



# WASTE MANAGEMENT AND UTILITY SERVICES PROFILE STATEMENT

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## **1 Introduction**

### **1.1 Background**

This profile statement provides a summary of the characteristics of service provision in the Waipa District, in particular the provision of solid waste disposal, power, gas and telecommunications services.

### **1.2 Purpose**

The purpose of this document is to provide a snapshot of the current and expected provision of services to the Waipa District in the four key areas outlined above. This report has been prepared to better understand the current situation, as well as the likely implications for future provision given expected growth in population and resulting growth in the need for domestic and business services. This paper will assist Council in understanding future needs and opportunities for the community to assist in the preparation of the Growth Strategy and in the review of the District Plan.

### **1.3 Definitions**

WDC – Waipa District Council;

n-1 supply – Dual line level of service reliability in power network;

n' supply – Single line level of service reliability in power network;

RSL – Reliability service level;

ISP – Internet service providers;

GSM – Global system from mobile communication;

### **1.4 Limitations**

With the exception of solid waste disposal, none of these services are provided for (directly or indirectly) by Council. Contact has been made with a number of organisations within each of the relevant sectors, however responses have varied due to resourcing issues and security measures on available information. It is acknowledged that this report does not contain all of the information required to complete the profile of service provision in the Waipa District, however all available information has been included.

Key information that is currently outstanding includes:

- n Information on the existing Vodafone network within the District;
- n 'District' specific services from Waipa Networks, WEL Network and Powerco;
- n 'District' specific projects by Waipa Networks, WEL Networks and Powerco;

reticulated in a radial pattern from grid exit points to minimise the risk of outages to customers. The three electricity distributors in the District are Waipa Networks, Powerco and WEL Networks. Waipa Networks distribute power to the majority of the District with WEL distributing to a pocket area in the north-east and Powerco in the south-east.

Waipa Networks supply power to the main urban centres of Cambridge and Te Awamutu. Cambridge is supplied via dual lines from Karapiro through an n-1 reliability service level (RSL). Te Awamutu is supplied via only a single line (n' supply RSL) which is considered an unreliable source. Power consumption is high throughout the District during the winter months from June to August and during peak dairy farming months from August to November.

**Map 2.2.1.i Proposed 440kV Whakamaru to Otahuhu transmission line**



**Transpower Projects**

- n Transpower are proposing to install a new 440kV transmission line from Whakamaru to Otahuhu. If the designation is approved, the line will run south to north up the eastern side of the Waipa District (see Map 2.2.1.i).

**Waipa Networks Recent Projects**

- n The Paterangi/Pirongia feeder was split into two in 2007 to improve reliability.
- n The Te Awamutu GXP installed four new circuit breaker switches in 2007 which are used to improve the security of supply to various feeders in the district.
- n The Kaipaki feeder which supplies the Mystery Creek Events Centre was extended to meet new anticipated demands particularly for Field Days.

**Waipa Networks Pending Projects**

- n A new feeder interconnection between Cambridge GXP and Te Awamutu GXP is proposed to improve the security of supply to the Mystery Creek Events Centre.
- n The anticipated urban growth in Leamington, Cambridge could potentially cause capacity constraints in 2008/2009. The Kaipaki feeder will be used when required to offload excess demand.
- n The number of subdivisions and natural growth in south Cambridge will result in the Roto-O-Rangi feeder becoming capacity constrained by 2011/2012. The Leamington and Kaipaki feeder will be used when required to offload excess demand.
- n It is predicted that development of lifestyle blocks in Tamahere will result in the Tamahere feeder becoming capacity constrained by 2014/2015. The Cambridge North feeder will be used when required to offload excess demand.
- n Natural growth from Te Awamutu urban areas will result in capacity constraints in 2008/2009. The Hairini feeder will be used when required to offload excess demand.

**2.2.2 Power Generation**

There is one power generation source within the District, being Karapiro hydro power station, owned and operated by Mighty River Power. Karapiro is the last in a chain of hydro power stations on the Waikato River and is connected to the national grid in Hamilton and also supplies a regional sub-station in Te Awamutu.

Karapiro has been in operation since 1947 and was the second dam to be constructed in the Waikato. The dam is made up of three Kaplan turbines and three generators. The average energy generated from Karapiro is 490 GWh with a total kilowatt output of 90,000kW.

