



# Waipa District

## Demographic Profile 1986 - 2031

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*Te Rūnanga Tātari Tatauranga*

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*Te Whare Wānanga o Waikato*

## Waipa District: Demographic Profile 1986-2031

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## Population Trends

1. The population of Waipa District has grown significantly over the past three decades, from just over 35,500 in 1986 to 46,200 in 2012 (30 per cent). The population is projected to further increase by 12.7 per cent over the 2011 – 2031 period, to around 51,910 persons by 2031. The trends are similar to that for Waikato, where the population is projected to increase by around 13.8 per cent.
2. Waipa District has a larger proportion of those of European/New Zealand/Other ethnicity (hereafter European-origin) than either the Waikato Region or Total New Zealand, and a smaller proportion of both Māori and Pacific Island. Waipa also has substantially fewer people of Asian origin. In all cases, the number in each ethnic group has grown. While Maori grew by 6.5 per cent, accounting for approximately 6 per cent of Waipa District's growth, the biggest increase was for the European-origin population with an increase of 14 per cent and contributing 87 per cent to the growth in the district.

## Components of Change

3. Overwhelmingly the main component of growth during the period 1991-2000 was natural increase (the difference between births and deaths), while between 2001 and 2006 this was accompanied by—and in some years overshadowed by—strongly positive net migration gain. However the 2011-2012 year indicates a departure from the latter trend, with the first notable net migration loss since 1991-92. Also of note is that the trend is similar for both the Waikato Region and nationally.
4. Components of change by age (which are free of cohort size effects) show that Waipa has experienced substantial net migration losses at 15-24 years of age. Between 1996 and 2001, migration gains were experienced at 5-9 and 30-39 years or age (plausibly parents and children), while between 2001 and 2006 there were greater gains at 5-9 and 10-14 years of age, and for almost all age groups between 30 and 74 years.

## Age Structure & Population

5. From a cross-sectional perspective (that is, change by age group rather than cohort), Waipa experienced a small increase in numbers in the youngest age groups, with the exception of 5-9 years where there was a marginal decline. At 25-39 years there was a more significant decline in numbers, while numbers increased at all older ages, particularly across the Baby Boomer age groups.
6. As elsewhere, the population of Waipa is ageing. However, like many rural areas, the District's ageing is being accelerated by the sustained net migration loss at young adult ages which has caused a deep bite to develop in the age structure, across age 20-39 years. The minor gains at older ages also add to structural population ageing. The trends have been similar for the Waikato region.



7. The changes by age have important implications for the labour market. Waipa's Labour Market entry:exit ratio (population aged 15-24: 55-64 years) has fallen since 1996, from 17 people at labour market entry age for every 10 in the retirement zone, to just 10 for 10 in 2012. By comparison, the Waikato Region and Total New Zealand still have 13 people respectively at entry age per 10 in the retirement zone.
8. As elsewhere in New Zealand, the age structures of Waipa's major ethnic groups differ markedly, with the European-origin population relatively older and the Māori and Pacific Island populations relatively young. There is a very strong correspondence between the overall bite in the age structure, and the age structure of the European population.
9. The very youthful age structure of Waipa's Māori population saw over one-third aged 0-14 years across the period 1996-2006. At the same time, the data also indicate that Waipa's Māori population is slightly older than its counterparts in the Waikato Region and Total New Zealand. By comparison with the Waikato Region and Total New Zealand, the Māori, Pacific Island and Asian populations are under-represented at all ages, and European-origin population is over-represented.

10. Projections by major ethnic group show the district's Māori population increasing between 2011 and 2021 by approximately 14.1 per cent, and the European-origin population by 6.9 per cent. There are, however, marked differences by age. For example, the 65+ year Māori population is projected to increase by 50 per cent and the European-origin population of the same age by 35.2 per cent.
11. Data for the Waikato Region suggest there will be relatively little change in the overall ethnic composition over time, but greater change by age. Young Māori, Pacific Island and Asian (0-14 years) are projected to slightly increase their share of the region's youthful population, while greater shift-share changes are projected for each successively older age group. In each case these result in a slightly diminished proportion of European.
12. The projections show Waipa's labour market entry / exit ratio falling below one (entrant per exit) between 2021 and 2026, depending on which age groupings are used. The trends are similar for Waikato and Total New Zealand, although for total New Zealand the ratio does not fall below one during the projection period.
13. The projections also show a rapid decline in Waipa's natural increase that has significant implications for future growth. The trend is driven by a crossover to more elderly than children by 2021 (compared with 2026 for Waikato and Total New Zealand), and a relatively small proportion projected to be at the key reproductive ages (21-23 per cent for Waipa) compared with 24-25 per cent for Waikato and 25-27 per cent for Total New Zealand.



14. A special topic section provides an overview of the Waikato region's changing industrial age structure across the 1996-2006 period, focussing on its four largest industries at the three-digit level (of which there are 158), and concluding with an overview of all industries employing more than 1,000 people (57 of 158 industries). Despite the region's relative youth, three of its four largest industries have somewhat older age structures than the total workforce, uppermost among them Sheep, Beef and Cattle farmers, pointing to an urgent need to engage in succession planning.
15. Data at the one-digit level (17 industries), but without a breakdown by age, are given for the Waipa District. As for the Waikato, Agriculture, Forestry and Fishing is the single-largest industry for the district, but also one of only two to decline over the period (-9.3 per cent), the other being the second-smallest industry: Electricity, Gas and Water Supply. Retail Trade is Waipa's second-largest industry, followed by Property and Business Services, Manufacturing, and Health and Community Services, all of which experienced sizeable increases over the period, most notably Property and Business Services which increased by 70.5 per cent. The relatively large Construction industry (6<sup>th</sup> largest) also saw a significant increase (72.6 per cent).



## What you need to know about these data

**Data sources:** All data used in this report have been sourced from Statistics New Zealand. Most have been accessed via Infoshare or Table Builder, while some have come from purchased, customised databases specially prepared for NIDEA by Statistics New Zealand. Because the data come from different collections and/or are aggregated in different ways, for example by ethnicity or labour force status, and small cell sizes have been rounded by Statistics New Zealand to protect individuals, they often generate different totals. While considerable care has been taken to ensure that such inter- and intra-collection discontinuities are acknowledged and accounted for, for example via footnotes to tables or in the text, the disparities are not usually large, and typically do not affect the story being told. The matter is drawn to the attention of readers who are often concerned when numbers which ‘should’ be the same, are not. The time-series data in Figures 1.1 and 1.2 are a particular case in point.

**Ethnicity:** The ‘multiple count’ method of enumerating the population by ethnic group is another case worthy of special note. The ethnic concept underlying data used in in this report is:

*‘the ethnic group or groups that people identify with or feel they belong to. Ethnicity is self-perceived and people can belong to more than one ethnic group. For example, people can identify with Māori ethnicity even though they may not be descended from a Māori ancestor. Conversely, people may choose to not identify with Māori ethnicity even though they are descended from a Māori ancestor’* (Statistics New Zealand 2011).

Counting people more than once makes analysis of the data and its interpretation particularly difficult. Some analysts prefer to calculate proportions based on the summed numbers in each ethnic group, which is the approach taken here, while others prefer to use the total population count as the denominator (eg., for a region). The problem with the latter method is that proportions sum to well over 100 per cent, making it difficult to interpret the resulting graphs. The approach in this paper has been to identify the extent of the ‘over count’.

**Residual method for estimating total net migration:** This paper uses a residual method for estimating net migration. First, deaths for a given observation (e.g. one single year) are subtracted from births to give an estimate of natural increase. Second, the population at one observation is subtracted from the population at the previous observation, to give an estimate of net change between the two observations. Third, natural increase for that observation is subtracted from net change, to give the component due to net migration.

**Residual method for estimating inter-censal migration by age and sex:** A similar method is used for estimating net migration by age between two observations for which there are existing





data (eg, 5 year census periods). First, numbers by age and sex for one observation are 'survived' based on the probability of surviving to the next age group. Second, known births are apportioned male/female according to the sex ratio (105 males / 100 females), and (using 5 year age group data) entered at age 0-4. Third, the survived numbers for each age/sex group are 'aged' by 5 years, to become the expected population for the next observation. Fourth, expected numbers for each age/sex group are subtracted from actual numbers at the next census, to derive an estimate of net migration for each age/sex.

**Projections:** The population projections used in this paper are in most cases based on Statistics New Zealand's medium set of assumptions, but comparison with the high and low variants have been included where useful. At national level, the medium assumptions are that the total fertility rate (TFR) will decline from its present 2.1 births per woman to 1.9 births per woman by 2026; that life expectancy will continue to increase, but at a decelerating rate, and that annual net international migration will be 10,000 per year. International and internal migration at the subnational level is also accounted for, the assumptions reflecting observed net migration during each five-year period 1981-2006. The assumptions for Waipa are included at Appendix 3. When interpreting these data it is important to remind readers that demographic projections of future demand are not forecasts in the sense that they incorporate interventions that may change the demographic future. Rather, they simply indicate what future demand will be if the underlying assumptions regarding births, deaths, migration prevail.

**Industry:** The industry data used in the Special Topic (Section 6) are drawn from a time-series database developed by Statistics New Zealand to NIDEA specifications. They pertain to the employed population only. Data are given for three Census observations (1996, 2001 and 2006) and have been customised so that the industrial classification and geographic region is internally consistent across the period. The industrial classification is based on ANZSIC96 V4.1 at the three digit level. Aggregation by employment status (employer, self-employed, paid employee etc.,) is another case where the totals in this report may differ from those in other collections.



## Feature article – Population ageing in a nutshell

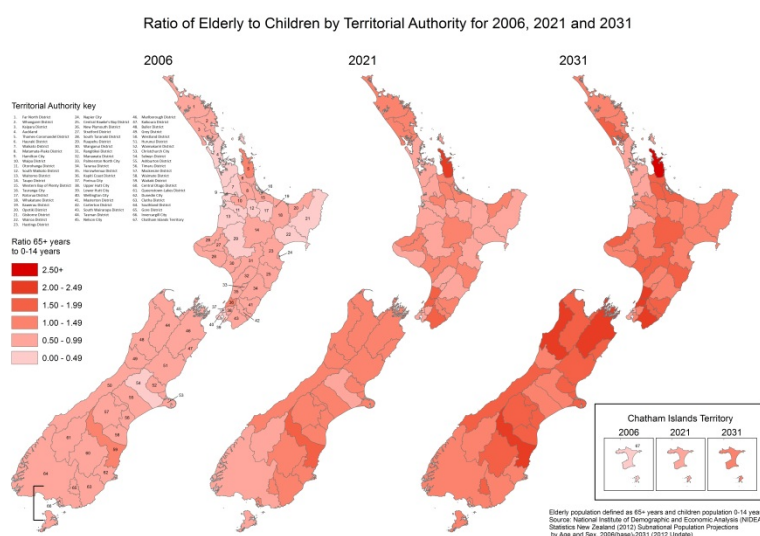
As elsewhere, population ageing is unfolding at markedly different rates across New Zealand. This diversity is caused by different mixes in the drivers of population ageing: birth rates, longevity (survivorship) and migration:

- Declining birth rates decrease the proportion of the population that is young and concomitantly increase the proportion at older ages.
- More people living longer adds to the numbers at older ages, and in the process further swells the proportion at those ages.
- When an area experiences net migration loss, which occurs mainly at 20-39 years, it removes both the young people themselves and their reproductive potential, further pushing up the median age.
- Where an area experiences net migration gains at retiree ages, both the numbers and proportions at those ages are further augmented, further accelerating structural ageing.

The overall outcome of these processes is an incremental—and in some cases rapid—shift to more elderly than children, more deaths than births, and to the end of growth and onset of what is expected to be permanent population decline, something not seen in modern populations until its recent onset in Japan and much of Europe.

Figure 1 provides an overview of the first of these trends (more elderly than children) at Territorial Authority level (TA). In 1996, no TA had more elderly than children. By 2003 that had become 3 TAs (4.5 per cent); by 2021 it is projected to be the case for 41 TAs (61.2 per cent); and by 2031, for 61 TAs (91.0) per cent.

**Figure 1: Ratio of elderly (65+ years) to children (0-14 years), 2006, 2021 and 2031**



As indicated, the process of population ageing generates two even more profound shifts: from natural increase, where births exceed deaths – as they have for all of New Zealand’s modern history – to natural decline where deaths exceed births; and from absolute growth to absolute decline, once there are insufficient migrants to offset the ‘lost’ births and increased deaths. In New Zealand, the shift to natural decline is not expected to occur nationally until the second half of the Century. However, the crossover is already occurring in three TAs (Waitaki, Thames Coromandel, and Horowhenua) and is projected to be the case in 22 TAs (30 per cent) by 2031.

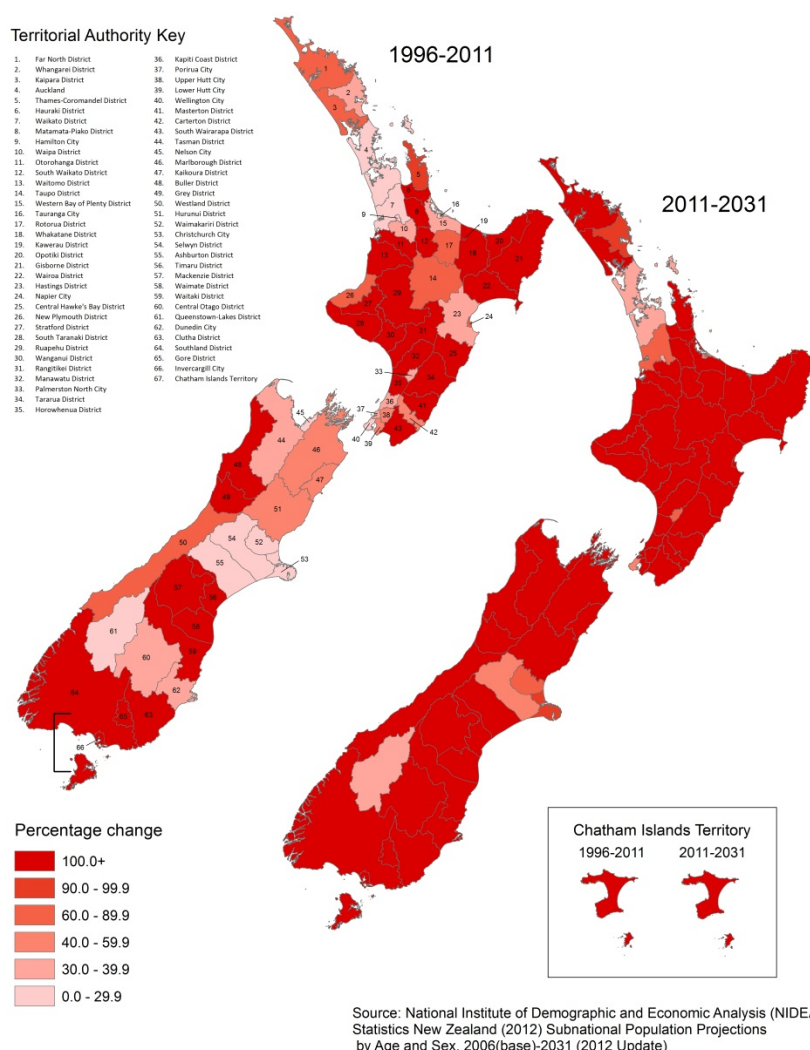
The final piece of jigsaw is a slow but equally inexorable shift from the ‘old’ form of population decline, which was caused by net migration loss that was greater than natural increase, to the ‘new’ form, where net migration loss is both accompanied by – and further contributes to – natural decline. Currently 24 (36 per cent) of New Zealand’s TAs are declining in absolute terms, but only the three TAs noted above are yet experiencing the new (dual) form of decline. By 2031, the dual form is projected to be the case for seven TAs (10 per cent), alongside a further 15 TAs (22 per cent) experiencing decline from net migration loss only, and one experiencing decline from natural decline only. While it is still some way off for most TAs, the new form of population decline will be especially challenging because it will be self-reinforcing: ever-fewer young adults to bear the children, and ever-more elderly who have completed their childbearing years.

In the interim, it is critical to understand that for 56 TAs (84 per cent), all future ‘growth’ to 2031 will be at 65+ years (Figure 2)—and that in 23 of these TAs, that growth will be insufficient to offset overall decline at other ages. While the number declining will actually be one fewer than between 1996 and 2011 (due to a higher net migration assumption going forward), there will also be some shift share effects, with six TAs coming marginally out of decline, and five entering it—meaning that in reality 29 TAs (43 per cent) are at the end of their growth stage.

Between 2011 and 2031, only eleven TAs are projected to see less than 100 per cent of their growth at 65+ years: Christchurch and Whangarei (each 95+ per cent at 65+ years), Waikato, Palmerston North City, and Waimakiriri (60-63 per cent), Wellington City, Selwyn and Tauranga City (44-46 per cent), and Auckland City, Hamilton City, and Queenstown (36-37 per cent). The trends are thus both pervasive and inexorable. At national level, they mean that two-thirds of growth will be at 65+ years, the underlying trends at subnational level concealed largely by Auckland.



**Figure 2: Contribution to change by the 65+ year old population by Territorial Authority, 1996-2011 and 2011-2031**



To place New Zealand's situation in a global context, we can look at trends across the 58 More Developed Countries (MDCs) – of which New Zealand is one of the most youthful. Over the next 20 years, the population of the MDCs aged 65+ years will grow by around 98 million, while *all other age groups combined* will decline by 41 million. In anyone's language, those numbers will cause the scales to tip. Currently across the MDCs there is exactly one person aged 65+ years per child aged 0-14; by 2031 there will be 1.5. The shift is also unavoidable, because the 65+ population of 2031 is already 45+ years old. We know how many there are, and the rate at which they will die (and international migration at older ages is minimal). At the younger ages, only those aged less than 20 years are not yet born – but again we know approximately how many there will be in 2031 because we know how many people there will be at the key parenting ages (they are already teenagers) and we can be fairly certain that they are not going to return to having three or four children per woman as was the case during the baby boom (when their grandparents were born).



The global trends provide New Zealand with a salutary warning. The diminishing pool of youth in the other 57 OECD countries is the pool within which New Zealand competes for many of its skilled migrants. Increasing competition for these migrants will increasingly make it difficult for New Zealand to achieve the migration assumptions in the population projections drawn on above. Attention is increasingly being turned to the developing countries where there is still a significant excess supply of young people. However, attracting them to, and retaining them in New Zealand will require more attention to settlement issues and equity than is presently the case. As one of the youngest of the developed countries, those migrants whom New Zealand attracts *and trains* will be of ever-greater interest to our structurally older counterparts.

The following demographic profile for the Waipa District should be read with this broad context in mind. The shift to the end of growth is a sequentially-unfolding phenomenon, with plenty of early warning signals. We can plot its course and plan ahead. However the clock is ticking and has been doing so for many years, as the retrospective elements of this profile will clearly identify. The crossing of any one of a handful of thresholds (see Box 1) by a TA means that it has entered the end of its growth phase. As indicated above, some regions may temporarily revert, but it is unlikely that they will resume significant or sustained growth. These issues are being investigated more deeply by researchers at the National Institute of Demographic and Economic Analysis (NIDEA) and their colleagues at Massey University:

***Nga Tangata Oho Mairangi: Regional Impacts of Demographic and Economic Change – 2013-2014:*** MBIE-funded project led by Professor Paul Spoonley (Massey University) and Professor Jacques Poot (NIDEA). Key Researchers: Associate Professor Robin Pearce and Dr Trudi Cain (Massey University), Professor Natalie Jackson, Dr Dave Mare and Dr Michael Cameron (NIDEA).

**Box 1: Key thresholds indicating end of growth phase**

- Onset of youth deficit (proportion of population aged 15-24 years declines below 15 per cent)
- Fewer people at labour market 'entry' than 'exit' age (15-24: 55-64 years; 20-29: 60-69 years)
- More elderly than children (65+ : 0-14 years)
- Key reproductive age population declines below 15 per cent of the population
- More deaths than births (natural decline)
- Absolute decline

*Natalie Jackson*

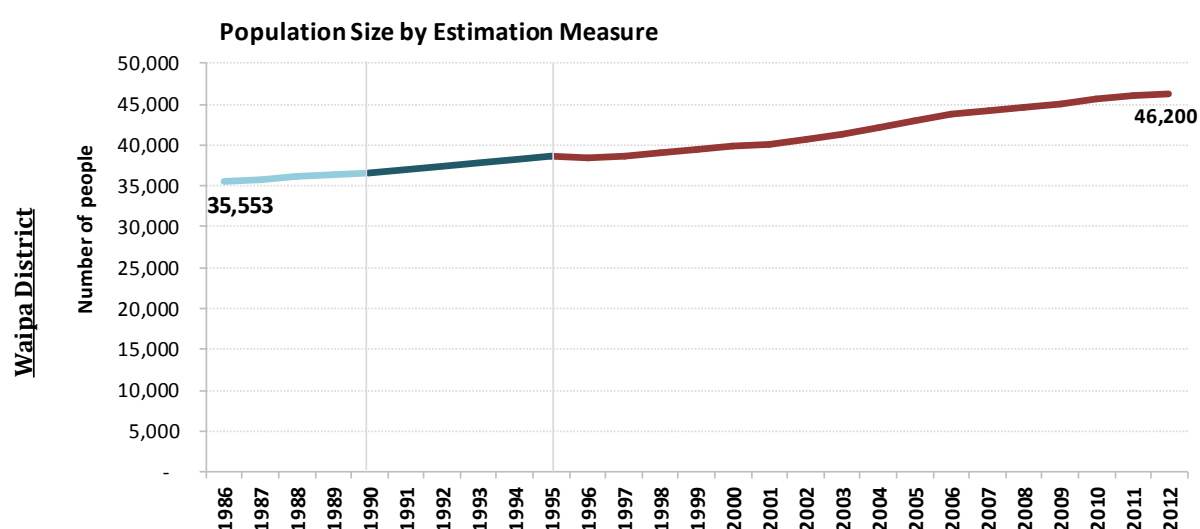


## 1. Population Trends

### 1.1 Population Size and Growth

The population of Waipa District has grown only slightly over the past three decades, from just over 35,500 in 1986 to 46,200 in 2012 (Figure 1.1.1). Differences in the timing and methods of estimating population size across the period mean that the trends cannot be presented as continuous; however there is sufficient correspondence to indicate that small but steady growth has occurred since the 1990s (see Appendix 1.0 for underlying data).

Figure 1.1.1: Population of Waipa District, 1986-2012



Source: Statistics New Zealand, Infoshare, Tables DPE052AA and DPE051AA

1986-1990: Census Night Resident Population (Census-Adjusted) Intercensal Estimates (March Years)

1991-1995: Census Night Resident Population (unadjusted for Census 1996) (March Years)

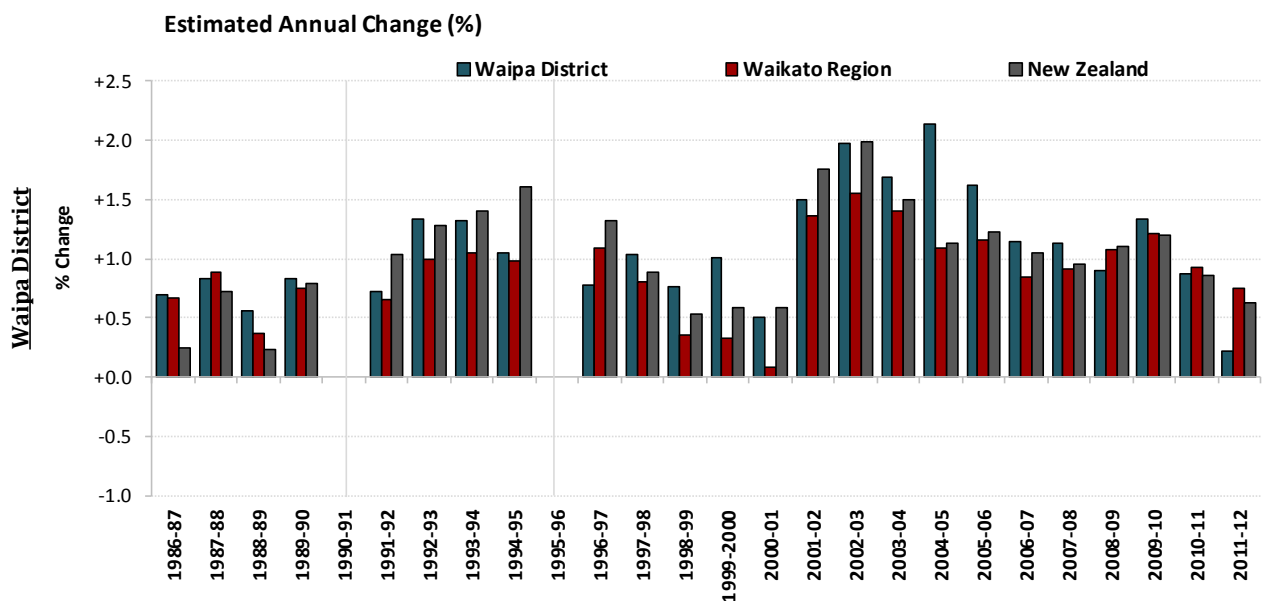
1996 onwards: Estimated Resident Population for Territorial Authority and Regional Council Areas, at 30 June (1996+) (Annual-Jun)

Notes: \*Changes in the timing and method of estimating Resident Population between 1991-1992 and 1995-1996 mean that the three sets of trends should be understood as discontinuous

Figure 1.1.2 shows the trends in terms of annual growth rates, with the data collection discontinuities identified by gaps. Data are also compared with Waikato Region and Total New Zealand. For Waipa District, the trends are similar to those for Waikato and Total New Zealand with positive growth seen across the entire period., albeit Waipa's rate of growth for the 2011-2012 year was somewhat lower (see Appendix 1.0 for data). The extent to which this relative rate is correct cannot be known until the 2013 Census data become available, towards the end of 2013, but it is plausible that it reflects the underlying estimation methodology which has a greater margin of error for smaller population bases.



**Figure 1.1.2: Annual Population Growth Rate: Waipa District, Waikato Region and Total New Zealand, 1986-2012**



Source: Statistics New Zealand, Infoshare, Tables DPE052AA and DPE051AA

1986-1990: Census Night Resident Population (Census-Adjusted) Intercensal Estimates (March Years)

1991-1995: Census Night Resident Population (unadjusted for Census 1996) (March Years)

1996 onwards: Estimated Resident Population for Territorial Authority and Regional Council Areas, at 30 June (1996+) (Annual-Jun)

Notes: \*Changes in the timing and method of estimating Resident Population between 1991-1992 and 1995-1996 mean that the three sets of trends should be understood as discontinuous

## 1.2 Ethnic Composition and Growth

Figure 1.2.1 provides an indication of the extent to which the major ethnic groups have contributed to the district's growth (see also Table 1.2.1). Very clear from these 'multiple ethnic group' data<sup>1</sup> is that Waipa District has a larger proportion of those of European/New Zealand/Other ethnicity (hereafter European-origin) and a smaller proportion of Māori than either the Waikato Region or Total New Zealand (12.5, 19.2 and 13.6 per cent respectively). Waipa also has substantially fewer people of Pacific Island and Asian origin.

