



guide to
working safely
around electricity,
gas & fibre

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working safely

We are New Zealand's largest distributor of electricity and gas, owning and operating networks that span the Auckland region. We are focused on meeting the changing energy needs across the country.

With a strong record of health, safety and environmental leadership, our aim is to keep all contractors, customers and the public safe around our network.

The safety of yourself, your co-workers, and the public is the responsibility of everyone on a work site. Therefore, we encourage you to read this document first to ensure you keep yourself and others safe before you dig on private or public property or work near overhead lines or other equipment above ground.

Vector electricity network



- Key:**
- Northern network
 - Auckland network (Entrust district)

Vector gas network



- Key:**
- Vector gas network
 - First gas transmission network (0800 734 567)

your legal requirements

Under the Health and Safety at Work Act 2015, all PCBU's (persons conducting a business or undertaking) have a duty of care to keep their workers and the public safe in conducting their activities.

All those concerned with planning, arranging, supervising and undertaking works near our assets must adhere to WorkSafe's Excavation Safety Good Practice Guidelines, which contains minimum safe work practices for carrying out any work near all underground and overhead pipes, power, communications lines and any other utility services. The mandatory requirements of the Guide for Safety with Underground Services, must be followed in relation to all work performed near underground services.

All underground services must be exposed and properly identified using industry recognised safe digging practices such as hand digging and hydrovacating before any excavation work can be carried out with machinery.

Other legislation, guidelines and codes specifying safe working practices include:

- Electricity Act 1992
- Gas Act 1992
- NZECP34:2001 Electrical Safe Distances
- Health and Safety in Employment (Pipeline) Regulations 1999
- Electricity Safety Regulations 2012

All PCBU's are under a duty to notify serious events (such as serious injuries, illnesses, or incidents) to WorkSafe. In addition, if anyone is found to have breached any applicable legislation, guidelines or codes, Vector may refer the matter to WorkSafe for investigation.

Vector may also take legal action to recover both the cost of repairs and any other recoverable losses from any party responsible for damaging its network.

the risk of working near our network

If you hit an electricity cable or overhead power line there is a risk of:



- fatal electrocution or critical injury
- flashover causing serious burns
- cable explosion
- fire
- loss of critical supply to hospitals, medically dependant customers and businesses

If an electricity cable is cut by an excavator, or contact is made with an overhead line, there is a risk of electric shock.

As electricity can travel through the ground, or objects in contact with the ground, there is a risk of causing neighbouring ground to become live.

If you damage a natural gas pipe there is a risk of:



- serious harm to life and property
- gas ignition
- gas accumulation in adjacent buildings

In the event of a gas leak, immediately remove all flames, cigarettes and mobile phones from the area.



If you hit a fibre cable, there is a risk of:

- interruption of critical communications services
- loss or damage to eyesight
- injury from exposed cabling



check before you dig

step 1: obtain plans and consents

Visit **www.beforeudig.co.nz** to request plans at least two working days before you begin work. We'll then email you the free plans that indicate the approximate location of underground cables and pipes.

Please note that these plans are valid for 28 days from the date of issue; new maps must be requested after 28 days.

The accuracy of our plans cannot always be guaranteed as road re-alignment and alterations to ground cover and property boundaries can affect their accuracy. This means that you must confirm the location of our cables and pipes within your work site before you begin any work.

Please call 0508 248 967 (option 2) for:

- Any follow up queries
- Close approach consents
- High load consents
- Standovers (on some strategic networks)

step 2: review plans and mark out all services

Use the plans as a guide to identify whether you have any Vector assets within your work area.

If your proposed worksite is within 10 metres of our cables or gas pipes you must use an underground locator (where possible) to track and mark out any cables or pipes in the area. If a locator isn't practical, measurements to indicate the cables and pipes approximate location are provided on most plans.



If the plans indicate a strategic asset is in the area or consent is required, please call 0508 248 967 to arrange a consent issue.

