



***WAIPA DISTRICT COUNCIL***

***Waipa Urban Growth Strategy***

***November 2003***



# HARRISON GRIERSON CONSULTANTS LIMITED

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Bryan Hudson	Roading Manager

In addition, the contributions of the surveyors and real estate agents that provided feedback on the preliminary growth cell options are much appreciated.

## EXECUTIVE SUMMARY

In 1994 Council identified the Cambridge North Deferred Residential Zone (CNDZR) in the (then Proposed) Waipa District Plan. Since then, various investigations have been undertaken and some concern emerged about, firstly, the high costs of providing the necessary infrastructure to allow development of the CNDZR to proceed and, secondly, the financial risks to Council and the community if development of the CNDZR then proceeds too slowly to pay back the up-front infrastructure costs at a reasonable rate. In March 2002 Waipa District Council commissioned Harrison Grierson Consultants Limited to prepare a draft Waipa Urban Growth Strategy. This strategy was prompted by Council's desire to identify suitable areas for urban development in Waipa, and determine whether the CNDZR is an appropriate and economically feasible area for urban development.

It is envisaged that this Strategy will form a framework within which subsequent resource consent applications and plan changes (whether privately or Council-initiated) to rezone more land to "Residential Zone", "Industrial Zone", or "Rural Residential Policy Area" within the Rural Zone can be considered.

### *Demand analysis*

In order to determine the demand for residential growth to 2021, historical growth was assessed (based on Statistics NZ Census figures for the past three census periods) and population projections were analysed using both medium and high growth scenarios. The demand for industrial growth was determined by reviewing building and subdivision consent data, obtaining yearly average figures for development, and projecting those averages forward to 2021. As a result the following demand was predicted:

### ***Projected growth (new housing and new industrial units) to 2021***

	<b><i>Cambridge</i></b>	<b><i>Te Awamutu/Kihikihi</i></b>
Residential Population Growth (medium growth scenario)	1,200 add. people (451 dwellings)	1,000 add. people (376 dwellings)
Residential Population Growth (high growth scenario)	2,200 add. people (827 dwellings)	2,000 add. people (751 dwellings)
Industrial Growth	115 industrial units	165 industrial units

In terms of residential growth, the study team (including Council planning staff) concluded that the high growth scenario is more appropriate for the purpose of this study.

### *Supply analysis*

A supply analysis was undertaken, using the permitted activity standards of the District Plan. As a result, it was determined that Cambridge has a shortage of good quality residential land, rural residential land, and industrial land. In contrast, Te Awamutu/Kihikihi has some residentially zoned areas with capacity, but there is a shortage of residential land located in the areas desired by the market. Te Awamutu/Kihikihi has an adequate supply of rural residential land, and a reasonably adequate supply of industrial land (including land zoned Dairy Industrial).

The supply analysis is summarised below. Although the figures below suggest that there is still reasonable capacity for growth, it should be noted that in real terms the market has chosen not to establish in many of these areas for reasons including slope, orientation, proximity to industrial areas, low lying land, distance from town, and historical use of the land.

<b>Waipa District – Zoned Land Supply (as at May 2002)</b>			
	<b>Residential</b>	<b>Rural Residential</b>	<b>Industrial (mainly dairy industrial)</b>
Te Awamutu/Kihikihi	273 lots	324 lots	795 lots
Cambridge	225 lots	222 lots	122 lots

It was also found that there is considerable potential for residential infill, however the current District Plan provisions favour low density residential development, and feedback from the community and market professionals indicates that demand is not high for infill development.

*Initial identification and shortlisting of growth cell options*

In conjunction with Council officers, 38 preliminary growth cells were identified (refer Appendix 1 of this report). These cells were subjected to a constraints analysis, for the purposes of which the growth cells were superimposed onto Waipa District Council hazards data (refer Appendix 7 to this report). The constraints analysis also considered soils, slope, flooding hazard, stability, poor soakage, ecological features, and likely market demand (determined through brief consultation with surveyors and real estate agents in the towns). Using the constraints analysis, many of the cells were eliminated from further investigation into infrastructure costs. Those that remained for further consideration were as follows:

	<b>Cambridge</b>	<b>Te Awamutu</b>
<b>Residential</b>	CB2 Victoria Road West CB3 Cambridge North CB11 Growcorp	TA1 Greenhill Drive TA3 Racecourse North TA5 Racecourse South TA7 Bond Road TA8 Piquet Hill Road TA10 Swarbrick Drive TA15 Kihikihi West
<b>Rural-residential</b>	CB7 Roto-o-rangi Road East CB8 Roto-o-rangi Road West	-
<b>Industrial</b>	CB1 Hautapu CB5 Cambridge East	TA6 Bond Road

*Initial preferred growth options (Draft Strategy, September 2002)*

The above 15 growth cell options were subjected to preliminary infrastructural analysis, the results of which are contained in Appendices 8, 9, 10 and 11 of this report. Based upon a combination of infrastructure costs and the general constraints analysis, the Draft Strategy, September 2002 shortlisted the options further and recommended the following 10 growth cell options for consultation and further engineering analysis:

	<b>Cambridge</b>	<b>Te Awamutu</b>
<b>Residential</b>	CB2 Victoria Road West CB3 Cambridge North CB11 Growcorp	TA3 Racecourse North TA7 Bond Road TA8 Piquet Hill Road TA15 Kihikihi West
<b>Rural-residential</b>	CB8 Roto-o-rangi Road West	-
<b>Industrial</b>	CB1 Hautapu	TA6 Bond Road

These shortlisted growth options were used as the basis for public consultation on growth options. Consultation comprising the following was undertaken in February/March 2003:

- letters to landowners within or near the shortlisted growth cells (some 2000 letters)
- letters to range of statutory authorities and community organisations
- public open days in Te Awamutu and Cambridge
- presentations to the Te Awamutu and Cambridge Community Boards
- discussions with various interested parties
- analysis of feedback from above

Refer to Appendix 12 for a copy of the consultation newsletter.

*Revised growth options following consultation (Draft Urban Growth Strategy – Consultation responses report, June 2003)*

Following analysis of consultation responses, the “Draft Urban Growth Strategy – Consultation Responses” report, June 2003, revised the shortlist further by deleting some options and adding others that were identified through the consultation process. The revised shortlist, as confirmed by the Council’s Policy Committee on 14 July 2003 was:

	<b>Cambridge</b>	<b>Te Awamutu</b>
<b>Residential</b>	(see note below)	TA1 Greenhill Drive TA7 Bond Road TA8 Piquet Hill Road TA10 Swarbrick Drive
<b>Rural-residential</b>	CB9 Silverwood South	-
<b>Industrial</b>	CB1 Hautapu	TA6 Bond Road

Note: The above growth cells are in addition to CB3 Cambridge North (Residential) and CB4 Thornton Road (Residential) which are the subject of separate plan change procedures already underway. The urban growth strategy confirms the suitability of these areas as preferred residential growth areas.

Maps showing the shortlisted growth areas are contained in Appendix 13 to this report. Landowners in the above shortlisted growth areas were then contacted in July 2003 in order to gauge responses to the proposals. The outcomes of the discussions were summarised in a report to the Council’s Policy Committee on 8 September 2003. Interested parties were invited to make representations to the Policy Committee at that meeting.

*Final growth cells*

Following consideration of the above, the Policy Committee confirmed the following urban growth cells:

	<b>Cambridge</b>	<b>Te Awamutu</b>
<b>Residential</b>	CB11 Growcorp (plus see note below)	TA7 Bond Road * TA8 Piquet Hill Road * TA10 Swarbrick Drive TA23 Pirongia/Frontier Road
<b>Rural-residential</b>	CB9 Silverwood South CB10 Silverwood North	-
<b>Industrial</b>	CB1 Hautapu *	TA6 Bond Road *

*Note:* Undeveloped areas that are already zoned Residential or Industrial, or are subject to plan changes already underway (such as CB3 Cambridge North and CB4 Thornton Road), are not included above as they are already confirmed or intended growth cells as a result of separate processes and resolutions. These areas, plus the identified growth cells in the above table are expected to cater for urban growth needs up to 2021.

In the longer term (beyond 2021), the future growth of Cambridge is anticipated to be generally in a westerly direction.

The final urban growth strategy is shown overleaf. The Council intends to initiate detailed engineering investigations, structure planning and district plan changes to give effect (over the next two financial years) to growth cells marked with a (\*) above. The engineering investigations will be assisted if Council's Asset Management Plans are updated to include the current usage and spare capacity remaining in the existing infrastructure.

The facilitation of the other growth cells in the Urban Growth Strategy will be up to the private sector and the relevant landowners through private plan change processes under the Resource Management Act 1991. The Council will not initiate these.

Areas not included in the Urban Growth Strategy are not excluded from consideration through private plan change processes under the Resource Management Act 1991.

In conclusion, the Council welcomes the community input that has been received throughout the "*Waipa Urban Growth Strategy*" project. The final urban growth strategy reflects many of the submissions made. While not all submissions could be accommodated, all submissions and representations were carefully considered. The key point to recognise is that the Strategy is an indication of preferred future growth areas. Any actual district plan changes that may subsequently be initiated to rezone any land (whether by Council or by the private sector) will be subject to public notification and formal submission and hearing processes under the Resource Management Act 1991.

INSERT CAMBRIDGE GROWTH STRATEGY

INSERT TE AWAMUTU/KIHIKIHI GROWTH STRATEGY

## 1.0 INTRODUCTION

In March 2002 Waipa District Council commissioned Harrison Grierson Consultants Limited to prepare a draft Urban Growth Strategy for the two main urban areas of the District, being Cambridge and Te Awamutu (including Kihikihi). This strategy identifies the most appropriate areas for urban development, based on cost effective infrastructure development, anticipated demand, urban form issues, and environmental constraints. The strategy identifies suitable areas to accommodate anticipated residential, rural residential, and industrial growth in Cambridge and Te Awamutu/Kihikihi until 2021.

By way of background, the Proposed Waipa District Plan was notified in 1994. It identified the Cambridge North Deferred Residential Zone (CNDZR), identified as a location where future residential development could take place to accommodate the population growth of Cambridge. The Plan noted that development of the CNDZR must be supported by the provision of roading, water, sewerage and stormwater services. The estimated cost of providing these services to the CNDZR is \$13.7 million within the next 10 years (Waipa District Council Annual Plan 2002-2003 and Long Term Financial Strategy 2002-2012). While the funding of these services will be able to be recouped (partly or fully) by either development contributions imposed under the Local Government Act 2002 or by financial contributions imposed under the Resource Management Act 1991, revenue would only be gained as subdivision occurs. Many infrastructure upgrades would need to be provided and funded by Council at the outset. Reliance would then be placed on the speedy uptake of the subdivision/s to repay initial capital costs.

This means that Waipa District Council would be accepting financial risks associated with a slow development. An alternative is that the private developer funds the servicing of the CNDZR up front, and then recovers the costs as development progresses (i.e. from sales). The Annual Plan 2002-2003 and Long Term Financial Strategy 2002-2012 states that reality is that if developers do not accept such risks, the CNDZR is "unlikely to proceed". The commissioning of this district-wide urban growth strategy was prompted by the high costs associated with developing the CNDZR, and Council's desire to:

- (a) Identify suitable areas for urban development in Waipa; and
- (b) determine whether the CNDZR is an appropriate area for urban development.

Thus, Te Awamutu, Kihikihi and Cambridge have been investigated with a view to identifying suitable areas for development in the coming 20 years. In addition, the stormwater investigation of the CNDZR undertaken by Tonkin & Taylor in August 2002 has been reviewed as part of this study.

## DISTRICT PROFILE

### 2.1 Introduction

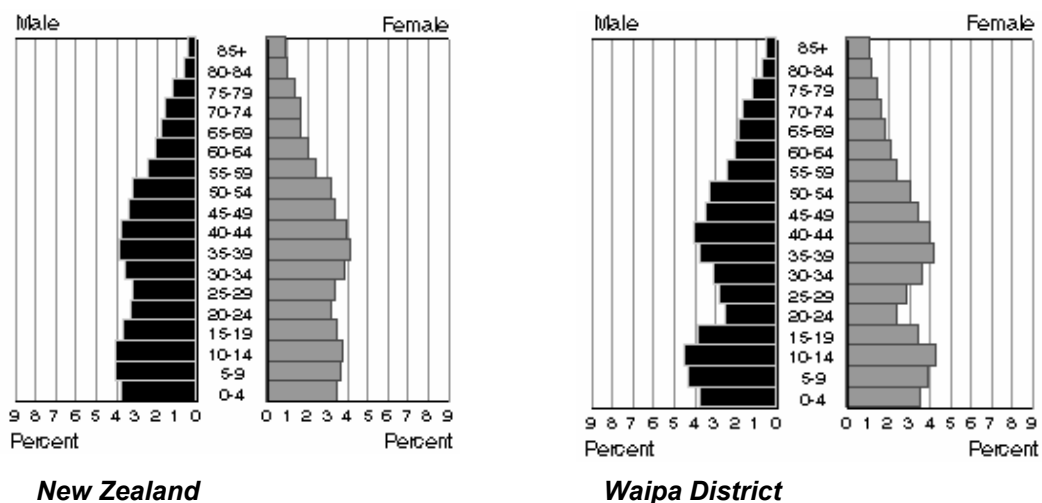
Waipa District Council formed predominantly from the former Waipa County, Cambridge and Te Awamutu Boroughs, and part of Matamata, Waikato and Raglan Counties. The District covers an area of 147,732 hectares of which 6% is zoned for urban use, with the remainder being rural (source: Waipa District Council Annual Plan 2002-2003 and Long Term Financial Strategy, 2002-2012).

