FREQUENTLY ASKED QUESTIONS

1.0 PROJECT OVERVIEW

1.1 Why does Waipa Networks Limited (WNL) want to build a new 110kV electricity line?

WNL are planning to build, own and operate a second 110kV line to supply Te Awamutu to eliminate the need for Transpower outages of 8 hours or more every 4 years and numerous unplanned outages each year.

1.2 Who will own the new transmission line?

It makes sense for WNL to construct, own and operate the new line, as it is a local line to meet local needs.

1.3 Who is Waipa Networks Limited?

WNL is 100% owned by the Waipa Networks Trust (WNT) where the benefits of ownership are returned to consumers by way of discounts on power bills twice a year. Since 1993 when the Waipa Networks Trust (WNT) was formed it has returned over $90M to consumers through discounts and dividends.

1.4 What are the potential benefits to the community?

- Power quality enhancement;
- Increased security and reliability of electricity supply to existing consumers (including reducing the need for planned blackouts & unplanned outages);
- Temporary employment opportunities during construction;
- Stimulus and support of economic growth in the Waipa region;
- Attracting new businesses that will bring employment to the region.

2.0 110KV ELECTRICITY LINE, SWITCHING STATION AND SUBSTATIONS

2.1 Where will the new line be located?

The proposed line will be built at 110kV and will link the existing Te Awamutu and Hangatiki substations and will generally follow the rail corridor.

2.2 How was the line route developed?

The route was identified by undertaking a large number of studies that considered different factors and by defining the most sensible route from environmental, community and engineering perspectives. In particular, the line route has been designed to avoid as many houses, buildings and areas of special interest as possible.

2.3 Why doesn't the line follow SH3 and the road?

NZTA will generally not allow new poles to be placed in their designated road corridor as they consider it will increase the risk of vehicles running into them. Significant disruptions to traffic flows would occur even if we were able to follow the state highway. Many houses and buildings are not far from the road and we have tried to keep the line as far as possible away from houses and buildings.

2.3 When will the specific details about the new line route be made public?

Prior to lodging the RMA applications in April / May 2014, WNL will be consulting with public stakeholders, consenting authorities, interest groups and affected parties.

2.4 Why won't WNL release the specific details before making the applications under the Resource Management Act (1991)?

WNL is committed to consulting directly affected land owners and affected parties first, discussing how the new line will impact their property and negotiating for property rights and easements. By consulting with land owners and affected parties first, WNL can define a route that minimises property issues and environmental effects before making an RMA application.

2.5 Why has WNL not signalled its intentions through the council's current District Plan review?

WNL needs to consult with land owners and affected parties to define the final route. WNL plans to lodge a Notice of Requirement in April / May 2014 and will at that stage become publically notified.

2.6 Why does the new electricity line need to be 110kV?

The new line must be capable of conveying electricity from Hangatiki to Te Awamutu. The most efficient and economic way to do this is to operate the line at 110kV.

2.7 What type of structures will be used to support the new line?

The typical conductor support structure will be steel poles with an average height of 21.5 metres. There may be locations where a special structure is required. These locations may include places where the line traverses waterways, next to substations and possibly where the line changes direction. The minimum ground clearance for the line will be 7.5M but clearances will generally be higher depending on land contours.

2.8 What EMF levels will be produced by the new line and existing substations?

Please see the section 8 on EMFs below.

2.9 Will WNL require access to the line and substation sites?

WNL will require access to the new line and existing substations in order to construct operate and maintain these assets. Access arrangements are currently being negotiated with the affected landowners.

2.10 Will WNL staff work at the existing substations?

WNL will own, operate and maintain some of the plant and equipment in the substation sites so will enter these from time to time.

2.11 Will WNL need to remove or trim trees?

Yes. All vegetation must be kept outside the growth limit zone of a line conductor (wire) to protect the security of the supply of electricity and the safety of the public. The rules for managing vegetation near 110kV lines are set out in the Electricity (Hazards from Trees) Regulations 2003.

2.12 When will construction on the new line start and finish?

WNL must obtain the necessary property rights and legal approvals before construction can begin. Once these are obtained, WNL will enter into a further design phase and tender the work required for construction. The timeframe for obtaining approvals and for the further design and tendering work is during 2014/15. Construction will commence during Summer 2015 or 2016 depending on the outcome of consenting processes. Landowners will be consulted once these details are known and specific arrangements will be made for access and timing of the work.

When construction commences, it is likely to take around one year to complete the whole project.

2.13 How long will the electricity line and related infrastructure last?

The design life of components used in this type of electricity line is typically 35 to 40 years. However the line and the related infrastructure, like any other piece of important infrastructure will be maintained and should last in excess of 60 years.

