



# **Greater Wellington and its TAs**

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## **Comparison of key demographic trends with 2013 Census data**

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Natalie Jackson

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Report Commissioned by the Local Government Commission



**National Institute of  
Demographic and Economic Analysis**

*Te Rūnanga Tātari Tatauranga*

THE UNIVERSITY OF WAIKATO



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**WAIKATO**

*Te Whare Wānanga o Waikato*

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Te Rūnanga Tātari Tatauranga | National Institute of Demographic and Economic Analysis  
Te Whare Wānanga o Waikato | The University of Waikato  
Private Bag 3105 | Hamilton 3240 | Waikato, New Zealand  
Email: [nojacks@waikato.ac.nz](mailto:nojacks@waikato.ac.nz) | visit us at: [www.waikato.ac.nz/nidea/](http://www.waikato.ac.nz/nidea/)

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### *Preamble*

This report was commissioned by the Local Government Commission to ascertain the extent of apparent discrepancies between data provided in the *Greater Wellington Demographic Profile 1986-2031* prepared by NIDEA in August 2012, and data from the 2013 census. This request presents a significant methodological challenge. Most of the data in the *Profile* were based on Estimated Resident Population (ERP) data. At this point, all 2013 census data are for the Usual Residence Population (URP) only—they are missing adjustments for people temporarily overseas on census night, and census undercount. Further complicating comparison is that the recently released 2013 ERP is still 2006 census-based, while the 2006 ERP includes not only the post-censal adjustments, but also births, deaths and migration occurring between census night in March 2006 and end-June. Care has been taken to explain the implications of these disparities for accurate comparison throughout the report.

### **1. *How do the 2013 Census results compare with the previous projected position for the Wellington Region and each of its TAs?***

The Usually Resident Population (URP) data suggest that growth for the Greater Wellington Region between 2006 and 2013 may have been a little lower than indicated by the Estimated Resident Population (ERP) data, but that a sizeable portion of the discrepancy in absolute numbers will be reduced when the 2013-based ERP data are available. As noted, the URP data are March-based, and the ERP data are June-based, and this difference will account for a portion of the discrepancy.

For Wellington City, Lower Hutt City, and Upper Hutt City, the growth rate 2006-2013 based on URP count is lower than for the ERP count. By contrast, for South Wairarapa, Carterton, Porirua City, Kapiti Coast and Masterton, growth rates based on the URP count are higher than for the ERP count. However, it should be noted that for the smaller populations of Carterton and South Wairarapa, these discrepancies may reflect greater margins of error, as small cell sizes are 'rounded' by Statistics New Zealand to the nearest 3.

### **2. *Has the spatial distribution of the region's TA populations changed significantly [by comparison with that previously thought to be the case]?***

On balance, the anomalies suggest that the ERP may have overestimated both population size and growth for Wellington City, Lower Hutt City, and Upper Hutt City, and underestimated it for Porirua City, Kapiti Coast and Masterton. Growth may have been particularly underestimated for Carterton and to a lesser extent for South Wairarapa, but the significantly smaller population sizes of these TAs do not greatly affect the spatial distribution.

### **3. *Do Census Area Unit level data indicate growth being accommodated by intensification rather than fringe growth?***

When mapped, the URP data indicate areas of both sizeable decline and sizeable growth, and an overall picture of fringe growth rather than intensification. Fringe growth in the 2006-2013 period is clear in the western Census Area Units (CAUs) of South Wairarapa, the northern CAUs of Upper Hutt, and generally across the Carterton District. Fringe growth would appear to have diminished slightly since the 2001-2006 period in the eastern CAUs of Lower Hutt.



#### ***4. What have been the components of change for region and district?***

Components of change data are based on a combination of Vital Registrations (Births and Death), and ERP data which is still 2006 census-based. They suggest that the 2013 URP data provide a reasonably accurate account of trends over the past two inter-censal periods. The data confirm positive net migration for Kapiti Coast and Wellington City (although this component has declined significantly over the past two years), and for Carterton, where it has increased. All other TAs appear to have experienced positive net migration until the past two years, since when it has been negative. The natural increase component appears intuitively correct when the age structure of each TA is taken into consideration. Reflecting the trends at national and Greater Wellington level, it shows declining natural increase in all TAs. Natural increase is now negative for the Kapiti Coast, and very low for Masterton and South Wairarapa, in each case reflecting their older age structures.

