Waipa Networks Limited

Asset Management Plan

1 April 2013 to 31 March 2023

Liability Disclaimer

The information in this document has been prepared in good faith and represents Waipa Networks Limited's intentions and opinions at the date of issue.

Waipa Networks Limited does not give any assurance, either explicitly or implied, about the accuracy of the information or whether Waipa Networks Limited will actually implement the plan or undertake any work mentioned in the document.

None of Waipa Networks Limited's Directors, office holders, shareholders or representatives accepts any liability whatsoever by reason of, or in connection with, any information in this document or any actual or purported reliance on it by any person.

Waipa Networks Limited may change any information in this document at any time.

Waipa Networks Limited Asset Management Plan was

Certified by:	The Board	Directors, Waipa Networks Limited
Authorised by:	Ray Milner	Chief Executive Officer, Waipa Networks Limited
Prepared by:	Lee Goddard	Network Asset Manager, Waipa Networks Limited

Certification Date

This Asset Management Plan was certified by The Board that it describes actual processes and practices on 26 March 2013

Table of Contents

1.0 Abbreviations

A, kA	Ampere, kilo-Ampere
ABS	Air Break Switch
AMMAT	Asset Management Maturity Assessment Tool
AMP	Asset Management Plan
CAIDI	Consumer Average Interruption Duration Index
CAD	Computer Aided Design
CBG GXP	Transpower New Zealand Cambridge GXP
CIC	Transpower New Zealand Customer Investment Contract
DCDB	Digital Cadastral Database
DDO	High Voltage Drop Out Fuses
Disconnector	ABS, Gas Switch, Knife Switch
DSD	Transpower New Zealand Detailed Solution Development
EDB	Electricity Distribution Business
GPS	Global positioning system
GXP	Grid Exit Point
ICP	Installation Control Point
IT	Information Technology
KPI	Key Performance Indicator
LINZ	Land Information New Zealand
MD	Maximum Demand
MVA	Mega-Volt-Ampere
MW	Megawatt
NCP	Network Connection Point
NCS	Napier Computer System
NIC	New Investment Contract
NZTA	New Zealand Transport Agency
ODAF	Oil Directed Air Forced
ODV	Optimised Deprival Value
PILC	Paper Insulated Lead Cover
POS	Point of Supply
RMU	Ring Main Unit
RTU	Remote Terminal Unit
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SCADA	Supervisory Control and Data Acquisition
SCI	Statement of Corporate Intent
SSR	Transpower New Zealand Solution Study Report
TMU GXP	Transpower New Zealand Te Awamutu GXP
Transpower	Transpower New Zealand Ltd
V, kV	Volt, kilo-Volt
Waipa	Waipa Networks Ltd
XLPE	Cross Linked Polyethylene
ADSS	All Di-Electric Self Supporting Fibre Cable

2.0 Summary of Asset Management Plan

This summary provides an overview of the content of Waipa Networks Ltd AMP.

Waipa Networks Limited (Waipa) is the EDB that owns and operates the electricity distribution assets in Cambridge and Te Awamutu and their surrounding rural areas in the Waikato region. Waipa's distribution system covers 1,865 square kilometres. The Company is owned by the Waipa Networks Trust (the shareholder who represents all connected consumers).

Waipa conveys electricity on behalf of 9 energy retailers from Transpower's Cambridge and Te Awamutu GXPs via 24 radial 11kV feeders, 11kV/400 transformers and associated 400V/230V reticulation to 23,685 ICPs.

The AMP is a key document that provides a systematic governance and management framework for managing Waipa's assets. It informs Waipa's stakeholders of the Company's policies for: investment; maintenance and retirement of assets; operating the network safely and in a prudent manner; ensuring security of supply and setting network reliability targets for different consumer groups. The AMP also meets the Commerce Commission's Electricity Distribution Information Disclosure Determination 2012.

The document describes the Company's business planning cycle, its relationship and interaction with Waipa's Purpose, annual business plan, capital and operational budgets and Statement of Corporate Intent (SCI).

The AMP was approved by Waipa's Board of Directors on 26 March 2013. It discusses new investments with Transpower and all network capital and maintenance works together with their associated budgets that are reasonably expected to be undertaken over the next 10 years.

The document identifies Waipa's stakeholders and their interests in the Company. It discusses the Company's priorities for managing stakeholder conflicts to ensure that: public and employee safety is not compromised; solutions are financially and operationally viable, compliant with best EDB practice and quality of supply is not compromised.

The Waipa Network Trust and the Company business aspirations are aligned through the SCI and as a consequence there have been no conflicts between the Company and shareholder.

The AMP describes who is responsible and accountable for asset management from the governance, executive management and operational perspectives.

The document describes the Company's asset management process, systems and quality of information. Waipa believes it has developed three robust asset management information systems (SCADA system, geographical information system and an integrated data warehouse system) that are appropriate for the size of the network, number and type of distribution assets, its financial and administrative business needs, consumer needs and other stakeholder requirements.

The AMP describes the network configuration and the location, numbers and types of distribution assets owned by the Company. Waipa has gathered comprehensive information on the physical attributes and condition of its assets through routine visual and thermal surveys and specific partial discharge and corona surveys as required. Based on Waipa's asset age profiles the Company does not expect any "wall-of-wire" issues over the next 10 years.

The document specifies Waipa's service level targets for various segments of the network and other business performance targets. These targets have been set through analysis of customer satisfaction surveys and consultation with stakeholders and as outcomes of the Company's Purpose. Waipa believes that its customers are satisfied with the current reliability of the network as a result of independent surveys and notes the fact the Company has some of the lowest line charges in New Zealand.

Te Awamutu is supplied by only one Transpower 110kV transmission line from Karapiro. Transpower acknowledges that this transmission line is statistically one of their most unreliable supplies. This poor performance coupled with Transpower's need for a 9 hour planned outage every 4 years to maintain equipment at the Karapiro and Te Awamutu GXPs is unacceptable to Waipa's 13,000 Te Awamutu consumers.

Waipa has had protracted discussions with Transpower over many years to provide a reasonably priced technically robust second supply to Te Awamutu without success.

Last year the Company decided to install a new line from Te Awamutu to Hangatiki which will provide the needed security of supply and improve reliability. This line will be owned by Waipa and operated by the System Operator as part of the grid. Waipa intends to complete this project over the next three years subject to comprehensive consultation with stakeholders.

Through a Transpower CIC in 2001 the transformer capacity constraint was removed at Cambridge GXP. However, there remains a capacity constraint on Transpower's aged 11kV switchboard at Cambridge GXP. Waipa executed a CIC with Transpower in 2010 to install a new switchboard to remove the constraint and provide additional switches for improved reliability through feeder splitting. Transpower expect to commission this new switchboard in 2014.

Through a Transpower CIC in 2006 Waipa removed all transformer and switchboard capacity constraints at Te Awamutu GXP.

The AMP discusses the Company's asset management criteria (quality, capacity, reliability and security of supply) and the planning assumptions (rate of GXP and Company feeder load growth) and the methods adopted to prioritise projects.

Subject to actual load growth aligning with predictions the only constraint likely to occur within the next 10 years will be on the Company's longest feeder supplying Kawhia. Waipa plans to commission a diesel generator at Lake Road near Kawhia if and when required for voltage support at peak times.

Waipa will continue its strategies of splitting feeders, installing reclosers to segment feeders and installing dropout fuses on spur lines where improvement of reliability can be achieved.

NZTA has indicated that the Tamahere South and Cambridge Bypass sections of the Waikato Expressway are likely to commence in September 2014. It is expected that this work will be completed during 2016. The project will impact on all of the Company's Cambridge feeders. The AMP discusses the Company's plans to relocate these assets.

The document describes Waipa's life-cycle maintenance criteria (is the asset safe and "fit for purpose") and physical condition asset surveys which drive the Company's maintenance works. The first condition survey completed in January 2006 revealed 2479 asset defects the last of which was eliminated during 2010. A second asset condition survey commenced in 2010 and has identified 799 defects as at 31 March 2012. Any defects identified will be eliminated on a prioritised basis.

The Company has a vegetation management programme to minimise interference from trees and maintain reliability. A routine earth testing and repair programme is used to ensure system safety. Waipa employs an external service provider to carry out an annual thermal survey. Any thermal defects identified will be eliminated as a matter of priority. The Company employs external service providers for partial discharge and corona surveys when required.

The Company has a number of aged two pole hardwood platform transformer structures that will be replaced by either a single pole transformer substation or a padmounted substation over the next 8 years for public safety. The Company has a number of aged ABSs on its 11kV feeders whose operation is becoming unreliable. These ABSs will be progressively replaced by either SF_6 gas switches or modern ABSs according to the fault duty rating required.

Where Waipa identifies, through surveys, significant portions of deteriorated 11kV or/and 400V lines the Company will evaluate the option of replacing these with underground reticulation for compliance and public safety on a case by case basis.

Waipa has assessed the risk from physical threats to its network posed by naturally occurring hazards (wind, lightning, floods, land erosion, earthquakes, volcanic eruptions and geothermal activity and adverse weather) and concludes that the risk is minimal and any damage to assets can be dealt with using Company and contracted resources. Waipa has a simple radial network and is confident it can restore power safely in an orderly manner after a major event. Waipa has back-up systems for its business systems and SCADA system to continue operating the business in the event of a major incident.

In 2010 part of Transpower's new switchboard at Te Awamutu failed in service. As a consequence of this significant incident the Company has prepared comprehensive contingency feeder switching plans to mitigate the extent of outages resulting from any future bus-bar fault.

The Company has prepared Participant Outage Plans for immediate and developing system events as required by the Electricity Authority.

Whilst Waipa encourages distributed generation on its network the Company has had only 6 connections to its network as at 31 March 2012.

The Company believes its asset management process, predictions on load growth, procedures to identify future network constraints, routine network assets surveys and commitment to improve network reliability, will enable Waipa to make informed asset management decisions regarding existing assets, non-asset solutions, procuring new assets and retiring assets. Waipa believes that any "incompleteness" of asset data will not be material when making asset management decisions.

Whilst the Company continually improves its existing information systems no radical changes of systems is contemplated.

Waipa is confident that; providing security of supply to Te Awamutu, continually improving reliability, completing network development plans and practicing life cycle management of assets, will preserve the value of the network for the Company's shareholders and will provide our connected consumers and public with a network which has capacity for growth, is secure, reliable and safe.

3.0 Background and Objectives

3.1 Purpose of the Plan

The primary purpose of this AMP is to provide a governance and management framework that ensures Waipa:

- sets service levels for its electricity network that reflect safety, customer, community and regulatory requirements.
- based on those expected service levels, understands what network capacity, reliability and security of supply will be required both now and in the future and what issues drive these requirements.
- has a robust and transparent process in place for managing all phases of the network life cycle from concept to disposal.
- has adequately considered the classes of risk implicit in all of it's lifecycle activities and that it has systematic processes in place to mitigate identified risks.
- has made adequate provision for funding and resourcing all phases of the network lifecycle.
- makes decisions within systematic and structured frameworks at each level within the business and that avoid ad-hoc decisions.
- has an ever increasing knowledge of its asset locations, ages, conditions and the networks likely future behaviour as it ages and may be required to perform at different levels.

The secondary purpose of this AMP is to inform Waipa's stakeholders of the Company's:

- policies for investment in construction, maintenance and retirement of assets,
- policies for operating the network in a safe and prudent manner,
- security of supply and network reliability targets for different consumer segments,
- major network developments and enhancements over the next 10 years and
- annual capital and maintenance budgets.

This AMP endeavours to meet the legislative requirements of the Electricity Distribution Disclosure Determination 2012.

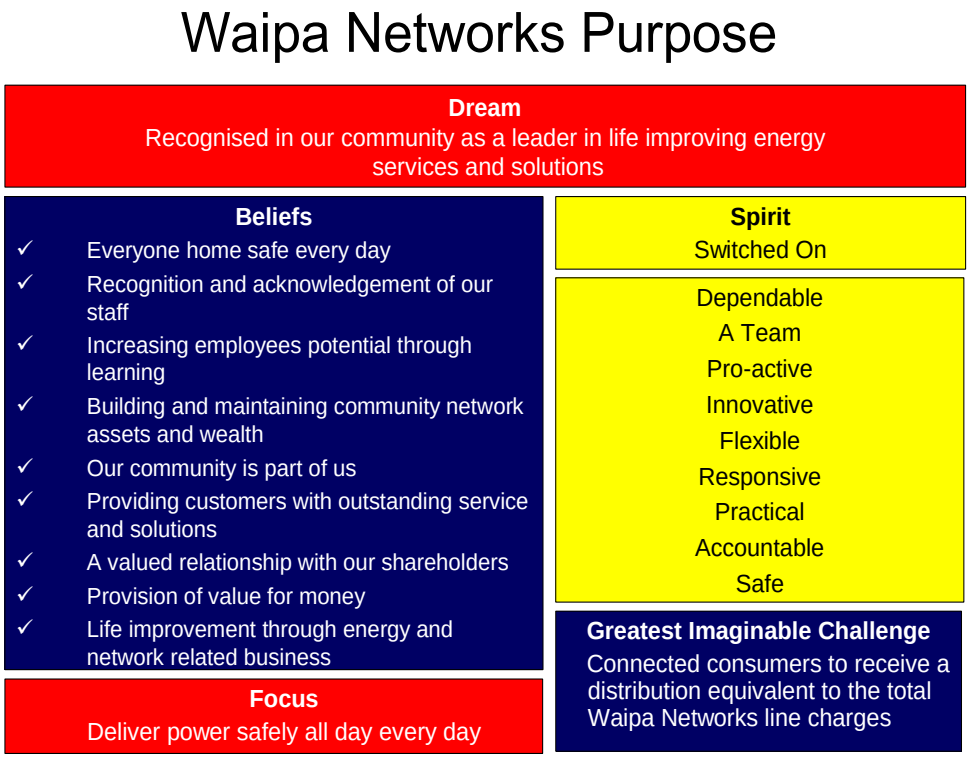
This AMP endeavours to meet the needs of external users and addresses information gaps to enhance the transparency of disclosure by identifying deficiencies and promoting improvements.

3.2 Interaction with Corporate Goals, Business Planning Process and Plans

Waipa's Business Planning Process is outlined as follows.

Waipa Networks Purpose

At the annual Strategic Planning Meeting (held each September) Company Directors and Executive Management established Waipa's Purpose statement which is summarised in the following chart.



Asset Management Plan

At an annual Strategic Planning Meeting held in September Company Directors and the Executive Management reviewed the AMP taking into account past network physical and financial performance, the current SCI and information affecting future network performance and expenditure.

This AMP is predicated on Waipa's Focus:

Deliver power safely all day every day

This AMP maintains a high level focus on Waipa's Beliefs:

Building and maintaining community network assets and wealth

Our community is part of us

Provision of value for money

Life improvement through energy and network related business

This AMP focuses on network asset management related matters. It does not discuss business or financial matters related to the non-network asset management aspects of Company.

Annual Business Plan and Budgets

The Annual Business Plan and Budgets are informed by the AMP and provide implementation details and the financial ability to achieve the outcomes of the AMP. The Annual Business Plan, Network Capital and Operational Budgets are approved by Directors at Waipa's March Board meeting.

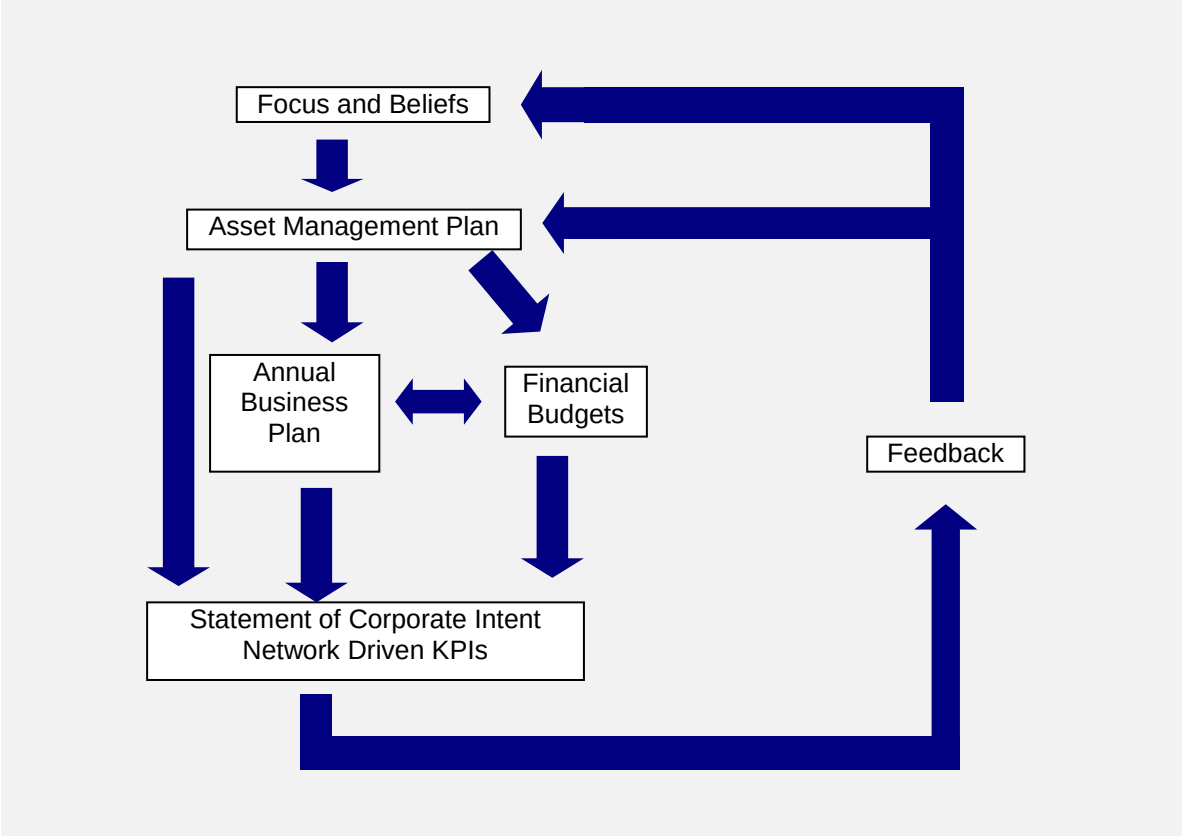
Statement of Corporate Intent

The SCI is derived from the AMP, Annual Plan and full financial budgets. The SCI sets agreed KPI for the Company's key physical and financial performance targets for 3 financial years. The SCI is approved and adopted by the Waipa Networks Trust (Waipa's shareholder) by 31 May each year.

Company Directors report to Waipa Networks Trust in June and December on Waipa's actual physical and financial performance against the SCI targets. A gap analysis on significant variances provides an important input for Directors and Executive Management at their annual Strategic Planning Meeting.

This feedback closes the Business Planning Process cycle shown below.

Business Planning Process Cycle



3.3 Period Covered by Plan and Date Certified

This AMP identifies all new investments with Transpower and capital and maintenance works on the network that are reasonably expected to be undertaken over the next 10 years between 1 April 2013 and 31 March 2023.

This AMP was certified by Waipa's Board of Directors that it describes the Company's actual processes and practices on 26 March 2013.

3.4 Stakeholder Interests

The following table identifies Waipa's stakeholders, how they relate to Company and their reasons for doing so.

Stakeholders	Relationship / Interface	Nature of Interest
Electricity consumers	Beneficiaries of Waipa Networks Trust Independent surveys Consultation meetings Daily direct and indirect feedback	Fault services, Network reliability Quality of supply, Controlled supply New connections, Safety disconnects Service requests, Bi-annual discount
Fonterra	Conveyance agreement Ad-hoc meetings	Network capacity, Network reliability Quality of supply, Cost of supply
Waipa Networks Trust	Shareholder Six monthly meetings	Return on investment Bi-annual discount Sustainable business Responsible corporate behaviour KPIs
Electricity Retailers	Interposed use-of-system agreements Ad-hoc meetings	Line charges and methodology Line losses, Revenue protection Billing accuracy and timeliness Retailer services Quality of supply and reliability
Waipa, Otorohanga, Waikato, Waitomo District Councils, Environment Waikato	Utility service provider Road requirements Regular meetings RMA / Planning	District & Regional planning requirements Traffic Management Utility services locations Co-ordinated street openings
Transit NZ	Road user requirements Ad-hoc meetings	Traffic management Streetlighting Utility services locations
Other utility operators	Road user requirements Ad-hoc meetings	Utility services locations
Transpower	Transmission Agreement New investment contracts Monthly meetings	Capacity of grid and connection assets Reliability of grid and connection assets Security of transmission lines Maintenance of connection assets and lines
Government / Regulatory Electricity Authority Commerce Commission Ministry Economic Development Auditor General Inland Revenue	Electricity Distribution Business legal operating framework Ad-hoc meetings, discussions and correspondence	Information Disclosure compliance Threshold compliance Compliant business practices Submissions on proposals
Industry Suppliers	Goods & services provider	Products and services
Waipa Employees	In house Company work force	Zero injuries Healthy employment environment Individual training plans Personal growth opportunities/etc
Electricity & Gas Complaints Commission	Customer complaints	Customer complaints
Waikato Networks Limited	Shared use of Assets	Attachment of ADSS fibre cable to poles Part ownership of Waikato Networks Limited

Waipa is an EDB owned by Waipa Networks Trust whose beneficiaries are the electricity consumers connected to the Company's network.

Consumer interests are ascertained by independent surveys, consultation meetings, direct and indirect feedback on the Company's plans, performance and service delivery.

Other stakeholders include energy retailers, by virtue of interposed use-of-system agreements, Waipa, Otorohanga, Waikato and Waitomo District Councils with district planning issues, Environment Waikato, Transit NZ and other utility operators with common reticulation concerns and various government agencies with monopoly business and information disclosure requirements.

Waipa's commercial, energy efficiency, customer service, security and reliability of supply, compliance, staff and social and community objectives are outlined in the SCI, the essence of which is expressed in the Company's Purpose and Focus;

Recognised in our community as a leader in life improving energy services and solutions

Deliver power safely all day every day

The interests of stakeholders are recognised and conveyed to the Company by Waipa Networks Trust, Waipa Networks Board of Directors and by the Company's customers, connected consumers and employees.

From an asset management perspective the interests of Waipa's stakeholders are addressed by ensuring:

- Creation and maintenance of a safe and reliable distribution network,
- Quality of supply performance meeting consumers needs,
- Optimisation of capital and operational expenditure,
- Maintaining a sustainable business that caters for consumers growth requirements,
- Comprehensive risk management strategies and planning for contingencies,
- Due consideration to the environmental impact of Waipa's operations,
- Regulatory and legal compliance,
- Economically efficient pricing methodologies,
- Security standards reflecting consumers needs,
- Robust network growth and development plans are prepared and
- Comprehensive asset replacement strategies are developed.

No material conflicts of interest have arisen between the Company and the Waipa Networks Trust who represent the consumer /owners of the Company.

However, where conflicts arise between other Stakeholders defined in the above table Waipa's priorities for managing these conflicts are to ensure that;

- public and employee safety is not compromised,
- the solution is financially and operationally viable,
- the quality of supply is not compromised,
- the solution is in compliance with best EDB practice and
- customers reasonable expectations are met.

3.5 Accountabilities and Responsibilities for Asset Management

Waipa's Network Management team determines the network enhancement and asset maintenance programmes, the various security of supply levels and the standards for automation and system operations that will improve network reliability and technical and economic efficiency.

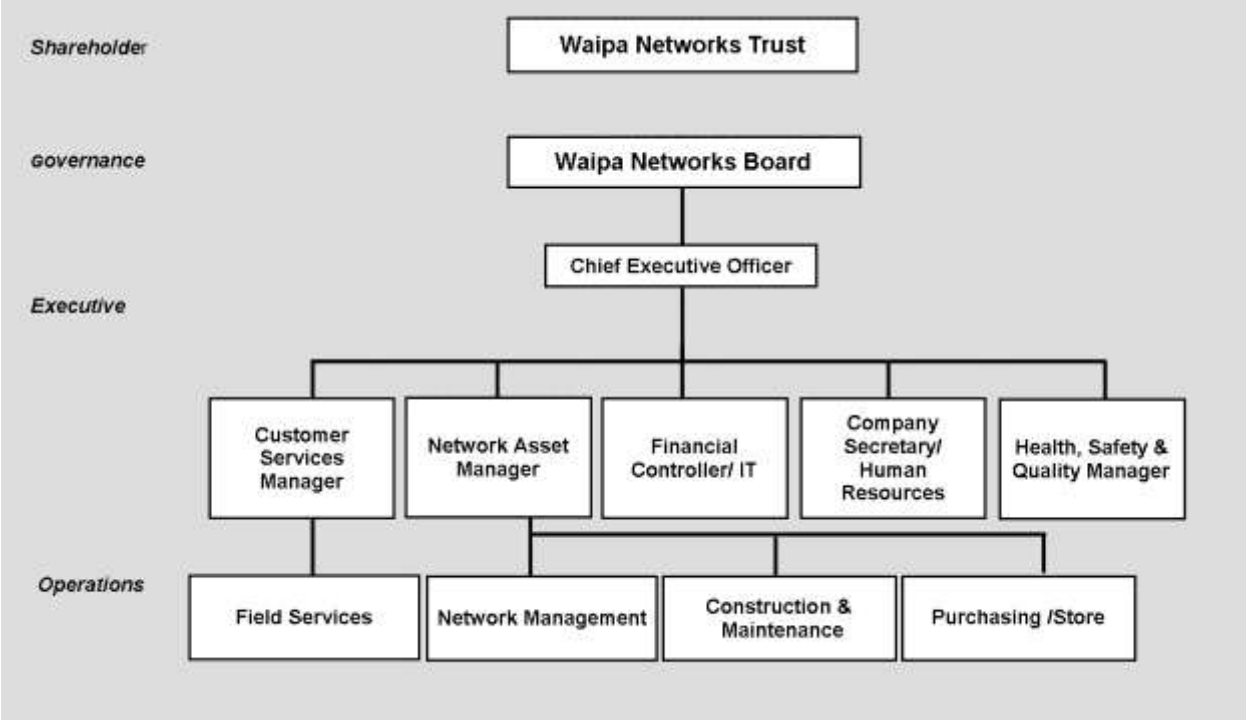
Major network capital works identified by the Network Management team with indicative budgets are tabled at the Company's September Strategic Planning meeting for Director's information, evaluation and appropriate approval.

The AMP is prepared by the Network Asset Manager, authorised by the Chief Executive and certified by the Company's Directors the following March.

Waipa's Network Asset Manager provides monthly reports to the Company's Directors on progress against targets of the annual capital and maintenance plans, system reliability and performance targets.

Waipa's Board reports to Waipa Networks Trust bi-annually on progress against the targets and plans agreed in the SCI.

An organisation chart depicting Waipa Networks Trust, Waipa's Board of Directors, Executive Management and Operational positions responsible for asset management planning and disclosure is shown below.



The Network Asset Manager holds the prime responsibility for preparing the AMP.

The Network Asset Manager chairs the Company's Operations Committee comprising; Customer Services Manager, Field Services Supervisor, Customer Connections Supervisor, Construction & Maintenance Supervisor, Vegetation Supervisor, Health, Safety & Quality Manager, Purchasing Officer, Network Information Officer and Planners all of whom have a significant input into the AMP by identifying the required capital projects and operational works.

The Network Information Officer is responsible for managing records of system assets.

The Financial Controller is responsible for assembling the budgets and reporting expenditure, all business systems and IT functions within Waipa Networks. The Company Secretary/HR Manager is responsible for recruitment and training of staff. The Health, Safety & Quality Manager is responsible for industry compliance and PSMS and WSMP accreditation.

The Network Asset Manager, Company Secretary/HR Manager, Health, Safety & Quality Manager and Financial Controller/IT Manager have significant input into the AMMAT assessment.

Waipa's AMP is produced within the Company and all information used in it is determined by the Company's management team. The CEO authorises the AMP and the Board certify it.

Resourcing Asset Management

The Company currently has the ability to carry out the majority of all planned and unplanned cable and pole line work and vegetation management. However, the Company elects to both contract out and contract in field crews as appropriate to ensure construction and maintenance costs remain competitive.

Waipa uses independent contractors as required to carry out thermal surveys, partial discharge surveys and perform load flow studies. This information is used by the Company's Network Management team for condition-based maintenance and replacement of electricity assets and network enhancements.

The Company has contracted out Control Room and Call Centre services, SCADA and communication work, main road directional drilling and traffic management on State Highways.

Waipa has also contracted out the design, resource consenting and property negotiation aspects of the new Te Awamutu to Hangatiki 110kV line because the Company does not have these skill sets.

Waipa continually reviews the performance and cost effectiveness of services that are contracted out.

3.6 Asset Management Systems, Processes and Information

Asset Management Systems

Waipa operates three primary asset management systems to manage its existing assets, plan network development and measure network performance. These systems comprise an Abbey SCADA system for network supervisory control and data acquisition, an AutoCAD system for geographic asset information and a Napier Computer System which provides an integrated data warehouse.

The Company also uses a network modelling tool, ETAP, to predict current and future network performance under steady state and fault conditions and model the impact of proposed system enhancements.

The Company's uses of these asset management systems are shown in the following table.

Asset Management System	Uses
Abbey SCADA Supervisory Control & Data Acquisition	• System control • Load control • Operational status • Load flow data • Voltage data • Alarm and fault data • Reliability data

AutoCAD Geographic Asset Information	• Asset geographical location data • System schematics and reticulation plans • System operations • Construction plans • Design standards • Owner, road and property boundary data
Napier Computer System Integrated Data Warehouse	• Installation Control Point data • Call centre enquiries • Planned outage notification • Outage (planned and unplanned) data • Asset data (type, number /length, age, value, ODV) • Network condition assessment and vegetation data • Financial Applications (General Ledger, Creditors Ledger, Debtors Ledger, Banking Transaction processing, Payroll, Human Resources, Stores, Purchase Orders, Asset Register (Financial and taxation) • Disclosure
ETAP Network Modelling Software	• Electrical Network Modelling • Load Flows Analysis • Short Circuit Fault Current Analysis • Electrical Network Design

Supervisory Control and Data Acquisition System

The prime function of SCADA is to provide a real time interface with the network which enables the safe operation and management of; network assets, reliability of supply and system peaks.

Data and alarms acquired from field assets are brought back via Waipa's radio communication links to the Control Centre and displayed for the System Operators to remotely monitor and control equipment for optimal network performance.

The data collected includes feeder currents, voltages, real and reactive power, power factor and asset operational status. Relevant data is archived in the Integrated Data Warehouse. This information is used to establish network asset maintenance programs, plan network developments and measure and disclose network performance.

The SCADA system manages ripple injection plants at both Te Awamutu and Cambridge to control the load over peak times at GXP and/or feeder level.

Geographic Information System

The prime function of the Geographic Information System is to provide the physical location and electrical connectivity of all Waipa's network assets so that they are safely operated by the System Operators and field crews and effectively managed by the Network Information Officer and Planners.

The Company's assets have been surveyed (completed January 2006). The data collected included asset locations, their physical and electrical attributes and condition. The spatial information has been overlaid with property boundaries within the geographic information system. The electrical connectivity from each ICP through to the Transpower GXP has been proven. The asset physical and electrical attributes and condition status is archived in the Integrated Data Warehouse.

The on-going focus of the Network Information Officer is to ensure that network asset information is updated in a timely manner in the Geographic Information System and Integrated Data Warehouse System.

Asset geographical, physical and electrical attribute data is used for network development, design and consumer connections. The asset condition information is used to establish prioritised network asset maintenance programs. .

Integrated Data Warehouse System

The key function of the Integrated Data Warehouse System is to provide a single repository for all data which is held in specific data bases and all the necessary applications for Waipa to operate and manage its EDB. All the data bases and applications can be accessed through a web browser.

The salient data bases are:

- ICP
- Call Centre Enquiry
- Outage
- Asset Equipment including Substation and Site
- Asset Condition and
- Financials

ICP Database

The ICP database is used by the Call Centre for their daily operations and to provide information to the Outage database for the calculation of network reliability performance. The ICP database contains a complete history of all outages and recorded customer comments.

ICP data comes from the customer, retailers, electrical inspectors and Waipa itself. Some of the data transferred between these parties relies on manual processes and routine checks are in place to ensure data integrity. The ICP database is continually updated with new and disconnected customers.

Call Centre Database

Waipa has contracted its call answering and dispatch activities to a remotely located Call Centre. The Call Centre logs all incoming and outgoing dispatch calls in the Call Centre database. The Call Centre relies on the ICP Database information for its operation.

SCADA information is used in an Interactive Voice Response system which updates customers with known outage information and expected restoration times.

Outage Database

Waipa operates a manual planned and unplanned Outage database.

For planned outages switching instruction sheets are prepared identifying areas of the network affected. These are used to prepare shutdown advertising sheets to notify retailers and customers of the planned outage. The details of the intended shutdown are recorded in the Outage database. Actual switching times on the switching instruction sheets are used to update the Outage database.

For unplanned outages the details are recorded on an emergency switching instruction sheet by the System Operator. This information is used to compile an unplanned outage report. These reports are checked by the Network Asset Manager before the details are entered into the Outage database.

Customer numbers for both planned and unplanned outages are sourced from the ICP database. Customer numbers can be obtained by feeder, module (section of network between 11kV switching points) or individual transformer level. The ICP database is continually updated with new and disconnected customers.

This data enables the calculation of SAIDI and SAIFI for each outage. The impact of each outage is summed to generate the outage statistics for measuring network performance for disclosure purposes. This information is also used to identify potential problems on the network and is used in the planning process.

Asset Equipment Database

Waipa's Asset Equipment database comprises a number of subset databases which contain comprehensive physical, electrical, location and valuation information on substations, transformers, switchgear, voltage regulators and sites.

This Asset information is used for network design, ODV and disclosure.

Asset Condition Database

The asset condition survey information is linked to the Asset databases and is used to establish and prioritise Waipa's preventive maintenance program.

Financial Systems

Waipa has the following interlinked financial applications within the Integrated Data Warehouse essential for the operation of an EDB;

- General Ledger,
- Creditors Ledger,
- Debtors Ledger,
- Banking Transaction processing,
- Payroll,
- Human Resources,
- Stores,
- Purchase Orders and
- Asset Register (Financial and taxation).

Asset Management Process

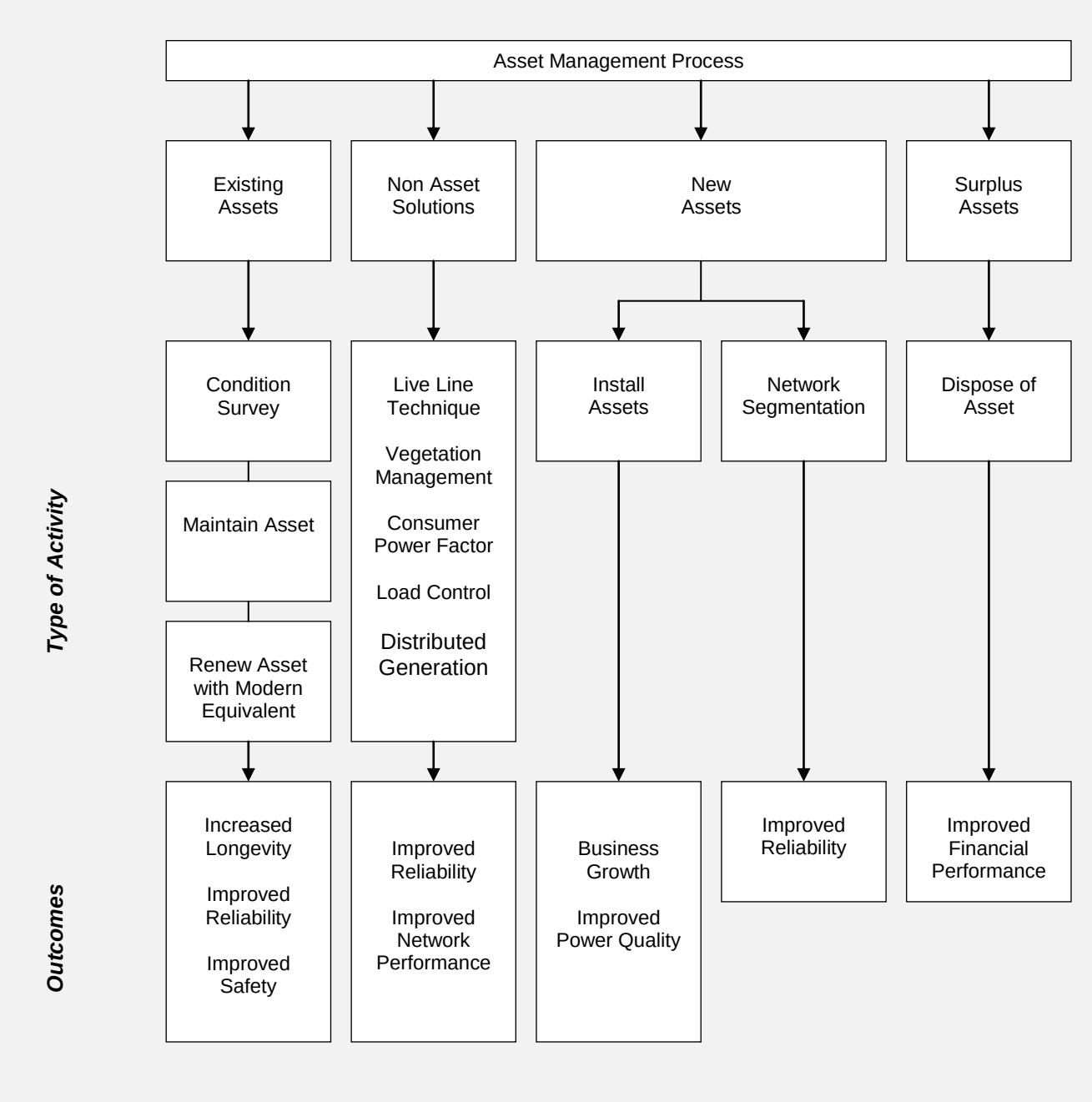
Waipa's asset management process covers the activity associated with the management of:

- existing assets through their life cycle,
- non-asset solutions to address network issues,
- the creation of new assets and
- the disposal of surplus assets.

The Company's desired outcomes of the various asset management activities:

- increased asset longevity,
- improved network reliability,
- improved network safety,
- improved power quality,
- improved financial performance and
- business growth

are shown in the following diagram.



Asset Management Information

Waipa's initial network survey completed in January 2006 provided the Company with comprehensive information on all of its assets' locations, physical and electrical attributes and their condition at the time of survey.

This initial data set has been supported by subsequent asset condition surveys and construction, equipment replacement and upgrade records.

Electrical connectivity has been proven from each ICP through to their respective Transpower GXP.

The on-going focus of the Network Information Officer is ensuring that network asset information is updated in a timely manner in the Geographic Information System and Integrated Data Warehouse System; this enables Waipa to have a high degree of confidence in the accuracy of its asset management information.

Waipa has developed and operates robust asset management information systems appropriate for;

- the size of the network and number and type of distribution assets,
- the Company's financial and administrative business needs,
- consumer needs and
- other stakeholders requirements.

ETAP Network Modelling Software

When PSSU was looked at in 1999/2000, Waipa's knowledge of the network was only accurate to ±20%. When looking to develop the network to best keep the voltages within ±6% as per regulations, it was found that The Company did not hold accurate enough data to use network modelling software for any useful gain.

Since 2000, Waipa employed an independent service provider to survey and record data of the entire network. By using this information, the Company now believes its knowledge of the network to be accurate to within ±5%. The data needed to accurately model the network is now available.

With the assistance of network modelling software, Waipa can position more accurately the locations for voltage regulators, automatic reclosers and their settings and required conductor upgrades and model their effect on the network.

Initial data input began in 2011/2012 by the Planners and is updated by the Network Information Officer assisted by the Planners.

The software can be utilised to model the network electrically, perform load flows analysis, calculate short circuit current flows and aid electrical network design.

4 Assets Covered

4.1 Distribution Area

Waipa is the EDB that owns and manages electricity distribution assets in Cambridge, Te Awamutu and surrounding areas, which are predominately in the local authority areas of Waipa and Otorohanga Districts, with minor reticulation in part of the Waikato District south of Hamilton and Waitomo District south of Kawhia.

In the urban and suburban areas of Cambridge, Leamington, Te Awamutu, Hairini, Kihikihi, Ohaupo, Pirongia and Kawhia the Company's distribution assets are generally located within road reserve.