The 2001 Census indicated the Waipa District had a population of 40,293 – up from 38,853 in 1996, and 36,693 in 1991 (source: Statistics New Zealand).

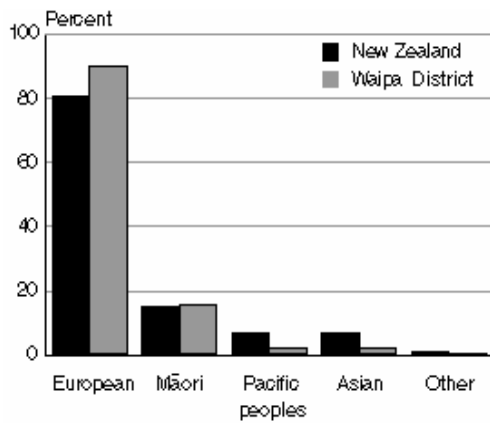
### 2.2 Demographic Snapshot

The following demographic profile has been based on 2001 Census data gathered by Statistics New Zealand.

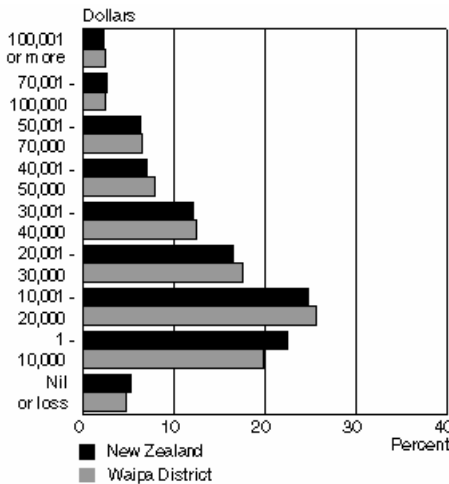
Waipa District has a resident population of 40,293, or 1.1% of the population of New Zealand. The rate of population growth for the district since the 1991 census (9.8%) has been less than the rate of growth for New Zealand as a whole (10.7%).



The population of Waipa District has a median age of 35.7, compared with 34.8 for the whole of New Zealand. 13% of people in the Waipa District are aged 65 and over, compared with 12.1% of people in New Zealand being 65 and over. In contrast to those figures, the District also has a larger proportion of younger people than the whole of New Zealand, with 24.3% of people in the district aged under 15, compared with 22.7% for the whole of New Zealand.

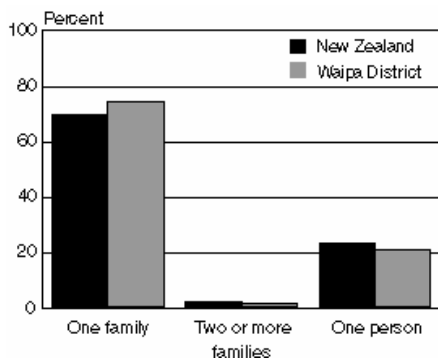
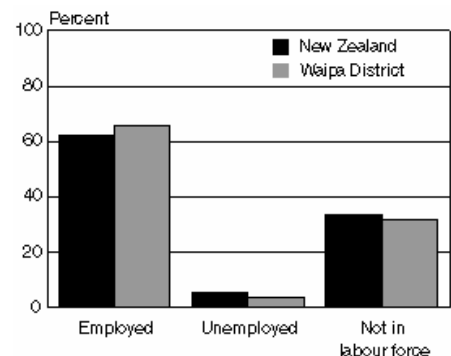


The district has a higher proportion of European residents than New Zealand as a whole. 89.7% of people identify themselves as being European – this compares with 80.1% of people in the general population of New Zealand. There is also a higher proportion of residents of Maori origin – 15.1%, compared with 14.7% for New Zealand as a whole. A significantly smaller proportion of residents in the district identify themselves as being of Pacific Island and Asian extraction – 1.7% and 1.6% respectively, compared with 6.5% and 6.6% for the country as a whole.



The median income for people in the Waipa District is \$19,800, compared with \$18,500 for the general population of NZ.

The unemployment rate in the Waipa District is 5.1%, compared with 7.5% for all of New Zealand. The most common occupations in Waipa District relate to agriculture and fisheries, whereas for New Zealand as a whole the most common occupations relate to service and sales.



One family households make up 73.8% of the households in the district, compared to 69.1% of households in New Zealand generally. 21% of households are one person households – this compares with 23.4% of households in New Zealand as a whole.

73.9% of permanent private dwellings in the Waipa District are owned (with or without a mortgage), compared with 68.8% of dwellings in New Zealand as a whole.

Couples with children make up 44.6% of all families, compared with 42.1% in New Zealand generally. Couples without children make up 40.2% of families, compared with 39.0% in the general population of New Zealand. 15.2% of families in Waipa District comprise one parent with child(ren), compared with 18.9% for New Zealand as a whole.

### 2.3 Age Structure

The District (and New Zealand as a whole) is characterised by an ageing population, with an increasing life expectancy and an increasing median age. With changing composition in terms of age, the population faces changes in fertility levels and age patterns, changes in household size and structure, labour force participation rates, personal income, and income maintenance. These factors all have a bearing on the demand for different types of accommodation in terms of location, lot size, density, intensity, security, privacy, transportation (public and private) and other infrastructure (such as footpaths, access ways, recreation facilities etc).

As a general overview, when considering the age structure of a population, it is helpful to note the national trend toward an ageing population. New Zealand has an ageing population as birth and migration levels are no longer sufficient to offset the large numbers of people entering the older age groups. The ageing of New Zealand's population is expected to accelerate as life expectancy continues to improve and the large baby-boom generation advances through the mid-age groups and into old age (Source: Statistics New Zealand).

The population pyramids in Appendix 4 show the age structure in each census area unit relating to the study areas of Te Awamutu, Kihikihi and Cambridge. A general comment in relation to the age structure in the study areas is that a greater proportion of residents in the older, retired age groups (60 years plus) reside in Te Awamutu Central, Te Awamutu South, Kihikihi Flat, Cambridge West and Cambridge Central. A greater proportion of residents in the younger age groups (particularly 5-14 years of age) reside in Kihikihi, Te Awamutu East, Te Awamutu West, Leamington East.

### 2.4 Summary

#### ***In Waipa, compared to New Zealand as a whole:***

- The population growth rate is slightly less;
- The population is slightly older;
- There are proportionately more people aged 15 and under;
- More permanent residents identify with the European ethnic group, slightly more with Maori, and significantly less with the Pacific Island and Asian ethnic groups;
- Unemployment is almost a third lower;
- The median income is higher;
- There are more households comprised of a family;
- There are fewer one person households.
- There is a higher rate of home ownership; and
- There are significantly fewer one parent families.

## STATUTORY CONSIDERATIONS

### 3.1 Resource Management Act 1991

Waipa District Council has important functions and responsibilities under the Resource Management Act 1991. Relevant provisions are summarised below:

Firstly the purpose of the Act as set out in Section 5 is *"to promote the sustainable management of natural and physical resources"*. This means *"managing the use, development and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic and cultural wellbeing and for their health and safety while –*

- (a) *Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
- (b) *Safeguarding the life-supporting capacity of air, water, soil and ecosystems; and*
- (c) *Avoiding, remedying or mitigating the adverse effects of activities on the environment.*

To help achieve this purpose, Section 31 of the Resource Management Act 1991 gives territorial authorities the function of *"the establishment, implementation and review of objectives, policies and methods to achieve integrated management of the effects of the use, development or protection of land and associated natural and physical resources of the district."*

There are a number of regulatory and non-regulatory methods which can be used to fulfil this function, but one of the more important methods is the District Plan. Section 73 of the Act makes it mandatory for each territorial authority to prepare and maintain a district plan. The Waipa District Plan became operative in December 1997, and is addressed in detail in Section 4.3 below.

It is envisaged that one of the outcomes of this urban growth strategy will, in due course, be a plan change(s) to the District Plan to rezone more land to "Residential Zone", "Industrial Zone", or "Rural Residential Policy Area" within the Rural Zone. Before doing so, however, Section 32 of the Act requires Council to consider alternatives, assess benefits and costs before adopting any objective, policy, rule or other method. The consultation with Council staff and research undertaken in preparing this urban growth strategy forms part of the "Section 32" process which precedes any formal plan change process. Future consultation with the public and other interested parties (including developers) will also form part of the Section 32 analysis.

### 3.2 Waikato Regional Policy Statement

The Waikato Regional Policy Statement (RPS) became operative on 1<sup>st</sup> October 2000. The RPS sets out the resource management issues for the region and the methods that will be used to manage natural and physical resources over the ten years until 2010.

Part 3 of the RPS sets out significant issues, objectives, policies and methods for achieving the integrated management of the resources of the region. Part 3 notes that Te Awamutu and Cambridge are located on the Waikato Lowlands, which together with the Hauraki Plains make up the central part of the Region and have several common land resource characteristics, notably the presence of relatively large areas of wetlands and peat soils, and Hinuera Formation<sup>1</sup>. Developed peatlands have value for agricultural, scientific and flood control purposes.

Section 3.3.6 sets out the significant land and soil resource management issues for the Waikato Region. Issues of relevance to this study include:

***Land***

In relation to accelerated soil erosion, the RPS seeks to ensure that land users avoid practices which accelerate erosion. The RPS also aims to ensure that land use practices occur in a manner designed to avoid degradation of soil versatility and productive capacity.

***Water***

The RPS seeks to ensure the protection of the quality of outstanding water bodies (which include the Waikato River), and to ensure that the adverse effects of land use activities on water quality and aquatic habitats are avoided, remedied or mitigated.

***Air***

The RPS aims to protect, maintain and enhance air quality in the region.

***Natural Hazards***

In relation to natural hazards, the RPS aims to ensure that new developments are built in a manner which avoids and mitigates the adverse effects of natural hazards. Methods of achieving this include identifying areas of natural hazard in plans (including the district plan, the hazard maps of which have been referred to during this strategy).

***Biodiversity***

In relation to biodiversity, the RPS seeks to allow the use and development of natural and physical resources while avoiding, remedying or mitigating adverse effects on biodiversity in the region, and ensuring that areas of significant indigenous vegetation and fauna are protected.

***Energy***

The RPS seeks to promote efficiency and conservation in the production, transmission and consumption of energy.

***Structures (Infrastructure)***

The issue statement relating to infrastructure states that inappropriate land uses can result in conflicts between activities which may compromise the operation of regionally significant infrastructure. The RPS seeks the avoidance of significant adverse effects (including cumulative effects) on the safe and efficient operation of regionally significant infrastructure. The RPS states that where adverse effects cannot be avoided they shall be remedied or mitigated (emphasis added).

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<sup>1</sup> The Hinuera Formation is the name given to unconsolidated pumice sands laid down by the ancestral Waihou and Waikato Rivers in the Hauraki Plains and the Hamilton Basin.

### ***Heritage***

The RPS aims to ensure the protection of significant natural and cultural heritage resources.

## **3.3 Local Government Act 2002**

Waipa District Council has prepared a Strategic Plan to 2010, as outlined in Section 4.1 below, and the vision and principles it contains are directly relevant to this urban growth strategy.

The Local Government Act 2002 significantly reformed local government legislation in many respects. As a result, several of the key Council documents prepared under the previous local government legislation (such as the Long Term Financial Strategy, or LTFS, and the Strategic Plan) have been, or are being, replaced by new documents such as the Long Term Council Community Plan (LTCCP).

The LGA legislation requires local authorities to focus on community outcomes and to facilitate these outcomes in a collaborative manner alongside the community and other agencies. Rigorous financial management procedures and a responsibility for local authorities to plan ahead and budget for future capital spending remain a key aspect of the new legislation. Waipa District Council has done this, as outlined in Section 4.2 below, and this will be regularly revisited through the Long Term Council Community Plan (LTCCP). This is directly relevant to this urban growth strategy, as the strategy must anticipate future capital expenditure requirements for new infrastructure to cater for growth of the district.

## **4.0 COUNCIL PLANS AND STRATEGIES**

### **4.1 Strategic Plan for Period to 2010**

In 1999 Waipa District Council finalised its Strategic Plan to 2010. The Mission Statement set out at the front of the Strategic Plan is as follows:

*“To fulfil the statutory and regulatory obligations of the elected representatives of Waipa District, and promote the well-being of the people of Waipa District through timely provision of services and sustainable management of natural and physical resources.”*

#### **Essential Services**

In regard to essential services, the Strategic Plan states as its goal:

*“To ensure the provision of essential services.”*

The narrative in relation to that goal acknowledges that Council may deliver these essential services using its own resources, contract to a private provider, or withdraw altogether if it is satisfied that normal market forces will guarantee an acceptable standard of service provision.

A relevant desired outcome to meet Council's goal is

*"Sewerage systems are available to all communities where an identifiable and measurable health hazard exists and where a communal system is the most cost effective solution." A strategic action to ensure this outcome is "Assist with "last resort" District funded solutions where financial implications of required capital works exceeds reasonable rating burden for affected area(s)."*

### **District Development**

The goal of Council with regard to district development is:

*"To encourage the orderly and sustainable development of the District."*

The narrative relating to this goal states that while Council is not in the business of developing housing, commercial and industrial ventures, it can promote development by providing the necessary infrastructure.