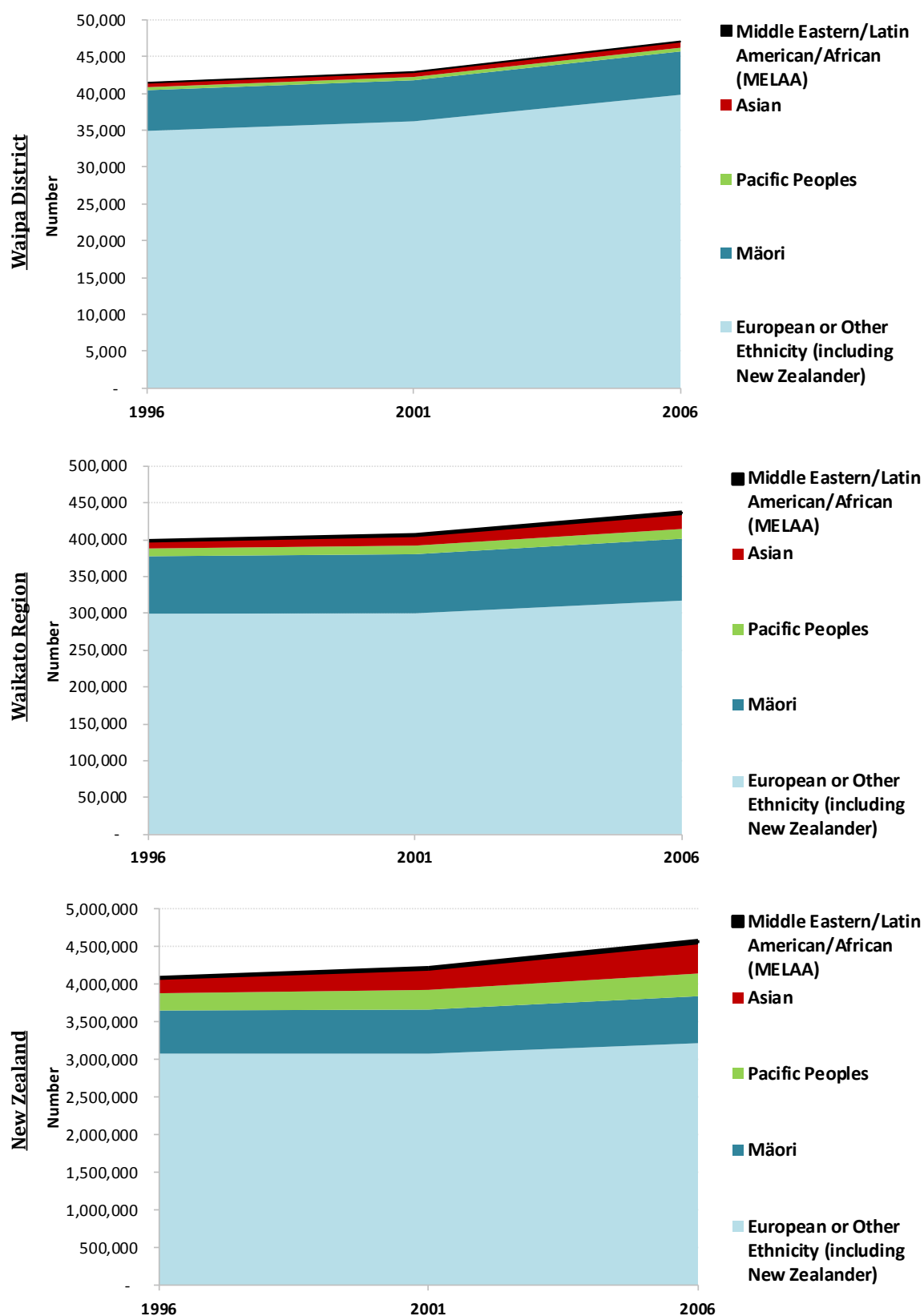
In all cases, the number in each ethnic group has grown. While the Maori population grew by 6.5 per cent, accounting for approximately 6.0 per cent of Waipa District's growth, the largest increase was for the European-origin population with an increase of 14 per cent, contributing 87 per cent to the growth of the district (Table 1.2.1). For Māori this growth was somewhat smaller than in either the Waikato or nationally, while for those of European-origin it was somewhat larger. Pacific Peoples, Asian and Middle Eastern/Latin American/African (hereafter MELAA) population groups each experienced greater growth rates again, but these reflect their relatively small 1996 base.

<sup>1</sup> The multiple ethnic group method of enumeration means that a proportion of people are counted more than once. Table 1.2.1 gives an approximation of the extent to which the method results in an over-count.





**Figure 1.2.1: Population by Major Ethnic Group\* (Multiple Count), Waipa District, Waikato Region, and Total New Zealand 1996-2006**



Statistics New Zealand, Estimated Subnational Ethnic Population (RC,TA) by Age and Sex at 30 June 1996, 2001 and 2006

Notes: \*People may be counted in more than one ethnic group





**Table 1.2.1: Population by Major Ethnic Group\* (Multiple Count), Waipa District, Waikato Region, and Total New Zealand, 1996-2006**

		Population			Change: 1996-2006			Distribution (%)*		
		1996	2001	2006	Number	% Change	Contribution to Change (%)	1996	2001	2006
Waipa District	European or Other Ethnicity (including New Zealander)	34,900	36,200	39,800	+4,900	+14.0	87.3	84.2	84.3	84.6
	Māori	5,520	5,570	5,880	+360	+6.5	6.4	13.3	13.0	12.5
	Pacific Peoples	410	450	510	+100	+24.4	1.8	1.0	1.0	1.1
	Asian	570	620	790	+220	+38.6	3.9	1.4	1.4	1.7
	Middle Eastern/Latin American/African (MELAA)	60	80	90	+30	+50.0	0.5	0.1	0.2	0.2
	Total	41,460	42,920	47,070	+5,610	+13.5	100.0	100.0	100.0	100.0
	Total People, Ethnicity Stated (without multiple count)	38,400	40,000	43,700	...	+13.8	...	...	...	...
	Ethnic 'overcount' (%)	8.0	7.3	7.7	...	...	...	...	...	...
Waikato Region	European or Other Ethnicity (including New Zealander)	299,600	300,100	317,300	+17,700	+5.9	45.7	75.1	73.7	72.5
	Māori	77,900	80,200	84,000	+6,100	+7.8	15.7	19.5	19.7	19.2
	Pacific Peoples	10,600	11,650	13,250	+2,650	+25.0	6.8	2.7	2.9	3.0
	Asian	9,830	13,400	20,600	+10,770	+109.6	27.8	2.5	3.3	4.7
	Middle Eastern/Latin American/African (MELAA)	1,170	1,870	2,720	+1,550	+132.5	4.0	0.3	0.5	0.6
	Total	399,100	407,220	437,870	+38,770	+9.7	100.0	100.0	100.0	100.0
	Total People, Ethnicity Stated (without multiple count)	359,900	369,800	395,100	...	+9.8	...	...	...	...
	Ethnic 'overcount' (%)	10.9	10.1	10.8	...	...	...	...	...	...
New Zealand	European or Other Ethnicity (including New Zealander)	3,074,600	3,074,000	3,213,300	+138,700	+4.5	28.2	75.2	72.8	70.1
	Māori	573,200	585,900	624,300	+51,100	+8.9	10.4	14.0	13.9	13.6
	Pacific Peoples	229,300	261,800	301,600	+72,300	+31.5	14.7	5.6	6.2	6.6
	Asian	194,800	272,500	404,400	+209,600	+107.6	42.6	4.8	6.5	8.8
	Middle Eastern/Latin American/African (MELAA)	18,450	27,600	38,600	+20,150	+109.2	4.1	0.5	0.7	0.8
	Total	4,090,350	4,221,800	4,582,200	+491,850	+12.0	100.0	100.0	100.0	100.0
	Total People, Ethnicity Stated (without multiple count)	3,732,000	3,880,500	4,184,600	...	+12.1	...	...	...	...
	Ethnic 'overcount' (%)	9.6	8.8	9.5	...	...	...	...	...	...

Source: Statistics New Zealand, Estimated Subnational Ethnic Population (RC,TA) by Age and Sex at 30 June 1996, 2001 and 2006

Notes: \*Multiple Count means that people may be counted in more than one ethnic group - see Ethnic 'overcount' rows



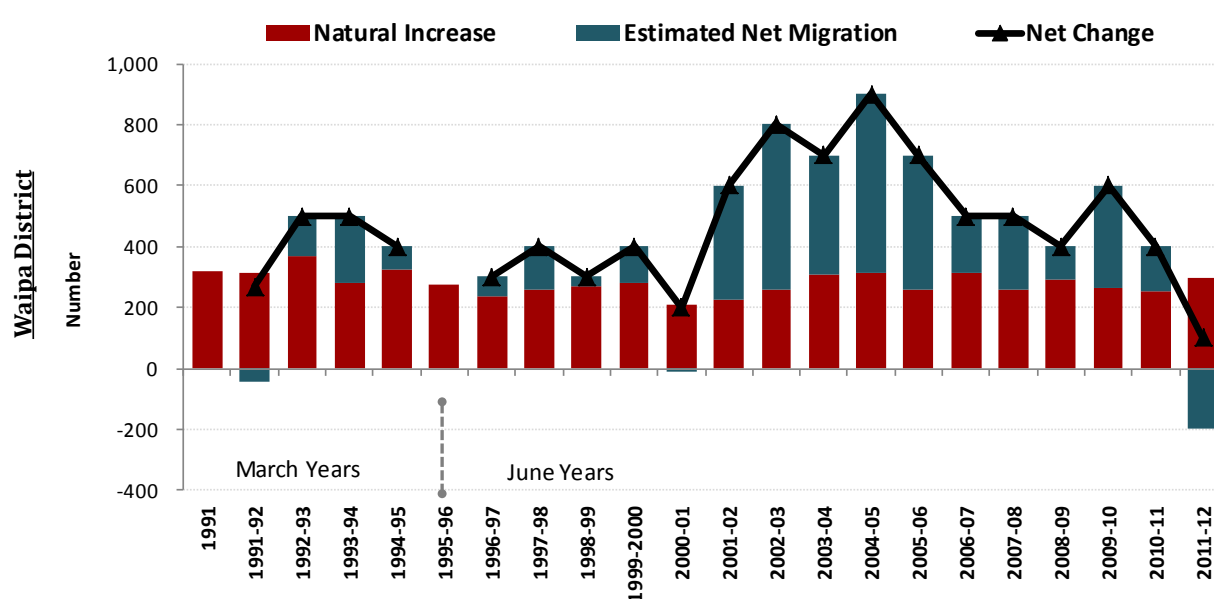
## 2. Components of Change

### 2.1 Natural Increase and Net Migration

Figure 2.1.1 shows the components of change contributing to growth for the Waipa District across the period 1991-2012 (see Table 2.1.1 for underlying data). Overwhelmingly the main component of growth during the period 1991-2000 was natural increase (the difference between births and deaths), while between 2001 and 2006 this was accompanied by strongly positive net migration gain. However the 2011-2012 year indicates a departure from the latter, with the first notable net migration loss since 1991-92 (Table 2.1.1 also shows minor loss for 2001). While the recent change of direction is a little surprising, data for both the Waikato Region and Total New Zealand (Figures 2.1.2 and 2.1.3) also indicate a departure from recent trends, with zero migration for Waikato and negative net migration at national level. In both cases the important—but seldom acknowledged—role of natural increase is prominent across the entire period, while net migration loss across the 1998-2001 period reduced overall growth.

Note that changes in the timing and method of estimating resident population numbers between 1995 and 1996 mean that only natural increase can be shown for that year (migration being a ‘residual’ estimate of the difference between natural increase and overall net gain).

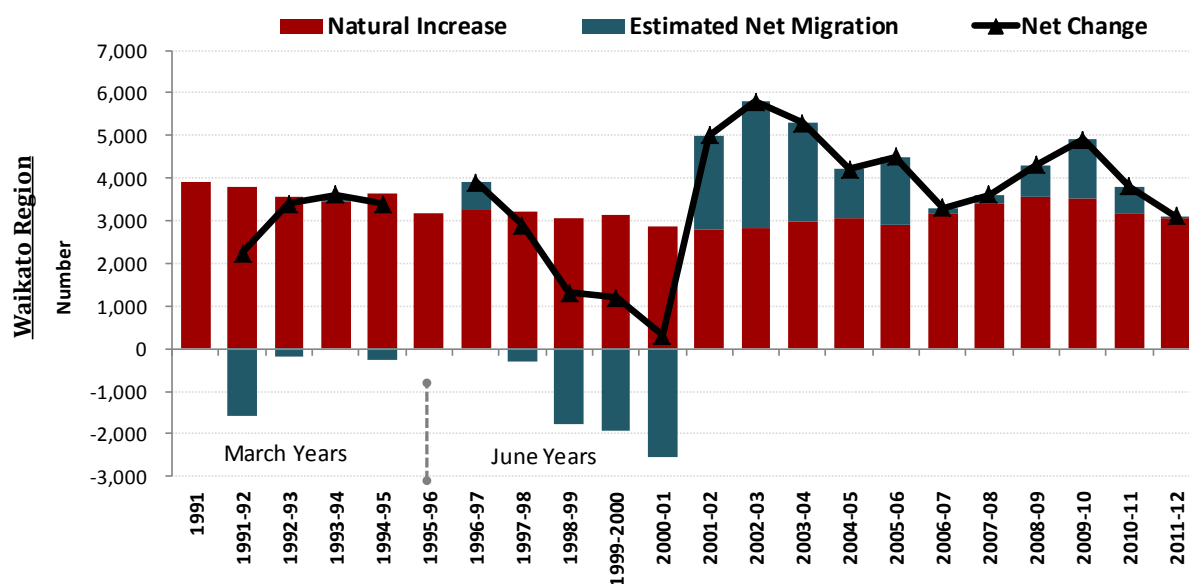
**Figure 2.1.1: Natural Increase, Net Migration and Net Change 1991-2012, Waipa District**



*\*Changes in timing and method of estimating Resident Population between 1995 and 1996 mean that only natural increase can be shown for that year*

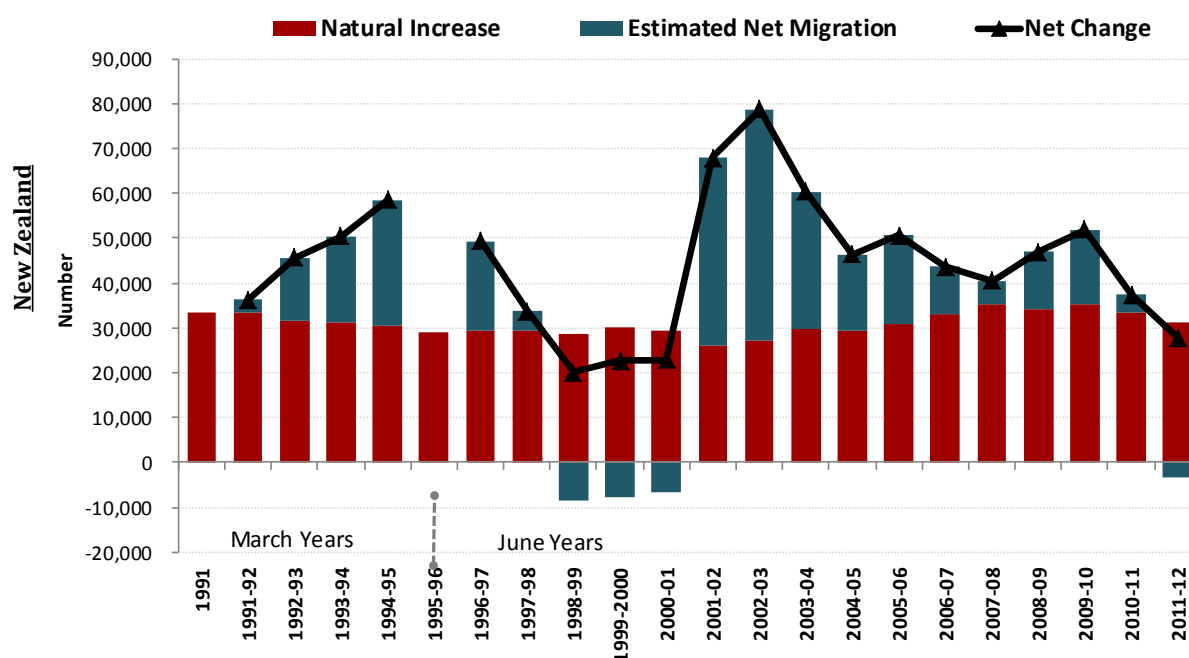


Figure 2.1.2: Natural Increase, Net Migration and Net Change 1991-2012, Waikato Region



\*Changes in timing and method of estimating Resident Population between 1995 and 1996 mean that only natural increase can be shown for that year

Figure 2.1.3: Natural Increase, Net Migration and Net Change 1991-2012, Total New Zealand



\*Changes in timing and method of estimating Resident Population between 1995 and 1996 mean that only natural increase can be shown for that year



**Table 2.1.1: Components of Change, 1991-2012, Waipa District and Total New Zealand**

		Waipa District									New Zealand		
		Components of Change						Contribution to Net Change			Contribution to Net Change		
		Births	Deaths	Natural Increase	Estimated Resident Population (a)	Net Change	Estimated Migration	Estimated Natural Increase~ (%)	Estimated Migration~ (%)	Net Change~ (%)	Estimated Natural Increase~ (%)	Estimated Migration~ (%)	Net Change~ (%)
March Year	1991	612	293	319	37,031	...	...	...	...	...	...	...	...
	1992	604	292	312	37,300	269	-43	0.84	-0.12	0.73	0.95	0.08	1.03
	1993	640	270	370	37,800	500	130	0.99	0.35	1.34	0.89	0.40	1.28
	1994	578	296	282	38,300	500	218	0.75	0.58	1.32	0.87	0.53	1.40
	1995	615	292	323	38,700	400	77	0.84	0.20	1.04	0.84	0.76	1.60
June Year	1996	587	310	277	38,400	...	...	...	...	...	...	...	...
	1997	577	342	235	38,700	300	65	0.61	0.17	0.78	0.79	0.53	1.32
	1998	605	344	261	39,100	400	139	0.67	0.36	1.03	0.78	0.11	0.89
	1999	579	307	272	39,400	300	28	0.70	0.07	0.77	0.75	-0.22	0.53
	2000	605	326	279	39,800	400	121	0.71	0.31	1.02	0.79	-0.20	0.59
	2001	558	349	209	40,000	200	-9	0.53	-0.02	0.50	0.76	-0.17	0.59
	2002	550	327	223	40,600	600	377	0.56	0.94	1.50	0.67	1.08	1.75
	2003	577	319	258	41,400	800	542	0.64	1.33	1.97	0.69	1.30	1.99
	2004	626	318	308	42,100	700	392	0.74	0.95	1.69	0.74	0.76	1.50
	2005	609	297	312	43,000	900	588	0.74	1.40	2.14	0.72	0.41	1.14
	2006	568	311	257	43,700	700	443	0.60	1.03	1.63	0.75	0.48	1.23
	2007	648	333	315	44,200	500	185	0.72	0.42	1.14	0.79	0.25	1.04
	2008	613	356	257	44,700	500	243	0.58	0.55	1.13	0.84	0.12	0.96
	2009	634	344	290	45,100	400	110	0.65	0.25	0.89	0.80	0.30	1.10
	2010	593	330	263	45,700	600	337	0.58	0.75	1.33	0.82	0.39	1.20
	2011	603	349	254	46,100	400	146	0.56	0.32	0.88	0.76	0.09	0.86
	2012	633	334	299	46,200	100	-199	0.65	-0.43	0.22	0.71	-0.08	0.63

Source: Compiled from Statistics New Zealand Infoshare: Estimated Resident Population, Table DPE051AA; Births, Table VSB016AA; Deaths, Table VSD018AA

(a) 1991-1995 Estimated Defacto; 1996-2011 Estimated Usually Resident Population (URP)

~ Births minus Deaths

\* Residual (Net Change minus Natural Increase)

^ Natural Increase, Net Migration and Net Change as a percentage of previous year's URP



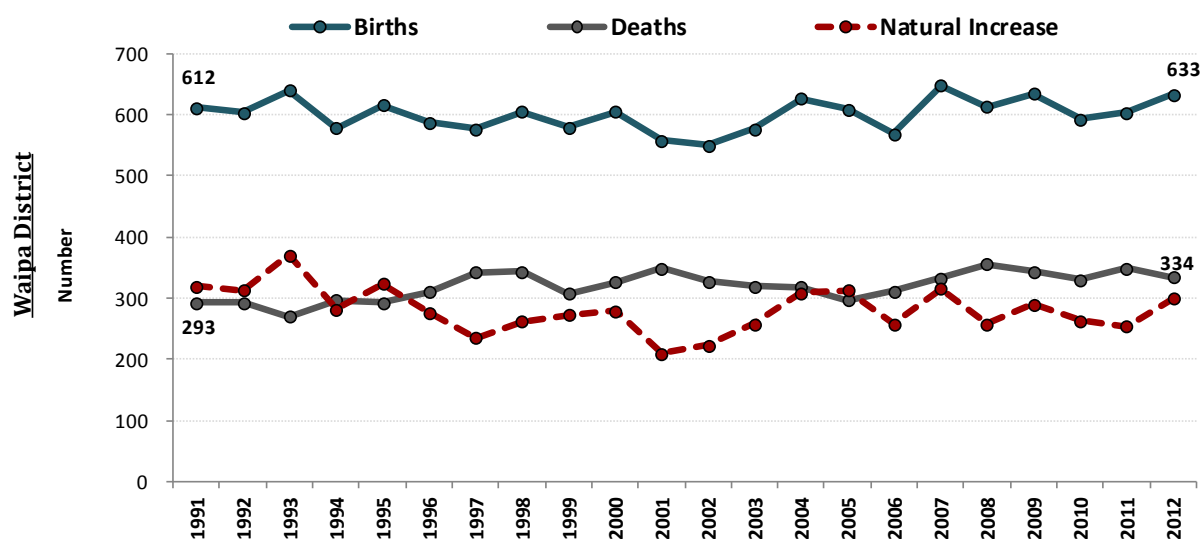
## 2.2 Births, Deaths and Natural Increase

Underlying the trends in natural increase shown above are those for births and deaths, depicted in Figure 2.2.1. Here we see that the number of births have remained relatively constant, with only a marginal increase over the period. For a number of reasons outlined below (most significantly the reducing size of the reproductive age cohort indicated in the section on age structures), birth numbers are not likely to see major increase in the future.

A small but steady increase in the number of deaths is also seen from 293 in 1991 to 334 in 2012. The overall trend of slow increase will soon accelerate as the Baby Boomer wave moves through the older age groups.

As the projections further below show, the overall outcome of these opposing trends will be a steady reduction in natural increase.

**Figure 2.2.1: Births, Deaths and Natural Increase, Waipa District 1991-2012**



*Compiled from Statistics New Zealand Infoshare: Births, Table VSB016AA; Deaths, Table VSD018AA*

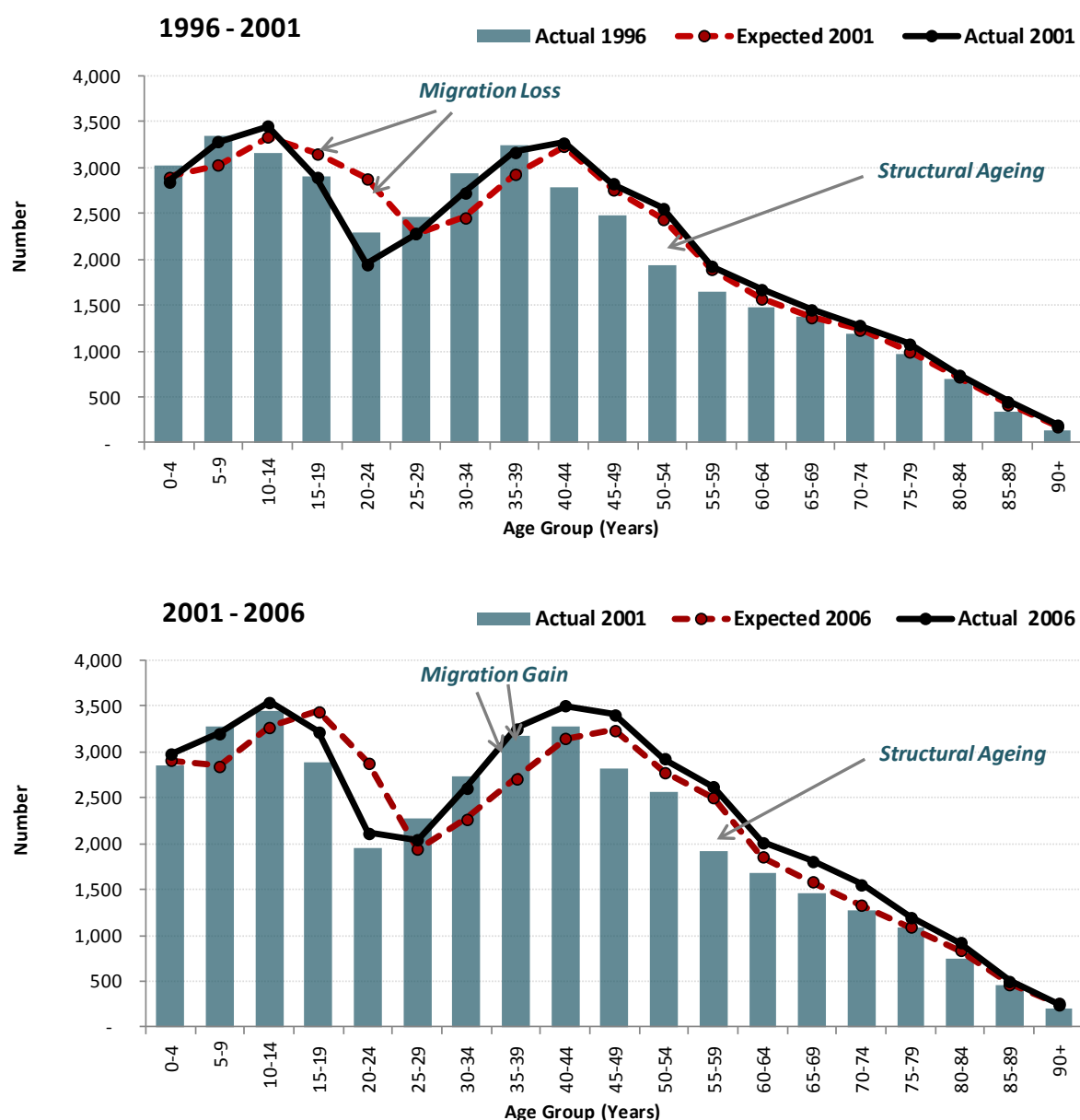


### 3. Components of Change by Age

#### 3.1 Expected versus Actual Population

Using the residual method for estimating net migration described earlier, the components of change can be plotted by age. Figure 3.1.1 shows that net migration losses have occurred primarily at age 15-24 for both periods (more so at 20-24 years). Between 1996 and 2001, migration gains were experienced at 5-9 and 30-39 years or age (plausibly parents and children), while between 2001 and 2006 there were greater gains at 5-9 and 10-14 years of age, and for almost all age groups between 30 and 74 years.

