

Transmission pipelines

in the Auckland urban area



At Vector we want to keep all contractors, customers and the public safe.

High pressure natural gas and petroleum product transmission pipelines are one of the safest and most efficient ways of transporting these energy resources. However, like all forms of transporting energy they must be treated with respect so that accidents can be prevented.

This booklet provides information about the transmission pipelines in urban Auckland, such as, the pipeline locations, safety features and what do in the unlikely event of an emergency. It also provides information about the safe working practices and procedures that must be followed when working near transmission pipelines.

The pipeline owners take pipeline safety seriously and utilise many resources to ensure that the pipelines are protected. The greatest risk to pipelines is damage by third parties, most commonly the use of excavation and thrust boring equipment. You can help us keep the pipelines safe by following our work and safety procedures, and looking out for any digging activity or heavy machinery operating in the vicinity of the pipelines.

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Transmission pipelines in Auckland

In greater Auckland there are three natural gas and petroleum product high pressure transmission pipelines, which are owned and independently operated by separate companies:

- Vector operates the natural gas pipeline
- The New Zealand Refining Company (NZRC) operates an oil pipeline
- Wiri Oil Services Ltd (WOSL) operates an aviation fuel pipeline.

Vector, by agreement with NZRC and WOSL, is responsible for routine surveillance and issuing permits along these pipelines.

Auckland pipeline routes

Vector's natural gas pipeline travels:

- From Taranaki to Papakura, Auckland. From Papakura the pipeline travels through to Manukau and across the Tamaki Estuary into the main delivery point at Westfield
- From Westfield it then passes along the northern shore of the Manukau Harbour, through Hillsborough,

Blockhouse Bay, New Lynn, Glen Eden, Henderson Valley and then north to Whangarei

- A short pipeline also travels from Waiouru Road, East Tamaki, across Otara Creek to the Otahuhu Power Station.

NZRC's oil pipeline from Marsden Point Refinery travels:

- South from Marsden Point, in a common trench with the Vector natural gas pipeline, entering the Auckland urban area at Henderson Valley, then through Glen Eden, New Lynn and Blockhouse Bay until it reaches Hillsborough
- From Hillsborough, the oil pipeline separates from the gas pipeline and crosses the Manukau Harbour, then travels south of Mangere to the oil terminal at Wiri.

WOSL's aviation fuel pipeline from Wiri to Auckland Airport travels:

- From the Wiri Oil Terminal to Auckland Airport. The pipeline shares the trench with the NZRC line until Puhinui Road and traverses beside Puhinui Road to the Auckland International Airport.

Route maps which indicate the location of all three pipelines in Auckland are provided at the back of this booklet.

**Transmission pipelines
dial before you dig 0800 734 567**

Transmission pipeline locations

Transmission pipelines are located in registered easements located on private property and in the road reserve. Easement widths do vary but they are generally 12 metres wide for a single pipeline and increase by four metres for each additional pipeline. In Auckland the pipelines are predominantly located in the berm or carriageway in the road reserve.

The locations of the transmission pipelines are clearly marked. The signs are an indication only and a *permit to work* must be obtained before any excavations can commence. Look out for:

- Warning signs on kerbs, street lights and power poles in urban areas
- Warning signs and painted posts on fences in rural areas
- White triangular warning signs at pipeline river and harbour crossings.

Transmission pipelines are buried with an approximate coverage of 900mm. This can vary as alterations to the ground cover may reduce or increase depths. Pipelines are usually laid with a marker above the pipe. Be aware the tape may have shifted over time.

Never assume you know exactly where the pipeline is located – always contact us.



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Pipeline safety features and protection

At Vector we take pipeline safety seriously and utilise many resources to ensure that our pipelines are protected from the hazards of corrosion, ground movement and external interference. All Vector pipelines comply with or exceed international codes and standards accepted by New Zealand authorities.

