

Newell Substation Upgrade

Open House

January 30, 2025

Virtual Meeting Etiquette



Welcome!

- Use the 'raise your hand' button for comments/questions
- 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
- We aren't recording this session, and kindly ask that others do not record

Agenda

- Introductions
- Power Lingo
- Newell Substation Overview
- Project Overview
- Project Activities
- Schedule
- Environmental Studies
- Areas of Interest
- Discussion

Power Lingo

Substation

- Converts electricity from the high-voltage “transmission system” to the local “distribution system” which powers your homes and businesses

Transformer

- Lowers voltages so that power can be distributed safely to your homes and businesses through lower-voltage power lines

Feeders

- Connect the substation to the lower-voltage power lines that provide electricity to the community

Ductbank

- Used to protect underground electrical wires
- Wires are placed in PVC tubes which are then encased in concrete

Disconnect switches

- Safety device used with electrical equipment
- Cuts off electricity so that a circuit is safe to be worked on
- Disconnects circuits from the power supply in the event of an emergency

Newell Substation Overview

- Located at the southwest corner of Kingsway and Griffiths Drive in Burnaby
- Supplies over 59,000 homes and business as well as other substations
- Built in stages from 1946 to 1955
- Operating reliably for almost 70 years but key equipment is now nearing end of life
- Key part of our electrification initiative



Project Overview

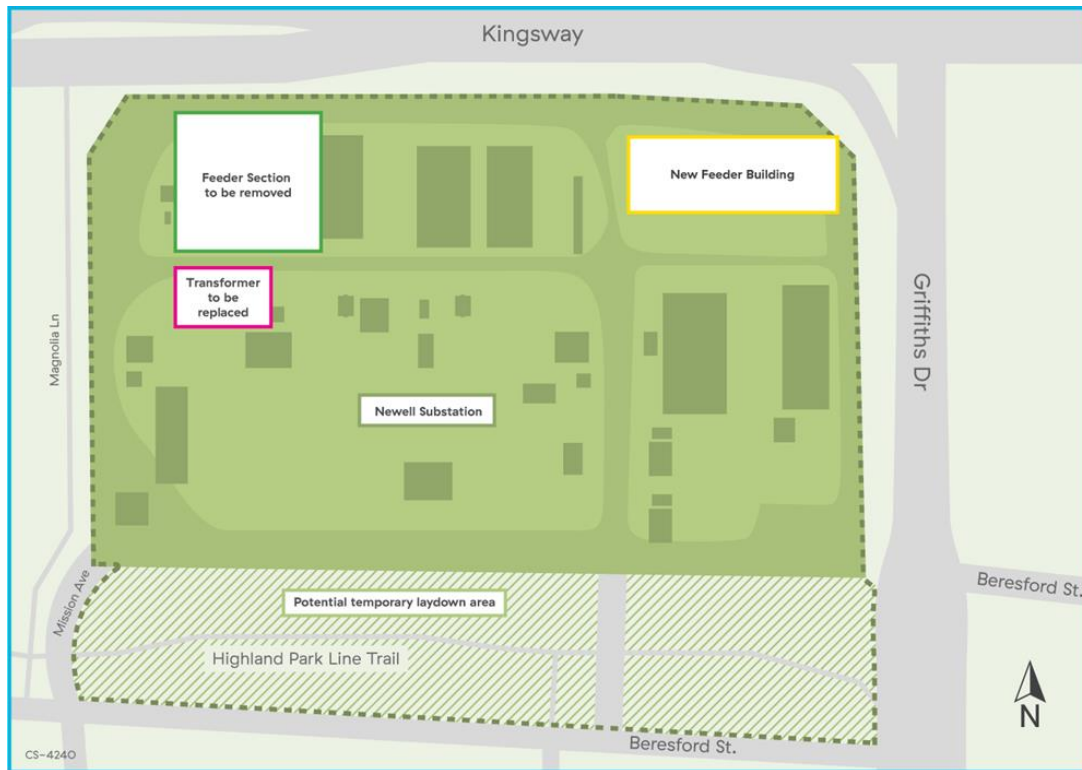
We're upgrading Newell Substation to improve reliability, address safety risks and meet projected load growth.

- This will allow us to continue to provide reliable electricity to homes and businesses in southern Burnaby as well as to other substations.