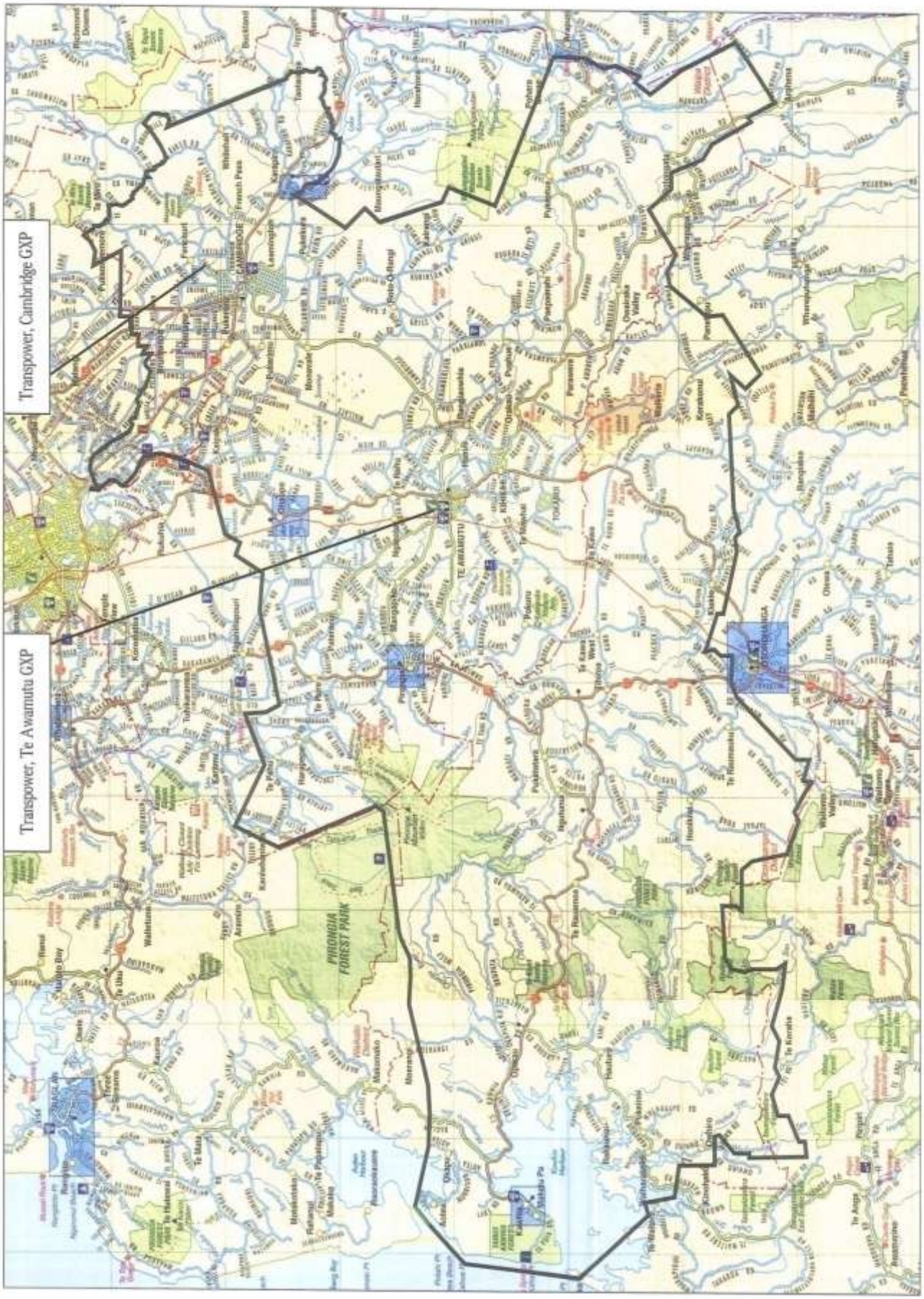
In the rural areas of Tamahere, French Pass, Roto-O-Rangi and Kaipaki that surround Cambridge and in Paterangi, Pirongia, Pokuru, Kiokio, Waikeria, Pukeatua and Mystery Creek that surround Te Awamutu, whilst the Company's distribution assets are generally located within road reserve, there are areas where these assets traverse private property as the most economical way to reticulate the area.

In the remote rural areas of Kawhia and Hauturu with low population densities there are significant areas where the Company's assets traverse private property.

Waipa takes supply from Transpower's Cambridge and Te Awamutu GXPs at 11kV. The Company has no 33kV (or higher voltages) and therefore has no sub-transmission system or zone substations.

Waipa conveys electricity on behalf of 9 retailers from both Cambridge and Te Awamutu GXPs via 24 radial 11kV circuits, 11kV/400V transformers and associated 400V/230V reticulation to 23,685 consumer installations (as at 31 March 2012).

Waipa's distribution system covers 1,865 square kilometres. The area reticulated is shown on the following map.


Transpower, Cambridge GXP
Transpower, Te Awamutu GXP
PIRONGIA FOREST PARK

Larger Consumers

Waipa supplies two large Fonterra dairy factories located at Hautapu and Te Awamutu. The Hautapu factory is 3.5 km from Cambridge GXP and is supplied via two dedicated 11kV service mains. The Te Awamutu factory is located 1km from Te Awamutu GXP and is supplied via two dedicated 11kV service mains. Fonterra contracts every year with Waipa for each factory's MD requirement. Currently, Hautapu MD does not exceed 10MW and Te Awamutu MD does not exceed 4.5MW.

Fonterra's MD requirements have a significant impact on Waipa's system peak load control regime and available capacity at Transpower's Cambridge and Te Awamutu GXPs.

There are no other large consumers that have a significant impact on Waipa's network operations or asset management priorities.

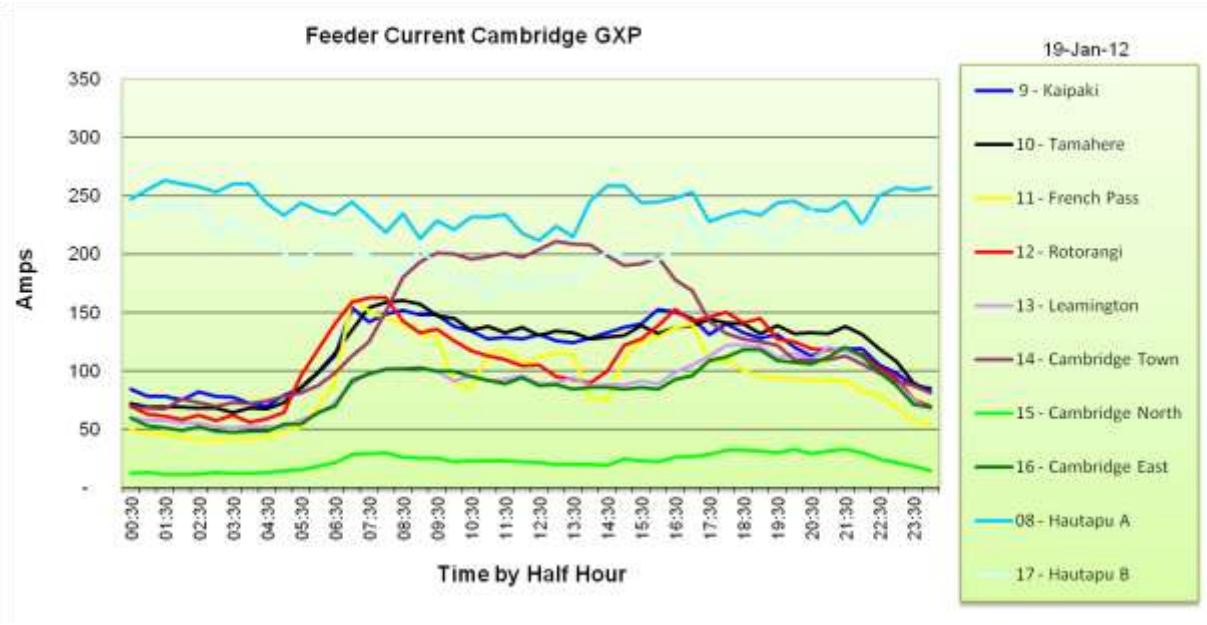
Load Characteristics

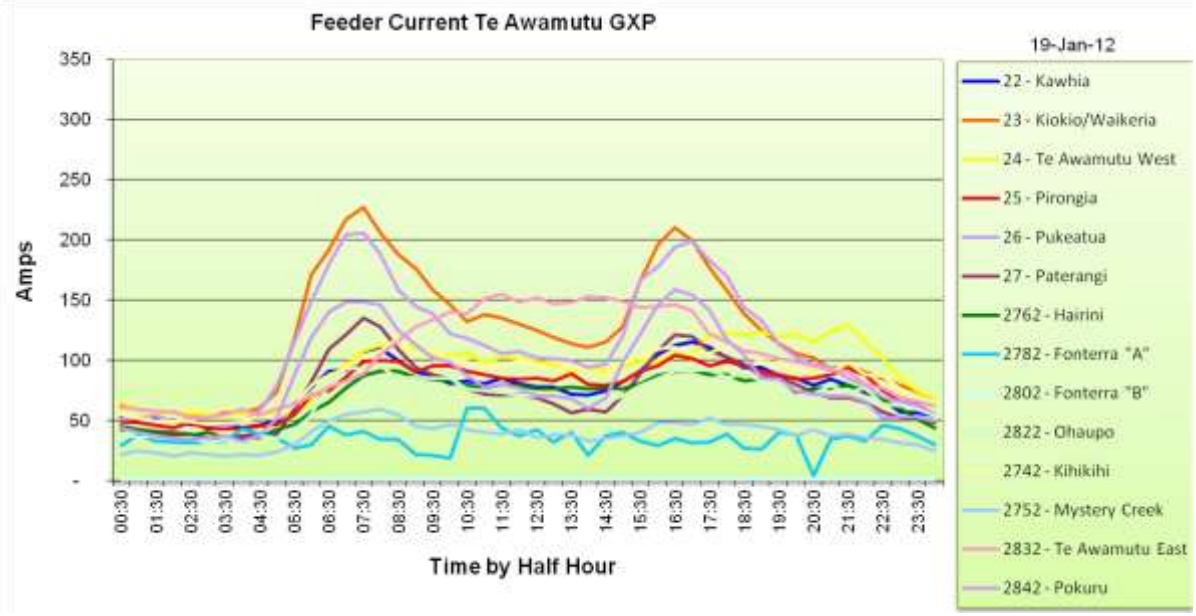
Waipa's urban and suburban feeders exhibit a typical EDB load profile where there are morning and evening peaks caused by residential demand super imposed over the commercial demand through the normal business day.

Waipa's rural feeders exhibit the same residential characteristics but with much higher early morning and afternoon demands during the dairy milking season.

The Fonterra loads are characterised by high demand throughout the day over the dairy season.

Transpower's GXPs and Waipa's 11kV feeder load profiles for a typical week day in January are shown in the following graphs.


Feeder Current Cambridge GXP
19-Jan-12
Amps
350
300
250
200
150
100
50
-
00:30
01:30
02:30
03:30
04:30
05:30
06:30
07:30
08:30
09:30
10:30
11:30
12:30
13:30
14:30
15:30
16:30
17:30
18:30
19:30
20:30
21:30
22:30
23:30
Time by Half Hour
9 - Kaipaki
10 - Tamahere
11 - French Pass
12 - Rotorangi
13 - Leamington
14 - Cambridge Town
15 - Cambridge North
16 - Cambridge East
08 - Hautapu A
17 - Hautapu B


Feeder Current Te Awamutu GXP
19-Jan-12
Amps
350
300
250
200
150
100
50
-
00:30
01:30
02:30
03:30
04:30
05:30
06:30
07:30
08:30
09:30
10:30
11:30
12:30
13:30
14:30
15:30
16:30
17:30
18:30
19:30
20:30
21:30
22:30
23:30
Time by Half Hour
22 - Kawhia
23 - Kiokio/Waikeria
24 - Te Awamutu West
25 - Pirongia
26 - Pukeatua
27 - Paterangi
2762 - Hairini
2782 - Fonterra "A"
2802 - Fonterra "B"
2822 - Ohaupo
2742 - Kihikihi
2752 - Mystery Creek
2832 - Te Awamutu East
2842 - Pokuru

Peak Demand and Energy Delivered

The historical peak demands and total energy conveyed through Transpower's Cambridge and Te Awamutu GXPs are shown in the following table.

Cambridge GXP

Year	Units (kWh)	MD (MW)
1995	129,835,090	25,105
1996	129,543,203	26,537
1997	139,742,516	25,425
1998	144,743,967	29,050
1999	146,322,063	27,842
2000	154,095,403	30,068
2001	159,942,281	30,486
2002	170,428,577	29,302
2003	170,920,235	28,102
2004	169,953,151	27,930
2005	178,858,670	30,938
2006	180,610,404	31,842
2007	186,489,039	30,064
2008	183,332,147	32,672
2009	183,139,815	33,196
2010	195,076,504	38,984
2011	188,699,806	36,934
2012	199,208,652	36,110

Te Awamutu GXP

Year	Units (kWh)	MD (MW)
1995	124,729,310	29,115
1996	143,477,389	28,197
1997	144,369,441	29,262
1998	145,116,050	29,964
1999	142,734,374	25,962
2000	141,435,801	26,834
2001	142,337,330	26,208
2002	149,946,322	27,376
2003	152,079,931	27,378
2004	153,399,618	28,112
2005	155,851,860	30,014
2006	155,772,430	28,480
2007	156,541,457	28,872
2008	158,883,194	28,698
2009	158,767,196	29,400
2010	166,399,952	37,300
2011	167,856,983	35,518
2012	171,289,917	34,050

4.2 Network Configuration

Waipa's radial 11kV distribution network receives power at 11kV from two Transpower's GXPs located at Cambridge and Te Awamutu. The Company does not have any 66kV, 33kV or 22kV commissioned substation or reticulation assets.

On some occasions a small amount of electricity is imported at 11kV from the embedded generator at Fonterra dairy factory in Te Awamutu.

The 11kV supplies from Cambridge and Te Awamutu GXPs are not configured to be interconnected. There is one legacy switched connection that could offer limited backup supply to Mystery Creek.

Waipa's legacy distribution substations are predominately pole mounted transformers (up to 200kVA on two pole structures or up to 75 kVA on single pole structures) and metal clad padmount substations (up to 500kVA) in the urban and suburban areas.

Newly commissioned substations are either metal clad padmounted (typically 50kVA up to 300kVA) or pole mounted up to 75kVA as permitted by the respective District Council Plan requirements.

Waipa's legacy 400V reticulation is predominately overhead except for urban areas. New 400V reticulation is generally underground as required by the respective District Council Plans with the exception of rural and remote rural areas where overhead reticulation is permitted on economic grounds.

Waipa's distribution system comprises (as at 31 March 2012):

Cambridge Area

- 10 11kV feeder circuits connected to Cambridge GXP,
- 410km 11kV circuit (342km overhead line, 68km underground cable),
- 282km 400V circuit (151km overhead line, 131km underground cable),
- 1,278 11kV/400V transformers (101,461kVA capacity) and
- 10,713 ICPs.

Te Awamutu Area

- 14 11kV feeder circuits connected to Te Awamutu GXP,
- 928km 11kV circuit (885km overhead line, 43km underground cable),
- 469km 400V circuit (359km overhead line, 110km underground cable),
- 1,978 11kV/400V transformers (114,267kVA capacity) and
- 12,972 ICPs.

System switching, isolation and protection are achieved via Transpower's GXP circuit breakers and Waipa's ring main units, line auto reclosers and sectionalisers, disconnectors, 11kV dropout fuses and 400V fuses.

A SCADA system and radio communication system enables remote monitoring and control of distribution switchgear and voltage regulators, and remote monitoring and control of GXP feeder circuit breakers.

Two 11kV ripple injection plants and receiving relays at consumers' installations enable implementation of energy retailers' tariffs, control of street lighting and management of feeder loads and GXP maximum demands.

Cambridge Network Configuration

Transpower owns the 110kV line assets, the 110kV/11kV transformers and 11kV switchboard to which Waipa's 11kV feeders are connected.

Cambridge GXP is supplied via a double 110kV line from Karapiro to Hamilton and has an n-1 security of supply.

There are two 40MVA ODAF transformers at Cambridge giving a total installed capacity of 80MVA and a firm capacity of 40MVA. These transformers operate in parallel and supply an 11kV bus bar via two incoming circuit breakers. However, the 11kV incomers and bus bar are only rated at 2000A constraining the power conveyed to 38MVA.

The peak load MD with full load control exercised in 2012 on this GXP during Transpower's Lower North Island 100 average peaks was 36.110MW (1830 hours on 15 August 2012).

There are eight 400A rated 11kV circuit breakers supplying radial urban and rural feeders and two 1250A rated 11kV circuit breakers supplying a Fonterra dairy factory at Hautapu.

The eight 11kV radial urban and rural feeders are predominately concrete pole lines. These lines, in conjunction with their associated 400V reticulation, supply Cambridge, its suburbs and rural areas adjacent to the Waikato River from Lake Karapiro to Tamahere on the outskirts of Hamilton.

In the urban and suburban areas there is a moderate amount of underground reticulation with padmounted transformers and pad mounted switchgear.

Te Awamutu Network Configuration

Transpower owns the 110kV line assets, the 110kV/11kV transformers and 11kV switchboards to which Waipa Networks 11kV feeders are connected.

Te Awamutu GXP is supplied via a single 110kV transmission line from Karapiro.

Te Awamutu also has 7.5MVA of embedded generation at the Fonterra dairy factory site which is connected to the Transpower's Te Awamutu GXP via 11kV supply cables.

There are two 40MVA ODAF transformers at Te Awamutu giving a total installed capacity of 80MVA and a firm capacity of 40MVA. These transformers operate in parallel and supply two 11kV bus bars via four incoming circuit breakers.

The peak load MD with full load control exercised in 2012 on this GXP during Transpower's Lower North Island 100 average peaks was 34.050MW (1830 hours on 16 August 2012).

There are twelve 630A rated 11kV circuit breakers supplying radial urban and rural feeders and two 1250A rated 11kV circuit breakers supplying Fonterra dairy factory site in Te Awamutu.

The twelve 11kV radial urban and rural feeders are predominately concrete pole lines. These lines, in conjunction with their associated 400V reticulation, supply Te Awamutu's urban, suburban and rural areas north to Mystery Creek, south-east to Arapuni, south towards Otorohanga and west to Paterangi, Pirongia, Pokuru and Kawhia.

Two underground cable circuits supply the Fonterra dairy factory.

In the urban and suburban areas there is a moderate amount of underground reticulation with padmounted transformers and padmounted switchgear.

4.3 Network Assets, Age and Condition

Network Feeder Assets

Waipa's primary assets are the 11kV feeders supplying town, rural and remote rural consumer ICPs.

Appendix A shows the Company's 11kV feeder attributes as at 31 March 2012.

Supervisory Control and Data Acquisition System Assets

Waipa owns a SCADA system to operate its feeder network and control load, street lighting and metering tariffs. SCADA system remote terminal units are fitted to Transpower's circuit breakers at Cambridge GXP and Te Awamutu GXP, Waipa's ripple injection plants and various voltage regulators, 11kV line auto reclosers and automated air break switches on the distribution network.

The SCADA comprise a master and hot standby located in Waipa's control room at 240 Harrison Drive Te Awamutu and two remote operating terminals located in WEL Networks Control Centre in Te Rapa. The SCADA network configuration and operating schematics are backed up daily onto Waipa's central server.

Ripple Injection Plants Assets

Waipa owns and operates two ripple injection plants located at Cambridge GXP and Te Awamutu GXP respectively. Ripple injection signals are initiated by the SCADA system via these plants to control load, street lighting and metering tariffs. The Company also owns the receiving relays in consumers' installations.

Radio Communication Network Assets

Waipa owns separate VHF voice and data communication networks comprising;

- Radio repeater sites located at Pukekura in Cambridge, Te Rauamoa on the south western slope of Mt Pirongia, Wharepuhunga near Lake Arapuni and Mount Oue near Kawhia,
- Base stations are located at the Harrison Drive depot in Te Awamutu and at the premises of the Company's Control Room service provider,
- Vehicle mounted radios and hand held units used by the Company's field crews and
- Radios in remote terminal units at Transpower's GXPs and on automated voltage regulators, auto reclosers and disconnector switches.

Network Asset Age

Waipa's distribution asset types and age profiles as at 31 March 2012 are shown in Appendix F.

The Company uses the weighted average age of the poles to determine the age of its primary pole line assets because there is no other reliable information on the age of conductors and crossarms available.

The 11kV Line Age Profile indicates that the Company rebuilt the majority of its network during the 1980s. Hardwood poles were changed for concrete poles and it is assumed that the pole hardware was renewed in the majority of cases. In most cases the existing overhead copper conductor was re-used.

From the initial asset condition survey completed in January 2006 the general condition of hardware suggests that the Company does not expect to be confronted with an unmanageable "wall-of-wire" issue within the 10 year horizon of this AMP.

Network Asset Valuation

Waipa's distribution asset valuations as determined by the certified ODV process in March 2004 are shown in the following table. The valuation excludes the value of the ripple relays installed at customers ICPs.

Asset Valuation

Asset Type	RC $	ORC $	DRC $	ODRC $
Distribution Lines	44,828,523	44,828,523	28,476,692	28,476,692
Distribution Cables	11,670,793	11,670,793	7,515,079	7,515,079
Distribution Substations & Transformers	23,196,200	23,196,200	12,337,510	12,337,510
Distribution Switchgear	14,230,500	14,230,500	5,551,082	5,551,082
Other System Fixed Assets	4,440,300	4,440,300	2,660,456	2,660,456
Total	**98,366,316**	**98,366,316**	**56,540,820**	**56,540,820**

Asset Condition

Feeder Assets

Waipa engaged an independent contractor in 2001 to visually inspect the condition of all of the Company's feeder assets. This survey was completed in January 2006. The independent contractor assessed the condition of feeder assets and prioritised defects into the following categories for remedial work; Urgent (3 months); 1 year; 2 years; and 5 years.

An urgent priority was assigned to asset defects that presented a safety hazard to the public, field crews, livestock or property. The 1, 2 and 5 year priorities were assigned to asset defects on a diminishing probability of causing loss of supply. The final asset defects identified in this survey were eliminated during 2009/2010.

Waipa elected to use internal resources for its second visual asset condition survey which commenced in 2010/2011. The asset types surveyed include; conductors, poles, staywires, crossarms, insulators, armbraces, binders, deadends, transformers, reclosers, disconnectors, drop out fuses, cable terminations, surge arrestors and earthing and matters of public safety.

The total number of 11kV and 400V defects awaiting repair (as at 31 March 2012) are shown in the following table.

	Totals
Total defects remaining	324
11kV defects remaining	314
400V defects remaining	10

The second survey is expected to take 8 years to complete and feeders will be surveyed in the same order as the first survey. The programme is based on an even spread of kilometres of line being surveyed each year.

Waipa gains further asset condition information from;

- A vegetation management programme,
- An earth testing and repair programme,
- Asset thermal surveys,
- Partial discharge surveys and
- Corona surveys.

The vegetation programme is based on even spread of kilometres of line being surveyed each year modified by known growth trends on specific feeders. The programme results in each feeder being systematically cleared every 4, 6 or 8 years depending on the type, growth rate and quantity of vegetation menacing our power lines. Tree "hot-spots" are dealt with as required.

The earth testing and repair programme which is now coordinated with the visual asset defect survey is based on an even spread of earth banks requiring testing each year. The programme results each system earth being checked every 8 years.

Waipa engages an external service provider to carry out an annual thermal survey of arterial feeder disconnectors, line and transformer, dropout fuses, cable pothead terminations and line connections during high load periods. Thermal defects are treated as urgent and are repaired as soon as possible.

In 2005/2006 Waipa engaged an external service provider to carry out partial discharge surveys of all RMU equipment after two RMU units failed in service. All switchgear partial discharge defects were treated as urgent and were repaired soon after. The survey led to Magnefix, Andelect and ABB Series 1 RMUs, being replaced in 2009/2010 as the safest and most cost effective solution.

No further partial discharge surveys are contemplated in this AMP. This does not preclude future partial discharge surveys if the need arises.

Waipa is cognisant of the industry's concern about oil-filled switchgear and had a program to completely replace all of its 9 (as at 31 March 2011) remaining oil-filled RMUs with SF_6 RMUs during 2012/13 as a public safety initiative.

The Company had 126 (as at 31 March 2012) two pole hardwood platform transformer structures (6 in Cambridge, 120 in Te Awamutu) that are over 40 years old. While the hardwood platforms have been maintained as required over the years these assets are approaching the end of their economic life. Furthermore, this type of substation structure no longer conforms to modern industry standards. All of these two pole transformer structures will be replaced on a condition prioritised basis by either a single pole transformer substation or a padmounted substation over the next 8 years for staff and public safety.

Waipa had 29 (as at 31 March 2012) "spa pool" padmounted pole transformer substations that no longer comply with industry safety requirements. The Company commenced removing these non-compliant substations in 2011/2012 and will complete replacing them during 2013/2014.

The Company has a growing number of aged ABSs on its 11kV feeders whose operation is becoming unreliable. These ABSs will be progressively replaced by either SF_6 gas switches or modern ABSs according to the fault duty rating required.

In 2005/2006 Waipa engaged an external service provider to carry out a corona survey by helicopter of Kawhia feeder which was plagued by several persistent faults. This resulted in 33 tension polymer insulators being replaced at the time. There has been no recurrence of the problem on Kawhia feeder or any other feeder to date. No further corona surveys are contemplated in this AMP. This does not exclude future corona surveys if the need arises.

Supervisory Control and Data Acquisition

A new central SCADA system for Waipa's feeder network, load management system, street lighting and metering tariffs was commissioned in Te Awamutu in 2005.

In 2006/2007 the Company replaced Transpower's aged SCADA system remote terminal units located at Cambridge GXP and Te Awamutu GXP with modern equivalent assets to obtain additional data.

In 2007/2008 the Company replaced Waipa's aged SCADA system remote terminal units located at Cambridge GXP used for Waipa's ripple injection plant with modern equivalent assets to ensure reliability of load management system.

The central SCADA system was relocated to Waipa's new depot in Harrison Drive, Te Awamutu in 2010/2011.

The SCADA software was upgraded in 2011/2012 as the previous version was no longer supported by the vendor.

The SCADA system remote terminal units fitted to various voltage regulators, 11kV auto reclosers and automated air break switches on the distribution network will be replaced as required.

Cambridge Ripple Injection Plant

Cambridge had a legacy 492Hz ripple injection frequency. Waipa installed a new 283Hz Enermet static ripple injection plant in 1999/2000 to avoid propagation problems when the Cambridge GXP transformers were upgraded from two 20MVA to two 40MVA in July 2002.

All 7000 492Hz relays in consumers' premises were replaced over the period 2002-2004.

Note: Once the aged 297Hz relays in Te Awamutu have been replaced with 283Hz relays the 297Hz coupling cell will be re-tuned to 283Hz and relocated to Cambridge GXP to replace the existing coupling cell which is nearing its full capacity.

Te Awamutu Ripple Injection Plant

Te Awamutu has a legacy 297Hz ripple injection frequency. With the Te Awamutu GXP transformers upgraded from two 20MVA to two 40MVA transformers in June 2004 the 297Hz signal propagation is expected to progressively deteriorate as the Te Awamutu load increases.

Waipa installed a new Enermet static ripple injection transmitter at Te Awamutu GXP after the catastrophic failure of an aged Landis & Gyr transmitter in 2001. The new Enermet transmitter can drive a 297Hz coupling cell and a 283Hz (the Company's adopted frequency) coupling cell.

In 2007/2008 Waipa installed a new 283Hz Enermet coupling cell for the relay change programme and a new 297Hz Enermet coupling cell to replace the old 297Hz Landis and Gyr coupling cell.

This will allow the existing 297Hz relays in the field to be progressively changed to new 283Hz ripple relays over the period 2008-2015 with minimum risk of failure of the old injection plant and confidence that sufficient signal strength is available for correct relay operation.

Radio Network Communication Assets

Waipa's VHF voice and data communication network assets described in Section 4.3 are in good operating condition and require only routine maintenance.

The Company enhanced its communication network by separating out the voice and SCADA data radio channels in 2005/2006 to ensure the integrity of operational commands and voice traffic and the safety of field crews.

Waipa's increased use of automated switches and voltage regulators in the network required an additional radio repeater station installed on the Rangitoto Ranges to provide coverage of the Pukeatua feeder area out to Arapuni Dam. A new Wharepuhunga radio repeater station was established in 2010/2011.

4.4 Justification for Assets

Waipa does not currently have any 66kV or 33kV sub-transmission line or zone substation assets. The Company believes that directly transforming a transmission voltage of 110kV to a distribution voltage of 11kV is inherently more efficient than introducing sub-transmission voltages such as 66kV or 33kV for Waipa's geographical area. A relatively small and compact network does not justify the cost of a sub-transmission system and zone substations.

The Company intends building a 110kV line from Hangatiki to Te Awamutu that will provide the needed security of supply and will offer improved reliability to Te Awamutu. Waipa intends to progress this project over the next three years subject to comprehensive consultation with the Company's stakeholders.

Stakeholders have expressed their dissatisfaction with the need for 9 hour planned outages by Transpower to maintain the assets used for the single supply to Te Awamutu. Frequent disruption to this line also causes significant impacts on the local economy and operations of the dairy factory. Transpower's Quality Performance Report 2010/2011 (page 20) records the poor performance of this line over 5 years with an average of 2.6 interruptions per year and the 4th highest percentage of un-served energy.

Feeder Assets

All the Company's 11kV and 400V feeders are constructed from commonly manufactured industry proven components that are essential for effective and efficient conveyance of electricity from Transpower's GXPs to the NCPs connecting consumer owned assets.

The distribution asset types that comprise the Company's 11kV and 400V feeders are;

- 11kV lines on concrete or wooden poles,
- 11kV cables either XLPE or PILC,
- 400V lines on concrete or wooden poles,
- 400V cables either XLPE or PILC,
- street lighting lines and cables,
- ring main units, oil switches and fuse switches,
- auto reclosers and sectionalisers,
- disconnectors,
- dropout fuses,
- transformers (pole or padmounted ranging from 1kVA to 1500kVA),
- substations (pole or padmounted or in customers premises),
- voltage regulators and
- consumer service connections, either underground pillars or overhead cutout fuses.

There are no redundant assets and no areas of the network that are uneconomic using the ODV criteria

SCADA, Ripple Injection Plants and Radio Communication Equipment

Other system fixed assets used by the Company to control and operate its 11kV feeders effectively and efficiently are;

- SCADA system,
- radio voice and data communication network and equipment and
- ripple injection plants and receivers.

None of these assets are redundant or inappropriate for their role

Asset Selection Policy

Waipa owns and operates a basic radial 11kV pole line network that has satisfactorily delivered power safely and efficiently to consumers over a number of years.

The Company is confident that the type of network assets installed will continue to provide a safe and reliable service to consumers over the 10 year horizon of this AMP.

Waipa's asset selection policy is to use only tried and proven products. The Company adopts a position of being "leading edge not bleeding edge". When new modern equivalent assets are considered, their performance and life-cycle cost are evaluated by Waipa's Operations Committee comprising the Customer Services Manager, Field Services Supervisor, Customer Connections Supervisor, Construction & Maintenance Supervisor, Vegetation Supervisor, Health, Safety & Quality Manager, Purchasing Officer, Network Information Officer and Planners before they are installed on the network. All new assets are sized appropriate for their intended use and life.

Redundant assets

No assets were found to be redundant as part of the 31 March 2004 ODV process, subsequent reviews or March 2011 stock take. In contrast, more automation of 11kV switching points and feeder segmentation by line auto reclosers and sectionalisers, disconnectors and dropout fuses will be required to enable reliability targets to be achieved or bettered.

5 Service Levels

5.1 Price Quality Expectations

Waipa Networks has employed a number of mediums to consult with customers:

- Annual customer survey
- Focus groups
- Public meetings
- Customer Helpdesk and Website feedback forms, and
- Complaints Resolution Process

Annual Customer Survey

The primary method of consultation with customers is our annual customer survey. The survey takes place midyear and consists of 400 telephone interviews with randomly selected customers. The overall results have a margin of error of +/- 4.86% at the 95 confidence level.

For analysis, each customer/ICP is assigned a category from each of the four customer groups:

- Grid Exit Point (Te Awamutu, Cambridge)
- Feeder Type (Urban Te Awamutu, Rural Te Awamutu, Urban Cambridge, Rural Cambridge)
- Tariff Type (Domestic, Non-Domestic)
- Retailer Type (TrustPower, Other)

GXP / Feeder Type have been identified as the key indicators and so quotas are enforced for the survey to ensure the survey sample reflects the population mix. Retailer type is included primarily to gauge if responses are influenced through the customer being supplied by the traditional incumbent or a competing retailer.

Some key results from the surveys:

- Customer satisfaction consistently exceeds 90%.
- On Price versus Quality, the 2012 survey found the following:
    - When customers were asked to think of the last time they had a power cut, 68% were not prepared to pay any extra to reduce the likelihood of it happening again. Only 6% were prepared to pay extra, while 26% were unsure.
    - Regarding a specific project to improve reliability for all customers supplied from the Te Awamutu GXP, 69% of customers were prepared to pay extra for the increased reliability.
- For a number of years we asked customers for their preference regarding price parity between urban and rural properties. Consistently customers preferred that all customers pay the same regardless of the fact it costs more to supply rural customers than urban ones.

Focus Groups

In 2009/2010 Waipa Networks ran focus group meetings with a cross-section of customers to discuss a variety of issues including supply quality and price. Interest in membership of the focus groups was low from the outset and this was perhaps reflective of the generally high service satisfaction coupled with the fact that Waipa Networks has consistently had the lowest average domestic lines charges in the country. The focus groups were not continued due to the lack of interest.

Public Meetings

Waipa Networks organises public meetings on an ‘as required’ basis. Examples in recent years have been for planned Transpower maintenance affecting over half the customers on our network.

Several years ago we held some 'proactive' public meetings in key locales across our network for customers to discuss aspects of our operations, including price and quality that were of concern to them. Despite the meetings being widely publicised and scheduled outside business hours we only had two attendees in total at three meetings. The only feedback was from a community advocate who favoured keeping our charges low and paying a discount for the benefit of those who struggle financially. This again was perhaps reflective of the high satisfaction rating and reasonable pricing, and proactive meetings were abandoned as a result.

Customer Helpdesk and Website Feedback Forms

Waipa Networks maintains toll free numbers for customers to contact us regarding any issue of our operations. We also maintain e-mail contact details of key staff on our corporate website, and a feedback form for customers to use.

Fault calls and their resolution are recorded in the Company database. Network faults are analysed and reported to the Board

Complaints Resolution Process

The Company operates a Complaints Resolution Process in accordance with the Electricity & Gas Complaints Commission requirements. All complaints are assigned a case manager and complainants are fully involved and informed on the progress of their complaint.

Complaints are analysed by complaint type and customer type. The Company receives very few complaints. For the 3 years (ending 31 March 2012), the average number of complaints registered per year represented only 0.16% of total ICPs. On average, more than 97% of registered complaints were able to be resolved using our in-house Complaints Resolution Process. Any feedback provided is used to improve the quality of our service going forward

Customer Price/Quality Expectations & Waipa Networks Pricing

The results of consultation suggest Waipa's strategy of providing a good level of service and low lines charges should continue. With customers supporting price parity, there is little mandate to offer a pricing structure more diverse than we already offer. It should be noted that the high retail margins, enabled by our low charges, attract a large number of retailers and provide customers with choice. The large number of retailers operating in our area mean our prices, and changes, are largely obscured by the retail market.

The one project where customers have expressed a need for increased quality and a willingness to pay for it is the Te Awamutu 110kV reinforcement project and we will be using the feedback received when planning our funding for the project.

5.2 Customer Consultation

Waipa Networks has two types of consultation; Customer-initiated and Company-initiated.

Customer-Initiated

Customer-initiated consultation usually occurs due to a specific need of a customer, or after a Network event affecting one or more customers. This is summarised in the following table.

Customer Need or Event	Method of Consultation	Desired Planning Outcome
New connection to Network or upgrade of existing connection	Network Connection Application and capital contributions processes	Approvals take network load and growth into consideration. Trends in new connections help plan network income and investment.
Vegetation management	Processes under the Electricity (Hazards From Trees) Regulations 2003	Vegetation management programme addresses all geographic areas according to their specific species growth rates growth rates.
Faults	Customer faults number, call centre and field service	Immediate response to resolve fault. Faults individually and collectively analysed to identify medium and long term investment needs.
Complaints	Use of the customer Disputes Resolution Process	Registered complaints are analysed for trends. Service trends are used to assist network investment decisions.

Company-Initiated

Waipa consults with the following groups regarding significant projects and medium/long term Network planning.

Customer Group	Method of Consultation	Desired Planning Outcome
Large Customers	Individual meetings /correspondence as required.	Consideration of larger customers given for key network investments.
Customer Advocacy / Interest Groups	Public meetings/individual meetings /correspondence as required.	Consideration of customer advocacy / interest groups given for key network investments.
Customer Groups (Residential/ Commercial / Urban / Rural)	Annual Customer Survey	Refer below.
Local District Councils, Regional Council & National Regulatory Bodies	Local Council planning cycles. Meetings with Council officers as required for specific projects. Public meetings / correspondence as required.	Consideration of local and national regulatory bodies given for key network investments.
All	Public and Stakeholder meetings	Agreement on Transpower outage requirements for Te Awamutu supply maintenance

Annual Customer Survey

The Waipa Networks annual customer survey is the predominant method by which Waipa Networks consults with customers. The independent phone survey of 400 randomly selected customers covers a wide range of operational and public relations aspects of the Company's work with a particular focus on supply satisfaction.

The August 2012 survey revealed the results shown in the following table.

Customer Satisfaction	Result
Overall	95%
Number of Fluctuations	90%
Length of Planned Shutdowns	89%
Number of Planned Shutdowns	92%
Length of Unplanned Shutdowns	85%
Number of Unplanned Shutdowns	85%

Note – for the purposes of this report, customers who responded as "No Opinion" or "Don't Know" were considered to be "Satisfied".

The annual customer survey is used as the means of assessing performance with regards to Consumer Oriented Performance Targets.

5.3 Consumer Oriented Performance Targets

The following table indicates the Consumer Oriented Performance categories and targets the Company has deemed appropriate based on customer feedback. The % target figures listed are the results returned in each category for the respective customer survey year.

Performance Indices	Target 2012/2013	Target 2013/2014	Target 2014/2015	Target 2015/2016	Target 2016/2017	Target 2017/2018	Target 2018/2019	Target 2019/2020	Target 2020/2021	Target 2021/2022
Overall	95%	95%	95%	95%	95%	95%	95%	95%	95%	95%
Number of Fluctuations	80%	80%	80%	90%	90%	90%	90%	90%	90%	90%
Length of Planned Shutdowns	85%	85%	85%	90%	90%	90%	90%	90%	90%	90%
Number of Planned Shutdowns	85%	85%	85%	90%	90%	90%	90%	90%	90%	90%
Length of Unplanned Shutdowns	85%	85%	85%	90%	90%	90%	90%	90%	90%	90%
Number of Unplanned Shutdowns	85%	85%	85%	90%	90%	90%	90%	90%	90%	90%

Waipa recognises achievement of these satisfaction performance targets is dependent upon fulfilling our Purpose Statement and seeking continued improvement in the Company's security and reliability targets.

Waipa Networks Purpose

The Company intends to build on its good relationship with its customers and other stakeholders by continually improving the network performance costs and efficiency consistent with the Company's Purpose Statement to;

Deliver power safely all day every day

Provision of value for money

Provide customers with outstanding service and solutions

Security Targets

Security of supply is assessed by reference to a level of in-built asset flexibility.

An "n" security level implies no alternative means of supply. If a component fails then supply is lost. An "n-1" security level is one in which supply is not lost in the event of any single component failure. An "n-1 switched" security level is one in which supply is lost until the faulty asset is isolated. Power is restored by closing interconnecting switches between feeders. Waipa's system is not operated in a "closed ring" manner. Therefore, the best feeder security level offered is n-1 switched.

Waipa has adopted the deterministic rather than the probabilistic approach to specifying security of supply for Transpower's and the Company's distribution assets.

Waipa's network security objective is to strive for the following security levels to be achieved for Transpower's Transmission Grid and GXP assets and specific parts of the Company's distribution network.

Transpower / Waipa Asset	Security Level
Transpower transmission lines supplying GXPs in Waipa's area	n-1
Transpower GXP transformers	n-1
11kV urban lines	n-1 switched
Other 11kV lines	n-1 switched where interconnection is economic
Remote rural 11kV lines	n
All 400V lines	n

Reliability Targets

Network supply reliability is measured using;

- SAIDI – the system average interruption duration index (minutes) and
- SAIFI – the system average interruption frequency Index,

from which CAIDI the consumer average interruption duration index is calculated, where CAIDI = SAIDI / SAIFI.

Waipa's target is to continually improve network reliability over the life of this AMP. The following table shows the targets that have been set in the SCI for the next 2 years and extrapolated for the AMP horizon of 10 years for Reliability

Live-Line Techniques

Every opportunity will be taken to use live-line techniques where it is safe and cost effective. An on-going target to constrain planned outages to 38 SAIDI minutes per year has been set which is proving a significant challenge.