A number of safety features have been incorporated into the design, construction and operation of the transmission pipeline system including:

- Regular ground and air patrols to identify potential hazards or any indications of a leak. This includes a daily road patrol along the route of the pipelines in the Auckland urban area
- All pipelines are buried with a minimum coverage of 900mm to minimise the risk of damage or interference
- Warning signs are attached to street poles and kerbs and provide a contact phone number, and marker tape is laid in the backfill above each pipeline
- Pipe used in the construction of pipelines is fabricated from steel. All pipeline joints are welded and all welds x-rayed. The finished pipe is pressure tested after laying in excess of the maximum operating pressures
- The pipelines are protected against corrosion by a combination of low voltage impressed current and a protective wrapping
- Safety valves are strategically placed along the length of the pipeline to enable sections of the pipeline to be isolated in the unlikely event of an emergency
- Each pipeline has an integrity monitoring system that can detect malfunctions and initiate automatic shutdowns.



Working safely around transmission pipelines

Any work which may affect the integrity of a pipeline or the surrounding easement must be approved by Vector. Although transmission pipelines are buried, accidents can still occur.

Before you start work call us on [0800 734 567](tel:0800734567). This number is a quick and easy way to access all the services we provide free of charge, to help you work safely around transmission pipelines.

These services include:

- On-site supervision
- *Permits to work* which are required by all parties who intend to work near a transmission pipeline
- Pipeline safety awareness seminars on request.

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Your legal requirements

The Department of Labour has set down minimum safe work practices for carrying out any work near pipelines. See its 'Guide for Safety with Underground Services'.

There are also laws and regulations that specify safe working practices, which must be followed. The Health and Safety in Employment Act 1992 requires people working near a pipeline to take all practicable steps to ensure their own safety or prevent harm to any other person.

Anyone who damages a pipeline as a result of unsafe work practices may be found in breach of the act and liable for prosecution by the Department of Labour. Vector may take legal action to recover both the cost of repairs and the cost of lost business from any party or parties responsible for damaging our pipelines.



Permits to work

Work permits are issued by Vector to authorise and control all works that could damage or endanger a transmission pipeline.

You must obtain a permit for all works within a pipeline easement or in the road reserve near a transmission pipeline, this includes:

- Drain construction and cleaning
- All excavation works
- Laying or working on other services
- Under-boring
- Removing or increasing soil cover
- Building construction
- Operating heavy machinery
- Placement of fence posts
- Planting and deep ripping
- Blasting.

NOTE: You must also obtain a Road Opening Notice (RON) from the relevant council when working in the road reserve.

We will meet you at the site on the day the work is to be undertaken to locate and identify the pipeline, and then issue you with a *permit to work*. We'll need at least two working days notice of the proposed work (more time for larger projects).

The *permit to work* sets out the minimum safety conditions applicable to the proposed work which you must adhere to. **NEVER commence work without a permit**, or you could be liable for any damage to the pipeline and the surrounding easement.

To get your *permit to work* contact Vector on:

Phone 0800 734 567, Fax 06 759 6494

Email landinfo@vector.co.nz

Or write to Vector, Private Bag 2020, New Plymouth

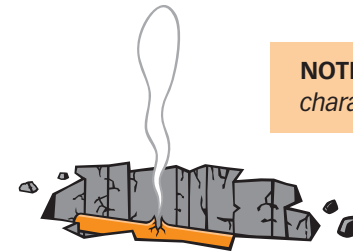
**Transmission pipelines
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Recognising a transmission pipeline leak

Despite all precautions, leaks can occur in pipeline systems. Any escaping gas or liquid is potentially dangerous and warrants caution and immediate action when discovered. If you suspect there is a pipeline leak call Vector immediately on **0800 734 567**.

Gas leaks can be detected by:

- Smell
- Dead or dying vegetation
- The noise of escaping gas
- A visible gas vapour
- The ground near the pipeline may be frozen.