Figure 3.1.1: Expected and actual population by age, 1996-2001 and 2001-2006, Waipa District



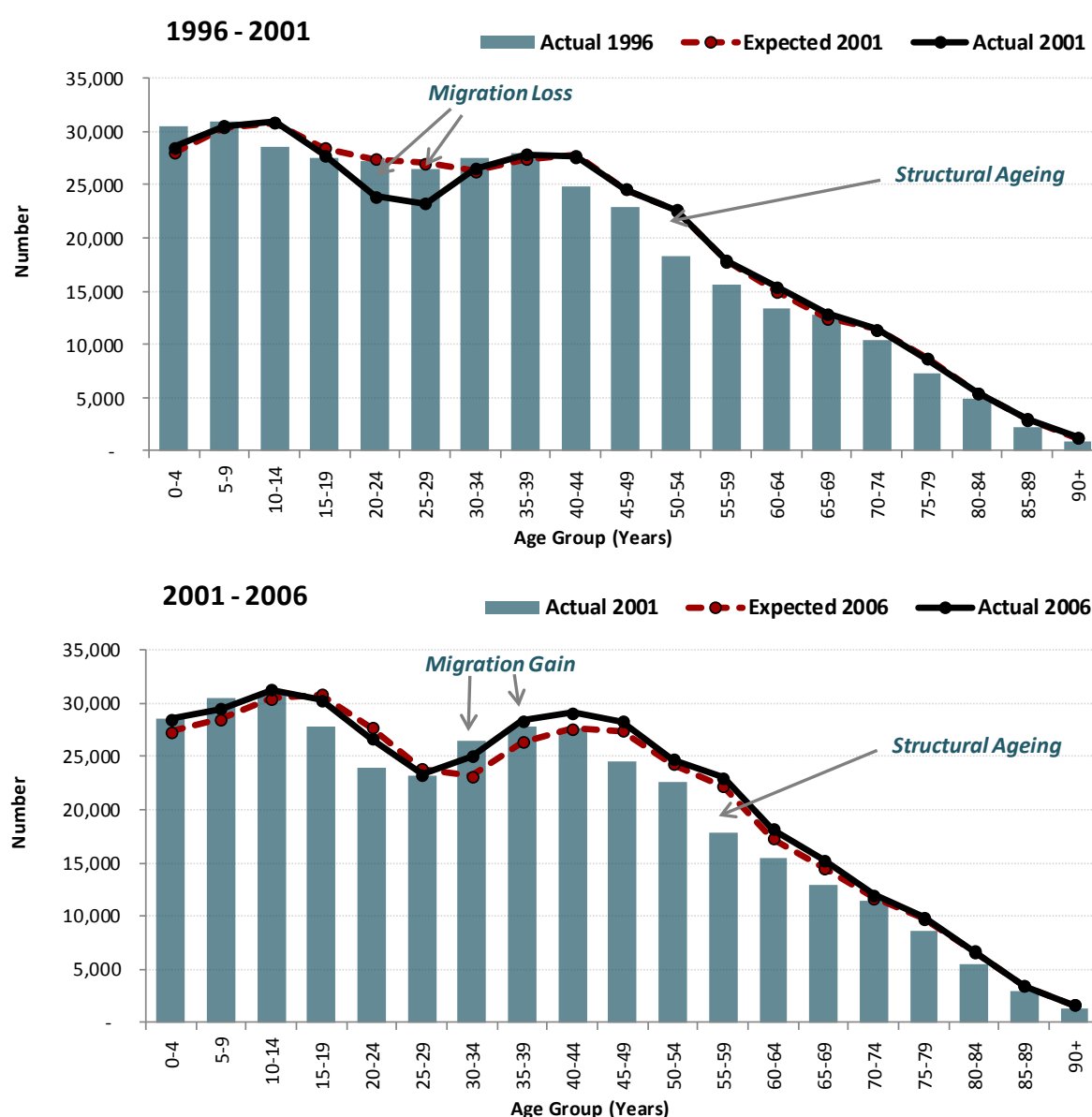
Source: Jackson/ from Statistics New Zealand ERP and New Zealand Survivorship 1995-2007



Data for the Waikato Region are slightly different (Figure 3.1.2) with noticeable net migration loss at 20-29 years seen only in the 1996-2001 period, while the 2001-2006 period saw noticeable net migration gains at 0-4, 5-9, and 30-49 years (see also Appendix 2).

Of note for both regions is the impact of structural ageing which shows at 50-54 years across the 1996-2001 period, and 55-59 years for 2001-2006. That is, the gap between numbers at the previous Census (columns) and Expected/Actual numbers at the subsequent Census, reflects the movement of the Baby Boomer wave through the age structure.

**Figure 3.1.2: Expected and actual population by age, 1996-2001 and 2001-2006, Waikato Region**



Source: Jackson/from Statistics New Zealand ERP and New Zealand Survivorship 1995-2007

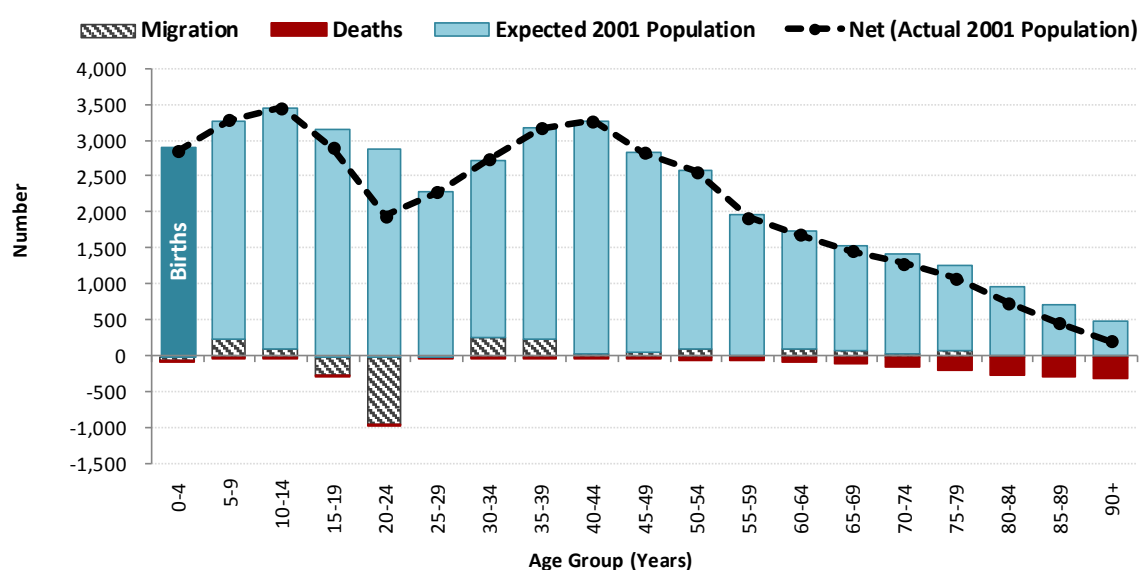


## 3.2 Expected versus Actual Change by Component

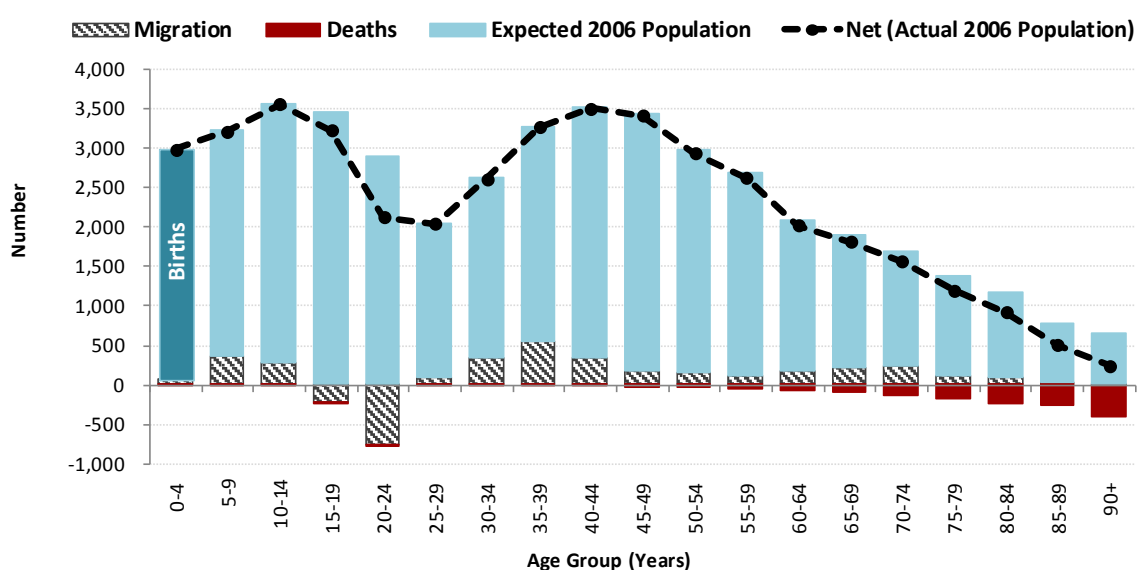
Similar data are plotted in Figure 3.2.1 for Waipa District only, this time to highlight the role of each component. As indicated above, the primary driver reducing the expected numbers at young adult ages is migration, while at older ages it is deaths. By contrast, increasing net migration gain is detectable for most other age groups between the two periods. The information is important because it is free of cohort size effects, which have already been accounted for in the methodology.

Figure 3.2.1: Population change by age and component, 1996-2001 and 2001-2006, Waipa District

### 1996 - 2001



### 2001 - 2006



Source: Jackson/from Statistics New Zealand ERP and New Zealand Survivorship 1995-2007





## 4. Age Structure and Population Ageing

### 4.1 Numerical and Structural Ageing

As elsewhere, the population of Waipa District is ageing. It is ageing numerically, as more people survive to older ages, and structurally, as falling birth rates and reducing numbers at the key reproductive ages deliver fewer babies into the base of the age structure, causing the proportions at younger ages to decrease and the increased numbers at older ages to also become increased proportions.

Migration is also playing a role. As indicated above, Waipa's structural ageing is accelerated in the first instance because of net migration loss at the young adult ages, particularly 15-24 years. The loss of people at these youthful ages accelerates the structural ageing process in two ways, firstly as a direct result of the reduction in their own numbers; secondly because it removes their reproductive potential, along with any children they may have. It is accelerated in the second instance by modest net gains at older ages, which add to both numerical and structural ageing.

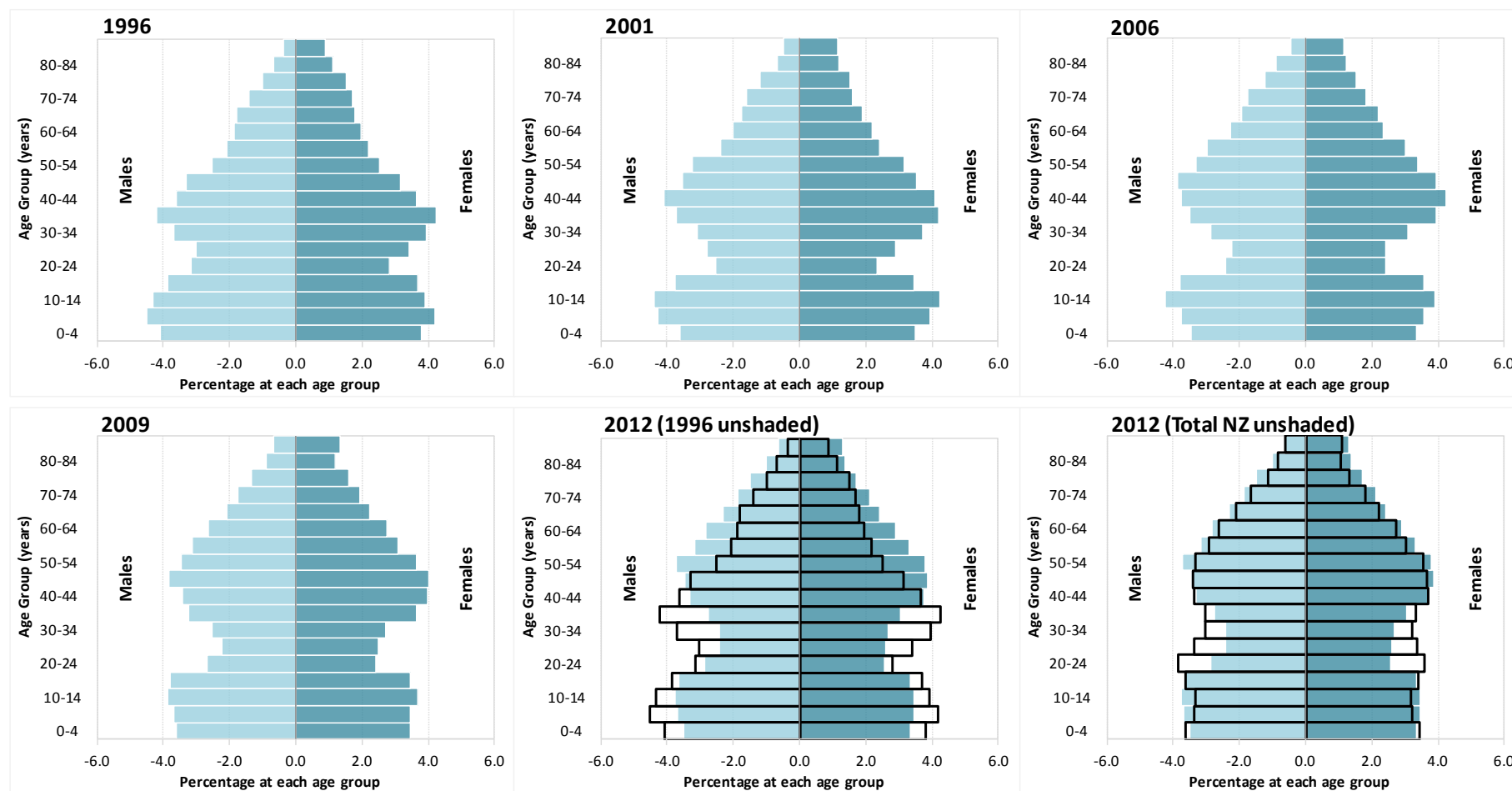
Figure 4.1.1 illustrates the outcome of these trends over the period 1996-2012 (see Table 4.1.1 for summary data). Most obvious from Figure 4.1.1 is the deep bite in the age structure at 20-39 years, in part the legacy of the net losses at 15-24 years noted above, and in part the net gains above and below these ages, which accentuate the hourglass shape. Importantly, Waipa is not alone in experiencing this youthful deficit, which is evident across most of New Zealand's non-urban regions, and which is also partly a reflection of declining birth rates at the time the current population aged 20-39 years was born. The bite is, however, significantly deeper for Waipa District than for Total New Zealand, as can be seen in the lower right-hand panel.

Compression at the youngest ages due to declining birth rates over the period is clear. However, at 5-9 and 10-14 years, proportions in 2012 are marginally higher for Waipa than nationally.

As Table 4.1.1 shows, Waipa's population aged 65+ years has increased from 12.2 per cent in 1996 to almost 16.2 per cent in 2012, making it somewhat older than both Total New Zealand (13.8 per cent), and the Waikato Region (14.3 per cent), and ageing a little faster. However as indicated above, this faster rate of ageing is primarily a reflection of Waipa's greater net migration loss at 15-24 years.



**Figure 4.1.1: Age-sex structure of Waipa District 1996-2012, and compared with New Zealand 2012**



Source: Jackson, N.O (2012) Subnational Age Structure Resource 1996-2011, NIDEA, University of Waikato. Source data from Stats NZ Infoshare Estimated Subnational Population and TableBuilder: (RC, TA,AU) by Age and Sex at 30 June 1996, 2001, 2006-2011 (2006 Boundaries)



**Table 4.1.1: Summary indicators of change by age, 1996-2012, Waipa District and key comparisons**

Distribution of population over broad age groups									
Broad Age Group (Yrs)	Population					Average Annual Change (%)			Annual Change (%) 2011-12
	1996 <sup>1</sup>	2001	2006	2011	2012	1996-2001 <sup>1</sup>	2001-2006	2006-2011	
0-14	9,530	9,580	9,740	9,840	9,800	+0.1 <sup>1</sup>	+0.3	+0.2	-0.4
15-24	5,190	4,840	5,340	5,720	5,740	-1.3 <sup>1</sup>	+2.1 <sup>1</sup>	+1.4	+0.3
25-54	15,870	16,830	17,750	17,670	17,470	+1.2 <sup>1</sup>	+1.1	-0.1	-1.1
55-64	3,110	3,600	4,640	5,570	5,620	+3.2 <sup>1</sup>	+5.8 <sup>1</sup>	+4.0	+0.9
65+	4,700	5,210	6,190	7,230	7,490	+2.2 <sup>1</sup>	+3.8 <sup>1</sup>	+3.4	+3.6
Waipa District	38,400	40,060	43,660	46,030	46,120	+0.9 <sup>1</sup>	+1.8 <sup>1</sup>	+1.1	+0.2
New Zealand	3,732,000	3,880,500	4,184,500	4,405,200	4,433,100	+0.8 <sup>1</sup>	+1.6 <sup>1</sup>	+1.1	+0.6
Broad Age Group (Yrs)	Percentage Distribution					Average Annual Change (%)			Annual Change (%) 2011-12
	1996 <sup>1</sup>	2001	2006	2011	2012	1996-2001 <sup>1</sup>	2001-2006	2006-2011	
0-14	24.8 <sup>1</sup>	23.9	22.3	21.4	21.2	-0.7 <sup>1</sup>	-1.3 <sup>1</sup>	-0.8	-0.6
15-24	13.5 <sup>1</sup>	12.1	12.2	12.4	12.4	-2.1 <sup>1</sup>	+0.2	+0.3	+0.2
25-54	41.3 <sup>1</sup>	42.0	40.7	38.4	37.9	+0.3 <sup>1</sup>	-0.6 <sup>1</sup>	-1.1	-1.3
55-64	8.1 <sup>1</sup>	9.0	10.6	12.1	12.2	+2.2 <sup>1</sup>	+3.7	+2.8	+0.7
65+	12.2	13.0	14.2	15.7	16.2	+1.3	+1.8 <sup>1</sup>	+2.2	+3.4
Waipa District	100.0 <sup>1</sup>	100.0	100.0	100.0	100.0	...	...	...	-0.0
Total NZ 65+ years	11.5	11.9	12.2	13.3	13.8	+0.6 <sup>1</sup>	+0.6 <sup>1</sup>	+1.8	+3.5
Ratio Labour Market Entrants to Exits (Number aged 15-24 per 10 persons aged 55-64)									
	Ratio					Average Annual Change (%)			Annual Change (%) 2011-12
	1996 <sup>1</sup>	2001	2006	2011	2012	1996-2001 <sup>1</sup>	2001-2006	2006-2011	
Waipa District	16.7 <sup>1</sup>	13.4	11.5	10.3	10.2	-3.9 <sup>1</sup>	-2.9 <sup>1</sup>	-2.2	-0.5
New Zealand	18.3 <sup>1</sup>	15.2	14.1	13.0	12.8	-3.3 <sup>1</sup>	-1.5	-1.5	-1.5
Ratio Elderly to Children (Number 65+ per Child 0-14)									
	Ratio					Average Annual Change (%)			Annual Change (%) 2011-12
	1996 <sup>1</sup>	2001	2006	2011	2012	1996-2001 <sup>1</sup>	2001-2006	2006-2011	
Waipa District	0.5 <sup>1</sup>	0.5	0.6	0.7	0.8	+2.1 <sup>1</sup>	+3.4 <sup>1</sup>	+3.1	+4.0
New Zealand	0.5 <sup>1</sup>	0.5	0.6	0.7	0.7	+1.0 <sup>1</sup>	+1.9 <sup>1</sup>	+2.8	+4.4

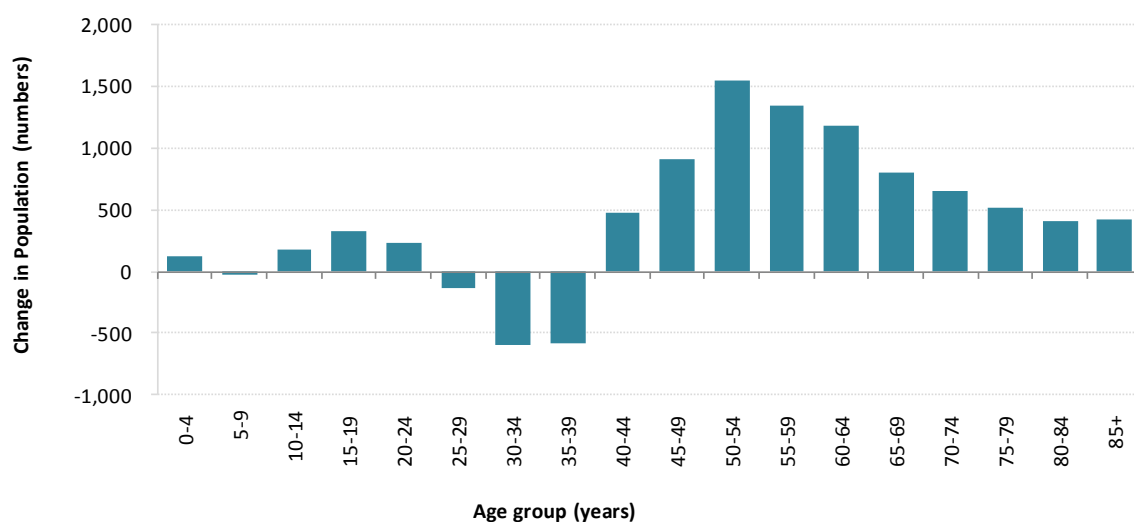
Source: Jackson, N.O (2012) Subnational Age Structure Resource 1996-2011, National Institute of Demographic and Economic Analysis (NIDEA), University of Waikato

Notes: Source data from Stats NZ Infoshare Estimated Subnational Population (RC, TA,AU) by Age and Sex at 30 June 1996, 2001 and 2006-2011 (2006 Boundaries)

Overall trends by five-year age group are summarised in Figure 4.1.2 (see Table 4.1.2 for comparison with Total New Zealand and Waikato Region). Between 1996 and 2012, numbers at 5-9 and 25-39 years declined, while they increased for all other age groups, most particularly across the Baby Boomer age groups. The decline at 25-39 years was somewhat more significant for Waipa than for the Waikato or nationally. However, as indicated above, some of these changes reflect cohort size effects, with smaller cohorts replacing larger cohorts at some of the younger ages, and vice-versa at older ages. For example, despite experiencing net migration loss at 15-24 years, there was still an overall gain at these ages *compared with the previous period*.



**Figure 4.1.2: Change by age (number), Waipa District 1996-2012**



**Table 4.1.2: Change by age (%), Waipa District, Waikato, and Total New Zealand, 1996-2012**

		Waipa District		Waikato Region		New Zealand	
		Change in Population	% Change	Change in Population	% Change	Change in Population	% Change
1996 - 2012	0-4	120	+4.0	1,120	+3.7	17,140	+5.8
	5-9	(30)	-0.9	(1,360)	-4.4	(4,300)	-1.5
	10-14	180	+5.7	750	+2.6	19,890	+7.4
	15-19	320	+11.0	2,780	+10.1	40,480	+14.9
	20-24	230	+10.0	3,300	+12.2	49,850	+17.8
	25-29	(140)	-5.7	(920)	-3.5	13,040	+4.6
	30-34	(600)	-20.4	(3,020)	-11.0	(24,670)	-8.2
	35-39	(580)	-17.8	(3,250)	-11.6	(15,520)	-5.2
	40-44	470	+16.8	3,460	+14.0	48,550	+18.4
	45-49	910	+36.7	5,280	+23.0	63,720	+25.5
	50-54	1,540	+79.4	10,320	+56.5	112,470	+58.3
	55-59	1,340	+81.7	9,660	+61.9	99,240	+60.3
	60-64	1,170	+79.6	9,410	+70.5	99,850	+72.6
	65-69	800	+58.0	6,090	+47.6	55,920	+41.4
	70-74	650	+54.6	4,570	+43.8	36,910	+31.9
	75-79	520	+54.2	3,440	+46.8	24,530	+29.3
	80-84	400	+58.0	3,310	+67.3	27,230	+48.3
	85+	420	+87.5	3,820	+120.1	36,810	+93.9
Total		7,800	+20.3	58,800	+16.3	701,100	+18.8

Source: Jackson, N.O (2013) Subnational Age Structure Resource 1996-2012, NIDEA, University of Waikato

Source data from Stats NZ TableBuilder Estimated Subnational Population by Age and Sex at 30 June (2006 Boundaries)

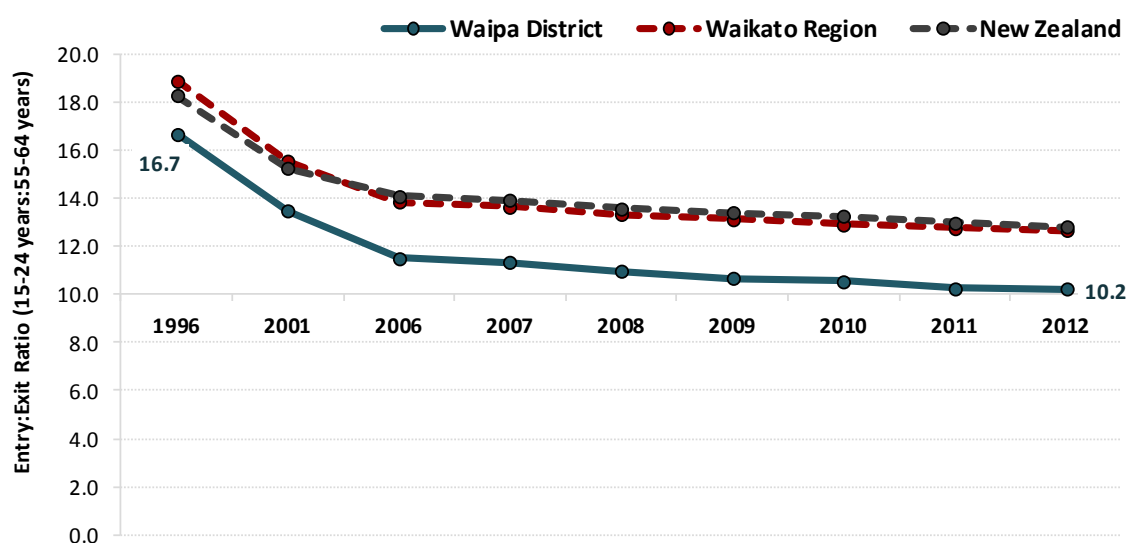


## 4.2 Labour Market Implications

Table 4.1.1 (above) also showed that Waipa District's Labour Market 'entry: exit ratio' has fallen since 1996, from 17 people at labour market entry age (15-24 years) for every 10 in the retirement zone (55-64 years), to just 10 per 10 in 2012 (see Figure 4.2.1). By comparison, both the Waikato Region and Total New Zealand still have around 13 people at entry age per 10 at exit age.

The entry: exit ratio for Waipa in 2012 remains the same even if older age groupings are used, for example 20-29 and 60-69 years, compared with 14.7 for Total New Zealand and 13.4 for Waikato. Again this is a reflection of the greater bite in Waipa's age structure at 20-34 years, and its older age structure overall. This issue is returned to further below.