Specifically, we'll:

- Remove old outdoor equipment that's in poor condition and replace it with modern equipment in a new feeder building
- Replace one of three transformers at the substation
- Make required upgrades to other equipment at site
- Install underground infrastructure in Griffiths Drive east of the substation and in Kingsway north of the substation

Project Overview



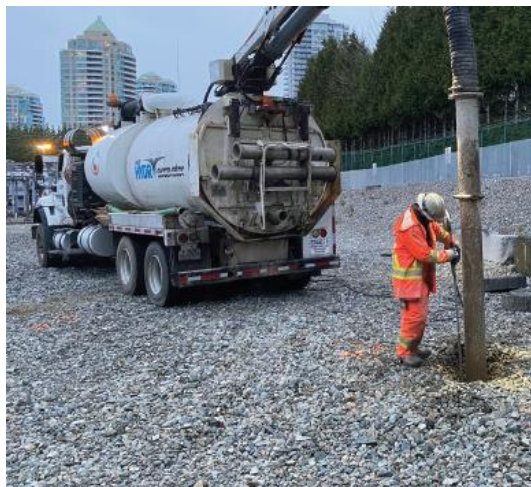
Key Project Activities

- Key project activities are:
 - Site preparation
 - Transformer and disconnect switch replacement
 - New feeder building
 - Demolition and restoration
- Most work will be within the substation fence.
 - Some land outside the south side substation fence, between the fence and street, will be used for construction activities (e.g., laydown, parking).
 - Some land north and east of the substation will be used for underground distribution infrastructure.

Site Preparation

Site preparation involves:

- Grading the site
- Replacing the retaining wall in the northeast corner of the substation site
- Completing drainage around the new building area
- Expanding the fence in the northeast corner of the substation



Hydrovac work at site to identify existing utility locations



Site for new building looking west



Site for new building looking east

Transformer and Disconnect Switches

Replacing the transformer and disconnect switches involves:

Transformer

- Constructing a new foundation
- Removing the existing transformer
- Installing a new transformer



Disconnect switches

- Replacing footings and associated steel structures for end of life disconnect switches



New Feeder Building

Building development will involve:

- Constructing a two-storey building on the northeast corner of the site
- Installing indoor equipment
- Installing new underground infrastructure to connect the building to our distribution system (includes work under Griffiths Drive)
- Connecting the building to City of Burnaby water, sanitary, and storm systems



New Feeder Building



New building looking north east



Street view on Griffiths Dr.



Similar building under construction at Mainwaring Substation

Demolition and Restoration

Once we've moved the equipment into the new building and the project is complete, we'll:

- Remove the old, outdoor feeder section and associated equipment
- Demolish existing concrete footings
- Remove the old transformer and associated equipment
- Plant trees and complete other landscaping as needed on the substation site
- Restore the area outside the fence to the south of the substation site if it's not needed for another project



Old feeder section to be removed

Schedule



This schedule will be refined, and additional detail provided, as planning advances.

Environment

- | | |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Groundwater | <ul style="list-style-type: none">• Groundwater management needed during ground disturbance• A Section 10 <i>Water Sustainability Act</i> permit will be needed |
| Contaminated Soils | <ul style="list-style-type: none">• Localized contamination identified in soil<ul style="list-style-type: none">• Surplus soils removed from this area will be disposed of at permitted facility• No groundwater contamination identified to date• Surplus soils generated during construction will be tested and disposed of as required |

All environmental risks will be managed through the implementation of an Environment Management Plan.

Environment

Habitat

- Work is primarily within the substation property, with limited work on adjacent roadways and areas outside the fence
- Potential impacts to fish and wildlife or at-risk vegetation communities are considered low

Archaeology and Heritage

- Low archaeological potential within substation
- Potential for archaeological resources for off-site duct banks
- Chance Find/Stop Work procedure will be used within substation
- Archaeological monitoring will be implemented for off-site duct bank works

All environmental risks will be managed through the implementation of an Environment Management Plan.

Noise and Visual Effects

Noise

- Noise from an existing transformer has raised concerns
- We completed noise measurements to understand existing noise levels
- The transformer causing noise will be replaced and
- enclosures will be used, if required, to further reduce noise from transformers

Visual

- We recognize the importance of visual aesthetics to the community
- New building design considered the surrounding neighbourhood
- Although trees will be removed during construction, visual screening will be restored at the end of project construction by planting trees and hedging

Electric and Magnetic Fields

- EMF is present everywhere electricity flows inside and outside your home.
- Sources of EMF include appliances (e.g., oven, refrigerator), electronic devices (e.g., TV, cell phone), power lines and substations.
- The strength of electric and magnetic fields decreases rapidly with distance from the source.
- We operate our facilities well within the EMF guidelines endorsed by Health Canada and the World Health Organization.
- After the upgrades at Newell Substation, the facility will continue to operate within the guidelines.

Walking Trails

- There are walking trails south and west of the substation.
- We'll use the area south of the substation for parking and material storage and processing.
- While this area is used, a walking trail will be available, but it will be moved south, closer to Beresford Street.
- We'll restore the areas around the station as required.
 - As with many of our stations, there are multiple projects on going at Newell that may have other impacts to the station.
- The walking trail west of the substation site won't be affected.



Thank you!

- Please complete a comment form and leave it with us or, alternatively, email us at projects@bchydro.com with your comments and questions.
- We'll continue to keep you informed as the project advances.
- For more information, please visit <https://www.bchydro.com/energy-in-bc/projects/newell-substation-upgrade.html> .
- Please contact us at 604 623 4472 at projects@bchydro.com if you have any additional questions or comments about the project or any information presented today.

Discussion