#### ***5. Is there any material change to the regional or TA age structures?***

Comparing the URP and ERP data by age and sex reveals intuitively correct patterns that, on the one hand, indicate minimal material change to the regional age structure, but on the other, have some impact at the TA level. Specifically, the age structural data indicate that the larger than anticipated 2013 URP total counts for Carterton and South Wairarapa are evident across a large number of age groups, particularly 'familial' (parent and children) age groups, and are thus unlikely to be 'small population size' errors—albeit the numbers will have been subject to a greater degree of rounding than for the larger TAs. Masterton, Upper Hutt City, Kapiti Coast and Porirua City also saw widespread gains at familial ages, while Lower Hutt shows gain at 35-39 years only, indicating a disproportion of adults without accompanying children. Wellington City also shows higher URP than ERP numbers at 10-14 and 15-19 years, at the same time as 'losing' a disproportion of people at 25-44 years, plausibly accounting for some of the gains elsewhere.

#### ***6. Do any discrepancies materially affect the longer range projections (to 2031) in the earlier work?***

It is not plausible to quantify by how much the discrepancies between the 2013 URP and 2013 ERP (2006-base) will affect the longer range projections, except to say that over the longer-term, short-term declines or increases in, for example, net migration, tend to be smoothed out. New Zealand experienced very low net migration gain in 2007-2008, and 2010-2011, and net migration loss between 2011 and 2012. These 'shortfalls' were experienced throughout the country, but over the longer-term are likely to be made up in high net migration gain years.

That caveat aside, it can be confidently stated that South Wairarapa, Carterton, and Masterton, whose URP counts already exceed or match the 2016 projection (by +1.0, +7.2, and -0.2 per cent respectively), are likely to achieve their 2016 projection. From a conceptual perspective, the data for Greater Wellington suggest that the 2013 URP remains within sight of the 2016 projection, it is likely to fall short. Wellington City and Lower Hutt City would also appear vulnerable to not meeting the 2016 projection by virtue of their somewhat lower URP than 2013 ERP and 2016 projection counts. Despite the 2013 URP for Kapiti Coast being substantially short of its 2016 projection—as would be expected, it is not greatly short of its 2013 ERP (2006-base), and thus may have a good chance of meeting the 2016 projection. On these measures, Porirua City and Upper Hutt City each have slightly greater gaps to fill—around 1,500 between the 2013 URP and 2013 ERP, and respectively 2,153 and 1,769 between the 2013 URP and 2016 projection, but as proposed throughout, it can be expected that these discrepancies will be reduced with the 2013-census based adjustments, and thus the 2016 projection may be achievable.



## 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 NZStat, 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, and small cell sizes have been rounded (to the nearest 3) 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.

**Population counts:** Important differences between three levels of population count: Census Night Population, Usual Residence Population (URP), and Estimated Residence Population (ERP) are detailed separately in the Preamble.

**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.

**Projections:** The RC and TA level population projections referred to in the *Greater Wellington Demographic Profile 1986-2031* produced in 2012 have a 2006-census base. At national level the medium assumptions were 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 (notably this level has been increased to 12,000 per year in subsequent projection updates; however the change does not affect the analysis in this report). 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. When interpreting these data it is important to remember 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.




## Preamble

This report provides an overview and comparison of key demographic indicators for the Greater Wellington Region and its Territorial Authority areas, drawing on data from the 2013 census. It has been commissioned by the Local Government Commission to ascertain the extent of apparent discrepancies between data provided in the *Greater Wellington Demographic Profile 1986-2031* prepared by NIDEA in August 2012, and data from the 2013 census.

First, an important methodological issue must be outlined. At this point, all 2013 census data are for the Usual Residence Population (URP) only. These data are still missing an adjustment for census night undercount, and an adjustment for people temporarily overseas on census night. The following slide, prepared by Statistics New Zealand, describes the difference between each 'level' of data:

- **Census Night Population** counts, which count people where they were on census night and include visitors from both overseas and elsewhere in New Zealand
- **Usually Resident Population (URP)** counts, which reassign visitors to their usual residence but do not yet include an adjustment for census night undercount or people temporarily overseas on census night, and
- **Estimated Resident Population (ERP)** counts, which include the adjustments for census night undercount and those temporarily overseas. The ERP also includes births, deaths and migration occurring between census night and the date of the subsequent ERP.