To achieve the desired outcome of *"Provision for sustainable development"*, Council sets out strategic actions which include identifying areas preferred for development in the District Plan, providing direct funding assistance for infrastructural assistance where market provision has failed, and requiring statutory impact levies on development – in the form of Development Impact Fees or DIFs. It is noted that Plan Change No.2 recently introduced new Development Impact Fee provisions into the District Plan, relating to the provision of water supply, wastewater, rural roading and berm upgrades.

A further desired outcome is *"Stimulation of suitable industrial activity in preferred locations"*. Strategic actions to achieve that outcome include considering active involvement in development where market failure exists, and identifying and controlling areas for development through the District Plan.

Finally, a third relevant desired outcome is *"Steady increase in population"*. The strategic actions proposed to achieve a steady increase in population include encouraging residential development through the District Plan so that industrial areas are separated from residential areas, and residential areas are protected from the adverse effects of non-residential uses.

A point of interest to note in relation to district development is the economic outlook set out in the Strategic Plan, which states that the New Zealand Dairy Group, the largest ratepayers in Waipa District, have indicated their intent to extensively develop the Hautapu site.

## **4.2 Annual Plan July 2002-June 2003 & Long Term Financial Strategy 2002-2012**

It was noted in Section 3.3 above that the Council's Long Term Financial Strategy (LTFS) - which was prepared under the previous local government legislation - will be incorporated into the Council's Long Term Council Community Plan (LTCCP) as a result of the recently-enacted Local Government Act 2002 (and it will be reviewed as part of this process). For the purpose of this report, however, the provisions of the LTFS are relevant to note.

Key initiatives over the next ten years in Waipa (relevant to this study) include the staged upgrading of infrastructure services and allowance for ongoing growth, and

roading improvements. Specifically, significant capital works include the following (from Section 4, Community Overview and Financial Indicators, p.27):

<b>Capital Work</b>	<b>2002/03</b>	<b>2003/012</b>
<b>CAMBRIDGE</b>		
Water upgrades	477,000	8,473,000
Sewer upgrades	712,000	2,646,000
Deferred Residential Area		13,711,000
<b>TE AWAMUTU/KIHIKIHI</b>		
Water upgrades	2,200,000	7,802,000
Sewer upgrades (TA)	4,385,000	2,550,000
Water upgrades (Kihikihi)	570,000	978,000
Sewer upgrade (Kihikihi)	100,000	5,155,000

Also of relevance to this study are the Strategic Plan Objectives and Outcomes in relation to the following:

- Road Network Management;
- Stormwater;
- Water Treatment and Supply; and
- Sewerage.

#### **Road Network Management**

Performance targets in relation to the management of the road network include achieving performance measures contained within the District Road Programme agreement with Transfund, ensuring that 98% of sealed roads are maintained to an average roughness level below 150 NAASRA, and ensuring levels of public satisfaction are maintained. Milestones set out for 2002-2012 include increasing the seal extension programme in 2002-2006, and commencing the annual development programme for the Cambridge North Deferred Residential Zone in 2003 (now that this is confirmed by this urban growth strategy), subject to relevant Resource Management Act processes.

#### **Stormwater**

Management of Waipa's stormwater (including its collection, control and diversion as necessary) is achieved via 230km of open drains and 112kms of piped reticulation. Performance targets associated with the stormwater system include ensuring that all new stormwater infrastructure vested in the District complies with the standards set out in the Waipa District Council Development Standard, ensuring development does not impact adversely on the stormwater network, and maintaining levels of public satisfaction. Milestones set for 2002-2012 include commencing the development programme for the Cambridge North Deferred Residential Zone in 2003 (now that this is confirmed by this urban growth strategy), and completing the upgrade of stormwater infrastructure in 2006/7.

#### **Water Treatment and Supply**

The Te Awamutu water supply scheme serves Pirongia, Kihikihi and Te Awamutu. The Cambridge scheme services Karapiro, Maungatautari, Ohaupo, and Cambridge. Pukerimu is served by a physically separate scheme. Performance targets in relation to the water treatment and supply schemes include finalising long term water development and renewal plans and a water conservation strategy, and

maintaining public satisfaction with the schemes. Milestones for 2002-2012 include staged upgrades of Cambridge water reticulation in 2003/04, 2006/07, and 2010/11, staged upgrades of Cambridge water treatment plant in 2005/06, commencement of a development programme for the Cambridge North Deferred Residential Zone in 2003 (now that this is confirmed by this urban growth strategy), staged upgrades to the Te Awamutu Water Treatment plant in 2002/03, 2005/06, 2010/11 and 2011/12, and staged upgrades to the Kihikihi water treatment plant in 2002/03 and 2004/05.

### **Sewerage**

Community sewerage schemes serve the townships of Te Awamutu and Cambridge. Performance targets for the schemes include finalising long-term sewerage development and renewal plans and a strategy to reduce stormwater infiltration, confirmation and implementation of designs for Te Awamutu's sewerage upgrade, and maintaining public levels of satisfaction with the service.

Milestones for the years 2002-2012 include commencement of the construction of the Te Awamutu sewerage treatment plant upgrade in 2002/03 (and completion in 2003/04), commencement of the development programme for the Cambridge North Deferred Residential Zone in 2003/04 with completion in 2009/10, commencement of construction of Kihikihi sewerage reticulation in 2004/05, with completion in 2006/07.

## **4.3 District Plan**

Waipa District contains a range of sizes and types of settlements. Low intensity, low rise development is characteristic of the district's residential areas, and the residential zone rules aim to retain the low rise, open character of residential buildings. Subdivision for infill development is provided for, subject to mitigating the adverse effects and retaining the open character. A minimum lot size of 450m<sup>2</sup> is specified, directing development toward, at its most intense, medium intensity residential. Environmental standards are applied to the scale, intensity, bulk and location of all residential development under plan rules. The type and scale of housing is generally determined by market preferences within parameters defined by plan standards. It is clear that the potential for residential infill in established residential areas will not be sufficient by itself to cater for projected household demand (refer to Section 5 of this report) without significant increases in household density – increases which are not, at present, supported by market demand.

### ***Rural Zone and Rural Residential Policy Areas***

Some limited areas for peripheral rural-residential development have been included as Rural Residential Policy Areas within the Rural zone to enable a variety of living environments, and to meet the increasing demand for rural residential type development.

An issue of relevance to this study is that of land fragmentation, which is canvassed in Chapter 3 (Explanation of Rules). The Plan notes that if further fragmentation of land is allowed it will accelerate rapidly in the prime agricultural land areas between Hamilton, Cambridge and Te Awamutu. Interestingly, the feedback received from real estate agents and surveyors indicated that it was precisely in this area that the majority of market demand is focused. The Plan goes on to state that were fragmentation allowed to occur, it would result in land being used for large lot residential (rural residential) purposes rather than for primary production, and the provisions of sustainable management of the land resource would not be achieved.

As a result, the subdivision of land in the rural zone is restricted to avoid any significant increase in the fragmentation of land titles (on which separate dwellings could be established).

Plan Change 21 (Rural Subdivision) recently made a number of amendments to the existing policies and rules relating to rural subdivision. Many of the changes clarify existing provisions and update provisions as a result of changes made to plans and other documents prepared by Council and the Waikato Regional Council. The principal changes (relevant to this study) are as follows:

- The change of activity status of most rural subdivisions from controlled activities to discretionary activities.
- The addition of provisions to permit the transfer of subdivision entitlements from certain areas
- The deletion of provisions for the subdivision of a site for a retired person's dwelling and replacing it with provisions for the subdivision of a site for a person with a long association with a particular holding (being 15 years or more).

### ***Residential Zone***

The zone statement for the residential zone states that the rules will allow a mixture of dwelling types appropriate to the needs of each community. Residential development will be controlled by performance standards. It is noted that the plan anticipates that more residential accommodation will continue to be provided in detached dwellinghouses at comparatively low densities. This supports feedback gained from council staff and local land development professionals (real estate agents and surveyors) that there is a minimal level of interest in infill development, with the market preference tending toward low-medium density greenfield subdivisions.

The environmental results anticipated from implementation of the zone rules include the following relevant to this study:

- Maintenance of low-rise type of residential development
- Maintenance of an open-character of residential areas with set back of buildings from street boundaries, provision for unbuilt areas of sites, and landscaping
- Avoidance of on-street parking in residential streets
- Access to reticulated utility services

As a result of the feedback gained throughout the process of undertaking this study, combined with the Council preferred development direction outlined in the zone statement for the residential zone, a density of 10 lots per hectare has been used in calculating the lot yield capacity of potential (and existing) growth cells.

In relation to residential development, Rule 3.4.1 of the Plan states that the minimum site area for residential zones is 450m<sup>2</sup>. For unsewered areas (i.e. most rural residential sites), the rules state that the minimum site size must comply with the Waikato Regional Council regulations which dictate a minimum site size of 2,500m<sup>2</sup> (Rule 3.5.7.4 of the Waikato Proposed Regional Plan), and must ensure an average lot size of 5,000m<sup>2</sup> (Rule 10.6.1.2 of Waipa District Plan).

### **Industrial Zone**

The zone statement for the industrial zone states that although there is a place for low impact industrial activities throughout all zones, Part 1 of the Plan identifies a need for specific "Industrial" zones. The strategy of the Plan toward industrial activities can be summarised as separation from sensitive areas (e.g. residential areas), staging development to ensure efficient use, setting minimum performance standards, and excluding activities requiring higher levels of amenity (e.g. residential, retail).

Anticipated environmental results arising from implementation of the industrial zone rules are as follows (relevant to this study):

- ❑ Efficient use of land for industry (through concentration), and efficient provision of services to industry
- ❑ Preservation of options for the use of rural land and the encouragement of productive rural activity through the reduction of uncertainty about the location of future industrial development.
- ❑ Creation of new industrial areas with high standards of amenity.
- ❑ Maintenance of the amenities of areas surrounding industrial areas.
- ❑ Prevention and minimisation of adverse environmental effects of industry such as noise, odour and visual detraction.

The Plan (rule 7.4.1) states that the minimum site size for most industrial activities is 1000m<sup>2</sup>, subject to performance standards.

### **General Zone**

The zone statement for the general zone states that it contains a mixture of land uses of predominantly residential, commercial and light industrial character. The broad strategy for "industrial activities" (set out in Part 1 of the Plan) is to require that where they operate in and around the town centres they must meet stringent standards making them compatible with other activities in these areas, and to provide separate Industrial Zones for activities unable to meet these standards. Thus, industry in the general zone is more likely to be *light* industry.

Environmental results anticipated from implementation of the general zone rules include:

- ❑ Efficient use of existing resources, buildings and infrastructure within the General Zone
- ❑ A wide choice of sites for activities which benefit from locating near town centres
- ❑ High quality physical development which recognises the effect of development on adjoining sites, and the control of emissions such as noise and dust.

## 5.0 POPULATION

### 5.1 Historical Population Growth

Census figures from the 1991, 1996 and 2001 census counts have been analysed to determine which areas of the towns of Cambridge and Te Awamutu have experienced high or low growth. The figures have been mapped, (see Appendix 3 to this report) and the following general conclusions can be drawn from the data:

#### *Cambridge Urban Area*

- Generally, the eastern and southern urban areas of Cambridge have experienced medium to high population growth.
- The areas in the north of Cambridge have experienced low population growth, or in some cases, loss.

#### *Cambridge Rural Area*

- The larger rural areas to the west and northeast of Cambridge have experienced medium to high population growth.

#### *Te Awamutu Urban Area*

- Generally, the areas in the north of Te Awamutu have experienced low population growth. However those areas of low growth have been interspersed with a few scattered areas of medium and high growth (mainly through the centre of town, and on the northern edges of town).

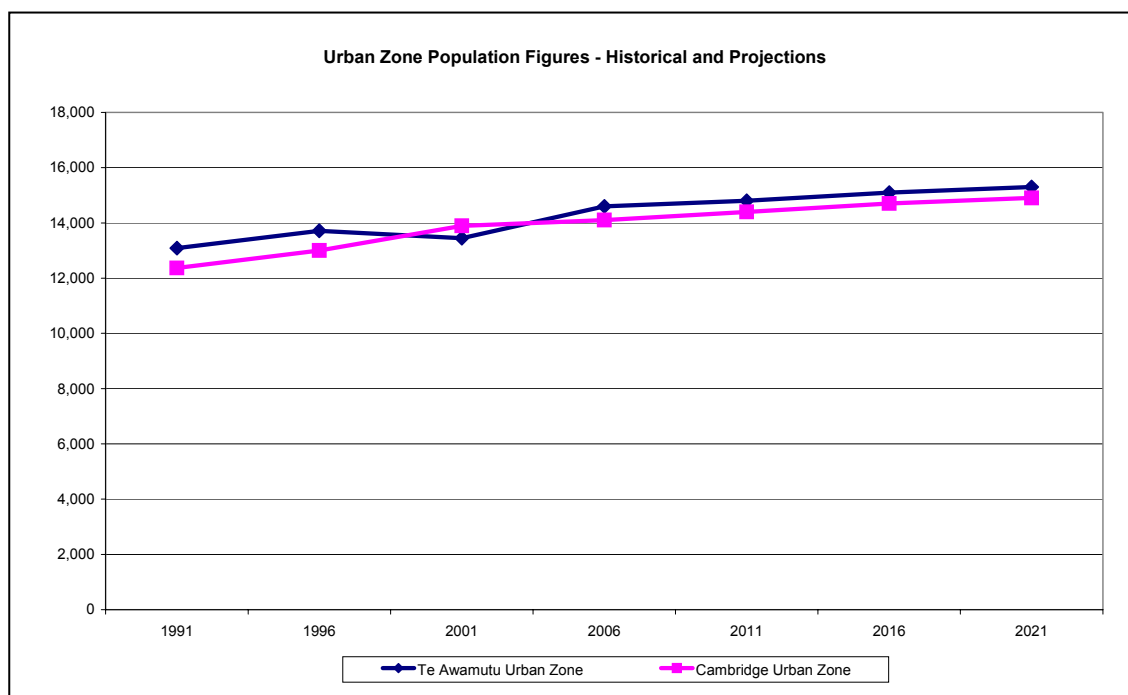
#### *Te Awamutu Rural Area (including Kihikihi)*

- Rural areas further out of town in the eastern part of Te Awamutu and in the main housing area of Kihikihi have experienced low growth, or population loss.
- Rural areas between Te Awamutu and Kihikihi have experienced medium to high rates of population growth – notably in rural residential policy areas within the Rural Zone.

