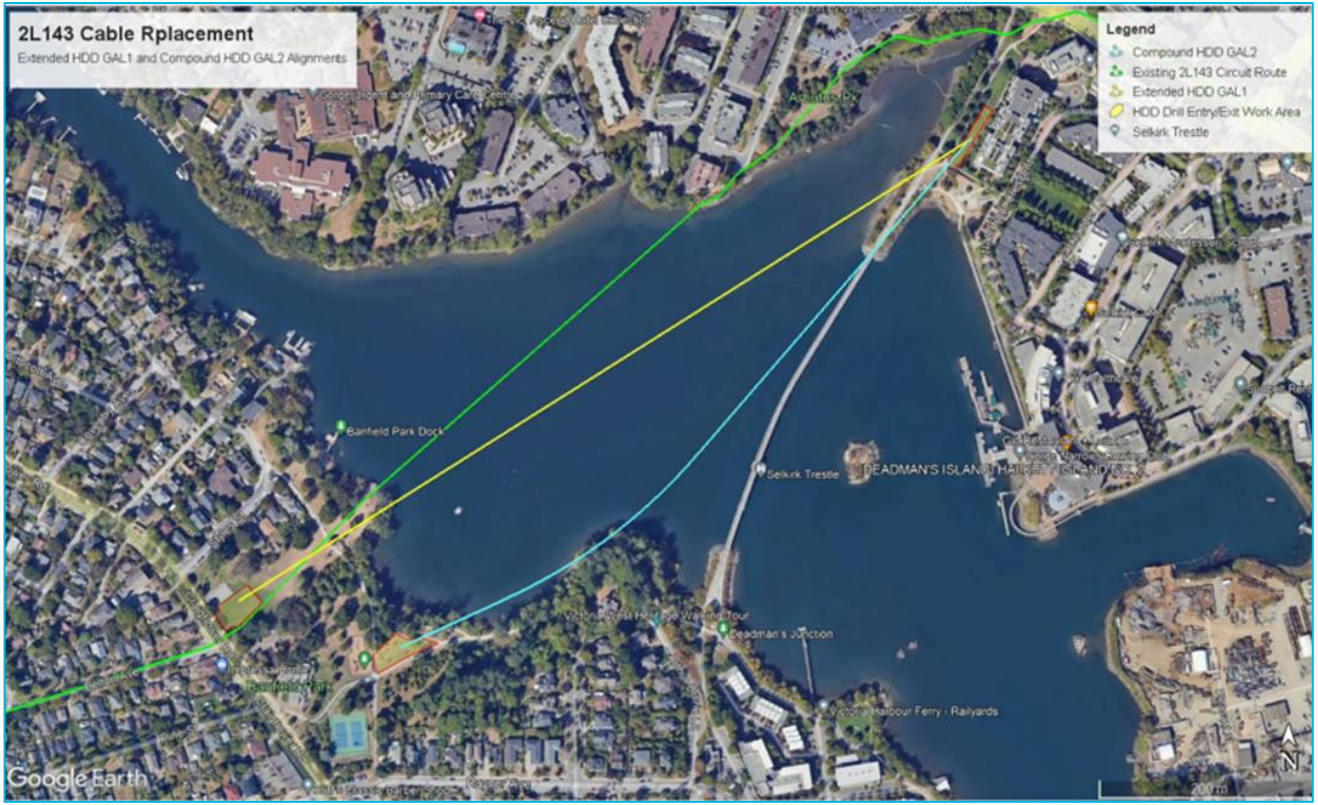
Horizontal directional drilling construction: not selected



- Extends the schedule about one year.
- Large construction area footprint in Banfield Park and Viaduct Park.
- Water management challenges.
- Noisy.
- Longer site presence.
- Rock deeper than anticipated – greater than 30 metres under the sea floor.

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The Gorge Waterway new cable route

The new route under the Gorge Waterway considers:

- Existing cable separation
- Feedback from the City of Victoria
- Information from field studies

Fisheries Act Authorization – submitted by April 2025 and anticipated by fall 2025.

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Shallow burial construction: selected

Photo example of barge and power line cable work.

- Meets target in-service date of summer 2026.
- Excavation about 2.5 metres wide and 1.2 metres deep and place duct bank.
- Found a route away from the main eelgrass bed.
- Found a route that avoids rock outcrops along shoreline.
- Construction work not stationary; moves along the route as the work is done (less of a nuisance to people).

Coming up:
land geotechnical drilling investigation

Drilling and test trench work is planned in early February to determine sediment and rock profile within city streets and within parks beside the Gorge Waterway. Traffic management and pedestrian management plans will be in place.

Environmental considerations

- Environmental overview assessments still process for the project.
- We have been working on a contaminated sites review to inform soil and groundwater management during construction.
- Further terrestrial and aquatic detailed studies will be required around the Gorge Waterway, and for possible removal of vegetation.
- Fisheries Act Authorization needs to be obtained.
- Working with First Nations on archaeology requirements.

We installed containment booms to capture the mineral oil leaks after past spills. The old cables will be removed beginning as early as fall 2026 and continuing in 2027.

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Environment considerations

- An Environmental Management Plan will be prepared to protect the environment during construction.
- We will monitor environmental compliance during construction.

Project construction schedule

Project – construction considerations

Considerations include:

- Traffic Management Plan
  - Safety
  - Construction equipment
- Timing (Douglas Street done at night)
- Location (generally moving eastward)
- Coordination with local government capital projects
  - Capital Regional District and City of Victoria

Planning the cable route – construction timing

Esquimalt Substation and Horsey Substation work February 2025 to July 2026.

Dominion Rd, Pine St and Banfield Park work March to June 2025

Gorge Waterway shallow burial December 2025 to February 2026 – fisheries work window

Starting at Viaduct Park and moving eastward, Gorge Road, Dunedin St, Douglas St and Topaz Ave July to November 2025

Removal of old cable once new cable is in-service

- New cable is scheduled to be in-service in summer 2026.
- We may begin work to remove the old cable from the Horsey Substation to the Esquimalt Substation as early as fall 2026.
- The removal work includes any remediation of mineral oil.
- City of Victoria and community interest in the remediation and possible future use of Arbutus Park (photo on right).

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First Nation consultations and community engagement

First Nations

- The project is located within the territories of Cowichan Tribes, Esquimalt Nation, Halalt First Nation, Lake Cowichan First Nation, Lyackson First Nation, Pauquachin First Nation, Penelakut Tribe, Songhees Nation, Stz'uminus First Nation, Tsartlip First Nation, Tsawout First Nation, and Tseycum First Nation.

- We are engaging with these communities and will continue to work with them throughout the project.

- We have heard from First Nations of the importance of protecting the marine environment and heritage/archaeological resources and is working with First Nations to mitigate these concerns.

Ongoing community engagement

- We continue to engage with stakeholders and residents.
- Media coverage to keep the wider community informed.
- Virtual open houses:
  - February 2024
  - January 2025
  - Third virtual open house likely early fall 2025.

Victoria News
January 23, 2025

BC Hydro set to begin work on cable replacement for Victoria, Esquimalt

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Thank you and next steps

- Thanks for joining us today to hear more about this project and share your feedback.

- Please follow our website, **bchydro.com/victoriatoesquimalt** to keep up-to-date with project information, including future open houses.
  - We will be posting bi-monthly construction reports.

- Email questions and comments, or if you would like to be added to the project e-distribution list, to Stephen at **steve.watson@bchydro.com**.

Questions and answers