2.14 How can I object to the project?

The local authorities have indicated a preference for the project to be publically notified. When the applications or notices of requirement are lodged, all affected parties will be able to have their say on the project by making a written submission and, if they wish by presenting their submission in person at a hearing under the Resource Management Act (RMA). More information is available on the WNL Fact Sheet – RMA Process at www.waipanetworks.co.nz or visit:

Ministry for the Environment	www.mfe.govt.nz/rma/public/index.html
Environmental Defence Society	www.rmaguide.org.nz/

3.0 NEGOTIATION, PROPERTY RIGHTS AND COMPENSATION

3.1 What are the objectives of the negotiation process?

For the affected landowners and WNL to agree to an easement over a specific area of land and to reach agreement to the compensation that will be paid for the property right.

3.2 What is an easement?

An easement is a property right agreement over a specific area of land that is registered on the property title. An easement specifies the land subject to the easement and the rights of both the landowner and WNL relating to that land.

3.3 What size easement is WNL seeking?

The easement width varies along the line route depending on the distance between structures. The easement width ranges from 11 metres to 26 metres however the typical width over most of the line route is 18 metres.

3.4 Who will own the land under the easement?

The landowner will continue to own the land, but their rights over the easement area are subject to the easement agreement with WNL.

3.5 Will landowners receive compensation?

Yes. WNL will pay directly affected landowners fair and reasonable compensation for the easement.

3.6 How will the level of compensation be arrived at?

WNL is negotiating with landowners to reach fair and reasonable compensation on the basis of independent registered valuer advice. Landowners have been encouraged to obtain an alternative valuation of the easement from a reputable, independent registered property valuer to assist with the negotiations.

3.7 When will the compensation be paid?

This will be agreed between the WNL and the individual landowner.

3.8 Who will be involved in the negotiation process?

The landowner and the WNL negotiation representative that is assigned to them will be involved in the negotiation process. Independent property valuers and legal representatives for both parties will also be involved to support the negotiation process.

3.9 Will other affected parties be compensated?

Parties other than landowners who derive an income off a directly affected property, and who can demonstrate an impact, may be eligible for compensation from construction disturbance.

3.10 When will negotiations start?

WNL is currently negotiating easements and compensation with directly affected landowners.

3.11 What timeframe will negotiations be completed within?

Negotiations will continue until agreement is reached by both parties on the easement and compensation.

3.12 What if no agreement can be reached between the parties?

WNL will make all reasonable effort to negotiate a fair agreement with landowners, as this is the best outcome for both parties. If an agreement on an easement is not able to be reached, WNL may proceed through the process set out in the Public Works Act to acquire property rights.

3.13 Are there any alternatives to easements?

Easements are the accepted norm and the most practicable way of securing long term property rights for a transmission line over an affected landowner's property.

4.0 STATUTORY APPROVALS FOR THE 110KV ELECTRICITY LINE

4.1 What approvals must WNL obtain for the new line?

WNL must obtain a number of approvals to construct, operate and maintain a 110kV line and the related infrastructure. The main law governing the approvals process for a new electricity line is the Resource Management Act 1991 (RMA).

WNL intends to lodge Notices of Requirement to designate a route and some sites, under the RMA. Resource consents may also be required from the regional council, under the RMA.

4.2 What approvals must WNL obtain under other laws?

WNL must obtain a variety of approvals under laws other then the RMA. Examples include, 'authorities' from the Historic Places Trust (NZHPT), where construction works affect an historic site, and 'concessions' from the Department of Conservation (DoC), where the line is located on conservation estate.

4.3 What is a Notice of Requirement (NoR)?

A Notice of Requirement (NoR) is a document that advises district councils that land is required for a public work or project. A Notice of Requirement must be lodged by a requiring authority.

4.4 What is a requiring authority?

A requiring authority is an organisation that is approved by the Minister for the Environment because it meets certain criteria. These criteria are outlined on the Ministry for the Environment website (www.mfe.govt.nz/rma/central/designations). WNL is a requiring authority.

4.4 What is designation?

A designation is a provision in a district plan that provides notice to the community that a requiring authority is using land, or intends to use land in the future, for a public work or project.

More information about designations is outlined on the Ministry for the Environment website (www.mfe.govt.nz/rma/central/designations).

4.5 What is a resource consent?

A resource consent is an approval for an activity that is regulated by a district or regional plan. Resource consents are granted by local or unitary authorities which, when carrying out this function, are known as consenting authorities.

There are different types of resource consent; for example, land-use consents and water permits. The type of resource consent required depends on the activity and its classification in the applicable district or regional plan(s).

More information about resource consents can be found online at the Ministry for the Environment website (http://www.mfe.govt.nz/publications/rma/everyday/overview/).