### 5.2 Population Projections 2001-2021 (1996 Base)

In November 1997, Statistics New Zealand produced population projections for all the CAUs (Census Area Units) in New Zealand. The Post Enumeration Survey of the 1996 Census results indicated that there had been a census undercount of an average of 1.2% for the total New Zealand population. As a result, the population projections were reproduced in May 2000, with an adjusted estimated base population as at 30 June 1996.

Historically, migration (which is the most influential component of population growth in Waipa) has been relatively constant and moderate in the District. Figure 5.2 below combines actual historic population growth (1996-2001) with Statistics New Zealand medium growth scenario projections (2006-2021). Given that the population of Cambridge surpassed that of Te Awamutu in the 1996-2001 period it seems an anomaly that the Te Awamutu population is projected by Statistics New Zealand to re-pass that of Cambridge in the 2001-2006 period. However this does not significantly alter or affect the conclusions of this study.



**Figure 5.2 Cambridge & Te Awamutu Historical Population Growth and Population Projections (medium growth scenario) 1991-2021 (data source: Statistics NZ)**

### 5.3 Cambridge

The projections in Appendix 4 reveal the following scenarios:

*Medium growth scenario*

- Population of 14,900 by 2021 (an increase of 1,200 residents, or 8.8%, on the 2001 figure).
- Additional 451 dwellings\* needed to cater for the additional population

*High growth scenario*

- Population of 16,100 by 2021 (an increase of 2,200 residents, or 15.8%, on the 2001 figure).
- Additional 827 dwellings\* needed to cater for the additional population

\* The additional dwelling numbers are based on the assumption that the occupancy rate is consistent with the current New Zealand occupancy rate of 2.66 people per household.

In terms of residential growth, the study team (including Council planning staff) concluded that the high growth scenario is more appropriate for the purpose of this study. The aim of the strategy is ensure that sufficient land is provided for future urban growth and, in this respect, potentially erring on the side of oversupply is considered better than potentially erring on the side of undersupply.

### 5.4 Te Awamutu

The projections in Appendix 4 reveal the following scenarios:

*Medium growth scenario*

- Population of 15,300 by 2021 (an increase of 1,000 residents, or 7.0%, on the 2001 figure).

- Additional 376 dwellings\* needed to cater for the additional population

*High growth scenario*

- Population of 16,600 by 2021 (an increase of 2,000 residents, or 13.7%, on the 2001 figure).
- Additional 752 dwellings\* needed to cater for the additional population

\* The additional dwelling numbers are based on the assumption that the occupancy rate is consistent with the current New Zealand occupancy rate of 2.66 people per household.

In terms of residential growth, the study team (including Council planning staff) concluded that the high growth scenario is more appropriate for the purpose of this study, for the same reason as set out in section 5.3 above. That is, it is considered better to potentially err on the side of oversupply rather than err on the side of undersupply which could risk constraining growth opportunities and the market.

## INDUSTRIAL GROWTH

In measuring the rate of industrial growth, the rate of industrial zone building activity was obtained from Council records, in the form of the numbers of building consents issued in recent years (since 1998, when Council commenced recording such data).

### 6.1 Cambridge

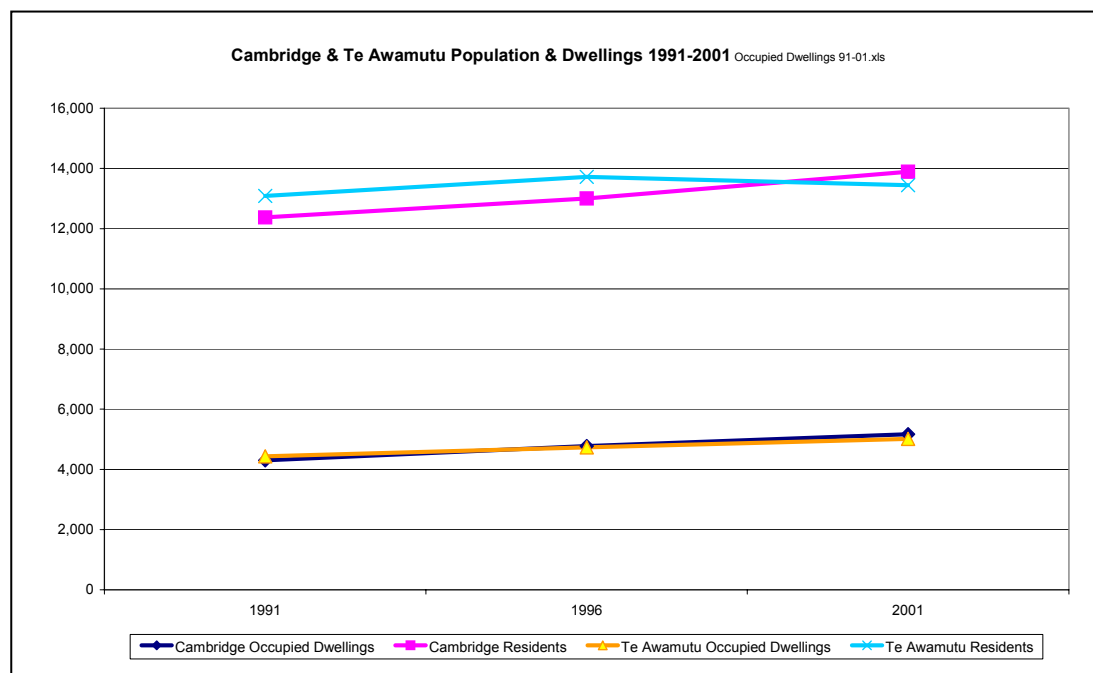
Council records indicate that the rate of industrial development in Cambridge has been steady and moderate, with an average of 5.75 building consents for new industrial buildings (i.e. not alterations/additions) each year. When considering the data in relation to the rate of industrial related building consents issued in Cambridge, it is appropriate to note the possibility that the lack of available "Industrial" zoned land could be restricting the amount of industrial development in the town. Nevertheless, extrapolating the average number of building consents forward to 2021, it can be seen that if the current rate of growth is sustained, Cambridge will need to provide for a further 115 industrial businesses to construct premises (i.e. a maximum 115 industrial lots).

### 6.2 Te Awamutu

The data shows that there has been a low but steady growth in the industrial zones of Te Awamutu, corresponding to an average of 8.25 building consents for new industrial buildings per year. Extrapolating this growth out to 2021, Te Awamutu will need to provide for a further 165 industrial lots in the town.

## 7.0 NUMBER OF DWELLINGS

The 2001 Census indicates that there are 5016 occupied dwellings in the Te Awamutu Urban Zone, and 5172 in the Cambridge Urban Zone. Comparing the two urban zones in terms of population and occupied dwelling numbers over the past three census periods it can be seen that there has been a higher level of growth in Cambridge than in Te Awamutu (see Figure 7.0 below).



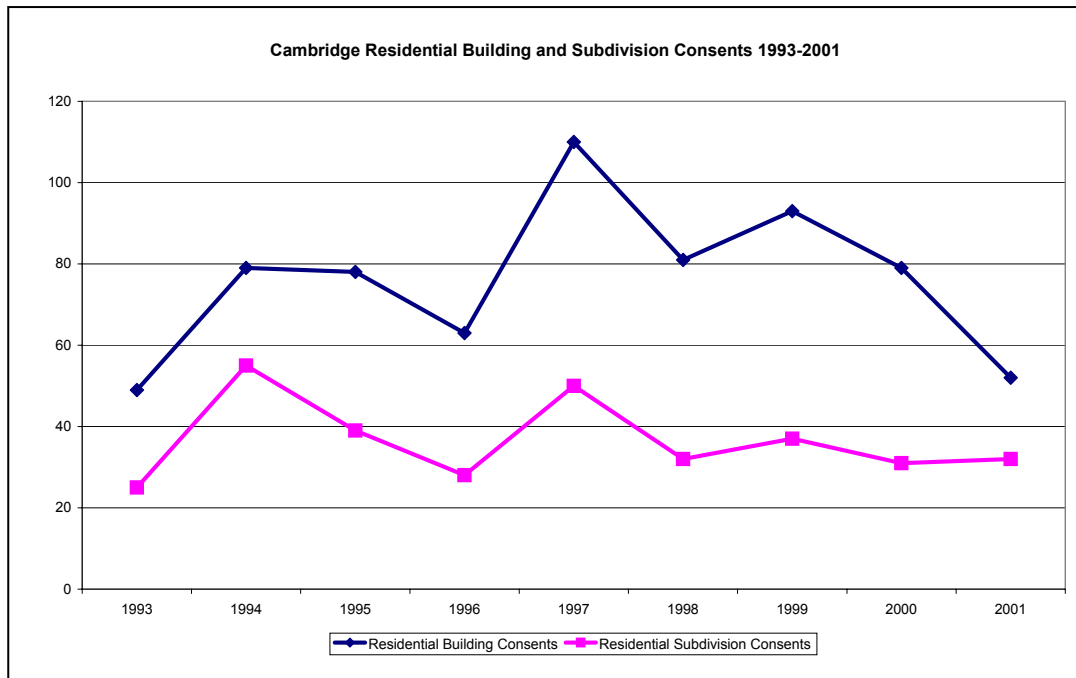
**Figure 7.0 Cambridge & Te Awamutu Population & Occupied Dwellings 1991-2001**  
 (Data Source: Statistics NZ 2001 Census)

## 8.0 RESIDENTIAL SUBDIVISION AND BUILDING CONSENTS

The rate of uptake of zoned land can be ascertained by analysing particularly the subdivision data retained by the Council. Council's GIS department and building department provided the base data from which the following analysis was extrapolated. It using this data it is important to note that in terms of the varying time periods used for analysis, Council's records only differentiate industrial and commercial subdivision activity from 1997 onwards, and other records (e.g. building consents and residential subdivision consents) have only be kept electronically since 1993. However, for the purposes of averaging and projecting growth, the records are considered quite adequate.

### 8.1 Cambridge

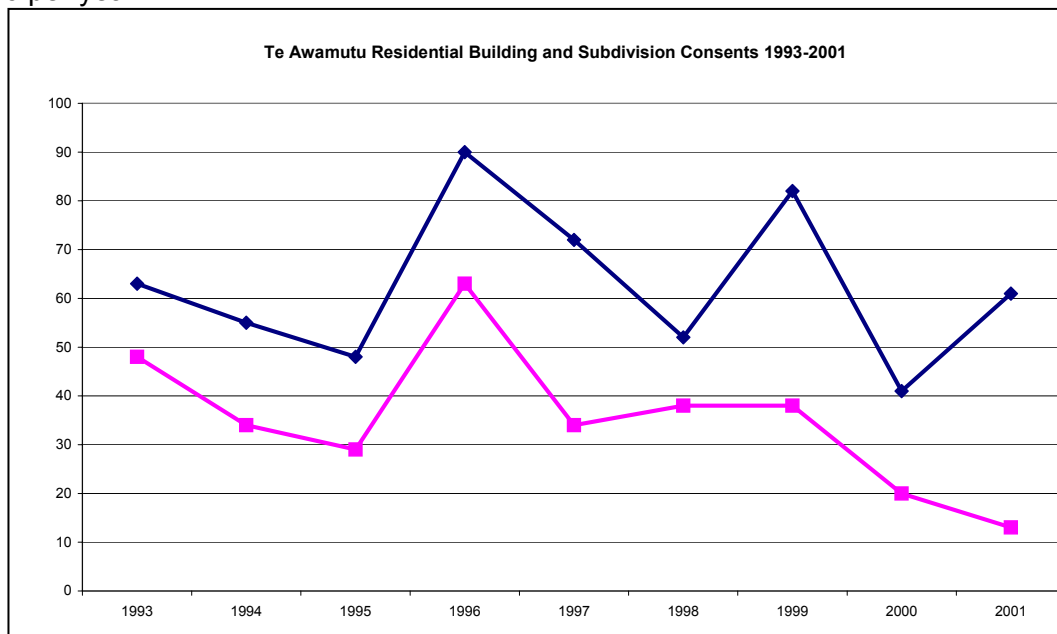
The data shows an average of 68 building consents (for new dwellings) and 20 subdivision consents issued each year for the past nine years. When graphed, the pattern of residential building and subdivision consents issued shows an increase in subdivision consents issued during 1993-94 and 1996-1997, with a general levelling from 1998 to the present. An increase in building consents issued occurred during 1997, with a decreasing rate of building consents issued from 1997 to the present. The limited availability of residential land is likely to have influenced the post-1999 decline in numbers of building consents issued.