Reliability Targets

Network Reliability Performance Indices	Target 2013/2014	Target 2014/2015	Target 2015/2016	Target 2016/2017	Target 2017/2018	Target 2018/2019	Target 2019/2020	Target 2020/2021	Target 2021/2022	Target 2022/2023
SAIDI planned	38	38	38	38	38	38	38	38	38	38
SAIFI planned	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
CAIDI planned	292	292	292	292	292	292	292	292	292	292
SAIDI unplanned	133	132	131	130	129	128	127	126	125	124
SAIFI unplanned	2.31	2.30	2.28	2.27	2.25	2.24	2.22	2.21	2.19	2.17
CAIDI unplanned	58	57	57	57	57	57	57	57	57	57
SAIDI total	171	170	169	168	167	166	165	164	163	162
SAIFI total	2.44	2.43	2.41	2.40	2.38	2.37	2.35	2.34	2.32	2.30
CAIDI total	70	70	70	70	70	70	70	70	70	70

5.4 Targets for Asset and Electricity Distribution Business Performance

Asset Delivery Efficiency Targets

Waipa uses the performance indicators of Load Factor, Loss Ratio and Capacity Utilisation to measure network asset delivery efficiency.

Load Factor

Load Factor measures the ratio of kWh conveyed per year to the kW MD multiplied by the number of hours in a year. Improvement in this performance indicator will require minimisation of MDs via a fully functional load management system whilst delivering contracted service levels. Load Factor will also be improved by increasing the kWh conveyed over the distribution network. Because network assets are built to meet MD a good Load Factor is essential to obtain economic use of assets.

Load control can be used to control MDs and:

- Defer capital investment in larger assets
- Reduce Transpower charges
- Reduce network losses

In the short term the dominant reason to minimise the MD of a network is to minimise Transpower charges. In the medium term it is to defer capital investment. Its impact on losses is minor and ignored in all practical respects.

When Transpower's charging methodology changed from being based on a network's 12 highest anytime MDs to its contribution to a region's 100 anytime MDs there was no reason to manage a networks MD at times of low regional demand. From 2010/2011 Waipa's practice changed from the former to the latter and Load Factor is no longer used as a key performance measure for the network.

Loss Ratio

Loss Ratio measures the ratio of kWh lost on the distribution network to kWh conveyed per year. Lost units are the difference between metered sales to consumers and metered purchases at each Transpower GXP and distributed generation supplied to the network.

Losses are composed of physical losses due to the heating of distribution assets, un-metered supply and theft. Losses are difficult to measure accurately because all unit sales through retailers' meters would need to be read instantaneously at year-end to calculate the difference between conveyed and sold energy. Currently only Time-of-Use meters in consumers' installations can supply the required accuracy for sales.

Capacity Utilisation

Capacity Utilisation measures the ratio of kW MD to installed transformer kVA capacity. Continuous improvement in Capacity Utilisation will require stringent management of transformer installations.

The following table shows the targets that have been set in the SCI for the next 2 years and extrapolated for the AMP horizon of 10 years for Asset Delivery Efficiency.

Asset Delivery Efficiency Targets

Asset Delivery Efficiency Performance %	Target 2013/2014	Target 2014/2015	Target 2015/2016	Target 2016/2017	Target 2017/2018	Target 2018/2019	Target 2019/2020	Target 2020/2021	Target 2021/2022	Target 2022/2023
Loss Ratio	<6.5	<6.5	<6.5	<6.5	<6.5	<6.5	<6.5	<6.5	<6.5	<6.5
Capacity Utilisation	>25	>25	>25	>25	>25	>25	>25	>25	>25	>25

Business Efficiency Targets

Waipa uses the performance indicator Total Operational Expenditure per ICP as a measure of the Company's financial efficiency. The following table shows the targets that have been set in the SCI for the next 2 years and extrapolated for the AMP horizon of 10 years for Business Efficiency.

Business Efficiency Targets

Business Efficiency Performance $	Target 2013/2014	Target 2014/2015	Target 2015/2016	Target 2016/2017	Target 2017/2018	Target 2018/2019	Target 2019/2020	Target 2020/2021	Target 2021/2022	Target 2022/2023
Total Operational Expenditure per ICP	<235	<235	<235	<235	<235	<235	<235	<235	<235	<235

These targets are consistent with the Company's belief of:

Provision of value for money

Public Safety, Amenity Values and EDB Performance Goals

Waipa will take all steps to eliminate the risk of injury to people, animals and damage to property by ensuring that;

- All electrified assets are secure from inadvertent or accidental contact by the public,
- all equipment earthing complies with industry standards,
- all network assets are maintained in good, safe working order,
- all faults are detected and disconnected from supply automatically and made safe.

These objectives are consistent with the first element of the Company's Focus of:

Deliver power safely all day every day

The Company will be cognisant of the requirements of the Resource Management Act, Waipa District Council Plans, Waikato District Council Plans, Otorohanga District Council Plans, Waitomo District Council Plans, Land Transport Safety Authority requirements and On Track requirements when constructing new lines.

These objectives are consistent with the Company's belief;

Our community is part of us

Waipa will comply with the regulatory obligations applicable to EDBs. The following table identifies Waipa's corporate responsibilities.

Safety	Amenity Values	Consumer, Commercial and Employee	Electricity Distribution Industry
Health and Safety in Employment Act 1992	Resource Management Act 1991	Consumer Guarantee Act 1993	Electricity Act 1992
Hazardous Substances and New Organisms Act 1996	Waipa District Council Plans	Fair Trading Act 1986	Electricity (Safety) Regulations 2010
Fire Safety and Evacuation of Buildings Regulations 2006	Waikato District Council Plans	Privacy Act 1993	Electricity Industry Reform Act 1998
Building Act 2004	Otorohanga District Council Plans	Companies Act 1993	Energy Companies Act 1992
	Waitomo District Council Plans	Contract (Privity) Act 1982	Electricity (Hazards from Trees) Regulations 2003
	Land Transport Safety Authority requirements	Employment Relations Act 2000	Electricity Disclosure Requirements 2004
	KiwiRail Requirements	Financial Reporting Act 1993	Commerce Act (Electricity Distribution Thresholds) Notice 2004
	National Code of Practice for Utility Operators' Access to the Transport Corridors and the Utility Access Act 2010	Commerce Act 1986	Electricity Governance Regulations 2003
			Electricity Industry Act 2010
			Safety Management Systems for Public Safety – Electricity and Gas industries – NZS 7901:2008
			Electricity Governance (Security of Supply) Regulations 2008

Quality of Supply Goals

Voltage

Waipa will endeavour to provide supply at each NCP to meet regulatory voltage requirements consistent with the Company's Focus;

Deliver power safely all day every day

Power Factor

Waipa will continue to work with electricity retailers and electrical contractors to ensure consumers' installations are maintained with a power factor of better than 0.95 at all times to maximise electricity conveyance through its assets by reducing network reactive load and losses consistent with the Company's Belief;

Provision of value for money

Interference

Waipa will continue to work with electricity retailers to ensure as far as possible that one consumer's installation does not cause interference for any other consumer and that consumers' installations does not adversely impact on ripple injection signal strength or quality consistent with the Company's Belief:

Provision of value for money

Load Management Goals

Waipa will continue to operate its load management system to minimise the Lower North Island Maximum Demand interconnection charges from Transpower and to minimise capital investment on the distribution network.

Waipa will price load control services so that they are attractive for electricity retailers to implement with their customers. Both objectives are consistent with the Company's Belief:

Provision of value for money

Prudent Operator Goals

Waipa is committed to being a good employer and responsible EDB network operator consistent with the Company's Beliefs:

Everyone home safe everyday

Recognition and acknowledgement of our staff

Increasing employees potential through learning

Building and maintaining community assets and wealth

Our Community are a part of us

Providing customers with outstanding service and solutions

Provision of value for money

Life improvement through energy and network related business

and the Company's Focus:

Deliver power safely all day every day

Reliability Goals

The Company aims to continually improve the quality and reliability of it's service consistent with the Company's Beliefs:

Providing customers with outstanding service and solutions

Life improvement through energy and network related business

Reliability will be improved and the risk of outage to consumers reduced by implementing the Company's segmentation programme and continuing a preventative maintenance programme based on asset condition surveys and vegetation management of trees menacing lines consistent with the Company's Focus:

Deliver power safely all day every day

Work Practice Goals

The Company seeks to use best work practices and continually upgrade skills for all staff consistent with the Company's Spirit and Belief:

Safe

Increasing employees potential through learning

The risk of injury to employees or contractors will be reduced by ensuring that all contractors and employees are suitably trained, qualified and meet minimum auditable standards for health and safety procedures, design standards and operating standards before being permitted to work on the distribution network.

The Company encourages safe working practices, provides high quality tools, plant and personal protective equipment. Both of these initiatives are consistent with the Company's Spirit and Belief:

Safe

Increasing employees potential through learning

Environmental Goals

The risk of Company operations adversely impacting on the environment will be reduced by ensuring the use and disposal of any hazardous materials such as transformer oil is in accordance with good industry practice. The Company seeks to consistently achieve the best environmental outcomes from all it's activities and holds Gold Enviro-Mark certification. Waipa's on-going environmental initiatives are consistent with the Company's Belief:

Our community is part of us

Providing customers with outstanding service and solutions

Asset Record Goals

Waipa will maintain accurate records locating all overhead and underground plant and equipment in the field owned by the Company. Standard construction design drawings from Waipa's Design Manual will be used for most new construction and for maintenance requirements. Full construction drawings will be maintained for any non-standard installations operated by the Company in accordance with its following Beliefs:

Building and maintaining community network assets and wealth

Providing customers with outstanding service and solutions

5.5 Justification for Service Level, Asset and EDB Targets

The Company has set its service level and asset performance targets after analysing the historical performance of other EDBs and wishing to position itself consistently in the top ten achievers.

Waipa Networks Purpose

Waipa intends to build upon its good relationship with its customers and other stakeholders by continually improving the network performance cost effectively consistent with the Company's Purpose;

Deliver power safely all day every day

Provision of value for money

Provide customers with outstanding service and solutions

Customer Satisfaction Targets

The customer satisfaction categories were chosen based on analysis of typical customer issues: planned/unplanned outages, the number and length of those outages and voltage fluctuations. Overall satisfaction was also included as a general indicator of performance.

The % targets were chosen using the following methodology:

Overall satisfaction – for a number of years this has been in the mid-high 90s. The target has been set at 95% as a minimum realistic target given historic performance.

The number of voltage fluctuations – the target of 80% was set based on historical performance. This increases to 90% in two years time. 90% was set taking into consideration the rural nature of a significant portion of the Network.

Outages – the target of 85% was set for all outage categories based on historic performance. This increases to 90% in two years time. 90% was set taking into consideration the rural nature of a significant portion of the Network.

Refer to Section 5.3 for Consumer Oriented Performance Targets table.

Security

Waipa has set future security level targets for Transpower assets and its own distribution assets as a consequence of customer consultation.

The Company undertakes annual Customer Surveys conducted by an independent service provider. It has held Public Consultation meetings in Cambridge, Te Awamutu and Kawhia to gain feedback from consumers on the service it provides as well as security and reliability of their supply.

While consumers continue to be satisfied with Waipa's service and the reliability of the Cambridge and Te Awamutu networks they also support the provision of n-1 security of supply to the Te Awamutu network by Transpower.

Waipa has surveyed consumers over a number of years regarding the provision of a second supply line for Te Awamutu. Consistently 40% or more of the Company's consumers are willing to pay $1 or $2 per week for this increased security of supply. About 50% have preferred to stay with one line while less than 10% had no opinion.

The Company considers the 40% of consumers willing to pay more for their electricity represent significant support for the proposal at a time when general perception is that electricity is expensive.

During 2011/2012 the Company made a commitment to construct a 110kV line from Hangatiki GXP to Te Awamutu GXP which will provide n-1 level of security of supply and improved reliability for Te Awamutu. The line will also provide a route to alternate generation sources.

Reliability

Supply reliability including response targets should be established taking into account consumer needs and their willingness to pay for an improved service. Given the complexity of quantifying all of our customer requirements and relating them to network performance, targets are normally set on a qualitative and generic basis.

From recent consumer surveys it is not evident that Waipa's customer base supports heightened (or reduced) levels of supply reliability, especially where these would involve increased (or decreased) line charges.

Some customers would prefer reduced charges while others would prefer increased reliability. About 88% consistently support the current price and quality of supply received.

Under the previous regulatory regime the Company's reliability thresholds were prescribed by the Commerce Commission. The regulatory targets were based on historical network performance and it is likely that even in the absence of regulatory intervention, Waipa's reliability targets and performance would have been similar to those achieved under the regime.

Waipa has set future reliability targets to continually improve the quality and reliability of its network performance. These targets have been established in light of the recent good network performance and reflect the Company's perception of growing expectations of our community. These quality improvements are to be achieved without increasing prices in real terms.

Asset Delivery Efficiency Targets

Load Factor

Generally, the use of this ratio as a service level is justified as it indicates the extent to which the network is being utilised, given the load connected.

Waipa has a fully functional load management system. Investment has been made in the provision of new ripple control injection equipment in recent years and continues to be made in the ripple receivers installed at consumers' installations. The Company is committed to maintaining an active load control system to minimise Transpower charges and delaying the need for new capital investments in its network.

During 2010/2011 Waipa's practice with regard to controlling water heating load was changed to improve service levels for controlled load with minimum impact on costs. The Company noted that drawing water heating load from Transpower's network during Transpower's "off peak" times resulted in lower MD's during their "on peak" times. The ripple control system has been reprogrammed to release MD restrictions during the middle of the day while Transpower is off peak, subject to a less restrictive limit protecting Waipa's network from becoming overloaded. As a result, Load Factor is no longer a target set by The Company to achieve.

Loss Ratio

The use of this loss ratio as a service level is justified as it indicates, at a high level that asset selection and operation decisions have been appropriate and whether the network is operating at an optimum level of efficiency in terms of losses, given physical constraints.

Waipa intends to run its distribution network to its fully rated capacity without thermally damaging or prematurely aging the network assets. This will increase the network technical losses over time for existing assets. New assets will be sized to meet future load growth and have lower initial losses. It is expected that future total network losses will remain at current levels.

Capacity Utilisation

The use of this ratio as a service level is justified as it is indicative of the quality of network development planning which drives capital investment decisions.

Waipa strives to match installed transformer capacity to stated or predicted load characteristics of new consumers. However, the Company has no control over consumers' uncontrolled load and currently does not routinely monitor all transformer MDs. Therefore, it is expected that future Capacity Utilisation will remain at current levels.

Business Efficiency Targets

The use of Operational Expenditure per Network Connection Point as a service level, particularly when comparison with peers is undertaken, is justified as it enables an understanding as to whether operating expenditures are appropriate and efficient given the operating parameters of the company.

The Business Efficiency Targets adopted by the Company (Executive Management, Directors and Trust) will ensure that Waipa can continue to offer low network line charges while continually striving to improve reliability of service.

Safety

Waipa has set its future asset, energy delivery, efficiency, reliability and safety performance targets after consultation with stakeholders and in accordance with the Company's Spirit, Focus and Beliefs.

To be safe

Deliver power safely all day every day

Provision of value for money

Provide customers with outstanding service and solutions

Waipa's health and safety goal is to achieve zero accidents and lost time injuries in accordance with its Belief.

Everyone home safe every day

Environmental

Waipa's environmental goal is to fully comply with all reasonable requirements of the Waipa, Otorohanga, Waikato and Waitomo District Councils and the Waikato Regional Council and to avoid incidents that would cause environmental harm in accordance with the Company's Belief.

Our community is part of us

Voltage

Waipa along with other EDBs has a regulatory obligation to provide supply within statutory voltage limits. The Company will continually strive to ensure that regulatory voltage standards are not breached.

Power Factor

Waipa has set future power factor limits to avoid Transpower kVAr penalty payments incurred if power factor is less than 0.95 and to reduce network reactive load and losses.

6 Network Development Plans

6.1 Planning Criteria and Assumptions

Waipa planning criteria for network development plans takes into consideration;

- the capacity of an asset to convey electricity,
- the quality of supply (voltage within regulatory limits),
- reliability (SAIDI, SAIFI, CAIDI) and
- security of supply (n-1 or n).

As the Company has a number of long radial rural feeders there is a need to provide conductors of adequate cross-sectional area to maintain satisfactory voltage levels along and at the extremities of these feeders. Typically, the front end of all feeders radiating out from Transpower's Cambridge and Te Awamutu GXP require 300mm^2 Al cables and heavy line for adequate fault rating and voltage support.

Waipa takes its 11kV supply directly from Transpower's 110kV/11kV 40MVA 15% impedance transformers at Cambridge and Te Awamutu. Transpower's 11kV fault duty is now such that Waipa feeder cables radiating out from these GXPs require a 500MVA or 26kA fault duty screen for the first few kilometres before the fault duty diminishes sufficiently for normal distribution switchgear with a fault duty rating of 250MVA or 13.1kA.

As the network comprises 11kV and 400V reticulation assets only, the Company need only buy a limited scope of assets. The assets chosen comply with the load requirements and fault duty of the network.

The Company's main assets comprise: cables, lines, reclosers, ring main units, gas switches/ABS and dropout fuses. Their performance ratings are described in the following table. Due to the radial configuration and simplicity of the network it is cost effective to limit the number of models of reclosers, ring main units, gas switches /ABS and dropout fuses to one model for each asset.

Asset Ratings / Distance from GXP	TPNZ Circuit Breaker	Waipa Cable	Waipa Line	Waipa Recloser	Waipa RMU	Waipa ABS	Waipa DDO
<3km	800A / 400A, 26kA CBG GXP 1250A / 630A 26kA TMU GXP	400A, 26kA 3c300mm^2 Al XLPE Cu Screen	490A AAAC Krypton 158mm^2	630A 16kA 4sec	630A 20kA 3sec	630A 12kA 1sec	100A 12kA 1sec
3km-10km		400A, 13.1kA 3c300mm^2 Al XLPE Cu Screen					
10km-25km		300A, 10.6kA 3c185mm^2 Al XLPE Cu Screen	410A AAAC Hydrogen 111mm^2 333A AAAC Helium 77mm^2				
>25km		200A, 9.1kA 3c95mm^2 Al XLPE Cu Screen	250A AAAC Fluorine 49mm^2				
spur		100A, 3.3kA 3c35mm^2 Al XLPE Cu Screen	140A ACSR Squirrel 21mm^2				

Al: Aluminium
Cu: Copper

ACSR: Al Conductor Steel Reinforced
AAAC: All Al Alloy Conductor

Waipa evaluated the benefits of procuring network modelling software in 2011/2012 to improve the Company's ability to determine and select more accurately the capacity of new assets. The Company procured ETAP software in 2011/2012 to use for accurately calculating and determining the requirements of new assets. Network information began being input to the programs models and has been used for designs on feeders once modelled.

Other inputs to the Company's network develop plans come from District Councils, Environment Waikato Regional Council, property developers and Fonterra.

The District Councils in Waipa's reticulation area have adopted a 10 year planning horizon for local development. The Company regularly assesses the impact of these developments on the network and makes submissions on these plans as appropriate..

The impact of developers subdividing existing properties is assessed from year to year.

The two Fonterra dairy factories, Waipa's largest consumers, keep the Company informed of their maximum demand (MD) requirements on an annual basis. Any significant increase in the long term capacity requirements are discussed as they arise and a solution agreed between the parties.

Waipa intends to continue to supply remote connected consumers' installations beyond April 2013 provided it remains economic for the Company to do so.

Waipa's forecast MDs for both CBG and TMU GXPs are shown in the 'Predicted Longevity of Transpower GXP Transformers and Waipa Feeders' chart, Section 6.3. We predict a 2% compounding increase in MD at each GXP, modified by Fonterra's historical coincident MD. This gives a forecast of 1.5% compounding increase at CBG GXP and 1.9% compounding increase at TMU GXP over the 10 year planning horizon.

Maximum Demand Growth on Waipa Feeders

MD growth predictions for all Waipa's feeders were established using half hourly load data. The underlying MDs on Waipa's feeders were determined by analysing each half hour load and eliminating abnormal loads caused by total or partial switching of feeders for capital and maintenance works and for restoration of supply after a fault. The Company then predicted when its feeders would become capacity or voltage or security constrained as determined by the following criteria.

Capacity Constrained Feeders

Waipa deems that a feeder has reached its capacity constraint when its 10th consecutive MD exceeds its switchgear, cable or overhead line maximum thermal rating.

Voltage Constrained Feeders

Waipa deems that a feeder reaches its voltage constraint when the delivered voltage levels anywhere along the length of the feeder fall below the minimum prescribed regulatory voltage of 0.94pu (that is, 6% voltage drop).

Security of Supply Constrained Feeders

Waipa deems that a feeder has reached its security of supply constraint when its MDs exceed 66% of its maximum thermal rating for more than one-sixth (2,920 half hours of 17,520 half hours) of the year.

The Company's stated security of supply objective for 11kV urban and suburban areas and other 11kV lines where interconnection can be provided economically is n-1 switched. This objective can be met if all 11kV feeders are only loaded up to 66% of their rating so that there is the ability to switch load to two (or more) adjacent feeders in the event of a fault close to the GXP, or the feeder circuit breaker being removed from service for maintenance.

Allowing feeder loads to exceed 66% of their maximum thermal rating for a specified period improves feeder utilisation but assumes that non-supply of power to a neighbouring faulted feeder, over peak loading periods, is an acceptable risk.

Maximum Demand Growth on Feeders

A growth rate of 3.5% per year compounding has been applied to individual feeders reflecting actual experience on high growth feeders over the past 5 years. In addition allowance has been made for known or expected developments.

A growth rate of 3.5% per year compounding, results in the feeder MD doubling over a period of 20 years.

Using such a growth rate allows an adequate planning horizon when considering future reinforcement options and the inherently long life (60 years for concrete pole line) of distribution assets.

From the above information the Company has predicted, with a reasonable degree of confidence, the likely network asset enhancement, refurbishment, or replacement for the next 5 years and with a lesser degree of certainty predict asset enhancement, refurbishment, or replacement for the next 10 years.

6.2 Prioritisation Methodology Adopted for Development Projects

Waipa prioritises Transpower new investments and the Company network development projects by a combination of the number of customers affected and predicting when Transpower transmission, GXP assets and the Company's feeder assets become constrained. The following table shows the priority that the Company places on these constraints.

Constraint	Priority Level*
Low Voltage	First Priority
Lack of Capacity	Second Priority
Poor Reliability	Third Priority
An Unacceptable Level of Security of Supply	Fourth Priority

***Where finite resources constrain the completion of multiple projects.*

These predictions are made by analysing;

- Transpower's transmission line security level,
- Transpower's GXP underlying maximum demand growth,
- the Company's underlying feeder load trends,
- customer driven work,
- the Company's feeder reliability (SAIDI, SAIFI, CAIDI) performance and
- the Company's feeder security level.

Transpower's new investments and Waipa's network development projects are evaluated using the 'Predicted Longevity of Transpower GXP Transformers and Waipa Feeders' chart, Section 6.3 which identifies when an asset is predicted to become constrained. Waipa then prioritises and schedules projects so that the assets are not constrained and solutions are implemented in a timely manner.

Over the past 8 years Waipa has been able to schedule and implement all the Company's development projects in good time to avoid the assets becoming constrained, without incurring any conflicts of resources.

6.3 Demand Forecasting

Maximum Demand Growth at Transpower's GXPs

Cambridge GXP

Over the past 5 years the underlying average growth (less Fonterra dairy factory) in kWhs of electricity imported through Cambridge GXP was 1.83% per year.

Over the same period the average growth in MD at Cambridge GXP (with full load control) has ranged between +0.52% and +5.20% per year.

Te Awamutu GXP

Over the past 5 years the underlying average growth (less Fonterra dairy factory) in kWhs of electricity imported through Te Awamutu GXP was +1.72% per year.

Over the same period the average growth in MD at Te Awamutu GXP (with full load control) has ranged between +0.92% and +4.94% per year.

Maximum Demand Growth at Transpower GXPs

The large step increases in MD at both Te Awamutu and Cambridge (4.94% and 5.20% respectively) were associated with a change in load control policy. The Company places less emphasis on controlling its own anytime MD instead it focuses on controlling its contribution to the 100 Lower North Island Coincident Peaks.

Waipa uses the historical trends to forecast future MDs. The Company forecast MDs using Transpower MD data for both CBG and TMU GXPs are shown in the 'Predicted Longevity of Transpower GXP Transformers and Waipa Feeders without Intervention' chart, Section 6.3. Waipa predicts a 2% compounding increase in MD at each GXP, modified by Fonterra historical coincident MD. This gives a forecast of 1.5% compounding increase at CBG GXP and 1.9% compounding increase at TMU GXP over the 10-year planning horizon.

Impact of Substantial Projects or Developments on Maximum Demand

Currently, the Company is not aware of any substantial project or development that will abnormally increase the MD at either GXP. Historical new developments comprise; subdivisions, dairy farms and small retail outlets. Waipa has recently connected two fast moving consumable goods outlets which the Company considers large loads. However, it is predicted that this type of load can be connected to the network without dramatically increasing the MD beyond forecast predictions because of load diversity on the respective GXP and the Company's ability to manage controlled load.

Impact of Distributed Generation on Maximum Demand

Waipa has very low levels of distributed generation on its network and has assumed for the purpose of forecasting MD that any existing or future distributed generation will have minimal effect on MD. Distributed generation, by nature, is not available 100% of the time. This is caused by periods of low generation, faults or maintenance on distributed generation or lines connecting it to the Company's network. These assumptions will be reviewed once significant levels of distributed generation are connected to the network.

Impact of Demand Management on the Maximum Demand

The Company has assumed for the purpose of forecasting MD that any form of Demand Side Management will not have any material effect on reducing the MD. Currently, there is no quantitative evidence retailer demand side management initiatives have been adopted by their respective consumers.

Waipa has a ripple control load management system that controls 10MW of connected load in Cambridge and 12MW of connected load in Te Awamutu over peak periods. The Company has assumed for the purpose of forecasting MD that its load control system is fully functional and that full load control is being exercised over peak load periods.

The Company assumes that for the immediate future smart meters and smart tariffs introduced by retailers will continue to offer load control to connected consumers.

Security of Transpower's GXPs

Cambridge GXP Transformers and 11kV Switchboard Assets

Two 40MVA (continuous) OFAF transformers were installed in July 2002 and provide a firm transformer capacity of 46MVA (summer) / 48MVA (winter) at Cambridge GXP. However, the 11kV incomers and bus bar are only rated at 2000A constraining the power conveyed to 38MVA.

The highest MD on these transformers with full load control exercised in 2011 on this GXP during Transpower's Lower North Island 100 average peaks was 36.110MW (1830 hours on 15 August 2011). There is approximately 10MW of connected controllable load.

Eight 400A rated units of the 11kV switchboard were installed in 1982. Transpower have stated that these circuit breakers and the bus bar are approaching the end of their economic life. Transpower intend replacing this switchboard over the next 12 months.

Two additional 1250A units were installed June 2001 to supply upgraded lines to the dairy factory at Hautapu.

The total number of outgoing feeders supplied from Cambridge GXP 11kV switchboard is ten.

In January 2007 the Fonterra Hautapu dairy factory contracted for 10MW for 2007/2008 and has given no further indication of future load growth.

Assuming the dairy factory requires no more than 10MW and there is a 1.5% per year compounding growth in underlying MD at Cambridge GXP, the firm capacity of 46MVA (summer) / 48MVA (winter) will not be exceeded within the 10 year planning horizon of this AMP, provided that load control tariffs or their equivalent continue to be offered and used by consumers.

Cambridge GXP is deeply embedded in Transpower's Grid and has experienced only two unplanned outages during the past 10 years (Otahuhu "D" shackle 12 June 2006 and lightning 9 July 2011).

The Company's n-1 security level for Transpower's transmission lines and assets at Cambridge GXP has been met.

Te Awamutu GXP Transformers and 11kV Switchboard Assets

Two new 40MVA (continuous) OFAF transformers installed in July 2004 provide a firm capacity of 46MVA (summer) / 48MVA (winter) at Te Awamutu GXP.

The highest MD on these transformers with full load control exercised in 2011 on this GXP during Transpower's Lower North Island 100 average peaks was 34.050MW (1830 hours on 16 August 2011). There is approximately 12MW of connected controllable load.

The transformers feed two 11kV switchboards in parallel. The first 11kV switchboard installed in 1997 is in good order and currently supplies six feeders. The switchboard incomers, bus-coupler and bus bars are rated at 1250A, limiting the board to 24MVA under an n-1 contingency. The second 11kV switchboard rated at 48 MVA was installed in June 2004 to supply four existing feeders. A further four additional feeders were installed on this parallel switchboard in March 2007.

The total number of outgoing feeders supplied from Te Awamutu GXP 11kV switchboard is now fourteen.

In January 2007 the Fonterra Te Awamutu dairy factory contracted for 4.5MW for 2007/2008 and has given no further indication of future load growth.

Assuming this requires no more than 4.5MW and there is a 1.9% pa compounding growth in underlying MD at Te Awamutu GXP, the firm capacity of 46MVA (summer) / 48MVA (winter) will not be exceeded within the 10 year planning horizon of this AMP, provided that load control tariffs or their equivalent continue to be offered and used by consumers.

The Company's n-1 security level for Transpower's substation assets at Te Awamutu GXP has been met.

Transpower GXP Assets Longevity

Using the firm transformer capacity and n-1 security criteria the longevity of Transpower's GXP assets has been predicted assuming an MD growth of 2% pa compounding at both Cambridge and Te Awamutu GXPs.

Waipa predicts Transpower's transformer firm capacity at Cambridge GXP and Te Awamutu GXP will not be reached within the 10 year planning horizon of this AMP.

Te Awamutu GXP Transmission Line Issues and Risks

Te Awamutu does not have a secure Transpower transmission line supply. The following table records the number of unplanned Transpower outages on the Karapiro – Te Awamutu 110kV transmission line.

Transpower Unplanned and Planned Outages affecting Te Awamutu

Year (1 April - 31 March)	Number of unplanned Outages	Number of planned Outages	Equivalent Waipa SAIDI	Equivalent Waipa SAIFI
2003/2004	1	1	264	4.39
2004/2005	2		162	3.09
2005/2006	2		171	2.75
2006/2007	1	1	169	2.24
2007/2008	5	1	113	1.88
2008/2009	1		235	2.53
2009/2010	2		124	1.88
2010/2011	3		114	1.56
2011/2012	2		242	2.54
2012/2013		1	186	1.91

** Unplanned and planned outages up to 12 March 2013*

Reliability of Supply Te Awamutu

In 2003 and 2006 Transpower required forced outages of 9 hours to repair a decayed two pole structure and replace a decayed three pole structure. In 2008 a further forced 9 hour outage was required to remove birds' nests from the Te Awamutu GXP switchyard following a flashover fault. A further 9 hour maintenance outage has been requested by Transpower in 2012. These forced outages have been used to maintain GXP switchgear and equipment and do other remedial substation and line work.

Transpower acknowledge that Karapiro–Te Awamutu 110kV line is one of their most unreliable transmission lines. On seven occasions out of the past ten years the impact of Transpower planned and unplanned outages on Te Awamutu customers has exceeded Waipa's SAIDI minutes.

The reliability of this transmission line is unacceptable to Waipa's Te Awamutu consumers.

Security of Supply Te Awamutu

Transpower claim that the longest contingency expected with the existing line allows for the replacement of a failed transmission structure by helicopter within 24 hours. The Company is not confident that Transpower could replace a failed transmission structure within 24 hours on all occasions. The line crosses two peat swamps with difficult access conditions during wet weather. These areas could also be subject to liquefaction in the event of an earthquake.

This level of security of supply is unacceptable to Waipa and for over a decade the Company has been working with Transpower to provide a reasonably priced technically robust second 110kV line to Te Awamutu so that an n-1 security level and can be achieved.

Second Supply Options

In Transpower's original consideration of alternative supplies for Te Awamutu the two top ranked alternatives were:

- A second line from Karapiro, or
- A line from Hangatiki.

These two lines were similarly ranked across a number of criteria with the Hangatiki line being slightly longer and therefore slightly more expensive. Waipa was about to sign a contract with Transpower to build the line from Hangatiki when Transpower decided possible future generation input at Hangatiki would mean the proposed line from Te Awamutu would be constrained out of service for several months each year. Subsequent studies have shown that for likely future generation scenarios this is not the case.

<u>Karapiro –Te Awamutu Line Option</u>

Transpower's preferred solution was to install a second 110kv from Te Awamutu GXP back to Karapiro. However, this option does not address the Company's concerns regarding;

- Liquefaction of Moanatuatua peat swamps
- No reasonable diversity of line route
- No diversity of generation
- Transmission line constraint between Cambridge and Hamilton.

A second line from Karapiro would only serve to increase the capacity between Karapiro and Te Awamutu when capacity is not an issue. It would be equally vulnerable to lightning (the most frequent reason stated by Transpower for unplanned outages) and fires lit by property owners (one of the identified causes of an unplanned outage).

<u>Hangatiki – Te Awamutu Line Option</u>

Throughout the protracted discussion with Transpower regarding the long list and short list of options identified by Transpower, Waipa has had a preference for constructing a new 110kV from Hangatiki to Te Awamutu because this would address the shortcomings of the Karapiro – Te Awamutu line option.

In 2009, Transpower reviewed their position on a second line from Hangatiki GXP to Te Awamutu GXP and agreed that this solution is technically feasible with no known constraints that would affect the availability of the line except for faults and routine maintenance. This view was corroborated by an independent consultant retained by Waipa in 2010. At Waipa's request the consultant developed high level costs and a project timeline to build a 110kV line from Te Awamutu to Hangatiki to improve security to n-1.

This reticulation proposal will;

- Provide a permanent (non-switched) n-1 supply to TMU,
- Improve reliability,
- Provide physical diversity of line route,
- Provide diversity of generation source, and
- Reduce existing transmission line constraints in the Waikato region.

Waipa will continue to work with the its consultants to seek the consent of landowners and support of the Company's numerous stakeholders to with the aim of building and commission the new line before the next planned Transpower outage in 2016.

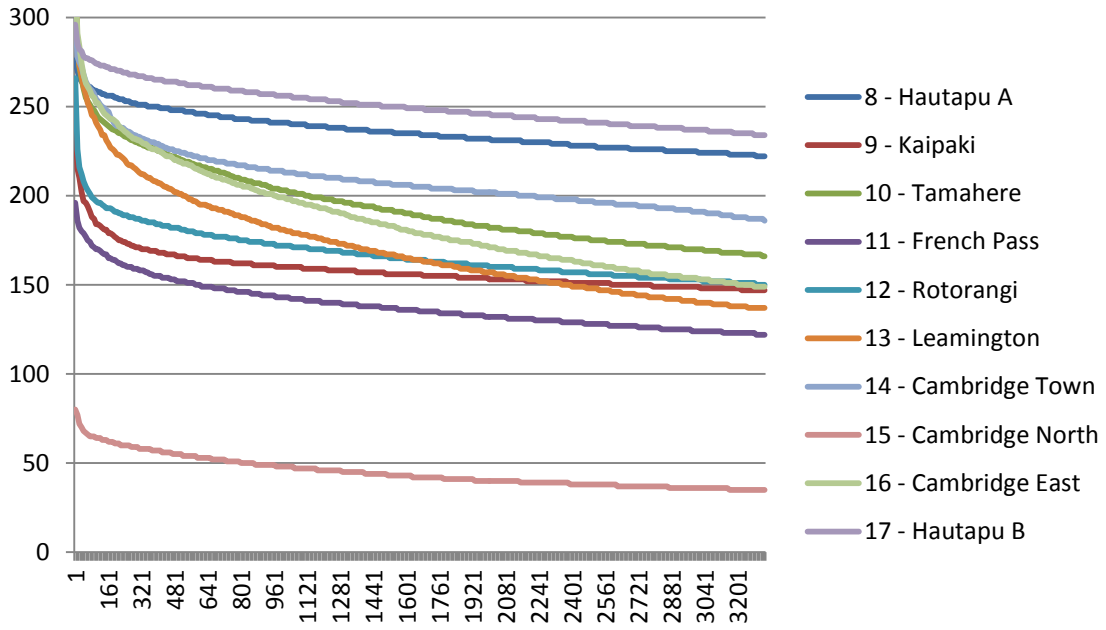
The cost associated with this development is identified as Reliability, Safety and Environment expenditure of the Capital Expenditure Budget in Section 10 of this AMP.

Waipa Feeder Longevity

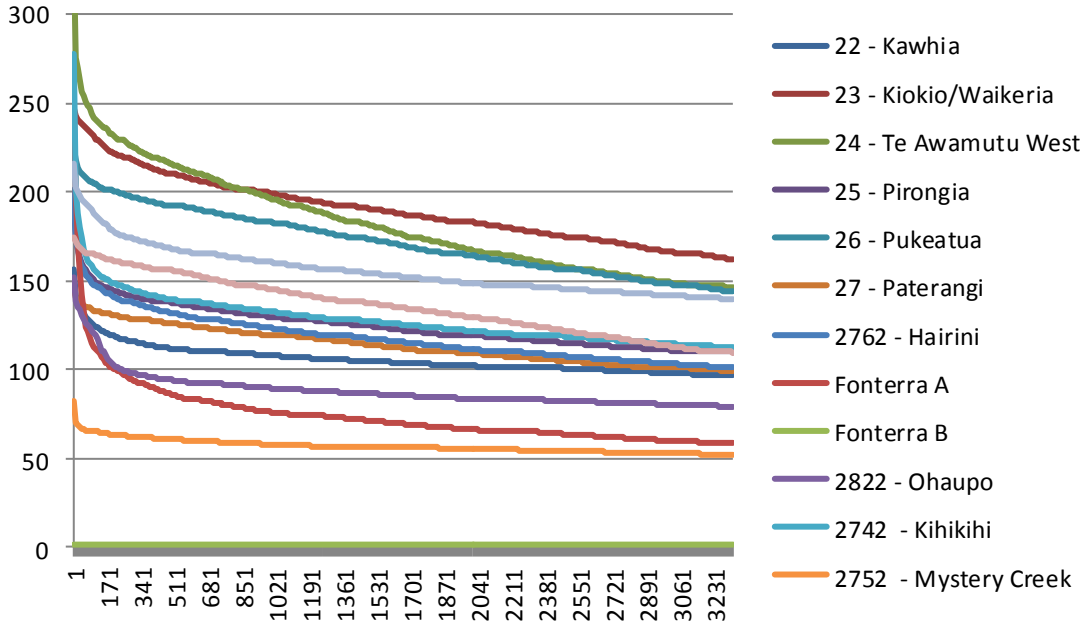
Using data collected over a period of 1 year between 1 January 2011 and 30 December 2011 the underlying MDs on all Waipa's feeders were determined by analysing each half hour load and eliminating abnormal loads caused by total or partial switching of feeders for capital and maintenance works and for restoration of supply after a fault.

The underlying feeder MDs frequencies are shown on the following load duration graphs.

Cambridge Feeders Load Duration Graph (Amps vs Number of half hours)

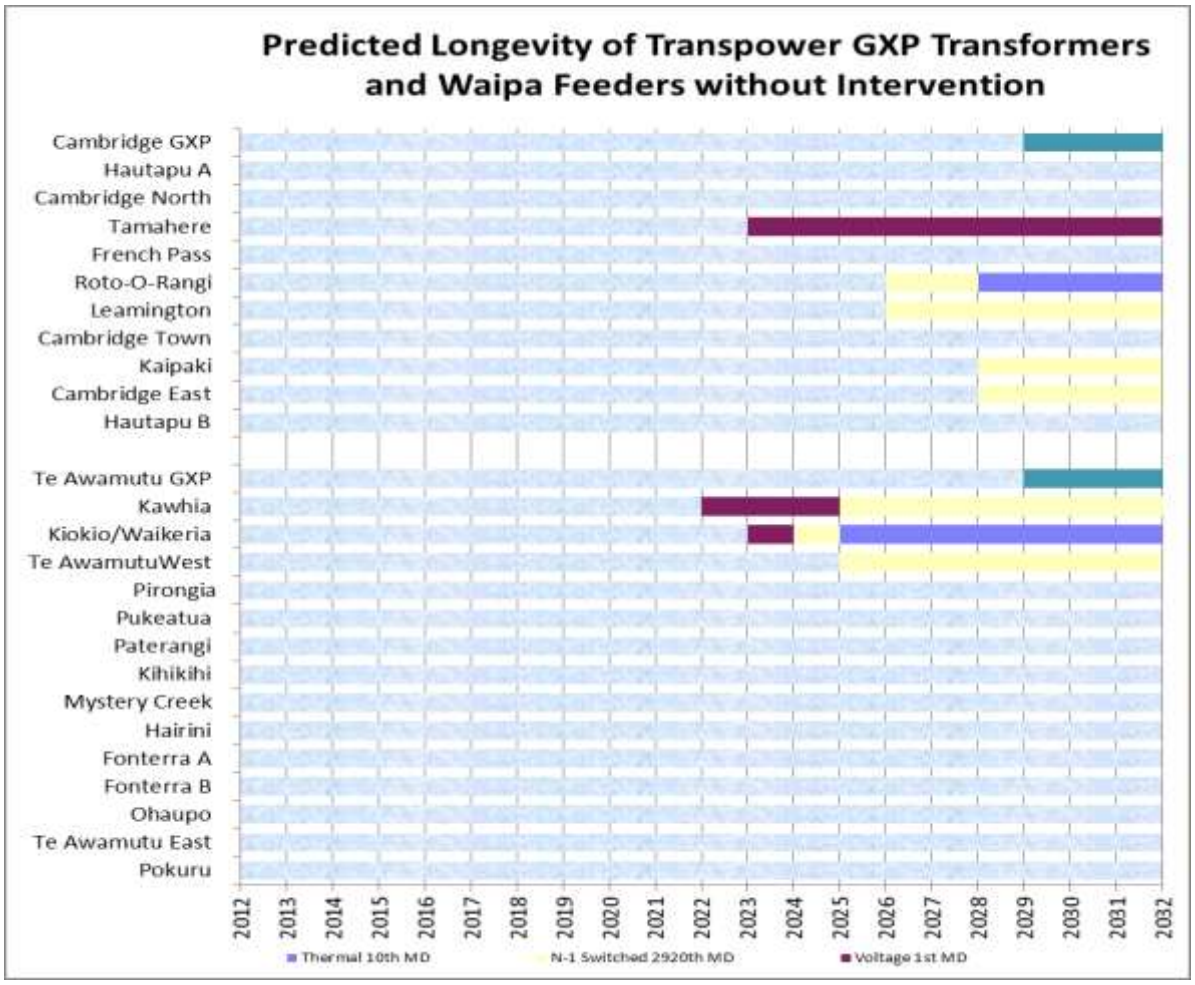


Te Awamutu Feeders Load Duration Graph (Amps vs Number of half hours)



The Company then predicted when its feeders would become capacity, voltage or security constrained in accordance with the established criteria.

