



North Auckland and Northland grid upgrade project



AT A GLANCE



Total estimated cost
\$415
million

Cable route length
37
kilometres

Target completion
2013

Operating voltage
220
kilovolts

Underground cabling factsheet Pakuranga to Hobson Street

Who is Transpower

Transpower is the owner and operator of the National Grid – the high voltage transmission network made up of lines and substations connecting areas of generation with towns and cities across New Zealand.



Project overview

We are installing a new 220 kV underground transmission cable link, which will run from Pakuranga to Albany, connecting through Penrose substation and new substations to be built at Hobson Street and Wairau Road. The underground cabling will run primarily underneath roads and within designated transmission corridors.

As part of the project an existing overhead transmission line running between Pakuranga and Penrose substations will be decommissioned and removed.

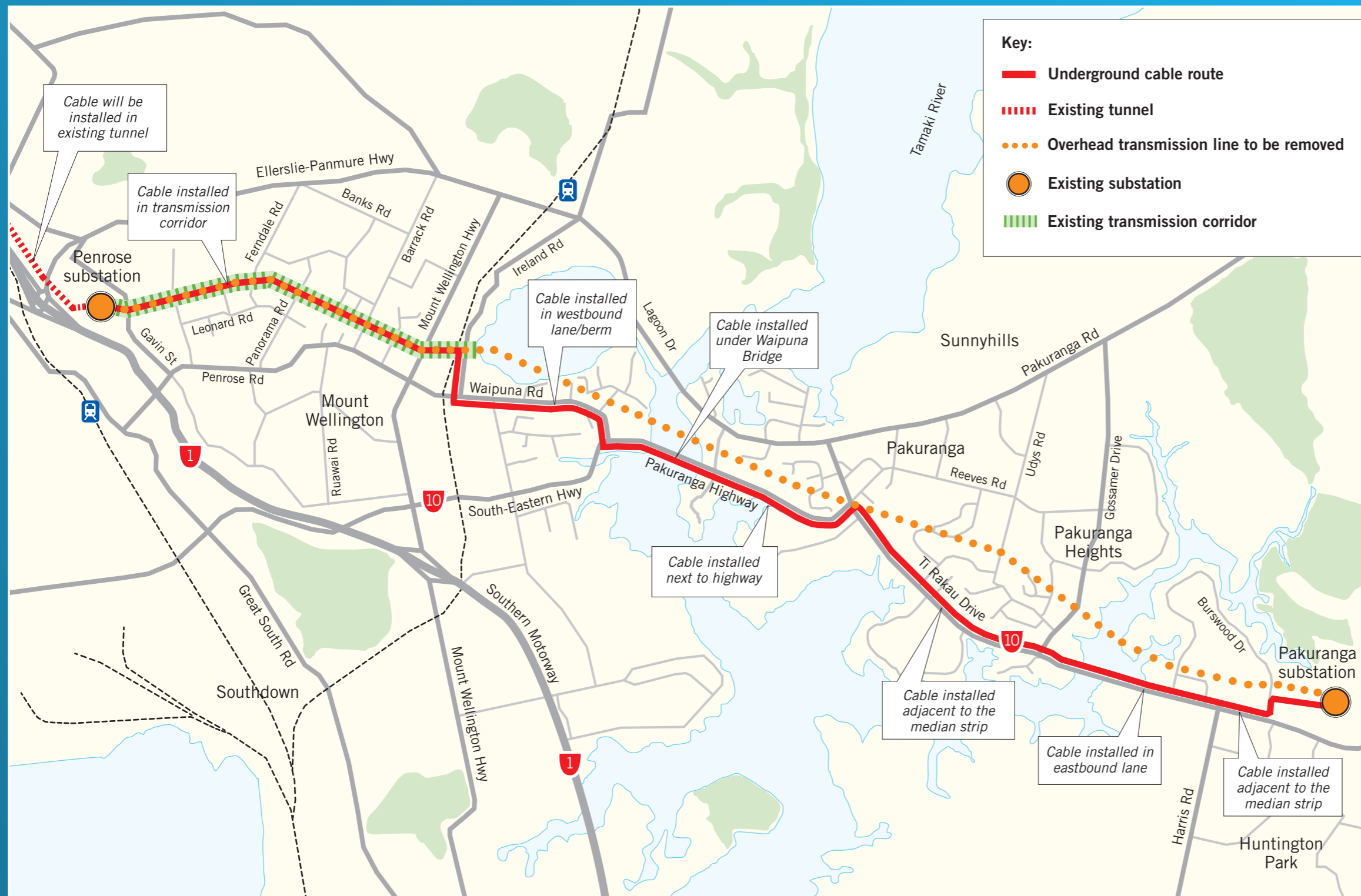
We are targeting late 2013 for commissioning this new and important part of the region's electricity infrastructure.

Why is this project important for Auckland and Northland?

At present, North Auckland and Northland are heavily reliant upon a single high capacity transmission line between Otahuhu and Henderson for their power. This \$415 million project will provide greater transmission capacity, reinforce electricity supply across the wider Auckland region and into Northland to help meet the increasing energy demands in these areas.