**Figure 8.1 Cambridge Residential Subdivision and Building Consents 1993-2001**  
 (Data Source: Waipa District Council Building/GIS Departments)

## 8.2 Te Awamutu

Review of subdivision consents and building consents reveals an average of 56 building consents (for new dwellings) issued each year for the past nine years (1993-2001), and an average of 12 subdivision consents issued each year for the same period. When graphed, the pattern of residential building and subdivision consents issued shows a general decline in the number of subdivision consents issued, with a marked increase however, in 1996. The number of building consents issued is unevenly distributed, however as noted above contributes to an average 56 per year.



**Figure 8.2 Te Awamutu Residential Subdivision and Building Consents 1993-2001**  
 (Data Source: Waipa District Council Building Department and GIS Department)

## 9.0 SUPPLY ISSUES

In order to accurately assess future growth management issues it is important to clearly understand the capacity of land and servicing resources that are already recognised and provided for under the current District Plan. This enables assessment of the gap between forecast demand, and available resources to meet that demand.

### 9.1 Capacity determination methodology - general

In assessing supply (or capacity) in the towns it should be noted that although there may be capacity in theory, in real terms the market has chosen not to establish in these areas. Reasons for this include slope, orientation (south/west facing slopes are not preferred), proximity to industrial areas, the presence of low lying land, distance to the centre of town, and historical use of the land. Refer to the summary of feedback received from land development professionals in the towns, attached as Appendix 5 to this report.

In determining land capacity, reference has been made to the District Plan rules for permitted activities. Figures for the size of zoned areas, and the number of lots over a certain size have been obtained from Council's GIS department.

### 9.2 Residential and Rural Residential Greenfield

The capacity for growth in greenfield areas has been calculated from the area of existing, vacant, residential or rural residential areas in and around each town (Te Awamutu/Kihikihi and Cambridge). From this, an assessment has been made of the number of serviceable lots for which development is likely or able to be realised.

Greenfield areas currently zoned "Residential" in both towns are as follows:

Growth Area	Name	Size	No. of Lots (10 per ha)	No of residents (2.66 per dwelling)
<b>TE AWAMUTU</b>				
TA2	Taylor's Hill	6.85ha	68	180
TA4	George Melrose Drive	1.87ha	18	47
TA17	Dalton Avenue	1.88ha	18	47
TA18	Eden Avenue	3.82ha	38	101
TA20	Mountain View Drive	12.16ha	121	321
TA22	Rewi Street North	1.03ha	10	26
<i>Te Awamutu Total</i>		<i>27.61</i>	<i>273</i>	<i>722</i>
<b>CAMBRIDGE</b>				
CB3	Cambridge North (Thornton Road)	9.98ha	99	263
CB11	Kelly Subdivision	12.67ha	126	335
<i>Cambridge Total</i>		<i>22.65</i>	<i>225</i>	<i>598</i>

In addition, greenfield areas currently within "Rural Residential Policy Areas" are as follows:

Rural Res Policy Area	Size	No. of Lots (2 per ha)	No. of residents (2.66 per dwelling)
TE AWAMUTU			
Bond Road	76.8ha	153	406
St Leger Road	47.7ha	95	252
Haultain Street	22.8ha	45	119
Flat Road	5.4ha	10	26
Herbert Road	10.7ha	21	23
Brill Road	9.5ha	19	44
<i>Te Awamutu Total</i>	<i>163.4ha</i>	<i>324</i>	<i>870</i>
CAMBRIDGE			
Thornton Road	28.7ha	57	151
Leamington	38.7ha	77	204
Fencourt	38.2ha	76	202
Silverwood	6.3ha	12	31
<i>Cambridge Total</i>	<i>111.9ha</i>	<i>222</i>	<i>588</i>

### 9.3 Residential Infill

Residential infill is defined, for the purposes of this study, as a land parcel that has the potential to be subdivided creating up to five lots ( $5 \times 450\text{m}^2 = 2,250\text{m}^2$ ). In order to determine the potential for residential infill, the number of residentially zoned lots sized  $> 2250\text{m}^2$  was obtained from Council's GIS department. It is assumed that each of these lots contains one dwelling, therefore having the capacity to provide four more. Given these figures, the following analysis was made:

Area	No of Lots $> 2250\text{m}^2$	Potential Residential Infill Lots	No. of residents (2.66 per dwelling)
Cambridge	209	836	2223
Te Awamutu	59	236	628
Kihikihi	142	568	1510

*Note: These calculations provide a minimum number of potential infill lots, as the information provided the number of lots with a minimum area of  $2250\text{m}^2$ . Some will have a greater area, therefore greater theoretical potential for infill development. Note, however that site specific characteristics and the location of existing dwellings on each site may mean that this potential cannot be realised.*

### 9.4 Industrial Greenfields

Greenfield areas presently zoned "Industrial" in each town are as follows. The number of existing lots has been based on cadastral data from Council's GIS department. The number of lots per hectare has been based on twice the minimum lot size specified by the District Plan, (the minimum has been doubled to give flexibility in site size).

Town	Name	Capacity	No. of Lots (5 per ha)
Cambridge	Aotearoa Park	5.11ha	60 (35 already) = 25
Cambridge	Cambridge Central	39.2ha	196 (99 already) = 97
Te Awamutu	Northwest	129.1ha	645 (69 already) = 576
Te Awamutu	Bond Road	56.7ha	283 (64 already) = 219

## 9.5 Industrial Infill

Industrial infill is defined as a land parcel zoned industrial (or specialised industrial) that has the potential to be subdivided creating up to five lots (5 x 1,000m<sup>2</sup> – 5,000m<sup>2</sup>). In order to determine the potential for industrial infill, the number of industrially zoned lots sized > 5000m<sup>2</sup> was obtained from Council's GIS department.

Cambridge has 2 such lots, Te Awamutu 11, and Kihikihi none. Given those figures, the following analysis was made:

Area	No of Lots > 5000m <sup>2</sup>	Potential Industrial Infill Lots
Cambridge	2	8
Te Awamutu	11	44
Kihikihi	-	-

*Note: These calculations provide a minimum number of potential infill lots, as the information provided the number of lots with a minimum area of 5000m<sup>2</sup>. Some will have a greater area, therefore greater theoretical potential for infill development. Note, however that site specific characteristics and the location of existing buildings on each site may mean that this potential cannot be realised.*

## 9.6 Conclusion

Land Type	Total Theoretical Capacity (lots)	No. of residents (2.66 per dwelling)
<b>TE AWAMUTU</b>		
Residential Greenfield	332	878
Residential Infill	804 (236 Te Awamutu, 568 Kihikihi)	2138 (628 Te Awamutu, 1510 Kihikihi)
Rural Residential Greenfield	324	826
<b>Total Residential Capacity</b>	<b>1460</b>	<b>3842</b>
Industrial Greenfield	795	
Industrial Infill	44	
<b>Total Industrial Capacity</b>	<b>839</b>	
<b>CAMBRIDGE</b>		
Residential Greenfield	225	598
Residential Infill	836	2223
Rural Residential Greenfield	222	588
<b>Total Residential Capacity</b>	<b>1283</b>	<b>3409</b>
Industrial Greenfield	122	
Industrial Infill	8	
<b>Total Industrial Capacity</b>	<b>130</b>	

As discussed previously, it should be noted that while there may appear to be considerable capacity in some areas, the market, for reasons include slope, orientation, historical land use, and public perception, does not prefer some of those areas.

As a result, the following points can be made regarding supply in the study area:

### CAMBRIDGE

- Cambridge has a shortage of good quality residential land.
- Cambridge has a shortage of good quality rural residential land – and demand for such land is increasing.
- Cambridge has a significant shortage of industrial land.

#### TE AWAMUTU

- Te Awamutu has some residentially zoned areas with capacity, however they are not in the most desirable areas (in terms of market demand).
- Te Awamutu has an adequate supply of rural residential land.
- Te Awamutu has a reasonably adequate supply of industrial land (including land zoned Dairy Industrial).

### 10.0 MARKET PREFERENCE

Based on the comments received from a sample of land development professionals (attached as Appendix 5 to this report) the following generalisations can be made regarding market demand in Waipa.

Demand is greater than supply in the following areas:

- Residential areas at the top end of the market, sized around 900m<sup>2</sup>.
- Rural residential areas – reflecting the rural background of buyers.

Comment was made that if subdivision rules could be relaxed to enable 4000m<sup>2</sup> lots to be subdivided off existing large holdings, the demand for lifestyle blocks could be met. However, in contrast, one real estate agent commented that there is not so much demand for rural residential, as Waikato District Council had changed their district plan and there is a lot of land available between Cambridge and Hamilton.

- Areas in the north and northwest of both towns – as a result of proximity to Hamilton and better orientation of slopes.

It was noted that demand, and better quality housing, has always been focussed on the northern side of the Waikato River, and north is seen as the logical way for both towns to progress as it is closer to Hamilton, where a lot of people commute to employment. One respondent commented that Cambridge is seen by some as having the potential to become a satellite suburb of Hamilton. While land in the northern areas of both towns was seen as being preferred, in Cambridge priority was seen as being more rightly placed on land south of the proposed Bypass.

A demand constraint noted in recent years has apparently been the level of DIFs putting developers off investing, as they reduce returns.

It should be kept in mind that while there is a perceived shortage of residential land, supply is actually greater than demand in some existing residentially zoned land. As noted previously in this report, this is largely due to their orientation (south-west facing slopes), slope, distance from town, and the fact that some rural residential areas are perceived as being overpriced.

### 11.0 CONSTRAINTS ANALYSIS

The suitability of potential future growth areas in both towns has been determined using a constraints matrix. The capacity of future urban areas gives an indication of expected household/dwelling yield in urban areas for which rezoning and servicing has not yet occurred.

Given that the number of lots required to service demand to 2021 in Cambridge is 451, and Te Awamutu/Kihikihi 376, and the total area of all growth options could theoretically provide more than ten times that number of lots, it was both necessary and desirable to discount some of the potential cells prior to commencing the detailed servicing investigations.

During meetings with Council and HGCL staff, the growth options were narrowed down by identifying and excluding areas identified as being prone to various constraints for development. These constraints include:

- Unstable land
- Flooding
- Soil type (including peat areas)
- Slope
- Filled ground
- Poor soakage
- Ecological features
- Likely market demand
- Infrastructure/servicing constraints (see Section 9)

The table attached as Appendix 6 to this report shows the detailed constraints analysis undertaken in respect of each growth cell. For the purposes of this constraints analysis, the growth cells were superimposed onto Waipa District Council hazards data (refer Appendix 7 to this report). It should be noted that the hazards data is prepared and mapped at a macro level, and any further dependence on the results of this constraints analysis should be subject to further more detailed investigation at a site specific level.

In formulating the constraints matrix, each constraint was assigned a value ranging from 1 to 5. The full range of values is as follows:

- 0 Ideal
- 1 Preferable
- 2 Suitable
- 3 Unsuitable
- 4 Fatal Flaw

### **11.1 Unstable Ground**

Council's Hazard Maps (obtained from Council's GIS Department) provided information regarding areas in which unstable land provides a constraint. Such areas include TA9 (Cambridge Road), and CB5 (Cambridge East Industrial). The significance of the unstable land is not enough, however, to warrant exclusion of the growth cell on that factor alone. Some minor "tweaking" of the boundaries of the growth cell can eliminate the need to impinge on areas of unstable ground.

### **11.2 Flooding**

A fatal flaw in terms of flooding presented itself in the growth cell of TA9 (Cambridge Road). In addition, over half of the growth cell TA6 (Bond Road Industrial) was considered unsuitable for development as a result of it being affected by flooding. During site visits it is apparent that the remaining half of the growth cell is subject to drainage problems. TA6 (Bond Road Industrial) was still included through to the servicing assessment, however, as no other alternative

future industrial development possibility presented itself in the initial options formulation.

### **11.3 Soils**

Soils maps were prepared from the Land Resource Inventory data by Council's GIS department. CB15 (Cambridge North West) was deemed unsuitable in terms of soil type, as a result of it containing a large area of peat soils in the southern half of the growth cell. The remainder of the cell has longstanding issues with stormwater, a number of subdivision applications being declined in the past as a result of this issue.

### **11.4 Slope**

A growth cell with slope rendering it unsuitable for development was TA16 (Te Awamutu South). This mirrored comments received from land development professionals during the process of gathering feedback on the possible growth cells.

### **11.5 Filled Ground**

Waipa District Council Hazard Maps provided a good indication of areas of filled ground. Feedback from surveyors established that CB9 (Cambridge Road) has been filled with sawdust in the past (from an old sawmill that used to operate in the area). The decomposing sawdust creates unstable pockets of land throughout the western portion of the growth cell.

In relation to filled ground (and to demonstrate the need for site specific assessment as to the suitability of such ground), it is interesting to note that TA4 (George Melrose Drive), an existing residentially zoned area (so not really part of the constraints assessment) is completely located on filled land.

### **11.6 Poor Soakage**

Again, the Hazard Maps (Appendix 7) provided by Council's GIS department were relied upon to provide information regarding poor soakage. TA12 (McGhie Road) was almost completely subsumed by areas of poor soakage, and while TA6 (Bond Road Industrial) was not indicated by the maps as suffering poor soakage, it is evident when visiting the site that soakage problems exist in at least the southern half of the site. However, once again TA6 (Bond Road Industrial) was not discounted as no alternative industrial possibility was initially identified.