Waipa's 2012 longevity predictions for Transpower's GXP transformer capacity and the Company's feeders are shown in the following graph.



Subject to actual load growth aligning with the above predictions the only constraint likely to occur within the next 10 years will occur on the Company's longest feeder supplying Kawhia. Waipa will commission a diesel generator at the Otorohanga transfer station in Lake Road near Kawhia if and when required for voltage support at peak load times and delay the capital investment required for a more permanent solution.

6.4 Policies on Distributed Generation

Waipa has welcomed all enquiries from consumers and other interested parties regarding the commercial and technical viability of a variety of distributed generation (coal/diesel, micro-hydro, wind and photo-voltaic, etc.) proposals.

Waipa's connection policy requires distributed generators to contribute to any network enhancements that are required to eliminate any input constraints caused by the distributed generator.

Applications and a description of the consenting process and associated legislation and technical requirements for distributed generation are available on the Company's web-site.

The Company's salient requirements for new generators are;

- Operators must ensure their generator operates safely and does not produce any adverse effects on the network or any other network consumers.
- Generators must not produce any voltages or harmonics outside regulatory limits, interfere with network protection systems or inject fault currents above network capabilities.
- Generator owners must provide protection against over and under frequency, overcurrent, phase to phase faults and phase to earth faults.
- Generators must comply with all relevant regulations, standards and codes of practice.
- Applicants who reduce the net kVAr supplied to Waipa's network by Transpower will be encouraged, while those who require additional kVAr support will be declined.
- Generators must be tested fully before being connected.
- Connected generators will be disconnected; in emergency situations, if the generator has failed to pay any fees or charges, if there is a change or increase in distributed generation without Waipa's prior consent or if the generator fails to have an electricity retailer.
- Standard fees apply for applications and inspections.

Most of the distributed generation installations have been downstream of the consumer's metering point and generally photovoltaic applications. This type of distributed generation has had little effect on the network.

The existing 7.5MVA co-generator at Fonterra Te Awamutu dairy factory is directly connected to the Te Awamutu GXP via two 11kV service mains. This generator while it has no effect on other Company network assets it does impact on Transpower's Te Awamutu GXP assets and MD.

To date Waipa's experience has been that no committed distributed generation projects have had any impact on the Company's reticulation assets or network development plans.

Impact of Distributed Generation on Maximum Demand

Waipa has assumed for the purpose of forecasting MD that any existing or future distributed generation will have minimal effect on MD. Distributed generation, by nature, is not available 100% of the time. This is caused by periods of low generation, faults or maintenance on distributed generation or lines connecting it to the Company's network.

6.5 Policies on Non-network Solutions

Waipa encourages all forms of non-network solutions that are economically feasible and practical alternatives to conventional network augmentation, to address network constraints such as energy efficient lamps and heat pumps, for reducing network MD and kWh consumption by consumers within their installations.

When potential non-network solutions are identified, they are reviewed by the Operations Committee, a group of Company representatives who meet monthly to discuss operational and technical matters that have arisen.

The Operations Committee assigns the potential non-network solution to the relevant staff member for further research on cost/benefits of the proposal. The findings are reported back to the Operations Committee and if they are endorsed onto Management for appropriate action.

Line Pricing Incentives

The Company offers all retailers controlled load, day/night and 8 hour supply kWh line pricing to encourage consumers to reduce network MD at peak times.

Embedded Generation

Waipa will consider using non-network solutions such as diesel generation to reduce network MD to delay capital expenditure where economic.

Consumer Advice

The Company's web-site (Info for Customers/Energy Efficiency) contains suggestions for consumers to save power without adversely impacting on their lifestyle.

Virtual Smart Home

Waipa launched a new website late 2010 which can be found at www.virtualsmarthome.co.nz. The Company's aim was to provide ready access to the latest in smart and energy efficient home technologies for its customers. Waipa therefore developed the concept of a 'virtual' smart home on the internet where customers could easily access the technology and interact with it. The smart home website goes beyond a typical demonstration of smart technology by also providing users with tips regarding energy safety and efficiency.

Power Factor

Waipa will continue to require consumers to install sufficient power factor correction at their installations to maintain a minimum power factor of 0.95 to reduce kVAr loading on the Company's feeders and avoid Transpower's kVAr penalty charges.

Transpower routinely advises the Company each year what the power factor at Cambridge GXP and Te Awamutu GXP has been during the previous year. To date Transpower has advised that power factor at both GXPs remain satisfactory. However, there will be a need for an on-going education programme for electricity retailers, electrical contractors and consumers.

Impact of Demand Management on the Maximum Demand

Waipa has a ripple control load management system that is able to control 10MW of connected load in Cambridge and 12MW of connected load in Te Awamutu over peak periods. The Company has assumed for the purpose of forecasting MD that its load control system is fully functional and that full load control is being exercised over lower North Island peak load periods as required.

The Company has assumed for the purpose of forecasting MD that any form of additional Demand Side Management will not have any material effect on reducing the MD. Currently, there is no quantitative evidence that retailer demand side management initiatives have been adopted.

6.6 Network Development Plan

Network Development Options Identified

As there is no significant Distributed Generation on Waipa's network and as there is no significant additional Demand Side Management initiatives driven by electricity retailers for consumers to take advantage of, the Company's pragmatic option is to pursue reticulation solutions.

11kV Feeder Reinforcement

The majority of Cambridge GXP and Te Awamutu GXP urban/suburban and rural feeders can be future proofed by normal 11kV reinforcement techniques.

Normal 11kV reinforcement techniques are economic and involve:

- upgrading all under sized feeder conductors to remove capacity constraints and improve delivered voltage;
- relocating, enhancing, adding or removing voltage regulators to ensure regulatory voltage is maintained at all times;
- establishing new 11kV feeders and reallocating load between the new and existing feeders; and
- relocating, adding or removing line auto reclosers, sectionalisers, disconnectors and dropout fuses to satisfy system operating needs.

Normal 11kV reinforcement strategies can be applied to most of Waipa's 11kV feeders if required to meet future capacity and voltage constraints that arise from the assumed 3.5% pa compounding growth rate in MD.

Customer Connection

General Extensions

The quantity of subdivisions and other developments and the timing of their reticulation are driven by the developers of each site.

Over the past few years expenditure on reticulating subdivisions and new developments has declined. The Company believes this is primarily due to the on-going constrained economic environment. Waipa has reflected the reduced activity in this AMP. The Company has not speculated on when the economy will pick up and activity return to previous levels.

Investment in new network extensions, driven by developer and consumer requirements will continue as required.

The cost associated with this activity is identified as customer connection expenditure of the Capital Expenditure Budget in Section 10 of this AMP.

St Kilda Feeder

In 2013/2014 Waipa will begin reticulation of a new subdivision of 285 life style blocks which surrounds Cambridge GXP and lies between Cambridge North and French Pass feeders.

A new St Kilda feeder out of Cambridge GXP is required to supply this subdivision. The new feeder will connect to and improve security for French Pass feeder.

The cost associated with this network development is included in the customer connection expenditure of the Capital Expenditure Budget in Section 10 of this AMP.

Transformer and Substation Additions

Installation of new transformers and substations, essential for network extensions, will continue to be driven by developer and consumer demand.

The cost associated with this activity is identified as customer connection expenditure of the Capital Expenditure Budget in Section 10 of this AMP.

Ring Main Unit Switchgear Additions

Installation of new ring main units, essential for network extensions, will continue to be driven by developer and consumer demand.

The cost associated with this activity is identified as customer connection expenditure of the Capital Expenditure Budget in Section 10 of this AMP.

Disconnector Switchgear Additions

Installation of new disconnectors, essential for network extensions, will continue to be driven by developer and consumer demand.

The cost associated with this activity is identified as customer connection expenditure of the Capital Expenditure Budget in Section 10 of this AMP.

Dropout Fuse Switchgear Additions

Installation of new drop out fuses, essential for network extensions, will continue to be driven by developer and consumer demand.

The cost associated with this activity is identified as customer connection expenditure of the Capital Expenditure Budget in Section 10 of this AMP.

General Relays Additions

Waipa will install additional ripple control relays each year for new customers or existing customers seeking a tariff change.

The cost associated with this activity is identified as customer connections expenditure of the Capital Expenditure Budget in Section 10 of this AMP.

System Growth

Waipa's feeder longevity analysis which assumes a 3.5% compounding growth per year indicates that there are no feeders that are expected to become constrained by low voltage, thermal overload or unacceptable security of supply within the horizon of this AMP with the exception of Kawhia.

New Voltage Regulators

Waipa has a regulatory obligation to supply consumers' NCP within specified voltage limits not withstanding momentary fluctuations.

The Company's load profile is typical of most EDBs' with morning and evening peaks which occur for 6-8 hours each day.

For the remaining 16 to 18 hours the Company's urban and suburban pole line feeders operate well within their current rating capacity and deliver statutory voltage.

However during peak loading periods the Company's rural pole line feeders without enhancement cannot deliver regulatory voltage. The cost effective solution is to install voltage regulators on these rural lines so that regulatory voltage is maintained at NCPs over peak periods.

Waipa will have completed installation of the new overhead front end for Pukeatua feeder in 2012/2013. The location of the two existing voltage regulators on the feeder will need to be adjusted to optimise the voltage profile of the feeder. Adjusting the locations will require installing two new three can regulators, each on four pole structures, at new optimal locations.

Waipa has established a programme for enhancing (adding third voltage regulator can) to two phase 200A 32 step 0.625% per step type installations and installing additional new voltage regulators.

Appendix A shows the proposed Voltage Regulator Programme. The need and timing of voltage regulator installations and enhancements proposed from 2014/2015 onward will be confirmed by the Company's ETAP software and actual load growth.

A budget provision has been made for installing an additional set of three 200A voltage regulators on a four pole structure each second year on rural feeders to maintain statutory voltage. A budget provision has been made for enhancing existing voltage regulators on rural feeders.

The cost associated with voltage regulator installations is identified as system growth expenditure of the Capital Expenditure Budget in Section 10 of this AMP.

Kawhia Generation

Waipa proposes a cost effective solution to install diesel generation on Kawhia feeder in 2021/2022 which will operate during peak load periods initially to for voltage support.

The cost associated with voltage regulator installations is identified as system growth expenditure of the Capital Expenditure Budget in Section 10 of this AMP.

Transformer & Substation Enhancements

Enhancements of existing transformers and substations will continue to be driven by consumer demand.

The cost associated with this activity is identified as system growth expenditure of the Capital Expenditure Budget in Section 10 of this AMP.

Kawhia Generator

Kawhia feeder is the Company's longest rural feeder. It is supplied from Te Awamutu GXP having an arterial length of 81kms. It consists of two legs, Hauturu and Kawhia, each of which has effectively two voltage regulators in series. Should the load growth increase by 3.5% per year compounding then normal 11kV reinforcement techniques will be inappropriate for this long rural feeder.

A Power System Studies for Utilities analysis completed in 2001 assumed a 3.5% pa compounding growth in MD and a point load of 250kVA would be established at Aotea Harbour before 2008. The results based on the highest MD at the time predicted that Kawhia feeder would reach its voltage constraint in 2008.

One of the options considered in the study titled "Future Network Voltage(s)" dated 26 March 2002 for voltage support of Kawhia feeder in 2008 was to install a diesel generator in the vicinity of Kawhia town. However, the predicted load growth on Kawhia feeder has not eventuated to date. Currently, the load has reached a plateau.

The present indication is that Kawhia feeder will not become voltage constrained until 2021/2022. Kawhia is a holiday resort and the Company has monitored feeder load and voltages over the Christmas and New Year summer period and Anniversary and Waitangi weekends of 2009-2012 to corroborate the latest MD predictions.

Based on current MD load growth predictions a "firm" 500kVA diesel generator may need to be commissioned on Kawhia feeder in 2021/2022.

The cost associated with installing generation at Kawhia is identified as system growth expenditure of the Capital Expenditure Budget in Section 10 of this AMP.

Asset Replacement and Renewal

One Pole Transformer and Substation Structure Replacement

Waipa had 2503 (as at 31 March 2012) single pole transformer structures on the network. Other than the visual asset condition survey, the Company does not have a routine replacement or maintenance programme for this type of asset.

The Company's experience is that the service life of pole mounted transformers is generally well in excess of the ODV 45 standard life years. While minor remedial work is carried out when a defect is detected, the asset is only replaced when it fails in service. This excludes replacing transformers due to load growth and replacing transformers during major line alterations.

This is an on-going activity and a budget provision based on the number of annual failures has been made to replace 15 per year.

The cost associated with this activity is identified as asset replacement and renewal expenditure of the Capital Expenditure Budget in Section 10 of this AMP.

Disconnector (ABS) Switchgear Replacement

Waipa had 689 (as at 31 March 2012) air break switches in service on the distribution network. These air break switches are used to segment and isolate lines and provide inter-ties between feeders.

Previously these disconnectors were removed from service and refurbished. However, the Company prefers to replace them because their most common mode of failure is to "freeze up" through infrequent use or their contacts weld together when they pass fault current.

When a defective disconnector is identified a rigorous process is used to determine if the ABS disconnector is still required for network operations.

It is intended to replace deteriorated air break switches at the time the pole line is reconstructed or when they fail in service. This is an on-going activity and a budget provision has been made to replace 12 per year.

The cost associated with this project is identified as asset replacement and renewal expenditure of the Capital Expenditure Budget in Section 10 of this AMP.

Padmount Transformer Substation Structure Replacement

Waipa had 573 (as at 31 March 2012) padmounted transformer substations on the network. Other than the visual asset condition survey, the Company does not have routine replacement or maintenance programme for this type of asset.

The Company's experience is that the service life of pad mounted transformers is generally well in excess of the ODV 45 standard life years. While minor remedial work is carried out when a defect is detected, the asset is only replaced when it fails in service.

This is an on-going activity and a budget provision has been made to replace up to 10 per year.

The cost associated with this activity is identified as asset replacement and renewal expenditure of the Capital Expenditure Budget in Section 10 of this AMP.

Underground Overhead Line

There are a few locations on the network which have ageing overhead reticulation where it is cost effective and more appropriate (due to tree interference, carriageway constraints or unsatisfactory building clearances) to replace the overhead reticulation by installing underground cables.

Previous locations where overhead lines have been replaced by underground cables are;

- Wilson St Cambridge (undergrounded in 2010/2011)
- Albert Park Drive Te Awamutu (undergrounded in 2010/2011)
- Hall St Cambridge (undergrounded in 2011/2012)

During 2013/2014 the Company completed undergrounding overhead reticulation in Milicich Place and along Swayne Road Cambridge which required approximately 100m of 400V distribution cable to be installed.

In 2013/2014 the Company will evaluate the benefits of undergrounding overhead reticulation along Swayne Road Cambridge from Taylor Street to Cambridge High School and along Bryce Street from State Highway 1 through to Queens Street in Cambridge.

Undergrounding existing overhead reticulation is an on-going activity and a budget provision has been made for future locations yet to be prioritised.

The cost associated with this project is identified as asset replacement and renewal expenditure of the Capital Expenditure Budget in Section 10 of this AMP.

Te Awamutu Ripple Relay Replacement

The Company uses ripple relays for load control as a cost effective alternative to investing in increasing feeder capacity to handle MD load, as well as minimising Transpower interconnection transmission charges.

In Te Awamutu the aged 297Hz ripple relays are being replaced with new 283Hz Enermet RO3 ripple relays. over the next 2 years. It is estimated there are a total of 9301 ripple relays to replace. Up to 31 March 2012 there were 4834 relays replaced in the programme. Waipa aims to replace approximately 1500 relays a year completing the project during 2014/2015.

The cost associated with this project is identified as asset replacement and renewal expenditure of the Capital Expenditure Budget in Section 10 of this AMP.

Quality of Supply

Hangatiki – Te Awamutu 110kV Transmission Line

Waipa has committed to install and commission a 110kV transmission line from Hangatiki to Te Awamutu to provide n-1 security of supply to Te Awamutu and to improve transmission line reliability subject to comprehensive consultation with the Company's stakeholders.

The project will comprise;

- negotiation of property rights,
- resource management consent,
- design, build and commission a 33km single pole 110kV transmission line in accordance with Transpower's design criteria,
- alterations to Hangatiki and Te Awamutu GXPs' switchyards, switchgear, metering, communications and protection, to accommodate the terminations of the line and
- negotiation of an operating contract with the System Operator to operate the line as part of the Grid.

Other options to provide n-1 security and improve reliability for Te Awamutu are discussed in Section 6.3 Demand Forecasting.

The proposed timeline is for the project to be completed during 2014/15.

The cost associated with this network development is identified as quality of supply expenditure of the Capital Expenditure Budget in Section 10 of this AMP.

Install Remote Controlled Auto Reclosers

Continuing the installation of remote controlled 11kV auto reclosers will increase feeder segmentation which will reduce the number of consumers impacted by faults and enable quicker supply restoration thereby improving reliability performance.

Waipa's target over the next 3 years is to have no more than 200-300 consumers or 15-20km of 11kV line between remote controlled 11kV auto reclosers.

The Company proposes to install up to 12 additional NOJA pole mounted remote controlled 11kV auto reclosers each year completing the project during 2015/2016.

Some of these auto reclosers will be installed to replace existing sectionalisers to reduce fault affected areas and improve fault isolation. The remainder of the auto reclosers will be installed to further segment each 11kV feeder to reduce the number of consumers affected by faults and improve fault isolation and restoration of supply times.

Appendix B shows the proposed Remote Controlled Auto Recloser programme.

The costs associated with installing remote controlled auto recloser are identified as quality of supply expenditure of the Capital Expenditure Budget in Section 10 of this AMP.

Install Recloser Bypass Disconnectors

Installation of new disconnectors, essential for recloser structures, will continue to be driven by the recloser installation program. The cost associated with this activity is identified as quality of supply expenditure of the Capital Expenditure Budget in Section 10 of this AMP.

Install 11kV Dropout Isolation Fuses on Spurs & Services

Waipa's Cambridge and Te Awamutu pole lines were historically constructed with a minimum of isolation points installed between the main 11kV distribution lines and either 11kV distribution network spur lines or consumers' 11kV service mains.

As a consequence when a fault occurs on an 11kV distribution network spur line or consumer 11kV service main all the distribution network up to the nearest protective isolation device is without power.

Continuing the installation of 11kV dropout fuse isolation points on network spurs and consumers' service mains will reduce the number of consumers impacted by phase to phase faults on these spur lines and provide easier disconnect points enabling quicker supply restoration to other consumers thereby improving reliability performance indices.

Approximately 35 additional two or three phase 11kV dropout isolation fuses will be installed on network feeder spurs and 35 additional two or three phase 11kV dropout isolation fuses will be installed on consumers' service mains each year to minimise the number of consumers affected by faults and improve fault isolation and restoration of supply times. This is an on-going activity and a budget provision has been made to install 70 per year.

The costs associated with installing dropout fuses are identified as quality of supply expenditure of the Capital Expenditure Budget in Section 10 of this AMP.

Pukeatua, Hairini, Kihikihi Feeders

Waipa has a multi-circuit pole line along Cambridge road comprising Pukeatua, Hairini and Kihikihi feeders that is located on the edge of high density motor vehicle carriageways of State Highway 3 and Te Awamutu - Cambridge district road and is vulnerable to traffic accidents.

Because several circuits occupy the same poles and cross-arms there are occasions when repairs and maintenance to one circuit cannot be safely carried out using live line techniques and outages must be planned affecting all circuits. What would be routine fault or maintenance work on a single circuit pole line causes increased disruption to connected consumers across all these feeders.

The available solutions comprise: undergrounding all the multi-circuits from Te Awamutu GXP through town to the point where the circuits become single feeders; and building a new overhead front end along a new alignment for Pukeatua feeder which is physically separated from the multi-circuit line and increasing back feed capability for Hairini and Kihikihi feeders.

As the cost of installing cable is over four times the cost of installing overhead line (ODV), the cabling option was considered prohibitively expensive for no additional benefits.

The Company commenced this project in 2009/2010 and completed building the new front end for Pukeatua feeder in 2012/2013 to improve the reliability of these feeders.

Waipa Feeder Reliability

Waipa has a semi-rural network with relatively high consumer density on rural feeders. As a result faults on rural feeders affect a larger numbers of consumers than other more typical rural and semi-rural networks. At the same time travel times to these faults can be longer than for urban networks.

Analysis has shown the average number of consumers affected by a fault on Waipa's network is substantially higher than for most other networks.

Waipa's objective is to continually improve the reliability performance of its network feeder assets to meet the Company's understanding of the growing expectations of consumers.

From 2006 the Company has exploited opportunities often created by customer driven works to split feeders at minimal cost to improve SAIDI minutes and reduce SAIFI. However, these opportunities have now been exhausted.

Split Tamahere Feeder into Tamahere and Pencarrow Feeders

Tamahere is a long predominately rural feeder whose fault history is dominated by trees and tree borne wind debris interfering with the power lines. Whilst we have a vegetation management programme in place, tree interference before the feeder splits into two major legs continues to be disruptive to the entire feeder.

Tamahere is a predominantly life style area where customers are reluctant to have their trees trimmed beyond the minimum required.

The available solutions comprise; undergrounding the front end of the feeder and building and additional overhead front end to split the existing Tamahere feeder into Tamahere and Pencarrow feeders.

As the cost of installing cable is over four times the cost of installing overhead line (ODV), the cabling option was considered prohibitively expensive for a marginal increase in benefits.

By splitting the feeder into two feeders the resultant SAIDI from a tree incident on the front end is statistically halved.

Waipa intends building laying a new Pencarrow feeder from the CBG GXP along Appleby Road and the new Cambridge Bypass alignment to Victoria Road which will split the existing Tamahere feeder into a “Pickering Road leg” (Pencarrow) and a “Hautapu Road leg” (Tamahere).

The Company proposes to commence this project in 2015/2016 and complete it during 2016/2017. The project requires a 2.5 km of Krypton conductor pole line and 250m of 300mm^2 Aluminium cable to be installed.

The cost associated with this network development is identified as quality of supply expenditure of the Capital Expenditure Budget in Section 10 of this AMP.

Split Kaipaki Feeder into Kaipaki and Monavale Feeders

Kaipaki is a long predominately rural feeder whose fault history is dominated by third party vehicle versus pole accidents. Vehicle before the feeder splits into two major legs continues to be disruptive to the entire feeder.

The available solutions comprise; undergrounding the front end of the feeder and building and additional overhead front end to split the existing Kaipaki feeder into Kaipaki and Pencarrow feeders. As the cost of installing cable is over four times the cost of installing overhead line (ODV), the cabling option was considered prohibitively expensive for a marginal increase in benefits.

By splitting the feeder into two feeders the resultant SAIDI from a vehicle accident on the front end is statistically halved.

Waipa intends laying an “express” cable directly to the Kaipaki load centre, from the CBG GXP along Appleby Road and the new Cambridge Bypass alignment to Hannon Road and along Racecourse Road to Banks Road, bypassing the load at the front end of the original Kaipaki feeder in Monavale.

The Company proposes to commence this project in 2015/2016 and complete it during 2016/2017. The project requires a 3 km Krypton conductor pole line and 250m of 300mm^2 Aluminium cable to be installed.

The Monavale feeder will be inter-tied to Leamington feeder through an existing gas switch, thereby increasing the security of Leamington feeder.

The cost associated with this network development is identified as quality of supply expenditure of the Capital Expenditure Budget in Section 10 of this AMP.

Legislative and Regulatory

Waipa has not identified any capital expenditure on assets required to address any new legislator or legal requirements.

Other Reliability, Safety & Environment

Waipa Asset Safety & Environment

In reviewing the impact of existing distribution assets on safety and the environment and the requirements of the Electricity (Safety) Regulations 2010, the Public Safety Management System based on NZS 7901:2008 and the Electricity (Hazard from Trees) Regulations 2003 the Company had identified 3 major asset types that presented a significant public safety hazard.

These were oil-filled ring main units, non-compliant transformer substation enclosures and two pole transformer substation structures.

Oil-Filled Ring Main Units

Waipa had 9 11kV outdoor oil-filled ring main units in service on the distribution network (as at 31 March 2011).

Across the industry there have been a number of reported failures of this type of RMU. Because they are filled with flammable oil they present a high risk to public safety. Waipa have had two units fail in the past. Fortunately neither incident caused injury to a member of the public or staff or significant damage to property.

The Company commenced a change out program in 2011/2012 and completed the program in 2012/2013. All of these oil-filled RMUs have now been removed or replaced with SF_6 RMUs.

Spa Pool Type Transformer Substations

Waipa had 43 (as at 31 March 2011) "spa pool" type padmounted substations (a pole transformer mounted on the ground covered with a plastic enclosure) that no longer comply with electrical industry safety access requirements and electricity industry standards for HV terminations and LV switchboards.

The Company commenced a change out program in 2011/2012 and completed the program in 2012/2013. These "spa pool" type padmount substations have been replaced with modern padmount transformer substations.

Tin Shed Type Transformer Substation Replacement

Waipa has 15 (as at 31 March 2012) tin shed type padmounted substations (a pole transformer mounted on the ground covered with a metal enclosure) that no longer comply with electrical industry standards for HV terminations and LV switchboards and present an operating and maintenance risk for staff and contractors.

The Company intends changing these tin shed type padmounted substations in 2013/2014. These tin shed type padmount substations will be replaced with modern padmount transformer substations.

The cost associated with this activity is identified as other reliability, safety & environment expenditure of the Capital Expenditure Budget in Section 10 of this AMP.

Two Pole Transformer Substation Replacement

Waipa had 126 (as at 31 March 2012) two pole hardwood platform transformer structures (6 in Cambridge, 120 in Te Awamutu) that are over 40 years old. While the hardwood platforms have been maintained as required over the years these assets are approaching the end of their economic life.

Furthermore, this type of substation structure no longer conforms to modern industry standards and present an operating and maintenance risk for staff and contractors.

All of these two pole transformer structures will be replaced on a condition prioritised basis by either a single pole transformer substation or a padmounted substation over the next 8 years for staff and public safety.

The cost associated with this activity is identified as other reliability, safety & environment expenditure of the Capital Expenditure Budget in Section 10 of this AMP.

Relocation

NZTA Waikato Expressway

NZTA intend to construct the Tamahere and Cambridge Bypass sections of the Waikato Expressway over the period September 2013 – December 2016.

This new construction project will impact on all of the Cambridge GXP 11kV feeders which will need to be diverted from the their existing route as they currently cross or run within the proposed Bypass carriageway.

NZTA has not provided the Company with detailed construction details as yet but their overall scheme plan indicates there are at least 11 sites where Waipa's lines intersect with the new Bypass.

The Company has estimated the cost of diverting the overhead lines and placing cables under the Bypass where necessary. The exact project methodology is unknown at this stage and will be determined by NZTA requirements closer to the building phase.

A provisional cost for NZTA's Cambridge Bypass Section project has been included in the relocation expenditure of the Capital Expenditure Budget in Section 10 of this AMP.

Cambridge Switchboard Replacement

Transpower intends replacing its aged 11kV switchboard at Cambridge GXP and eliminating an existing 11kV bus bar constraint so that the full capacity of their 110kV/11kV 40MVA transformers can be used by Waipa.

After the new switchboard is commissioned the Company will need to relocate and re-terminate all of its existing 11kV feeders onto the new switchboard.Transpower's new Cambridge switchboard will be commissioned in February 2014.

The cost associated with this activity is identified as relocation expenditure of the Capital Expenditure Budget in Section 10 of this AMP.

Additional Switches at Cambridge GXP

After several years of negotiations Waipa executed a CIC with Transpower in 2011 to install four additional switches at the same time the new Cambridge switchboard is installed. This provides the Company with the opportunity to efficiently install additional switchgear to split feeders and improve reliability and security.

Payment for the four additional switches will be made through a Transpower CIC which does not contribute to any capital expenditure on network assets.

The four additional switches will be used to create;

- A new Pencarrow feeder to split Tamahere for improved reliability and security,
- A new Monavale feeder to split Kaipaki for improved reliability and security and additional security for Leamington feeder,
- A new St Kilda Waterways feeder that will supply a new subdivision development and improve security for French Pass feeder,
- A new direct feeder to the existing ripple plant for improved operational safety. Currently the ripple plant is supplied from Cambridge Town feeder via a RMU with constrained capacitive switching rating which presents a safety hazard. Establishing a direct feeder involves installing a new cable feeder from the new switchroom to the existing ripple plant and an inter-tie to a feeder on the adjoining bus bar for n-1 switched security of supply to the ripple plant in the event of a GXP bus bar failure

The cost associated with this network development is identified as relocation expenditure in the Capital Expenditure Budget in Section 10 of this AMP.

7 Life Cycle Asset Management Planning

Whilst standard asset lives prescribed in the fourth edition Handbook for Optimised Deprival Valuation of System Fixed Assets of Electricity Lines Businesses March 2004 (ODV) range between 15 years for SCADA systems and 70 years for PILC cable, Waipa's experience is that in most cases a specific asset's "fitness for purpose" is reviewed several times during the course of its life.

Generally asset enhancement or replacement is driven by increased load demand, the need to deliver electricity within statutory voltage limits, physical deterioration, or the discovery of a significant staff, contractor or public safety hazard.

Waipa prioritises network maintenance works by assessing the adverse impact of the respective network assets on:

Adverse Asset Impact	Priority Level*
Staff, Contractor or Public Safety	First Priority
Reliability	Second Priority
Fitness for Purpose	Third Priority

***Where finite Company and contracted resources constrain the completion of multiple projects.*

7.1 Maintenance Planning Criteria and Assumptions

Waipa manages its distribution assets through their various lifecycles to ensure the network:

- will not present a significant safety hazard,
- will be "fit for purpose" during the next 10 year planning period,
- will deliver voltage within statutory limits,
- will meet the security levels as determined by the Company in consultation with the shareholder and consumers,
- are maintained in accordance with the Company's investment and maintenance policies,
- will continually improve on targets for SAIDI and SAIFI, and
- are operated in a safe and prudent manner.

The Company will ensure that its staff, contractors and the public are safe from "step and touch" potential rise by complying with earthing standards.

Waipa will continue to drive distribution network maintenance from asset condition surveys and by the eliminating or mitigating the causes of faults and hazards.

The Company's main non-asset solutions to improve network SAIDI and SAIFI reliability performance are to:

- continue to use live-line techniques and
- encourage tree owners to manage vegetation menacing power lines.

7.2 Routine and Corrective Maintenance Policies and Procedures

Maintenance programmes are driven by the Waipa's objective to provide a safe and reliable supply.

Identifying and completing preventative maintenance works on the network will also preserve the value of the Company's distribution lines.

Waipa will continue to maintain its 11kV and 400V distribution feeders, voltage regulators, line auto reclosers, SF_6 ring main units, disconnectors, distribution transformers and substation structures in accordance with the maintenance planning criteria and assumptions set out in section 7.1.

Asset Condition Surveys

Waipa has adopted the asset condition approach to prioritise routine and corrective maintenance expenditure.

Visual Survey

An independent contractor completed a visual survey of Waipa's pole line assets in January 2006. The assessment of network pole lines included:

- adequacy of pole structure,
- condition of transformers, crossarms and all line hardware,
- conductor tension, sagging and attachments,
- regulatory clearances, and
- menacing vegetation.

The external condition of 11kV and 400V distribution lines, transformers, voltage regulators, line auto reclosers and sectionalisers, disconnectors, 11kV dropout fuses, 400V fuse links, lightning arrestors and cable terminations has also been assessed.

This information was used by the Company to prioritise maintenance works to ensure:

- safety of staff, contractors, the public, live stock and property,
- regulatory requirements are maintained, and
- important supplies are ranked accordingly.

Waipa has monitored the causes of system faults over the past 5 years and has found that very few identified asset defects have caused unplanned outages. Asset defects which have caused faults have generally been unidentifiable by survey.

The Company commenced the second visual asset condition survey in 2010/2011 using internal resources. The second survey is expected to take 8 years to complete and feeders will be surveyed in the same order as the first survey. The programme is based on an even spread of kilometres of line being surveyed each year.

Preventative maintenance work packages and capital asset replacement work packages are developed by the surveyor replace

Appendix C shows the proposed Visual Asset Condition Survey Programme.

The costs associated with these activities are identified as routine and corrective maintenance and inspection expenditure in the Operational Expenditure Budget, and, asset replacement and renewal expenditure in the Operational and Capital Expenditure Budgets in Section 10 of this AMP.

Waipa gains further asset condition information from;

- Asset thermal surveys,
- Partial discharge surveys and
- Corona discharge surveys.
- A vegetation management programme,
- An earth testing and repair programme,

Thermal Surveys

Waipa will continue to engage an external service provider to carry out an annual thermal survey at times of high load of arterial feeder disconnectors, lines, transformers, dropout fuses, cable pothead terminations and line connections. Thermal “hot spots” are treated as urgent and are repaired as soon as possible.

The cost associated with this activity is identified as system management & operations expenditure in the Operational Expenditure Budget in Section 10 of this AMP.

Partial Discharge Surveys

In 2005/2006 Waipa engaged an external service provider to carry out partial discharge surveys of all RMU equipment after two RMU units failed in service. The survey revealed that a number of RMUs had varying degrees of partial discharge originating from heat shrink cable terminations.
All switchgear partial discharge defects were treated as urgent and were repaired soon after.

The survey led to Magnefix, Andelect and ABB Series 1 RMUs being replaced as the safe and most cost effective solution as these RMUs were no longer supported by their manufacturers.

No further partial discharge surveys are contemplated in this AMP. This does not preclude future partial discharge surveys as the need arises.

Corona Discharge

In 2005/2006 Waipa engaged an external service provider to carry out a corona survey by helicopter of Kawhia feeder which was plagued by persistent unidentified faults. This resulted in 33 contaminated polymer resin strain insulators being replaced. There has been no recurrence of the problem on Kawhia feeder or any other feeder to date.

No further corona surveys are contemplated in this AMP. This does not exclude future corona surveys as the need arises.

Earthing Testing and Repair

Waipa will ensure that all its system earthing and bonding comply with AS/NZS 3000:2007 earthing standards and NZECP 35 New Zealand Electrical Code of Practice for Power System Earthing to ensure that Company personnel, contractors and the public are safe from “step and touch” potential rise.

The earth testing and repair programme is based on an even spread of earth banks requiring testing each year. The programme results in each system earth being checked every 8 years.

The Company has experienced a growing number of copper earth thefts consistent with recent industry trends. Stolen copper earths are replaced immediately once they are discovered. Waipa is investigating alternative materials for earthing that will have a lower scrap value.

In 2011/2012 Waipa began installing Copper Clad Steel Conductor on new sites in vulnerable areas and replacing stolen copper earths with Copper Clad Steel Conductor.

The cost of installing Copper Clad Steel Conductor earths is comparable with pure copper earths, but has significantly lower scrap value. Freshly cut Copper Clad Steel Conductor is visually similar to pure copper conductor and is likely to be identifiable by scrap metal dealers only, which it is hoped will act as a deterrent to thieves.

Appendix E shows the proposed Earth Testing and Repair Programme.

The cost associated with this activity is identified as routine and corrective maintenance and inspection expenditure in the Operational Expenditure Budget in Section 10 of this AMP.

7.3 Asset Replacement and Renewal Policies and Procedures

Waipa has established the following policies for asset replacement and renewal in accordance with the maintenance planning criteria and assumptions set out in section 7.1.

Acquisition of New Assets

Equipment will be purchased on the basis of its potential impact on public safety and its life-cycle costs including the capitalisation of electricity losses.

Conductor upgrading to reduce distribution losses will be based on an individual feeder cost/benefit analysis over 30 years (half of ODV specified life).

Waipa generally acquires all assets through a competitive tender process. Suppliers' offers are assessed on asset functionality, technical attributes, safety compliance, delivery times, product support and product price.

The purchase of "one off" or "orphan" assets is avoided where possible.

Adoption of New Technology

Waipa will employ new technology once it has become proven and provides an economic solution to a distribution problem or will improve the reliability of the distribution system.

New technology will be employed where it can economically increase productivity, improve safety or demonstrate other tangible benefits.

Disposal of Existing Assets

Waipa disposes of old assets in compliance with all environmental requirements.

Critical Spares and Surplus Assets

Waipa has established an inventory of critical distribution system spares. The inventory comprises stock with long delivery lead times, stock no longer manufactured and minimum level of stock required to re-establish supply. No significant assets were found to be redundant as part of the March 2004 ODV process, subsequent reviews or March 2011 stock take.

Redeployment and Upgrade of Existing Assets

Pole Line Hardware Policy

Waipa will continue its policy of not reinstalling recovered pole line hardware on the network. The Company's experience has been that reused crossarms pin and strain insulators and disconnectors fail within a relatively short period of time compared to the 60 years useful life of a concrete pole line.

Concrete Pole Policy

Waipa will continue installing only pre-stressed concrete poles on the network unless site access is extremely difficult and installation costs are considered excessive. The Company's 11kV and 400V feeders are predominately concrete pole lines. The network comprises 20,141 concrete and 1885 wooden poles as at 31 March 2012.

Steel Crossarms Policy

Waipa has adopted a policy to install only hot dipped galvanised steel crossarms on the network. As the only remaining organic pole line hardware, wooden crossarms were providing a "weak link" requiring replacement after just a portion of the useful life of a concrete pole line. It was observed that hot dipped galvanised steel crossarms on neighbouring networks had lasted well, with no signs of rust. Waipa considers hot dipped galvanised steel crossarms to be "tried and proven" technology.

Pole Line Reconstruction

Waipa intends to reconstruct sections of 11kV and 400V pole lines identified by the 2012/2013 visual survey as being not fit for purpose and expected to potentially fail before the next survey.

The cost associated with this activity is identified as either asset replacement and renewal expenditure in the Operational Expenditure Budget or asset replacement and renewal expenditure in the Capital Expenditure Budget in Section 10 of this AMP depending on the extent of work required.

Wooden Pole Replacement

Waipa intends to replace deteriorating hardwood and larch poles identified by the visual surveys as being not fit for purpose and expected to potentially fail before the next scheduled survey, preferably with concrete poles if access permits.

The cost associated with this activity is identified as asset replacement and renewal expenditure in the Operational Expenditure Budget in Section 10 of this AMP.

Crossarm Replacement

Waipa intends to replace defective wooden crossarms and pole hardware identified by the visual surveys as being not fit for purpose and expected to fail before the next scheduled survey.

The cost associated with this activity is identified as asset replacement and renewal expenditure in the Operational Expenditure Budget in Section 10 of this AMP.

Auto Reclosers & Sectionalisers

KF and KFE Auto Reclosers

Waipa has a number of old KF and KFE type vacuum auto reclosers in service on the distribution network. These auto reclosers are beyond their economic life and will be retired and replaced with modern auto reclosers with increased functionality.

Noja Auto Reclosers

Because auto reclosers have a significant impact on network operations they will be inspected for external corrosion and damage every year in addition to the asset condition survey of pole lines.

Repairs on existing Noja installations will be completed in a timely manner after deterioration is detected. Routine maintenance will be conducted in accordance with the manufacturer's recommendations and wear indication.

The cost associated with this activity is identified as asset replacement and renewal expenditure in the Operational Expenditure Budget in Section 10 of this AMP.

Line Sectionalisers

Waipa has a few older GN3E sectionalisers in service on the distribution network.

These sectionalisers are beyond their economic life and will be retired and replaced with modern auto reclosers with increased functionality.

Ring Main Units

Waipa installs only SF_6 switchgear currently. The company expects that these RMUs will not require major maintenance over their useful lives. Waipa will install vacuum RMUs or solid dielectric RMUs if cost effective in the future.

The cost associated with this activity is identified as asset replacement and renewal expenditure in the Operational Expenditure Budget in Section 10 of this AMP.

Disconnectors

Waipa has 689 (as at 31 March 2012) air break switches in service on the distribution network. Their most common mode of failure is to “freeze up” through infrequent use or their contacts weld together when they pass fault current.

The Company intends to replace defective air break switches when they fail in service or at the time the pole line is reconstructed. If they can be refurbished economically they are redeployed in areas of the network with a lower fault rating.