**Figure 4.2.1: Labour market entry/exit ratio, Waipa District, Waikato region and Total New Zealand, 1996-2012**



Source: Jackson, N.O (2012) Subnational Age Structure Resource 1996-2011, NIDEA, University of Waikato. Source data from Stats NZ Infoshare Estimated Subnational Population (RC, TA,AU) by Age and Sex at 30 June 1996, 2001, 2006-2011 (2006 Boundaries)

## 4.3 Ethnic Age Composition and Ageing

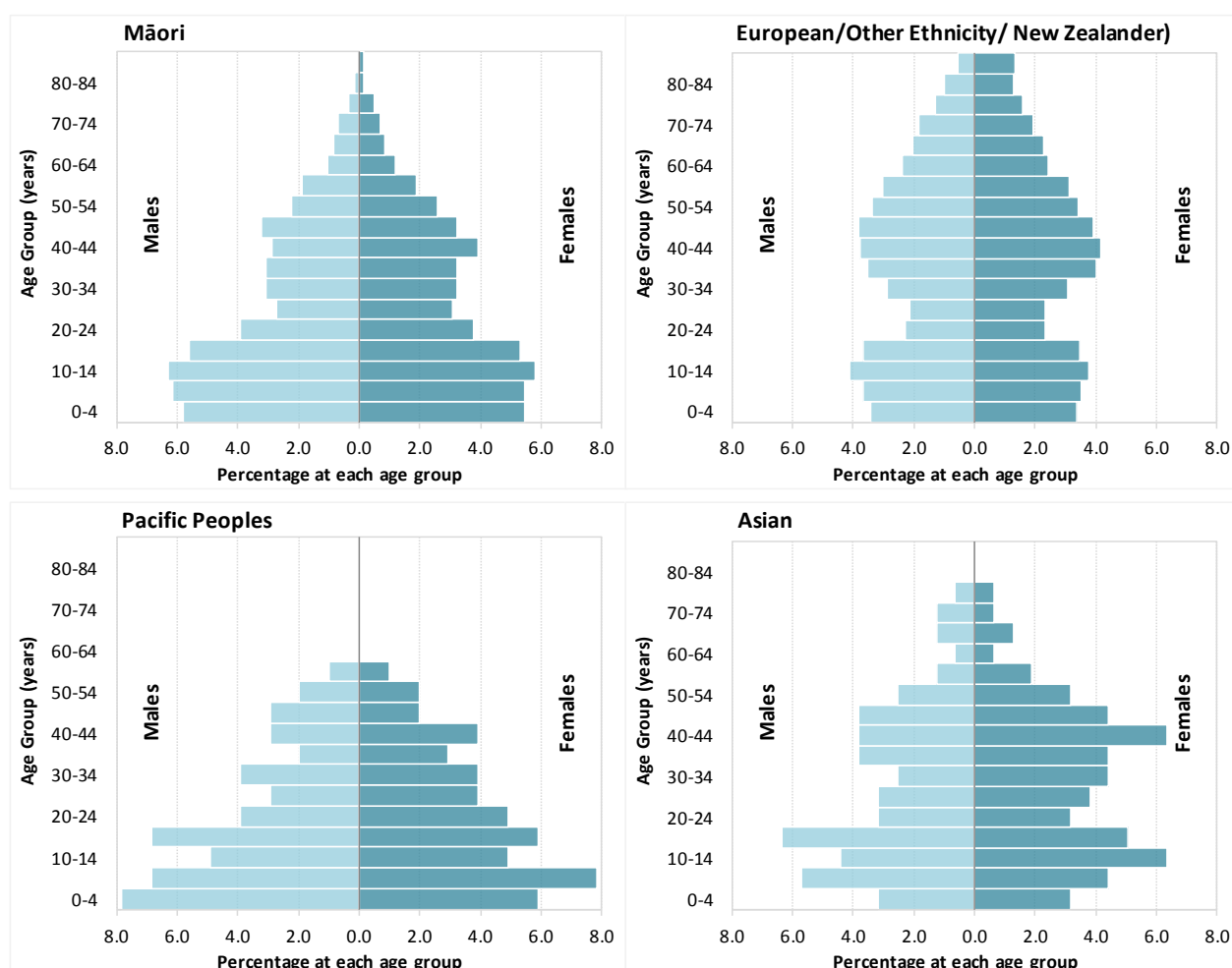
Figure 4.3.1 provides a comparison of the age structures of Waipa District's major ethnic groups in 2006, according to the multiple count enumeration method discussed above. As was indicated in Table 1.2.1, this method of enumeration means that a portion of the population is counted in more than one ethnic group. In Waipa District's case, the over-count for 2006 (when



the totals by ethnic group are summed) was approximately 7.7 per cent. However as can be seen by the markedly different age structures of each group in Figure 4.3.1, this methodological complexity would have very little impact on the story by age composition.

The data suggest that the bite in the age structure is very much connected with the European-origin population, although it is heightened at the younger ages by the very youthful Māori population and to a lesser extent by the similarly youthful but somewhat smaller Pacific Island population. While the bite also appears to some extent for the Asian population, it is difficult to make conclusive comparisons as overall numbers—like those for the Pacific Islands population—are very small. The age structure of the MELAA population is not shown as the numbers are too small to give a reliable picture by age. Summary data by age are given for all ethnic groups further below in Table 4.3.5.

**Figure 4.3.1: Age-sex Structure by major ethnic group\*, Waipa District 2006**



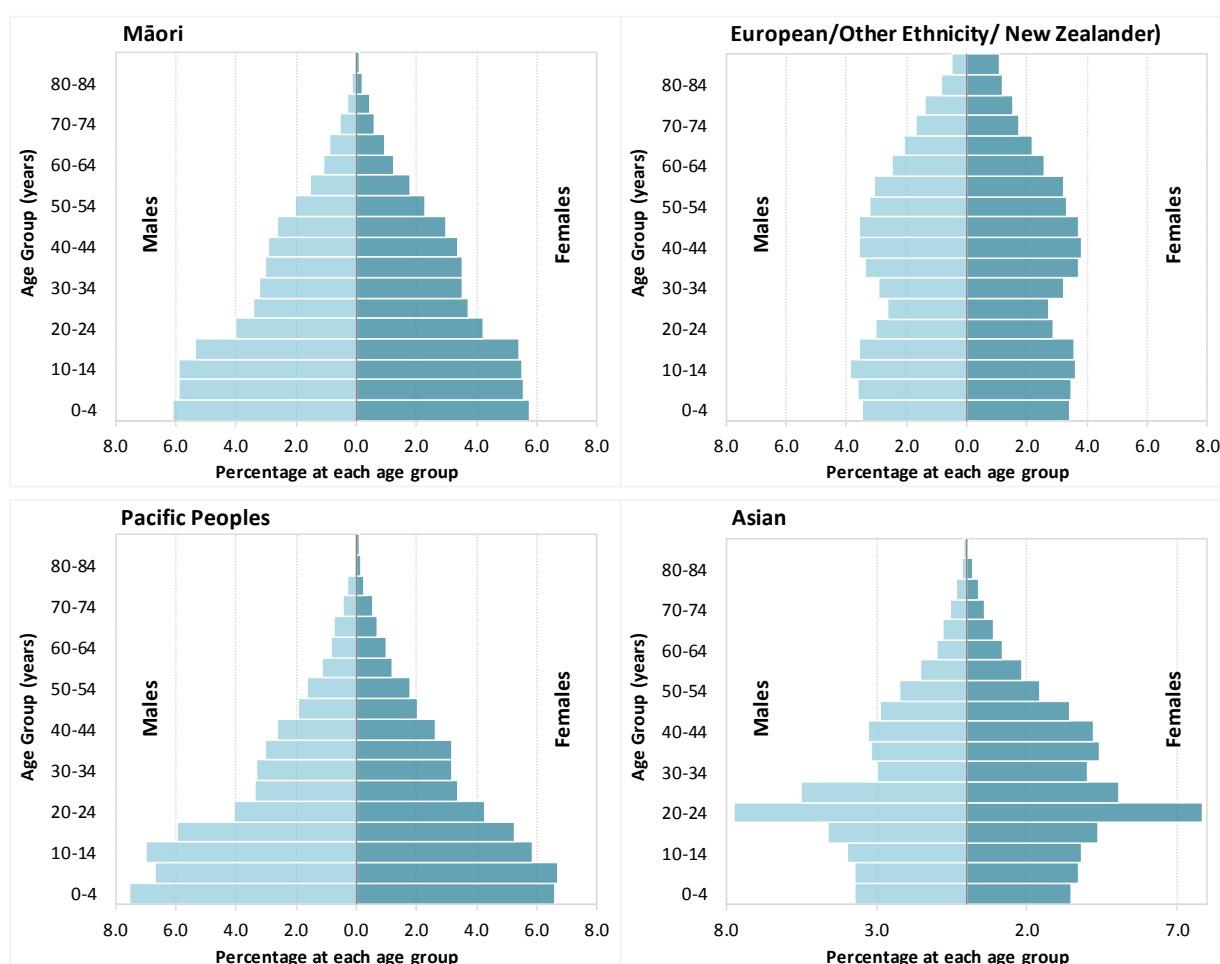
Source: Statistics New Zealand, Estimated Subnational Ethnic Population (RC,TA) by Age and Sex at 30 June 2006

Notes: \*Multiple count ethnicity means that people may be counted in more than one ethnic group



Similar comments apply to the situation for the Waikato Region (Figure 4.3.2). The differences by ethnic group are equally marked, although there is significant disparity between the Asian-origin population of Waipa and the total Waikato Region, particularly at 20-29 years. This difference primarily reflects the presence of many young Asian students at university in Hamilton.

**Figure 4.3.2: Age-sex structure by major ethnic group\*, Waikato Region 2006**



Source: Statistics New Zealand, Estimated Subnational Ethnic Population (RC,TA) by Age and Sex at 30 June 2006

Notes: \*Multiple count ethnicity means that people may be counted in more than one ethnic group

Tables 4.3.1-4.3.4 provide summary data for the Māori and European-origin populations only. As indicated above, data for the Pacific Peoples, Asian and MELAA populations are not presented here because of very small numbers by age.

Table 4.3.1 shows that the very youthful age structure of Waipa District's Māori population results in over one-third aged 0-14 years across all three observations, albeit falling from 38.7 per cent in 1996 to 34.8 per cent in 2006. At 65+ years, numbers and proportions are relatively small but have grown quite significantly, increasing from 3.4 per cent of the population in 1996 to 4.4 per cent in 2006. The data indicate that Waipa's Māori population is marginally older than



its counterparts in Waikato and Total New Zealand, where the proportions aged 65+ are a little lower, and labour market entry: exit ratios are a little higher (see Section 6 on this topic).

**Table 4.3.1: Summary indicators, Waipa District Māori Population, 1996, 2001, 2006**

Distribution of population over broad age groups						Māori
Broad Age Group (Yrs)	Population			Change (%) over 5 years		Change (%) over 10 years 1996 - 2006
	1996	2001	2006	1996-2001	2001-2006	
0-14	2,130	2,140	2,050	+0.5 <sup>1</sup>	-4.2	-3.8
15-24	980	930	1,090	-5.1 <sup>1</sup>	+17.2	+11.2
25-54	1,960	2,050	2,140	+4.6 <sup>1</sup>	+4.4	+9.2
55-64	250	280	350	+12.0 <sup>1</sup>	+25.0	+40.0
65+	190	170	260	-10.5 <sup>1</sup>	+52.9	+36.8
Waipa District Māori	5,510	5,570	5,890	+1.1 <sup>1</sup>	+5.7	+6.9
Waikato Region Māori	77,900	80,200	84,000	+3.0 <sup>1</sup>	+4.7	+7.8
New Zealand Māori	573,200	586,000	624,300	+2.2 <sup>1</sup>	+6.5	+8.9
Broad Age Group (Yrs)	Percentage Distribution			Change (%) over 5 years		Change (%) over 10 years 1996 - 2006
	1996	2001	2006	1996-2001	2001-2006	
0-14	38.7	38.4	34.8	-0.6 <sup>1</sup>	-9.4	-10.0
15-24	17.8	16.7	18.5	-6.1 <sup>1</sup>	+10.8	+4.0
25-54	35.6	36.8	36.3	+3.5 <sup>1</sup>	-1.3	+2.1
55-64	4.5	5.0	5.9	+10.8 <sup>1</sup>	+18.2	+31.0
65+	3.4	3.1	4.4	-11.5 <sup>1</sup>	+44.6	+28.0
Waipa District Māori	100.0	100.0	100.0	...	...	...
Waikato Region Māori, % 65+ yrs	3.0	3.4	4.2	+13.1 <sup>1</sup>	+22.5	+38.5
New Zealand Māori, % 65+ yrs	3.0	3.4	4.1	+11.8 <sup>1</sup>	+22.0	+36.4
Ratio Labour Market Entrants to Exits (Number aged 15-24 per 10 persons aged 55-64)						
	Ratio			Change (%) over 5 years		Change (%) over 10 years 1996 - 2006
	1996	2001	2006	1996-2001	2001-2006	
Waipa District Māori	39.2	33.2	31.1	-15.3 <sup>1</sup>	-6.2	-20.6
Waikato Region Māori	42.0	38.4	33.8	-8.7 <sup>1</sup>	-11.9	-19.5
New Zealand Māori	42.0	36.9	33.1	-12.1 <sup>1</sup>	-10.2	-21.1
Ratio Elderly to Children (Number 65+ per Child 0-14)						
	Ratio			Change (%) over 5 years		Change (%) over 10 years 1996 - 2006
	1996	2001	2006	1996-2001	2001-2006	
Waipa District Māori	0.09	0.08	0.13	-10.9 <sup>1</sup>	+59.7	+42.2
Waikato Region Māori	0.08	0.09	0.12	+14.4 <sup>1</sup>	+31.5	+50.4
New Zealand Māori	0.08	0.09	0.12	+11.8 <sup>1</sup>	+30.5	+45.9

Source: Jackson, N.O. (2011) Subnational Age Structure Resource 1996, 2001, 2006, NIDEA, University of Waikato.

Source data from Stats NZ TableBuilder Estimated Subnational Population (RC,TAAU) by Age and Sex at 30 June 96,01,06.

Notes: Multiple count ethnicity means that people may be counted in more than one ethnic group





Table 4.3.4 shows that the increase for the European-origin population of the district discussed above occurred across all broad age groups. With 15.1 per cent aged 65+ years in 2006, the European-origin population of Waipa is somewhat older than that of both the Waikato Region, at 14.2 per cent, and nationally at 14.4 per cent. The district's 65+ year European-origin population is also growing at a faster rate (15.8 per cent over the decade 1996-2006) than nationally (8.8 per cent), but not quite as fast as for the Waikato Region (16.7 per cent).

**Table 4.3.4: Summary indicators, Waipa District European/NZ/Other Population, 1996, 2001, 2006**

Distribution of population over broad age groups				European /Other/NZ		
Broad Age Group (Yrs)	Population			Change (%) over 5 years		Change (%) over 10 years
	1996	2001	2006	1996-2001	2001-2006	1996 - 2006
0-14	8,450	8,400	8,680	-0.6	+3.3	+2.7
15-24	4,530	4,160	4,640	-8.2	+11.5	+2.4
25-54	14,460	15,210	16,060	+5.2	+5.6	+11.1
55-64	2,900	3,360	4,350	+15.9	+29.5	+50.0
65+	4,550	5,030	6,000	+10.5	+19.3	+31.9
Waipa District European /Other/NZ	34,890	36,160	39,730	+3.6	+9.9	+13.9
Waikato Region European /Other/NZ	299,600	300,100	317,300	+0.2	+5.7	+5.9
New Zealand European /Other/NZ	3,074,600	3,074,000	3,213,400	-0.0	+4.5	+4.5
Broad Age Group (Yrs)	Percentage Distribution			Change (%) over 5 years		Change (%) over 10 years
	1996	2001	2006	1996-2001	2001-2006	1996 - 2006
0-14	24.2	23.2	21.8	-4.1	-6.0	-9.8
15-24	13.0	11.5	11.7	-11.4	+1.5	-10.0
25-54	41.4	42.1	40.4	+1.5	-3.9	-2.5
55-64	8.3	9.3	10.9	+11.8	+17.8	+31.7
65+	13.0	13.9	15.1	+6.7	+8.6	+15.8
Waipa District European /Other/NZ	100.0	100.0	100.0	...	...	...
Waikato Region European /Other/NZ	12.2	13.2	14.2	+8.4	+7.6	+16.7
New Zealand European /Other/NZ	13.2	13.8	14.4	+4.6	+4.1	+8.8
Ratio Labour Market Entrants to Exits (Number aged 15-24 per 10 persons aged 55-64)						
	Ratio			Change (%) over 5 years		Change (%) over 10 years
	1996	2001	2006	1996-2001	2001-2006	1996 - 2006
Waipa District European /Other/NZ	15.6	12.4	10.7	-20.7	-13.8	-31.7
Waikato Region European /Other/NZ	16.9	13.3	11.5	-21.3	-13.6	-32.0
New Zealand European /Other/NZ	15.9	12.7	11.3	-20.1	-11.0	-28.9
Ratio Elderly to Children (Number 65+ per Child 0-14)						
	Ratio			Change (%) over 5 years		Change (%) over 10 years
	1996	2001	2006	1996-2001	2001-2006	1996 - 2006
Waipa District European /Other/NZ	0.54	0.60	0.69	+11.2	+15.4	+28.4
Waikato Region European /Other/NZ	0.52	0.58	0.66	+11.3	+14.9	+27.9
New Zealand European /Other/NZ	0.61	0.65	0.72	+6.1	+10.0	+16.7

Source: Jackson, N.O. (2011) Subnational Age Structure Resource 1996, 2001, 2006, NIDEA, University of Waikato.

Source data from Stats NZ TableBuilder Estimated Subnational Population (RC,TA,AU) by Age and Sex at 30 June 96,01,06.

Notes: Multiple count ethnicity means that people may be counted in more than one ethnic group



Table 4.3.5 provides a summary overview of each ethnic group's population share by broad age group. As indicated above, the general picture is that the Māori and Pacific Island populations increase their share as age decreases, while the European-origin population increases its share as age increases. Within that picture, Māori, Pacific Island, Asian and MELAA people are under-represented across all broad age groups, and European-other are over-represented, by comparison with both the Waikato Region and the national level.

**Table 4.3.5: Ethnic group\* percentage share by age group and region, 2006**

		Māori	Pacific Peoples	Asian	MELAA	European/Other/NZ	Total*	Total People with Ethnicity Stated*	Ethnicity Overcount
Waipa District	0-14	2,050 18.4	195 1.7	215 1.9	25 0.2	8,680 77.7	11,165 100.0	9,740	14.6
	15-24	1,090 18.2	110 1.8	140 2.3	15 0.3	4,640 77.4	5,995 100.0	5,340	12.3
	25-54	2,140 11.4	180 1.0	365 1.9	50 0.3	16,060 85.4	18,795 100.0	17,750	5.9
	55-64	350 7.4	10 0.2	35 0.7	- -	4,350 91.7	4,745 100.0	4,640	2.3
	65+	260 4.1	- -	45 0.7	- -	6,000 95.2	6,305 100.0	6,240	1.0
	Total	5,890 12.5	495 1.1	800 1.7	90 0.2	39,730 84.5	47,005 100.0	43,710	7.5
Waikato Region	0-14	29,130 26.9	5,370 5.0	4,630 4.3	960 0.9	68,110 62.9	108,200 100.0	89,220	21.3
	15-24	15,920 24.3	2,600 4.0	5,050 7.7	530 0.8	41,440 63.2	65,540 100.0	56,930	15.1
	25-54	30,730 17.9	4,270 2.5	8,960 5.2	1,090 0.6	126,490 73.7	171,540 100.0	158,760	8.0
	55-64	4,710 11.1	550 1.3	1,140 2.7	90 0.2	36,090 84.8	42,580 100.0	41,190	3.4
	65+	3,540 7.1	430 0.9	820 1.6	50 0.1	45,160 90.3	50,000 100.0	49,030	2.0
	Total	84,030 19.2	13,220 3.0	20,600 4.7	2,720 0.6	317,290 72.5	437,860 100.0	395,130	10.8
New Zealand	0-14	215,290 20.2	110,280 10.4	83,590 7.9	10,330 1.0	645,240 60.6	1,064,730 100.0	888,320	19.9
	15-24	116,090 17.0	56,770 8.3	89,570 13.1	7,620 1.1	414,280 60.5	684,330 100.0	604,740	13.2
	25-54	232,190 12.4	107,800 5.8	187,640 10.0	17,800 1.0	1,325,060 70.8	1,870,490 100.0	1,750,250	6.9
	55-64	35,060 7.9	15,250 3.4	24,670 5.6	1,710 0.4	365,590 82.7	442,280 100.0	429,670	2.9
	65+	25,680 4.9	11,540 2.2	18,850 3.6	1,090 0.2	463,160 89.0	520,320 100.0	511,620	1.7
	Total	624,310 13.6	301,640 6.6	404,320 8.8	38,550 0.8	3,213,330 70.1	4,582,150 100.0	4,184,600	9.5

Source: Jackson, N.O (2011) Subnational Ethnic Age Structure Resource 1996, 2001, 2006, NIDEA. Source data: Statistics New Zealand, Estimated Subnational Ethnic Population (RC,TA) by Age and Sex at 30 June

Notes: \*Multiple count ethnicity means that people may be counted in more than one ethnic group



## 5. Population Projections

### 5.1 Size, Growth and Population Ageing

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Under the medium series assumptions, the population of Waipa District is projected to increase by 12.7 per cent over the 2011 – 2031 period, to around 51,910 persons by 2031 (Table 5.1.1). Numbers at 0-14, 15-24 and 40-54 years are projected to decline, while growth is projected for all other age groups. In sum, however, all growth for the district is projected to occur at 65+ years, where the population is anticipated to grow both numerically (by 92.2 per cent between 2011 and 2031) and structurally (from 15.9 per cent in 2011 to 27.1 per cent by 2031), while all other age groups combined (0-64 years) are projected to decline by around 2.3 per cent.

Figure 5.1.1 compares these changes under the low, medium and high variant projection assumptions (see Appendices 3.1—3.4 for assumptions for both Waipa District and the Waikato Region). As would be expected, Figure 5.1.1 shows that the losses by age are greater under the low variant assumptions, and lower under the high variant assumptions. However, even under the high variant assumptions, loss is projected for similar age groups to those under the medium assumption.



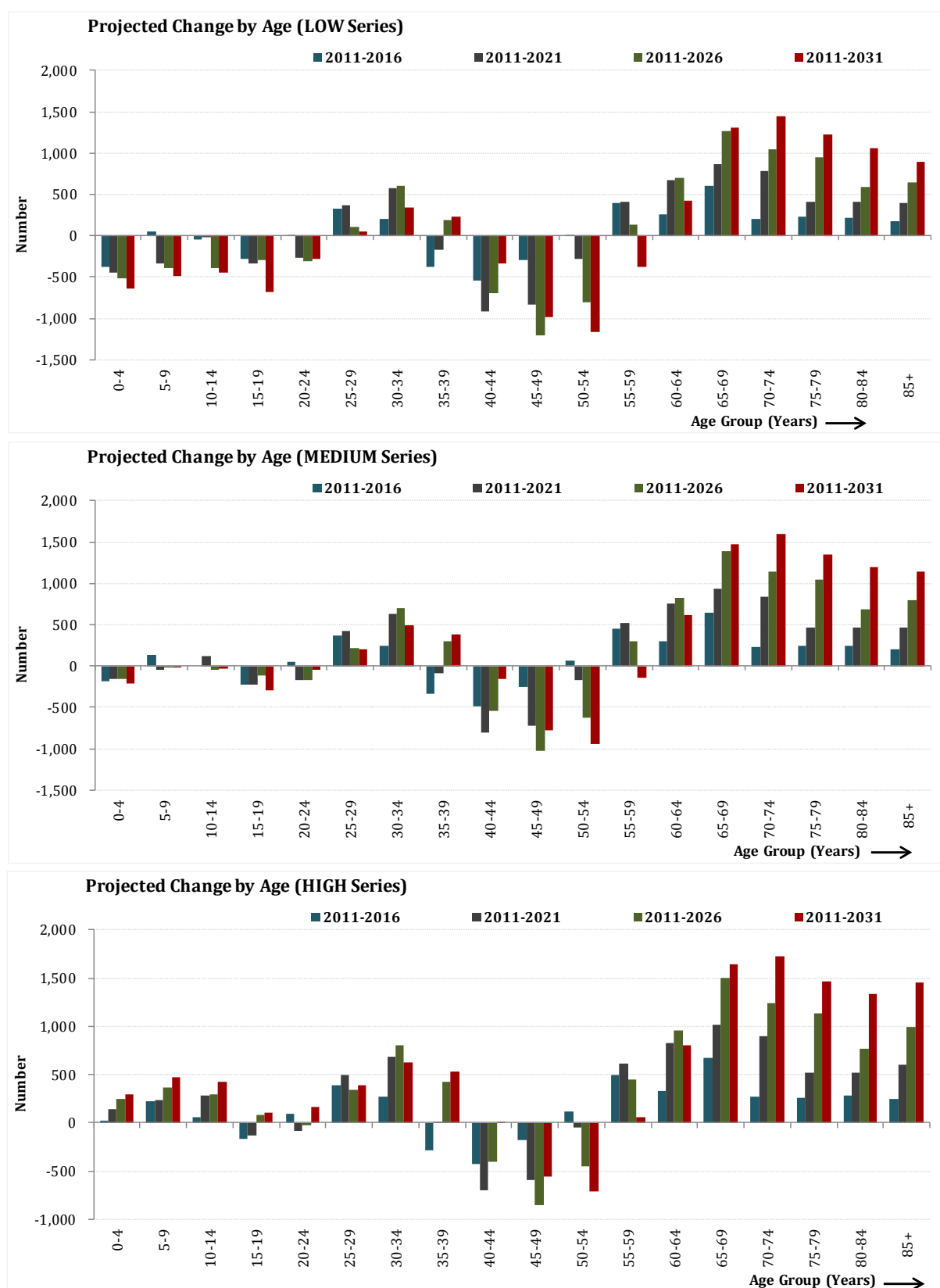
**Table 5.1.1: Projected population, Waipa District, 2006-2031 (Medium Series)**

	Numbers by age						Change (%)
	2006	2011	2016	2021	2026	2031	2011-2031
0-14 years	9,740	<b>9,830</b>	9,780	9,740	9,610	9,570	-2.6
15-24 years	5,340	<b>5,720</b>	5,550	5,320	5,440	5,380	-5.9
25-39 years	7,910	<b>7,480</b>	7,750	8,460	8,700	8,560	+14.4
40-54 years	9,840	<b>10,190</b>	9,520	8,500	8,000	8,320	-18.4
55-64 years	4,640	<b>5,550</b>	6,300	6,820	6,670	6,030	+8.6
65-74 years	3,370	<b>3,820</b>	4,690	5,600	6,350	6,880	+80.1
75-84 years	2,120	<b>2,490</b>	2,980	3,430	4,210	5,030	+102.0
85+ years	750	<b>1,000</b>	1,210	1,470	1,790	2,140	+114.0
Total	43,710	<b>46,080</b>	47,780	49,340	50,770	51,910	+12.7
65+ years	6,240	<b>7,310</b>	8,880	10,500	12,350	14,050	+92.2
	Intercensal Change by Age (Numbers)						Change (N)
	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031		2011-2031
0-14 years	...	<b>90</b>	(50)	(40)	(130)	(40)	(260)
15-24 years	...	<b>380</b>	(170)	(230)	120	(60)	(340)
25-39 years	...	<b>(430)</b>	270	710	240	(140)	1,080
40-54 years	...	<b>350</b>	(670)	(1,020)	(500)	320	(1,870)
55-64 years	...	<b>910</b>	750	520	(150)	(640)	480
65-74 years	...	<b>450</b>	870	910	750	530	3,060
75-84 years	...	<b>370</b>	490	450	780	820	2,540
85+ years	...	<b>250</b>	210	260	320	350	1,140
Total	...	<b>2,370</b>	1,700	1,560	1,430	1,140	5,830
65+ years	...	<b>1,070</b>	1,570	1,620	1,850	1,700	6,740
	Age Distribution (% at each age group)						Change (%)
	2006	2011	2016	2021	2026	2031	2011-2031
0-14 years	22.3	<b>21.3</b>	20.5	19.7	18.9	18.4	-13.6
15-24 years	12.2	<b>12.4</b>	11.6	10.8	10.7	10.4	-16.5
25-39 years	18.1	<b>16.2</b>	16.2	17.1	17.1	16.5	+1.6
40-54 years	22.5	<b>22.1</b>	19.9	17.2	15.8	16.0	-27.5
55-64 years	10.6	<b>12.0</b>	13.2	13.8	13.1	11.6	-3.6
65-74 years	7.7	<b>8.3</b>	9.8	11.3	12.5	13.3	+59.9
75-84 years	4.9	<b>5.4</b>	6.2	7.0	8.3	9.7	+79.3
85+ years	1.7	<b>2.2</b>	2.5	3.0	3.5	4.1	+90.0
Total	100.0	<b>100.0</b>	100.0	100.0	100.0	100.0	+0.0
65+ years	14.3	<b>15.9</b>	18.6	21.3	24.3	27.1	+70.6
	Summary Measures						Change (%)
	2006	2011	2016	2021	2026	2031	2011-2031
<b>LM Entrants/Exits</b>							
(15-24/55-64 years)	1.2	<b>1.0</b>	0.9	0.8	0.8	0.9	-13.4
(20-29/60-69 years)	1.1	<b>1.0</b>	0.9	0.8	0.7	0.7	-28.6
<b>Elderly/Children</b>	0.6	<b>0.7</b>	0.9	1.1	1.3	1.5	+97.4
<b>Reproductive (20-39 yrs)</b>	22.9	<b>21.6</b>	21.5	21.8	21.6	21.1	-2.0
<b>Proportion 65+ years</b>	14.3	<b>15.9</b>	18.6	21.3	24.3	27.1	+70.6
<b>Proportion 75+ years</b>	6.6	<b>7.6</b>	8.8	9.9	11.8	13.8	+82.4
<b>Growth (%) in 5 years</b>	...	<b>+5.4</b>	+3.7	+3.3	+2.9	+2.2	+12.7
<b>Annual average growth (%)</b>	...	<b>+1.1</b>	+0.7	+0.7	+0.6	+0.4	+0.6

Source: Statistics New Zealand, Subnational Population Projections by Age and Sex, 2006(base)-2031 (October 2012 update)



**Figure 5.1.1: Projected population change by age and projection series, Waipa District**

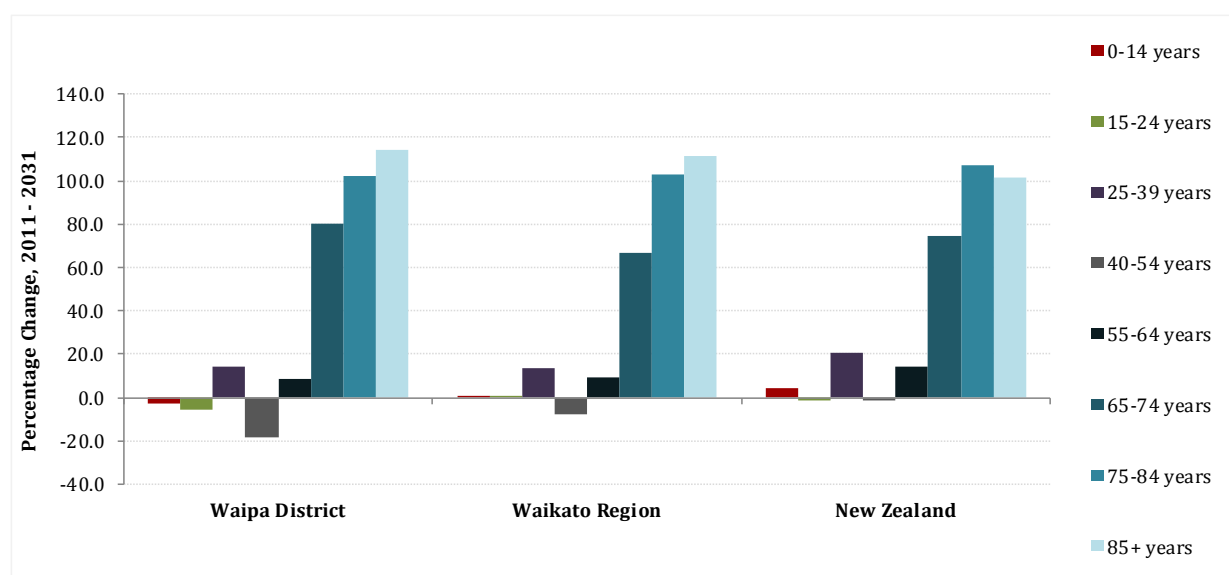


Source: Statistics New Zealand, Subnational Population Projections by Age and Sex, 2006(base)-2031 (October 2012 update)



Figure 5.1.2 and Table 5.1.2 show that similar losses and gains across the same age groups are also projected for both Waipa District and the Waikato region. No notable losses at the younger ages are projected for Total New Zealand, although the gains are expected to be minimal; changes at older ages are similar for Waipa, the Waikato Region, and nationally.