4.6 What will happen when WNL lodges its notices and applications?

When WNL lodges its notices with the territorial authorities (district councils) the authorities will first review the notices to ensure that they contain adequate information on the project. If the notices are accepted as complete by the councils they will be publically notified, and everybody in the community will have the opportunity to lodge a submission on the project outlining their views. Submissions on the project will be heard in a council hearing and then the council's will make a recommendation to WNL as to whether they consider WNL should confirm, withdraw or modify

the notice's. WNL will then lodge their decision with the authority. WNL's decision can be appealed to the Environment Court.

4.7 What approvals processes are available under the RMA?

After a requiring authority lodges a Notice of Requirement and any resource consent applications with the relevant consenting authorities, these can be processed in any one of the following ways:

- The notice and application are processed under the traditional 'two tier' approach, whereby the consenting authorities are responsible for processing the documents and holding any public hearings. The notices or applications can be appealed to the Environment Court by the applicant, local authorities or submitters.
- The notice and application are 'called-in' by the Minister for the Environment, and then are heard by a Board of Inquiry (BOI) or the Environment Court.
- A consenting authority requests the Minister for the Environment to call-in the notices and applications to be heard by a Board of Inquiry or the Environment Court.
- WNL requests the Minster to call-in the notices and applications to be heard by a Board of Inquiry or the Environment Court.
- The notices and applications are directly referred to be heard by the Environment Court.
- WNL lodges the applications directly with the Environmental Protection Authority (EPA).

More information on these processes can be found online at the Ministry for the Environment website: www.mfe.govt.nz.

4.8 How will stakeholders and the public have their say?

WNL's preferred approached is the normal two tier approach but regardless of which of the above processes is used, following the lodgement of the notice, the relevant authority will publicly advertise the notice and call for submissions from the public if they consider the effects to be more than minor. If publically notified, any person or group can make a submission and present their views at a hearing, which is held by the processing authority as part of the decision-making process.

Although there is no obligation to consult under the RMA, WNL is undertaking extensive consultation with the individuals and groups that are likely to be affected by, or interested in, the project.

4.9 Will environmental effects caused by the new line be addressed under the RMA process?

Yes. The RMA specifically seeks to avoid, mitigate and remedy effects on the environment that are caused by new activities. WNL is committed to meeting the requirements of the RMA and where practicable will implement measures to avoid, mitigate and remedy any significant environmental effects that are caused by the transmission line.

4.10 What are the environmental effects of a new 110kV electricity line?

Environmental effects are likely to occur as a result of the construction, operation and maintenance of the transmission line. Some of the typical effects are outlined below.

WNL must also detail any adverse or positive environmental effects that will be caused by the transmission line in its Notices of Requirement or resource consent applications.

4.11 How will WNL ensure that environmental effects are minimised?

WNL engaged environmental experts to identify sensitive environments, special interest areas and dwellings in the planning and early design stages of the project. As a result, it was possible to identify routes with less effect on the environment.

WNL must demonstrate to the consent authorities how it proposes to avoid, remedy and mitigate any environmental effects that may occur, as part of the RMA process. Environmental experts will be engaged to identify measures that WNL can pursue to avoid, mitigate and remedy any significant effects.

If approvals are given, conditions will be placed on the designation and resource consents to avoid, remedy and mitigate any environmental effects that may occur.

5.0 CONSTRUCTION

5.1 What will be the effects during the construction of the new line?

There will be a variety of short term environmental impacts during the construction of the new line. These may include the creation of access tracks; minor soil disturbance at each pole site; the use of heavy machinery; and construction noise. WNL is committed to minimising each of these impacts by working with individual land owners and affected parties, and the use of appropriate technologies and solutions.

Any permanent alterations, such as the permanent creation of access tracks will be discussed with the land owner at an early stage in the negotiations and mutually acceptable solutions agreed. In all other cases the land will be returned, as near as possible, to the condition it was found in prior to the work commencing.

6.0 VISUAL

6.1 What will be the visual affects of the new line?

The new line will use single steel poles about 21m tall with offset insulators to minimise their visual profile. No towers will be employed and the line will be placed as much as practicable to avoid homes and other buildings.

There will be four single conductors on each pole which will be as small as possible to carry the required load. One of the conductors will be a fibre optic to carry the protection signals necessary for the line.

7.0 NOISE

7.1 Will there be any noise from the 110kV electricity line and related installations?

There are three types of noise that may be present at times and they are called: Aeolian Noise, Corona Noise and Radio Interference.