### **11.7 Ecological Features**

Cross referencing the growth cell maps with maps from both the Waipa District Plan and the Waikato Regional Plan revealed no significant ecological features or protected trees within the growth cells.

### **11.8 Likely Market Demand**

Discussion with Council staff, feedback from a sample of real estate agents and surveyors, and site visits by Harrison Grierson staff formed the basis of the assessment of market demand. As noted previously, market demand has been assessed as being strongly driven by factors such as slope, orientation, proximity to the town centres, historical land uses in an area, and proximity to industrial areas.

## 11.9 Quarry Buffer Zones

It should be noted when considering the impact of Quarry Buffer Zones on possible growth options, that the boundaries of any growth cell can be amended to avoid such constraints. Therefore, the Quarry Buffer Zones were not entered into the constraints matrix, but were instead considered separately. While Quarry Buffer Zones were not entered into the constraints matrix (as only one growth cell was affected by the constraint), the Waipa District Plan prohibits residential development within 500m of operating quarries. As a result, even allowing for possible amendment of boundaries, CB6 (Maungatautari Road) has a “fatal flaw” which was entered into the market demand column.

## 11.10 Conclusion

As a result of the initial assessment, the following growth cells in each area were investigated in greater detail as to their suitability in terms of infrastructure servicing costs (roading, stormwater, water, and wastewater).

CB2 Victoria Road West (residential)  
CB3 Cambridge North (residential)  
CB7 Roto-o-rangi Road East (rural residential)  
CB8 Roto-o-rangi Road West (rural residential)  
CB11 Growcorp (residential)  
CB1 Hautapu (industrial)  
CB5 Cambridge East Industrial  
TA1 Greenhill Drive (residential)  
TA3 Racecourse North (residential)  
TA5 Racecourse South (residential)  
TA7 Bond Road (residential)  
TA8 Piquet Hill Road (residential)  
TA10 Swarbrick Drive (residential)  
TA15 Kihikihi West (residential)  
TA6 Bond Road (industrial)

## 12.0 REZONING/PLAN CHANGE ISSUES

When identifying rezoning options, six principles to consider are:

- Land should be provided to match location of demand
- There should be a range of opportunities available for different market segments
- Land should be able to be serviced efficiently
- Residential development should not adversely affect significant environmental features
- Residential land should not be located adjacent to incompatible activities
- Greenbelt areas should be retained

At future stages in the process of looking to accommodate Waipa’s growth, these principles should be borne in mind.

## **13.0 SERVICING ISSUES**

### **13.1 Infrastructure Demand Assumptions**

The demand assumptions used in this investigation are detailed in Appendix 8.

### **13.2 Previous Studies of Waipa's Infrastructure Networks.**

The following studies have been carried out previously in respect to the Cambridge North Deferred Residential Zone :

1. Development Impact Fees and Cambridge North Residential Development : report to Policy Committee by Planning Services Manager, March 2001.
2. Cambridge North Development Proposals for Water Supply and Wastewater – Addendum by Waipa Utilities Department, February 2001.
3. Evaluation of Costs and Benefits of the Cambridge North Development – by Dr Warren Hughes Department of Economics University of Waikato, February 2001.
4. Stormwater Development Cambridge North Deferred Residential Zone – report to Council by Roading Asset Manager, January 2001.
5. Cambridge North Deferred Residential Zone East West Arterial – review of cost estimates by McPherson Goodwin Ltd, October 2000.
6. Peer Review of Cambridge North Water and Wastewater – by Tonkin & Taylor Ltd, October 2000.
7. Cambridge North Development : Proposals for Water Supply and Wastewater Disposal – by Waipa Utilities Department, February 2000.
8. Cambridge North Stormwater Investigation – by Montgomery Watson, June 1999.
9. Cambridge North Sewer Trunk Main – by Jones Gray Partners Ltd, December 1998.
10. Proposed 10.30 Hectare Extension North of Cambridge High School – by Harrison Grierson November 1998.
11. Cambridge North Deferred Residential Zone : Proposed District Plan Change – by Bloxam, Burnett & Oliver Ltd, August 1998.
12. Cambridge Sewer Collector in Alpha Street : Capacity Review – by Harrison Grierson Consultants Ltd, April 1998.
13. Cambridge North Deferred Residential Zone Stormwater and Geotechnical Investigation – by Tonkin & Taylor Ltd, August 2002.

Council has also provided data on road widths and current road traffic volumes from its RAMM asset database, and this was used to identify those roads that appear to close to capacity and which may need widening if a subdivision is released in the area. The studies on the Cambridge North area have generally concluded that the water supply and wastewater pipeline networks have limited spare capacities suitable only for relatively small growth cells of 100 lots or less. In terms of stormwater, it has been concluded that most of the Cambridge North Deferred Residential Zone can be potentially discharged detention ponds and to soakage. However, the eastern side is not as suitable for soakage, and further investigation is required to determine the capacity of the eastern drain that flows into the natural headwaters of the Mangaone Stream. The August 2002 Tonkin & Taylor Report details this stormwater issue.

Other similar studies are required on the remaining infrastructure in Cambridge, Te Awamutu, or Kihikihi. Meanwhile, this strategic study has made specific assumptions regarding the spare capacity within Council's existing infrastructure.

### 13.3 Connections to the Existing Council Infrastructure

The existing loads and assumed spare capacities in the existing system of major roads, stormwater reticulation, water reservoirs, treatment plants, and pump stations are detailed in Appendix 9.

These results show that Waipa District Council's water supply and wastewater headworks infrastructure, with the exception of the recently augmented Cambridge wastewater treatment plant, is currently running at full capacity and is in need of upgrade. Stormwater flows from growth cells were assumed to go to onsite soakholes with the larger secondary overflows going to the nearest natural drainage channel, rather than to Council's existing stormwater reticulation. In addition, several roads were found to be already at full capacity, and they will need widening if new subdivisions are released into their catchments.

### 13.4 Infrastructure Upgrade Requirements For Each Growth Cell

Due to limited previous studies on the loads and capacities of Council's existing infrastructure, the determination of the specific infrastructure requirements of each growth cell have been based upon the following assumptions :

**Roading capacity** : Traffic from each growth cell was assumed generally to move toward the respective town centre along the shortest possible routes. The traffic volumes from each growth cell were based upon the number of lots developed, and the assumed traffic routes were given a percentage of these new traffic volumes. Council's RAMM asset database was then used to determine whether the nominated traffic routes were already at full capacity. If so, such roads were nominated for the cost of a road upgrade.

**Stormwater capacity** : Detailed studies need to be undertaken on Council's existing stormwater reticulation before any consideration is given to connecting to the existing town reticulation network. Connection into Council's existing stormwater reticulation would generate additional flows and possible flooding, and it was thought more practical to assume at this stage, that the stormwater from each new urban growth cell would discharge to onsite soakholes and overland to the nearest natural drainage system.

**Water Supply capacity:** More investigations are required to determine the existing loads and spare capacities within all parts of Council's existing water supply network. Meanwhile, this strategy has assumed that the point of possible connection is the nearest 200mm diameter water main.

**Wastewater capacity:** There has been some limited capacity analysis of parts of the Cambridge wastewater system. This strategy assumed that the point of possible connection is the nearest Council wastewater pump station or the nearest 300 dia gravity pipe.

#### 13.4.1 Basis of Cost Estimates

The cost estimates of the infrastructure upgrades are indicative only, however they do provide a reasonable basis of comparison between each of the 16 nominated growth cells so that the cheapest cells can be identified for more detailed infrastructure examination.

##### **Roading Estimates**

The estimated cost of widening each road was based upon a typical \$unit cost/vehicle trips/day multiplied by the estimated vehicle trips from each growth cell.

The average current cost to design and construct an 8 m wide "sub collector" road with a traffic capacity of 1,000 vehicle trips per day = \$750,000/km. The derived unit cost = \$750/vehicle trip/km/day.

##### **Stormwater Infrastructure Estimates**

In view of the amount of investigation work already undertaken on the Cambridge North Deferred Residential Zone, it was considered appropriate to assume that its unit stormwater cost was also typical of all other growth cells which were assumed to also bypass Council's existing stormwater reticulation.

The Tonkin & Taylor August 2002 Report estimated the stormwater infrastructure costs to be \$4,302,000 for the 1,551 lot growth cell. This is equivalent to \$2,774/lot.

##### **Water Infrastructure Estimates**

Each growth cell would be required to contribute to the cost of providing reservoir water storage, pipeline connections, and the cost of upgrading Council water treatment plant and pump stations which are already at full capacity.

Based upon the design and construction rates sourced from the "Tauranga District Council Subdivision Impact Fee Project Costings" July 2000, the unit costs have been derived as follows :

*Upgrade Joyce Road WTP + Oropi WTP from 45,500 m<sup>3</sup>/day to 92,000 m<sup>3</sup>/day at a cost = \$24.45 million. Joyce Road Water Reservoir 10,000 m<sup>3</sup> = \$1.863 million + \$1 million on water mains.*

Derived unit costs :

- A typical 1,000 m<sup>3</sup>/day water pump station costs \$80,000 = \$80/m<sup>3</sup>/day.
- WTP upgrade unit cost = \$525/m<sup>3</sup>/day.
- Water Reservoir & main unit cost = \$286/m<sup>3</sup> of storage (this cheaper unit cost assumes a large town reservoir shared by all urban areas).
- Design, supply and install a 150 water main = \$75/m
- Design, supply and install a 200 water main = \$98/m

### **Wastewater Infrastructure Estimates**

Each growth cell's wastewater infrastructure requirement was estimated by applying typical unit cost for pump stations and pipelines. However, the cost of providing the gravity reticulation within each growth cell was assumed to be borne by the developers. Where the receiving treatment plant had recognised spare capacity, the growth cell was not expected to make a financial contribution to future upgrades. If on the other hand, the treatment plant was at full capacity as is Te Awamutu Treatment Plant, then the growth cell was expected to make a contribution equal to the unit cost of upgrading the plant. For the Te Awamutu Wastewater Treatment Plant this amount would be \$702/person.

From the "Tauranga District Council Subdivision Impact Fee Project Costings" July 2000, the unit costs :

*Expand the capacity of the Te Maunga WWTP at Tauranga by 35,850 persons (7,170 m<sup>3</sup>/day) at a cost = \$25.18 million. Upgrade the Judea Wastewater Pump Station (365 l/sec wet weather capacity or 60 l/sec average dry weather flow = 5,184 m<sup>3</sup>/day) = \$872,300.*

Derived unit costs :

- WWTP upgrade unit cost = \$702/person = \$3,510 m<sup>3</sup>/day average dry weather flow
- Wastewater Pump Station upgrade unit cost = \$168 m<sup>3</sup>/day.
- 150 dia gravity sewers 2.5 m deep incl manholes in road/chip seal areas = \$110/m
- 225 dia gravity sewers 2.5 m deep incl manholes in road/chip seal areas = \$135/m
- 300 dia gravity sewers 2.5 m deep incl manholes in road/chip seal areas = \$155/m
- Design, supply and install 225 gravity sewers across the Waikato River = \$300/m
- 375 dia gravity sewers 2.5 m deep incl manholes in road/chip seal areas = \$168/m
- 150 dia sewer rising main through road areas = \$75/m
- 200 dia sewer rising main through road areas = \$100/m

#### **13.4.2 Infrastructure Costs of Each Growth Cell**

The following tables 13.1 and 13.2 summarise the indicative costs of infrastructure required to serve each of the 15 growth cells. The specific infrastructure upgrades and estimates are detailed in Appendix 11.

