

## Invercargill to Awarua 66kV Line Route Questions and Answers

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**4 November 2024 update:**

### How many residents are affected by the proposed new 66kv line from Findlay Road to Awarua?

There are 144 land and property owners along the selected line route. This includes;

- owners on both sides of the road,
- owners who may not adjoin the road reserve, but their driveway/access road does (eg. back sections), and
- vacant land.

The breakdown per road is;

Findlay Road	27
East Road (SH1)	17
Mill Road South	47
Mason Road	28
Judge Road	3
Lardner Road	4
Wixon Road	1
Murphy Road North	2
Murphy Road South	4
Motu Rimu Road	9
Colyer Road	1
Kekeno Place	1
<b>Total</b>	<b>144</b>

### The proposed new line route already has an existing line in places. Will the new line build mean lines will run down both sides of the road in places?

We are aiming to only have one power line down each road, i.e. wanting to avoid having power lines down both sides of the road, wherever possible.

Below is a summary of how we plan to manage areas of the new line build, where there is already an existing line.

#### **Findlay, East (State Highway 1) and Mason Roads**

There will only be poles on one side of these roads.

#### **Mill Road South**

PowerNet initially planned to build the new line on the west side of Mill Road South, then transfer the existing 11kV line (on the east side of the road), over to the new poles on the west side. We would then remove the original poles on the east side, so poles are only on one side of the road (the west side).

The benefit of constructing a new line this way is the existing line can be kept in service until the new line is built, then it can be transferred over to the new line, minimising power interruptions during construction.

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However, we received feedback that residents prefer the new line be built on the east side of the road, where the existing poles and wires are, despite the increased need for power outages with this option during construction.

A decision regarding the new line route has now been finalised. The final line route down Mill Road South will be on the east side, in the road reserve.

There are several long-term benefits to installing the new line on the east side of the road, which include:

- There is already an existing line on the east side of the road and the new line will be placed in the same road reserve.
- Landowners on the east side of the road already understand their obligations, and manage their vegetation in relation to the lines.
- While the new poles will be larger, they will be placed further apart than the existing poles. This means there will be fewer poles on the side of the road than there are at present. The number of poles in place will reduce from 60 poles to 33 poles.

The disadvantages of the east side of the road include:

- Power outages will be required to construct the new line while the existing line is in place. These outages will be kept to a minimum and we will connect properties to generators if they are expected to last for 8 hours or more. If you have a specific need for power during the outage timeframe, please let us know at [awarualine@powernet.co.nz](mailto:awarualine@powernet.co.nz)

### **Will there be power outages during the new line build?**

Where we are building the new line along the existing route, (e.g. Mill Road South), the new line will be built in sections. We anticipate that for each section customers will experience outages over three consecutive days in the affected work zones. These three days will be in a row and power will be shut off mid-morning and then restored late afternoon each day.

There will be outages at times during the build for other parts of the route too. This includes brief outages each evening to ensure you have power overnight. Planned outages during construction will be well communicated prior to them occurring.

### **What is the cost of this line build?**

The cost of the selected line route is \$10.9 million for the 19.5 km, which is approximately 25% of the total project cost.

### **What consideration is being given to road safety with the new line build?**

We are working with both Invercargill City Council (ICC) and the New Zealand Transport Agency (NZTA) to make sure road safety measures are in place. ICC and NZTA also have input into pole placements, with public safety front-of-mind.

We have also been meeting with some residents along the line route, to get their input. We are incorporating their preferences wherever we can.

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### **Does the proposed line route impact the Seaward Bush Reserve parking area?**

No. The selected line route and the proposed poles are either side of this area. This will also be part of the road safety impact assessment we undertake with ICC and NZTA when the final pole placements are confirmed.

### **Are any landowners entitled to compensation payments where they feel they have been impacted by the new line build?**

Electricity networks are 'Requiring Authorities' and have rights to build and maintain lines in road reserves, which are owned by roading authorities. With these rights granted in district plans and legislation, payments to landowners adjoining the road reserve are not required because electricity networks have existing rights to occupy.