**Figure 5.1.2: Projected change 2011-2031 by broad age group (%), Waipa District, Waikato Region and Total New Zealand, Medium Series**



Source: Statistics New Zealand, Subnational Population Projections by Age and Sex, 2006(base)-2031 (October 2012 update)

**Table 5.1.2: Projected change 2011-2031 by broad age group (%), Waipa District, Waikato Region and Total New Zealand**

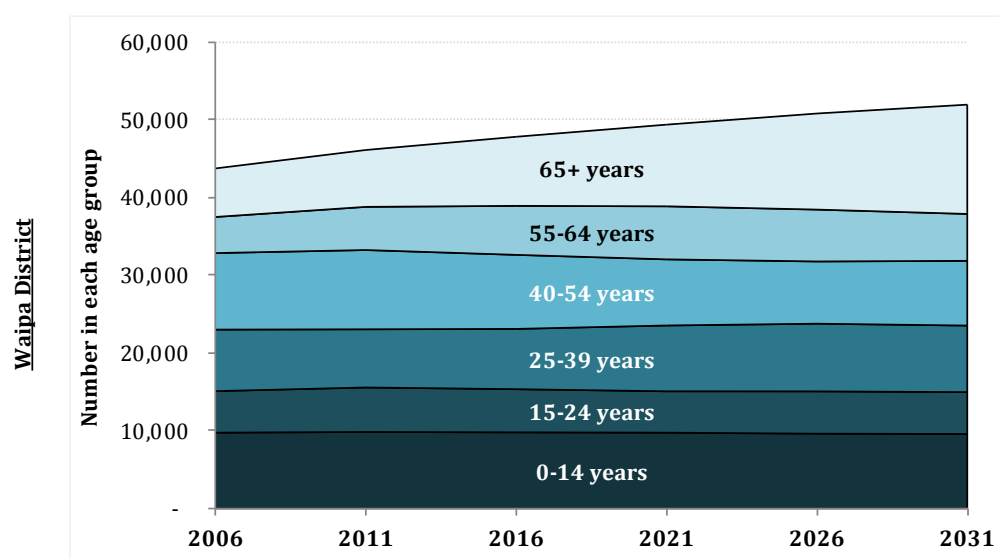
	Waipa District	Waikato Region	New Zealand
0-14 years	-2.6	+0.8	+4.5
15-24 years	-5.9	+0.6	-1.1
25-39 years	+14.4	+13.6	+20.7
40-54 years	-18.4	-7.5	-1.2
55-64 years	+8.6	+9.6	+14.2
65-74 years	+80.1	+66.9	+74.8
75-84 years	+102.0	+102.7	+107.2
85+ years	+114.0	+111.6	+101.5
Total	+12.7	+13.8	+17.9
65+ years	+92.2	+83.6	+88.5

Source: Statistics New Zealand, Subnational Population Projections by Age and Sex, 2006(base)-2031 (October 2012 update)

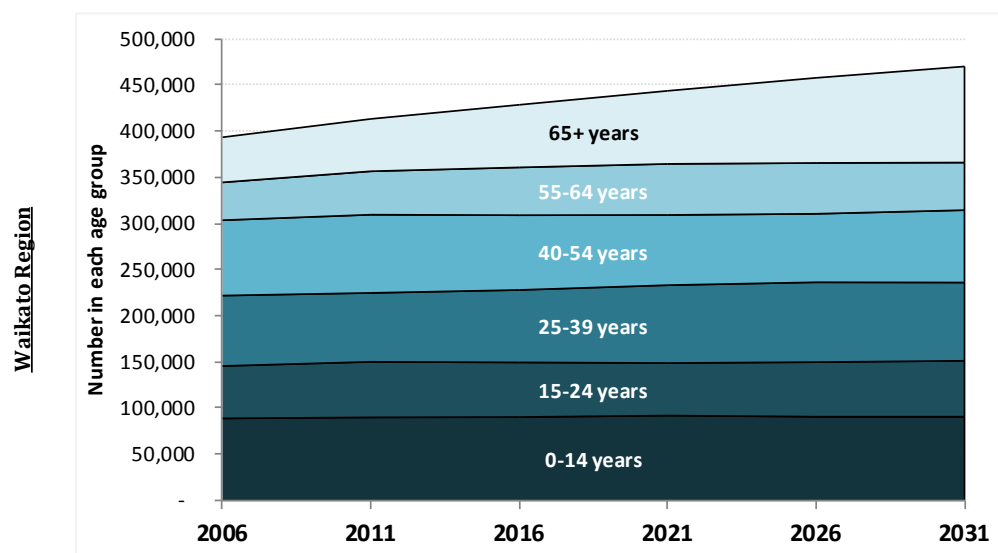


Figure 5.1.3 provides a time-series perspective on the projected changes by broad age group for just Waipa District and the Waikato. The concentration of growth at 65+ years for both areas is clear.

**Figure 5.1.3: Projected change in numbers by broad age group, Waipa District and Waikato Region, 2006-2031, Medium Series**



Source: Statistics New Zealand, Subnational Population Projections by Age and Sex, 2006(base)-2031 (October 2012 update)



Source: Statistics New Zealand, Subnational Population Projections by Age and Sex, 2006(base)-2031 (October 2012 update)



## 5.2 Projections by Ethnicity

While counting population by ethnicity is difficult, projecting populations based on ethnic affiliation is even more difficult. The following projections have many caveats attached to them and should be read as indicative only.

The main caveat is that projected data for Waipa District by ethnicity are available for two ethnic groups only: European-origin and Māori (Table 5.2.1). They show the Māori population increasing between 2011 and 2021 by approximately 14.1 per cent, and the European-origin population by 6.9 per cent. There are, however, marked differences by age. The 65+ year Māori population is projected to increase by 50 per cent (from 400 to 600), and the European-origin population of the same age, by 35.2 per cent. No growth is anticipated at 40-64 years for either population. The Māori population is projected to increase around 13-14 per cent for both younger age groups (0-14 and 15-39 years), while there is only a marginal increase in the European-origin population at these ages.

**Table 5.2.1: Population projections for Waipa District by ethnic group and broad age group**

Waipa district	Population <sup>(2,3)</sup> by age group (years) at 30 June					Projected components of population change, five years ended 30 June					Median age <sup>(5)</sup> (years) at 30 June
	0-14	15-39	40-64	65+	All ages	Births	Deaths	Natural increase	Net migration	Inter-ethnic mobility <sup>(4)</sup>	
European/Other											
1996	8,400	12,300	9,600	4,600	34,900	...	...	...	...	...	34.3
2001	8,400	11,500	11,300	5,000	36,200	...	...	...	...	...	36.9
2006 (base)	8,700	11,800	13,300	6,000	39,800	...	...	...	...	...	39.0
2011	9,000	11,500	14,500	7,100	42,100	2,700	1,600	1,200	1,200	0	40.9
2016	9,100	11,400	14,800	8,300	43,700	2,600	1,800	800	700	0	42.4
2021	9,100	11,800	14,500	9,600	45,000	2,600	2,000	600	700	0	43.4
Change 2011-2021 (%)	+1.1	+2.6	+0.0	+35.2	+6.9	...	...	...	...	...	...
Māori											
1996	2,100	2,300	900	200	5,500	...	...	...	...	...	20.8
2001	2,100	2,100	1,200	200	5,600	...	...	...	...	...	21.4
2006 (base)	2,000	2,200	1,400	300	5,900	...	...	...	...	...	22.9
2011	2,200	2,300	1,600	400	6,400	900	100	700	-100	-100	23.3
2016	2,300	2,500	1,700	500	6,900	900	200	700	-200	-100	24.2
2021	2,500	2,600	1,600	600	7,300	900	200	700	-200	-100	25.2
Change 2011-2021 (%)	+13.6	+13.0	+0.0	+50.0	+14.1	...	...	...	...	...	...

Source: Statistics New Zealand, Subnational Ethnic Population Projections (2006 Base - 2009 Update) Tables 4e, 4m, 4p, 4a

(1) Boundaries at 30 June 2009.

(2) These projections have as a base the estimated resident population of each ethnicity, of each area, at 30 June 2006 and incorporate medium fertility, medium migration, medium mortality, and medium inter-ethnic mobility assumptions for each area. Population estimates for 1996-2006 are derived from the respective 1996-2006 census usually resident population counts.

(3) Numbers reflect the multiple count enumeration methodology and their sum is somewhat greater than the total projection for the TA.

Projections are not available for all ethnic groups for all TA's.

(4) The net effect of people changing their ethnic identity.

(5) Half the population is younger, and half older, than this age.





Because the data in Figure 5.2.1 do not account for all ethnic groups, they are not graphed. Instead, Table 5.2.2 and Figure 5.2.1 gives an overview for the Waikato region (see Appendix 3.5 for the underlying assumptions and other information). It should, however, be noted that the data pertain to four ethnic groups only. The fifth group (MELAA) is not projected because of the small cell sizes obtaining when this relatively small population is disaggregated by age.

Based on these four ethnic groupings, the data suggest that there will be relatively little change in the overall ethnic composition of the region over time. However young Māori (0-14 years) are projected to increase their share of the region's youthful population from 27.8 to 29.0 per cent, Pacific Island from 5.7 to 7.0 per cent, and Asian from 5.0 to 7.1 per cent (Table 5.2.2). The trends result in a diminishing share for the youthful European-origin population, from 61.5 to 57.0 per cent.

Changing shift-shares are equally evident for each successively older age group; for example, at 40-64 years, Māori increase their share from 14.8 to 16.3 per cent (10 per cent increase), and at 65+ years, from 7.5 to 8.7 per cent (16 per cent). The percentage magnitude of the changes are even greater for the Pacific Island and Asian populations; however, as Figure 5.2.1 shows, they have somewhat less impact on the overall ethnic distribution, because they are coming off such small bases. Concomitantly, the European-origin share of all age groups declines.

**Table 5.2.2: Projected distribution by age and ethnic group\*, Waikato Region**

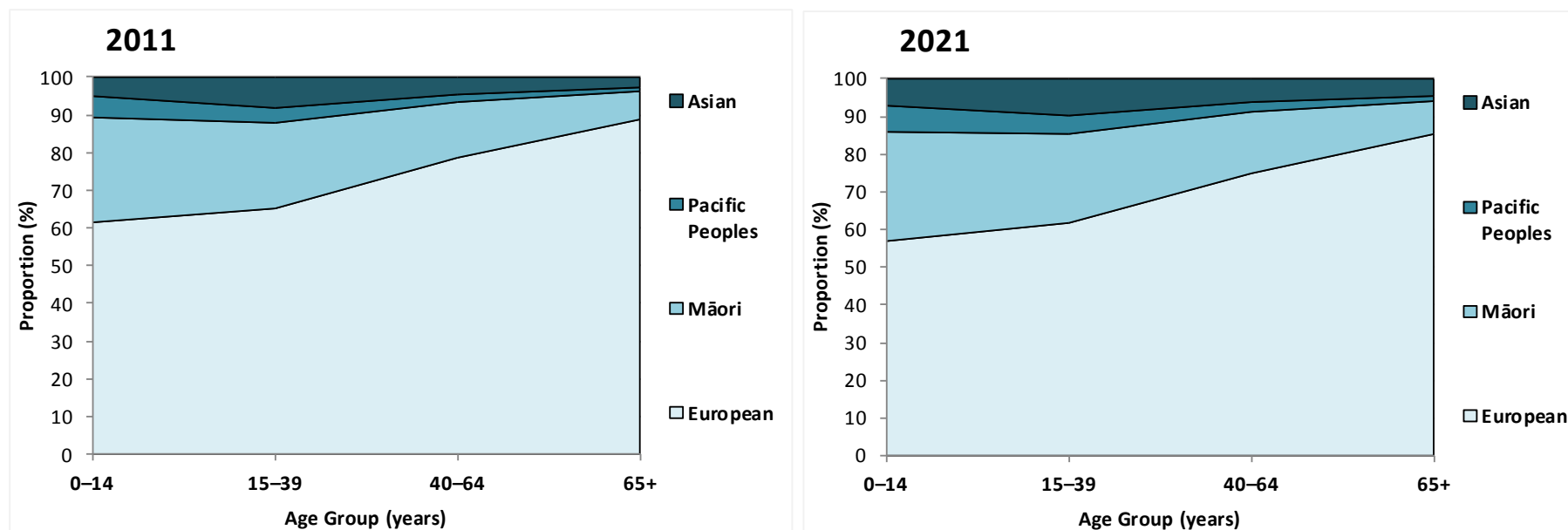
	0-14	15-39	40-64	65+	All ages
<b>2011</b>					
European	61.5	65.2	78.6	88.8	71.4
Māori	27.8	22.7	14.8	7.5	19.6
Pacific Peoples	5.7	3.9	2.0	1.0	3.4
Asian	5.0	8.2	4.6	2.7	5.6
Total	100.0	100.0	100.0	100.0	100.0
Number <sup>(1)</sup>	111,400	151,900	139,500	58,900	461,700
<b>2016</b>					
European	59.3	63.1	77.0	87.3	69.8
Māori	28.5	23.2	15.6	8.0	20.0
Pacific Peoples	6.3	4.4	2.2	1.1	3.8
Asian	6.0	9.2	5.1	3.6	6.4
Total	100.0	100.0	100.0	100.0	100.0
Number <sup>(1)</sup>	115,600	154,600	142,400	69,900	482,800
<b>2021</b>					
European	57.0	61.8	74.9	85.3	68.2
Māori	29.0	23.6	16.3	8.7	20.4
Pacific Peoples	7.0	4.9	2.6	1.4	4.1
Asian	7.1	9.7	6.2	4.6	7.3
Total	100.0	100.0	100.0	100.0	100.0
Number <sup>(1)</sup>	119,400	158,000	142,700	81,200	501,400

Source and Notes same as Table 5.2.1

(1) Underlying numbers reflect the multiple count enumeration methodology and their sum is somewhat greater than the total projection for the region. Projections not available for all ethnic groups for all regions.



**Figure 5.2.1: Projected population of the Waikato Region by major ethnic group\* and broad age group, 2011 and 2021**



Source: Statistics New Zealand, Subnational Ethnic Population Projections (2006 Base - 2009 Update) Tables 4e, 4m, 4p, 4a

(1) Boundaries at 30 June 2009.

(2) These projections have as a base the estimated resident population of each ethnicity, of each area, at 30 June 2006 and incorporate medium fertility, medium migration, medium mortality, and medium inter-ethnic mobility assumptions for each area. Population estimates for 1996–2006 are derived from the respective 1996–2006 census usually resident population counts.

(3) The underlying numbers reflect the multiple count enumeration methodology and their sum is somewhat greater than the total projection for the region.

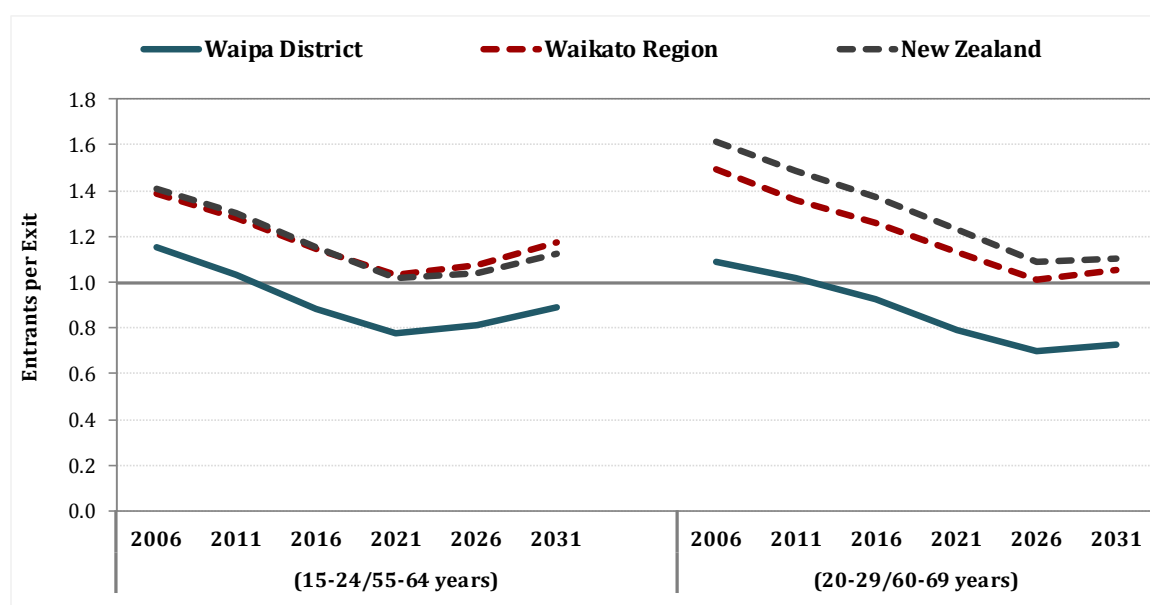


### 5.3 Labour Market Implications of Changing Age Structure

As noted earlier, population ageing drives other very important changes. One of the most important is change in the ratio of people at labour market entry age to those at 'exit' age. As indicated earlier, various age groupings can be employed to calculate this ratio; here we use two: people aged 15-24 to those aged 55-64 years, and people aged 20-29 to those aged 60-69 years (Figure 5.3.1). Based on the first of these indices, Waipa District can expect to have fewer 'entrants' than 'exits' by 2016, reaching a low point of 0.8 (eight entrants per ten exits) over the 2021-2026 period (see also Table 5.1.1 above). When the ratio is based on those aged 20-29 and 60-69 years, it falls as low as 0.7 in 2026.

Trends for the Waikato Region are more similar to those at national level (see also Appendix 3.3). For Total New Zealand the ratios similarly decline, but do not fall below 1.0 during the projection period (Appendix 3.4). All are of course linked, however, in a national (and international) labour market that will see increased competition for the participation of the young and greater need to encourage retention of older workers. This demographically tight labour market will have significant implications for both labour supply and costs as it unfolds. This will be particularly so for industries which have older age structures and are ageing faster than average, as outlined below in the special topic (Section 6.0).

**Figure 5.3.1: Projected ratio of people at labour market entry age to those approaching exit age, Waipa District, Waikato Region and Total New Zealand, 2006-2031**



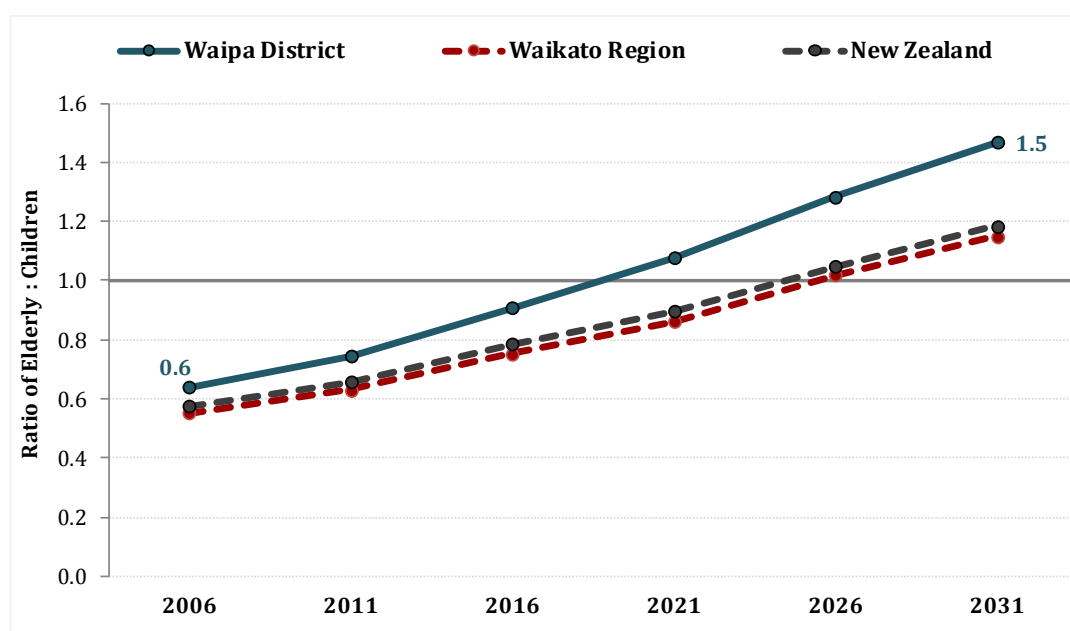
Source: Statistics New Zealand, Subnational Population Projections by Age and Sex, 2006(base)-2031 (October 2012 update)



## 5.4 Natural Increase Implications of Changing Age Structure

For Waipa District, the projected ratio of elderly (65+ years) to children (0-14 years) increases rapidly from its present 0.6 (six elderly for every ten children), to 1.5 by 2031 (Figure 5.4.1). This profound shift to more elderly than children (crossover for Waipa District before 2021) will by then be contributing to rapidly diminishing levels of natural increase (Figure 5.4.2), as will the relatively small proportion projected to be at the key reproductive ages (21-23 per cent) compared with Total New Zealand (25-27 per cent) (Figure 5.4.3). For both Waikato Region and Total New Zealand, the crossover to more elderly than children will occur closer to 2026 (see also Appendices 3.3 and 3.4).

**Figure 5.4.1: Projected ratio of elderly (65+ years) to children (0-14 years), Waipa District, Waikato Region and Total New Zealand, 2006-2031**

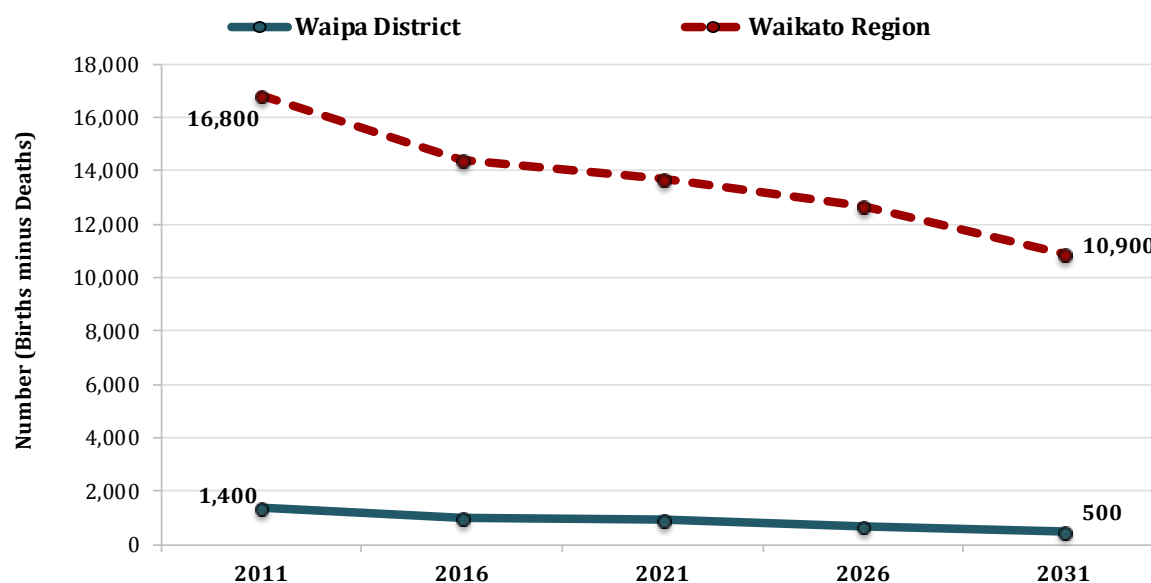


Source: Statistics New Zealand, *Subnational Population Projections by Age and Sex, 2006(base)-2031 (October 2012 update)*

The proportion at key reproductive ages (Figure 5.4.3) appears to be a particularly critical indicator of future growth. In 2010, 15 of New Zealand's 67 Territorial Authorities (22 per cent) had either stopped growing or declined in size (Jackson 2011: 20). All had proportions aged 20-39 years lower than the national average (then 26.9 per cent), and thereby severe 'hour-glass' shaped age structures which are no longer conducive to sustained natural growth. Referring back to Section 2, natural increase is one of the major components of Waipa's growth. As that component declines, growth – or maintenance of population size – will become ever more dependent on migration gain.