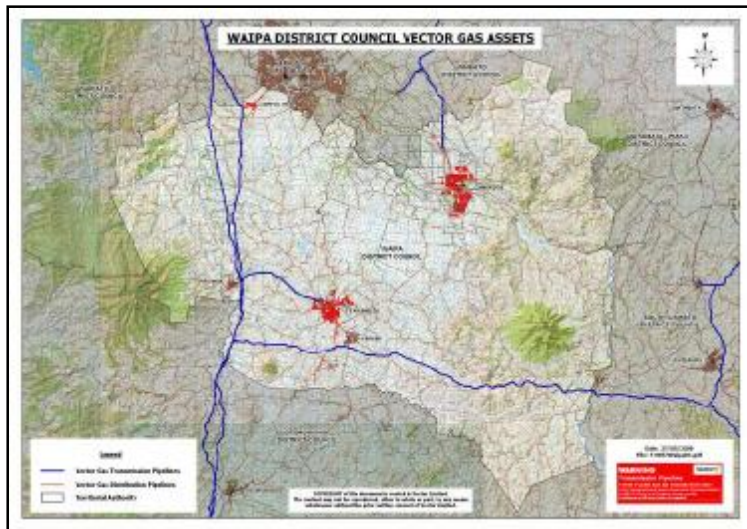
As the last station on the Waikato River, Karapiro is required to maintain minimum water levels in the lower section of the Waikato River. This requires at least two of the three generating units to be operating full time.

### 2.3 Gas

Vector is the only supplier and distributor of gas services in the Waipa District. Currently, Vector has four high pressure transmission pipelines (see map 2.3) supplying the Waipa District from fields offshore and inland around Taranaki. All pipelines are located underground and surface at delivery point stations where gas is distributed to lower pressured distribution pipelines. These supply gas to the District in four urban centres, Cambridge, Te Awamutu, Kihikihi, and Pirongia. The figure below highlights Vector's distribution of natural gas in the District. (Note that the District TLA boundary shown in this figure is not the most recent as the area of Temple View was transferred to Hamilton City Council in 2007.)

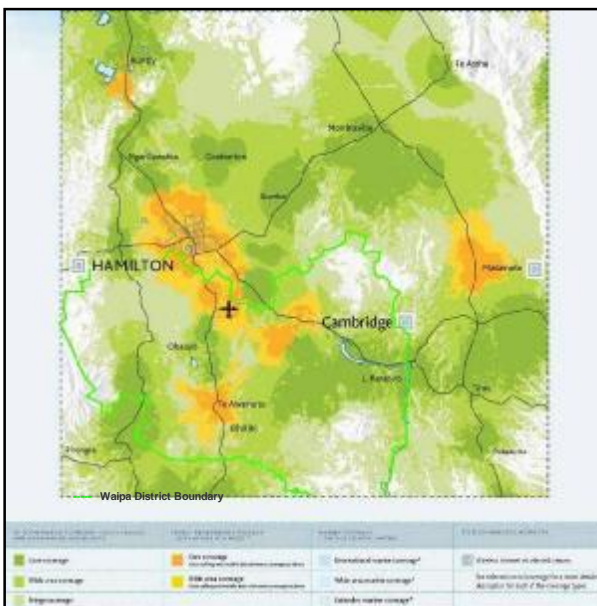
Gas is consumed all year round, however consumption levels vary depending on the season with peak periods experienced during winter, similar to power consumption.

Transmission pipelines are constructed and operated under strict standards which require measures to be in place to ensure the protection of the pipelines from corrosion and third party interference.



Map 2.3 Waipa District - Gas transmission & distribution lines

### 2.4 Telecommunications



Map 2.4.2 Waipa District – Mobile & Broadband Coverage

The information received from Telecom regarding telecommunication services is limited. We have also been unable to procure any information from Vodafone on their network in the Waipa District. TelstraClear have reported they currently do not hold any assets or provide services within the Waipa District.

#### 2.4.1 Fixed Line Coverage

The entire Waipa District has fixed line access (land line) within the existing copper network coverage provided by Telecom.