However, a small part of the route does go through private land. Where this happens, we have an easement agreement and made a payment (a "consideration payment") to the landowner, which is based on independent valuations. The easement gives us the right to occupy the line route, including to build the line, and also to access it for maintenance over the time it is there (80-100 years).

Whether the land is owned by the roading authority or a private landowner, approval is required, and no assets will be placed on any land until this is confirmed. Approvals have been secured for this project.

### **For sections of the new line build that uses road reserve, there will be homeowners whose private trees need to be cut as a consequence of the new line build. How will that be managed?**

The management of vegetation is covered by Tree Regulations.

Where vegetation requires either removal or trimming for the new line to be built, it is likely it is in the road reserve and the trees are owned by the roading authority. In that situation, we are able to trim or remove the trees.

PowerNet will discuss with the private landowners who own trees which are not in the road reserve and may need trimming if they are within the growth zone for the new line. If you would like to understand more about Tree Regulations and how they may impact you or your property, visit [www.powernet.co.nz/electricity-safety/trees/](http://www.powernet.co.nz/electricity-safety/trees/). Our team are here to help, if you have questions about Tree Regulations, phone 032111899 or email [trees@powernet.co.nz](mailto:trees@powernet.co.nz).

### **Was consent required to put new poles on Council land or the roadside?**

The vast majority of the 19.5 km line is in the road reserve, where we have rights (as a Requiring Authority) to access under the District Plan, the Electricity Act and Resource Management Act.

Road reserve is preferred as it allows better access for construction of the line, and then maintenance of the line throughout its 80-100 year life.

Consent was required for seven poles which run along Findlay Road. While they are in the road reserve, resource consent needed to be secured because part of Findlay Road is zoned residential under ICCs District Plan. ICC has granted the resource consent.

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### **Does the new line build have any impact on the rescue helicopter flight path?**

HeliOtago, which operates the rescue helicopter, have been contacted and they have confirmed the new line route will not impact their existing flight plans/paths.

### **Is there a risk the new pole structures, which are metal and approximately 20m high, could become lightning conductors - increasing fire risk?**

Any potential increase to fire risk is minimal. It is common practice to build high-voltage distribution poles (at 66kV and above) and transmission towers (110kV and 220kV) with steel. The poles also go deep underground (approximately 5m), meaning they are well earthed and reducing the risk of lightning being conducted to surrounding vegetation. With any powerlines, vegetation is actively managed so it does not go close to the conductors. This is important when there are high winds or lightning storm conditions, which is when the weather increases fire risk.

### **Has an environmental impact assessment been carried out?**

A specific environmental impact assessment for this project has not been carried out, because environmental considerations are made when ICC develops its District Plan. In the District Plan, this work is deemed a permitted activity. Allowing lines in road reserve is also considered as part of the Resource Management Act and Electricity Act.

### **Has the Construction/earthworks impact and duration of the works been considered?**

Construction and civil works are considered as part of the project management process.

We will increase our contact with residents as we get close to the construction phase and ensure this is maintained during construction. We are writing to all residents along the final line route, requesting they share their preferred contact details, so we can provide regular updates. Residents can also contact us directly to provide their contact details via email at [awarualine@powernet.co.nz](mailto:awarualine@powernet.co.nz)

It is likely there will be some planned power outages as well as road closures, but we will maintain access for residents. Both will be kept to a minimum and communicated well in advance.

PowerNet will reinstate any driveways or footpaths which may be affected by construction.

### **Does the new line create Electromagnetic Field impacts to residents in proximity to the new line build?**

We have previously offered to fund an independent assessment of Electromagnetic Fields (EMF) at property boundaries to demonstrate to residents living in proximity to the new line build that EMFs are within acceptable levels. That offer remains and we are happy to work with residents and undertake that testing.

Residents who wish to take up this offer, can do so by emailing [awarualine@powernet.co.nz](mailto:awarualine@powernet.co.nz).