NOTE: Not all gas in pipelines has that characteristic natural gas odour.

Oil leaks can be detected by:

- Smell (petroleum odour)
- Dead or dying vegetation
- Visible oil fluid
- Fog like vapour.

What to do in an emergency

If you hit a gas or oil pipeline, or hear or smell gas escaping:

- Note the nature and location of the gas/oil escape and evacuate the immediate area to a distance of at least 100 metres up wind
- Call the fire service on 111 immediately, then Vector on **0800 734 567**
- Switch off all machinery and remove all sources of ignition, including mobile phones
- Leave the damaged pipe to vent
- **DO NOT** start any vehicles for removal
- **DO NOT** attempt to extinguish ignited gas or oil fires
- **DO NOT** try to cover the damaged pipe with any material, including digger buckets
- **DO NOT** inhale oil fumes.

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Emergency works on other utilities

If you are undertaking emergency works on other utilities, such as broken water mains, in the road reserve near a transmission pipeline or pipeline easement, you must contact Vector immediately on **0800 734 567**.

Every effort will be made to get personnel to the site as soon as possible. If the emergency works must commence prior to Vector arriving at the site, you must only use hand tools when digging below 400mm.

Report all damage to transmission pipelines

In the event of any damage, no matter how minor it may appear, it is essential that you notify Vector immediately. Any damage to the coating or denting of the pipe could seriously impact the integrity or shorten the life of the pipeline.

Never try to repair the pipeline yourself. Repairs must only be made under Vector supervision or by a Vector representative.

You can help us keep the pipelines safe by reporting any pipeline exposure, damage or signs of defects that could put the pipelines at risk. Call Vector on **0800 734 567**.



About us

Vector is New Zealand's leading multi network infrastructure company.

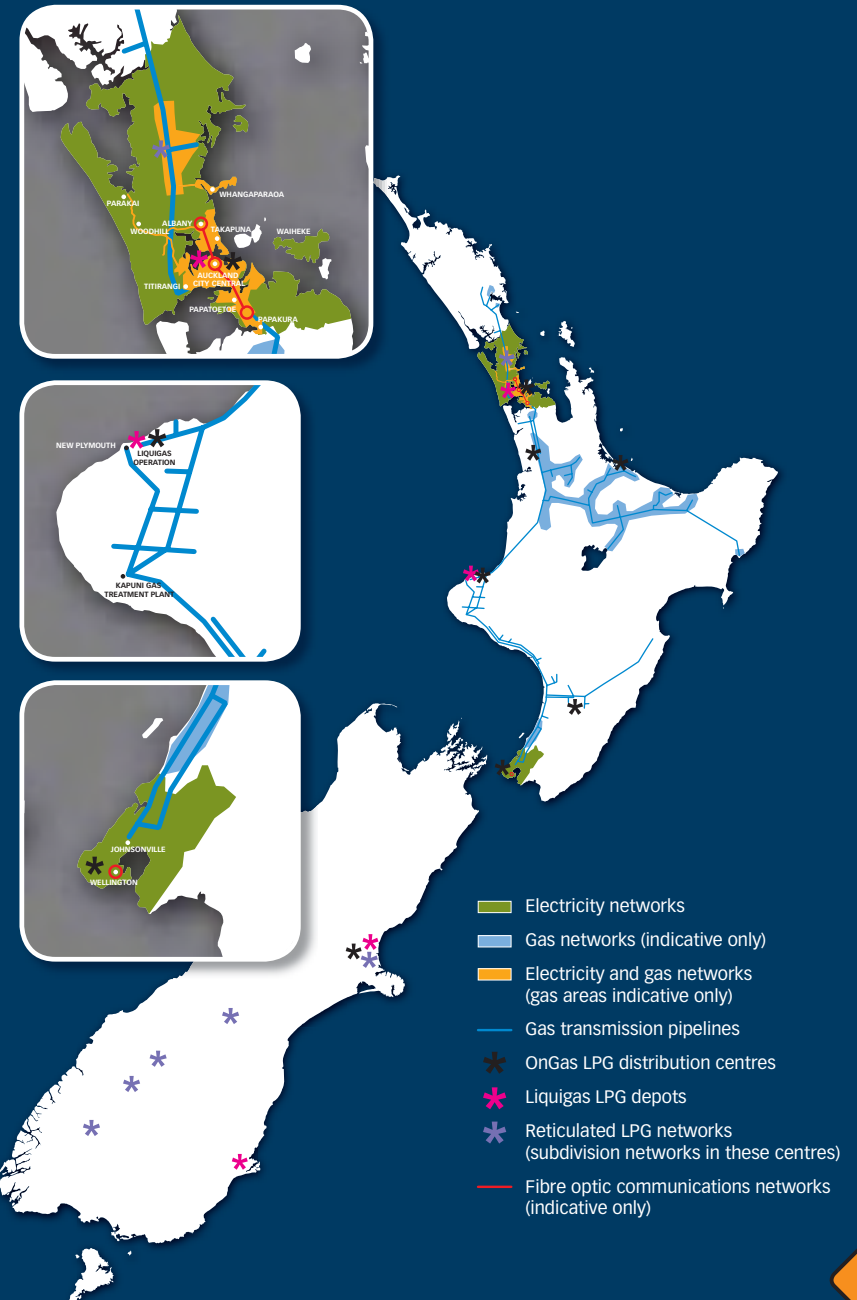
Our group owns and manages a range of energy, technology and service businesses and assets which touch more than one million New Zealand homes and businesses.