Waipa has successfully trialled G&W SF_6 disconnectors on the network over the past 6 years. These types of disconnectors will be installed at switching sites that are frequently operated while heavily loaded.

While SF_6 disconnectors function well they remain relatively expensive compared to the traditional disconnector. The Company has elected to continue to use Electropar EPS1 disconnectors for other applications where refurbished ABSs do not have sufficient fault rating.

The cost associated with this activity is identified as asset replacement and renewal expenditure of the Capital Expenditure Budget or asset replacement & renewal expenditure of the Operational Expenditure Budget in Section 10 of this AMP depending on the extent of the works.

Transformers

Waipa has 2,503 pole mounted and 573 padmount 11kV/400V transformers (as at 31 March 2012) in service on the distribution network.

Transformers are not routinely inspected or serviced. However, their external condition is assessed at the time of the visual asset condition survey. Subsequent repair and maintenance will be undertaken in a timely manner.

The padmount transformers in urban areas are subject to vandalism. The Company will repair vandalism and remove graffiti as required.

The costs associated with these activities are identified as asset replacement & renewal expenditure of the Operational Expenditure Budget in Section 10 of this AMP.

Voltage Regulators

Waipa does not have 66kV, 33kV sub-transmission lines or zone substations. To maintain regulatory 11kV voltage on its feeders Waipa has a significant number of voltage regulator units in service on the distribution network.

The Company has 48 voltage regulator cans (as of 31 March 2012) in service on the network.

Because of their significant impact on network operations if they malfunction voltage regulators will be inspected for external corrosion and damage every year in addition to the asset condition survey of pole lines.

Repairs on existing voltage regulator installations will be completed in a timely manner after deterioration is detected. Routine maintenance will be conducted in accordance with the manufacturer's recommendations and operations counter.

The cost associated with this activity is identified as asset replacement and renewal expenditure in the Operational Expenditure Budget in Section 10 of this AMP.

7.4 Service Interruptions and Emergencies Policy and Procedures

Waipa has established the following policies and procedures for providing continual line services and dealing with emergencies in accordance with the maintenance planning criteria and assumptions set out in section 7.1.

24/7 Fault Response Service

Waipa will continue to provide a 24/7 service to attend to;

- all distribution line and equipment faults,
- service main faults (if customer accepts cost of repairs),
- all water heating relay faults,
- faults caused by third party interference and wildlife,
- faults caused by lightning, adverse weather and adverse environment, and
- faults caused by trees.

The cost associated with this activity is identified as service interruption and emergencies expenditure of the Operational Expenditure Budget in Section 10 of this AMP.

Oil Leak Containment

All padmounted transformers with capacity in excess of 750kVA will be constructed with bunding for oil containment as required by the Resource Management Act 1991.

Waipa's fault crews carry emergency oil containment and clean up kits. Larger kits and replacement materials are located at Waipa's Te Awamutu depot and at Transpower's Cambridge GXP and are available 24 hours per day.

The cost associated with this activity is identified as service interruption and emergencies expenditure of the Operational Expenditure Budget in Section 10 of this AMP.

Buildings, Fences and Grounds

Waipa owns buildings and grounds in or on which a variety of distribution network assets are installed. These buildings and grounds will be kept secure from inadvertent public entry, safe for Waipa's staff and contractors and neat and tidy as an expression of our good citizenship. Repair and maintenance work will be undertaken as required.

The cost associated with this activity is identified as service interruption and emergencies expenditure of the Operational Expenditure Budget in Section 10 of this AMP.

7.5 Vegetation Management Policy and Procedures

Waipa has established the following policies and procedures for vegetation management in accordance with the maintenance planning criteria and assumptions set out in section 7.1.

The Company has had an active vegetation management programme in place since 2001 whereby an entire feeder is surveyed and all trees menacing the distribution lines are either removed or trimmed depending on consultation with their owner.

Waipa established an internal vegetation management crew in 2007 to bring an added focus on clearing vegetation from its 11kV pole lines.

The Company offers tree owners an initial free cut/trim but insist that if the tree owner engages another contractor that this type of work is undertaken by an approved contractor.

Waipa's experience is that the new Electricity (Hazard from Trees) Regulations 2003 has resulted in the Company incurring additional compliance costs and the maintenance budget reflects the increase in cost. The clearing of trees menacing service mains remains the responsibility of the tree owner. The Company offers free temporary disconnection of a service main for the tree owner to clear the vegetation safely.

Waipa will either remove or attempt to trim trees so that they will not grow back into the Notice Zone (2.6m) between surveys. Tree "hot-spots" are dealt with as required.

The vegetation programme is based on even spread of kilometres of line being surveyed and historical incidents of tree interference each year. The programme results in each feeder being systematically cleared either every 4, 6 or 8 years depending on growth rates and tree species on specific feeders.

Appendix E shows the proposed Vegetation Management Programme.

The cost associated with this activity is identified as vegetation management expenditure in the Operational Expenditure Budget in Section 10 of this AMP.

8.0 Risk Management

8.1 Risk Management Methodology

Waipa is an active participant in the Waikato Engineering Lifelines Group and through consultation with other members of the group the Company has assessed the potential physical threats to its network assets posed by naturally occurring hazards of wind, lightning, floods, land erosion, earthquakes, volcanic eruptions, geothermal activity and adverse weather. The methods used to assess the risk of each natural hazard are listed in their respective sections.

Wind

Waipa's reticulation is in an area of New Zealand that has one of the lowest recorded average wind speeds. However, there are seasonal storms with winds that blow debris into the 11kV pole lines from time to time. Because of this trees tend to be weak and easily damaged by stronger winds. The Company's vegetation management programme is intended to reduce the number of the incidents caused by wind blown vegetation. The Company concludes that wind presents a minimal threat to network assets and that any damage caused by wind borne debris is easily fixed.

Lightning

Waipa's reticulation assets are regularly subjected to lightning strike. The majority of network assets affected by lightning are rural 11kV pole lines on which normal 11kV lightning protection devices are used to localise and minimise lightning damage. The Company considers lightning is not a major threat to the network.

Floods and Land Erosion

Waipa's reticulation area is subjected to frequent and often heavy rainfalls. There are numerous streams and rivers whose flow-paths change over time. The effect of such erosion on network assets is minimal affecting only one or two poles at any time which are relatively easy to reinstate. The Company is a member of the Waikato Engineering Lifelines Group and through participating in the group's risk assessment exercise considers floods and land erosion are not major threats to the network.

Earthquakes

Transpower have assessed the probability and consequences of earthquakes damaging their assets for all areas in New Zealand. Transpower have defined three seismic risk zones: Zone A (high risk), Zone B (medium risk) and Zone C (low risk).

Transpower have developed the following range of seismic risk factors that reflect the financial loading on construction works that will ensure the integrity of their equipment;

- the seismic risk factor for Zone C (low risk) is 1.00,
- the seismic risk factor range for Zone B (medium risk) is 1.01 to 1.06 and
- the seismic risk factor range for Zone A (high risk) is 1.02 to 1.14, depending on the equipment type.

Waipa's distribution networks are located entirely within a Zone B (medium risk) area. The Company's network assets are predominantly long rural 11kV pole lines. Waipa considers these assets fall into the category defined by Transpower as "Other Plant" and as such have a seismic risk factor of 1.01. There has never been a recorded incident of network asset damage caused by an earthquake.

The Company considers this is an acceptable risk to manage because rural 11kV pole lines are relatively easy and an inexpensive network asset to repair if damaged by an earthquake.

Volcanic Eruption

There are no known active volcanoes in Waipa distribution area. The Mount Ruapehu eruption in 1995 had no adverse impact on the Company assets. If volcanic ash had been deposited over the rural 11kV pole lines then the Company would have continued to operate the distribution networks until there was clear evidence of insulation failure.

Geothermal

There is no significant geothermal activity in Waipa's reticulation area other than a hot water beach at Kawhia. Therefore, there is no corrosive atmosphere to contaminate the overhead lines or hot ground, gases or liquids constraining cable ratings or corrosive liquids damaging cable insulation and conductors. The Company concludes that there is minimal risk to the network from geothermal activity.

8.2 Details of Emergency Response and Contingency Plans

Network Operation

Waipa operates two relatively simple radial 11kV, predominately pole line, distribution systems extending out from Transpower's Cambridge and Te Awamutu GXPs.

Under normal conditions network operations are initiated through a control room and work is dispatched through a call centre. System switch status is recorded on a single line computer mimic diagram.

Under extraordinary conditions the Company expects the control room and call centre functions may be disrupted. During these emergencies network operations and fault dispatch functions will need to be performed by Waipa's own administrative staff and field crews.

In circumstances where the Company's SCADA, financial and business computer systems also fail, Waipa is confident that there is sufficient network information held in printed form for the Company's Faultmen and Field Supervisors to isolate, repair and operate the networks safely. During these emergencies Waipa expects normal telephone services will be disrupted and direct communications with consumers will be reduced due to the abnormal nature of the operation.

Waipa operates its own independent radio telephone system. Should one or more repeaters fail the system is capable of short range point–to-point communications which will continue to function.

Power restoration will be inherently slow under these circumstances. The majority of repairs required on the networks will be identified by physically patrolling the pole line feeders.

The Company is a participant in the Waikato Engineering Lifelines Group and the Hamilton City Council Emergency Management Group and expects that Civil Defence in conjunction with other utility owners and local authorities will prioritise Installation Control Points for power restoration.

Emergency Response Capability

Waipa has not experienced storms of significance since Cyclone Drena 1997 and the "weather bomb" June 2002. During both these events the Company contracted external resources to help repair the network. Since that time Waipa has built up its internal field crews and successfully reinstated the network during the February 2004 and April 2011 storms. The Company has also formed a liaison with three other local Electricity Distribution Businesses and one contractor to make use of their field resources if required.

The Company carries sufficient spares in its store to construct several kilometres of pole line and is confident that it can assemble sufficient internal and external resources to repair and continue to operate its network in emergency situations.

Security of Supply Participant Outage Plan

The Electricity Governance (Security of Supply) Regulations 2008 require the Electricity Authority to produce a Security of Supply Outage Plan, including requesting all participants (EDB's and direct connected consumers drawing in excess of 80GWh directly from the Transpower Grid), to produce their own Security of Supply Participant Outage Plan.

Waipa's approved Security of Supply Participant Outage Plan is publicly available on the Company's internet web site.

Busbar Failure Contingency Plans

Te Awamutu

In January 2010, Waipa experienced an outage caused by a busbar fault at Transpower's Te Awamutu GXP simultaneously occurring while maintenance was being carried out on one of the GXP's transformers. This outage affected half of the Te Awamutu feeders.

Power was restored by emergency switching, with the network being placed at risk of damage or overloading by operators needing to make "on the spot" decisions during such a large switching operation.

The Company has developed detailed switching plans for any section of busbar at Te Awamutu GXP, should there be a similar busbar event in future. The Te Awamutu busbar contingency plans are internally available and form part of Waipa's Business Contingency Plan.

Cambridge

Cambridge 11kV switchboard comprises a double busbar with no bus-coupling switch. If a single bus is lost supply can be switched to the other bus. However, if a fault renders both busbars inoperable all supply is lost and cannot be reinstated until repairs are made. When Transpower replaces the Cambridge switchboard Waipa will create similar bus bar contingency plans to those made for Te Awamutu.

Business Systems Contingency

Waipa runs its financial and business systems (NCS Integrated Data Warehouse) on one server and runs its Windows based programs including AutoCAD (Geographic Asset Information) on another server which are located at the Company's depot at 240 Harrison Drive Te Awamutu.

The Company holds sufficient spare IT hardware to reinstate financial and business systems and windows based programs including AutoCAD in the event of a catastrophic event.

The financial and business systems and geographic asset information data is copied across from administration servers onto backup servers each day. A daily backup tape of financial and business information and Windows based AutoCAD information is held off site. The Company can recreate the information databases and business functionality after a catastrophic event.

Instructions for staff members to reinstate Waipa's computer systems are held in a fireproof cabinet in the Company's Te Awamutu depot.

Should Waipa's Te Awamutu depot be uninhabitable the Company's business systems can be recreated at Plan B's (an external service provider) premises in Hamilton.

Supervisory Control and Data Acquisition System Contingency

Waipa's SCADA system comprises a master station and a "hot standby" backup station located in the Company's Waipa's control room located at 240 Harrison Drive Te Awamutu and two remote operating terminals located in WEL Networks Control Centre at 114 Maui Street, Te Rapa, Hamilton.

The SCADA network configuration and operating schematics are copied across onto the Company's administration servers and back up servers each day. A daily backup tape of SCADA network configuration and operating schematics information is held off site. The SCADA configuration is copied across onto the backup servers each day. A daily back up tape of the SCADA configuration is held off site. Waipa can recreate the SCADA network configuration and operating schematics after a catastrophic event.

The Company can purchase all component parts for the SCADA system from its SCADA supplier located in Wellington. Waipa moved into new premises several years ago and has demonstrated it can assemble and re-commission the master station, the "hot standby" backup station and communications hub equipment within 5 working days.

Should Waipa's Te Awamutu depot be uninhabitable the Company's SCADA systems can be recreated at WEL Network Control Centre at 114 Maui Street, Te Rapa, Hamilton or any other temporary location within a similar period of time.

9.0 Evaluation of Performance

9.1 Financial and Physical Progress

Physical Progress Network Development

The following network enhancements, replacements and refurbishments proposed in AMP 2011 to be completed during 2011/2012 were completed;

- The second stage of installing a new front end for Pukeatua feeder, in order to provide increased reliability for Pukeatua, Hairini and Kihikihi. On schedule, Waipa installed all of the planned second stage, The Company intends completing the third and final stage of this project in 2012/2013,
- The undergrounding of Hall Street Cambridge and removal of aged distribution lines and equipment and service mains.
- The undergrounding of 14 (of 15) State Highway 1 crossings which will decrease the effect of High Load escorts on SAIDI and SAIFI. The Company removed the 1 remaining aerial crossing in 2012/2013,
- The change out of 20 (of 20) Spa Pool type substations. The Company completed removing the remaining 20 Spa Pool type substations in 2012/2013,
- The installation of 12 additional remote controlled 11kV auto reclosers to further segment 11kV feeders to minimise the number of consumers affected by faults and improve fault isolation and restoration of supply times. The Company intends installing a further 48 reclosers over the next 4 years,
- SCADA system remote terminal units were installed as required on various voltage regulators, 11kV auto reclosers and automated air break switches.
- Additional 11kV dropout isolation fuses were installed on feeder spurs and consumers' service mains to minimise the number of consumers affected by faults and improve fault isolation and restoration of supply times,
- The removal or change out of 4 (of 10) oil filled RMUs ring main units. The Company intends removing or changing out the remaining 6 oil-filled RMUs in 2012/2013,
- The third year of replacement of aged ripple The Company intends completing this project in 2014/2015. Relays in Te Awamutu to decrease the MD, the need to upgrade feeders and Transpower transmission charges. The Company intends completing the ripple relays change out in 2014/15,
- Installing ripple relays at consumers' installations to ensure that load management and tariff switching remains effective,
- Installing new transformers, substation structures and switchgear to meet consumers' requirements, and
- Installing new network extensions were installed to meet developers' requirements.

The following network improvement proposed in AMP 2011 to be completed during 2011/2012 was not achieved;

- Execute an agreement with Transpower to provide Te Awamutu GXP with n-1 security of supply that technically delivered Waipa's requirements at an acceptable cost. In 2012 the Company reached agreement with Transpower for Waipa to install a new line from Te Awamutu to Hangatiki to provide the needed security of supply and improve reliability. This line will be owned by Waipa and operated by the System Operator as part of the national grid. Waipa intends to complete this project over the next three years subject to comprehensive consultation with the Company's stakeholders.

The following network enhancements and refurbishments proposed in AMP 2011 to be completed in 2011/2012 were deferred;

- Undergrounding one remaining State Highway one road crossing was deferred until 2012/2013 due to a maize crop prohibiting access.

The following network enhancements proposed in the AMP 2011 are on-going;

- install new Cambridge and Te Awamutu ripple relays (2011-2023),
- replace Te Awamutu ripple relays (2011–2014/2015),
- install 11kV fuses on network spur lines and service mains (2011-2023),
- install auto reclosers and bypass disconnectors (2011– 2015/2016),
- install new voltage regulators as required (2011-2023),
- install additional 11kV switchgear as required (2011-2023),
- install new transformer substations and switchgear as required (2011-2023),
- install general network extensions as required (2011- 023),
- replace two pole substation structures (2011–2015/2016),
- replace pole and pad mount transformer substations (2011-2023),
- replace 11kV disconnectors (2011-2023),
- underground overhead lines (2011-2023), and
- install a new front end of Pukeatua feeder to improve reliability (2011–2012/2013).

Physical Progress Network Maintenance

Asset Condition Survey Program

The Company began its second asset condition survey in 2011/2012

Asset Condition Survey	Proposed 2010/2011	Actual 2010/2011
Kawhia	2nd Survey	100% completed

Waipa's asset condition survey program was achieved in 2011/2012.

The following table shows the number of outstanding 11kV and 400V defects remaining on distribution assets as at 31 March 2012.

Asset Defects	Total
Balance	325
11kV remaining	315
400V remaining	10

Earth Testing and Repair Programme

Progress against targets for Waipa's 2011/2012 earth testing and repair program is shown in the following table.

Earth Testing and Repair	Proposed 2010/2011	Actual 2010/2011
French Pass	Test & Repair	100% completed
Kawhia	Test & Repair	100% completed

Waipa's earth testing and repair program was achieved in 2011/2012.

Vegetation Management Programme

Progress against targets for Waipa's vegetation programme is shown in the following table. The tree legislation requiring EDBs to offer tree owners a 1st free cut has resulted in an increasing number of trees being completely removed rather than trimmed.

Removal has proven to be more costly and time consuming than trimming. However, the Company believes vegetation removal is a better long term solution for improving network reliability.

Vegetation Management	Proposed 2011/2012	Actual 2011/2012
French Pass	Cut 3	100% completed
Roto-O-Rangi	Cut 2	100% completed

Waipa's vegetation management program was achieved in 2011/2012.

Financial Progress

The following table shows actual financial performance KPI compared to Statement of Corporate Intent targets set for 2011/2012.

Business Efficiency Performance $	SCI Target 2011/2012	Actual 2011/2012
Total Operational Expenditure per ICP	<230	235

Waipa's financial business efficiency KPI was achieved in 2011/2012.

9.2 Service Level and Asset Performance

Customer Satisfaction Performance

The August 2010 consumer survey indicated an overall satisfaction rating of 94% (Target 95%). The results for Fluctuations/Surges and Power Cuts were 85% (Target 75%) and 86% (Target 80%) respectively.

These latter two results include those who responded with "No Impression", which in the case of supply quality the Company believes to equate to satisfaction.

The Overall Satisfaction target is well within the margin of error for these surveys of ±4% and is considered to be achieved. Waipa achieved the Fluctuations/Surges and Power Cuts satisfaction targets.

Reliability Performance

Waipa's actual SAIDI and SAIFI performance over the past 5 years compared with the Commerce Commission reliability threshold levels of 273 SAIDI minutes and 3.23 SAIFI set in 2003 is shown in the following table.

Network Reliability Performance Indices	Actual 2007/2008	Actual 2008/2009	Actual 2009/2010	Actual 2010/2011	Actual 2011/2012	Target 2011/2012
SAIDI total	113	235	126	114	242	173
SAIFI Total	1.88	2.53	1.91	1.56	2.54	2.47

Waipa did not achieve he reliability targets for SAIDI and SAIFI set in AMP 2011 for 2011/2012 due to two high wind storms experienced during 2011/2012.

The first storm occurred on Tuesday 26 April 2011 and contributed 96 SAIDI minutes and 0.61 SAIFI. The second storm occurred on Saturday 3 March 2012 and contributed 44 SAIDI minutes and 0.60 SAIFI.

Asset Delivery Performance

The following table shows actual asset delivery performance over the past 5 years compared to Statement of Corporate Intent targets set for 2011/2012.

Asset Delivery Efficiency Performance %	Actual 2007/2008	Actual 2008/2009	Actual 2009/2010	Actual 2010/2011	Actual 2011/2012	Target 2011/2012
Load Factor	64.29	63.84	62	57.08	*	*
Loss Ratio	6.42	6.43	6.38	6.44	6.37	<6.5
Capacity Utilisation	24.7	24.4	26.3	27.6	26.44	>25

*The load factor asset delivery efficiency KPI was not achieved in 2010/2011 During 2010/2011 Waipa changed its water heating control regime to improve service levels to consumers and in response to changes in Transpower's interconnection charges. As a result, Load Factor is no longer a Company KPI. This change in practice was implemented after AMP 2010 and asset delivery performance targets were published.

Loss ratio and capacity utilisation asset delivery KPIs were achieved in 2011/2012.

9.3 Gap Analysis and Identification of Improvement Initiatives

Security

Waipa's objective of establishing n-1 security of supply for Te Awamutu GXP set in AMP 2011 has not been achieved. This AMP identifies this as a significant gap, offers a solution and timeline for its implementation.

State Highway 1 Road Crossings

The Company's project to underground State Highway 1 aerial road crossings along the high load route set in AMP2011 was not achieved due to access problems. However, the last remaining aerial crossing was undergrounded in 2012/2013.

Non-Network Solutions

Waipa's Te Awamutu ripple relay replacement program set in AMP 2011 was achieved and is expected to be completed during 2014/2015 in accordance with AMP 2013.

Asset Defects

The Company's asset condition survey program set in AMP 2011 for 2011/2012 was achieved.

Earth Testing and Repair

Waipa's earth testing and repair programme set in AMP 2011 for 2011/2012 was achieved.

Vegetation Management

The Company's vegetation management program set in AMP 2011 for 2011/2012 was achieved.

Financial Performance

Waipa's financial business efficiency KPIs set in AMP 2011 for 2011/2012 were achieved.

Customer Satisfaction - Service Level and Asset Performance

Waipa achieved Overall Satisfaction and Fluctuations/Surges targets set in AMP 2011.

The August 2011 consumer survey indicated an overall satisfaction rating of 95% (Target 95%). The results for Fluctuations/Surges and Power Cuts were 85% (Target 80%) and 81% (Target 85%) respectively. These latter two results include those who responded with "No Impression", which in the case of supply quality the Company believes to equate to satisfaction.

Reliability

Waipa's reliability targets set in AMP 2011 for 2011/2012 were not achieved due to two significant high wind storms during the year.

Asset Delivery Performance

Waipa's asset delivery KPIs set in AMP 2011 for Loss Ratio and Capacity Utilisation were achieved.

Constraints

The Company's objective of eliminating predicted feeder constraints has been achieved by the timely implementation of network feeder enhancements identified in the network development projects of previous AMPs.

Quality of Supply

Voltage

Waipa's obligation to ensure regulatory voltage can be delivered by has been achieved by the timely implementation of network feeder enhancements identified in the network development programme of previous AMPs and the timely installation of voltage regulators.

Power Factor

The Company's network power factor has been greater than 0.95 at times when Transpower has experienced its 100 lower north island peaks and when Waipa has incurred its 12 anytime peaks.

Interference

Waipa has not received any complaints of interference from connected consumers.

AMP Improvements

Asset Management Process

Waipa is confident that its:

- commitment to improve network safety and reliability,
- predictions on load growth,
- procedures to identify future network constraints and
- routine network assets surveys,

provide the Company with adequate information to make appropriate asset management decisions regarding existing assets, non-asset solutions, additional asset and surplus assets. The Company believes that any "incompleteness" of asset data will not be material when making these asset management decisions.

Asset Management Systems

Waipa is confident that its:

- Abbey SCADA system,
- AutoCAD Geographic Asset Information system,
- Napier Computer Integrated Data Warehouse system and
- ETAP network modelling software,

are configured and used in a manner that provides the Company with robust information for managing network assets. Waipa believes its asset management process and systems are appropriate for:

- the size of the network,
- Company financial and administrative business needs,
- consumer needs and
- other stakeholders requirements.

Stakeholders Input

Waipa welcomes any stakeholder feedback on the quality, clarity and completeness of its AMP. To date feedback has been received from Fonterra, engineering consultants and contractors who are interested in becoming involved in some of the projects and the Commerce Commission (or their agents).

10.0 Expenditure Forecasts, Reconciliations and Assumptions

10.1 Expenditure Forecast

Appendix G shows Waipa's Capital Expenditure projects and forecasts proposed over the next 10 years.

Appendix H shows the Company's Operational Expenditure works and forecasts proposed over the next 10 years.

Appendix I show's Waipa's Consolidated Capital and Operational Expenditure forecasts over the next 10 years.

10.2 Reconciliations

Appendix J shows the Company's Capital and Operational Expenditure Reconciliations for 2011/2012.

Total Direct Expenditure on Distribution Network

Total Direct Expenditure on the Distribution Network

Total direct expenditure on the distribution network during 2011/2012 was under the forecast of $6,950k by $434k (minus 6.2%). This is within the acceptable variation limits (plus or minus 10%) set by the Commerce Commission.

Variations in expenditure greater than 10% in specific categories of capital and operational forecasts are explained as follows.

Capital Expenditure on Asset Management

Total Capital Expenditure on Asset Management

Total capital expenditure on asset management during 2011/2012 exceeded the forecast of $4,486k by $8k (plus 0.2%). This is within the acceptable variation limits (plus or minus 10%) set by the Commerce Commission.

Customer Connections

Anticipated expenditure on customer connections primarily on new subdivisions and new service mains was below the forecast of $1,947k by $373k (minus 19.2%) reflecting the continuing impact of constrained economic activity in subdivisions and the building sector.

System Growth

Higher activity and therefore expected expenditure on providing additional padmount and pole transformers, a voltage regulator and associated network extensions to accommodate system growth on the existing network resulted in the system growth forecast of $65k being overspent by $266k (plus 408%).

Reliability, Safety and Environment

Company resources were deployed to eliminate assets that from industry's experience present a safety hazard or are no longer considered compliant with industry standards, and, to improving reliability. The safety initiative included an emphasis on replacing oil-filled switches with SF_6 ring main units, replacing unsafe and non-compliant aged "spar pool" substations with modern equivalent assets, replacing unsafe and non-compliant aged two-pole transformers structures with either a single pole mounted transformer or a pad mount transformer substation. Expenditure on reliability, safety and environment was above the forecast of $1,932k by $127k (plus 6.6%) which is within the acceptable variation limits set by the Commerce Commission.

Asset Replacement and Renewal

Focusing on eliminating unsafe and non-compliant aged assets reduced the need for expenditure on replacing aged assets. Expenditure on asset replacement and renewal was under the forecast of $842k by $289k (minus 34.3%).

Asset Relocations

District Council(s) road realignments project requiring relocation of network assets are generally not committed at the time of preparing the asset relocation budget and therefore no provision was made. Asset relocation expenditure of $277k was incurred on relocating networks assets in Frontier Road Te Awamutu and Kaipaki Road Cambridge.

Operational Expenditure on Asset Management

Total Operational Expenditure on Network Assets

The variances in routine and preventative maintenance, refurbishment and renewal maintenance, fault and emergency maintenance contributed to an overall under spend of the operational expenditure on asset maintenance forecast of $2,164k by $442k (minus 20.4%).

Routine and Preventative Maintenance

Lower than anticipated expenditure incurred on routine maintenance of 11kV overhead lines, 400V overhead lines, 11kV underground cables, 400V underground cables, vegetation management and earthing testing and repair resulted in the routine and preventative maintenance forecast of $1,567k being underspent by $711k (minus 45.4%).

Refurbishment and Renewal Maintenance

Higher than anticipated expenditure incurred on pad-mount and pole transformers, 11kV ring main units, 11kV disconnectors and automatic recloser refurbishment and renewal resulted in the refurbishment and renewal maintenance forecast of $146k budget being overspent by $125k (plus 85.4%).

Fault Emergency Maintenance

Higher than anticipated expenditure incurred on fixing daytime and after hours faults, hot water faults, pole fuse faults, irrecoverable car accident costs and two major storm repairs resulted in the fault and emergency maintenance forecast of $451k being overspent by $144k (plus 32.0%).

10.3 AMP Assumptions

A number of significant assumptions have been made in order to determine likely outcomes of Waipa's AMP. The key factors, assumptions, the basis on which they are made and the impact of their uncertainty is discussed in the following table.

Factor	Assumption	Basis for the Assumption	Potential Impact of Uncertainty	Potential Risk of Uncertainty
Legislative Environment Legislative and regulatory requirements could change, requiring the Company to achieve different service, design or security standards. Regulatory changes could also impact on the availability of funds for asset management.	The existing external legislative and regulatory requirements are assumed to remain unchanged throughout the planning period. Therefore, the external drivers which influence reliability targets, design, environmental, health and safety standards and industry codes of practice are assumed not to change.	Although the industry's regulatory and legislative environment has and will continually change the Company has no ability to predict future changes in regulatory requirements.	It is unlikely that the legislative and regulatory requirements will reduce. The most likely impact is an increase in forecast expenditure to meet increased overheads which will add costs with no consumer benefits. It is not possible to quantify this potential impact.	High Probability Medium Impact
Business Ownership Waipa's ownership could change. New owners may have different service and financial objectives than those set out in this AMP.	For the purposes of this AMP it is assumed that Waipa will remain in Trust ownership. The thrust of Waipa's Purpose, Beliefs, Focus and Greatest Imaginable Challenge continues over for the planning period.	No changes are proposed to the existing ownership of Waipa and therefore all prospective information has been prepared consistent with the existing Waipa business ownership, structure and purpose Waipa's strategic planning documents, including the 2011/2012 Statement of Corporate Intent and the 2011/2012 Annual Business Plan and Budgets.	Different owners could have different service and expenditure objectives than those set out in the AMP, resulting in either higher or lower service targets and associated expenditures. Different owners could change development and maintenance requirements currently practiced which could impact on forecast expenditure.	Low Probability High Impact
Price/Quality Trade Off Connected consumers could change their demands for reliability or quality of supply or their willingness to pay for different levels of service.	Future levels of customer satisfaction and willingness to pay for improved reliability and quality of supply are consistent with those identified by customer surveys since 1996.	Interaction with customers and the community in relation to future developments within Waipa's network area. Bi-annual Waipa Customer Surveys (1996–2007) and annual Waipa Customer Surveys (2009-2011).	Customers could change their demands for service and willingness to pay resulting in either higher or lower service targets and associated expenditures.	Low Probability Medium Impact
Load Growth The magnitude of Waipa's underlying load (made up of predominately dairy, supporting industry and farming community) is expected to change over the planning period but the extent is not known with certainty. Connected consumers load patterns could change by the use of heat-pumps for example resulting in a movement from traditional winter peaks to higher summer peaks. Significant new loads not yet identified may require supply within the planning period of this AMP These drivers will affect the timing of network enhancements.	Underlying demand growth at each GXP is predicted to continue throughout the planning period at a rate consistent with the historical rate of growth. Dairy load will remain dominant in the region. Seasonal load profiles remain consistent with recent historical trends. The number of new consumers connecting to Waipa's network is predicted to continue at a similar level to historical rates over the planning period. Development of distributed generation is slow.	These assumptions were made by analysing historical half-hourly maximum electricity demand at each GXP (excluding Fonterra), historical half-hourly maximum electricity demand on each feeder from Waipa's SCADA, population data and demographic forecasts from Statistics New Zealand Distributed generation is likely to be small PV in the Waikato due to poor wind resource. PV remains expensive.	Higher demands require greater capacity across the system earlier than projected, requiring an acceleration of forecast expenditure. Seasonal shifts in demand could require planned capacity upgrades to be accelerated. The rate of new connections will impact on demand growth. Specific new investments may also be required to meet large new loads.	Low Probability Low Impact

Factor	Assumption	Basis for the Assumption	Potential Impact of Uncertainty	Potential Risk of Uncertainty
Hazard Management It is recognised that some network assets are inherently hazardous. The Regulator and Company stakeholders may alter their views on the importance and value of mitigating hazards presented by network assets.	The Company and Stakeholders want a network that does not present an unacceptable level of exposure to hazards to the general public, staff, property or animals. The network was originally designed and built to minimise exposure to these inherent hazards. The Company will readily identify new hazards as they arise. Waipa will not operate in a way that exposes the business to the liabilities associated with not taking all practicable steps to minimise and eliminate hazards.	The hazard assumption is based on people not wanting or get shocked or electrocuted or harmed. Waipa has renewal maintenance programmes in place to ensure that it operates a network with acceptable low levels of exposure to hazards. Waipa has identified a number of potentially significant hazardous assets on its network and has scheduled their removal. Waipa has on-going plans to monitor and reduce minor network hazards over the planning period.	Altering the importance of eliminating or mitigating exposure to hazardous assets will affect the amount of work and expenditure in the AMP Altering the importance of eliminating or mitigating exposure to hazardous assets will impact on the risk of injury or damage.	Low Probability High Impact
Mass Premature Failure Similarly manufactured assets generally have similar life expectancies. If a significant group of similar assets fail prematurely this will impact on Waipa's asset renewal strategy.	Forecasts for the remaining life of assets are correct and mass premature failure of similar assets does not occur.	Any known group of assets that fail prematurely have been identified for remedial action or removal. The extent of unknown groups of assets that are going to fail prematurely in future is impossible to predict. Waipa uses only tried and proven assets, adopting a "leading edge, not bleeding edge" approach to new technologies.	If a significant group of widely used assets fail prematurely they may have a catastrophic affect on the reliability of the network.	Low Probability High Impact
Grid Catastrophe Waipa's network and/or Transpower's local Grid could experience a major natural disaster during the planning period.	Neither Waipa's network nor Transpower's local Grid will experience a major natural disaster during the planning period.	As described in Section 8.1 Risk Management Methodology, the Company has assessed the potential physical threats to its network posed by naturally occurring hazards of wind, lightning, floods, land erosion, earthquakes, volcanic eruptions, geothermal activity and adverse weather and concluded that the network is built in a benign region.	High volume equipment repairs and replacements are not provided for.	Low Probability High Impact
Local Body Requirements Changes in the District Plans could require Waipa to alter its current reticulation practices (example installing new rural circuits underground rather than reticulating overhead)	Waipa assumes that current District Plans will not change significantly as to the Company's method of reticulation.	Local Body District Plans have been relatively stable over the past 10 years regarding reticulation practices. Changes are notified with the ability for Waipa to make submissions on proposed changes.	Changes are likely to result in higher costs for the Company and consumers.	Low Probability Medium Impact

Factor	Assumption	Basis for the Assumption	Potential Impact of Uncertainty	Potential Risk of Uncertainty
Inflation / Value of NZ dollar The value of the New Zealand Dollar and the cost of procuring resources is almost certain to change over the planning period.	All projections of expenditure are presented in real New Zealand Dollar terms as at 1 April 2013. In reality, over time input costs (including those sourced from outside New Zealand) for asset management activities will change at rates greater or less than the rate of general inflation.	As expenditure forecasts are updated annually, this approach is assumed acceptable and consistent with that prescribed. Experience of times when high copper and steel commodity prices in international markets pushing up equipment costs at a rate above NZ inflation. Inflation will remain at moderate levels as required by the Reserve Bank.	Forward estimates are based without an inflation rate. Inflation will mean higher costs in dollar terms. Deflation will give the reverse. (The inflation referred to is that associated with the renewal and construction of distribution networks, not general inflation.	Medium Probability Medium Impact
Generation and Demand Side Management Significant demand side management or significant distributed generation may be commissioned or decommissioned in Waipa's network. This would impact on network design and timing of network enhancements.	No new significant demand side management or significant distributed generation is commissioned or decommissioned during the planning period.	There have been no applications for significant distributed generation. There is no evidence of significant future customer demand side management initiatives being commissioned or decommissioned.	Changes to significant demand side management or significant distributed generation will impact on network design and timing of network enhancements. Network enhancement to accommodate distributed generation will be funded by proponents.	Medium Probability Low Impact
Land Use The District Councils may implement significant land zoning changes which could have a positive or negative impact on new developments in the region.	District Council zoning land use remains unchanged during the planning period.	Waipa, Otorohanga and Waitomo District Councils and the Waikato Regional Council planning information.	Land use zoning changes will impact either positively or negatively on new developments and demand. Network enhancement to accommodate distributed generation will be funded by developers.	Medium Probability Low Impact

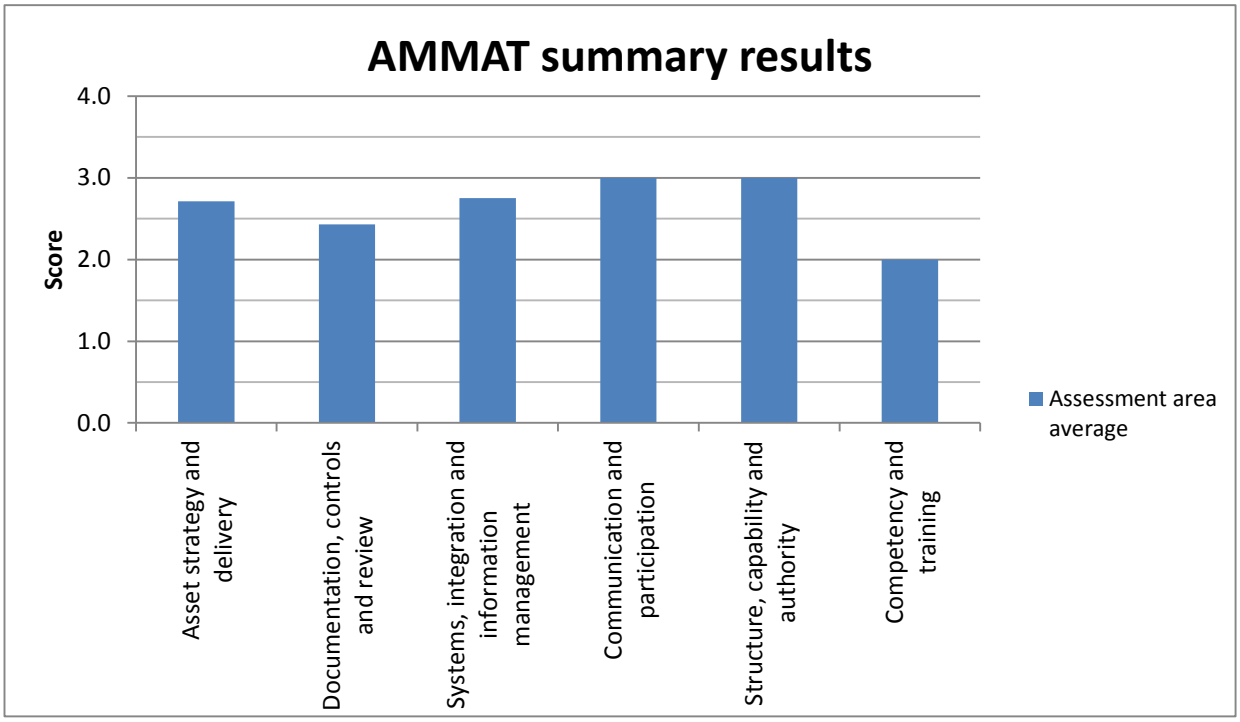
10.4 Changes Proposed where Information is not Based on Existing Business

No changes are proposed to the existing business of Waipa. Therefore, all prospective information has been prepared consistent with the existing Waipa business ownership, structure and purpose.

11.0 Asset Management Maturity Assessment

Waipa has completed an internal assessment of its asset management processes in accordance with the AMMAT in Schedule 13: Report on Asset Management Maturity attached.

The following graph shows the Company's performance as determined by the AMMAT.



Waipa considers its current asset management processes are adequate for its stakeholder's requirements and are provided at a cost acceptable to them.

12.0 Conclusion

Waipa believes its asset management process, predictions on load growth, procedures to identify future network constraints and routine network assets surveys will enable the Company to make informed asset management decisions regarding existing assets, non-asset solutions, procuring new assets and retiring assets.

The Company believes that any "incompleteness" of asset data will not be material when making asset management decisions. Whilst Waipa continually improves its existing information systems no radical changes of these systems is contemplated.

Waipa is confident that its;

- commitment to provide n-1 security of supply to Te Awamutu,
- commitment to continually improve network reliability,
- proposed network development plans and

life cycle management of existing assets, over the next 10 years will preserve the value of the network for the Company's shareholders and will provide our connected consumers and public with a network which has capacity for growth, is secure, reliable and safe.