All works within 2 metres of subtrans electrical cables require a Vector stand over and strategic gas pipe requires a close approach consent.

step 3: pothole to expose services

Once all services have been marked out, you must pothole with great care by hand digging or hydrovac (max pressure 1500 psi) to expose and positively identify all services within the worksite.

If you discover warning tape, you must continue hand digging until you have exposed all services shown on the plans. Some pipes and cables may not be aligned with warning tape or you may not have found the correct pipe or cable.

Some services do not have warning tape if they were installed by trenchless technology so do not rely on it when locating services.

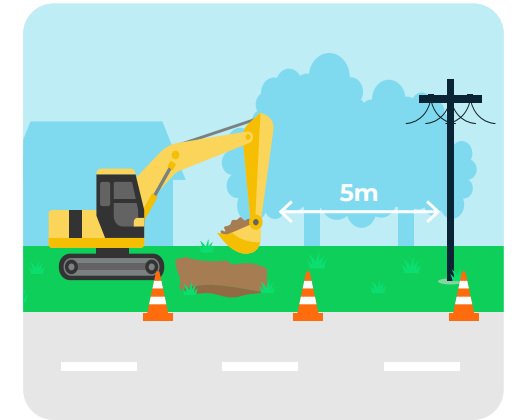
It is very important that you physically see and identify the cable or pipe indicated on the plan.

tips to continue working safely

- Always assume that cables and pipes are live until confirmed otherwise by a Vector representative.
- When all services have been located and you need to use an excavator or heavy equipment, please ensure a competent safety observer or spotter monitors the equipment and services at all times during operation.
- If you would like to move a cable/pipe or expose any more than 2 metres in length, you must contact Vector for assistance. Only Vector's authorised contractors may handle and relocate gas pipes and cables.
- Backfill around pipes and cables should be approved sand or clean fill (no sharp rocks or metal).
- Replace warning tape or cover boards if removed as found when backfilling holes.
- Overhead lines in the area doesn't mean an absence of underground cables.
- Be aware of gas service pipes to individual properties that branch off from gas mains in the street and are generally between 300mm and 1000mm deep.
- Electricity cables and gas pipes are laid at different depths in the ground and while they are typically from 300-1500mm they can be just under the surface to over 2000mm deep.
- We cannot guarantee the depth of any cable or pipe because alterations to the ground cover may have reduced or increased the depth.
- Please **do not** use excavator buckets with teeth when digging close to underground assets.
- Not all damages cause gas leaks, but they can over time so please report all damages found on the gas network at 0800 764 764. Some pipes have thin plastic coatings over steel that are easily damaged, so it is critical that even minor damages are reported as they corrode over time.
- Please remember all repairs to all Vector assets can only be carried out by qualified and authorised Vector personnel.

excavating near power poles

- Do not dig within five metres of one of Vector's power poles without a **Close Approach Consent** as this could cause the power pole to collapse.
- We will provide guidance and on-site advice where necessary.



near our assets

When working near overhead lines and power poles, keep a careful watch and make sure that you maintain a safe working distance from overhead lines at all times.

- When operating machinery such as a digger or crane near lines you must keep at least four metres clear of overhead power lines.
- Do not excavate within five metres of a power pole.



When planning to work near overhead lines or power poles, please note that you are legally required to follow the minimum safe distances set by the New Zealand Electrical Code of Practice – NZECP 34:2001 Electrical Safe Distances.

All work activity must be kept at least four metres from overhead power lines. If you need to work closer, you must obtain a **Close Approach Consent** which will take two working days to process.

close approach consents

For safety reasons, Close Approach Consents are required for:

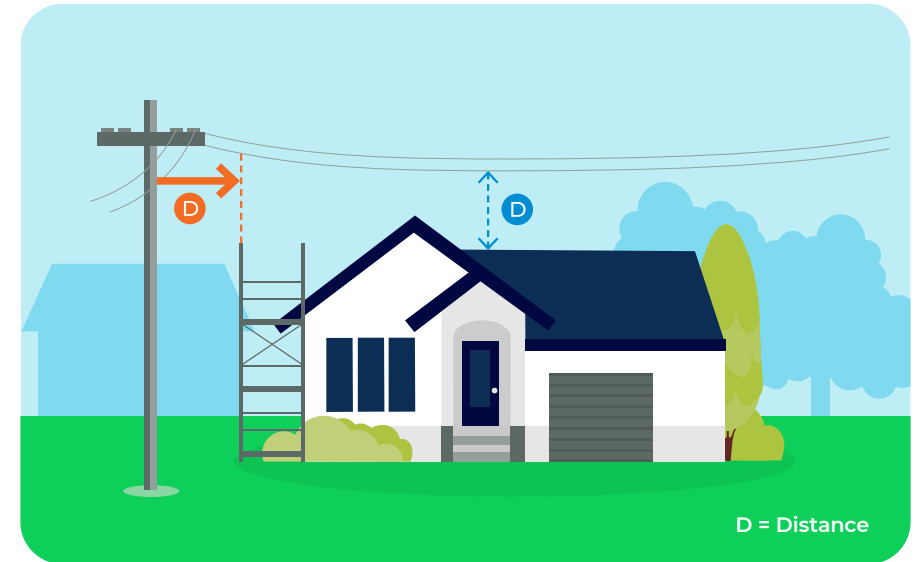
- all works within 2 metres of subtransmission electrical cables and strategic gas pipes
- all works within 4 metres of overhead lines
- excavating within five metres of a power pole or within 12m of a tower or pylon
- excavating within 5 metres of a Distribution Sub Station and 10 metres within a Zone Substation
- all work above overhead lines
- any building or temporary structure within NZECP 34 Table 2 distances.

You must contact us on 0508 248 967 if any subtransmission cables or strategic gas pipes are shown on the maps you have requested. This is to determine if there is the need to organise on-site advice, a standover or a Close Approach Consent.

You must not use any mechanical excavator within one metre of strategic cables or pipes – you must hand dig. Exceptions to this are only permitted if the excavation technique is expressly provided for in the Close Approach Consent.

Please note that Close Approach Consents are only valid for the dates applied for and the location and type of works agreed to on the consent.

building near overhead lines



Please ensure that structures, such as garages and extensions to houses, remain well clear of overhead lines.

Minimum distances allowed between any new buildings and overhead lines have been set by the New Zealand Electrical Code of Practice NZECP 34:2001. Please note that the minimum safe distances will differ depending on the voltage of the overhead lines.

To find out the voltage of the lines that you are planning to build near to, please call 0508 832 867.

If your works do not comply with Table 2 of NZECP 34:2001 (see below), specialist engineering advice will be required to confirm that the works comply with Table 3 of NZECP 34:2001 (see page 11 of The New Zealand Code of Practice for Electrical Safe Distances). We do not provide specialist engineering advice but we are able to recommend providers if you call us on 0508 832 867.

Minimum safe distances from buildings to overhead lines

Voltage	Minimum distance beneath powerlines	Minimum distance to side of powerlines
Not exceeding 1kV	4.0m	3.5m
Exceeding 1kV but not exceeding 11kV	5.5m	5.0m
Exceeding 11kV but not exceeding 33kV	7.0m	8.5m
Exceeding 33kV but not exceeding 110kV	7.5m	9.5m

temporary electricity disconnection services

Repairs to roofing, spouting, painting, water-blasting, tree trimming and scaffolding may be dangerous if carried out close to overhead service lines – the lines connecting a home or business to the lines and poles in the street.

To stay safe, we recommend you call us on 0508 832 867 to have power temporarily disconnected when working near overhead service lines.

Please allow **five working days** to process the temporary disconnection request. This service is free on private properties. Unless we confirm otherwise, assume all lines are live.



removal or demolition of a building

Please note that you will have to organise the disconnection of both gas and electrical connections before removing or demolishing a building.