### Different population measures

Census night population count	Census usually resident population count	Estimated resident population
Visitors from overseas in the area on census night	...	Residents temporarily overseas on census night
Residents in the area on census night		
...	Residents temporarily in other areas of New Zealand on census night	
Visitors from other areas of New Zealand in the area on census night	...	Residents missed by census (net census undercount)

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Most of the analyses in the *Greater Wellington Demographic Profile 1986-2031* were based on Estimated Resident Population (ERP) data. Equivalent ERP data based on the 2013 census are not yet available (that is, the recent 2013 ERP data release is still based on the 2006 census; the 2013 census-based ERP for 2013 will not be available until approximately August 2014). Thus, we are as yet unable to compare apples with apples. At the same time, the Wellington Region and its TA populations are relatively large, so the 'missing' data are not likely to have major impact. Also, because most of the URP population data are available for both 2006 and 2013, it is possible to compare trends *within* that collection.

**With these caveats in mind, this report responds to six questions (presented here in a slightly different order as posed in the brief):**

- How do the 2013 Census results compare with the previous projected position for the Wellington Region and each of its TAs?
- Has the spatial distribution of the region's TA populations changed significantly [by comparison with that previously thought to be the case]?
- Do Census Area Unit level data indicate growth being accommodated by intensification rather than fringe growth?
- What have been the components of change for region and district?
- Is there any material change to the regional or TA age structures?
- Do any discrepancies materially affect the longer range projections (to 2031) in the earlier work?



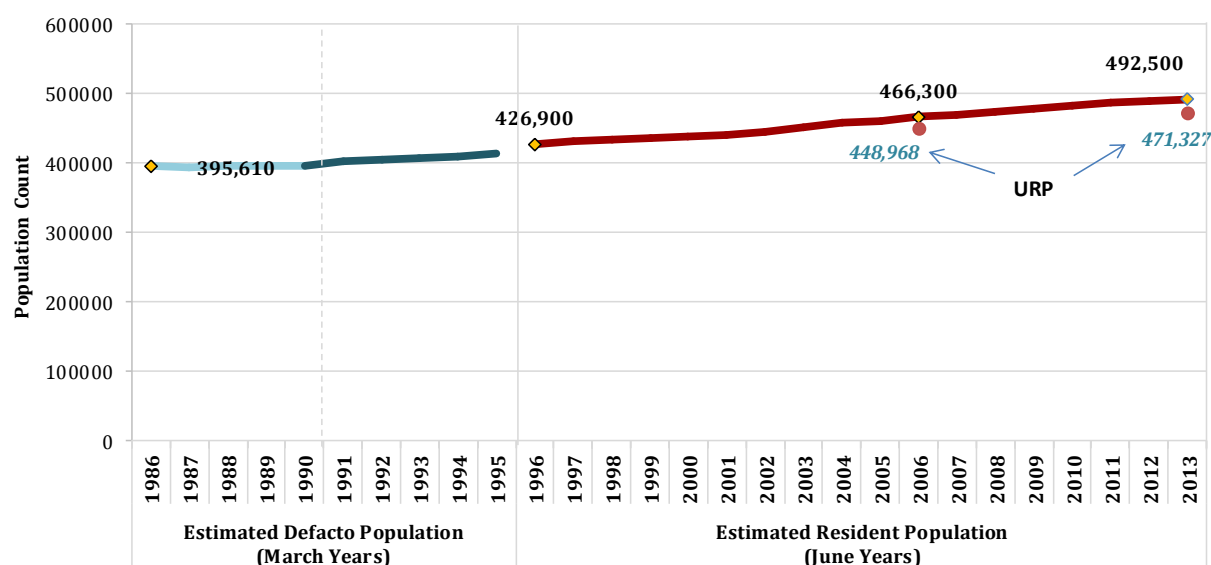


## 1.0 Population Trends

### 1.1: How do the 2013 Census results compare with the previous projected position for the Wellington Region and each of its TAs?

The Usually Resident Population (URP) data from the 2013 census indicate a census night population for Greater Wellington Region of 471,327. This is 21,713 persons (4.3 per cent) below the 2006-census based Estimated Resident Population (ERP) for June 2013 of 492,500, which can be considered the 'projected population' for 2013 (Figure 1.1.1; see Appendix A for underlying data). The 4.3 per cent discrepancy for Greater Wellington is slightly lower than the discrepancy at national level (-5.1 per cent).

**Figure 1.1.1: Population of Wellington Region, 1986-2013 by enumeration measure.**



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 - 2013: 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

The 2013 discrepancy for Greater Wellington is slightly greater than at the 2006 census, when the URP was 3.7 per cent below the subsequent June ERP (which has been adjusted for people temporarily overseas, census undercount, births, deaths and migration occurring between census night and the end-June ERP). The discrepancy for Total New Zealand in 2006 was identical to that for Greater Wellington. Thus it might



be considered that the 2006 disparity of 3.7 per cent provides an approximation of the combined effect of those items (people temporarily overseas on census night, census undercount, births, deaths and migration between March and end-June 2006). If that is so, it could be expected that much of the 4.3 per cent disparity for 2013 will be accounted for by a similar margin.