13.0 APPENDICES

13.1 Appendix A: Network Feeder Asset Attributes (as at 31 March 2012)
13.2 Appendix B: Voltage Regulator Programme
13.3 Appendix C: Remote Controlled Auto Recloser Programme
13.4 Appendix D: Visual Asset Condition Survey Programme
13.5 Appendix E: Vegetation Management Programme
13.6 Appendix F: Earth Testing and Repair Programme
13.7 Appendix G: Asset Age Profile
13.8 Appendix H: Capital Works and Expenditure Forecast
13.9 Appendix I: Operational Expenditure Forecast
13.10 Appendix J: Consolidated Capital and Operational Expenditure Forecast
13.11 Appendix K: Capital and Operational Expenditure Reconciliations for 2011/2012

Appendix A: Network Feeder Asset Attributes (as at 31 March 2012)

Transpower GXP	TPNZ CB	Feeder type	Waipa Feeder Assets	Total 11kV km	Overhead 11kV km	Underground 11kV km	Total 400V km	Overhead 400V km	Underground 400V km	Number concrete poles	Number wooden poles	Number transformers	Transformer capacity kVA	Number ICPs
Cambridge	8	urban	Hautapu A	7.369	6.08	1.061	0	0	0	41	0	2	130	1
Cambridge	9	rural	Kaipaki	55.613	46.63	8.982	21.569	14.819	6.75	752	62	173	15550	726
Cambridge	10	rural	Tamahere	95.355	80.818	14.537	62.439	36.843	25.596	1422	235	344	18890	1691
Cambridge	11	rural	French Pass	95.383	89.331	6.051	37.474	29.772	7.702	1256	265	318	15244	1033
Cambridge	12	rural	Roto-O-Rangi	91.065	82.408	8.656	43.283	28.159	15.123	1210	323	264	13762	1588
Cambridge	13	urban	Leamington	21.207	14.492	6.714	43.202	15.298	27.903	428	117	62	10170	2148
Cambridge	14	urban	Cambridge Town	10.566	3.661	6.904	20.161	5.8	14.361	171	49	46	12950	1040
Cambridge	15	urban	Cambridge North	7.662	2.37	5.292	10.363	1.594	8.769	57	4	22	3430	476
Cambridge	16	urban	Cambridge East	18.373	10.375	7.998	43.032	18.058	24.974	451	157	47	11335	2010
Cambridge	17	urban	Hautapu B	7.076	4.933	2.143	0	0	0	39	0		0	
			Subtotal	409.669	341.098	68.338	281.523	150.343	131.178	5827	1212	1278	101461	10713
Te Awamutu	22	rural	Kawhia	203.091	199.971	3.119	50.979	42.268	8.71	2416	183	309	11609	1289
Te Awamutu	23	rural	Kio Kio / Waikeria	111.265	107.959	3.306	41.763	37.9	3.862	1721	24	223	12490	838
Te Awamutu	24	urban	Te Awamutu West	21.763	16.71	5.052	48.205	20.813	27.391	501	106	68	10325	2300
Te Awamutu	25	rural	Pirongia	64.312	59.452	4.859	45.176	29.24	15.935	961	46	160	9640	1305
Te Awamutu	26	rural	Pukeatua	136.817	135.134	1.682	45.502	43.87	1.632	2173	37	303	13292.5	891
Te Awamutu	27	rural	Paterangi	101.549	100.125	1.424	54.737	51.71	3.027	1688	33	245	9557	803
Te Awamutu	2742	rural	Kihikihi	37.727	36.322	1.405	38.004	31.342	6.662	928	100	106	8938	1559
Te Awamutu	2752	rural	Mystery Creek	47.398	40.553	6.844	20.69	18.582	2.108	687	28	94	5518	462
Te Awamutu	2762	urban	Hairini	28.748	22.563	6.184	34.773	15.801	18.971	479	43	81	8920	1282
Te Awamutu	2782	urban	Fonterra A	2.04	0	2.04	0	0	0	0	0	0	0	1
Te Awamutu	2802	urban	Fonterra B	2	0	2	0	0	0	0	0	0	0	0
Te Awamutu	2822	rural	Ohaupo	43.312	41.43	1.882	35.02	23.029	11.991	831	25	101	6740	773
Te Awamutu	2832	urban	Te Awamutu East	4.212	1.903	2.308	10.397	2.655	7.742	61	19	22	7000	631
Te Awamutu	2842	rural	Pokuru	123.333	122.74	0.593	43.467	41.375	2.092	1868	29	266	10237.5	838
			Subtotal	927.567	884.862	42.698	468.713	358.585	110.123	14314	673	1978	114267	12972
			Total	1337.236	1225.96	111.036	750.236	508.928	241.301	20141	1885	3256	215728	23685

Appendix B: Voltage Regulator Programme

TPNZ GXP	TPNZ CB	Feeder Type	Waipa Feeder Asset	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Cambridge	8	urban	Hautapu A										
Cambridge	15	rural	Kaipaki										
Cambridge	10	rural	Tamahere										
Cambridge	11	rural	French Pass						Install				
Cambridge	12	rural	Roto-O-Rangi										Install
Cambridge	13	urban	Leamington										
Cambridge	14	urban	Cambridge Town										
Cambridge	9	urban	Cambridge North										
Cambridge	16	urban	Cambridge East										
Cambridge	17	urban	Hautapu B										
Te Awamutu	22	rural	Kawhia										
Te Awamutu	23	rural	Kio Kio / Waikeria										
Te Awamutu	24	urban	Te Awamutu West										
Te Awamutu	25	rural	Pirongia								Install		
Te Awamutu	26	rural	Pukeatua		Install		Install						
Te Awamutu	27	rural	Paterangi										
Te Awamutu	2742	rural	Kihikihi										
Te Awamutu	2752	rural	Mystery Creek										
Te Awamutu	2762	urban	Hairini										
Te Awamutu	2782	urban	Fonterra A										
Te Awamutu	2802	urban	Fonterra B										
Te Awamutu	2822	rural	Ohaupo										
Te Awamutu	2832	urban	Te Awamutu East										
Te Awamutu	2842	rural	Pokuru										

Appendix C: Remote Controlled Auto Recloser Programme

TPNZ GXP	TPNZ CB	Feeder Type	Waipa Feeder Asset	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Cambridge	8	urban	Hautapu A										
Cambridge	15	rural	Kaipaki	5									
Cambridge	10	rural	Tamahere		1	3							
Cambridge	11	rural	French Pass										
Cambridge	12	rural	Roto-O-Rangi										
Cambridge	13	urban	Leamington										
Cambridge	14	urban	Cambridge Town										
Cambridge	9	urban	Cambridge North										
Cambridge	16	urban	Cambridge East										
Cambridge	17	urban	Hautapu B										
Te Awamutu	22	rural	Kawhia	5		4							
Te Awamutu	23	rural	Kio Kio / Waikeria										
Te Awamutu	24	urban	Te Awamutu West										
Te Awamutu	25	rural	Pirongia		4								
Te Awamutu	26	rural	Pukeatua		7								
Te Awamutu	27	rural	Paterangi	2									
Te Awamutu	2742	rural	Kihikihi			3							
Te Awamutu	2752	rural	Mystery Creek										
Te Awamutu	2762	urban	Hairini			2							
Te Awamutu	2782	urban	Fonterra A										
Te Awamutu	2802	urban	Fonterra B										
Te Awamutu	2822	rural	Ohaupo										
Te Awamutu	2832	urban	Te Awamutu East										
Te Awamutu	2842	rural	Pokuru										

Appendix D: Visual Asset Condition Survey Programme

TPNZ GXP	TPNZ CB	Feeder Type	Waipa Feeder Asset	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Cambridge	8	urban	Hautapu A		2nd								3rd
Cambridge	15	rural	Kaipaki	2nd								3rd	
Cambridge	10	rural	Tamahere						3rd				
Cambridge	11	rural	French Pass						3rd				
Cambridge	12	rural	Roto-O-Rangi								3rd		
Cambridge	13	urban	Leamington			2nd							
Cambridge	14	urban	Cambridge Town			2nd							
Cambridge	9	urban	Cambridge North		1st								2nd
Cambridge	16	urban	Cambridge East			2nd							
Cambridge	17	urban	Hautapu B		2nd								3rd
Te Awamutu	22	rural	Kawhia							3rd			
Te Awamutu	23	rural	Kio Kio / Waikeria								3rd		
Te Awamutu	24	urban	Te Awamutu West					2nd					
Te Awamutu	25	rural	Pirongia					2nd					
Te Awamutu	26	rural	Pukeatua				2nd						
Te Awamutu	27	rural	Paterangi			2nd							
Te Awamutu	2742	rural	Kihikihi	2nd								3rd	
Te Awamutu	2752	rural	Mystery Creek				2nd						
Te Awamutu	2762	urban	Hairini					2nd					
Te Awamutu	2782	urban	Fonterra A										
Te Awamutu	2802	urban	Fonterra B										
Te Awamutu	2822	rural	Ohaupo	2nd								3rd	
Te Awamutu	2832	urban	Te Awamutu East					2nd					
Te Awamutu	2842	rural	Pokuru		2nd								3rd

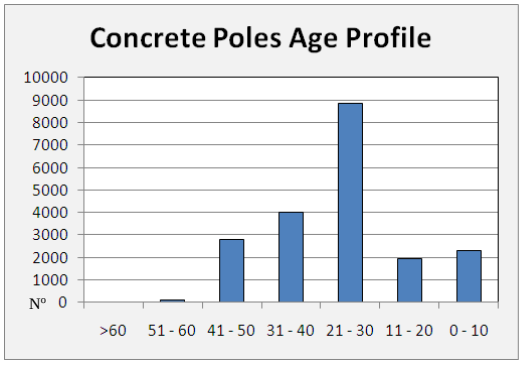
Appendix E: Vegetation Management Programme

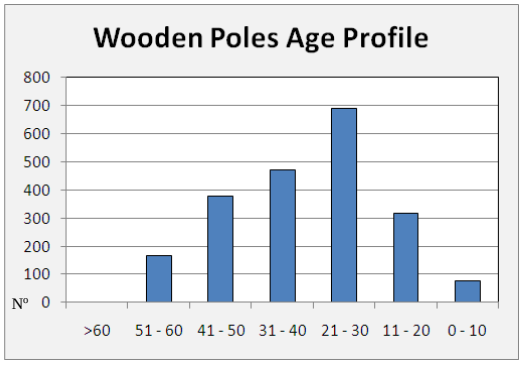
TPNZ GXP	TPNZ CB	Feeder Type	Waipa Feeder Asset	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Cambridge	8	urban	Hautapu A	Cut 2								Cut 3	
Cambridge	15	rural	Kaipaki								Cut 3		
Cambridge	10	rural	Tamahere	Cut 4				Cut 5				Cut 6	
Cambridge	11	rural	French Pass					Cut 4					
Cambridge	12	rural	Roto-O-Rangi							Cut 3			
Cambridge	13	urban	Leamington		Cut 2								Cut 3
Cambridge	14	urban	Cambridge Town		Cut 2								Cut 3
Cambridge	9	urban	Cambridge North	Cut 1								Cut 2	
Cambridge	16	urban	Cambridge East		Cut 2								Cut 3
Cambridge	17	urban	Hautapu B	Cut 2								Cut 3	
Te Awamutu	22	rural	Kawhia						Cut 3				
Te Awamutu	23	rural	Kio Kio / Waikeria			Cut 3							
Te Awamutu	24	urban	Te Awamutu West							Cut 2			
Te Awamutu	25	rural	Pirongia				Cut 2						
Te Awamutu	26	rural	Pukeatua		Cut 3								Cut 4
Te Awamutu	27	rural	Paterangi			Cut 2							
Te Awamutu	2742	rural	Kihikihi								Cut 3		
Te Awamutu	2752	rural	Mystery Creek	Cut 2								Cut 3	
Te Awamutu	2762	urban	Hairini							Cut 2			
Te Awamutu	2782	urban	Fonterra A										
Te Awamutu	2802	urban	Fonterra B										
Te Awamutu	2822	rural	Ohaupo								Cut 3		
Te Awamutu	2832	urban	Te Awamutu East							Cut 2			
Te Awamutu	2842	rural	Pokuru				Cut 3						

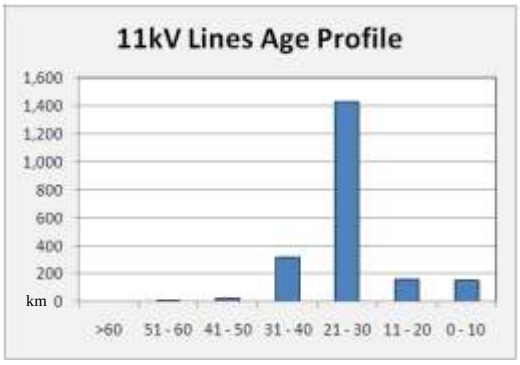
Appendix F: Earth Testing and Repair Programme

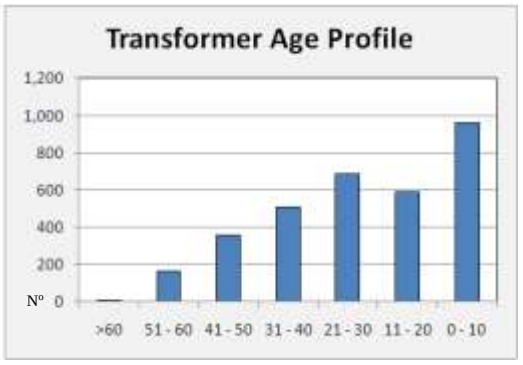
TPNZ GXP	TPNZ CB	Feeder Type	Waipa Feeder Asset	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Cambridge	8	urban	Hautapu A		T&R2								T&R3
Cambridge	15	rural	Kaipaki	T&R2								T&R3	
Cambridge	10	rural	Tamahere						T&R2				
Cambridge	11	rural	French Pass						T&R2				
Cambridge	12	rural	Roto-O-Rangi								T&R3		
Cambridge	13	urban	Leamington			T&R2							
Cambridge	14	urban	Cambridge Town			T&R2							
Cambridge	9	urban	Cambridge North		T&R1								T&R2
Cambridge	16	urban	Cambridge East			T&R2							
Cambridge	17	urban	Hautapu B		T&R2								T&R3
Te Awamutu	22	rural	Kawhia							T&R2			
Te Awamutu	23	rural	Kio Kio / Waikeria								T&R2		
Te Awamutu	24	urban	Te Awamutu West					T&R2					
Te Awamutu	25	rural	Pirongia					T&R2					
Te Awamutu	26	rural	Pukeatua				T&R2						
Te Awamutu	27	rural	Paterangi			T&R2							
Te Awamutu	2742	rural	Kihikihi	T&R2								T&R3	
Te Awamutu	2752	rural	Mystery Creek				T&R2						
Te Awamutu	2762	urban	Hairini					T&R2					
Te Awamutu	2782	urban	Fonterra A										
Te Awamutu	2802	urban	Fonterra B										
Te Awamutu	2822	rural	Ohaupo	T&R2								T&R3	
Te Awamutu	2832	urban	Te Awamutu East					T&R2					
Te Awamutu	2842	rural	Pokuru		T&R2								T&R3

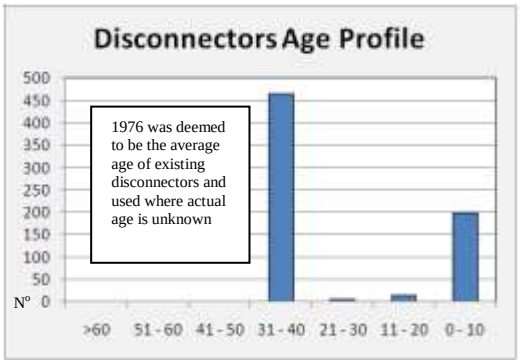
Asset Age Profiles

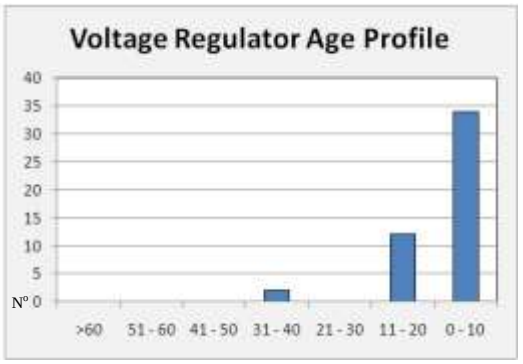


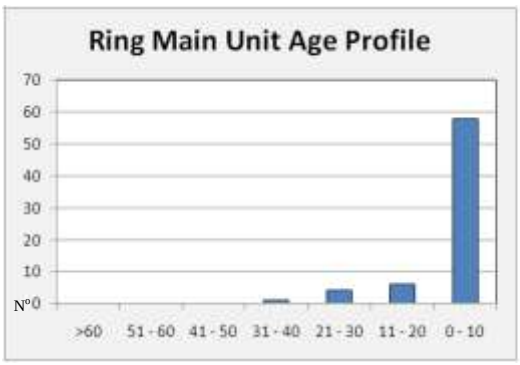


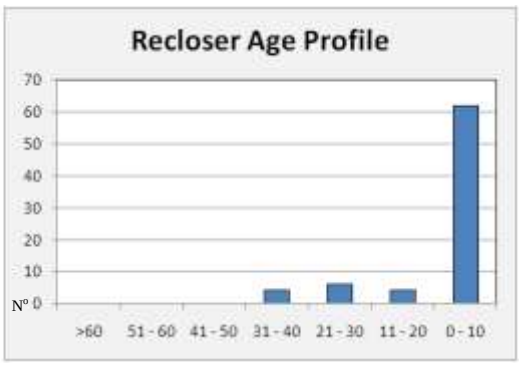


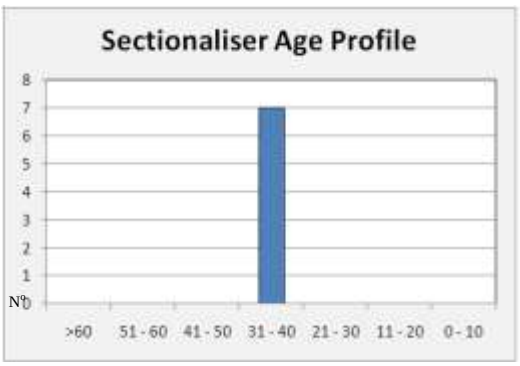


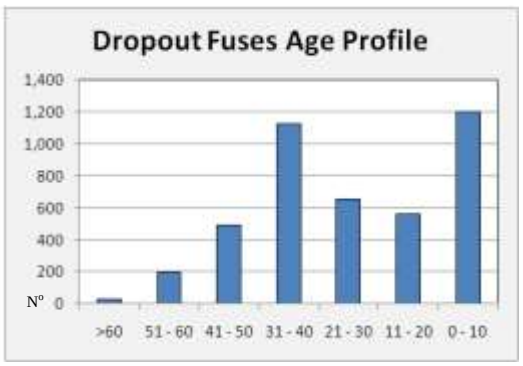












Appendix H: Capital Works

Capital Works	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
General Relays Additions	13	13	13	13	13	13	13	13	13	13
Transformer & Sub Additions	952	952	952	952	952	952	952	952	952	952
General Extensions	477	476	476	476	476	476	476	476	476	476
Ring Main Unit Switchgear Additions	104	104	104	104	104	104	104	104	104	104
Disconnector Switchgear Additions	32	32	32	32	32	32	32	32	32	32
Dropout Fuse Switchgear Additions	65	65	65	65	65	65	65	65	65	65
New Voltage Regulators	0	195	0	195	0	195	0	195	0	195
Install Kawhia Generator	0	0	0	0	0	0	0	130	519	0
Transformer & Sub Enhancements	195	195	195	195	195	195	195	195	195	195
Replace One Pole Transformers and Sub Structures	156	156	156	156	156	156	156	156	156	156
Switchgear Replacement Disconnectors	117	117	117	117	117	117	117	117	117	117
Replace Ground Mounted Transformer Sub Structures	162	162	162	162	162	162	162	162	162	162
Underground Overhead Line	195	195	195	195	195	195	195	195	195	195
Replace Ripple Relays Te Awamutu	247	247	0	0	0	0	0	0	0	0
Install 11kV Dropout Fuses Spurs & Services	117	117	117	117	117	117	117	117	117	0
Install Remote Control Switches	429	429	429	0	0	0	0	0	0	0
Install Recloser Bypass Disconnectors	117	117	117	0	0	0	0	0	0	0
Split Tamahere into Tamahere and Pencarrow	0	0	188	188	0	0	0	0	0	0
Split Kaipaki into Kaipaki and Monavale	0	0	188	188	0	0	0	0	0	0
Install TMU-HTI 110kV line	2812	13307	0	0	0	0	0	0	0	0
Replace Tin Shed Transformers and Sub Structures	166	166	0	0	0	0	0	0	0	0
Replace Two Pole Transformers and Sub Structures	391	391	391	391	391	391	391	391	0	0
Waikato Expressway	488	838	838	838	0	0	0	0	0	0
Cambridge Switchboard Replacement	500	0	0	0	0	0	0	0	0	0
Total Capital Budget	7,735	18,274	4,735	4,384	2,975	3,170	2,975	3,300	3,103	2,662

Non Network Capital										
Motor vehicles, fleet and plant	616	616	616	616	616	616	616	616	616	616
Office furniture and plant	197	197	197	197	197	197	197	197	197	197
Computer equipment	69	69	69	69	69	69	69	69	69	69

Appendix H: Capital Expenditure Forecast

Capital Expenditure Forecast	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Customer connection	1643	1642	1642	1642	1642	1642	1642	1642	1642	1642
System growth	195	390	195	390	195	390	195	520	714	390
Asset replacement and renewal	877	877	630	630	630	630	630	630	630	630
Asset relocation	988	838	838	838	0	0	0	0	0	0
Reliability, safety and environment										
Quality of Supply	3475	13970	1039	493	117	117	117	117	117	0
Legislative and regulatory	0	0	0	0	0	0	0	0	0	0
Other Reliability, Safety & Environment	557	557	391	391	391	391	391	391	0	0
Total Reliability, safety and environment	4032	14527	1430	884	508	508	508	508	117	0
Expenditure on network assets	7735	18274	4735	4384	2975	3170	2975	3300	3103	2662
Non-network assets	882	882	882	882	882	882	882	882	882	882
Expenditure on assets	8617	19156	5617	5266	3857	4052	3857	4182	3985	3544

Appendix I: Operational Expenditure Forecast

Operational Expenditure Forecast	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Service interruption and emergencies	572,000	572,000	572,000	572,000	572,000	572,000	572,000	572,000	572,000	572,000
Vegetation management	501,000	501,000	501,000	501,000	501,000	501,000	501,000	501,000	501,000	501,000
Routine and corrective maintenance and inspection	711,000	711,000	711,000	711,000	711,000	711,000	711,000	711,000	711,000	711,000
Asset replacement and renewal	319,000	319,000	319,000	319,000	319,000	319,000	319,000	319,000	319,000	319,000
Network Opex	2,103,000	2,103,000	2,103,000	2,103,000	2,103,000	2,103,000	2,103,000	2,103,000	2,103,000	2,103,000
System operations and network support	1,107,000	1,116,000	1,120,000	1,125,000	1,130,000	1,135,000	1,140,000	1,145,000	1,151,000	1,156,000
Business Support	1,658,000	1,658,000	1,658,000	1,658,000	1,658,000	1,658,000	1,658,000	1,658,000	1,658,000	1,658,000
Non-network opex	2,765,000	2,774,000	2,778,000	2,783,000	2,788,000	2,793,000	2,798,000	2,803,000	2,809,000	2,814,000
Operational Expenditure	4,868,000	4,877,000	4,881,000	4,886,000	4,891,000	4,896,000	4,901,000	4,906,000	4,912,000	4,917,000

Appendix K: Capital and Operational Expenditure Reconciliations for 2011/2012

REPORT AM1: EXPENDITURE FORECASTS AND RECONCILIATION

Electricity Distribution Business: Waipa Networks

For Year Ended: 2012

($000)

A) Five year forecasts of expenditure

From most recent Asset Management Plan

	Actual for Current Financial Year	Forecast Years					
for year ended	2012	year 1 2013	year 2 2014	year 3 2015	year 4 2016	year 5 2017	
Capital Expenditure: Customer Connection	1,574	1,902	1,902	1,954	1,954	1,954	from FS2
Capital Expenditure: System Growth	331	595	595	447	595	595	from FS2
Capital Expenditure: Reliability, Safety and Environment	2,059	3,668	4,209	4,405	13,521	983	from FS2
Capital Expenditure: Asset Replacement and Renewal	553	950	950	950	703	703	from FS2
Capital Expenditure: Asset Relocations	277	868	1,439	939	838	-	from FS2
Subtotal - Capital Expenditure on asset management	**4,794**	**7,993**	**8,894**	**8,734**	**17,311**	**4,205**	
Operational Expenditure: Routine and Preventative Maintenance	856	1,567	1,567	1,567	1,567	1,567	from FS1
Operational Expenditure: Refurbishment and Renewal Maintenance	271	146	146	146	146	146	from FS1
Operational Expenditure: Fault and Emergency Maintenance	595	451	451	451	451	451	from FS1
Subtotal - Operational Expenditure on asset management	**1,722**	**2,164**	**2,164**	**2,164**	**2,164**	**2,164**	
Total direct expenditure on distribution network	**6,516**	**10,157**	**10,958**	**10,898**	**19,475**	**6,369**	
Overhead to Underground Conversion Expenditure	775						

The Electricity Distribution Business is to provide the amount of Overhead to Underground Conversion Expenditure included in each of the above Expenditure Categories (explanatory notes can be provided in a separate note if necessary)

B) Variance between Previous Forecast for the Current Financial Year, and Actual Expenditure

	Actual for Current Financial Year (a)	Previous forecast for Current Financial Year (b)	%Variance (a)/(b)-1	
Capital Expenditure: Customer Connection	1,574	1,947	-19.2%	from row 10
Capital Expenditure: System Growth	331	65	409.5%	from row 11
Capital Expenditure: Reliability, Safety and Environment	2,059	1,932	6.6%	from row 12
Capital Expenditure: Asset Replacement and Renewal	553	842	-34.3%	from row 13
Capital Expenditure: Asset Relocations	277	-	Not defined	from row 14
Subtotal - Capital Expenditure on asset management	**4,794**	**4,786**	**0.2%**	
Operational Expenditure: Routine and Preventative Maintenance	856	1,567	-45.4%	from row 17
Operational Expenditure: Refurbishment and Renewal Maintenance	271	146	85.4%	from row 18
Operational Expenditure: Fault and Emergency Maintenance	595	451	32.0%	from row 19
Subtotal - Operational Expenditure on asset management	**1,722**	**2,164**	**-20.4%**	
Total direct expenditure on distribution network	**6,516**	**6,950**	**-6.2%**	

Explanation of variances

Distribution Business must provide a brief explanation for any line item variance of more than 10%

Explanatory notes (can be provided in a separate note if necessary)

Capital Expenditure

With fewer new customer connections resources were reallocated to:

* incremental upgrade of an aged feeder (system growth)
* improving reliability via various projects
* relocation of existing assets as required by councils

Operation Expenditure

* the speeding up of asset replacements reduced the need for renewal maintenance
* fault maintenance is by its nature event driven and unpredictable

14.0 SCHEDULES

14.1 Schedule 11a: Report on Forecast Capital Expenditure
14.2 Schedule 11b: Report on Forecast Operational Expenditure
14.3 Schedule 12a: Report on Asset Condition
14.4 Schedule 12b: Report on Asset Capacity
14.5 Schedule 12c: Report on Forecast Network Demand
14.6 Schedule 12d: Report on Forecast Interruptions and Duration
14.7 Schedule 13: Report on Asset Management Maturity
14.8 Schedule 17: Certification for Year-beginning Disclosures

Email of Schedules to follow

Company Name	Waipa Networks Limited
AMP Planning Period	1 April 2013 – 31 March 2023

SCHEDULE 11a: REPORT ON FORECAST CAPITAL EXPENDITURE

This schedule requires a breakdown of forecast expenditure on assets for the current disclosure year and a 10 year planning period. The forecasts should be consistent with the supporting information set out in the AMP. The forecast is to be expressed in both constant price and nominal dollar terms. Also required is a forecast of the value of commissioned assets (i.e., the value of RAB additions)

EDBs must provide explanatory comment on the difference between constant price and nominal dollar forecasts of expenditure on assets in Schedule 14a (Mandatory Explanatory Notes).

This information is not part of audited disclosure information.

sch ref

		Current Year CY	*CY+1*	*CY+2*	*CY+3*	*CY+4*	*CY+5*	*CY+6*	*CY+7*	*CY+8*	*CY+9*	*CY+10*
	for year ended	**31 Mar 13**	**31 Mar 14**	**31 Mar 15**	**31 Mar 16**	**31 Mar 17**	**31 Mar 18**	**31 Mar 19**	**31 Mar 20**	**31 Mar 21**	**31 Mar 22**	**31 Mar 23**
	11a(i): Expenditure on Assets Forecast	**$000 (in nominal dollars)**										
	Consumer connection	1,902	1,643	1,675	1,708	1,743	1,777	1,813	1,849	1,886	1,924	1,962
	System growth	585	195	398	203	414	211	215	-	224	-	233
	Asset replacement and renewal	950	877	895	655	669	682	696	709	724	738	753
	Asset relocations	688	988	855	872	889	-	-	-	-	-	-
	Reliability, safety and environment:											
	Quality of supply	2,646	3,475	14,249	1,081	523	127	129	132	134	137	140
	Legislative and regulatory	-	-	-	-	-	-	-	-	-	-	-
	Other reliability, safety and environment	1,222	557	568	407	415	423	432	440	449	-	-
	Total reliability, safety and environment	3,868	4,032	14,818	1,488	938	550	561	572	584	137	140
	Expenditure on network assets	7,993	7,735	18,640	4,926	4,652	3,220	3,285	3,131	3,417	2,799	3,088
	Non-network assets	882	882	882	882	882	882	882	882	882	882	882
	Expenditure on assets	8,875	8,617	19,522	5,808	5,534	4,102	4,167	4,013	4,299	3,681	3,970
plus	Cost of financing	-	-	-	-	-	-	-	-	-	-	-
less	Value of capital contributions	839	1,233	1,582	1,582	1,582	744	-	-	-	-	-
plus	Value of vested assets	-	-	-	-	-	-	-	-	-	-	-
	Capital expenditure forecast	8,036	7,384	17,940	4,226	3,952	3,358	4,167	4,013	4,299	3,681	3,970
	Value of commissioned assets	7,425	5,805	23,783	5,808	5,534	4,102	4,167	4,013	4,299	3,681	3,970

		Current Year CY	*CY+1*	*CY+2*	*CY+3*	*CY+4*	*CY+5*	*CY+6*	*CY+7*	*CY+8*	*CY+9*	*CY+10*
	for year ended	**31 Mar 13**	**31 Mar 14**	**31 Mar 15**	**31 Mar 16**	**31 Mar 17**	**31 Mar 18**	**31 Mar 19**	**31 Mar 20**	**31 Mar 21**	**31 Mar 22**	**31 Mar 23**
		$000 (in constant prices)										
	Consumer connection	1,902	1,643	1,642	1,642	1,642	1,642	1,642	1,642	1,642	1,642	1,642
	System growth	585	195	390	195	390	195	195	-	195	-	195
	Asset replacement and renewal	950	877	877	630	630	630	630	630	630	630	630
	Asset relocations	688	988	838	838	838	-	-	-	-	-	-
	Reliability, safety and environment:											
	Quality of supply	2,646	3,475	13,970	1,039	493	117	117	117	117	117	117
	Legislative and regulatory	-	-	-	-	-	-	-	-	-	-	-
	Other reliability, safety and environment	1,222	557	557	391	391	391	391	391	391	-	-
	Total reliability, safety and environment	3,868	4,032	14,527	1,430	884	508	508	508	508	117	117
	Expenditure on network assets	7,993	7,735	18,274	4,735	4,384	2,975	2,975	2,780	2,975	2,389	2,584
	Non-network assets	882	882	882	882	882	882					
	Expenditure on assets	8,875	8,617	19,156	5,617	5,266	3,857	2,975	2,780	2,975	2,389	2,584
	Subcomponents of expenditure on assets (where known)											
	Energy efficiency and demand side management, reduction of energy losses	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Overhead to underground conversion	325	195	195	195	195	195	195	195	195	195	195
	Research and development	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Company Name	Waipa Networks Limited
AMP Planning Period	1 April 2013 – 31 March 2023

SCHEDULE 11a: REPORT ON FORECAST CAPITAL EXPENDITURE

This schedule requires a breakdown of forecast expenditure on assets for the current disclosure year and a 10 year planning period. The forecasts should be consistent with the supporting information set out in the AMP. The forecast is to be expressed in both constant price and nominal dollar terms. Also required is a forecast of the value of commissioned assets (i.e., the value of RAB additions)

EDBs must provide explanatory comment on the difference between constant price and nominal dollar forecasts of expenditure on assets in Schedule 14a (Mandatory Explanatory Notes).

This information is not part of audited disclosure information.

sch ref		Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5	CY+6	CY+7	CY+8	CY+9	CY+10
	for year ended	31 Mar 13	31 Mar 14	31 Mar 15	31 Mar 16	31 Mar 17	31 Mar 18	31 Mar 19	31 Mar 20	31 Mar 21	31 Mar 22	31 Mar 23
	Difference between nominal and constant price forecasts	**$000**										
	Consumer connection	-	-	33	66	101	135	171	207	244	282	320
	System growth	-	-	8	8	24	16	20	-	29	-	38
	Asset replacement and renewal	-	-	18	25	39	52	66	79	94	108	123
	Asset relocations	-	-	17	34	51	-	-	-	-	-	-
	Reliability, safety and environment:											
	Quality of supply	-	-	279	42	30	10	12	15	17	20	23
	Legislative and regulatory	-	-	-	-	-	-	-	-	-	-	-
	Other reliability, safety and environment	-	-	11	16	24	32	41	49	58	-	-
	Total reliability, safety and environment	-	-	291	58	54	42	53	64	76	20	23
	Expenditure on network assets	-	-	366	191	268	245	310	351	442	410	504
	Non-network assets	-	-	-	-	-	-	882	882	882	882	882
	Expenditure on assets	-	-	366	191	268	245	1,192	1,233	1,324	1,292	1,386

		Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5
	for year ended	31 Mar 13	31 Mar 14	31 Mar 15	31 Mar 16	31 Mar 17	31 Mar 18
	11a(ii): Consumer Connection						
	*Consumer types defined by EDB**	**$000 (in constant prices)**					
	Customer connection	1,902	1,643	1,642	1,642	1,642	1,642
	**include additional rows if needed*						
	Consumer connection expenditure	1,902	1,643	1,642	1,642	1,642	1,642
less	Capital contributions funding consumer connection	651	745	744	744	744	744
	Consumer connection less capital contributions	1,251	898	898	898	898	898
	11a(iii): System Growth						
	Subtransmission	-	-	-	-	-	-
	Zone substations	-	-	-	-	-	-
	Distribution and LV lines	-	-	-	-	-	-
	Distribution and LV cables	-	-	-	-	-	-
	Distribution substations and transformers	195	195	195	195	195	195
	Distribution switchgear	-	-	-	-	-	-
	Other network assets	390	-	195	-	195	-
	System growth expenditure	585	195	390	195	390	195
less	Capital contributions funding system growth	-	-	-	-	-	-
	System growth less capital contributions	585	195	390	195	390	195

Company Name	Waipa Networks Limited
AMP Planning Period	1 April 2013 – 31 March 2023

SCHEDULE 11a: REPORT ON FORECAST CAPITAL EXPENDITURE

This schedule requires a breakdown of forecast expenditure on assets for the current disclosure year and a 10 year planning period. The forecasts should be consistent with the supporting information set out in the AMP. The forecast is to be expressed in both constant price and nominal dollar terms. Also required is a forecast of the value of commissioned assets (i.e., the value of RAB additions)
EDBs must provide explanatory comment on the difference between constant price and nominal dollar forecasts of expenditure on assets in Schedule 14a (Mandatory Explanatory Notes).
This information is not part of audited disclosure information.

sch ref			Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5
		for year ended	31 Mar 13	31 Mar 14	31 Mar 15	31 Mar 16	31 Mar 17	31 Mar 18
	11a(iv): Asset Replacement and Renewal		**$000 (in constant prices)**					
	Subtransmission		-	-	-	-	-	-
	Zone substations		-	-			-	
	Distribution and LV lines		325	195	195	195	195	195
	Distribution and LV cables		-	-	-	-	-	-
	Distribution substations and transformers		261	318	318	318	318	318
	Distribution switchgear		117	117	117	117	117	117
	Other network assets		247	247	247	-	-	-
	Asset replacement and renewal expenditure		950	877	877	630	630	630
less	Capital contributions funding asset replacement and renewal		188	488	838	838	838	-
	Asset replacement and renewal less capital contributions		762	389	39	(208)	(208)	630
	11a(v):Asset Relocations							
	*Project or programme**							
	Waikato Expressway		188	488	838	838	838	-
	Cambridge Switchboard Replacement		500	500	-	-	-	-
	*include additional rows if needed							
	All other asset relocations projects or programmes							
	Asset relocations expenditure		688	988	838	838	838	-
less	Capital contributions funding asset relocations		188	488	838	838	838	-
	Asset relocations less capital contributions		500	500	-	-	-	-
	11a(vi):Quality of Supply							
	*Project or programme**							
	Install 11kV Dropout Fuses Spurs & Services		117	117	117	117	117	117
	Install Remote Control Switches		429	429	429	429	-	-
	Install recloser bypass disconnectors		117	117	117	117	-	-
	Split Kaipaki into Kaipaki and Monavale		117	-	-	188	188	-
	Install TMU-HTI 110kV line		1,450	2,812	13,307	-	-	-
	Reliability of Supply Pukeatua, Kihikihi and Hairini		299	-	-	-	-	-
	Split Tamhere into Tamhere and Pencarrow		117	-	-	188	188	-
	*include additional rows if needed							
	All other quality of supply projects or programmes		-	-	-	-	-	-
	Quality of supply expenditure		2,646	3,475	13,970	1,039	493	117
less	Capital contributions funding quality of supply		-	-	-	-	-	-
	Quality of supply less capital contributions		2,646	3,475	13,970	1,039	493	117
	11a(vii): Legislative and Regulatory							
	*Project or programme**							
	Nil		-	-	-	-	-	-
	*include additional rows if needed							
	All other legislative and regulatory projects or programmes		-	-	-	-	-	-
	Legislative and regulatory expenditure		-	-	-	-	-	-
less	Capital contributions funding legislative and regulatory		-	-	-	-	-	-

Company Name	Waipa Networks Limited
AMP Planning Period	1 April 2013 – 31 March 2023

SCHEDULE 11a: REPORT ON FORECAST CAPITAL EXPENDITURE

This schedule requires a breakdown of forecast expenditure on assets for the current disclosure year and a 10 year planning period. The forecasts should be consistent with the supporting information set out in the AMP. The forecast is to be expressed in both constant price and nominal dollar terms. Also required is a forecast of the value of commissioned assets (i.e., the value of RAB additions)

EDBs must provide explanatory comment on the difference between constant price and nominal dollar forecasts of expenditure on assets in Schedule 14a (Mandatory Explanatory Notes).

This information is not part of audited disclosure information.

sch ref							
153	**Legislative and regulatory less capital contributions**	-	-	-	-	-	-

Company Name	Waipa Networks Limited
AMP Planning Period	1 April 2013 – 31 March 2023

SCHEDULE 11a: REPORT ON FORECAST CAPITAL EXPENDITURE

This schedule requires a breakdown of forecast expenditure on assets for the current disclosure year and a 10 year planning period. The forecasts should be consistent with the supporting information set out in the AMP. The forecast is to be expressed in both constant price and nominal dollar terms. Also required is a forecast of the value of commissioned assets (i.e., the value of RAB additions)

EDBs must provide explanatory comment on the difference between constant price and nominal dollar forecasts of expenditure on assets in Schedule 14a (Mandatory Explanatory Notes).