**Table 13.1 New Growth Cells Cambridge : Infrastructure Upgrades**

Growth Cell	Load from Cell	Infrastructure Requirements (per Lot)	Estimated Cost	
			\$/ha	\$/lot
CB2 (445 residential)	4,450 vehicles/day 4.34 m3/sec stormwater, 1,184 m3/day water demand, 1,071 m3/day wastewater demand	Roading \$7,500 Stormwater unknown \$2,774 Water Supply \$2,388 Wastewater \$1,062  \$6,106,874	\$137,233	\$13,723
CB3 (1,551 residential)	15,510 vehicles/day 15.11 m3/sec stormwater, 4,126 m3/day water demand, 3,731 m3/day wastewater demand.	Roading \$7,500 Stormwater \$2,744 Water Supply \$2,496 Wastewater \$353  \$20,353,740	\$131,230	\$13,123
CB11 (423 residential)	4,230 vehicles/day, 4.13 m3/sec stormwater, 1,125 m3/day water demand, 1,018 m3/day wastewater demand	Roading \$7,500 Stormwater \$2,774 Water Supply \$2,388 Wastewater \$384  \$5,518,277	\$130,425	\$13,046
CB7 (139 Rural Resid)	1,390 vehicles/day, 1.50 m3/day stormwater, 370 m3/day water demand, 0 m3/day wastewater demand ie on septic	Roading \$7,500 Stormwater \$2,774 Water Supply \$2,534 Wastewater \$0  \$1,780,256	\$25,704	\$12,808
CB8 (114 Rural Resid)	1,140 vehicles/day, 1.24 m3/day stormwater, 303 m3/day water demand, 0 m3/day wastewater demand ie on septic.	Roading \$7,500 Stormwater \$2,774 Water Supply \$2,666 Wastewater \$0  \$1,463,473	\$25,634	\$12,840
CB1 (317 Industrial premises)	4,755 vehicles/day, 6.18 m3/sec stormwater, 381 m3/day water demand, 381 m3/day wastewater demand.	Roading \$11,250 Stormwater \$2,774 Water Supply \$1,094 Wastewater \$1,711  \$5,682,050	\$84,110	\$15,883
CB5 (244 Industrial premises)	3,600 vehicles/day, 4.75 m3/sec stormwater, 293 m3/day water demand, 293 m3/day wastewater demand.	Roading \$17,213 Stormwater \$2,774 Water Supply \$1,685 Wastewater \$721  \$5,463,859	\$112,056	\$22,393

*(Refer to Appendix 11 for calculations of estimated infrastructure costs.)*

**Table 13.2 New Growth Cells Te Awamutu/Kihikihī : Infrastructure Upgrades**

Growth Cell	Load from Cell	Infrastructure Requirements (per Lot)	Estimated Cost	
			\$/ha	\$/lot
TA5 (66 residential lots)	660 vehicles/day, 0.64 m3/sec stormwater, 176 m3/day water demand, 159 m3/day wastewater demand.	Roading \$0 Stormwater \$2,774 Water Supply \$2,490 Wastewater \$2,065  \$483,672	\$73,395	\$7,328
TA7 (105 residential)	1,050 vehicles/day, 1.02 m3/sec stormwater, 279 m3/day water demand, 252 m3/day wastewater demand.	Roading \$0 Stormwater \$2,774 Water Supply \$2,439 Wastewater \$2,843  \$845,877	\$80,637	\$8,056
TA1 (125 residential)	1,250 vehicles/day, 1.22 m3/sec stormwater, 333 m3/day water demand, 301 m3/day wastewater demand.	Roading \$0 Stormwater \$2,774 Water Supply \$2,362 Wastewater \$2,790  \$990,719	\$79,131	\$7,926
TA3 (361 residential)	3,610 vehicles/day, 3.52 m3/sec stormwater, 960 m3/day water demands, 869 m3/day wastewater demand.	Roading \$0 Stormwater \$2,774 Water Supply \$2,397 Wastewater \$2,096  \$2,622,994	\$72,599	\$7,266
TA8 (338 residential)	3,380 vehicles/day, 3.29 m3/sec stormwater, 899 m3/day water demand, 813 m3/day wastewater demand.	Roading \$0 Stormwater \$2,774 Water Supply \$2,457 Wastewater \$2,405  \$2,581,119	\$76,455	\$7,636
TA10 (184 residential)	1,840 vehicles/day, 1.80 m3/sec stormwater, 489 m3/day water demand, 444 m3/day wastewater demand.	Roading \$0 Stormwater \$2,774 Water Supply \$2,490 Wastewater \$2,521  \$1,432,413	\$77,680	\$7,785
TA15 (1,194 residential)	11,900 vehicles/day, 11.60 m3/sec stormwater, 3,165 m3/day water demand, 2,864 m3/day wastewater demand.	Roading \$3,750 Stormwater \$2,783 Water Supply \$910 Wastewater \$2,169  \$11,438,396	\$96,153	\$9,612
TA6 (60 industrial)	900 vehicles/day, 1.17 m3/sec stormwater, 72 m3/day water demand, 72 m3/day wastewater demand.	Roading \$11,250 Stormwater \$2,774 Water Supply \$3,129 Wastewater \$4,762  \$1,314,928	\$110,036	\$21,915

*(Refer to Appendix 11 for calculations of estimated infrastructure costs.)*

## 13.5 Infrastructure Conclusions

### 13.5.1 Overall

Looking at the previous tables, the Te Awamutu and Kihikihi growth cells are some 40% cheaper to service than the Cambridge growth cells. This is mainly due to additional road capacity in Te Awamutu/Kihikihi and the associated lower roading upgrade costs. The one exception is industrial growth cell TA6 in Te Awamutu which will have higher roading costs to increase the capacity of Bond Road.

Therefore, Te Awamutu/Kihikihi appears to be the cheaper area to develop, even including the costs of the new wastewater scheme.

### 13.5.2 Cambridge Growth Cells

As expected, rural residential growth cells CB7 (Roto-o-rangi Road East), and CB8 (Roto-o-rangi Road West) have the lowest overall infrastructure costs on a per lot basis (i.e. \$12,800/lot). Slightly more expensive are CB11 (Growcorp) and CB3 (Cambridge North). Meanwhile, industrial growth cell CB1 (Hautapu) (\$15,883/lot) in Cambridge North appears to be somewhat cheaper than industrial growth cell CB5 (\$17,000/lot ; Cambridge East Industrial) due to its cheaper roading costs. Cell CB5 has the additional cost of providing a bridge across the gully at the end of Queen Street. However, that while the costs of establishing the growth cell are high, the market has commented (during feedback received from surveyors and real estate agents) that CB5 is far preferable to CB1 in terms of proximity to existing industrial areas, orientation, wind direction, and accessibility to and from the town centre (notwithstanding costs).

**Growth cells CB7 (Roto-o-rangi Road East) and CB8 (Roto-o-rangi Road West)** are medium sized cells of 139 lots and 114 lots located alongside each other in Cambridge south. Each cell will generate just over 1,000 vehicle trips/day that would most probably travel along Roto-o-rangi/Carlyle/Browning/Shakespeare Streets to either Victoria Bridge or the main bridge into Cambridge. Some road widening is expected on Roto-o-rangi, Carlyle and Browning Streets. In terms of stormwater, it is likely that it can be mostly disposed of to onsite soakholes, however roading stormwater may need to travel overland to the nearest natural drainage system either to the south-west or the south-east. This needs to be specifically determined through a detailed stormwater investigation. The water supply requirements of CB7 and CB8 will involve two possible connections to Council's existing reticulation in Roto-o-rangi Road and Shadbolt Drive. In addition, the developers will be expected to provide their own water reticulation within the growth cell and make a financial contribution towards the cost to upgrade Council's central town reservoirs, water treatment plant, and water pump stations. Due to the rural nature of these zones, onsite septic tank treatment disposal is assumed, and therefore there would be no connection to Council's wastewater infrastructure.

**Growth Cell CB11 (Growcorp)** is a medium sized cell of 423 residential lots located in Cambridge south off Pope Terrace. It will generate 4,230 vehicles per day along Pope Pope Terrace and over the Victoria Bridge or the main bridge into Cambridge. Widening of Pope Terrace is needed to cater for this extra traffic, and Victoria Bridge will need to be augmented by the main bridge due to its limited 5.5m width. In terms of stormwater, it is likely that onsite soakholes will be adequate, together with a drain from the internal roading to the natural drainage system

immediately to the west. This needs to be specifically determined through a detailed stormwater investigation. The water supply requirements of CB11 will involve a connection/s to the water main that runs along Pope Terrace. In addition, the developers will be expected to provide their own water reticulation within the growth cell and make a financial contribution towards the cost to upgrade Council's central town reservoirs, water treatment plant, and water pump stations. The wastewater requirements will involve a Council-constructed pump station within the growth cell and a pipeline connection to the 525 dia sewer that enters the treatment plant. The developers will, once again, be expected to provide their own wastewater reticulation within the growth cell.

**Growth cell CB3 (Cambridge North)** is a relatively large cell of 1,551 residential lots located in Cambridge north. It will generate 15,510 vehicles per day along Victoria Street (east) and Watkins Road that run through the green belt to Cambridge. Both these roads will need widening to cater for these traffic volumes. In terms of stormwater, numerous studies have been undertaken. It appears most of the residential stormwater can be disposed to detention ponds and soakholes within CB3. However, the remaining north-eastern part of CB3 is unsuitable for soakage, and it will need to drain to the eastern headwater catchment of the Mangaone Stream. The water supply requirements of CB3 will involve connections to Council's water mains in Victoria Street (East) and Watkins Road. The water supply requirements of CB11 will involve a connection/s to the water main that runs along Pope Terrace. In addition, the developers will be expected to provide their own water reticulation within the growth cell and make a financial contribution towards the cost to upgrade Council's central town reservoirs, water treatment plant, and water pump stations. The wastewater requirements will involve a Council-constructed pump station within the growth cell and a quite long pipeline connection along Victoria/Taylor/Vogel Streets and over the Waikato River to the 525 dia sewer that enters the treatment plant. Developers will be expected to provide their own wastewater reticulation within the growth cell.

**Growth Cell CB1 (Hautapu)** is a medium sized cell of 317 industrial lots located in north Cambridge off Victoria Street (West). It will generate 4,755 vehicles per day along Victoria Street (West) and Hannon Road into Cambridge. Both these roads will need widening to cater for these traffic volumes. In terms of stormwater, it is likely that onsite soakholes will be adequate, together with a drain from the internal roading to the natural drainage system immediately to the west. This needs to be specifically determined through a detailed stormwater investigation. The water supply requirements of CB1 will involve a connection/s to the water main that runs along Victoria Street (West) and Hannon Road. In addition, the developers will be expected to provide their own water reticulation within the growth cell and make a financial contribution towards the cost to upgrade Council's central town reservoirs, water treatment plant, and water pump stations. The wastewater requirements will involve a Council-constructed pump station within the growth cell and a pipeline connection to the 525 dia sewer that enters the treatment plant. The developers will also be expected to provide their own wastewater reticulation within the growth cell.

### 13.5.3 Te Awamutu Growth Cells

Te Awamutu residential growth cells TA3 (Racecourse North), TA5 (Racecourse South), TA8 (Piquet Hill Road) appear to have the cheapest overall infrastructure costs (around \$7,500/lot) due to the spare capacity in Te Awamutu's nearby roading system. Residential growth cells TA10 (Swarbick Drive) and TA1 (Greenhill Drive) are the next cheapest with an estimated infrastructure upgrade cost of about \$7,800/lot. On the other hand, the most expensive is industrial cell TA6 (Bond

Road Industrial) (\$21,915/lot) due mainly to its relatively high costs to upgrade Bond Road.

**Growth Cell TA8 (Piquet Hill Road)** is a medium sized cell of 338 residential lots located in east Te Awamutu off Te Rahu Road. It will generate 3,380 vehicles per day along Te Rahu Road and Cambridge Road and into Te Awamutu. Both these roads have sufficient capacity to receive these traffic volumes without upgrading. In terms of stormwater it is likely that onsite soakholes will be adequate together with a drain from the internal roading to the natural drainage system immediately to the east. The water supply requirements of TA8 will involve water connections to the water mains that run along Te Rahu and Cambridge Roads. In addition, the developers will be expected to provide their own water reticulation within the growth cell and make a financial contribution towards the cost to upgrade Council's central town reservoirs, water treatment plant, and water pump stations. The wastewater requirements will involve a Council-constructed pump station within the growth cell and a pipeline connection to the sewer that runs along Te Rahu Road. The developers will also be expected to provide their own wastewater reticulation within the growth cell, and to also make a financial contribution towards the cost of upgrading Te Awamutu's pump stations and wastewater treatment plant.

**Growth Cell TA3 (Racecourse North)** is a medium sized cell of 361 residential lots located in east Te Awamutu off Racecourse Road. It will generate 3,610 vehicles per day along Racecourse Road to Ohaupo and Tawhiao Roads and then into Te Awamutu. These roads appear to have adequate spare capacity and they should not need upgrading. In terms of stormwater it is likely that due to the relatively non porous soils, all discharges will need to be drained to the nearest natural drainage system to the south-west. The water supply requirements of TA3 will involve water connections to the water main that runs along Racecourse Road. In addition, the developers will be expected to provide their own water reticulation within the growth cell and make a financial contribution towards the cost to upgrade Council's central town reservoirs, water treatment plant, and water pump stations. The wastewater requirements will involve a Council-constructed pump station within the growth cell and a pipeline connection to the sewer that runs along Tawhiao Street. Once again, the developers will be expected to provide their own wastewater reticulation within the growth cell, and to also make a financial contribution towards the cost of upgrading Te Awamutu's pump stations and wastewater treatment plant.

**Growth Cell TA5 (Racecourse South)** is a small cell of 66 residential lots located in north Te Awamutu off Racecourse Road. It will generate 660 vehicles per day along Racecourse Road to Tawhiao and Ohaupo Roads and then into Te Awamutu. These roads appear to have adequate spare capacity and they should not need upgrading. In terms of stormwater, it is likely that onsite soakholes will be adequate together with a drain from the internal roading to the natural drainage system immediately to the south. The water supply requirements of TA5 will involve water connections to the water main that runs along Racecourse Road. In addition, the developers would be expected to provide their own water reticulation within the growth cell and make a financial contribution towards the cost to upgrade Council's central town reservoirs, water treatment plant, and water pump stations. In regard to wastewater infrastructure, The wastewater requirements will involve a Council-constructed pump station within the growth cell and a pipeline connection to the sewer that runs along Tawhiao Street. The developers will be expected to provide their own wastewater reticulation within the growth cell, and to also make a financial contribution towards the cost of upgrading Te Awamutu's pump stations and wastewater treatment plant. There appears to be no need to construct a wastewater pump station within TA5 because there is a sewer in close proximity.

However, the developers will be expected to provide their own wastewater reticulation within the growth cell, and to also make a financial contribution towards the cost of upgrading Te Awamutu's pump stations and wastewater treatment plant.