For Greater Wellington, the ERP counts indicate growth of 5.6 per cent between 2006 and 2013, and the URP counts, growth of 5.0 per cent. For Total New Zealand the comparative percentages are 6.8 and 5.3 per cent.

Taken together, the data suggest that growth for the Greater Wellington Region between 2006 and 2013 may have been a little lower than indicated by the ERP, but that a sizeable portion of the discrepancy in absolute numbers will be reduced when the 2013-based ERP data are available. As explained it must be remembered that the URP data are March-based, and the ERP data are June-based, and this difference alone will account for a portion of the discrepancy.

Table 1.1.1 repeats the analysis for the seven Territorial Authority Areas which comprise the Greater Wellington Region.

In 2006, all URP counts were consistently below the ERP counts, ranging from -2.2 per cent for Carterton to -4.4 per cent for Wellington City, with Lower Hutt City showing the second-largest discrepancy (-3.5 per cent). The range shows little variance from the Greater Wellington average of -3.7 per cent.

The 2013 data show somewhat greater disparity, ranging from the URP count for Wellington City being 6.3 per cent below the ERP, but for Carterton, 5.3 per cent *higher* than the ERP (and 1.0 per cent above for South Wairarapa). Lower Hutt City again shows the second greatest negative disparity (-4.5 per cent).



**Table 1.1.1: Wellington Region and Territorial Authority Areas, 2006 and 2013 comparison by enumeration measure**

	Wellington City	Lower Hutt City	Porirua City	Kapiti Coast District	Upper Hutt City	Masterton District	South Wairarapa District	Carterton District	Greater Wellington
<b>Difference between ERP and URP</b>									
2006 ERP <sup>(1)</sup>	187,700	101,300	50,600	47,500	39,700	23,200	9,120	7,260	466,300
2006 URP <sup>(2)</sup>	179,466	97,704	48,546	46,197	38,412	22,626	8,889	7,098	448,968
Difference (%)	-4.4	-3.5	-4.1	-2.7	-3.2	-2.5	-2.5	-2.2	-3.7
2013 ERP <sup>(1)</sup>	204,000	102,900	53,300	50,000	41,700	23,400	9,430	7,820	492,500
2013 URP <sup>(2)</sup>	190,959	98,241	51,717	49,104	40,182	23,349	9,528	8,235	471,327
Difference (%)	-6.4	-4.5	-3.0	-1.8	-3.6	-0.2	1.0	5.3	-4.3
<b>Change 2006-2013</b>									
ERP <sup>(1)</sup>	8.7	1.6	5.3	5.3	5.0	0.9	3.4	7.7	5.6
URP <sup>(2)</sup>	6.4	0.5	6.5	6.3	4.6	3.2	7.2	16.0	5.0

(1) Estimated Resident Population for Regional Council and Territorial Authority Areas, at 30 June(2006+) (Annual-Jun)

(2) Statistics New Zealand (2014) Usually Resident Population Counts

It is plausible that there is a greater propensity for people from Wellington City and Lower Hutt City to be temporarily overseas on census night, which would explain their greater discrepancies between ERP and URP numbers; and therefore it is highly likely that the 2013 census-based ERP data will see a greater reduction in those gaps than elsewhere.

However the respective situations of Carterton, where the URP is 5.3 per cent higher than the ERP, and South Wairarapa, where it is one per cent higher, are clearly anomalous. These positive discrepancies indicate disproportionate gains in those areas, and, at least for Carterton, reflect a continuation of past trends described in the *Greater Wellington Demographic Profile*. The proposition is supported in the percentage change data for the URP counts, with growth for Carterton between 2006 and 2013 of 16.0 per cent—somewhat higher than for any other TA, and for South Wairarapa, 7.2 per cent, the second-highest rate of growth. *However it must also be cautioned that these two populations are relatively small in size, and that typically there is a greater margin of error, the smaller the population.*

Also worth emphasising from Table 1.1.1 is that the respective growth rates by ERP and URP count are by no means consistent across the region. For Wellington City, Lower Hutt City, and Upper Hutt City, as for Greater Wellington, the growth rate based on URP count is lower than for the ERP count. By contrast, for Porirua City, Kapiti Coast and Masterton the growth rates based on URP count are higher than for the ERP counts, these TAs joining South Wairarapa and Carterton in this regard. The caution that these discrepancies may reflect greater margins of error for smaller populations should be kept in mind.