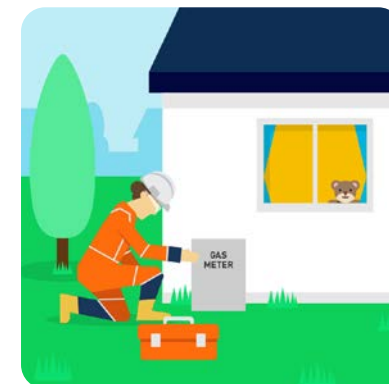
For free electrical and communications disconnection requests, please call 0508 832 867 and allow up to 20 working days to process the request.



For gas disconnection requests, please contact your gas retailer.



If you don't know who your gas retailer is, please visit <https://my.vector.co.nz/decommissioncp> or call us on 0800 22 22 60 and allow up to 20 working days to process this request. Charges may apply for this service.



travelling with high loads

You must apply for a High Load Consent if you plan to move a tall structure, such as a house or a boat, with a height that is 4.3m or greater.

Please call 0508 832 867 to process the consent. We recommend that you also check with your local telecommunications company about the height of their lines as well.

The table below summarises all possible scenarios when travelling with high loads:

Height (m)	Conditions
4.25 – 5.0	<ul style="list-style-type: none"> You will need to obtain written permission from us and any other owners of overhead obstructions that the load or vehicle can't clear safely. Allow at least 2 working days to process the consent.
Over 5.0 – 6.5	<ul style="list-style-type: none"> Along with the above conditions, you will also need a permit from the Over-dimension Permit Issuing Agency (OPIA). 0800 OVERSIZE (0800 683 774). Allow at least 5 working days to process the consent
Over 6.5	<ul style="list-style-type: none"> Along with the above conditions you will also need written approval from the Transport Agency. Allow at least 25 working days to process the consent depending on requirements

*If a disconnection is necessary, a 15 day notice period is required so that Vector can inform customers who will be affected.

what to do in an emergency

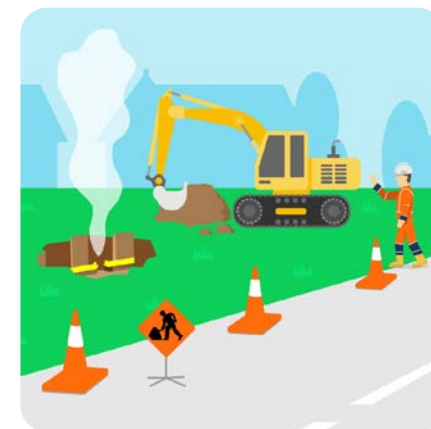
If you hit an electricity cable or overhead power line:

- Treat the cable or overhead line as live – jump well clear and get back at least 10 metres.
- Evacuate the immediate area.
- If you are in a machine, stay there.
- If you are at serious risk from another hazard, such as fire, and must leave the machine, jump well clear. Do not touch metal surfaces, or the machine and ground at the same time.
- Leave damaged cables exposed for us to fix.
- Call us immediately on 0508 832 867.
- In the event of an electric shock don't touch the person until you are certain the source of electricity has been removed. Call 111.



If you smell gas or damage a natural gas pipe:

- Switch off all machinery and remove all sources of ignition (including phones) from the area if it is safe to do so.
- Evacuate the area and keep at least 30m away.
- Call the fire service on 111 then call us on 0800 764 764.
- Leave the damaged pipe to vent and do not try to cover it.
- Do not re-enter the leak area for any reason.
- Leave any ignited gas fires to burn and do not try to extinguish them.
- Do not attempt to squeeze off or bend over the gas pipe.



If you hit a communications cable:

- Do not look directly at the cable as laser light may damage eyesight.
- Leave damaged cable exposed for us to fix it.
- Call us immediately on 0800 826 436 (select option 1, then select option 2 for Vector Fibre).



quick reference phone numbers

For plans requests visit www.beforeudig.co.nz or call 0800 248 344

For Close Approach Consents and safety advice 0508 248 967

For Vector Electricity General Enquires or Emergencies call 0508 832 867

For Gas Emergencies call 111 then call Vector on 0800 764 764

For General Gas Enquiries call Vector on 0800 447 447