7.2 What noise is produced and when does it occur?

Aeolian noise	'Wind in the wires' noise that may be present when the wind blows hard. Aeolian noise may be caused by regular air fluctuations across the conductor (line), structures and the fittings on the structures. Aeolian noise can be largely eliminated through engineering design practices that modify the airflow. Aeolian noise is rarely a problem in practice.
Corona noise	Corona is generally only audible under conditions of high humidity, such as rain and fog. It can occur around the conductor (line) and insulator. Corona occurs when there are localised electrical discharges caused by humidity, producing a hiss or a crackle noise. If Corona occurs, there may also be radio interference present.
Radio Interference	Radio interference, or static interference, may occur and this is when you can hear a crackle noise on some appliances, like a radio or your telephone. A similar example is when an electric fence interferes with your telephone. Proper design and fittings are used to eliminate these problems which can occur from any electric line.

7.3 How will WNL ensure that any noise is kept to acceptable levels?

WNL ensures that all its electricity installations meet the New Zealand standard for acceptable noise levels through the process of designing the 110kV electricity line and network installations. An easement will also be established on both sides of the transmission line to ensure that any noise produced is within the acceptable levels of the New Zealand standards.

8.0 ELECTROMAGNETIC FIELDS (EMF)

8.1 What are electromagnetic fields?

The term Electromagnetic Fields (EMFs) refers to electric fields and magnetic fields. For a more detailed description, visit the Ministry of Health's National Radiation Laboratory (NRL) at www.nrl.moh.govt.nz and view their publication *Electric and Magnetic Fields and your Health*.

8.2 When do EMFs occur?

EMFs occur naturally around the earth and in our atmosphere. EMFs are also produced whenever electricity or electrical equipment is in use – including in our homes, offices and workplaces.

8.3 How are EMFs measured?

Electric fields are measured in units of 'volts per metre' (V/m) and magnetic fields are measured in units of Teslas (T) or microteslas (µT).

8.4 What is a safe level of EMFs?

The New Zealand guideline used for acceptable exposure levels is the Ministry of Health National Radiation Laboratory (NRL) Guideline. The recommended safe continuous exposure limit for magnetic fields for the general public is 200µT (microteslas). This exposure limit is the same in Australia, Germany, Switzerland and the United Kingdom.

The New Zealand recommended safe continuous exposure limit for electric fields is 5kV/m (kilovolts per metre).

8.5 What EMF levels are produced by electricity network lines and substations?

WNL's electricity equipment is comparable with common household appliances. For example, an electric kettle produces up to 1µT, a computer produces up to 2µT and an electric stove or microwave can produce around 5µT. A small substation at peak load produces less than 0.1µT and a very large substation produces up to around 5µT.

8.6 How do EMFs occur and behave?

The strength of electric fields emitted from a transmission conductor (line/wires) is influenced by its voltage, which generally stays constant. The strength of the magnetic field relates to the amount of electrical current that is flowing through the conductor. The strength of both fields reduces and ceases to exist with distance from the conductor and objects like buildings and metal roofs also reduce the fields or shield the fields.

8.7 Are there health issues associated with EMFs?

Many people have questions and concerns about EMFs and how they relate to our health. In New Zealand, the National Radiation Laboratory (NRL) reviews research from New Zealand and overseas that relates to EMFs and health. The NRL has developed an information booklet called *Electromagnetic Fields and your Health*, which is available from the NRL website www.nrl.moh.govt.nz.

8.8 How does WNL ensure safe levels of EMFs?

WNL ensures that EMF levels are kept below the Ministry of Health's guidelines for electric and magnetic field levels. This is done through the engineering design of distribution lines, transmission lines, switching stations and substations.

WNL has taken EMFs into consideration in the design of the Te Awamutu Reinforcement transmission line and other related network installations.

For example:

- Where possible, the transmission line route and related network installations have been designed to avoid as many existing buildings and structures as possible.

The transmission lines have been designed to operate within the guidelines published by both the International Committee on Non-ionising radiation and protection (ICNIRP) and by the New Zealand Ministry of Health.

- WNL is seeking an easement on both sides of the transmission line and will restrict the activities that will be allowed to occur within the easement area. For example, houses and other structures like cow sheds and schools will not be permitted within the easement.

8.9 Where can I find independent, expert advice and industry guidelines on EMFs?

More detailed information is available from:

- The New Zealand Ministry of Health's National Radiation Laboratory (NRL) www.nrl.moh.govt.nz. See their publication *Electric and Magnetic Fields and your Health.*
- The World Health Organisation (WHO) http://www.who.int. See their report on the health effects of exposures to extremely low frequency (ELF) electric and magnetic fields (EMFs), their fact sheet and full report.
- The International Commission on Non-Ionising Radiation Protection (ICNIRP) www.icnirp.de.
- The Australian Government Agency ARPANSA www.arpansa.gov.au. See their report on *Extremely Low Frequency Magnetic Fields*.
- The Health Protection Authority (HPA) www.hpa.org.uk.