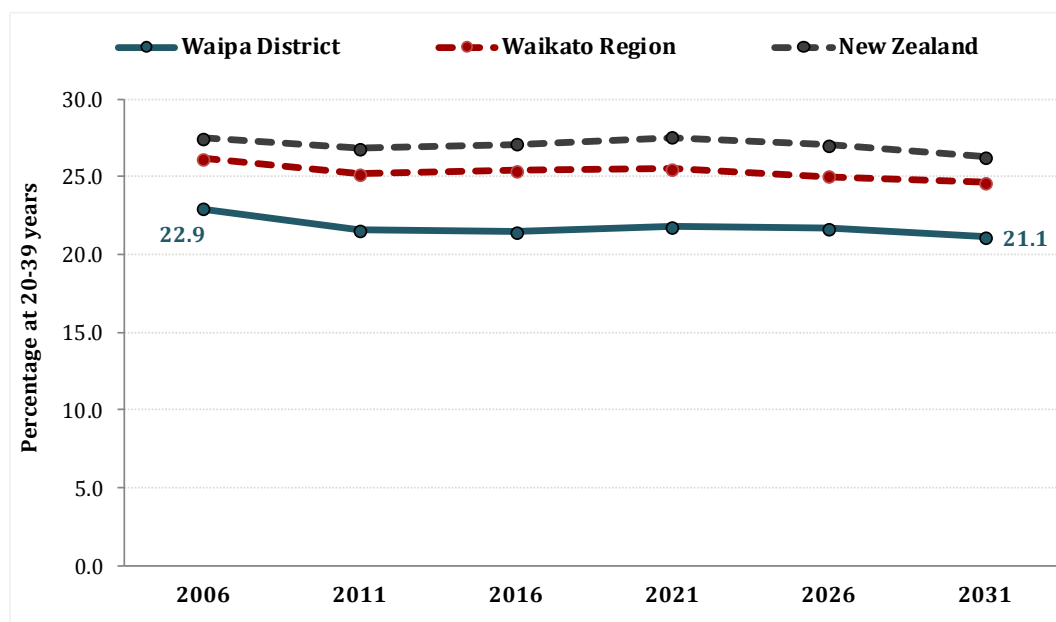


**Figure 5.4.2: Projected natural increase, Waipa District and Waikato Region, 2011-2031**



Source: Subnational Projected Population Characteristics, 2006(base)-2031 (October 2012 update)

**Figure 5.4.3: Projected proportion at key reproductive ages (20-39 years), Waipa District, Waikato Region and Total New Zealand, 2006-2031**



Source: Statistics New Zealand, Subnational Population Projections by Age and Sex, 2006(base)-2031 (October 2012 update)

### 6.1 Industrial Age-Sex Structures (1996, 2001, 2006)

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The extent (and speed) of population ageing and its impact on Labour Market entry/exit ratios also differs by industry. Industries which employ large proportions of younger people, such as supermarkets and grocery stores, by definition have youthful age structures; those employing large proportions of older people (especially in senior management positions) have older age structures. However industrial employment patterns by age are not of interest simply because they differ, but rather, in the context of population ageing, they provide important information for issues such as future labour supply and succession planning.

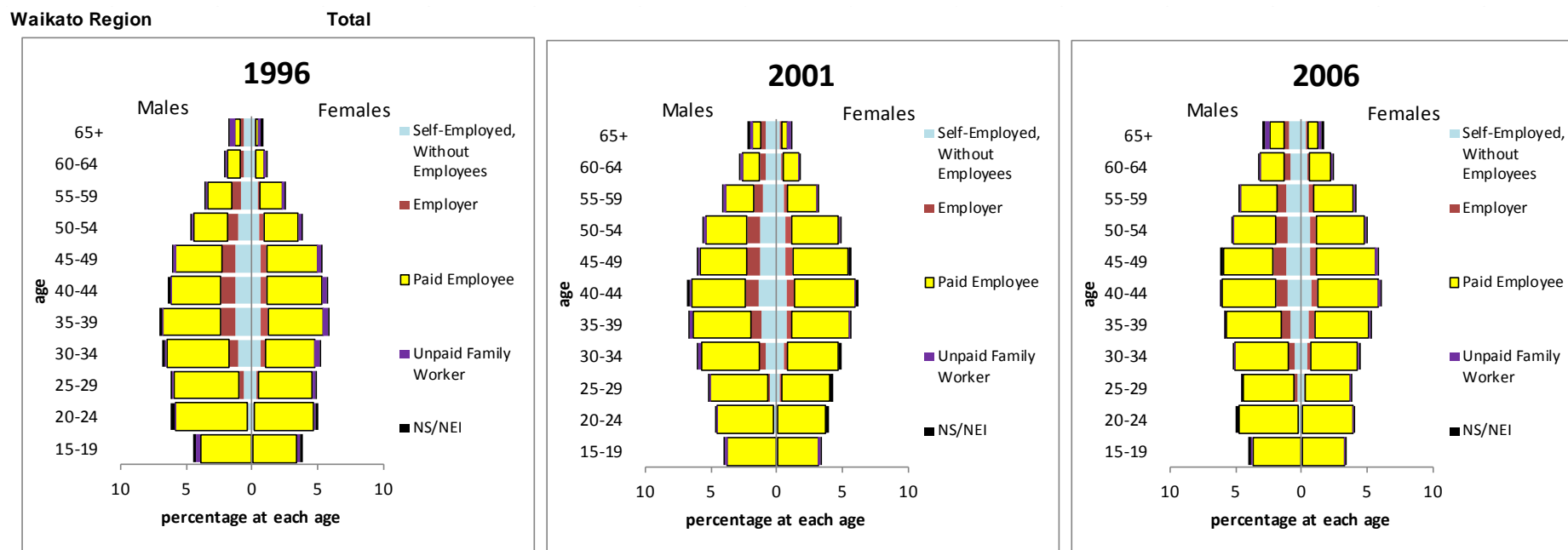
This section provides an overview of the changing age-sex structure of the Waikato Region's employed labour force by employment status (self-employed, employer, paid employee etc.), first for the total labour force, then for the region's four largest industries (in 2006) at the three digit level: Dairy Cattle Farming; School Education; Building and Construction; and Grain, Sheep and Beef Farming; (see also Appendix 4). The data have been customised by Statistics New Zealand to be consistent in terms of industry and employment status across time. The section concludes with a brief overview of change in all Waikato RC industries employing more than 1,000 people in 2006, followed by data for the Waipa District at one-digit level.

Figure 6.1.1 provides data for the Waikato Region's total employed labour force (see also Appendix 4.1). Reflecting the trends outlined above, the average age of employed persons at each census was respectively 38.3, 40.3 and 41.4 years, an overall increase of 3.1 years (8.1 per cent). This is almost identical to the average age for the Total New Zealand employed labour force at each observation: 38.3, 40.1 and 41.2 years (an increase of 2.9 years, 7.6 per cent). However the Waikato Region's labour force (employed) is ageing at a slightly faster rate. The speed of this change is similarly evidenced in the increasing proportion aged 55+ years, from just 12.1 per cent in 1996 to 19.5 per cent in 2006 (61.0 per cent), and the ratio of those at labour market entry to exit age falling from 16 per 10 in 1996, to just eight per 10 in 2006.

Differing somewhat from the total employed labour force is the region's single largest industrial grouping, Dairy Cattle Farming (ANZSIC96 V4.1 code A013), which is heavily masculinised (Figure 6.1.2)—albeit the sex ratio (males per female) has reduced slightly over time, from 1.8 in 1996 to 1.7 in 2006 (Appendix 4.2). The average age of Waikato persons employed in this industry (41.9 years in 2006) is only slightly greater than the region's total labour force, and has shifted upwards since 1996 by 3.0 years (7.8 per cent). This is a slightly greater rate of structural ageing than for the Total New Zealand Dairy Farming labour force.



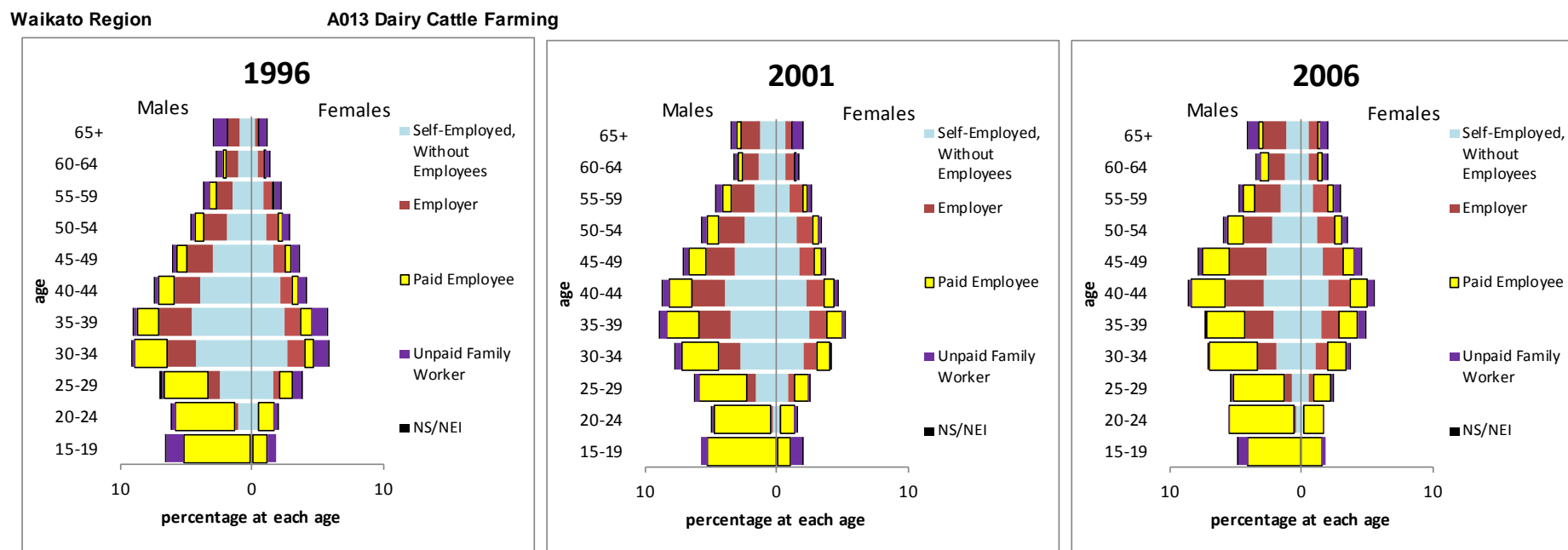
**Figure 6.1.1: Age-Sex Structure and Employment Status of Employed Labour Force 1996, 2001, 2006, Waikato Region**



Source: Jackson/Statistics NZ Customised Database,  
Area of Usual Residence, Industry (ANZSIC96 V4.1) and Status in Employment by Age Group and Sex for the Employed Census Usually Resident Population Count Aged 15+ Years, 1996, 2001, 2006



**Figure 6.1.2: Age-Sex Structure and Employment Status of the Dairy Cattle Farming Industry [A013] 1996, 2001, 2006, Waikato Region**



Source: Jackson/Statistics NZ Customised Database,  
Area of Usual Residence, Industry (ANZSIC96 V4.1) and Status in Employment by Age Group and Sex for the Employed Census Usually Resident Population Count Aged 15+ Years, 1996, 2001, 2006





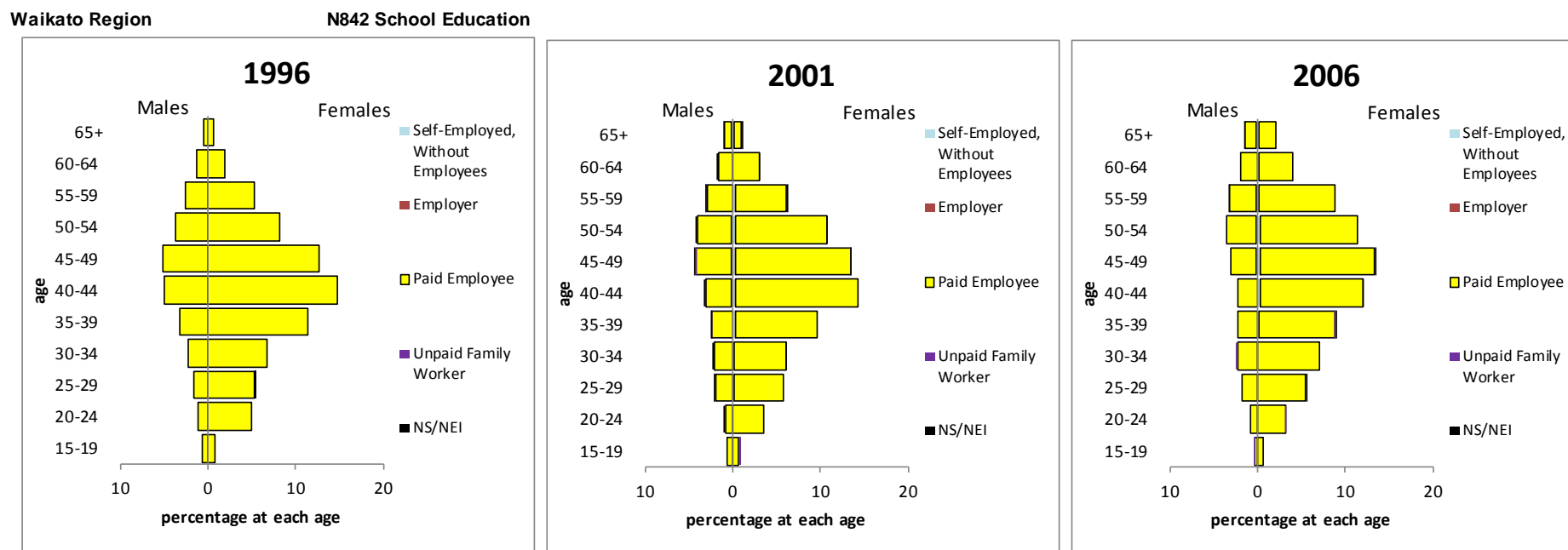
Contrasting completely with the region's male dominated dairy farming industry is the region's second largest industry, School Education, disproportionately employing females (Figure 6.1.3, Appendix 4.3). Although not unfolding quite as rapidly, structural ageing in this industry is also more advanced than in the dairy industry, with an average age in 2006 of 45.0 years (having increased by 2.6 years since 1996, 6.1 per cent). In 1996, just 12.2 per cent of those employed in this industry were aged 55+ years, while by 2006 that had increased to 21.5 per cent (a 76.0 per cent increase). The trends resulted in the labour market entry: exit ratio falling from 6 entrants per 10 in the retirement zone in 1996, to just two per ten in 2006.

Significantly younger and substantially more masculinised, the region's third largest industry (in 2006 employing 4,680) is Building and Construction (Figure 6.1.3, Appendix 4.4). The average age of employees in this industry increased from 37.4 years in 1996 to 38.5 years in 2006 (1.1 years, 3.0 per cent), although it declined fractionally between 2001 and 2006. This relatively slow ageing reflects the enormous increase in this industry, which in 1996 employed just 2,682 persons, a 75 per cent increase, taking it from eleventh largest in 1996 to third in 2006. Nevertheless it should be noted that the industry's entry: exit ratio fell from 21 per 10 (entrants per those in the retirement zone) in 1996, to 16 per ten in 2006.

The region's fourth largest industry is Grain, Sheep and Beef Cattle Farming, in 2006 employing 4,593 people (Figure 6.1.4, Appendix 4.5), only fractionally more than in 1996 (4,410) and explaining its fall from third to fourth position. Its age-sex structure contrasts substantially with those for the three largest industries, albeit like dairy farming it is also heavily masculinised (sex ratio in 2006, 1.9 males per female, down from 2.0 in 1996). Widely understood as one of the oldest industries in terms of age structure, the average age of the Waikato Region's Grain, Sheep and Beef Farmers increased from 44.6 years in 1996 to 49.3 years in 2006 (4.8 years, 10.7 per cent), making it the region's third oldest industry of the 158 measured at 3-digit level. Relatedly the proportion aged 55+ years increased from 26.5 to 41.6 per cent. The data show that the industry's labour market entry: exit ratio has fallen from an already low five people at labour market entry age in 1996 per ten in the 'retirement zone', to just two per ten in 2006. Notably also, the region's farmers are a little older on average than their New Zealand counterparts. The relatively small proportion at the younger ages *vis-à-vis* the bulk of self-employed and employers at older ages has significant implications for the succession of these farms.



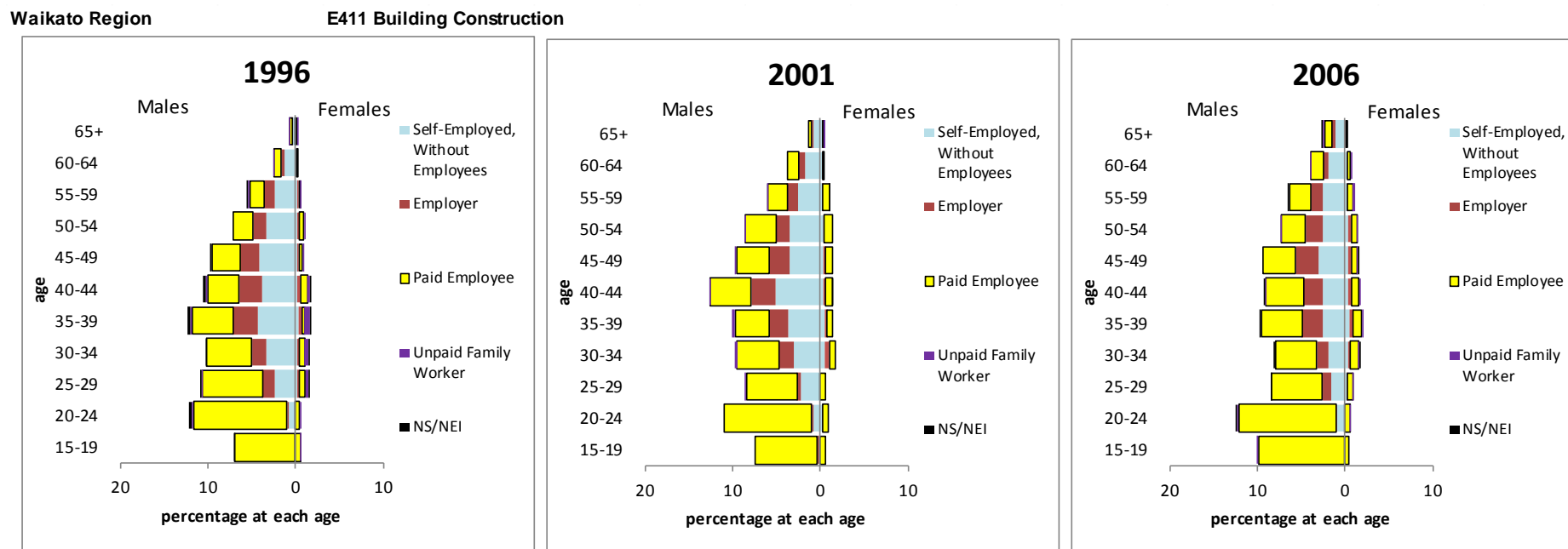
**Figure 6.1.3: Age-Sex Structure and Employment Status, School Education Industry [N842] 1996, 2001, 2006, Waikato Region**



Source: Jackson/Statistics NZ Customised Database,  
Area of Usual Residence, Industry (ANZSIC96 V4.1) and Status in Employment by Age Group and Sex for the Employed Census Usually Resident Population Count Aged 15+ Years, 1996, 2001, 2006



**Figure 6.1.4: Age-Sex Structure and Employment Status, Building and Construction Industry [E411] 1996, 2001, 2006, Waikato Region**



Source: Jackson/Statistics NZ Customised Database,

Area of Usual Residence, Industry (ANZSIC96 V4.1) and Status in Employment by Age Group and Sex for the Employed Census Usually Resident Population Count Aged 15+ Years, 1996, 2001, 2006



**Figure 6.1.5: Age-Sex Structure and Employment Status, Grain, Sheep and Beef Cattle Farming Industry [A012] 1996, 2001, 2006, Waikato Region**



Source: Jackson/Statistics NZ Customised Database, Area of Usual Residence, Industry (ANZSIC96 V4.1) and Status in Employment by Age Group and Sex for the Employed Census Usually Resident Population Count Aged 15+ Years, 1996, 2001, 2006



Table 6.1.1 gives data for all Waikato industries employing over 1,000 people in 2006 (accounting for 79 per cent of the region's employed workforce). As indicated above, the region's largest, second-largest and fourth-largest industries all have average ages above that of the total employed workforce, with the latter (Grain, Sheep and Beef Farming) having the third-oldest average age of all 158 industries at 3-digit level. Offsetting this workforce ageing to some extent are the below-average ages of the three next-largest industries: Building and Construction (3rd largest), Supermarket and Grocery Stores (5th largest), and Cafes and Restaurants (6th largest). However, it goes without saying that people and skills are not exact replacements for each other. While the region's overall population remains relatively young, it is critical that the rapid ageing of its workforce is urgently engaged with.



**Table 6.1.1: Waikato Industries Employing over 1,000 persons in 2006, Number, Average Age, and Change (%) 1996, 2001 and 2006 (Ranked largest to smallest)**

	Number Employed				Average Age (Years)			
	1996	2001	2006	Change 1996-2006 (%)	1996	2001	2006	Change 1996-2006 (%)
Waikato Region								
A013 Dairy Cattle Farming	12879	11991	10953	-15.0	38.8	41.0	41.9	7.9
N842 School Education	6582	7914	8139	23.7	42.5	43.9	45.0	6.0
E411 Building Construction	2670	2790	4680	75.3	37.3	39.0	38.5	3.0
A012 Grain, Sheep and Beef Cattle Farming	4410	3840	4593	4.1	44.6	46.6	49.3	10.6
G511 Supermarket and Grocery Stores	3726	4059	4467	19.9	29.7	31.6	33.8	13.9
H573 Cafes and Restaurants	3141	3663	4383	39.5	30.4	31.2	30.9	1.4
M811 Government Administration	4374	4083	4371	-0.1	39.7	42.0	42.9	8.0
L786 Other Business Services	2694	3174	4329	60.7	38.9	40.6	41.2	5.9
O863 Other Health Services	1497	4005	4305	187.6	40.6	43.0	44.2	9.0
G532 Motor Vehicle Services	3609	3798	4023	11.5	34.3	36.1	37.7	9.8
O861 Hospitals and Nursing Homes	4191	3414	3813	-9.0	40.2	42.7	44.5	10.5
O872 Community Care Services	2385	3096	3732	56.5	40.9	44.4	46.7	14.3
I611 Road Freight Transport	2505	2811	3288	31.3	38.5	40.2	42.9	11.6
H571 Accommodation	2298	2727	3246	41.3	40.2	41.5	42.1	4.7
G525 Other Personal and Household Good Retailing	2493	2625	3177	27.4	39.4	40.9	41.6	5.7
G512 Specialised Food Retailing	2772	2685	3093	11.6	33.4	33.9	33.9	1.4
E423 Installation Trade Services	1851	2262	3048	64.7	37.1	39.3	39.4	6.4
L785 Marketing and Business Management Services	1275	2001	2913	128.5	38.8	40.0	41.7	7.4
L784 Legal and Accounting Services	2295	2454	2880	25.5	37.7	40.2	41.5	10.2
Q952 Other Personal Services	2439	2268	2790	14.4	35.9	38.9	40.7	13.4
A021 Services to Agriculture	1608	2121	2454	52.6	35.6	39.2	40.8	14.7
E424 Building Completion Services	1584	1794	2400	51.5	37.4	39.3	39.1	4.6
C211 Meat and Meat Product Manufacturing	2046	2373	2364	15.5	34.8	36.8	37.4	7.6
L782 Technical Services	1221	1473	2304	88.7	39.4	41.4	42.1	6.8
C286 Industrial Machinery and Equipment Manufact	2094	1989	2280	8.9	37.2	39.4	40.6	9.1
F461 Machinery and Equipment Wholesaling	1620	1878	2193	35.4	36.6	39.2	41.5	13.5
P931 Sport	1368	1518	2106	53.9	37.1	38.4	39.1	5.4
N843 Post School Education	1926	2343	2097	8.9	40.3	42.7	43.5	7.9
Q963 Public Order and Safety Services	1503	1851	2019	34.3	38.8	40.4	42.8	10.3
L771 Property Operators and Developers	1599	1641	2001	25.1	41.0	43.7	44.5	8.5
E412 Non-Building Construction	1470	1623	1986	35.1	39.9	41.8	42.8	7.3
G523 Furniture, Houseware and Appliance Retailing	1524	1542	1917	25.8	38.9	39.6	39.4	1.3
L772 Real Estate Agents	1392	1314	1842	32.3	44.7	46.9	47.3	5.8
N844 Other Education	1215	1383	1806	48.6	40.3	41.3	44.1	9.6
O862 Medical and Dental Services	1218	1401	1695	39.2	40.8	43.3	44.7	9.3
C212 Dairy Product Manufacturing	1596	1296	1680	5.3	36.8	40.0	40.3	9.5
K732 Deposit Taking Financiers	2010	1461	1665	-17.2	35.5	39.4	40.5	14.1
G531 Motor Vehicle Retailing	1599	1518	1569	-1.9	36.5	38.4	39.5	8.2
A015 Other Livestock Farming	1722	2271	1563	-9.2	43.1	45.1	45.9	6.5
A011 Horticulture and Fruit Growing	2127	1872	1542	-27.5	38.8	41.1	43.9	13.2
G522 Clothing and Soft Good Retailing	1347	1227	1533	13.8	39.3	40.5	38.5	-2.0
C231 Log Sawmilling and Timber Dressing	1536	1716	1521	-1.0	36.5	38.2	39.6	8.7
F453 Builders Supplies Wholesaling	1038	1080	1476	42.2	36.8	39.3	39.1	6.2
C232 Other Wood Product Manufacturing	1314	1155	1365	3.9	35.8	38.2	40.2	12.3
J711 Postal and Courier Services	1089	1215	1320	21.2	37.1	39.4	42.3	14.1
N841 Preschool Education	579	807	1203	107.8	37.0	39.5	39.8	7.6
E422 Building Structure Services	603	717	1182	96.0	36.2	36.2	35.7	-1.4
G524 Recreational Good Retailing	909	1098	1176	29.4	35.1	37.0	38.1	8.4
A030 Forestry and Logging	1761	1674	1167	-33.7	34.4	36.2	38.7	12.4
F471 Food, Drink and Tobacco Wholesaling	1065	1107	1152	8.2	36.6	37.9	39.1	6.8
L783 Computer Services	288	639	1107	284.4	37.3	37.0	38.4	2.8
G521 Department Stores	918	1161	1086	18.3	28.8	29.8	31.9	10.9
Q962 Interest Groups	744	1038	1074	44.4	40.2	42.7	44.3	10.3
O871 Child Care Services	459	648	1029	124.2	34.3	36.3	36.9	7.5
E421 Site Preparation Services	501	699	1026	104.8	38.3	41.9	41.7	8.8
L781 Scientific Research	831	891	1026	23.5	37.5	39.3	40.7	8.6
C276 Fabricated Metal Product Manufacturing	936	930	1005	7.4	37.0	39.3	40.5	9.6
All employing over 1,000 persons	118446	128124	146154	23.4				
Total Waikato employed Labour Force	155457	162963	185691	19.4	38.3	40.3	41.4	8.0

Source: Jackson/Statistics NZ Customised Database, Area of Usual Residence, Industry (ANZSIC96 V4.1) and Status in Employment by Age Group and Sex for the Employed Census Usually Resident Population Count Aged 15+ Years, 1996, 2001, 2006



## 6.2 Industrial Change for Waipa (1996, 2001, 2006)

Finally, Table 6.2.1 gives an overview of industrial change for the Waipa District at the one-digit level. As would be expected, Agriculture, Forestry and Fishing is, as for the Waikato, the single-largest industry for the district, but also one of only two to decline over the period (-9.3 per cent), the other being the second-smallest industry: Electricity, Gas and Water Supply. Retail Trade is Waipa's second-largest industry, followed by Property and Business Services, Manufacturing, and Health and Community Services, all of which experienced sizeable increases over the period, most notably Property and Business Services which increased by 70.5 per cent. The relatively large Construction industry (6<sup>th</sup> largest) also saw a significant increase (72.6 per cent).