**Growth Cell TA6 (Bond Road Industrial)** is a small industrial cell of 60 lots located in east Te Awamutu off Bond Road. It will generate 900 vehicles per day along Bond Road and into Te Awamutu. Bond Road will most likely need widening to accommodate these extra vehicles. In terms of stormwater, it is likely that a drain will need to be directed west under Bond Road to the nearby natural drainage system. The water supply requirements of TA6 will involve connections to the water main that runs along Bond Road. In addition, the developers will be expected to provide their own water reticulation within the growth cell and make a financial contribution towards the cost to upgrade Council's central town reservoirs, water treatment plant, and water pump stations. Regarding wastewater, the fall of the land will allow a gravity connection into Council's sewers in Bond Road. However, TA6 will need to contribute to the cost of upgrading the Te Awamutu's pump stations and wastewater treatment plant.

#### 13.5.4 Kihikihi Growth Cells

Kihikihi residential growth cell TA15 has some road upgrade requirements which result in a slightly more expensive infrastructure cost of \$9,612/lot.

**Growth cell TA15 (Kihikihi West)** is a relatively large residential cell of 1,194 lots, located immediately west of the Kihikihi shopping centre. It will generate 11,900 vehicles per day along Brill/McAndrew/St Leger Roads to Kihikihi Road (SH3). Brill/McAndrew/St Leger Roads are small rural roads and they will need widening to accommodate these extra vehicles. In terms of stormwater, it is likely that several drains will need to be directed to the north-east and to the south-west to the nearby natural drainage system. The water supply requirements of TA15 will involve connections to the water mains that run along St Leger Road and Kihikihi Road. In addition, the developers will be expected to provide their own water reticulation within the growth cell and make a financial contribution towards the cost to upgrade Council's central town reservoirs, water treatment plant, and water pump stations. The wastewater requirements will involve one or two Council-constructed pump stations within the growth cell and a pipeline connection to the future sewer that will run along Kihikihi Road. The developers will also be expected to provide their own wastewater reticulation within the growth cell, and to make a financial contribution towards the cost of upgrading Te Awamutu's pump stations and wastewater treatment plant.

#### 13.5.5 Limitations of the Infrastructure Costs

It should be noted that the cost estimates are very indicative, and they simply serve to indicate the growth cells *likely* to have the lowest infrastructure costs.

#### 13.6 Future Engineering Investigations

Each of the above nominated growth cells needs to be specifically investigated in terms of their particular infrastructure requirements. These investigations would involve:

**Roading:** The likely routes that traffic will take when entering and leaving each growth cell have been simply based upon road maps and an examination of Council's RAAM database to indicate the likelihood of overloading. The

practicalities of the traffic flows and the upgrading requirements need to be specifically investigated onsite for each growth cell. Once completed, an accurate roading infrastructure cost estimate can be prepared for each growth cell.

**Stormwater:** Except for growth cell CB3 (Cambridge North), it was not possible to reliably estimate the cost of stormwater infrastructure for each urban growth cell with the limited field information available. Site specific investigations need to be undertaken on relative ground levels, land ownership, physical structures, and distance to a suitable discharge point. This strategy does however identify the probable suitable location of stormwater discharge for each growth cell. Therefore, a thorough onsite examination of the relative ground levels, land ownership, and other issues needs to be undertaken for each growth cell to derive a reasonable infrastructure estimate.

**Water Supply:** The water infrastructure requirements were based on the knowledge that Council's water treatment plants and reservoirs are undersized to meet future demands. However, detailed investigations are needed to determine the spare capacities within Council's pipelines and pump stations in the vicinity of each growth cell. For the purposes of this strategy, assumptions were made that the nearest 200 mm diameter water main could accept new growth cells without the need for upgrades. Accurate infrastructure requirements should be determined for each growth cell from a detailed analysis of Council's water supply system. A computer model does exist within Council, but it is not completed to a level that allows a quick analysis of site-specific water upgrade requirements.

**Wastewater:** The wastewater infrastructure requirements were based upon the knowledge that Council's Cambridge wastewater treatment plant is adequate to treat new growth. On the other hand, the Te Awamutu Wastewater Treatment Plant is inadequate to treat growth cells in Te Awamutu and Kihikihi. Although there have been several past assessments of the spare capacities within parts of the Cambridge pipeline and pump station system, the overall wastewater system needs to be assessed. Therefore, for the purposes of this strategy, assumptions were generally made that the nearest 300 mm diameter gravity sewer or pump station could accept new growth cells.

## 14. SHORTLIST FOR CONSULTATION PURPOSES

While there is considerable theoretical land capacity within both Te Awamutu and Cambridge, it became apparent during this study that the market does not wish to establish in these areas. Reasons for such preference (or lack of) include the perceived prosperity of some areas, their slope and aspect, dampness, and proximity to facilities/town centres. As a result, there is a significant lack of suitable residential land in Te Awamutu, a modest lack of industrial land, but an adequate supply of rural residential land. Conversely, in Cambridge there is a significant lack of industrial and residential land, and a modest lack of rural residential land.

As a result of the detailed analysis undertaken during this study, the following ten growth cells were shortlisted due to being considered the most attractive in terms of market demand, development constraints, and infrastructure costs:

	<b>Cambridge</b>	<b>Te Awamutu</b>
<b>Residential</b>	CB2 Victoria Road West CB3 Cambridge North CB11 Growcorp	TA3 Racecourse North TA7 Bond Road TA8 Piquet Hill Road TA15 Kihikihi West
<b>Rural-residential</b>	CB8 Roto-o-rangi Road West	-
<b>Industrial</b>	CB1 Hautapu	TA6 Bond Road

These shortlisted growth options were used as the basis for public consultation on growth options.

## **15.0 THE CONSULTATION PROCESS**

### **15.1 Letters**

On 26<sup>th</sup> February 2003, letters were circulated to landowners within or near the identified growth cells. Approximately 2,000 letters were distributed in Te Awamutu, and 450 in Cambridge. The letters introduced the draft Waipa Urban Growth Strategy, emphasising the preliminary nature of the study and the fact that identified growth cells were *potential* growth areas. The letter also stressed the desire of Council to obtain community feedback prior to proceeding further with the project.

The letters advised of Public Open Days held in Council Chambers, Te Awamutu (12<sup>th</sup> March 2003) and the Town Hall, Cambridge (13<sup>th</sup> March 2003).

Enclosed with the letters was a copy of the first Waipa Urban Growth Strategy Newsletter (refer Appendix 12 to this report).

### **15.2 Public Open Days**

Public Open Days, attended by Council and Harrison Grierson staff, were held as follows:

Te Awamutu  
Waipa District Council Chambers  
2.00pm-6.00pm  
Wednesday 12<sup>th</sup> March 2003

Cambridge  
Cambridge Town Hall  
2.00pm-6.00pm  
Thursday 13<sup>th</sup> March 2003

Sign in sheets were filled in by all attendees to the Open Days. 34 people attended the Open Day in Te Awamutu, and 40 in Cambridge.

A1 posters were displayed, outlining the draft Strategy and including large-scale maps for attendees to comment on. For completeness, the Cambridge Open Day also displayed detailed plans showing the Cambridge North area and indicative roading patterns etc. pertaining to Proposed Plan Change No.1.

The altered population projections (from medium growth scenario to high growth scenario) were presented clearly at the open days.

### 15.3 Response Forms

Response forms were provided at the Open Days to enable landowners and interested parties to comment on the draft Strategy. 36 consultation response forms were received.

### 15.4 Cambridge and Te Awamutu Community Boards

Andrew McFarlane (Community Planning and Liaison Manager) presented the draft Strategy to the Cambridge Community Board on 5<sup>th</sup> March 2003. While the strategy was of great interest to the board, no comments were received.

Wayne Allan (Planning Services Manager) presented the draft Strategy to the Te Awamutu Community Board on 18<sup>th</sup> March 2003. The board passed a resolution as follows:

***“That the Te Awamutu Community Board recommend to the Policy Committee that it investigate, in principle, the establishment of new industrial zones in the flat land on Bond Road and the land on the western side of the railway line in the vicinity of the old railway yards”.***

Note: The area described above relates to growth cell option TA6 Bond Road Industrial. The land on the western side of the railway line in the vicinity of the old railway yards is already zoned industrial (dairy industrial).

A further resolution was passed:

***“That the Te Awamutu Community Board recommend the Policy Committee look at the possibility of future development of the northern area of Te Awamutu, the race course site if it ever becomes available, and the other areas identified in the Waipa Urban Growth Strategy for residential development in Te Awamutu.”***

It is noted at this point that the race course site has been identified by Fonterra as not being suitable for residential development, due to its proximity to the dairy factory wastewater treatment ponds.

### 15.5 Consultation response report (June 2003)

The outcomes of the consultation undertaken were reported back to the Council's Policy Committee on 14 July 2003 (“Waipa Draft Urban Growth Strategy – Consultation Responses”, June 2003). This recommended deleting some options and adding others that were identified through the consultation process. The revised shortlist, as confirmed by the Policy Committee on 14 July 2003 was:

	<b>Cambridge</b>	<b>Te Awamutu</b>
<b>Residential</b>	(see note below)	TA1 Greenhill Drive TA7 Bond Road TA8 Piquet Hill Road TA10 Swarbrick Drive
<b>Rural-residential</b>	CB9 Silverwood South	-
<b>Industrial</b>	CB1 Hautapu	TA6 Bond Road

Note: The above growth cells are in addition to CB3 Cambridge North (Residential) and CB4 Thornton Road (Residential) which are the subject of separate plan change procedures already underway. The urban growth strategy confirms the suitability of these areas as preferred residential growth areas.

Maps showing the shortlisted growth areas are contained in Appendix 13 to this report. Landowners in the above shortlisted growth areas were then contacted in July 2003 in order to gauge responses to the proposals. The outcomes of the discussions were summarised in a report to the Council's Policy Committee on 8 September 2003 (refer to Appendix 14). Interested parties were invited to make representations to the Policy Committee at that meeting.

## 16.0 FINAL GROWTH STRATEGY

Following consideration of the above reports, and the representations made to it on 8 September 2003, the Policy Committee confirmed the following urban growth cells:

	<b>Cambridge</b>	<b>Te Awamutu</b>
<b>Residential</b>	CB11 Growcorp (plus see note below)	TA7 Bond Road * TA8 Piquet Hill Road * TA10 Swarbrick Drive TA23 Pirongia/Frontier Road
<b>Rural-residential</b>	CB9 Silverwood South CB10 Silverwood North	-
<b>Industrial</b>	CB1 Hautapu *	TA6 Bond Road *

*Note:* Undeveloped areas that are already zoned Residential or Industrial, or are subject to plan changes already underway (such as CB3 Cambridge North and CB4 Thornton Road), are not included above as they are already confirmed or intended growth cells as a result of separate processes and resolutions. These areas, plus the identified growth cells in the above table are expected to cater for urban growth needs up to 2021.

In the longer term (beyond 2021), the future growth of Cambridge is anticipated to be generally in a westerly direction. It is considered that the proposed expressway (Cambridge bypass) will form a logical urban boundary to the north and east of Cambridge.

The final urban growth strategy is shown overleaf. The Council intends to initiate detailed engineering investigations, structure planning and district plan changes to give effect (over the next two financial years) to growth cells marked with a (\*) above. The engineering investigations will be assisted if Council's Asset Management Plans are updated to include the current usage and spare capacity remaining in the existing infrastructure.

The facilitation of the other growth cells in the Urban Growth Strategy will be up to the private sector and the relevant landowners through private plan change processes under the Resource Management Act 1991. The Council will not initiate these.

Areas not included in the Urban Growth Strategy are not excluded from consideration through private plan change processes under the Resource Management Act 1991.

In conclusion, the final urban growth strategy reflects many of the submissions made through the consultation process undertaken in respect of the draft strategy. While not all submissions could be accommodated, all submissions and representations were carefully considered. The key point to recognise is that the Strategy is an indication of preferred future growth areas. Any actual district plan changes that may subsequently be initiated to rezone any land (whether by Council or by the private sector) will be subject to public notification and formal submission and hearing processes under the Resource Management Act 1991.

### ***Review Process***

Due to the dynamic nature of population change and market conditions, it is recommended that follow up reviews of this strategy be undertaken at five yearly intervals. The purpose of such reviews would be to provide an indication of the rate of development activities in the different market sectors of the District over each five yearly interval. The review would provide a means of evaluating actual urban growth patterns against the projected urban growth anticipated in this strategy, and making adjustments accordingly. A further outcome of the review would be to identify any further work required in light of changes or shifts in the District's development market.

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## **APPENDIX 1**

### **Preliminary Growth Cells**

## **APPENDIX 2**

### **Zoning Maps**

## **APPENDIX 3**

### **Historical Population Growth Maps**

## **APPENDIX 4**

### **Population Projections Age/Sex Pyramids**

## **APPENDIX 5**

### **Feedback from Sample of Land Development Professionals**

## **APPENDIX 6**

### **Constraints Matrix**

## **APPENDIX 7**

**Hazards Data  
Soils  
Slope**

## **APPENDIX 8**

**Demands on existing infrastructure  
Demands from each growth cell**

## **APPENDIX 9**

### **Capacities of existing infrastructure**

## **APPENDIX 10**

**Maps of infrastructure upgrades for each growth cell**

## **APPENDIX 11**

**Table of infrastructure upgrades  
and costs for each growth cell**

## **APPENDIX 12**

**Copy of consultation newsletter  
(February 2003)**

## **APPENDIX 13**

### **Shortlisted growth cells (June 2003)**

## **APPENDIX 14**

**Report to Policy Committee on 8 September 2003 –  
Detailed landowner discussions**