CABLE ROUTE



Penrose to Hobson St substation

Approximately 9 km of cable circuit will be installed within the existing underground transmission tunnel which runs between the Penrose and Hobson Street substations.

Penrose to Pakuranga substation

Approximately 9 kms of cable circuit will be installed within the following roads:

- Burswood Drive (near Bunnings)
- Ti Rakau Drive
- Pakuranga Highway
- Waipuna Road
- Ireland Road

From Ireland Road to Penrose substation the cable will be installed in our transmission corridor, a green belt through which our overhead lines network runs.

Where the cabling crosses the Tamaki River and Pakuranga Creek it will be attached to the relevant road bridge.

How the work will be carried out?

We will install the underground cabling in ducts placed in trenches up to 2 m deep and 2 m wide. Approximately every 1000 m a joint bay will be constructed where the cable sections will be connected. We will install the ducts first and then backfill the trench so the road can be used again quickly. The cable will then be pulled through the ducts between each joint bay.

How long will the underground cabling work take?

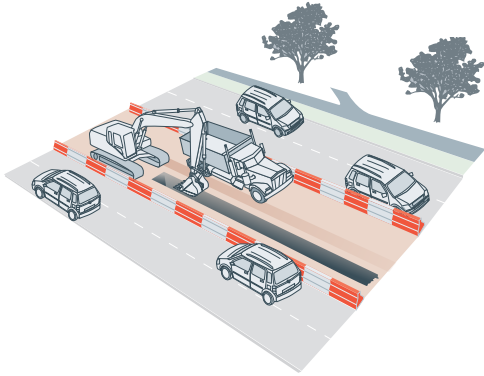
The project will take about 18 months to complete along the entire route, but work outside most homes and business on the route should only be up to 10 weeks all up, or 16 weeks where we are constructing joint bays.

Work will be staggered along the route to minimise disruption.

Where access to car parks and businesses on Ti Rakau Drive are temporarily affected alternative entrances will need to be used. These will be signposted.

What disruption can you expect?

The biggest disruption will be to traffic flow. This may include temporary traffic delays on busy roads and short term closure of a lane of traffic. However, as our work is being staggered along the cable route only short sections of the road will be affected at any one time.



Between Penrose substation and Ireland Road we will install the cable within our existing transmission corridor, and the work will only affect traffic where it crosses the following roads:

- Gavin Street
- Leon Leicester Avenue
- Reliable Way
- Ferndale Road
- Panorama Road
- Barrack Road
- Jarman Road
- Mt Wellington Highway

Work on these road crossings will take place where possible at off-peak times to minimise traffic disruption.

Any works in the vicinity of schools and childcare centres will be carefully planned to minimise the effects at peak drop-off and pick-up times. Where possible, work may occur during the school holidays.

On Waipuna Road, we will need to close a lane immediately around our worksite while construction of the trench and cable ducting is undertaken close to the southern kerb, but the traffic flow in both directions will be maintained.

On Ti Rakau Drive, we will maintain two lanes of traffic in both directions and a reduced speed limit will be in place around our worksites. Some work may take place at night to avoid lane closures at critical locations, such as intersections.

Property access

Once the trench has been excavated and prior to backfilling, we will lay temporary steel plates across the open trench to provide access to properties. However, at times (for example when the trench is being excavated or backfilled) our machinery and equipment may block the entrances to properties for a few hours at a time. We will provide advance notice to affected landowners and occupiers in this instance.

Construction noise

Construction noise is likely to be typical of road work activities, such as truck movements and earth excavation. Owners and occupiers of potentially affected properties will be notified ahead of time of when works will be occurring.

Hours of work

To finish the project quickly our crews will be working up to six days a week; generally Monday to Friday 7am to 6pm, and Saturday's 8am to 1pm. There may be occasions when we will need to work outside of these hours to take advantage of off-peak traffic times for the delivery of large equipment, and when excavating and installing cable in busy roads.

What are we doing to minimise disruption to the community?

- installing part of the cable circuit within our transmission corridor
- installing ducting first to limit the time needed to have open trenches
- staggering work along the cable route
- carrying out work at critical locations during low traffic volume times whenever possible
- careful planning to minimise the extent of lane closures needed
- working up to six days a week to finish the project quickly
- employing a dedicated project liaison to communicate with property owners, businesses and residents on the cable route.

Removal of the Pakuranga to Penrose 'A' overhead transmission line

The section of line between Penrose substation and Tamaki River has already been dismantled, and in 2012/early 2013 we will remove the last remaining section from Tamaki River to Pakuranga substation.

The work will involve taking down the wires and then dismantling the towers. In some cases parts of towers may be removed by helicopter.

We will be in touch with people living directly under the lines or who have a tower on their property before work starts.

The Pakuranga to Penrose 'A' transmission line is the northern most of four lines in the area. If you are unsure which line we are removing see the detailed map on our website – www.gridnewzealand.co.nz/OH-line-map.

For more information visit www.gridnewzealand.co.nz,



Facebook.com/transpowernz or call 0800 655 463