#### 2.4.2 Mobile Coverage

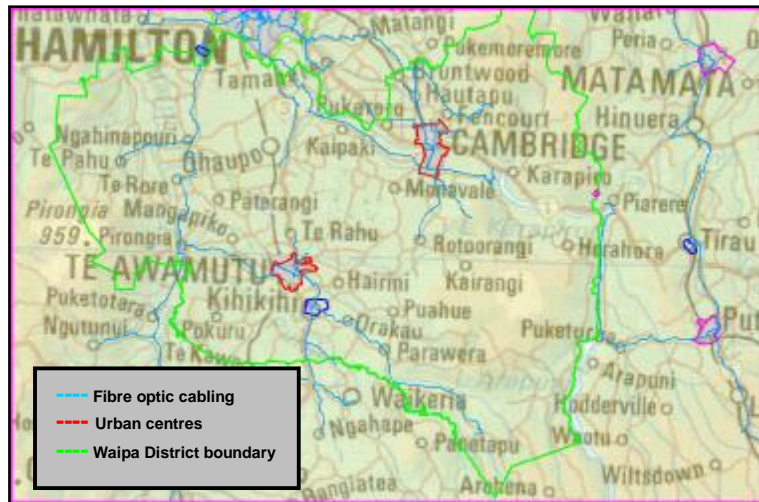
Telecom's mobile network is shown in Map 2.4.2. The majority of the District has mobile coverage with some rural areas with fringe

coverage. Pocket areas south of Maungatautari, west of Pirongia and northeast of Cambridge have no coverage. Mobile broadband coverage (3G) extends radially from urban centres into rural areas.

### 2.4.3 Broadband Coverage

Broadband infrastructure throughout the district is provided by Telecom. While there are a number of Internet Service Providers (ISPs), they do not provide infrastructure and have not been included in this analysis.

Broadband is available in the urban areas of Cambridge and Te Awamutu and many smaller centres. Approximately 79% of lines in the District are broadband-enabled, with the majority of the region having access to Telecom’s wireless broadband. Areas that have no broadband or wireless access are south of Parawera and west of Te Rahu.



Map 2.4.2 Waipa District – Existing Fibre Optic Cabling

## 3 Trends & Growth

### 3.1 Solid Waste

The Council recognises green waste as a key factor into minimising waste to landfill. Nearly 40% of the average Waikato household rubbish bag is currently made up of organic waste (*Waste Management Plan 2005-2010, WDC*). Education programmes encourage residents to recycle green waste through their own private composting, and transfer stations accept green waste which is separated prior to disposal at landfill.

### 3.2 Power

The dairy industry within the District is experiencing growth with increased farm conversions to dairy and the operation of two large dairy factories at Hautapu and Te Awamutu. Waipa Networks has identified these sites as the largest consumers of power where close communication is required to ensure level of supply is maintained.

The impact of developers subdividing existing properties is assessed by power distributors each year. Approximately 1,700 lots will be subdivided on the north-eastern side of Cambridge over the next 10 years (*Asset Management Plan 2007-17, Waipa Networks*). A new feeder at the Cambridge GXP was installed to supply these subdivisions. All new work in urban areas and subdivisions is reticulated underground as a requirement of Waipa District Council.

Wind farms have previously been investigated as an alternative sustainable energy option by Waipa Networks. Investigations show that the Waipa District is located in an area with one of the lowest recorded average wind speeds in New Zealand.

### 3.3 Gas

Vector’s high pressure natural gas transmission pipeline system has been progressively developed since 1969 as it assesses future expansion plans to keep pace with forecast demands. Any upgrades of distribution lines will be governed by demand when required through condition surveys

undertaken by Vector. No upgrades are currently required or planned on the transmission or distributions lines.

### **3.4 Telecommunications**

Telecom proposes to upgrade nine existing cell sites in the Waipa district to become GSM capable (Global System from Mobile Communication) providing 3G communication.

The increasing level of subdivisions within the Waipa District can create infrastructure capacity issues because of increasing growth and need for extension of existing lines/new lines. Telecom improves capacity when required to cater for growth within the coverage area.

## **4 Management Considerations and Implications for Growth**

### **4.1 Solid Waste**

#### **4.1.1 Waste Management Plan 2005-2010**

In June 2005, the Council adopted a Waste Management Plan that sets out Council's targets towards waste management services in the District. The urban recycling service commenced in March 2007, followed by the rural service in July of the same year.

WDC has set targets to reduce waste through developing education programmes, conducting waste audits, conducting a review of the refuse removal and disposal bylaw and promoting waste minimisation through the Enviroschools programme (which 19 schools within the District are currently participating in). These initiatives aim to lead towards the Council's target of 'Zero Waste to Landfill' by 2015.