We own and operate electricity distribution networks and high speed fibre optic networks in Auckland and Wellington, and gas processing, transmission and distribution networks throughout the North Island.

For more information about Vector visit www.vector.co.nz

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Vector's networks



Contact us

For more information, on-site supervision and *permits to work*:-

- Call **0800 734 567**
- Fax 06 759 6494
- Email landinfo@vector.co.nz
- Or write to Vector, Private Bag 2020, New Plymouth.

In an emergency call the fire service on 111, then Vector on **0800 734 567**.

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Disclaimer

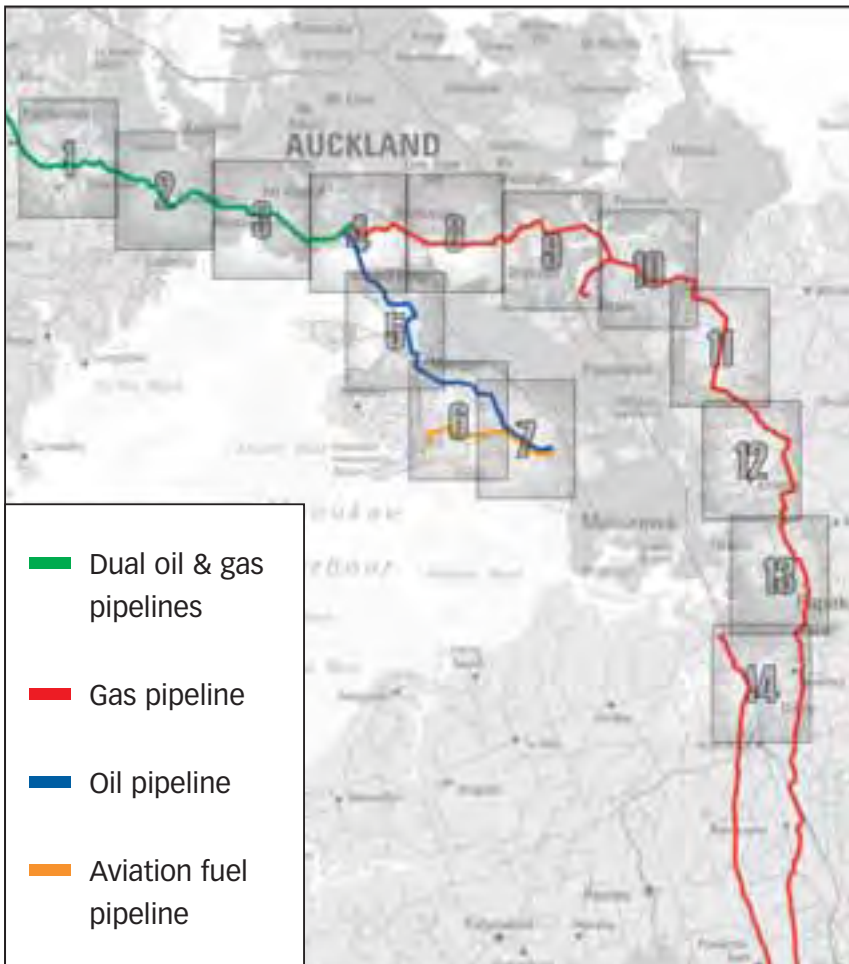
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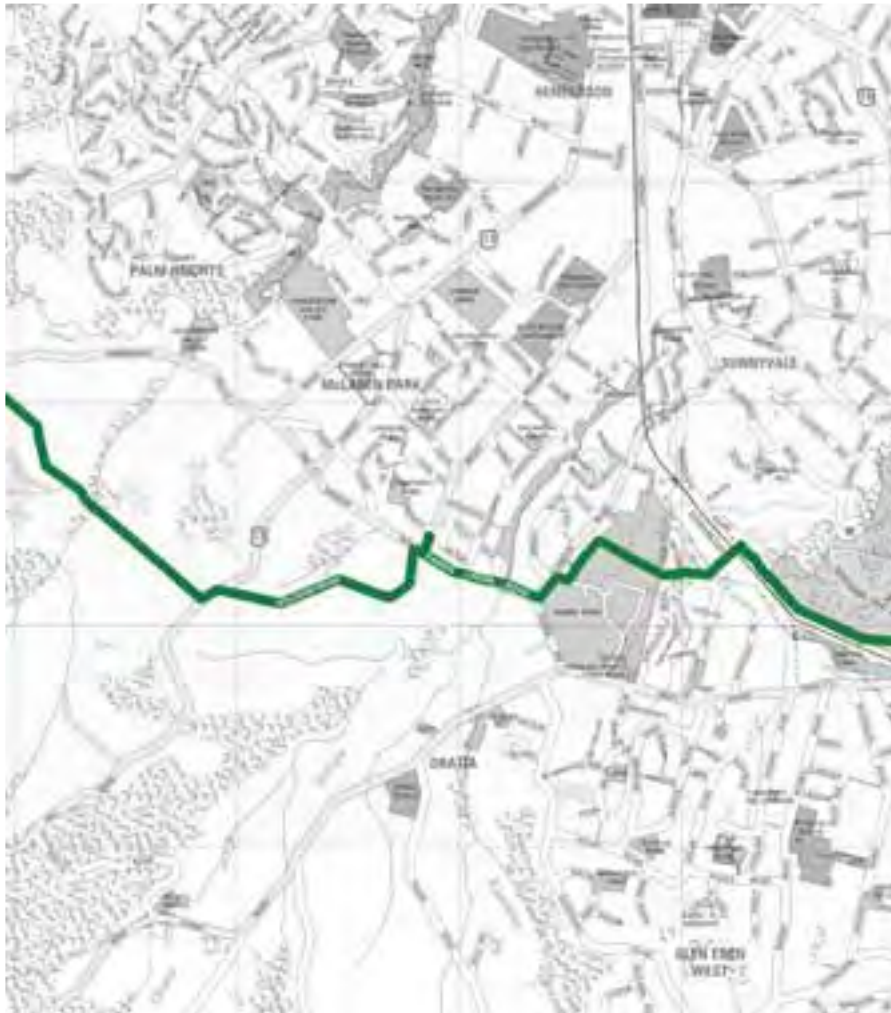
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Transmission pipeline maps for the Auckland urban area