**Table 6.2.1: Number, and Change (%) 1996, 2001 and 2006, Waipa District**

	1996	2001	2006	Change	
				1996-2006	% Change
Agriculture, Forestry and Fishing	3708	3621	3363	-345	-9.3
Retail Trade	2208	2304	2580	372	16.8
Property and Business Services	1293	1635	2205	912	70.5
Manufacturing	1764	1788	2082	318	18.0
Health and Community Services	1620	1857	2004	384	23.7
Construction	1062	1218	1833	771	72.6
Education	987	1278	1476	489	49.5
Wholesale Trade	819	909	1032	213	26.0
Personal and Other Services	642	852	948	306	47.7
Transport and Storage	576	627	819	243	42.2
Accommodation, Cafes and Restaurants	456	507	666	210	46.1
Cultural and Recreational Services	342	393	573	231	67.5
Finance and Insurance	354	396	474	120	33.9
Government Administration and Defence	399	387	468	69	17.3
Communication Services	156	162	159	3	1.9
Electricity, Gas and Water Supply	135	93	102	-33	-24.4
Mining	39	21	39	0	0.0
Total Industry	16560	18048	20823	4263	25.7
Not Elsewhere Included	1038	1011	1083	45	4.3

Source: Industry (ANZSIC96 V4.1 Division) by Age Group and Sex, for the Employed Census Usually Resident Population Count Aged 15 Years and Over, 1996, 2001 and 2006



## Appendices

### Appendix 1.0: Population Size and Growth, Waipa District, Waikato Region and Total New Zealand, 1986-2012

		Waipa District		Waikato Region		New Zealand	
		Population Number	% Change from previous year	Population Number	% Change from previous year	Population Number	% Change from previous year
Census Night Resident Population (Census-Adjusted) Intercensal Estimates (March Years) <sup>(1)</sup>	1986	35,553	...	325,220	...	3,307,084	...
	1987	35,800	+0.7	327,400	+0.7	3,315,410	+0.3
	1988	36,100	+0.8	330,300	+0.9	3,339,160	+0.7
	1989	36,300	+0.6	331,500	+0.4	3,347,140	+0.2
	1990	36,600	+0.8	334,000	+0.8	3,373,400	+0.8
Census Night Resident Population (unadjusted for Census 1996) (March Years) <sup>(1)</sup>	1991	37,031	...	338,959	...	3,515,980	...
	1992	37,300	+0.7	341,200	+0.7	3,552,240	+1.0
	1993	37,800	+1.3	344,600	+1.0	3,597,850	+1.3
	1994	38,300	+1.3	348,200	+1.0	3,648,260	+1.4
	1995	38,700	+1.0	351,600	+1.0	3,706,710	+1.6
Estimated Usual Resident Population (June Years) <sup>(2)</sup>	1996	38,400	....	358,800	....	3,732,000	....
	1997	38,700	+0.8	362,700	+1.1	3,781,300	+1.3
	1998	39,100	+1.0	365,600	+0.8	3,815,000	+0.9
	1999	39,400	+0.8	366,900	+0.4	3,835,100	+0.5
	2000	39,800	+1.0	368,100	+0.3	3,857,700	+0.6
	2001	40,000	+0.5	368,400	+0.1	3,880,500	+0.6
	2002	40,600	+1.5	373,400	+1.4	3,948,500	+1.8
	2003	41,400	+2.0	379,200	+1.6	4,027,200	+2.0
	2004	42,100	+1.7	384,500	+1.4	4,087,500	+1.5
	2005	43,000	+2.1	388,700	+1.1	4,133,900	+1.1
	2006	43,700	+1.6	393,200	+1.2	4,184,600	+1.2
	2007	44,200	+1.1	396,500	+0.8	4,228,300	+1.0
	2008	44,700	+1.1	400,100	+0.9	4,268,900	+1.0
	2009	45,100	+0.9	404,400	+1.1	4,315,800	+1.1
	2010	45,700	+1.3	409,300	+1.2	4,367,800	+1.2
	2011	46,100	+0.9	413,100	+0.9	4,405,200	+0.9
	2012	46,200	+0.2	416,200	+0.8	4,433,000	+0.6
1986-2012*			+20.3		+16.0		+18.8

Source: (1) Statistics New Zealand, Infoshare, Tables DPE052AA and DPE051AA

(2) Statistics NZ, Infoshare, Estimated Resident Population for Territorial Authority and Regional Council Areas, at 30 June (1996+) (Annual-Jun)

Notes: \*Changes in the timing and method of estimating Resident Population between 1991-1992 and 1995-1996 mean that the three sets of trends should be understood as discontinuous





## Appendix 2.1: Components of Change by age (Waipa District 1996-2001)

<i>Waipa District</i>	Actual (Observed) 1996	Expected 2001	Actual (Observed) 2001	Actual (Observed) Change 1996-2001	Change due to Migration	Change due to Deaths	Change to cohort size	Actual (Observed) change 1996-2001	Change due to Migration ~	Change due to Deaths~	Change to cohort size~
	Number							Percentage (%)			
<b>0-4 Years</b>	3,030	2,904	2,850	-180	-54	-20	-106	-5.9	-1.8	-0.6	-3.5
<b>5-9 Years</b>	3,340	3,026	3,280	-60	254	-4	-310	-1.8	7.6	-0.1	-9.3
<b>10-14 Years</b>	3,160	3,337	3,450	290	113	-3	180	9.2	3.6	-0.1	5.7
<b>15-19 Years</b>	2,900	3,153	2,890	-10	-263	-7	260	-0.3	-9.1	-0.2	9.0
<b>20-24 Years</b>	2,290	2,887	1,950	-340	-937	-13	610	-14.8	-40.9	-0.6	26.6
<b>25-29 Years</b>	2,470	2,279	2,280	-190	1	-11	-180	-7.7	0.0	-0.4	-7.3
<b>30-34 Years</b>	2,940	2,459	2,730	-210	271	-11	-470	-7.1	9.2	-0.4	-16.0
<b>35-39 Years</b>	3,250	2,925	3,170	-80	245	-15	-310	-2.5	7.5	-0.4	-9.5
<b>40-44 Years</b>	2,790	3,229	3,270	480	41	-21	460	17.2	1.5	-0.7	16.5
<b>45-49 Years</b>	2,480	2,763	2,820	340	57	-27	310	13.7	2.3	-1.1	12.5
<b>50-54 Years</b>	1,940	2,441	2,560	620	119	-39	540	32.0	6.1	-2.0	27.8
<b>55-59 Years</b>	1,640	1,890	1,920	280	30	-50	300	17.1	1.9	-3.1	18.3
<b>60-64 Years</b>	1,470	1,571	1,680	210	109	-69	170	14.3	7.4	-4.7	11.6
<b>65-69 Years</b>	1,380	1,371	1,460	80	89	-99	90	5.8	6.4	-7.2	6.5
<b>70-74 Years</b>	1,190	1,233	1,280	90	47	-147	190	7.6	4.0	-12.4	16.0
<b>75-79 Years</b>	960	995	1,080	120	85	-195	230	12.5	8.9	-20.4	24.0
<b>80-84 Years</b>	690	718	740	50	22	-242	270	7.2	3.2	-35.1	39.1
<b>85-89 Years</b>	337	419	450	113	30	-271	353	33.4	9.0	-80.2	104.5
<b>90+ Years</b>	143	185	200	57	15	-295	337	40.3	10.4	-206.5	236.5
<b>Total</b>	<b>38,400</b>	<b>39,786</b>	<b>40,060</b>	<b>1,660</b>	<b>274</b>	<b>-1,538</b>	<b>2,924</b>	<b>4.3</b>	<b>0.7</b>	<b>-4.0</b>	<b>7.6</b>

Source: Jackson/from Statistics New Zealand ERP and New Zealand Survivorship 1995-2007

Notes: ~ As a percentage of Previous Observed Population



## Appendix 2.2: Components of Change by age (Waipa District 2001-2006)

<i>Waipa District</i>	Actual (Observed) 2001	Expected 2001	Actual (Observed) 2006	Actual (Observed) Change 2001-2006	Change due to Migration	Change due to Deaths	Change to cohort size	Actual (Observed) change 2001-2006	Change due to Migration ~	Change due to Deaths~	Change to cohort size~
	Number							Percentage (%)			
<b>0-4 Years</b>	2,850	2,913	2,980	130	67	-17	80	4.6	2.4	-0.6	2.8
<b>5-9 Years</b>	3,280	2,846	3,210	-70	364	-4	-430	-2.1	11.1	-0.1	-13.1
<b>10-14 Years</b>	3,450	3,278	3,550	100	272	-2	-170	2.9	7.9	-0.1	-4.9
<b>15-19 Years</b>	2,890	3,443	3,220	330	-223	-7	560	11.4	-7.7	-0.2	19.4
<b>20-24 Years</b>	1,950	2,880	2,120	170	-760	-10	940	8.7	-39.0	-0.5	48.2
<b>25-29 Years</b>	2,280	1,943	2,040	-240	97	-7	-330	-10.5	4.3	-0.3	-14.5
<b>30-34 Years</b>	2,730	2,271	2,610	-120	339	-9	-450	-4.4	12.4	-0.3	-16.5
<b>35-39 Years</b>	3,170	2,718	3,260	90	542	-12	-440	2.8	17.1	-0.4	-13.9
<b>40-44 Years</b>	3,270	3,151	3,500	230	349	-19	-100	7.0	10.7	-0.6	-3.1
<b>45-49 Years</b>	2,820	3,241	3,410	590	169	-29	450	20.9	6.0	-1.0	16.0
<b>50-54 Years</b>	2,560	2,781	2,930	370	149	-39	260	14.5	5.8	-1.5	10.2
<b>55-59 Years</b>	1,920	2,504	2,620	700	116	-56	640	36.5	6.0	-2.9	33.3
<b>60-64 Years</b>	1,680	1,853	2,020	340	167	-67	240	20.2	9.9	-4.0	14.3
<b>65-69 Years</b>	1,460	1,586	1,810	350	224	-94	220	24.0	15.3	-6.4	15.1
<b>70-74 Years</b>	1,280	1,330	1,560	280	230	-130	180	21.9	18.0	-10.2	14.1
<b>75-79 Years</b>	1,080	1,094	1,200	120	106	-186	200	11.1	9.8	-17.2	18.5
<b>80-84 Years</b>	740	834	920	180	86	-246	340	24.3	11.7	-33.3	45.9
<b>85-89 Years</b>	450	473	504	54	30	-267	290	11.9	6.8	-59.3	64.5
<b>90+ Years</b>	200	262	246	46	-16	-388	450	23.2	-7.8	-193.8	224.7
<b>Total</b>	<b>40,060</b>	<b>41,400</b>	<b>43,710</b>	<b>3,650</b>	<b>2,310</b>	<b>-1,590</b>	<b>2,930</b>	<b>9.1</b>	<b>5.8</b>	<b>-4.0</b>	<b>7.3</b>

Source: Jackson/ from Statistics New Zealand ERP and New Zealand Survivorship 1995-2007

Notes: ~ As a percentage of Previous Observed Population



### Appendix 2.3: Components of Change by age (Waikato Region 1996-2001)

<i>Waikato Region</i>	Actual (Observed) 1996	Expected 2001	Actual (Observed) 2001	Actual (Observed) Change 1996-2001	Change due to Migration	Change due to Deaths	Change to cohort size	Actual (Observed) change 1996-2001	Change due to Migration ~	Change due to Deaths~	Change to cohort size~
	Number							Percentage (%)			
<b>0-4 Years</b>	30,410	28,009	28,530	-1,880	521	-189	-2,212	-6.2	1.7	-0.6	-7.3
<b>5-9 Years</b>	30,860	30,365	30,480	-380	115	-45	-450	-1.2	0.4	-0.1	-1.5
<b>10-14 Years</b>	28,470	30,835	30,860	2,390	25	-25	2,390	8.4	0.1	-0.1	8.4
<b>15-19 Years</b>	27,540	28,405	27,760	220	-645	-65	930	0.8	-2.3	-0.2	3.4
<b>20-24 Years</b>	27,130	27,419	23,900	-3,230	-3,519	-121	410	-11.9	-13.0	-0.4	1.5
<b>25-29 Years</b>	26,390	27,006	23,250	-3,140	-3,756	-124	740	-11.9	-14.2	-0.5	2.8
<b>30-34 Years</b>	27,520	26,272	26,460	-1,060	188	-118	-1,130	-3.9	0.7	-0.4	-4.1
<b>35-39 Years</b>	27,970	27,383	27,800	-170	417	-137	-450	-0.6	1.5	-0.5	-1.6
<b>40-44 Years</b>	24,770	27,792	27,630	2,860	-162	-178	3,200	11.5	-0.7	-0.7	12.9
<b>45-49 Years</b>	22,930	24,530	24,590	1,660	60	-240	1,840	7.2	0.3	-1.0	8.0
<b>50-54 Years</b>	18,250	22,568	22,660	4,410	92	-362	4,680	24.2	0.5	-2.0	25.6
<b>55-59 Years</b>	15,610	17,776	17,870	2,260	94	-474	2,640	14.5	0.6	-3.0	16.9
<b>60-64 Years</b>	13,350	14,953	15,390	2,040	437	-657	2,260	15.3	3.3	-4.9	16.9
<b>65-69 Years</b>	12,790	12,448	12,880	90	432	-902	560	0.7	3.4	-7.1	4.4
<b>70-74 Years</b>	10,440	11,423	11,440	1,000	17	-1,367	2,350	9.6	0.2	-13.1	22.5
<b>75-79 Years</b>	7,350	8,713	8,640	1,290	-73	-1,727	3,090	17.6	-1.0	-23.5	42.0
<b>80-84 Years</b>	4,920	5,476	5,460	540	-16	-1,874	2,430	11.0	-0.3	-38.1	49.4
<b>85-89 Years</b>	2,240	2,977	2,928	688	-50	-1,943	2,680	30.7	-2.2	-86.7	119.6
<b>90+ Years</b>	940	1,220	1,292	352	72	-1,960	2,240	37.5	7.6	-208.5	238.4
<b>Total</b>	<b>359,880</b>	<b>375,570</b>	<b>369,820</b>	<b>9,940</b>	<b>-5,750</b>	<b>-12,508</b>	<b>28,198</b>	<b>2.8</b>	<b>-1.6</b>	<b>-3.5</b>	<b>7.8</b>

Source: Jackson/from Statistics New Zealand ERP and New Zealand Survivorship 1995-2007

Notes: ~ As a percentage of Previous Observed Population



#### Appendix 2.4: Components of Change by age (Waikato Region 2001-2006)

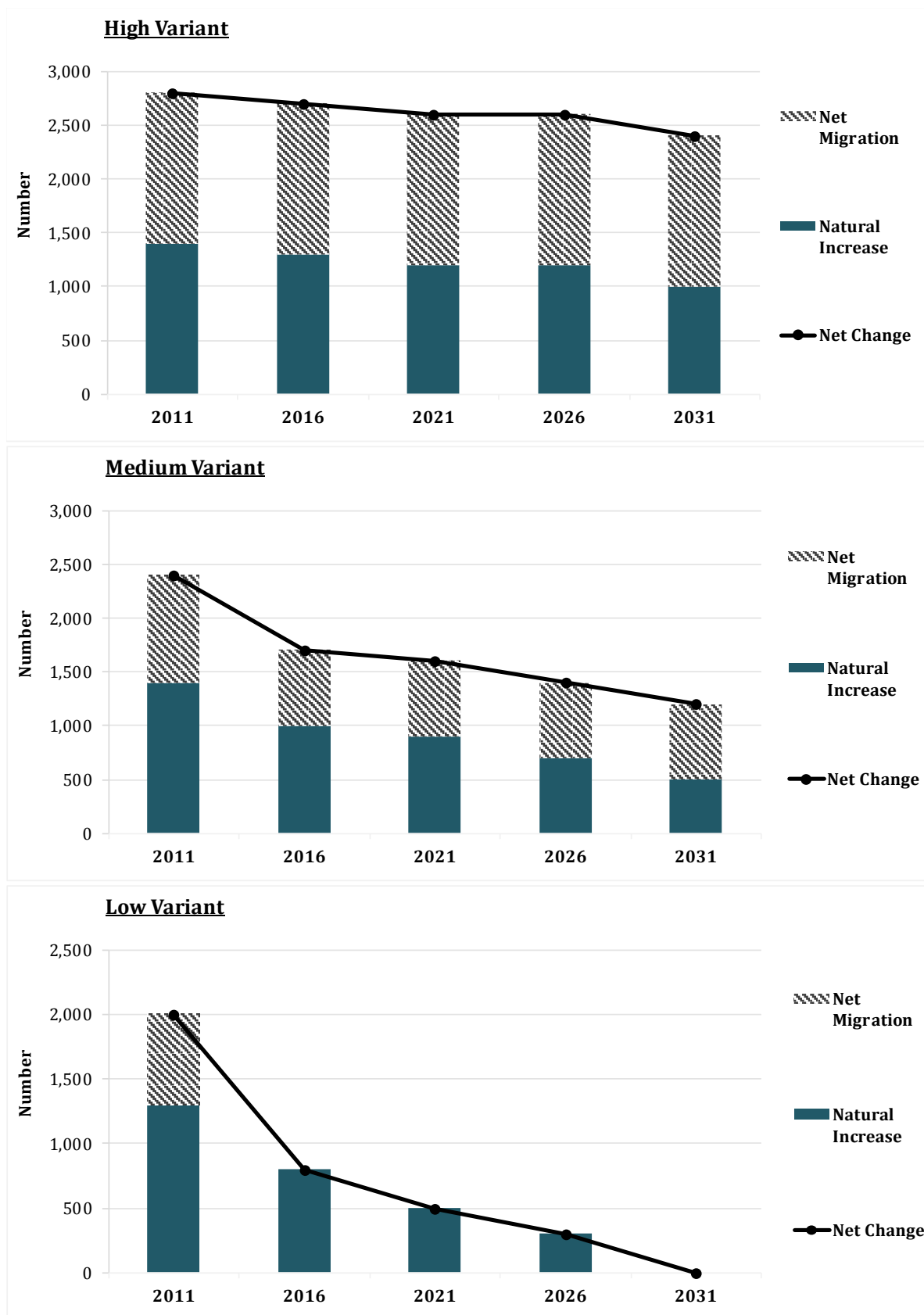
Waikato Region	Actual (Observed) 2001	Expected 2001	Actual (Observed) 2006	Actual (Observed) Change 2001-2006	Change due to Migration	Change due to Deaths	Change to cohort size	Actual (Observed) change 2001-2006	Change due to Migration ~	Change due to Deaths~	Change to cohort size~
	Number							Percentage (%)			
0-4 Years	28,530	27,318	28,500	-30	1,182	-160	-1,052	-0.1	4.1	-0.6	-3.7
5-9 Years	30,480	28,494	29,480	-1,000	986	-36	-1,950	-3.3	3.2	-0.1	-6.4
10-14 Years	30,860	30,459	31,240	380	781	-21	-380	1.2	2.5	-0.1	-1.2
15-19 Years	27,760	30,802	30,260	2,500	-542	-58	3,100	9.0	-2.0	-0.2	11.2
20-24 Years	23,900	27,662	26,670	2,770	-992	-98	3,860	11.6	-4.2	-0.4	16.2
25-29 Years	23,250	23,810	23,300	50	-510	-90	650	0.2	-2.2	-0.4	2.8
30-34 Years	26,460	23,161	25,000	-1,460	1,839	-89	-3,210	-5.5	7.0	-0.3	-12.1
35-39 Years	27,800	26,340	28,370	570	2,030	-120	-1,340	2.1	7.3	-0.4	-4.8
40-44 Years	27,630	27,630	29,090	1,460	1,460	-170	170	5.3	5.3	-0.6	0.6
45-49 Years	24,590	27,382	28,270	3,680	888	-248	3,040	15.0	3.6	-1.0	12.4
50-54 Years	22,660	24,253	24,730	2,070	477	-337	1,930	9.1	2.1	-1.5	8.5
55-59 Years	17,870	22,169	23,000	5,130	831	-491	4,790	28.7	4.6	-2.7	26.8
60-64 Years	15,390	17,246	18,190	2,800	944	-624	2,480	18.2	6.1	-4.1	16.1
65-69 Years	12,880	14,526	15,290	2,410	764	-864	2,510	18.7	5.9	-6.7	19.5
70-74 Years	11,440	11,720	12,010	570	290	-1,160	1,440	5.0	2.5	-10.1	12.6
75-79 Years	8,640	9,785	9,900	1,260	115	-1,655	2,800	14.6	1.3	-19.2	32.4
80-84 Years	5,460	6,658	6,710	1,250	52	-1,982	3,180	22.9	1.0	-36.3	58.2
85-89 Years	2,928	3,482	3,450	522	-32	-1,978	2,532	17.8	-1.1	-67.6	86.5
90+ Years	1,292	1,694	1,670	378	-24	-2,526	2,928	29.3	-1.9	-195.5	226.6
<b>Total</b>	<b>369,820</b>	<b>384,591</b>	<b>395,130</b>	<b>25,310</b>	<b>10,539</b>	<b>-12,707</b>	<b>27,478</b>	<b>6.8</b>	<b>2.8</b>	<b>-3.4</b>	<b>7.4</b>

Source: Jackson/from Statistics New Zealand ERP and New Zealand Survivorship 1995-2007

Notes: ~ As a percentage of Previous Observed Population



### Appendix 3.1: Projected Assumptions by Projection Variant, Waipa District



Source: Subnational Projected Population Characteristics, 2006(base)-2031 (October 2012 update)



### Appendix 3.2: Projection Assumptions by Variant and Region, Waipa District and Waikato RC

Waipa District	2011	2016	2021	2026	2031	Change 2011-2031 (%)
<b>HIGH</b>						
Births (Live) - 5 years ended 30 June	3100	3100	3300	3400	3400	9.7
Deaths - 5 years ended 30 June	1700	1900	2000	2200	2400	41.2
Natural Increase - 5 years ended 30 June	1400	1300	1200	1200	1000	-28.6
Net Migration - 5 years ended 30 June	1400	1400	1400	1400	1400	0.0
Population at 30 June	46400	49100	51700	54300	56700	22.2
Median Age (Years) at 30 June	40	41.2	41.8	42.4	43.1	7.8
<b>MEDIUM</b>						
Births (Live) - 5 years ended 30 June	3100	2900	3000	3000	2900	-6.5
Deaths - 5 years ended 30 June	1700	1900	2100	2300	2400	41.2
Natural Increase - 5 years ended 30 June	1400	1000	900	700	500	-64.3
Net Migration - 5 years ended 30 June	1000	700	700	700	700	-30.0
Population at 30 June	46000	47800	49300	50700	51900	12.8
Median Age (Years) at 30 June	40	41.5	42.3	43	43.9	9.8
<b>LOW</b>						
Births (Live) - 5 years ended 30 June	3000	2700	2700	2600	2500	-16.7
Deaths - 5 years ended 30 June	1700	2000	2100	2300	2500	47.1
Natural Increase - 5 years ended 30 June	1300	800	500	300	0	-100.0
Net Migration - 5 years ended 30 June	700	0	0	0	0	-100.0
Population at 30 June	45600	46400	46900	47200	47200	3.5
Median Age (Years) at 30 June	40	41.7	42.8	43.6	44.7	11.8

Source: Subnational Projected Population Characteristics, 2006(base)-2031 (October 2012 update)

Waikato Region	2011	2016	2021	2026	2031	Change 2011-2031 (%)
<b>HIGH</b>						
Births (Live) - 5 years ended 30 June	31300	31500	32800	33900	34600	10.5
Deaths - 5 years ended 30 June	14000	14600	15800	16800	18300	30.7
Natural Increase - 5 years ended 30 June	17300	16900	17000	17100	16300	-5.8
Net Migration - 5 years ended 30 June	6800	8300	8800	8800	8800	29.4
Population at 30 June	417300	442400	468100	494000	519100	24.4
Median Age (Years) at 30 June	36.4	37	37.5	38.3	39.1	7.4
<b>MEDIUM</b>						
Births (Live) - 5 years ended 30 June	30900	29400	29700	29700	29400	-4.9
Deaths - 5 years ended 30 June	14100	15000	15900	17000	18500	31.2
Natural Increase - 5 years ended 30 June	16800	14400	13700	12700	10900	-35.1
Net Migration - 5 years ended 30 June	3100	900	1400	1400	1400	-54.8
Population at 30 June	413100	428400	443500	457600	469900	13.7
Median Age (Years) at 30 June	36.4	37.2	37.9	38.7	39.8	9.3
<b>LOW</b>						
Births (Live) - 5 years ended 30 June	30500	27200	26700	25900	24700	-19.0
Deaths - 5 years ended 30 June	14200	15400	16300	17200	18500	30.3
Natural Increase - 5 years ended 30 June	16300	11900	10400	8700	6200	-62.0
Net Migration - 5 years ended 30 June	-600	-6500	-6000	-6000	-6000	900.0
Population at 30 June	408900	414400	418800	421500	421800	3.2
Median Age (Years) at 30 June	36.5	37.4	38.2	39.2	40.6	11.2

Source: Subnational Projected Population Characteristics, 2006(base)-2031 (October 2012 update)



### Appendix 3.3: Projected Population, Waikato RC, 2006-2031 (Medium Series)

	Numbers by age						Change (%)
	2006	2011	2016	2021	2026	2031	2011-2031
0-14 years	88,740	<b>89,830</b>	90,180	91,790	90,570	90,570	+0.8
15-24 years	56,740	<b>60,180</b>	59,180	56,910	59,100	60,550	+0.6
25-39 years	76,280	<b>74,630</b>	78,470	84,340	86,500	84,790	+13.6
40-54 years	81,630	<b>84,720</b>	80,990	76,020	74,170	78,390	-7.5
55-64 years	40,980	<b>47,040</b>	51,770	55,310	55,050	51,550	+9.6
65-74 years	27,180	<b>31,940</b>	38,860	44,810	49,610	53,320	+66.9
75-84 years	16,560	<b>18,310</b>	21,170	25,440	31,640	37,110	+102.7
85+ years	5,110	<b>6,440</b>	7,770	8,890	10,920	13,630	+111.6
Total	393,220	<b>413,090</b>	428,390	443,510	457,560	469,910	+13.8
65+ years	48,850	<b>56,690</b>	67,800	79,140	92,170	104,060	+83.6
	Intercensal Change by Age (Numbers)						Change (N)
	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031		2011-2031
0-14 years	...	<b>1,090</b>	350	1,610	(1,220)	00	740
15-24 years	...	<b>3,440</b>	(1,000)	(2,270)	2,190	1,450	370
25-39 years	...	<b>(1,650)</b>	3,840	5,870	2,160	(1,710)	10,160
40-54 years	...	<b>3,090</b>	(3,730)	(4,970)	(1,850)	4,220	(6,330)
55-64 years	...	<b>6,060</b>	4,730	3,540	(260)	(3,500)	4,510
65-74 years	...	<b>4,760</b>	6,920	5,950	4,800	3,710	21,380
75-84 years	...	<b>1,750</b>	2,860	4,270	6,200	5,470	18,800
85+ years	...	<b>1,330</b>	1,330	1,120	2,030	2,710	7,190
Total	...	<b>19,870</b>	15,300	15,120	14,050	12,350	56,820
65+ years	...	<b>7,840</b>	11,110	11,340	13,030	11,890	47,370
	Age Distribution (% at each age group)						Change (%)
	2006	2011	2016	2021	2026	2031	2011-2031
0-14 years	22.6	<b>21.7</b>	21.1	20.7	19.8	19.3	-11.4
15-24 years	14.4	<b>14.6</b>	13.8	12.8	12.9	12.9	-11.6
25-39 years	19.4	<b>18.1</b>	18.3	19.0	18.9	18.0	-0.1
40-54 years	20.8	<b>20.5</b>	18.9	17.1	16.2	16.7	-18.7
55-64 years	10.4	<b>11.4</b>	12.1	12.5	12.0	11.0	-3.7
65-74 years	6.9	<b>7.7</b>	9.1	10.1	10.8	11.3	+46.8
75-84 years	4.2	<b>4.4</b>	4.9	5.7	6.9	7.9	+78.2
85+ years	1.3	<b>1.6</b>	1.8	2.0	2.4	2.9	+86.1
Total	100.0	<b>100.0</b>	100.0	100.0	100.0	100.0	+0.0
65+ years	12.4	<b>13.7</b>	15.8	17.8	20.1	22.1	+61.4
	Summary Measures						Change (%)
	2006	2011	2016	2021	2026	2031	2011-2031
<b>LM Entrants/Exits</b>							
(15-24/55-64 years)	1.4	<b>1.3</b>	1.1	1.0	1.1	1.2	-8.2
(20-29/60-69 years)	1.5	<b>1.4</b>	1.3	1.1	1.0	1.1	-22.5
<b>Elderly/Children</b>	0.6	<b>0.6</b>	0.8	0.9	1.0	1.1	+82.1
<b>Reproductive (20-39 yrs)</b>	26.2	<b>25.2</b>	25.4	25.5	25.0	24.6	-2.2
<b>Proportion 65+ years</b>	12.4	<b>13.7</b>	15.8	17.8	20.1	22.1	+61.4
<b>Proportion 75+ years</b>	5.5	<b>6.0</b>	6.8	7.7	9.3	10.8	+80.2
<b>Growth (%) in 5 years</b>	...	<b>+5.1</b>	+3.7	+3.5	+3.2	+2.7	+13.8
<b>Annual average growth (%)</b>	...	<b>+1.0</b>	+0.7	+0.7	+0.6	+0.5	+0.7