### **Will private wire fencing and clothes lines need to be earthed with the new line build?**

There is no need to install additional earthing on existing fencing or metal equipment due to this line. As with all electricity lines, the insulators on the line protect and isolate the line from the ground. There

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are high-speed protection systems to ensure that the line is quickly isolated if there is a fault or third-party damage occurs.

### **What alternative line routes were considered to the line route chosen?**

We considered taking the line down Racecourse and Rockdale Roads, however the busy traffic along this route would have resulted in significant impacts for all road users, more disruption for more residents, and a longer project time to complete.

We also considered multiple different routes which would take the line across private land rather than in the road reserve. This created significant challenges for land access, both during construction and for ongoing maintenance and urgent repairs.

These options would have had considerably higher costs.

Rebuilding the existing 33kV lines with 66kV on top was also considered, however this would have a major impact on network stability during outages for maintenance.

### **Can part of the line be underground?**

The option of undergrounding the line (where it would be a cable) is both cost prohibitive and creates problems of an electrical - technical nature, given it is a 66kV line.

The line build portion of the project is budgeted at \$10.9 million for the 19.5 km. We estimate an underground cable would be approximately \$36.6 million.

Installing a cable to carry 66kV for 19.5 km introduces significant technical issues, such as excessive heating of the cable, which would be difficult to overcome.

For these reasons, we will not underground most of the line.

A short section of the existing medium-voltage (11kv line) infrastructure will be undergrounded, because it needs to be moved to accommodate the new line – and to prevent having too many circuits on the new line. This section is on Findlay Road.

### **Have you considered building a new Transpower Grid Exit Point (GXP) near the Tiwai turn off and take the power from the existing transmission lines in that area?**

The cost of building a Grid Exit Point (GXP) near the Awarua area is estimated to be over \$40 million for the GXP alone. Further costs would be incurred, including a line from the GXP (which would be under the 220kV transmission lines to the Awarua site). We estimate that another \$7 - \$10 million would be required.

Apart from cost, there is no need for an additional GXP in the region, as the demand can be met from the existing GXP at Invercargill. In addition, the time taken to build a GXP with Transpower would be at least 4 years, not completed until 2028-2029 at earliest, whereas the solution being delivered for Awarua is required by September 2025.

All power users pay the cost of electricity assets over the life of those assets, therefore PowerNet is ensuring the optimal solution is built, as it needs to consider the long-term interests of all electricity users in the region.

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### Couldn't Transpower assist with the cost of a new Grid Exit Point (GXP)?

Transpower funds national grid infrastructure only.

A Grid Exit Point (GXP), if built by Transpower, would require a return of that investment as well. Transpower will not build grid assets unless customers commit to paying for them.

**The Murihiku Southland Electrification Development Plan shows that the full route of the transmission lines begins at the Makarewa substation and travels through Findlay Road. It also talks about 220kV Grid Exit Points (GXP) for the Edendale expansion. That GXP does not show a location. Could it be moved to Awarua if the costs is shared between PowerNet and Transpower?**

The new Invercargill to Awarua line is a large distribution line, with 21-metre poles.

The Murihiku Southland Electrification Development Plan refers to:

1. PowerNet building a 66kV line between the existing North Makarewa and Invercargill GXP to increase transferable load. This is another project we are planning to do, starting around 2027/28.
2. Network constraints on the existing 33kV sub-transmission circuit to Bluff, and *"An understanding of future load and generation is needed to plan any additional developments to relieve the foreseeable constraints on the existing 33 kV network between the Invercargill GXP and the Colyer Road Substation in Awarua."*

Related to point 2 above, the 66kV line build between the Invercargill GXP on Findlay Road and Colyer Road substation in Awarua is required to address network constraints with the existing 33kV network.

We are working with Fonterra and Transpower to look to build a GXP in the Edendale region. This is required for increased power supply to that region, mainly for Fonterra. That is a separate project required for that region.