Map index



Map 1



— Dual oil & gas pipelines

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Map 2



— Dual oil & gas pipelines

*In an emergency call the fire service on 111,
then Vector on 0800 734 567*

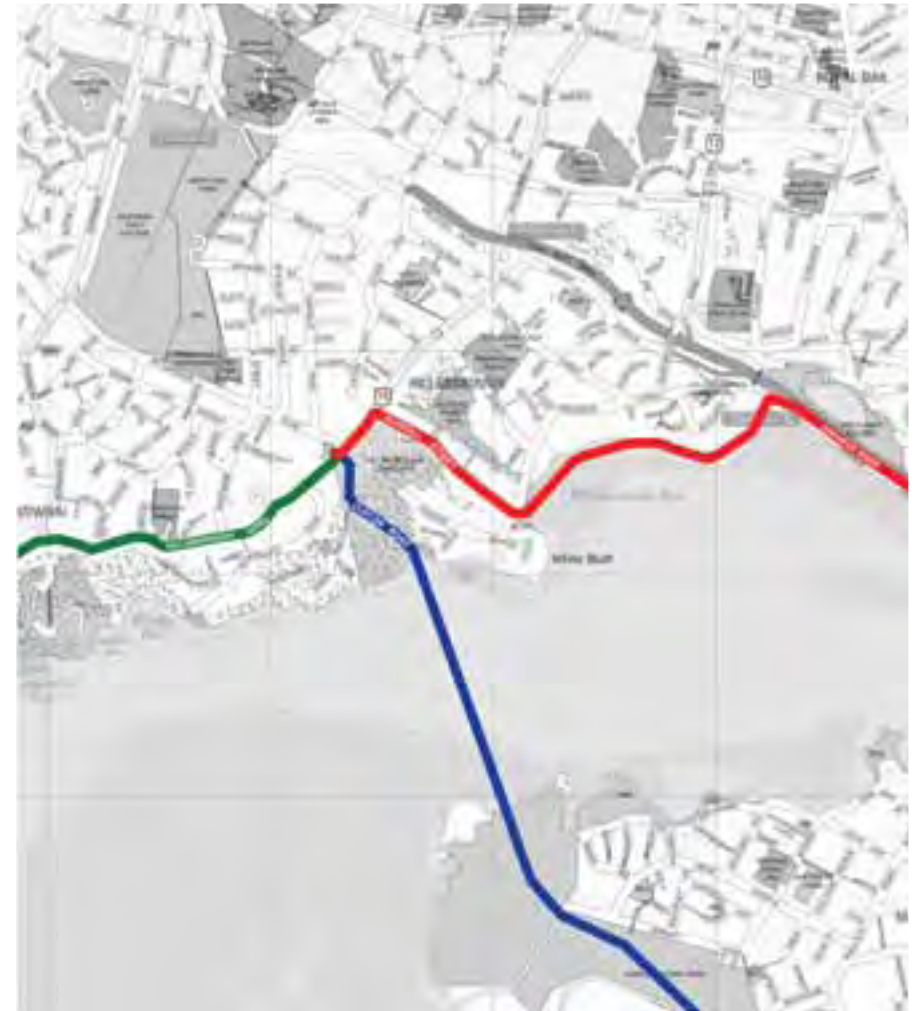
Map 3



— Dual oil & gas pipelines

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Map 4



— Dual oil & gas pipelines

— Gas pipeline

— Oil pipeline

*In an emergency call the fire service on 111,
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Map 9



— Gas pipeline

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Map 10



— Gas pipeline

*In an emergency call the fire service on 111,
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Map 13



— Gas pipeline

**Transmission pipelines
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Map 14



— Gas pipeline

*In an emergency call the fire service on 111,
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