#### **4.1.2 4.1.2 Waste Minimisation (Solids) Act 2008**

The Waste Minimisation Act 2008 (WMA) (currently the Waste Minimisation Bill) comes into force on 1 July 2009 and represents a shift in the focus of council activities relating to waste. It preserves the obligations and powers of councils set out in the Local Government Act 1974 (such as the ability to set bylaws governing waste).

However, the WMA now requires councils to focus on encouraging effective and efficient waste management and minimisation, rather than simply waste management. In this regard, the WMA requires councils to either review their existing waste management plan (by 1 July 2012), or prepare and adopt a new waste minimisation plan. Waste minimisation plans must then be reviewed every six years.

The plan must include objectives and policies for achieving effective and efficient waste management and minimisation, as well as specific methods for doing so. These methods are to include services for waste collection and treatment, the provision of waste facilities, as well as any educational or public awareness activities to be provided by council.

Before reviewing a waste management and minimisation plan, a council will be required to undertake a waste assessment. This must include a description of the waste services provided within a council's district, a forecast of future demands for such services, and a statement that any future proposals will promote effective and efficient waste management and minimisation.

To assist in funding these activities, councils will obtain an annual payment from the Secretary for the Environment collected from the Waste Levy imposed on every tonne of waste disposed of in landfills. The amount paid each year will be dependent on the amount of waste disposed of in landfills nationally, and the population living within the boundaries of the council. Councils will also have a particular interest in the development of regulations for priority products for product stewardship schemes and criteria for the contestable waste levy fund.

## 4.2 Power

The power industry is separated into generation, transmission, distribution and retail services. In terms of supply to residents and businesses in the District, this assessment focuses on distribution from the national grid as this is the key infrastructural component relevant at the local level. Given the fact that these functions are not undertaken by Council, there is a need to ensure that communication between the power companies and Council is open and continuous to ensure that future growth demands are met in a timely fashion.

Under Section 62 (6) of the Electricity Act 1992, power companies will not be required to supply uneconomic loads after 2013. While it is likely that this legal issue will be dealt with prior to 2012, it does raise serious issues for rural and remote users e.g. farmers.

## 4.3 Gas

Gas supply to the District is undertaken by Vector, a private company. In order for growth pressures and demand for services to continue to be met, both Council and Vector have a role to play in information sharing to enable adequate provision to meet demand.

## 4.4 Telecommunications

On 31 March 2008, a three-way operational separation of Telecom was put into effect under the Telecommunications Act 2001, providing for a separation of operational activities into network, wholesale and retail units. The amendment is a key part of the government's strategy to deliver a more effective telecommunications sector as it provides increased competition and efficient investment in the long-term. As a result of the operational separation of Telecom and other regulatory measures currently underway, it is expected that competition will increase and telecommunications users throughout New Zealand will be able to access a wider range of new and improved broadband-based services.

# 5 Strategic Opportunities & Constraints

## 5.1 Solid Waste

WDC encourages the reuse of waste products through 'The Waste Exchange', a website that facilitates the exchange of information throughout New Zealand resulting in the diversion of waste from landfill to reuse or for recycling.

The ongoing operation of the transfer stations is essential in providing the District with accessible refuse services. This presents a risk to the District if these transfer stations close or offer reduced services. Private sector management of a public service could potentially cause uncertainty for maintaining services for the future as this could lead to;

- n Closure of local transfer stations due to non profitability;
- n Closure of landfills reaching capacity;
- n Unable to find a new suitable landfill location;
- n Unable to obtain resource consent for new site.

The Council may look at service level agreements with the private sector without the need for formal contracts which will provide the council a level of control.

## 5.2 Power

Power supply to the Cambridge area is considered secure with dual transmission lines. Te Awamutu currently does not have a secure transmission line supply and this has resulted in 13 outages over a 10 year period from 1997-2006 (*Waipa Networks Asset Management Plan, 2007-*



2017). The installation of a secondary 110kV transmission line from Karapiro to Te Awamutu would improve the current n' supply RSL. Waipa Networks have requested a second 110kV transmission line be installed by Transpower to provide an n-1 security of supply to Te Awamutu (dual lines). This project is in the early development stages.

Current power limitations are:

- n Planned maintenance on various assets can often result in lines being taken out of service:
- n The risk of loss of power supply is reduced through ongoing preventative maintenance programmes (e.g. tree trimming) that are based on asset condition surveys:
- n Network supply around Rukuhia and Hamilton Airport is nearly reaching its limit for what is known as n-1 security. A new substation near the airport is planned to alleviate supply concerns. This is commissioned to take place within the next 2 years.