This information is not part of audited disclosure information.

sch ref			Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5
		for year ended	31 Mar 13	31 Mar 14	31 Mar 15	31 Mar 16	31 Mar 17	31 Mar 18
	11a(viii): Other Reliability, Safety and Environn							
	*Project or programme**		**$000 (in constant prices)**					
	Replace tin shed transformer and substations structures		254	166	166	-	-	-
	Replace two pole transformers and substation structures		708	391	391	391	391	391
	Replace oil filled ring main units		260	-	-	-	-	-
	*include additional rows if needed							
	All other reliability, safety and environment projects or programmes		-	-	-	-	-	-
	Other reliability, safety and environment expenditure		1,222	557	557	391	391	391
less	Capital contributions funding other reliability, safety and environment		-	-	-	-	-	-
	Other reliability, safety and environment less capital contributions		1,222	557	557	391	391	391
	11a(ix): Non-Network Assets							
	Routine expenditure							
	*Project or programme**							
	Motor vehicles, fleet and plant		616	616	616	616	616	616
	Office furniture and plant		197	197	197	197	197	197
	Computer equipment		69	69	69	69	69	69
	*include additional rows if needed							
	All other routine expenditure projects or programmes		-	-	-	-	-	-
	Routine expenditure		882	882	882	882	882	882
	Atypical expenditure							
	*Project or programme**							
	Nil		-	-	-	-	-	-
	*include additional rows if needed							
	All other atypical projects or programmes		-	-	-	-	-	-
	Atypical expenditure		-	-	-	-	-	-
	Non-network assets expenditure		882	882	882	882	882	882

Company Name	Waipa Networks Limited
AMP Planning Period	1 April 2013 – 31 March 2023

SCHEDULE 11b: REPORT ON FORECAST OPERATIONAL EXPENDITURE

This schedule requires a breakdown of forecast operational expenditure for the disclosure year and a 10 year planning period. The forecasts should be consistent with the supporting information set out in the AMP. The forecast is to be expressed in both constant price and nominal dollar terms.
EDBs must provide explanatory comment on the difference between constant price and nominal dollar operational expenditure forecasts in Schedule 14a (Mandatory Explanatory Notes).
This information is not part of audited disclosure information.

sch ref												
7		*Current Year CY*	*CY+1*	*CY+2*	*CY+3*	*CY+4*	*CY+5*	*CY+6*	*CY+7*	*CY+8*	*CY+9*	*CY+10*
8	for year ended	**31 Mar 13**	**31 Mar 14**	**31 Mar 15**	**31 Mar 16**	**31 Mar 17**	**31 Mar 18**	**31 Mar 19**	**31 Mar 20**	**31 Mar 21**	**31 Mar 22**	**31 Mar 23**
9	**Operational Expenditure Forecast**	**$000 (in nominal dollars)**										
10	Service interruptions and emergencies	585	572	583	595	607	619	632	644	657	670	684
11	Vegetation management	501	501	511	521	532	542	553	564	575	587	599
12	Routine and corrective maintenance and inspection	824	824	840	857	874	892	910	928	947	965	985
13	Asset replacement and renewal	217	217	221	226	230	235	240	244	249	254	259
14	**Network Opex**	2,127	2,114	2,156	2,199	2,243	2,288	2,334	2,381	2,428	2,477	2,526
15	System operations and network support	1,087	1,107	1,138	1,165	1,194	1,223	1,253	1,284	1,315	1,349	1,382
16	Business support	1,658	1,658	1,691	1,725	1,759	1,795	1,831	1,867	1,905	1,943	1,981
17	**Non-network opex**	2,745	2,765	2,829	2,890	2,953	3,018	3,084	3,151	3,220	3,291	3,363
18	**Operational expenditure**	4,872	4,879	4,986	5,090	5,197	5,306	5,418	5,532	5,648	5,768	5,889

19		*Current Year CY*	*CY+1*	*CY+2*	*CY+3*	*CY+4*	*CY+5*	*CY+6*	*CY+7*	*CY+8*	*CY+9*	*CY+10*
20	for year ended	**31 Mar 13**	**31 Mar 14**	**31 Mar 15**	**31 Mar 16**	**31 Mar 17**	**31 Mar 18**	**31 Mar 19**	**31 Mar 20**	**31 Mar 21**	**31 Mar 22**	**31 Mar 23**
21		**$000 (in constant prices)**										
22	Service interruptions and emergencies	585	572	572	572	572	572	572	572	572	572	572
23	Vegetation management	501	501	501	501	501	501	501	501	501	501	501
24	Routine and corrective maintenance and inspection	824	824	824	824	824	824	824	824	824	824	824
25	Asset replacement and renewal	217	217	217	217	217	217	217	217	217	217	217
26	**Network Opex**	2,127	2,114	2,114	2,114	2,114	2,114	2,114	2,114	2,114	2,114	2,114
27	System operations and network support	1,087	1,107	1,116	1,120	1,125	1,130	1,135	1,140	1,145	1,151	1,156
28	Business support	1,658	1,658	1,658	1,658	1,658	1,658	1,658	1,658	1,658	1,658	1,658
29	**Non-network opex**	2,745	2,765	2,774	2,778	2,783	2,788	2,793	2,798	2,803	2,809	2,814
30	**Operational expenditure**	4,872	4,879	4,888	4,892	4,897	4,902	4,907	4,912	4,917	4,923	4,928
31	**Subcomponents of operational expenditure (where known)**											
32	Energy efficiency and demand side management, reduction of energy losses	-	-	-	-	-	-	-	-	-	-	-
33	Direct billing*	-	-	-	-	-	-	-	-	-	-	-
34	Research and Development	-	-	-	-	-	-	-	-	-	-	-
35	Insurance	-	-	-	-	-	-	-	-	-	-	-

37 ** Direct billing expenditure by suppliers that direct bill the majority of their consumers*

38

39		*Current Year CY*	*CY+1*	*CY+2*	*CY+3*	*CY+4*	*CY+5*	*CY+6*	*CY+7*	*CY+8*	*CY+9*	*CY+10*
40	for year ended	**31 Mar 13**	**31 Mar 14**	**31 Mar 15**	**31 Mar 16**	**31 Mar 17**	**31 Mar 18**	**31 Mar 19**	**31 Mar 20**	**31 Mar 21**	**31 Mar 22**	**31 Mar 23**
41	**Difference between nominal and real forecasts**	**$000**										
42	Service interruptions and emergencies	-	-	11	23	35	47	60	72	85	98	112
43	Vegetation management	-	-	10	20	31	41	52	63	74	86	98
44	Routine and corrective maintenance and inspection	-	-	16	33	50	68	86	104	123	141	161
45	Asset replacement and renewal	-	-	4	9	13	18	23	27	32	37	42
46	**Network Opex**	-	-	42	85	129	174	220	267	314	363	412
47	System operations and network support	-	-	22	45	69	93	118	144	170	198	226
48	Business support	-	-	33	67	101	137	173	209	247	285	323
49	**Non-network opex**	-	-	55	112	170	230	291	353	417	482	549
50	**Operational expenditure**	-	-	98	198	300	404	511	620	731	845	961

Company Name	Waipa Networks Limited
AMP Planning Period	1 April 2013 – 31 March 2023

SCHEDULE 12a: REPORT ON ASSET CONDITION

This schedule requires a breakdown of asset condition by asset class as at the start of the forecast year. The data accuracy assessment relates to the percentage values disclosed in the asset condition columns. Also required is a forecast of the percentage of units to be replaced in the next 5 years. All information should be consistent with the information provided in the AMP and the expenditure on assets forecast in Schedule 11a. All units relating to cable and line assets, that are expressed in km, refer to circuit lengths.

sch ref					Asset condition at start of planning period (percentage of units by grade)						
	Voltage	Asset category	Asset class	Units	Grade 1	Grade 2	Grade 3	Grade 4	Grade unknown	Data accuracy (1–4)	% of asset forecast to be replaced in next 5 years
10	All	Overhead Line	Concrete poles / steel structure	No.	-	3.72%	96.28%	-	-	3	3.72%
11	All	Overhead Line	Wood poles	No.	-	39.79%	60.21%	-	-	3	39.79%
12	All	Overhead Line	Other pole types	No.	-	-	-	-	-	N/A	-
13	HV	Subtransmission Line	Subtransmission OH up to 66kV conductor	km	-	-	-	-	-	N/A	-
14	HV	Subtransmission Line	Subtransmission OH 110kV+ conductor	km	-	-	-	-	-	N/A	-
15	HV	Subtransmission Cable	Subtransmission UG up to 66kV (XLPE)	km	-	-	-	-	-	N/A	-
16	HV	Subtransmission Cable	Subtransmission UG up to 66kV (Oil pressurised)	km	-	-	-	-	-	N/A	-
17	HV	Subtransmission Cable	Subtransmission UG up to 66kV (Gas pressurised)	km	-	-	-	-	-	N/A	-
18	HV	Subtransmission Cable	Subtransmission UG up to 66kV (PILC)	km	-	-	-	-	-	N/A	-
19	HV	Subtransmission Cable	Subtransmission UG 110kV+ (XLPE)	km	-	-	-	-	-	N/A	-
20	HV	Subtransmission Cable	Subtransmission UG 110kV+ (Oil pressurised)	km	-	-	-	-	-	N/A	-
21	HV	Subtransmission Cable	Subtransmission UG 110kV+ (Gas Pressurised)	km	-	-	-	-	-	N/A	-
22	HV	Subtransmission Cable	Subtransmission UG 110kV+ (PILC)	km	-	-	-	-	-	N/A	-
23	HV	Subtransmission Cable	Subtransmission submarine cable	km	-	-	-	-	-	N/A	-
24	HV	Zone substation Buildings	Zone substations up to 66kV	No.	-	-	-	-	-	N/A	-
25	HV	Zone substation Buildings	Zone substations 110kV+	No.	-	-	-	-	-	N/A	-
26	HV	Zone substation switchgear	22/33kV CB (Indoor)	No.	-	-	-	-	-	N/A	-
27	HV	Zone substation switchgear	22/33kV CB (Outdoor)	No.	-	-	-	-	-	N/A	-
28	HV	Zone substation switchgear	33kV Switch (Ground Mounted)	No.	-	-	-	-	-	N/A	-
29	HV	Zone substation switchgear	33kV Switch (Pole Mounted)	No.	-	-	-	-	-	N/A	-
30	HV	Zone substation switchgear	33kV RMU	No.	-	-	-	-	-	N/A	-
31	HV	Zone substation switchgear	50/66/110kV CB (Indoor)	No.	-	-	-	-	-	N/A	-
32	HV	Zone substation switchgear	50/66/110kV CB (Outdoor)	No.	-	-	-	-	-	N/A	-
33	HV	Zone substation switchgear	3.3/6.6/11/22kV CB (ground mounted)	No.	-	-	-	-	-	N/A	-
34	HV	Zone substation switchgear	3.3/6.6/11/22kV CB (pole mounted)	No.	-	-	-	-	-	N/A	-

Company Name	Waipa Networks Limited
AMP Planning Period	1 April 2013 – 31 March 2023

SCHEDULE 12a: REPORT ON ASSET CONDITION

This schedule requires a breakdown of asset condition by asset class as at the start of the forecast year. The data accuracy assessment relates to the percentage values disclosed in the asset condition columns. Also required is a forecast of the percentage of units to be replaced in the next 5 years. All information should be consistent with the information provided in the AMP and the expenditure on assets forecast in Schedule 11a. All units relating to cable and line assets, that are expressed in km, refer to circuit lengths.

sch ref						Asset condition at start of planning period (percentage of units by grade)						
	Voltage	Asset category	Asset class	Units	Grade 1	Grade 2	Grade 3	Grade 4	Grade unknown	Data accuracy (1–4)	% of asset forecast to be replaced in next 5 years
45	HV	Zone Substation Transformer	Zone Substation Transformers	No.	-	-	-	-	-	N/A	-
46	HV	Distribution Line	Distribution OH Open Wire Conductor	km		5.11%	94.89%			3	5.11%
47	HV	Distribution Line	Distribution OH Aerial Cable Conductor	km	-	-	-	-	-	N/A	-
48	HV	Distribution Line	SWER conductor	km	-	-	-	-	-	N/A	-
49	HV	Distribution Cable	Distribution UG XLPE or PVC	km		-			100.00%	1	-
50	HV	Distribution Cable	Distribution UG PILC	km		-			100.00%	1	-
51	HV	Distribution Cable	Distribution Submarine Cable	km	-	-	-	-	-	N/A	-
52	HV	Distribution switchgear	3.3/6.6/11/22kV CB (pole mounted) - reclosers and sectionalisers	No.		15.19%	84.81%			4	15.19%
53	HV	Distribution switchgear	3.3/6.6/11/22kV CB (Indoor)	No.	-	-	-	-	-	N/A	-
54	HV	Distribution switchgear	3.3/6.6/11/22kV Switches and fuses (pole mounted)	No.		5.01%	94.99%			1	5.01%
55	HV	Distribution switchgear	3.3/6.6/11/22kV Switch (ground mounted) - except RMU	No.	-	-	-	-	-	N/A	-
56	HV	Distribution switchgear	3.3/6.6/11/22kV RMU	No.		-	100.00%			4	-
57	HV	Distribution Transformer	Pole Mounted Transformer	No.		6.78%	93.22%			3	6.78%
58	HV	Distribution Transformer	Ground Mounted Transformer	No.		6.11%	93.89%			3	6.11%
59	HV	Distribution Transformer	Voltage regulators	No.		12.50%	87.50%			4	12.50%
60	HV	Distribution Substations	Ground Mounted Substation Housing	No.	-	-	-	-	-	N/A	-
61	LV	LV Line	LV OH Conductor	km		1.96%	98.04%			3	1.96%
62	LV	LV Cable	LV UG Cable	km		-			100.00%	1	-
63	LV	LV Streetlighting	LV OH/UG Streetlight circuit	km		1.59%	98.41%			1	1.59%
64	LV	Connections	OH/UG consumer service connections	No.		1.58%	98.42%			1	1.58%
65	All	Protection	Protection relays (electromechanical, solid state and numeric)	No.	-	-	-	-	-	N/A	-
66	All	SCADA and communications	SCADA and communications equipment operating as a single system	Lot		-	100.00%			4	-
67	All	Capacitor Banks	Capacitors including controls	No.	-	-	-	-	-	N/A	-
68	All	Load Control	Centralised plant	Lot		-	100.00%			4	-
69	All	Load Control	Relays	No.		1.00%	99.00%			3	1.00%
70	All	Civils	Cable Tunnels	km	-	-	-	-	-	N/A	-

Company Name	Waipa Networks Limited
AMP Planning Period	1 April 2013 – 31 March 2023

SCHEDULE 12b: REPORT ON FORECAST CAPACITY

This schedule requires a breakdown of current and forecast capacity and utilisation for each zone substation and current distribution transformer capacity. The data provided should be consistent with the information provided in the AMP. Information provided in this table should relate to the operation of the network in its normal steady state configuration.

sch ref

12b(i): System Growth - Zone Substations

Existing Zone Substations	Current Peak Load (MVA)	Installed Firm Capacity (MVA)	Security of Supply Classification (type)	Transfer Capacity (MVA)	Utilisation of Installed Firm Capacity %	Installed Firm Capacity +5 years (MVA)	Utilisation of Installed Firm Capacity + 5yrs %	Installed Firm Capacity Constraint +5 years (cause)	Explanation
Transpower GXP Cambridge	36	40	N-1	-	90%	40	97%	No constraint within +5 years	Exceeds installed firm capacity by 4.5% in 10 years. However, Fonterra haven't used all their contracted 10MW MD to date and are continually implementing energy efficiency initiatives. Further, Transpower's transformers have a short term overload rating of 46MVA which will cope with peak demand periods.
Transpower GXP Te Awamutu	34	40	N-1	-	85%	40	93%	No constraint within +5 years	Exceeds installed firm capacity by 2.6% in 10 years. However, Transpower's transformers have a short term overload rating of 46MVA which will cope with peak periods.
					-				
					-				
					-				
					-				
					-				
					-				
					-				
					-				
					-				
					-				
					-				
					-				
					-				
					-				
					-				
					-				
					-				

[1] *Extend forecast capacity table as necessary to disclose all capacity by each zone substation*

12b(ii): Transformer Capacity

	(MVA)
Distribution transformer capacity (EDB owned)	216
Distribution transformer capacity (Non-EDB owned)	49
Total distribution transformer capacity	264
Zone substation transformer capacity	N/A

Company Name	Waipa Networks Limited
AMP Planning Period	1 April 2013 – 31 March 2023

SCHEDULE 12C: REPORT ON FORECAST NETWORK DEMAND

This schedule requires a forecast of new connections (by consumer type), peak demand and energy volumes for the disclosure year and a 5 year planning period. The forecasts should be consistent with the supporting information set out in the AMP as well as the assumptions used in developing the expenditure forecasts in Schedule 11a and Schedule 11b and the capacity and utilisation forecasts in Schedule 12b.

sch ref

12c(i): Consumer Connections

Number of ICPs connected in year by consumer type

		Number of connections					
		Current Year CY	*CY+1*	*CY+2*	*CY+3*	*CY+4*	*CY+5*
	for year ended	**31 Mar 13**	**31 Mar 14**	**31 Mar 15**	**31 Mar 16**	**31 Mar 17**	**31 Mar 18**
*Consumer types defined by EDB**							
Domestic		271	275	279	282	286	290
Non Domestic		60	61	62	63	63	64
Connections total		331	336	340	345	350	355

**include additional rows if needed*

Distributed generation

Number of connections		6	9	12	12	12	12
Installed connection capacity of distributed generation (MVA)		0	0	0	0	0	0

12c(ii) System Demand

		Current Year CY	*CY+1*	*CY+2*	*CY+3*	*CY+4*	*CY+5*
Maximum coincident system demand (MW)	for year ended	**31 Mar 13**	**31 Mar 14**	**31 Mar 15**	**31 Mar 16**	**31 Mar 17**	**31 Mar 18**
GXP demand		71	73	74	76	77	79
plus Distributed generation output at HV and above		-	-	-	-	-	-
Maximum coincident system demand		71	73	74	76	77	79
less Net transfers to (from) other EDBs at HV and above		1	1	1	1	1	1
Demand on system for supply to consumers' connection points		71	72	73	75	76	78

Electricity volumes carried (GWh)

Electricity supplied from GXPs		377	383	390	396	403	410
less Electricity exports to GXPs		-	-	-	-	-	-
plus Electricity supplied from distributed generation		2	2	2	2	2	2
less Net electricity supplied to (from) other EDBs		2	2	2	2	2	2
Electricity entering system for supply to ICPs		376	383	389	396	402	409
less Total energy delivered to ICPs		352	358	364	370	376	383
Losses		24	25	25	26	26	26
Load factor		61%	61%	60%	60%	60%	60%
Loss ratio		6.5%	6.5%	6.5%	6.5%	6.5%	6.5%

Company Name	**Waipa Networks Limited**
AMP Planning Period	**1 April 2013 – 31 March 2023**
Network / Sub-network Name	

SCHEDULE 12d: REPORT FORECAST INTERRUPTIONS AND DURATION

This schedule requires a forecast of SAIFI and SAIDI for disclosure and a 5 year planning period. The forecasts should be consistent with the supporting information set out in the AMP as well as the assumed impact of planned and unplanned SAIFI and SAIDI on the expenditures forecast provided in Schedule 11a and Schedule 11b.

sch ref		*Current Year CY*	*CY+1*	*CY+2*	*CY+3*	*CY+4*	*CY+5*
9	for year ended	**31 Mar 13**	**31 Mar 14**	**31 Mar 15**	**31 Mar 16**	**31 Mar 17**	**31 Mar 18**
10	**SAIDI**						
11	Class B (planned interruptions on the network)	38.0	38.0	38.0	38.0	38.0	38.0
12	Class C (unplanned interruptions on the network)	133.0	132.0	131.0	130.0	129.0	128.0
13	**SAIFI**						
14	Class B (planned interruptions on the network)	0.13	0.13	0.13	0.13	0.13	0.13
15	Class C (unplanned interruptions on the network)	2.31	2.30	2.28	2.27	2.25	2.24

Company Name	Waipa Networks Limited
AMP Planning Period	1 April 2013 – 31 March 2023
Asset Management Standard Applied	

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY

This schedule requires information on the EDB'S self-assessment of the maturity of its asset management practices .

Question No	Function	Question	Score	Evidence—Summary	User Guidance	Why	Who	Record/documented Information
3	Asset management policy	To what extent has an asset management policy been documented, authorised and communicated?	3	The Asset Management Policy was developed and authorised by the CEO as the overriding statement on asset management of Waipa Networks for reference when preparing the Asset Management Plan. This policy has been promulgated by placement in reception for visitors, Company intranet and internal notice boards for all staff, web-site for other stakeholders, interested parties and Commerce Commission.		Widely used AM practice standards require an organisation to document, authorise and communicate its asset management policy (eg, as required in PAS 55 para 4.2 i). A key pre-requisite of any robust policy is that the organisation's top management must be seen to endorse and fully support it. Also vital to the effective implementation of the policy, is to tell the appropriate people of its content and their obligations under it. Where an organisation outsources some of its asset-related activities, then these people and their organisations must equally be made aware of the policy's content. Also, there may be other stakeholders, such as regulatory authorities and shareholders who should be made aware of it.	Top management. The management team that has overall responsibility for asset management.	The organisation's asset management policy, its organisational strategic plan, documents indicating how the asset management policy was based upon the needs of the organisation and evidence of communication.
10	Asset management strategy	What has the organisation done to ensure that its asset management strategy is consistent with other appropriate organisational policies and strategies, and the needs of stakeholders?	3	The annual SCI and KPIs form the "contract" between Company Directors and Consumer Trust. The AMP is borne out of the Company's Annual Strategic Planning Meeting where Directors and Executive Management construct an Annual Business Plan and strategies to achieve specified outcomes in the SCI. The outcomes of the Strategic Planning Meeting and Business Plan are promulgated to staff and available on the Intranet. The AMP ("blue print" of capital and maintenance activity) is promulgated as appropriate to relevant staff. Refer AMP 2013 Sec 3.0 Background and Objectives, Sec 3.1 Purpose of Plan, Sec 3.2 Interaction with Corporate Goals, Business Planning Process and Plans, Sec 3.3 Period Covered by Plan and Date Certified, Sec 3.4 Stakeholder Interests, Sec 5 Service Levels, Sec 3.5 Accountabilities and Responsibilities for Asset Management. Refer SCI 2012 the contract between Company Directors and Consumer Trust. Refer KPIs 2012 auditable performance reported at the monthly Directors' Meeting and in Company's Annual Report.		In setting an organisation's asset management strategy, it is important that it is consistent with any other policies and strategies that the organisation has and has taken into account the requirements of relevant stakeholders. This question examines to what extent the asset management strategy is consistent with other organisational policies and strategies (eg, as required by PAS 55 para 4.3.1 b) and has taken account of stakeholder requirements as required by PAS 55 para 4.3.1 c). Generally, this will take into account the same polices, strategies and stakeholder requirements as covered in drafting the asset management policy but at a greater level of detail.	Top management. The organisation's strategic planning team. The management team that has overall responsibility for asset management.	The organisation's asset management strategy document and other related organisational policies and strategies. Other than the organisation's strategic plan, these could include those relating to health and safety, environmental, etc. Results of stakeholder consultation.
11	Asset management strategy	In what way does the organisation's asset management strategy take account of the lifecycle of the assets, asset types and asset systems over which the organisation has stewardship?	3	Refer to AMP 2013, Sec 7.0 Life Cycle Asset Management Planning, Sec 7.1 Maintenance Planning Criteria and Assumptions, Sec 7.2 Routine and Corrective Maintenance Policies and Procedures, Sec 7.4 Service Interruptions and Emergencies Policy and Procedures, Sec 7.5 Vegetation Management Policy and Procedures.		Good asset stewardship is the hallmark of an organisation compliant with widely used AM standards. A key component of this is the need to take account of the lifecycle of the assets, asset types and asset systems. (For example, this requirement is recognised in 4.3.1 d) of PAS 55). This question explores what an organisation has done to take lifecycle into account in its asset management strategy.	Top management. People in the organisation with expert knowledge of the assets, asset types, asset systems and their associated life-cycles. The management team that has overall responsibility for asset management. Those responsible for developing and adopting methods and processes used in asset management	The organisation's documented asset management strategy and supporting working documents.
26	Asset management plan(s)	How does the organisation establish and document its asset management plan(s) across the life cycle activities of its assets and asset systems?	3	Refer to AMP 2013, Sec 13.2 Appendix B: Voltage Regulator Programme, Sec 13.3 Appendix C: Remote Controlled Auto Recloser Programme, Sec 13.4 Appendix D: Asset Condition Survey Programme, Sec 13.5 Appendix E: Vegetation Management Programme, Sec 13.6 Appendix F: Earth Testing and Repair Programme, Sec 13.8 Appendix H: Capital Works and Expenditure Forecast, Sec 13.9 Appendix I: Operational Expenditure Forecast.		The asset management strategy need to be translated into practical plan(s) so that all parties know how the objectives will be achieved. The development of plan(s) will need to identify the specific tasks and activities required to optimize costs, risks and performance of the assets and/or asset system(s), when they are to be carried out and the resources required.	The management team with overall responsibility for the asset management system. Operations, maintenance and engineering managers.	The organisation's asset management plan(s).

Company Name	Waipa Networks Limited
AMP Planning Period	1 April 2013 – 31 March 2023
Asset Management Standard Applied	

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

Question No.	Function	Question	Maturity Level 0	Maturity Level 1	Maturity Level 2	Maturity Level 3	Maturity Level 4
3	Asset management policy	To what extent has an asset management policy been documented, authorised and communicated?	The organisation does not have a documented asset management policy.	The organisation has an asset management policy, but it has not been authorised by top management, or it is not influencing the management of the assets.	The organisation has an asset management policy, which has been authorised by top management, but it has had limited circulation. It may be in use to influence development of strategy and planning but its effect is limited.	The asset management policy is authorised by top management, is widely and effectively communicated to all relevant employees and stakeholders, and used to make these persons aware of their asset related obligations.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
10	Asset management strategy	What has the organisation done to ensure that its asset management strategy is consistent with other appropriate organisational policies and strategies, and the needs of stakeholders?	The organisation has not considered the need to ensure that its asset management strategy is appropriately aligned with the organisation's other organisational policies and strategies or with stakeholder requirements. OR The organisation does not have an asset management strategy.	The need to align the asset management strategy with other organisational policies and strategies as well as stakeholder requirements is understood and work has started to identify the linkages or to incorporate them in the drafting of asset management strategy.	Some of the linkages between the long-term asset management strategy and other organisational policies, strategies and stakeholder requirements are defined but the work is fairly well advanced but still incomplete.	All linkages are in place and evidence is available to demonstrate that, where appropriate, the organisation's asset management strategy is consistent with its other organisational policies and strategies. The organisation has also identified and considered the requirements of relevant stakeholders.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
11	Asset management strategy	In what way does the organisation's asset management strategy take account of the lifecycle of the assets, asset types and asset systems over which the organisation has stewardship?	The organisation has not considered the need to ensure that its asset management strategy is produced with due regard to the lifecycle of the assets, asset types or asset systems that it manages. OR The organisation does not have an asset management strategy.	The need is understood, and the organisation is drafting its asset management strategy to address the lifecycle of its assets, asset types and asset systems.	The long-term asset management strategy takes account of the lifecycle of some, but not all, of its assets, asset types and asset systems.	The asset management strategy takes account of the lifecycle of all of its assets, asset types and asset systems.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
26	Asset management plan(s)	How does the organisation establish and document its asset management plan(s) across the life cycle activities of its assets and asset systems?	The organisation does not have an identifiable asset management plan(s) covering asset systems and critical assets.	The organisation has asset management plan(s) but they are not aligned with the asset management strategy and objectives and do not take into consideration the full asset life cycle (including asset creation, acquisition, enhancement, utilisation, maintenance decommissioning and disposal).	The organisation is in the process of putting in place comprehensive, documented asset management plan(s) that cover all life cycle activities, clearly aligned to asset management objectives and the asset management strategy.	Asset management plan(s) are established, documented, implemented and maintained for asset systems and critical assets to achieve the asset management strategy and asset management objectives across all life cycle phases.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.

Company Name	Waipa Networks Limited
AMP Planning Period	1 April 2013 – 31 March 2023
Asset Management Standard Applied	

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

Question	Function	Question	Score	Evidence—Summary	User Guidance	Why	Who	Record/documented Information
27	Asset management plan(s)	How has the organisation communicated its plan(s) to all relevant parties to a level of detail appropriate to the receiver's role in their delivery?	3	AMP Service Levels, Financial Targets and works programmes are communicated to Company Trust members, Directors, Managers and Supervisors by way of hard copy. The AMP is accessible on the Company intranet for all staff and web-site for other stakeholders, interested parties and Commerce Commission. The Company has internal planning, procurement, stores and field crew resources. Planners prepare "Orange" project folders for all capital and maintenance works identified in AMP 2012. Materials are procured by the stores team. Work is undertaken by the field crews. Project quality and costs are audited and reported on when jobs are completed. The financials of network projects are reported on at Directors' monthly Board Meetings. SCADA, radio, directional drilling and traffic management works are performed by external service providers under contract.		Plans will be ineffective unless they are communicated to all those, including contracted suppliers and those who undertake enabling function(s). The plan(s) need to be communicated in a way that is relevant to those who need to use them.	The management team with overall responsibility for the asset management system. Delivery functions and suppliers.	Distribution lists for plan(s). Documents derived from plan(s) which detail the receivers role in plan delivery. Evidence of communication.
29	Asset management plan(s)	How are designated responsibilities for delivery of asset plan actions documented?	3	Refer Sec 3.5 Accountabilities and Responsibilities for Asset Mangement. The Network Asset Manager has overall responsibility for the Asset Management Plan implemenataion. The Network Asset Manager delegates appropriate sections of the AMP works program to appropriate planning and engineering staff and supervisors for implementation.		The implementation of asset management plan(s) relies on (1) actions being clearly identified, (2) an owner allocated and (3) that owner having sufficient delegated responsibility and authority to carry out the work required. It also requires alignment of actions across the organisation. This question explores how well the plan(s) set out responsibility for delivery of asset plan actions.	The management team with overall responsibility for the asset management system. Operations, maintenance and engineering managers. If appropriate, the performance management team.	The organisation's asset management plan(s). Documentation defining roles and responsibilities of individuals and organisational departments.
31	Asset management plan(s)	What has the organisation done to ensure that appropriate arrangements are made available for the efficient and cost effective implementation of the plan(s)? (Note this is about resources and enabling support)	2	Refer AMP 2013 Sec 3.2 Business Planning Process Cycle, Sec 3.5 Accountabilities and Responsibilities for Asset Management, Sec 3.6 Asset Management Process diagram. The "iterative" Business Planning Process Cycle sets and prioritizes all AMP works within the annual and medium term funding available and the availability of adequately skilled labour resources. The availability and cost of contracted services are considered in the Business Planning Process Cycle. A work vs resource balance is assessed and the stated Company strategy of supplementing internal resources with contracted services is followed if required.		It is essential that the plan(s) are realistic and can be implemented, which requires appropriate resources to be available and enabling mechanisms in place. This question explores how well this is achieved. The plan(s) not only need to consider the resources directly required and timescales, but also the enabling activities, including for example, training requirements, supply chain capability and procurement timescales.	The management team with overall responsibility for the asset management system. Operations, maintenance and engineering managers. If appropriate, the performance management team. If appropriate, the performance management team. Where appropriate the procurement team and service providers working on the organisation's asset-related activities.	The organisation's asset management plan(s). Documented processes and procedures for the delivery of the asset management plan.
33	Contingency planning	What plan(s) and procedure(s) does the organisation have for identifying and responding to incidents and emergency situations and ensuring continuity of critical asset management activities?	2	Refer to Business Contingency Plan; AMP 2013 Sec 8.1 and 8.2; Company Health and Safety Manual Sec 7.0, Emergency Planning and Readiness, Sec 7.1, Emergency Readiness, Sec 7.1.1 Responsibilities, Sec 7.1.2 Emergency Service, Sec 7.1.3 Field Work Site Evacuation, Sec 7.1.4 Fire Evacuation Procedure, Sec 7.1.5 Earthquake Evacuation Procedure, Sec 7.1.6 Hazardous Substances Spills or Leaks, Sec 7.1.7 Urgent Medical Emergencies, Sec 7.1.8 Post Incident Review, Sec 7.1.9 Review of Policy. Refer to Public Safety Management System Sec 2 Safety Management System, Sec 3 Asset Description, Sec 4 Identification and Control of Significant Hazards, Sec 5 Safety and Operating Processes and Information, Sec 6 Performance Monitoring. Refer to Business Systems IT "Plan B" contingency arrangements.		Widely used AM practice standards require that an organisation has plan(s) to identify and respond to emergency situations. Emergency plan(s) should outline the actions to be taken to respond to specified emergency situations and ensure continuity of critical asset management activities including the communication to, and involvement of, external agencies. This question assesses if, and how well, these plan(s) triggered, implemented and resolved in the event of an incident. The plan(s) should be appropriate to the level of risk as determined by the organisation's risk assessment methodology. It is also a requirement that relevant personnel are competent and trained.	The manager with responsibility for developing emergency plan(s). The organisation's risk assessment team. People with designated duties within the plan(s) and procedure(s) for dealing with incidents and emergency situations.	The organisation's plan(s) and procedure(s) for dealing with emergencies. The organisation's risk assessments and risk registers.

Company Name	Waipa Networks Limited
AMP Planning Period	1 April 2013 – 31 March 2023
Asset Management Standard Applied	

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

Question No.	Function	Question	Maturity Level 0	Maturity Level 1	Maturity Level 2	Maturity Level 3	Maturity Level 4
27	Asset management plan(s)	How has the organisation communicated its plan(s) to all relevant parties to a level of detail appropriate to the receiver's role in their delivery?	The organisation does not have plan(s) or their distribution is limited to the authors.	The plan(s) are communicated to some of those responsible for delivery of the plan(s). OR Communicated to those responsible for delivery is either irregular or ad-hoc.	The plan(s) are communicated to most of those responsible for delivery but there are weaknesses in identifying relevant parties resulting in incomplete or inappropriate communication. The organisation recognises improvement is needed as is working towards resolution.	The plan(s) are communicated to all relevant employees, stakeholders and contracted service providers to a level of detail appropriate to their participation or business interests in the delivery of the plan(s) and there is confirmation that they are being used effectively.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
29	Asset management plan(s)	How are designated responsibilities for delivery of asset plan actions documented?	The organisation has not documented responsibilities for delivery of asset plan actions.	Asset management plan(s) inconsistently document responsibilities for delivery of plan actions and activities and/or responsibilities and authorities for implementation inadequate and/or delegation level inadequate to ensure effective delivery and/or contain misalignments with organisational accountability.	Asset management plan(s) consistently document responsibilities for the delivery of actions but responsibility/authority levels are inappropriate/ inadequate, and/or there are misalignments within the organisation.	Asset management plan(s) consistently document responsibilities for the delivery actions and there is adequate detail to enable delivery of actions. Designated responsibility and authority for achievement of asset plan actions is appropriate.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
31	Asset management plan(s)	What has the organisation done to ensure that appropriate arrangements are made available for the efficient and cost effective implementation of the plan(s)? (Note this is about resources and enabling support)	The organisation has not considered the arrangements needed for the effective implementation of plan(s).	The organisation recognises the need to ensure appropriate arrangements are in place for implementation of asset management plan(s) and is in the process of determining an appropriate approach for achieving this.	The organisation has arrangements in place for the implementation of asset management plan(s) but the arrangements are not yet adequately efficient and/or effective. The organisation is working to resolve existing weaknesses.	The organisation's arrangements fully cover all the requirements for the efficient and cost effective implementation of asset management plan(s) and realistically address the resources and timescales required, and any changes needed to functional policies, standards, processes and the asset management information system.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
33	Contingency planning	What plan(s) and procedure(s) does the organisation have for identifying and responding to incidents and emergency situations and ensuring continuity of critical asset management activities?	The organisation has not considered the need to establish plan(s) and procedure(s) to identify and respond to incidents and emergency situations.	The organisation has some ad-hoc arrangements to deal with incidents and emergency situations, but these have been developed on a reactive basis in response to specific events that have occurred in the past.	Most credible incidents and emergency situations are identified. Either appropriate plan(s) and procedure(s) are incomplete for critical activities or they are inadequate. Training/ external alignment may be incomplete.	Appropriate emergency plan(s) and procedure(s) are in place to respond to credible incidents and manage continuity of critical asset management activities consistent with policies and asset management objectives. Training and external agency alignment is in place.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.

Company Name	Waipa Networks Limited
AMP Planning Period	1 April 2013 – 31 March 2023
Asset Management Standard Applied	

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

Question No	Function	Question	Score	Evidence—Summary	User Guidance	Why	Who	Record/documented Information
37	Structure, authority and responsibilities	What has the organisation done to appoint member(s) of its management team to be responsible for ensuring that the organisation's assets deliver the requirements of the asset management strategy, objectives and plan(s)?	3	Refer Sec 3.5 Accountabilities and Responsibilities for Asset Mangement. The Network Asset Manager has overall responsibility for the Asset Management Plan implemenataion. The Network Asset Manager delegates appropriate Sections of the AMP works program to appropriate planning and engineering staff and supervisors for implementation. The Network Asset Manager's Position Description includes the responsibililty for implementation of the Asset Management Plan and KPIs. The Network Asset Manager reports at all Board Meeting on progress against the Asset Managemant Plan.		In order to ensure that the organisation's assets and asset systems deliver the requirements of the asset management policy, strategy and objectives responsibilities need to be allocated to appropriate people who have the necessary authority to fulfil their responsibilities. (This question, relates to the organisation's assets eg, para b), s 4.4.1 of PAS 55, making it therefore distinct from the requirement contained in para a), s 4.4.1 of PAS 55).	Top management. People with management responsibility for the delivery of asset management policy, strategy, objectives and plan(s). People working on asset-related activities.	Evidence that managers with responsibility for the delivery of asset management policy, strategy, objectives and plan(s) have been appointed and have assumed their responsibilities. Evidence may include the organisation's documents relating to its asset management system, organisational charts, job descriptions of post-holders, annual targets/objectives and personal development plan(s) of post-holders as appropriate.
40	Structure, authority and responsibilities	What evidence can the organisation's top management provide to demonstrate that sufficient resources are available for asset management?	2	Refer to AMP 2013 Sec 3.5. Resourcing Asset Management. The Company believes there is a national shortage of experienced personnel with asset management skills. It has recruited a number of staff who had potential for this role all of whom have left the Company over the past 5 years. The Company is seeking to appoint a Planning Engineer with appropriate asset management skills. All other functions of the Company are currently adequately resourced.		Optimal asset management requires top management to ensure sufficient resources are available. In this context the term 'resources' includes manpower, materials, funding and service provider support.	Top management. The management team that has overall responsibility for asset management. Risk management team. The organisation's managers involved in day-to-day supervision of asset-related activities, such as frontline managers, engineers, foremen and chargehands as appropriate.	Evidence demonstrating that asset management plan(s) and/or the process(es) for asset management plan implementation consider the provision of adequate resources in both the short and long term. Resources include funding, materials, equipment, services provided by third parties and personnel (internal and service providers) with appropriate skills competencies and knowledge.
42	Structure, authority and responsibilities	To what degree does the organisation's top management communicate the importance of meeting its asset management requirements?	3	The Network Asset Manager delegates appropriate Sections of the AMP works program to planners. The Company holds monthly Operational Meetings for all Supervisors to co-ordinate implementation of the Asset Management Plan . Planners prepare "Orange" project folders for all capital and maintenance works identified in AMP 2012. Project folders are implemented by field staff through the Supervisors.		Widely used AM practice standards require an organisation to communicate the importance of meeting its asset management requirements such that personnel fully understand, take ownership of, and are fully engaged in the delivery of the asset management requirements (eg, PAS 55 s 4.4.1 g).	Top management. The management team that has overall responsibility for asset management. People involved in the delivery of the asset management requirements.	Evidence of such activities as road shows, written bulletins, workshops, team talks and management walk-abouts would assist an organisation to demonstrate it is meeting this requirement of PAS 55.
45	Outsourcing of asset management activities	Where the organisation has outsourced some of its asset management activities, how has it ensured that appropriate controls are in place to ensure the compliant delivery of its organisational strategic plan, and its asset management policy and strategy?	3	Refer AMP 2013 Sec 3.5 Resourcing Asset Management. WEL Networks for Control Room Services, Call Care for customer enquiry and dispatch services and Abbey for SCADA services have contracts which include performance KPI's. All works performed by service providers for SCADA, Radio Systems, Traffic Management on State Highways and directional drilling are contracted on an as required basis and are managed directly by Company Supervisors.		Where an organisation chooses to outsource some of its asset management activities, the organisation must ensure that these outsourced process(es) are under appropriate control to ensure that all the requirements of widely used AM standards (eg, PAS 55) are in place, and the asset management policy, strategy objectives and plan(s) are delivered. This includes ensuring capabilities and resources across a time span aligned to life cycle management. The organisation must put arrangements in place to control the outsourced activities, whether it be to external providers or to other in-house departments. This question explores what the organisation does in this regard.	Top management. The management team that has overall responsibility for asset management. The manager(s) responsible for the monitoring and management of the outsourced activities. People involved with the procurement of outsourced activities. The people within the organisations that are performing the outsourced activities. The people impacted by the outsourced activity.	The organisation's arrangements that detail the compliance required of the outsourced activities. For example, this this could form part of a contract or service level agreement between the organisation and the suppliers of its outsourced activities. Evidence that the organisation has demonstrated to itself that it has assurance of compliance of outsourced activities.

Company Name	Waipa Networks Limited
AMP Planning Period	1 April 2013 – 31 March 2023
Asset Management Standard Applied	

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

Question No.	Function	Question	Maturity Level 0	Maturity Level 1	Maturity Level 2	Maturity Level 3	Maturity Level 4
37	Structure, authority and responsibilities	What has the organisation done to appoint member(s) of its management team to be responsible for ensuring that the organisation's assets deliver the requirements of the asset management strategy, objectives and plan(s)?	Top management has not considered the need to appoint a person or persons to ensure that the organisation's assets deliver the requirements of the asset management strategy, objectives and plan(s).	Top management understands the need to appoint a person or persons to ensure that the organisation's assets deliver the requirements of the asset management strategy, objectives and plan(s).	Top management has appointed an appropriate people to ensure the assets deliver the requirements of the asset management strategy, objectives and plan(s) but their areas of responsibility are not fully defined and/or they have insufficient delegated authority to fully execute their responsibilities.	The appointed person or persons have full responsibility for ensuring that the organisation's assets deliver the requirements of the asset management strategy, objectives and plan(s). They have been given the necessary authority to achieve this.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
40	Structure, authority and responsibilities	What evidence can the organisation's top management provide to demonstrate that sufficient resources are available for asset management?	The organisation's top management has not considered the resources required to deliver asset management.	The organisations top management understands the need for sufficient resources but there are no effective mechanisms in place to ensure this is the case.	A process exists for determining what resources are required for its asset management activities and in most cases these are available but in some instances resources remain insufficient.	An effective process exists for determining the resources needed for asset management and sufficient resources are available. It can be demonstrated that resources are matched to asset management requirements.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
42	Structure, authority and responsibilities	To what degree does the organisation's top management communicate the importance of meeting its asset management requirements?	The organisation's top management has not considered the need to communicate the importance of meeting asset management requirements.	The organisations top management understands the need to communicate the importance of meeting its asset management requirements but does not do so.	Top management communicates the importance of meeting its asset management requirements but only to parts of the organisation.	Top management communicates the importance of meeting its asset management requirements to all relevant parts of the organisation.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
45	Outsourcing of asset management activities	Where the organisation has outsourced some of its asset management activities, how has it ensured that appropriate controls are in place to ensure the compliant delivery of its organisational strategic plan, and its asset management policy and strategy?	The organisation has not considered the need to put controls in place.	The organisation controls its outsourced activities on an ad-hoc basis, with little regard for ensuring for the compliant delivery of the organisational strategic plan and/or its asset management policy and strategy.	Controls systematically considered but currently only provide for the compliant delivery of some, but not all, aspects of the organisational strategic plan and/or its asset management policy and strategy. Gaps exist.	Evidence exists to demonstrate that outsourced activities are appropriately controlled to provide for the compliant delivery of the organisational strategic plan, asset management policy and strategy, and that these controls are integrated into the asset management system	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.

