



NORTH ISLAND GRID UPGRADE PROJECT UNDERGROUND CABLING FACT SHEET

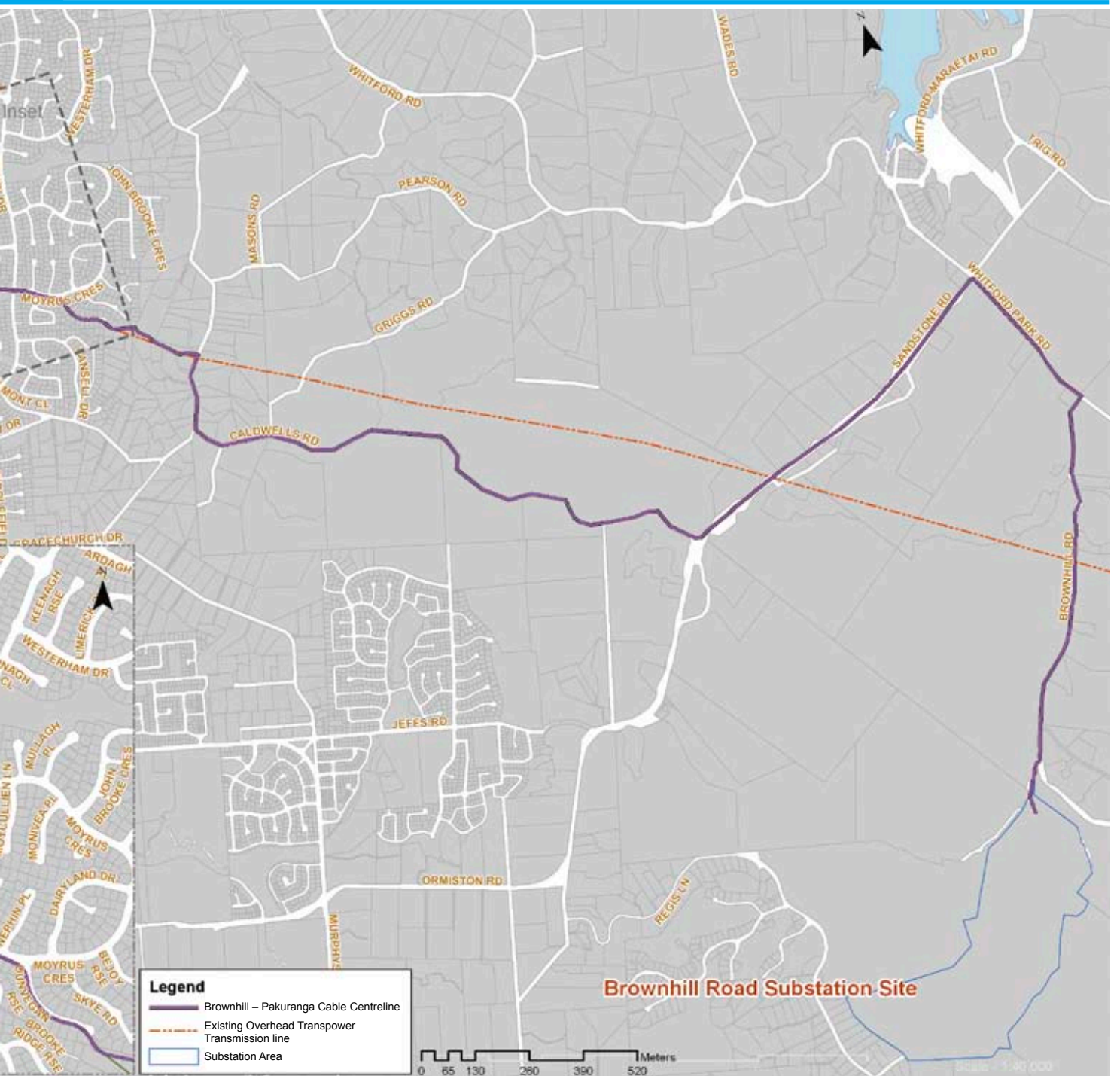


The North Island Grid Upgrade Project is one of the largest electricity transmission projects to be undertaken in New Zealand since 1960. The project is separated into three parts: the overhead transmission line, substations and underground cables. The project is critical to ensuring security of supply to the Upper North Island into the future. This fact sheet provides information on the construction of the new 11km underground cables running from Brownhill Road to Pakuranga.

Project overview

The 186km, 400 kV capable overhead transmission line runs from a new substation at Whakamaru (north of Taupo) to a new substation in Brownhill Road, Whitford. Four underground 220 kV cable circuits will run from this substation – two circuits to a new substation at the existing Pakuranga site and, at a later date, two circuits to Otahuhu substation (expected around 2020).

High voltage transmission lines are mostly built above ground, however in some areas, e.g. urban areas, this is not feasible and underground cabling is used. The Brownhill Road to Pakuranga route runs through lifestyle areas and residential subdivisions, where underground cabling is more appropriate.



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FREQUENTLY ASKED QUESTIONS

How long will the trench be open in front of my property?

Each section of the cable (about 600m) may take about 6 to 8 weeks to install. It will involve cutting and breaking the road surface, excavating the trench, installing the cables, backfilling, resealing, and reinstating affected areas.

Will I be able to get in and out of my property?

Once the trench has been excavated, temporary steel plates will be laid across the trench to give you access to your property. However, there may be times when access could be limited, although not for more than a few hours at a time. In all cases, we will provide advance warning to residents and occupiers and arrange alternative access or parking for that period.

We normally park one of our cars on the road outside our house. Where can we park when the cables are being installed in our road?

If you live on a road along the cable route, and you currently park a vehicle in the street outside your house, you won't be able to park there for the duration of the trenching work. We can help you find an alternative location for parking or may be able to arrange parking on the road verge close to your house.

My kids normally walk to school. Will there be safe pedestrian access still available?

Yes. The safety of all pedestrians will be a top priority. At the few locations where it is necessary to close the footpath on one side of the road, we will ensure that alternative pedestrian access is available.

Will there be any road closures?

In most instances, at least one lane will be available for traffic on all roads where we are working.

How deep in the trench will the cables be buried?

The trenches will be about 2.3m deep, and the cables will typically be buried at a depth of 1.5m below ground.

Why don't you take down all the overhead lines in this area and put them underground?

We are unable to underground all of our overhead lines because of the significant cost involved (\$10 to \$15 million a kilometre for undergrounding). High voltage underground cables are very expensive – in the order of ten times the cost of overhead line. Undergrounding also reduces the reliability of electricity as it takes longer to locate a fault and fix it.

What hours will you be working?

Our standard working hours will be Monday to Friday, 7am until 6pm. Saturday hours will be 8am–1pm. We will notify you if there are any changes to our working hours.

What safety measures will be put in place to protect residents and the general public?

Safety fencing will be erected around the construction site. Signs will also be erected detailing the safest route through the site.

What about the electric and magnetic fields from the cables?

Electric and magnetic fields (EMFs) are present wherever there is electricity, including in the home office, and workplace. The electric field from the underground cable will be contained within a metallic cable sheath and will be non-existent above the cable. The magnetic field will be well within the international guidelines set by the International Commission for Non-Ionizing Radiation Protection, and endorsed by New Zealand's Ministry of Health.

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 to towns and cities across New Zealand.