### 5.3 Gas

Urban encroachment has created an increased risk of external interference to existing pipelines. The expansion of urban areas can create maintenance issues including access for maintenance, and the ability to operate and manage pipelines to the required standards. Maintenance is carried out through general inspections and any defects picked up are part of general pipeline maintenance. Repairs or pipeline maintenance can be subject to the physical terrain particularly in urban environments where traffic management is often required and the proximity to buildings and other services has to be taken into consideration.

### 5.4 Telecommunications

Over the past 12 months, Telecom has invested in increasing fixed line and broadband capacity by installing nine new cabinets throughout the District at the following locations to supply these areas with broadband access.

- |                        |                   |
|------------------------|-------------------|
| n South-west Cambridge | n Hairini         |
| n Te Awamutu East      | n Pukeatua        |
| n Ohaupo               | n Racecourse Road |
| n Te Rahu              | n Tirau Road      |
| n Kihikihi             |                   |

The current limitations with broadband are:

- n Copper lines that are too long to support a broadband service;
- n Active cabinets that are unable to provide broadband and are currently not economical.

## 6 Recommendations for Further Work

Obtaining accurate detailed information on the utilities services has varied with most utility companies unable to supply information relating specifically to the Waipa District. Telecommunication companies were reluctant to supply information for security reasons or were unable to due to lack of available resources.

### 6.1 General

In order to improve the planning and development process within the District, detailed information on future developments should be communicated between Council and utility companies. This will

allow for services to be implemented more efficiently and to a standard that suits or exceeds the needs of the customer.

## 6.2 Solid Waste

The Council's dependency on private sector management of waste services places a high risk on the provision of services in the long term. Experience has shown transfer stations have either closed or reduced services due to non-profitability. As a security measure, service level agreements could be implemented to reduce this risk. Other recommendations include:

- n Further develop the Council's Waste Management Plan to provide an extensive overview of waste management policies, procedures and future targets. The plan should also incorporate necessary targets and responsibilities in response to the upcoming Waste Minimisation (Solids) Bill;
- n Identify a waste management strategy for solid waste disposal beyond 2010;
- n Provide an extensive report on the past, present and future waste management services within the Waipa district.

## 6.3 Power

Council should work in partnership with energy providers through future strategic planning exercises to identify opportunities for alternative energy generation and provide for future development in the District Plan through setting acceptable standards and controls.

## 6.4 Other Services

WDC subdivision and utility company planners could work more closely during the planning stage to identify any supply and demand issues related to utilities. Exchange of information between the Council and utility companies can provide both sides with an efficient and economical planning strategy for the future.

# 7 Source Material

The following material was reviewed in the preparation of this profile statement:

## 7.1 Publications

- n **Environment Waikato**, 2008, *Waste Landfills Map*;
- n **New Zealand Parliament**, *Waste Minimisation (Solids) Act*, 2006
- n **Powerco**, *Powerco Asset Management Plan*, 2007-2021;
- n **Waipa District Council**, *Annual District Plan*, 2008-2009;
- n **Waipa District Council**, *Blue Bin 4 You Recycling Guide*;
- n **Waipa District Council**, *Blue Bin 4 You Rural Recycling*;
- n **Waipa District Council**, *Waste Management Plan*, 2005-2010;
- n **Waipa Networks**, *Waipa Networks Asset Management Plan*, 2007-2017;
- n **WEL Networks**, *WEL Networks Asset Management Plan*, 2007-2017;

## 7.2 Internet Websites

- n <http://www.chorus.co.nz>
- n <http://www.electricity.org.nz>
- n <http://www.enviroschools.org.nz>
- n <http://www.ew.govt.nz>
- n <http://www.gastransportation.co.nz>
- n <http://www.gridnewzealand.co.nz>

- n <http://www.mightyriver.co.nz>
- n <http://www.nothrow.co.nz>
- n <http://www.parliament.nz>
- n <http://www.powerco.co.nz>
- n <http://www.telecom.co.nz>
- n <http://www.transpower.co.nz>

- n <http://www.vector.co.nz>
- n <http://www.waipadc.govt.nz>
- n <http://www.waipanetworks.co.nz>
- n <http://www.wel.co.nz>
- n <http://www.zerowaste.co.nz>