Company Name	Waipa Networks Limited
AMP Planning Period	1 April 2013 – 31 March 2023
Asset Management Standard Applied	

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

Question No	Function	Question	Score	Evidence—Summary	User Guidance	Why	Who	Record/documented Information
48	Training, awareness and competence	How does the organisation develop plan(s) for the human resources required to undertake asset management activities - including the development and delivery of asset management strategy, process(es), objectives and plan(s)?	2	During the budget process a GAP anaylsis is completed to ensure appropriate resouces are available either internal or external. The Company Training Matrix and Individual Personal Development Plans are used to increase skills of current staff as a first option and secondly employing additional staff for long term needs or contractors for short term.		There is a need for an organisation to demonstrate that it has considered what resources are required to develop and implement its asset management system. There is also a need for the organisation to demonstrate that it has assessed what development plan(s) are required to provide its human resources with the skills and competencies to develop and implement its asset management systems. The timescales over which the plan(s) are relevant should be commensurate with the planning horizons within the asset management strategy considers e.g. if the asset management strategy considers 5, 10 and 15 year time scales then the human resources development plan(s) should align with these. Resources include both 'in house' and external resources who undertake asset management activities.	Senior management responsible for agreement of plan(s). Managers responsible for developing asset management strategy and plan(s). Managers with responsibility for development and recruitment of staff (including HR functions). Staff responsible for training. Procurement officers. Contracted service providers.	Evidence of analysis of future work load plan(s) in terms of human resources. Document(s) containing analysis of the organisation's own direct resources and contractors resource capability over suitable timescales. Evidence, such as minutes of meetings, that suitable management forums are monitoring human resource development plan(s). Training plan(s), personal development plan(s), contract and service level agreements.
49	Training, awareness and competence	How does the organisation identify competency requirements and then plan, provide and record the training necessary to achieve the competencies?	2	The Company Training Matrix and Individual Personal Development Plans are used to identify maintain and increase skills of current staff.		Widely used AM standards require that organisations to undertake a systematic identification of the asset management awareness and competencies required at each level and function within the organisation. Once identified the training required to provide the necessary competencies should be planned for delivery in a timely and systematic way. Any training provided must be recorded and maintained in a suitable format. Where an organisation has contracted service providers in place then it should have a means to demonstrate that this requirement is being met for their employees. (eg, PAS 55 refers to frameworks suitable for identifying competency requirements).	Senior management responsible for agreement of plan(s). Managers responsible for developing asset management strategy and plan(s). Managers with responsibility for development and recruitment of staff (including HR functions). Staff responsible for training. Procurement officers. Contracted service providers.	Evidence of an established and applied competency requirements assessment process and plan(s) in place to deliver the required training. Evidence that the training programme is part of a wider, co-ordinated asset management activities training and competency programme. Evidence that training activities are recorded and that records are readily available (for both direct and contracted service provider staff) e.g. via organisation wide information system or local records database.
50	Training, awareness and competence	How does the organization ensure that persons under its direct control undertaking asset management related activities have an appropriate level of competence in terms of education, training or experience?	2	As per our Heath, Safety and Environmental requirements all contractors are inducted to work on our network. The Company does not assess the competence of service providers under its direct control in any other way other than observing the quality of the work performed.		A critical success factor for the effective development and implementation of an asset management system is the competence of persons undertaking these activities. organisations should have effective means in place for ensuring the competence of employees to carry out their designated asset management function(s). Where an organisation has contracted service providers undertaking elements of its asset management system then the organisation shall assure itself that the outsourced service provider also has suitable arrangements in place to manage the competencies of its employees. The organisation should ensure that the individual and corporate competencies it requires are in place and actively monitor, develop and maintain an appropriate balance of these competencies.	Managers, supervisors, persons responsible for developing training programmes. Staff responsible for procurement and service agreements. HR staff and those responsible for recruitment.	Evidence of a competency assessment framework that aligns with established frameworks such as the asset management Competencies Requirements Framework (Version 2.0); National Occupational Standards for Management and Leadership; UK Standard for Professional Engineering Competence, Engineering Council, 2005.

Company Name	Waipa Networks Limited
AMP Planning Period	1 April 2013 – 31 March 2023
Asset Management Standard Applied	

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

Question No.	Function	Question	Maturity Level 0	Maturity Level 1	Maturity Level 2	Maturity Level 3	Maturity Level 4
48	Training, awareness and competence	How does the organisation develop plan(s) for the human resources required to undertake asset management activities - including the development and delivery of asset management strategy, process(es), objectives and plan(s)?	The organisation has not recognised the need for assessing human resources requirements to develop and implement its asset management system.	The organisation has recognised the need to assess its human resources requirements and to develop a plan(s). There is limited recognition of the need to align these with the development and implementation of its asset management system.	The organisation has developed a strategic approach to aligning competencies and human resources to the asset management system including the asset management plan but the work is incomplete or has not been consistently implemented.	The organisation can demonstrate that plan(s) are in place and effective in matching competencies and capabilities to the asset management system including the plan for both internal and contracted activities. Plans are reviewed integral to asset management system process(es).	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
49	Training, awareness and competence	How does the organisation identify competency requirements and then plan, provide and record the training necessary to achieve the competencies?	The organisation does not have any means in place to identify competency requirements.	The organisation has recognised the need to identify competency requirements and then plan, provide and record the training necessary to achieve the competencies.	The organisation is the process of identifying competency requirements aligned to the asset management plan(s) and then plan, provide and record appropriate training. It is incomplete or inconsistently applied.	Competency requirements are in place and aligned with asset management plan(s). Plans are in place and effective in providing the training necessary to achieve the competencies. A structured means of recording the competencies achieved is in place.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
50	Training, awareness and competence	How does the organization ensure that persons under its direct control undertaking asset management related activities have an appropriate level of competence in terms of education, training or experience?	The organization has not recognised the need to assess the competence of person(s) undertaking asset management related activities.	Competency of staff undertaking asset management related activities is not managed or assessed in a structured way, other than formal requirements for legal compliance and safety management.	The organization is in the process of putting in place a means for assessing the competence of person(s) involved in asset management activities including contractors. There are gaps and inconsistencies.	Competency requirements are identified and assessed for all persons carrying out asset management related activities - internal and contracted. Requirements are reviewed and staff reassessed at appropriate intervals aligned to asset management requirements.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.

Company Name	Waipa Networks Limited
AMP Planning Period	1 April 2013 – 31 March 2023
Asset Management Standard Applied	

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

Question No	Function	Question	Score	Evidence—Summary	User Guidance	Why	Who	Record/documented Information
53	Communication, participation and consultation	How does the organisation ensure that pertinent asset management information is effectively communicated to and from employees and other stakeholders, including contracted service providers?	3	AMP Service Levels, Financial Targets and works programmes are communicated to Company Trust members, Directors, Managers and Supervisors by way of hard copy. The AMP is accessible on the Company intranet for all staff and web-site for other stakeholders, interested parties and Commerce Commission. The Company has internal planning, procurement, stores and field crew resources. Planners prepare "Orange" project folders for all capital and maintenance works identified in the AMP. Materials are procured by the stores team. Work is undertaken by the field crews. Project quality and costs are audited and reported on when jobs are completed. The financials of network projects are reported on at Directors' monthly Board Meetings. SCADA, radio, directional drilling and traffic management works are performed by external service providers under contract. All these methods of communication inform and allow for staff, contracted service providers and other stakeholder feedback.		Widely used AM practice standards require that pertinent asset management information is effectively communicated to and from employees and other stakeholders including contracted service providers. Pertinent information refers to information required in order to effectively and efficiently comply with and deliver asset management strategy, plan(s) and objectives. This will include for example the communication of the asset management policy, asset performance information, and planning information as appropriate to contractors.	Top management and senior management representative(s), employee's representative(s), employee's trade union representative(s); contracted service provider management and employee representative(s); representative(s) from the organisation's Health, Safety and Environmental team. Key stakeholder representative(s).	Asset management policy statement prominently displayed on notice boards, intranet and internet; use of organisation's website for displaying asset performance data; evidence of formal briefings to employees, stakeholders and contracted service providers; evidence of inclusion of asset management issues in team meetings and contracted service provider contract meetings; newsletters, etc.
59	Asset Management System documentation	What documentation has the organisation established to describe the main elements of its asset management system and interactions between them?	3	Refer to whole of AMP 2013. The Design Manual which has been issued in hard copy to all Manager, Supervisors, Planners and Foreman and has been placed on the intranet for all staff and on the web-site for contracted services providers, other stakeholders, interested parties and Commerce Commission .		Widely used AM practice standards require an organisation maintain up to date documentation that ensures that its asset management systems (ie, the systems the organisation has in place to meet the standards) can be understood, communicated and operated. (eg, s 4.5 of PAS 55 requires the maintenance of up to date documentation of the asset management system requirements specified throughout s 4 of PAS 55).	The management team that has overall responsibility for asset management. Managers engaged in asset management activities.	The documented information describing the main elements of the asset management system (process(es)) and their interaction.
62	Information management	What has the organisation done to determine what its asset management information system(s) should contain in order to support its asset management system?	3	Refer AMP 2013 Sec 3.6 Asset Management Systems, Processes and Information. The Network Asset Manager and Network Information Officer determine the data that is held in the Asset Managementment Information Systems. When new requirements are identified the Network Asset Manager and Network Information Officer request improvements that are designed and implemented by IT and the Operations Committee offers feedback in this iterative process.		Effective asset management requires appropriate information to be available. Widely used AM standards therefore require the organisation to identify the asset management information it requires in order to support its asset management system. Some of the information required may be held by suppliers. The maintenance and development of asset management information systems is a poorly understood specialist activity that is akin to IT management but different from IT management. This group of questions provides some indications as to whether the capability is available and applied. Note: To be effective, an asset information management system requires the mobilisation of technology, people and process(es) that create, secure, make available and destroy the information required to support the asset management system.	The organisation's strategic planning team. The management team that has overall responsibility for asset management. Information management team. Operations, maintenance and engineering managers	Details of the process the organisation has employed to determine what its asset information system should contain in order to support its asset management system. Evidence that this has been effectively implemented.
63	Information management	How does the organisation maintain its asset management information system(s) and ensure that the data held within it (them) is of the requisite quality and accuracy and is consistent?	3	Refer AMP 2013 Sec 3.6 Asset Management Systems, Processes and Information. The Network Information Officer populates the Asset Equipment Data Bases and inputs are audited for errors and irregularities. The Network Asset Manager and Network Information Officer request improvements that are designed and implemented by IT and the Operations Committee offers feedback in this iterative process.		The response to the questions is progressive. A higher scale cannot be awarded without achieving the requirements of the lower scale. This question explores how the organisation ensures that information management meets widely used AM practice requirements (eg, s 4.4.6 (a), (c) and (d) of PAS 55).	The management team that has overall responsibility for asset management. Users of the organisational information systems.	The asset management information system, together with the policies, procedure(s), improvement initiatives and audits regarding information controls.

Company Name	Waipa Networks Limited
AMP Planning Period	1 April 2013 – 31 March 2023
Asset Management Standard Applied	

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

Question No.	Function	Question	Maturity Level 0	Maturity Level 1	Maturity Level 2	Maturity Level 3	Maturity Level 4
53	Communication, participation and consultation	How does the organisation ensure that pertinent asset management information is effectively communicated to and from employees and other stakeholders, including contracted service providers?	The organisation has not recognised the need to formally communicate any asset management information.	There is evidence that the pertinent asset management information to be shared along with those to share it with is being determined.	The organisation has determined pertinent information and relevant parties. Some effective two way communication is in place but as yet not all relevant parties are clear on their roles and responsibilities with respect to asset management information.	Two way communication is in place between all relevant parties, ensuring that information is effectively communicated to match the requirements of asset management strategy, plan(s) and process(es). Pertinent asset information requirements are regularly reviewed.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
59	Asset Management System documentation	What documentation has the organisation established to describe the main elements of its asset management system and interactions between them?	The organisation has not established documentation that describes the main elements of the asset management system.	The organisation is aware of the need to put documentation in place and is in the process of determining how to document the main elements of its asset management system.	The organisation in the process of documenting its asset management system and has documentation in place that describes some, but not all, of the main elements of its asset management system and their interaction.	The organisation has established documentation that comprehensively describes all the main elements of its asset management system and the interactions between them. The documentation is kept up to date.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
62	Information management	What has the organisation done to determine what its asset management information system(s) should contain in order to support its asset management system?	The organisation has not considered what asset management information is required.	The organisation is aware of the need to determine in a structured manner what its asset information system should contain in order to support its asset management system and is in the process of deciding how to do this.	The organisation has developed a structured process to determine what its asset information system should contain in order to support its asset management system and has commenced implementation of the process.	The organisation has determined what its asset information system should contain in order to support its asset management system. The requirements relate to the whole life cycle and cover information originating from both internal and external sources.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
63	Information management	How does the organisation maintain its asset management information system(s) and ensure that the data held within it (them) is of the requisite quality and accuracy and is consistent?	There are no formal controls in place or controls are extremely limited in scope and/or effectiveness.	The organisation is aware of the need for effective controls and is in the process of developing an appropriate control process(es).	The organisation has developed a controls that will ensure the data held is of the requisite quality and accuracy and is consistent and is in the process of implementing them.	The organisation has effective controls in place that ensure the data held is of the requisite quality and accuracy and is consistent. The controls are regularly reviewed and improved where necessary.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.

Company Name	Waipa Networks Limited
AMP Planning Period	1 April 2013 – 31 March 2023
Asset Management Standard Applied	

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

Question No	Function	Question	Score	Evidence—Summary	User Guidance	Why	Who	Record/documented Information
64	Information management	How has the organisation's ensured its asset management information system is relevant to its needs?	3	Refer AMP 2013 Sec 3.6 Asset Management Systems, Processes and Information. The Network Asset Manager and Network Information Officer request improvements that are designed and implemented by IT and the Operations Committee offers feedback in this iterative process.		Widely used AM standards need not be prescriptive about the form of the asset management information system, but simply require that the asset management information system is appropriate to the organisations needs, can be effectively used and can supply information which is consistent and of the requisite quality and accuracy.	The organisation's strategic planning team. The management team that has overall responsibility for asset management. Information management team. Users of the organisational information systems.	The documented process the organisation employs to ensure its asset management information system aligns with its asset management requirements. Minutes of information systems review meetings involving users.
69	Risk management process(es)	How has the organisation documented process(es) and/or procedure(s) for the identification and assessment of asset and asset management related risks throughout the asset life cycle?	2	Refer to AMP 2013 Sec 8.1. Risk Management Methodology, Sec 8.2 Details of Emergency Response and Contingency Plans. Refer to AMP 2013 Sec 7 Life Cycle Asset Management Planning, Sec 7.1 Maintenance Planning Criteria and Assumptions, Sec 7.2 Routine and Corrective Maintenance Policies and Procedures, Sec 7.3 Asset Replacement and Renewal Policies and Procedures. Refer to Safety Management System for Public Safety Document Sec 2 Safety Management System, Sec 3 asset Description, Sec 4 Identification and Control of Significant Hazards, Sec 5 Safety and Operating Processes and Information, Sec 6 Performance Monitoring. Refer to "minutes" of Health, Safety & Environment Committee monthly meetings where incidents and accidents are analysed (E,I,M). Refer to "minutes" of Operations Team monthly meeting where incidents and accidents are analysed (E,I,M). Refer to Company Hazard Register. Refer to relevant Board Meeting "minutes" example accelerated removal of oil filled switchgear.		Risk management is an important foundation for proactive asset management. Its overall purpose is to understand the cause, effect and likelihood of adverse events occurring, to optimally manage such risks to an acceptable level, and to provide an audit trail for the management of risks. Widely used standards require the organisation to have process(es) and/or procedure(s) in place that set out how the organisation identifies and assesses asset and asset management related risks. The risks have to be considered across the four phases of the asset lifecycle (eg, para 4.3.3 of PAS 55).	The top management team in conjunction with the organisation's senior risk management representatives. There may also be input from the organisation's Safety, Health and Environment team. Staff who carry out risk identification and assessment.	The organisation's risk management framework and/or evidence of specific process(es) and/ or procedure(s) that deal with risk control mechanisms. Evidence that the process(es) and/or procedure(s) are implemented across the business and maintained. Evidence of agendas and minutes from risk management meetings. Evidence of feedback in to process(es) and/or procedure(s) as a result of incident investigation(s). Risk registers and assessments.
79	Use and maintenance of asset risk information	How does the organisation ensure that the results of risk assessments provide input into the identification of adequate resources and training and competency needs?	2	Refer AMP 2013 Sec 7. Life Cycle Asset Management Planning, Sec 7.1 Maintenance Planning Criteria and Assumptions, Sec 7.2 Routine and Corrective Maintenance Policies and Procedures, Sec 7.3 Asset replacement and Renewal Policies and Procedures, Sec 7.4 Service Interruptions and Emergencies Policy and Procedures, Sec 7.5 Vegetation Management Policy and Procedures. Refer to Company Training Matrix and Personal Development Plans. Refer to Company Hazard Register. Refer to Health and Safety Manual. Refer to "minutes" of Health, Safety & Environmental Committee (20% of Company personnel monthly meetings. Refer to "minutes" of Operations Committee monthly meetings. Refer to regular Field Crew Safety Refresher Training. During the budget process a GAP anaylsis is completed to ensure appropriate resouces are avaialble either internal or external. The Company Training Matrix and Individual Personal Development Plans are used to increase skills of current staff as a first option and secondly employing additional staff for long term needs or contractors for short term.		Widely used AM standards require that the output from risk assessments are considered and that adequate resource (including staff) and training is identified to match the requirements. It is a further requirement that the effects of the control measures are considered, as there may be implications in resources and training required to achieve other objectives.	Staff responsible for risk assessment and those responsible for developing and approving resource and training plan(s). There may also be input from the organisation's Safety, Health and Environment team.	The organisations risk management framework. The organisation's resourcing plan(s) and training and competency plan(s). The organisation should be able to demonstrate appropriate linkages between the content of resource plan(s) and training and competency plan(s) to the risk assessments and risk control measures that have been developed.
82	Legal and other requirements	What procedure does the organisation have to identify and provide access to its legal, regulatory, statutory and other asset management requirements, and how is requirements incorporated into the asset management system?	2	Refer AMP 2013 Sec 3.4 Stakeholder Interests. We rely on industry organisations and regulatory bodies to keep us informed of changes.		In order for an organisation to comply with its legal, regulatory, statutory and other asset management requirements, the organisation first needs to ensure that it knows what they are (eg, PAS 55 specifies this in s 4.4.8). It is necessary to have systematic and auditable mechanisms in place to identify new and changing requirements. Widely used AM standards also require that requirements are incorporated into the asset management system (e.g. procedure(s) and process(es))	Top management. The organisations regulatory team. The organisation's legal team or advisors. The management team with overall responsibility for the asset management system. The organisation's health and safety team or advisors. The organisation's policy making team.	The organisational processes and procedures for ensuring information of this type is identified, made accessible to those requiring the information and is incorporated into asset management strategy and objectives

Company Name	Waipa Networks Limited
AMP Planning Period	1 April 2013 – 31 March 2023
Asset Management Standard Applied	

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

Question No.	Function	Question	Maturity Level 0	Maturity Level 1	Maturity Level 2	Maturity Level 3	Maturity Level 4
64	Information management	How has the organisation's ensured its asset management information system is relevant to its needs?	The organisation has not considered the need to determine the relevance of its management information system. At present there are major gaps between what the information system provides and the organisations needs.	The organisation understands the need to ensure its asset management information system is relevant to its needs and is determining an appropriate means by which it will achieve this. At present there are significant gaps between what the information system provides and the organisations needs.	The organisation has developed and is implementing a process to ensure its asset management information system is relevant to its needs. Gaps between what the information system provides and the organisations needs have been identified and action is being taken to close them.	The organisation's asset management information system aligns with its asset management requirements. Users can confirm that it is relevant to their needs.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
69	Risk management process(es)	How has the organisation documented process(es) and/or procedure(s) for the identification and assessment of asset and asset management related risks throughout the asset life cycle?	The organisation has not considered the need to document process(es) and/or procedure(s) for the identification and assessment of asset and asset management related risks throughout the asset life cycle.	The organisation is aware of the need to document the management of asset related risk across the asset lifecycle. The organisation has plan(s) to formally document all relevant process(es) and procedure(s) or has already commenced this activity.	The organisation is in the process of documenting the identification and assessment of asset related risk across the asset lifecycle but it is incomplete or there are inconsistencies between approaches and a lack of integration.	Identification and assessment of asset related risk across the asset lifecycle is fully documented. The organisation can demonstrate that appropriate documented mechanisms are integrated across life cycle phases and are being consistently applied.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
79	Use and maintenance of asset risk information	How does the organisation ensure that the results of risk assessments provide input into the identification of adequate resources and training and competency needs?	The organisation has not considered the need to conduct risk assessments.	The organisation is aware of the need to consider the results of risk assessments and effects of risk control measures to provide input into reviews of resources, training and competency needs. Current input is typically ad-hoc and reactive.	The organisation is in the process ensuring that outputs of risk assessment are included in developing requirements for resources and training. The implementation is incomplete and there are gaps and inconsistencies.	Outputs from risk assessments are consistently and systematically used as inputs to develop resources, training and competency requirements. Examples and evidence is available.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
82	Legal and other requirements	What procedure does the organisation have to identify and provide access to its legal, regulatory, statutory and other asset management requirements, and how is requirements incorporated into the asset management system?	The organisation has not considered the need to identify its legal, regulatory, statutory and other asset management requirements.	The organisation identifies some its legal, regulatory, statutory and other asset management requirements, but this is done in an ad-hoc manner in the absence of a procedure.	The organisation has procedure(s) to identify its legal, regulatory, statutory and other asset management requirements, but the information is not kept up to date, inadequate or inconsistently managed.	Evidence exists to demonstrate that the organisation's legal, regulatory, statutory and other asset management requirements are identified and kept up to date. Systematic mechanisms for identifying relevant legal and statutory requirements.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.

Company Name	Waipa Networks Limited
AMP Planning Period	1 April 2013 – 31 March 2023
Asset Management Standard Applied	

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

Question No	Function	Question	Score	Evidence—Summary	User Guidance	Why	Who	Record/documented Information
88	Life Cycle Activities	How does the organisation establish implement and maintain process(es) for the implementation of its asset management plan(s) and control of activities across the creation, acquisition or enhancement of assets. This includes design, modification, procurement, construction and commissioning activities?	3	Refer AMP 2013 Sec 4.4 Asset Selection Policy. Waipa's asset selection policy is to use only tried and proven products. The Company adopts a position of being "leading edge not bleeding edge". When new modern equivalent assets are considered, their performance and lifecycle cost are evaluated by Waipa's Operations Committee before they are installed on the network. All new assets are sized appropriate for their intended use and life. Refer Design Manual for construction and commissioning policies and procedures.		Life cycle activities are about the implementation of asset management plan(s) i.e. they are the "doing" phase. They need to be done effectively and well in order for asset management to have any practical meaning. As a consequence, widely used standards (eg, PAS 55 s 4.5.1) require organisations to have in place appropriate process(es) and procedure(s) for the implementation of asset management plan(s) and control of lifecycle activities. This question explores those aspects relevant to asset creation.	Asset managers, design staff, construction staff and project managers from other impacted areas of the business, e.g. Procurement	Documented process(es) and procedure(s) which are relevant to demonstrating the effective management and control of life cycle activities during asset creation, acquisition, enhancement including design, modification, procurement, construction and commissioning.
91	Life Cycle Activities	How does the organisation ensure that process(es) and/or procedure(s) for the implementation of asset management plan(s) and control of activities during maintenance (and inspection) of assets are sufficient to ensure activities are carried out under specified conditions, are consistent with asset management strategy and control cost, risk and performance?	3	Refer AMP 2013 Sec 9.1. Financial and Physical Progress, Sec 9.3 Gap Analysis and Identification of Improvement Initiatives. Safety and Quality audits are conducted on a sample basis to monitor performance. Progress against AMP and Finances is a standard report to the Board.		Having documented process(es) which ensure the asset management plan(s) are implemented in accordance with any specified conditions, in a manner consistent with the asset management policy, strategy and objectives and in such a way that cost, risk and asset system performance are appropriately controlled is critical. They are an essential part of turning intention into action (eg, as required by PAS 55 s 4.5.1).	Asset managers, operations managers, maintenance managers and project managers from other impacted areas of the business	Documented procedure for review. Documented procedure for audit of process delivery. Records of previous audits, improvement actions and documented confirmation that actions have been carried out.
95	Performance and condition monitoring	How does the organisation measure the performance and condition of its assets?	3	The Company monitors network performance and reports monthly on SAIDI, SAIFI, CAIDI, planned and unplanned outage causes. Refer to AMP 2013 Sec 7.2 Routine and Corrective Maintenance Policies and Procedures Asset Condition Surveys and Earth Testing and Repair.		Widely used AM standards require that organisations establish implement and maintain procedure(s) to monitor and measure the performance and/or condition of assets and asset systems. They further set out requirements in some detail for reactive and proactive monitoring, and leading/lagging performance indicators together with the monitoring or results to provide input to corrective actions and continual improvement. There is an expectation that performance and condition monitoring will provide input to improving asset management strategy, objectives and plan(s).	A broad cross-section of the people involved in the organisation's asset-related activities from data input to decision-makers, i.e. an end-to end assessment. This should include contactors and other relevant third parties as appropriate.	Functional policy and/or strategy documents for performance or condition monitoring and measurement. The organisation's performance monitoring frameworks, balanced scorecards etc. Evidence of the reviews of any appropriate performance indicators and the action lists resulting from these reviews. Reports and trend analysis using performance and condition information. Evidence of the use of performance and condition information shaping improvements and supporting asset management strategy, objectives and plan(s).
99	Investigation of asset-related failures, incidents and nonconformities	How does the organisation ensure responsibility and the authority for the handling, investigation and mitigation of asset-related failures, incidents and emergency situations and non conformances is clear, unambiguous, understood and communicated?	3	Incidents and emergency situations are managed by the Control Room Operators who are authorised and responsible for assigning staff to respond by making safe and carry out repairs. Contracts with 3rd parties describe responsibilities and performance measures. The Network Asset Manager is reponsible for investigating all network asset failures and performance of the network as per job description. The Public Safety Management System and the Health, Safety and Environmental Manual ensure Identification and Control of Significant Hazards which are included in the Company Hazard Register. Any equipment or design hazards identified are replaced in a planned controlled manner through the asset management plan process. The Network Asset Manager is accountable to CEO and Board.		Widely used AM standards require that the organisation establishes implements and maintains process(es) for the handling and investigation of failures incidents and non-conformities for assets and sets down a number of expectations. Specifically this question examines the requirement to define clearly responsibilities and authorities for these activities, and communicate these unambiguously to relevant people including external stakeholders if appropriate.	The organisation's safety and environment management team. The team with overall responsibility for the management of the assets. People who have appointed roles within the asset-related investigation procedure, from those who carry out the investigations to senior management who review the recommendations. Operational controllers responsible for managing the asset base under fault conditions and maintaining services to consumers. Contractors and other third parties as appropriate.	Process(es) and procedure(s) for the handling, investigation and mitigation of asset-related failures, incidents and emergency situations and non conformances. Documentation of assigned responsibilities and authority to employees. Job Descriptions, Audit reports. Common communication systems i.e. all Job Descriptions on Internet etc.

Company Name	Waipa Networks Limited
AMP Planning Period	1 April 2013 – 31 March 2023
Asset Management Standard Applied	

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

Question No.	Function	Question	Maturity Level 0	Maturity Level 1	Maturity Level 2	Maturity Level 3	Maturity Level 4
88	Life Cycle Activities	How does the organisation establish implement and maintain process(es) for the implementation of its asset management plan(s) and control of activities across the creation, acquisition or enhancement of assets. This includes design, modification, procurement, construction and commissioning activities?	The organisation does not have process(es) in place to manage and control the implementation of asset management plan(s) during activities related to asset creation including design, modification, procurement, construction and commissioning.	The organisation is aware of the need to have process(es) and procedure(s) in place to manage and control the implementation of asset management plan(s) during activities related to asset creation including design, modification, procurement, construction and commissioning but currently do not have these in place (note: procedure(s) may exist but they are inconsistent/incomplete).	The organisation is in the process of putting in place process(es) and procedure(s) to manage and control the implementation of asset management plan(s) during activities related to asset creation including design, modification, procurement, construction and commissioning. Gaps and inconsistencies are being addressed.	Effective process(es) and procedure(s) are in place to manage and control the implementation of asset management plan(s) during activities related to asset creation including design, modification, procurement, construction and commissioning.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
91	Life Cycle Activities	How does the organisation ensure that process(es) and/or procedure(s) for the implementation of asset management plan(s) and control of activities during maintenance (and inspection) of assets are sufficient to ensure activities are carried out under specified conditions, are consistent with asset management strategy and control cost, risk and performance?	The organisation does not have process(es)/procedure(s) in place to control or manage the implementation of asset management plan(s) during this life cycle phase.	The organisation is aware of the need to have process(es) and procedure(s) in place to manage and control the implementation of asset management plan(s) during this life cycle phase but currently do not have these in place and/or there is no mechanism for confirming they are effective and where needed modifying them.	The organisation is in the process of putting in place process(es) and procedure(s) to manage and control the implementation of asset management plan(s) during this life cycle phase. They include a process for confirming the process(es)/procedure(s) are effective and if necessary carrying out modifications.	The organisation has in place process(es) and procedure(s) to manage and control the implementation of asset management plan(s) during this life cycle phase. They include a process, which is itself regularly reviewed to ensure it is effective, for confirming the process(es)/ procedure(s) are effective and if necessary carrying out modifications.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
95	Performance and condition monitoring	How does the organisation measure the performance and condition of its assets?	The organisation has not considered how to monitor the performance and condition of its assets.	The organisation recognises the need for monitoring asset performance but has not developed a coherent approach. Measures are incomplete, predominantly reactive and lagging. There is no linkage to asset management objectives.	The organisation is developing coherent asset performance monitoring linked to asset management objectives. Reactive and proactive measures are in place. Use is being made of leading indicators and analysis. Gaps and inconsistencies remain.	Consistent asset performance monitoring linked to asset management objectives is in place and universally used including reactive and proactive measures. Data quality management and review process are appropriate. Evidence of leading indicators and analysis.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
99	Investigation of asset-related failures, incidents and nonconformities	How does the organisation ensure responsibility and the authority for the handling, investigation and mitigation of asset-related failures, incidents and emergency situations and non conformances is clear, unambiguous, understood and communicated?	The organisation has not considered the need to define the appropriate responsibilities and the authorities.	The organisation understands the requirements and is in the process of determining how to define them.	The organisation are in the process of defining the responsibilities and authorities with evidence. Alternatively there are some gaps or inconsistencies in the identified responsibilities/authorities.	The organisation have defined the appropriate responsibilities and authorities and evidence is available to show that these are applied across the business and kept up to date.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.

Company Name	Waipa Networks Limited
AMP Planning Period	1 April 2013 – 31 March 2023
Asset Management Standard Applied	

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

Question No	Function	Question	Score	Evidence—Summary	User Guidance	Why	Who	Record/documented Information
105	Audit	What has the organisation done to establish procedure(s) for the audit of its asset management system (process(es))?	1	Whilst Waipa's AMP's asset management systems and processes developed by the Network Asset Manager, the Financial Controller and the Network Information Officer are subject to internal review by Executive Management they have never been audited by an external auditor. Waipa intends evaluating if there are any significant benefits for the Company from having the AMP's asset management systems and processes being externally audited.		This question seeks to explore what the organisation has done to comply with the standard practice AM audit requirements (eg, the associated requirements of PAS 55 s 4.6.4 and its linkages to s 4.7).	The management team responsible for its asset management procedure(s). The team with overall responsibility for the management of the assets. Audit teams, together with key staff responsible for asset management. For example, Asset Management Director, Engineering Director. People with responsibility for carrying out risk assessments	The organisation's asset-related audit procedure(s). The organisation's methodology(s) by which it determined the scope and frequency of the audits and the criteria by which it identified the appropriate audit personnel. Audit schedules, reports etc. Evidence of the procedure(s) by which the audit results are presented, together with any subsequent communications. The risk assessment schedule or risk registers.
109	Corrective & Preventative action	How does the organisation instigate appropriate corrective and/or preventive actions to eliminate or prevent the causes of identified poor performance and non conformance?	3	The Network Asset Manager is reponsible for investigating all network asset failures and performance of the network as per job description. The Public Safety Management System and the Health, Safety and Environmental Manual ensure Identification and Control of Significant Hazards which are included in the Company Hazard Register. Any equipment or design hazards identified are replaced in a planned controlled manner through the asset management plan process. The Network Asset Manager is accountable to CEO and Board.		Having investigated asset related failures, incidents and non-conformances, and taken action to mitigate their consequences, an organisation is required to implement preventative and corrective actions to address root causes. Incident and failure investigations are only useful if appropriate actions are taken as a result to assess changes to a businesses risk profile and ensure that appropriate arrangements are in place should a recurrence of the incident happen. Widely used AM standards also require that necessary changes arising from preventive or corrective action are made to the asset management system.	The management team responsible for its asset management procedure(s). The team with overall responsibility for the management of the assets. Audit and incident investigation teams. Staff responsible for planning and managing corrective and preventive actions.	Analysis records, meeting notes and minutes, modification records. Asset management plan(s), investigation reports, audit reports, improvement programmes and projects. Recorded changes to asset management procedure(s) and process(es). Condition and performance reviews. Maintenance reviews
113	Continual Improvement	How does the organisation achieve continual improvement in the optimal combination of costs, asset related risks and the performance and condition of assets and asset systems across the whole life cycle?	3	Refer AMP 2013 Sec 7. Life Cycle Asset Management Planning, Sec 7.1 Maintenance Planning Criteria and Assumptions, Sec 7.2 Routine and Corrective Maintenance Policies and Procedures, Sec 7.3 Asset replacement and Renewal Policies and Procedures, Sec 7.4 Service Interruptions and Emergencies Policy and Procedures, Sec 7.5 Vegetation Management Policy and Procedures. These AMP Sections set the Company's criteria of risk and performance against which optimal (the cost of) continual improvement is measured.		Widely used AM standards have requirements to establish, implement and maintain process(es)/procedure(s) for identifying, assessing, prioritising and implementing actions to achieve continual improvement. Specifically there is a requirement to demonstrate continual improvement in optimisation of cost risk and performance/condition of assets across the life cycle. This question explores an organisation's capabilities in this area—looking for systematic improvement mechanisms rather that reviews and audit (which are separately examined).	The top management of the organisation. The manager/team responsible for managing the organisation's asset management system, including its continual improvement. Managers responsible for policy development and implementation.	Records showing systematic exploration of improvement. Evidence of new techniques being explored and implemented. Changes in procedure(s) and process(es) reflecting improved use of optimisation tools/techniques and available information. Evidence of working parties and research.
115	Continual Improvement	How does the organisation seek and acquire knowledge about new asset management related technology and practices, and evaluate their potential benefit to the organisation?	3	Company Management and Supervisors who manage and operate network assets regularly participate in EEA, ESAA, ESITO and Transpower conferences, exhibitions and industry forums at which they are able to update themselves on new asset options and experiences others have had with existing network assets. Company Management and Supervisors regularly liaise with other EDBs and the Suppliers of assets concerning the adoption of new products and problems with existing asset.		One important aspect of continual improvement is where an organisation looks beyond its existing boundaries and knowledge base to look at what 'new things are on the market'. These new things can include equipment, process(es), tools, etc. An organisation which does this (eg, by the PAS 55 s 4.6 standards) will be able to demonstrate that it continually seeks to expand its knowledge of all things affecting its asset management approach and capabilities. The organisation will be able to demonstrate that it identifies any such opportunities to improve, evaluates them for suitability to its own organisation and implements them as appropriate. This question explores an organisation's approach to this activity.	The top management of the organisation. The manager/team responsible for managing the organisation's asset management system, including its continual improvement. People who monitor the various items that require monitoring for 'change'. People that implement changes to the organisation's policy, strategy, etc. People within an organisation with responsibility for investigating, evaluating, recommending and implementing new tools and techniques, etc.	Research and development projects and records, benchmarking and participation knowledge exchange professional forums. Evidence of correspondence relating to knowledge acquisition. Examples of change implementation and evaluation of new tools, and techniques linked to asset management strategy and objectives.

Company Name	Waipa Networks Limited
AMP Planning Period	1 April 2013 – 31 March 2023
Asset Management Standard Applied	

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

Question No.	Function	Question	Maturity Level 0	Maturity Level 1	Maturity Level 2	Maturity Level 3	Maturity Level 4
105	Audit	What has the organisation done to establish procedure(s) for the audit of its asset management system (process(es))?	The organisation has not recognised the need to establish procedure(s) for the audit of its asset management system.	The organisation understands the need for audit procedure(s) and is determining the appropriate scope, frequency and methodology(s).	The organisation is establishing its audit procedure(s) but they do not yet cover all the appropriate asset-related activities.	The organisation can demonstrate that its audit procedure(s) cover all the appropriate asset-related activities and the associated reporting of audit results. Audits are to an appropriate level of detail and consistently managed.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
109	Corrective & Preventative action	How does the organisation instigate appropriate corrective and/or preventive actions to eliminate or prevent the causes of identified poor performance and non conformance?	The organisation does not recognise the need to have systematic approaches to instigating corrective or preventive actions.	The organisation recognises the need to have systematic approaches to instigating corrective or preventive actions. There is ad-hoc implementation for corrective actions to address failures of assets but not the asset management system.	The need is recognized for systematic instigation of preventive and corrective actions to address root causes of non compliance or incidents identified by investigations, compliance evaluation or audit. It is only partially or inconsistently in place.	Mechanisms are consistently in place and effective for the systematic instigation of preventive and corrective actions to address root causes of non compliance or incidents identified by investigations, compliance evaluation or audit.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
113	Continual Improvement	How does the organisation achieve continual improvement in the optimal combination of costs, asset related risks and the performance and condition of assets and asset systems across the whole life cycle?	The organisation does not consider continual improvement of these factors to be a requirement, or has not considered the issue.	A Continual Improvement ethos is recognised as beneficial, however it has just been started, and or covers partially the asset drivers.	Continuous improvement process(es) are set out and include consideration of cost risk, performance and condition for assets managed across the whole life cycle but it is not yet being systematically applied.	There is evidence to show that continuous improvement process(es) which include consideration of cost risk, performance and condition for assets managed across the whole life cycle are being systematically applied.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
115	Continual Improvement	How does the organisation seek and acquire knowledge about new asset management related technology and practices, and evaluate their potential benefit to the organisation?	The organisation makes no attempt to seek knowledge about new asset management related technology or practices.	The organisation is inward looking, however it recognises that asset management is not sector specific and other sectors have developed good practice and new ideas that could apply. Ad-hoc approach.	The organisation has initiated asset management communication within sector to share and, or identify 'new' to sector asset management practices and seeks to evaluate them.	The organisation actively engages internally and externally with other asset management practitioners, professional bodies and relevant conferences. Actively investigates and evaluates new practices and evolves its asset management activities using appropriate developments.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.

14.8 Schedule 17: Certification for Year-beginning Disclosures

Clause 2.9.1 of section 2.9

We, Diane Mary Reed and Richard Zbigniew Kadziolka, being directors of Waipa Networks Limited certify that, having made all reasonable enquiry, to the best of our knowledge –

The following attached information of Waipa Networks Limited prepared for the purposes of clause 2.4.1, clause 2.6.1 and sub clauses 2.6.3(4) and 2.6.5(3) of the Electricity Distribution Information Disclosure Determination 2012 in all material respects complies with that determination.

The prospective financial or non-financial information included in the attached information has been measured on a basis consistent with regulatory requirements or recognised industry standards.

Diane Mary Reed

Richard Zbigniew Kadziolka

26 March 2013