On balance, these anomalies suggest that the ERP may have overestimated population size and growth for Wellington City, Lower Hutt City, and Upper Hutt City, and underestimated it for Porirua City, Kapiti Coast and Masterton. Growth may have been particularly underestimated for Carterton and to a lesser extent for South Wairarapa, but the significantly smaller population sizes of these TAs mean that the expected spatial distribution is not greatly affected.

The extent to which these apparent disparities have affected the expected spatial distribution and contribution to change are considered in Section 1.2, which responds to the question: ‘has the spatial distribution of the region’s TA populations changed significantly [to that previously thought to be the case]’.

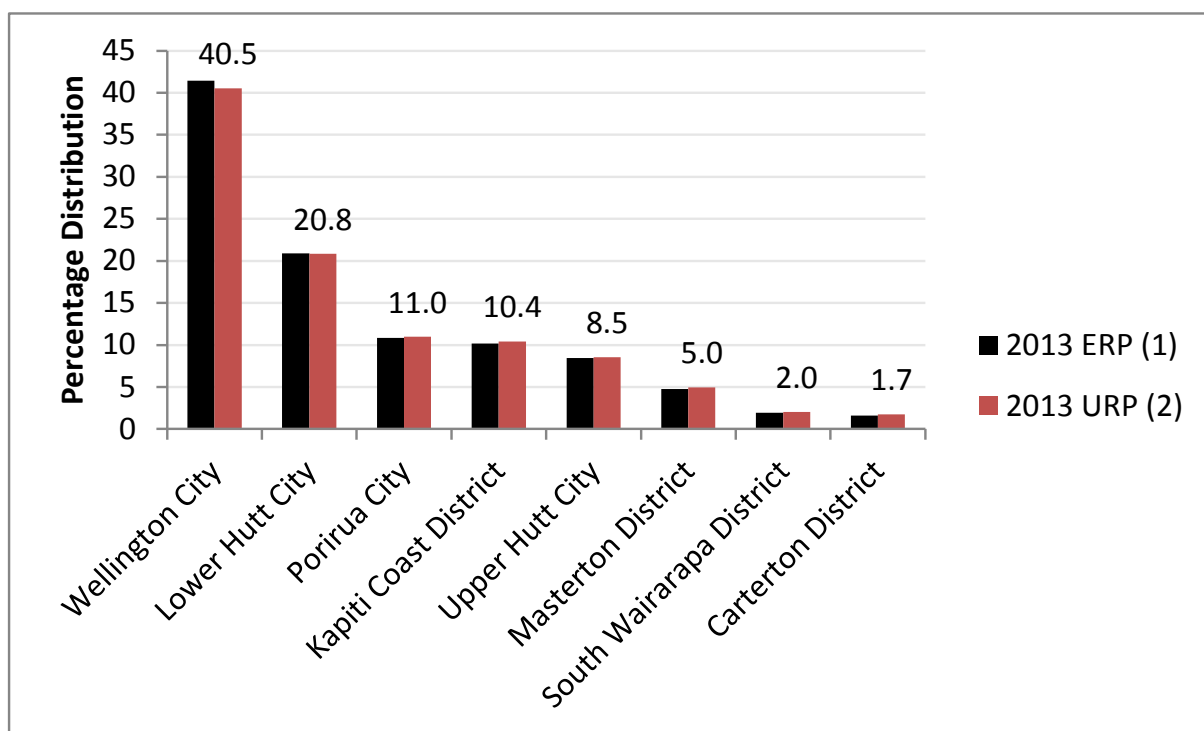


## 2.0 Spatial Distribution

### 2.1: Has the spatial distribution of the region's TA populations changed significantly [by comparison with that previously thought to be the case]?

The relative size of the TAs of the Greater Wellington Region mean that the potentially larger discrepancies for the smaller populations of Carterton and South Wairarapa noted above will have had little effect on overall population distribution (Figure 2.2.1, see also Table 2.2.1). On the URP count, Wellington City in 2013 accounted for 40.5 per cent of the region's population, approximately one percentage point below its 41.4 per cent share on the ERP count. All other TAs fell within 0.2 percentage points of their presumed ERP distribution. For Carterton and South Wairarapa this could mean populations perhaps 415 and 98 larger respectively—although again the small population/larger margin of error caution should be noted. Ironically, for Porirua City, Kapiti Coast District, and Masterton City, their slightly larger shares of the smaller URP population do not translate to larger population sizes (Table 2.2.1).