Source: Statistics New Zealand, Subnational Population Projections by Age and Sex, 2006(base)-2031 (October 2012 update)



### Appendix 3.4: Projected Population, Total New Zealand, 2006-2031 (Medium Series)

	Numbers by age						Change (%) 2011-2031
	2006	2011	2016	2021	2026	2031	
0-14 years	888,320	<b>894,460</b>	895,880	918,410	922,190	934,760	+4.5
15-24 years	604,740	<b>642,420</b>	627,810	604,110	620,770	635,360	-1.1
25-39 years	858,960	<b>856,580</b>	912,400	1,004,920	1,045,250	1,033,890	+20.7
40-54 years	891,290	<b>930,220</b>	903,540	854,150	852,610	919,050	-1.2
55-64 years	429,670	<b>494,440</b>	544,290	592,840	596,600	564,790	+14.2
65-74 years	275,700	<b>325,440</b>	400,300	465,990	518,940	568,860	+74.8
75-84 years	177,780	<b>188,510</b>	215,810	261,810	330,290	390,510	+107.2
85+ years	58,140	<b>73,110</b>	86,190	95,790	117,780	147,350	+101.5
Total	4,184,600	<b>4,405,180</b>	4,586,220	4,798,020	5,004,430	5,194,570	+17.9
65+ years	511,620	<b>587,060</b>	702,300	823,590	967,010	1,106,720	+88.5
	Intercensal Change by Age (Numbers)						Change (N) 2011-2031
	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031		
0-14 years	...	<b>6,140</b>	1,420	22,530	3,780	12,570	40,300
15-24 years	...	<b>37,680</b>	(14,610)	(23,700)	16,660	14,590	(7,060)
25-39 years	...	<b>(2,380)</b>	55,820	92,520	40,330	(11,360)	177,310
40-54 years	...	<b>38,930</b>	(26,680)	(49,390)	(1,540)	66,440	(11,170)
55-64 years	...	<b>64,770</b>	49,850	48,550	3,760	(31,810)	70,350
65-74 years	...	<b>49,740</b>	74,860	65,690	52,950	49,920	243,420
75-84 years	...	<b>10,730</b>	27,300	46,000	68,480	60,220	202,000
85+ years	...	<b>14,970</b>	13,080	9,600	21,990	29,570	74,240
Total	...	<b>220,580</b>	181,040	211,800	206,410	190,140	789,390
65+ years	...	<b>75,440</b>	115,240	121,290	143,420	139,710	519,660
	Age Distribution (% at each age group)						Change (%) 2011-2031
	2006	2011	2016	2021	2026	2031	
0-14 years	21.2	<b>20.3</b>	19.5	19.1	18.4	18.0	-11.4
15-24 years	14.5	<b>14.6</b>	13.7	12.6	12.4	12.2	-16.1
25-39 years	20.5	<b>19.4</b>	19.9	20.9	20.9	19.9	+2.4
40-54 years	21.3	<b>21.1</b>	19.7	17.8	17.0	17.7	-16.2
55-64 years	10.3	<b>11.2</b>	11.9	12.4	11.9	10.9	-3.1
65-74 years	6.6	<b>7.4</b>	8.7	9.7	10.4	11.0	+48.2
75-84 years	4.2	<b>4.3</b>	4.7	5.5	6.6	7.5	+75.7
85+ years	1.4	<b>1.7</b>	1.9	2.0	2.4	2.8	+70.9
Total	100.0	<b>100.0</b>	100.0	100.0	100.0	100.0	+0.0
65+ years	12.2	<b>13.3</b>	15.3	17.2	19.3	21.3	+59.9
	Summary Measures						Change (%) 2011-2031
	2006	2011	2016	2021	2026	2031	
<b>LM Entrants/Exits</b>							
(15-24/55-64 years)	1.4	<b>1.3</b>	1.2	1.0	1.0	1.1	-13.4
(20-29/60-69 years)	1.6	<b>1.5</b>	1.4	1.2	1.1	1.1	-25.4
<b>Elderly/Children</b>	0.6	<b>0.7</b>	0.8	0.9	1.0	1.2	+80.4
<b>Reproductive (20-39 yrs)</b>	27.5	<b>26.8</b>	27.1	27.5	27.0	26.3	-2.0
<b>Proportion 65+ years</b>	12.2	<b>13.3</b>	15.3	17.2	19.3	21.3	+59.9
<b>Proportion 75+ years</b>	5.6	<b>5.9</b>	6.6	7.5	9.0	10.4	+74.3
<b>Growth (%) in 5 years</b>	...	<b>+5.3</b>	+4.1	+4.6	+4.3	+3.8	+17.9
<b>Annual average growth (%)</b>	...	<b>+1.1</b>	+0.8	+0.9	+0.9	+0.8	+0.9

Source: Statistics New Zealand, Subnational Population Projections by Age and Sex, 2006(base)-2031 (October 2012 update)





### Appendix 3.5: Projected Population by Ethnic Group\* and Broad Age Group, Waikato Region

Waikato region	Population <sup>(2,3)</sup> by age group (years) at 30 June					Projected components of population change, five years ended 30 June					Median age <sup>(5)</sup> (years) at 30 June
	0-14	15-39	40-64	65+	All ages	Births	Deaths	Natural increase	Net migration	Inter-ethnic mobility <sup>(4)</sup>	
European/Other											
1996	70,500	109,900	82,700	36,600	299,600	0	0	0	0	0	33.3
2001	68,800	99,800	91,800	39,700	300,100	0	0	0	0	0	35.8
2006 (base)	68,100	100,600	103,400	45,200	317,300	0	0	0	0	0	37.8
2011	68,500	99,000	109,700	52,300	329,500	23,100	12,100	11,000	1,300	0	39.3
2016	68,500	97,600	109,700	61,000	336,800	21,700	13,100	8,600	-1,300	0	40.6
2021	68,000	97,600	106,900	69,300	341,900	21,000	14,000	7,000	-1,800	0	41.5
Change 2011-2021 (%)	-0.7	-1.4	-2.6	+32.5	+3.8	...	...	...	...	...	...
Māori											
1996	29,300	32,800	13,300	2,400	77,900	0	0	0	0	0	21.2
2001	29,900	32,000	15,600	2,800	80,200	0	0	0	0	0	21.8
2006 (base)	29,100	33,100	18,300	3,500	84,000	0	0	0	0	0	22.8
2011	31,000	34,500	20,600	4,400	90,500	12,300	2,100	10,100	-2,400	-1,300	23.1
2016	32,900	35,900	22,200	5,600	96,700	12,000	2,300	9,700	-2,100	-1,300	23.9
2021	34,600	37,300	23,300	7,100	102,300	11,800	2,600	9,200	-2,100	-1,400	24.8
Change 2011-2021 (%)	+11.6	+8.1	+13.1	+61.4	+13.0	...	...	...	...	...	...
Pacific Peoples											
1996	4,400	4,400	1,600	300	10,600	0	0	0	0	0	19.0
2001	4,900	4,600	1,800	300	11,600	0	0	0	0	0	18.8
2006 (base)	5,400	5,200	2,300	400	13,300	0	0	0	0	0	19.2
2011	6,300	6,000	2,800	600	15,700	2,500	200	2,300	300	-100	19.7
2016	7,300	6,800	3,200	800	18,200	2,700	300	2,400	300	-200	20.2
2021	8,300	7,700	3,700	1,100	20,800	2,900	300	2,600	300	-200	20.6
Change 2011-2021 (%)	+31.7	+28.3	+32.1	+83.3	+32.5	...	...	...	...	...	...
Asian											
1996	2,900	4,700	2,000	300	9,800	0	0	0	0	0	24.7
2001	3,400	6,300	3,200	500	13,400	0	0	0	0	0	25.6
2006 (base)	4,600	10,200	4,900	800	20,600	0	0	0	0	0	26.4
2011	5,600	12,400	6,400	1,600	26,000	2,100	200	1,900	3,700	-200	28.4
2016	6,900	14,300	7,300	2,500	31,100	2,600	300	2,300	3,100	-300	30.3
2021	8,500	15,400	8,800	3,700	36,400	2,900	400	2,500	3,100	-300	31.7
Change 2011-2021 (%)	+51.8	+24.2	+37.5	+131.3	+40.0	...	...	...	...	...	...

Source: Statistics New Zealand, Subnational Ethnic Population Projections (2006 Base - 2009 Update) Tables 4e, 4m, 4p, 4a

(1) Boundaries at 30 June 2009.

(2) These projections have as a base the estimated resident population of each ethnicity, of each area, at 30 June 2006 and incorporate medium fertility, medium migration, medium mortality, and medium inter-ethnic mobility assumptions for each area. Population estimates for 1996-2006 are derived from the respective 1996-2006 census usually resident population counts.

(3) Numbers reflect the multiple count enumeration methodology and their sum is somewhat greater than the total projection for the TA.

Projections are not available for all ethnic groups for all TA's.

(4) The net effect of people changing their ethnic identity.

(5) Half the population is younger, and half older, than this age.



## Appendix 4.1: Key Statistics for the Employed Labour Force, Waikato Region, 1996, 2001, 2006.

### Employment Status by Sex

<b>Total</b>				<b>Sex Ratio</b>	<b>Average Age</b>
<b>Waikato Region</b>	<b>Males</b>	<b>Females</b>	<b>Total</b>	<b>Males/Females</b>	<b>(Total)*</b>
<b>1996</b>					
Self Employed, no employee	14,181	7,023	21,204	2.0	44.5
Employer	9,825	4,473	14,298	2.2	44.8
Paid Employee	56,388	51,375	107,763	1.1	36.0
Unpaid Family Worker	2,775	4,086	6,861	0.7	42.3
NS/NEI	2,916	2,424	5,340	1.2	38.3
<b>Total</b>	<b>86,085</b>	<b>69,381</b>	<b>155,466</b>	<b>1.24</b>	<b>38.3</b>
<b>2001</b>					
Self Employed, no employee	15,009	8,028	23,037	1.9	46.9
Employer	10,092	5,058	15,150	2.0	46.8
Paid Employee	58,578	56,586	115,164	1.0	37.9
Unpaid Family Worker	1,959	2,931	4,890	0.7	45.0
NS/NEI	2,556	2,166	4,722	1.2	40.3
<b>Total</b>	<b>88,194</b>	<b>74,769</b>	<b>162,963</b>	<b>1.18</b>	<b>40.3</b>
<b>2006</b>					
Self Employed, no employee	15,177	8,709	23,886	1.7	48.6
Employer	10,791	5,529	16,320	2.0	47.7
Paid Employee	68,460	67,134	135,594	1.0	39.0
Unpaid Family Worker	1,953	2,808	4,761	0.7	47.2
NS/NEI	2,751	2,364	5,115	1.2	41.4
<b>Total</b>	<b>99,132</b>	<b>86,544</b>	<b>185,676</b>	<b>1.15</b>	<b>41.4</b>
<b>Change 1996-2006</b>					
Number	13,047	17,163	30,210		
(%)	15.2	24.7	19.4		

<b>Employment Entry/Exit Ratio</b>	<b>1996</b>	<b>2001</b>	<b>2006</b>	<b>Change 1996-2006 (%)</b>
15-24: 55+ years	1.6	1.0	0.8	-47.7

<b>Percentage aged 55+ Years</b>	<b>12.1</b>	<b>15.5</b>	<b>19.5</b>	<b>61.1</b>
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<b>Sex Ratio by age (males/females)</b>	<b>1996</b>	<b>2001</b>	<b>2006</b>	<b>Change 1996-2006 (%)</b>
15-19	1.2	1.1	1.2	-1.7
20-24	1.2	1.2	1.2	1.7
25-29	1.3	1.2	1.2	-3.8
30-34	1.3	1.2	1.2	-8.8
35-39	1.2	1.2	1.1	-7.9
40-44	1.1	1.1	1.0	-7.5
45-49	1.1	1.1	1.0	-8.1
50-54	1.2	1.1	1.1	-12.6
55-59	1.4	1.3	1.1	-19.4
60-64	1.8	1.6	1.3	-27.3
65+	2.1	1.8	1.7	-21.4
<b>TOTAL*</b>	<b>1.2</b>	<b>1.2</b>	<b>1.1</b>	<b>-7.7</b>

Source: Jackson/Statistics NZ Customised Database,

Area of Usual Residence, Industry (ANZSIC96 V4.1) and Status in Employment by Age Group and Sex for the Employed Census Usually Resident Population Count Aged 15+ Years, 1996, 2001, 2006

\* Age not available for small cell sizes, thus summed totals by employment status are lower than summed total



## Appendix 4.2: Key Statistics for the Employed Labour Force, Waikato Region, 1996, 2001, 2006, Dairy Cattle Farming (A013)

### Employment Status by Sex

<b>A013 Dairy Cattle Farming Waikato Region</b>	Males	Females	Total	Sex Ratio Males/Females	Average Age (Total)*
<b>1996</b>					
Self Employed, no employee	3,168	1,779	4,947	1.8	41.2
Employer	1,881	924	2,805	2.0	44.5
Paid Employee	2,658	795	3,453	3.3	29.8
Unpaid Family Worker	588	888	1,476	0.7	40.7
NS/NEI	138	66	204	2.1	38.8
<b>Total</b>	<b>8,433</b>	<b>4,452</b>	<b>12,885</b>	<b>1.89</b>	<b>38.8</b>
<b>2001</b>					
Self Employed, no employee	2,658	1,608	4,266	1.7	44.4
Employer	1,911	1,053	2,964	1.8	46.8
Paid Employee	2,823	912	3,735	3.1	31.8
Unpaid Family Worker	378	513	891	0.7	43.2
NS/NEI	72	63	135	1.1	41.0
<b>Total</b>	<b>7,842</b>	<b>4,149</b>	<b>11,991</b>	<b>1.89</b>	<b>41.0</b>
<b>2006</b>					
Self Employed, no employee	1,860	1,116	2,976	1.7	46.0
Employer	1,896	1,086	2,982	1.7	47.6
Paid Employee	2,958	1,170	4,128	2.5	33.8
Unpaid Family Worker	342	456	798	0.8	46.3
NS/NEI	39	42	81	0.9	41.9
<b>Total</b>	<b>7,095</b>	<b>3,870</b>	<b>10,965</b>	<b>1.83</b>	<b>41.9</b>
<b>Change 1996-2006</b>					
Number	-1,338	-582	-1,920		
(%)	-15.9	-13.1	-14.9		

<b>Employment Entry/Exit Ratio</b>	1996	2001	2006	Change 1996-2006 (%)
15-24: 55+ years	1.2	0.8	0.7	-39.4

<b>Percentage aged 55+ Years</b>	1996	2001	2006	Change 1996-2006 (%)
	13.9	17.7	19.4	39.6

<b>Sex Ratio by age (males/females)</b>	1996	2001	2006	Change 1996-2006 (%)
15-19	3.5	2.9	2.6	-26.5
20-24	3.1	3.2	3.2	1.9
25-29	1.9	2.4	2.2	18.3
30-34	1.6	1.9	1.9	19.4
35-39	1.6	1.7	1.5	-3.9
40-44	1.8	1.9	1.5	-14.1
45-49	1.7	1.9	1.7	2.5
50-54	1.6	1.7	1.7	3.6
55-59	1.7	1.8	1.6	-4.1
60-64	2.0	1.9	1.7	-15.3
65+	2.6	1.7	2.1	-21.1
<b>TOTAL*</b>	<b>1.9</b>	<b>1.9</b>	<b>1.8</b>	<b>-3.5</b>

Source: Jackson/Statistics NZ Customised Database,

Area of Usual Residence, Industry (ANZSIC96 V4.1) and Status in Employment by Age Group and Sex for the Employed Census Usually Resident Population Count Aged 15+ Years, 1996, 2001, 2006

\* Age not available for small cell sizes, thus summed totals by employment status are lower than summed total



**Appendix 4.3: Key Statistics for Employed Labour Force, Waikato Region, 1996, 2001, 2006, School Education (N842)**

<b>N842 School Education Waikato Region</b>	Males	Females	Total	Sex Ratio Males/Females	Average Age (Total)*
<b>1996</b>					
Self Employed, no employee	6	3	9	2.0	64.2
Employer	-	-	-		
Paid Employee	1,794	4,773	6,567	0.4	42.4
Unpaid Family Worker	-	-	-		
NS/NEI	-	3	3	0.0	42.5
<b>Total</b>	<b>1,800</b>	<b>4,779</b>	<b>6,579</b>	<b>0.38</b>	<b>42.5</b>
<b>2001</b>					
Self Employed, no employee	78	120	198	0.7	47.4
Employer	9	36	45	0.3	43.8
Paid Employee	1,887	5,700	7,587	0.3	43.8
Unpaid Family Worker	3	24	27	0.1	41.9
NS/NEI	21	51	72	0.4	43.9
<b>Total</b>	<b>1,998</b>	<b>5,931</b>	<b>7,929</b>	<b>0.34</b>	<b>43.9</b>
<b>2006</b>					
Self Employed, no employee	48	81	129	0.6	50.9
Employer	6	24	30	0.3	44.0
Paid Employee	1,815	6,138	7,953	0.3	45.0
Unpaid Family Worker	6	6	12	1.0	27.5
NS/NEI	6	15	21	0.4	45.0
<b>Total</b>	<b>1,881</b>	<b>6,264</b>	<b>8,145</b>	<b>0.30</b>	<b>45.0</b>
<b>Change 1996-2006</b>	Males	Females	Total		
Number	81	1,485	1,566		
(%)	4.5	31.1	23.8		
<b>Employment Entry/Exit Ratio</b>	1996	2001	2006	Change 1996-2006 (%)	
15-24: 55+ years	0.6	0.4	0.2	-61.4	
<b>Percentage aged 55+ Years</b>	12.2	15.9	21.5	76.0	
<b>Sex Ratio by age (males/females)</b>	1996	2001	2006	Change 1996-2006 (%)	
15-19	0.8	0.9	0.6	-23.1	
20-24	0.2	0.3	0.3	20.1	
25-29	0.3	0.3	0.3	1.2	
30-34	0.3	0.4	0.3	-4.8	
35-39	0.3	0.3	0.3	-10.2	
40-44	0.3	0.2	0.2	-44.0	
45-49	0.4	0.3	0.2	-44.2	
50-54	0.5	0.4	0.3	-32.8	
55-59	0.5	0.5	0.4	-27.8	
60-64	0.7	0.6	0.5	-26.4	
65+	0.9	1.0	0.7	-16.7	
<b>TOTAL*</b>	<b>0.4</b>	<b>0.3</b>	<b>0.3</b>	<b>-20.3</b>	

Source: Jackson/Statistics NZ Customised Database,  
Area of Usual Residence, Industry (ANZSIC96 V4.1) and Status in Employment by Age Group and Sex  
for the Employed Census Usually Resident Population Count Aged 15+ Years, 1996, 2001, 2006

\* Age not available for small cell sizes, thus summed totals by employment status are lower than summed total



**Appendix 4.4: Key Statistics for Employed Labour Force, Waikato Region, 1996, 2001, 2006, Building and Construction (E411)**

<b>E411 Building Construction Waikato Region</b>	Males	Females	Total	Sex Ratio Males/Females	Average Age (Total)*
<b>1996</b>					
Self Employed, no employee	705	45	750	15.7	43.2
Employer	375	45	420	8.3	42.1
Paid Employee	1,239	123	1,362	10.1	32.6
Unpaid Family Worker	30	66	96	0.5	39.7
NS/NEI	42	12	54	3.5	37.4
<b>Total</b>	<b>2,391</b>	<b>291</b>	<b>2,682</b>	<b>8.22</b>	<b>37.4</b>
<b>2001</b>					
Self Employed, no employee	750	69	819	10.9	44.3
Employer	378	54	432	7.0	43.6
Paid Employee	1,311	171	1,482	7.7	34.5
Unpaid Family Worker	3	36	39	0.1	42.9
NS/NEI	6	-	6		38.9
<b>Total</b>	<b>2,448</b>	<b>330</b>	<b>2,778</b>	<b>7.42</b>	<b>38.9</b>
<b>2006</b>					
Self Employed, no employee	984	105	1,089	9.4	45.7
Employer	645	117	762	5.5	44.7
Paid Employee	2,418	294	2,712	8.2	33.7
Unpaid Family Worker	27	63	90	0.4	42.7
NS/NEI	21	6	27	3.5	38.5
<b>Total</b>	<b>4,095</b>	<b>585</b>	<b>4,680</b>	<b>7.00</b>	<b>38.5</b>
<b>Change 1996-2006</b>					
Number	1,704	294	1,998		
(%)	71.3	101.0	74.5		
<b>Employment Entry/Exit Ratio</b>	1996	2001	2006	Change 1996-2006 (%)	
15-24: 55+ years	2.1	1.5	1.6	-24.1	
<b>Percentage aged 55+ Years</b>	10.0	13.0	15.0	50.7	
<b>Sex Ratio by age (males/females)</b>	1996	2001	2006	Change 1996-2006 (%)	
15-19	10.5	13.8	22.3	112.2	
20-24	21.8	12.8	21.4	-1.6	
25-29	6.9	15.8	8.3	19.1	
30-34	6.6	6.0	4.8	-26.3	
35-39	6.9	7.2	4.6	-33.4	
40-44	5.9	9.0	5.3	-9.9	
45-49	11.0	7.0	6.1	-44.3	
50-54	7.1	6.7	5.2	-27.1	
55-59	10.0	5.6	5.6	-43.9	
60-64	11.5	11.7	6.2	-46.1	
65+	3.5	3.0	13.3	281.0	
<b>TOTAL*</b>	<b>8.5</b>	<b>7.4</b>	<b>7.1</b>	<b>-16.4</b>	

Source: Jackson/Statistics NZ Customised Database,  
Area of Usual Residence, Industry (ANZSIC96 V4.1) and Status in Employment by Age Group and Sex  
for the Employed Census Usually Resident Population Count Aged 15+ Years, 1996, 2001, 2006

\* Age not available for small cell sizes, thus summed totals by employment status are lower than summed total



**Appendix 4.5: Key Statistics for Employed Labour Force, Waikato Region, 1996, 2001, 2006, Grain, Sheep and Beef Cattle Farming (A012)**

<b>A012 Grain, Sheep and Beef Cattle Waikato Region</b>	Males	Females	Total	Sex Ratio Males/Females	Average Age (Total)*
<b>1996</b>					
Self Employed, no employee	1,146	450	1,596	2.5	49.8
Employer	348	123	471	2.8	49.7
Paid Employee	951	261	1,212	3.6	36.1
Unpaid Family Worker	444	621	1,065	0.7	44.1
NS/NEI	45	21	66	2.1	44.6
<b>Total</b>	<b>2,934</b>	<b>1,476</b>	<b>4,410</b>	<b>1.99</b>	<b>44.6</b>
<b>2001</b>					
Self Employed, no employee	1,038	468	1,506	2.2	51.6
Employer	333	132	465	2.5	50.5
Paid Employee	861	252	1,113	3.4	37.1
Unpaid Family Worker	324	384	708	0.8	47.9
NS/NEI	33	24	57		46.6
<b>Total</b>	<b>2,589</b>	<b>1,260</b>	<b>3,849</b>	<b>2.05</b>	<b>46.6</b>
<b>2006</b>					
Self Employed, no employee	1,269	624	1,893	2.0	54.3
Employer	390	150	540	2.6	52.5
Paid Employee	957	300	1,257	3.2	39.1
Unpaid Family Worker	390	465	855	0.8	51.3
NS/NEI	27	21	48	1.3	49.3
<b>Total</b>	<b>3,033</b>	<b>1,560</b>	<b>4,593</b>	<b>1.94</b>	<b>49.3</b>
<b>Change 1996-2006</b>	Males	Females	Total		
Number	99	84	183		
(%)	3.4	5.7	4.1		
<b>Employment Entry/Exit Ratio</b>	1996	2001	2006	Change 1996-2006 (%)	
15-24: 55+ years	0.4	0.3	0.2	-55.1	
<b>Percentage aged 55+ Years</b>	26.5	31.1	41.6	56.8	
<b>Sex Ratio by age (males/females)</b>	1996	2001	2006	Change 1996-2006 (%)	
15-19	2.4	1.7	2.8	18.4	
20-24	3.3	3.5	2.5	-23.1	
25-29	2.4	3.1	3.3	34.1	
30-34	1.8	2.7	2.0	12.0	
35-39	1.6	2.4	1.7	7.3	
40-44	1.9	2.1	1.4	-25.4	
45-49	1.7	1.9	1.9	15.6	
50-54	1.7	2.2	1.6	-7.8	
55-59	2.0	2.0	1.8	-9.8	
60-64	1.8	2.2	1.9	5.5	
65+	3.1	1.9	2.4	-21.2	
<b>TOTAL*</b>	<b>2.0</b>	<b>2.1</b>	<b>1.9</b>	<b>-2.2</b>	

Source: Jackson/Statistics NZ Customised Database,

Area of Usual Residence, Industry (ANZSIC96 V4.1) and Status in Employment by Age Group and Sex for the Employed Census Usually Resident Population Count Aged 15+ Years, 1996, 2001, 2006

\* Age not available for small cell sizes, thus summed totals by employment status are lower than summed total



## References

- Jackson, N.O. (2011) The demographic forces shaping New Zealand's future. What population ageing [really] means, *NIDEA Working Papers* No. 1, National Institute of Demographic and Economic Analysis, University of Waikato, Hamilton.
- Statistics New Zealand Infoshare: Estimated Resident Population, Tables DPE006AA (Discontinued); DPE051AA; Births, Table VSB016AA; Deaths, Table VSD018AA.
- Statistics New Zealand TableBuilder: Estimated Subnational Population (RC, TA,AU) by Age and Sex at 30 June 1996, 2001, 2006-2011 (2006 Boundaries).
- Statistics New Zealand, Estimated Subnational Ethnic Population (RC,TA) by Age and Sex at 30 June 1996, 2001 and 2006.
- Statistics New Zealand, Subnational Population Projections by Age and Sex, 2006(base)-2031 (2012 Update)
- Statistics New Zealand (2010) Subnational Ethnic Population Projections (2006 Base - 2009 Update).
- Statistics New Zealand (2010) Technical Notes, Ethnic Population Projections,  
[http://www.stats.govt.nz/tools\\_and\\_services/tools/TableBuilder/population-projections-tables.aspx](http://www.stats.govt.nz/tools_and_services/tools/TableBuilder/population-projections-tables.aspx)
- Statistics New Zealand (2012) Technical Notes, Subnational Population Projections,  
[http://www.stats.govt.nz/browse\\_for\\_stats/population/estimates\\_and\\_projections/SubnationalPopulationProjections\\_HOTP0631UpdateOct12.aspx](http://www.stats.govt.nz/browse_for_stats/population/estimates_and_projections/SubnationalPopulationProjections_HOTP0631UpdateOct12.aspx)
- Statistics New Zealand (various years) Abridged Life Tables.