**Figure 2.2.1: Population Distribution across Greater Wellington by Territorial Authority Area in 2013, by Enumeration Measure**



**Table 2.2.1: Population Distribution across Greater Wellington by Territorial Authority Area in 2013, by Enumeration Measure**

	Wellington City	Lower Hutt City	Porirua City	Kapiti Coast District	Upper Hutt City	Masterton District	South Wairarapa District	Carterton District	Greater Wellington
2013 ERP <sup>(1)</sup>	41.4	20.9	10.8	10.2	8.5	4.8	1.9	1.6	492,550
2013 URP <sup>(2)</sup>	40.5	20.8	11.0	10.4	8.5	5.0	2.0	1.7	471,315
Difference (N)	-13,041	-4,659	-1,583	-896	-1,518	-51	98	415	-21,173

*(1) Estimated Resident Population for Regional Council and Territorial Authority Areas, at 30 June(2006+) (Annual-Jun)*

*(2) Statistics New Zealand (2014) Usually Resident Population Counts*

The 2006 data indicate a similar picture. In terms of percentage of population, Wellington City had a lower share on the URP count, while all other TAs either saw slightly higher shares or negligible change. However the lower underlying URP count means that all TAs, even Wellington City, were smaller than on the ERP count. Again this discrepancy suggests that much of the gap will disappear when the 2013 census-based ERP data are more appropriately used for comparison.

**Table 2.2.2: Population Distribution across Greater Wellington by Territorial Authority Area in 2006, by Enumeration Measure**

	Wellington City	Lower Hutt City	Porirua City	Kapiti Coast District	Upper Hutt City	Masterton District	South Wairarapa District	Carterton District	Greater Wellington
2006 ERP <sup>(1)</sup>	40.3	21.7	10.9	10.2	8.5	5.0	2.0	1.6	466,300
2006 URP <sup>(2)</sup>	40.0	21.8	10.8	10.3	8.6	5.0	2.0	1.6	448,968
Difference (N)	-8,234	-3,596	-2,054	-1,303	-1,288	-574	-231	-162	-17,332

*(1) Estimated Resident Population for Regional Council and Territorial Authority Areas, at 30 June(2006+) (Annual-Jun)*

*(2) Statistics New Zealand (2014) Usually Resident Population Counts*

The different enumeration measures have a somewhat greater impact on each TAs relative contribution to growth. On the ERP count, Wellington City accounted for 62.2 per cent of the region's growth, but only 51.4 per cent on the URP count. Lower Hutt City sees an even larger drop in contribution, while all other TAs see an increase. South Wairarapa and Carterton each double their (relatively smaller) contributions to the region's growth, while Masterton trebles its contribution.



**Table 2.2.3: Contribution to Change 2006-2013 by Territorial Authority Area and Enumeration Measure**

	Wellington City	Lower Hutt City	Porirua City	Kapiti Coast District	Upper Hutt City	Masterton District	South Wairarapa District	Carterton District	Greater Wellington
<b>Numerical Change 2006-2013 by Enumeration Measure</b>									
ERP <sup>(1)</sup>	16,300	1,600	2,700	2,500	2,000	200	310	560	26,200
URP <sup>(2)</sup>	11,493	537	3,171	2,907	1,770	723	639	1,137	22,359
ERP <sup>(1)</sup>	62.2	6.1	10.3	9.5	7.6	0.8	1.2	2.1	100.0
URP <sup>(2)</sup>	51.4	2.4	14.2	13.0	7.9	3.2	2.9	5.1	100.0

*(1) Estimated Resident Population for Regional Council and Territorial Authority Areas, at 30 June(2006+) (Annual-Jun)*

*(2) Statistics New Zealand (2014) Usually Resident Population Counts*

Using the URP data, change between 2001-2006 and 2006-2013 is now mapped at Census Area Unit (CAU) level (Map 2.2.1). Immediately observable are areas of both sizeable decline and sizeable growth, and an overall picture of fringe growth rather than intensification.

A number of relatively small CAUs stand out as having experienced significant growth across the 2001-2013 period, for example, Peka Peka, Maungakotukutuku, and Kaitawa in the Kapiti Coast District, growing overall by 84.6, 58.3 and 39.2 per cent respectively (see Appendix B). For Peka Peka the growth accelerated during the 2006-2013 period. Other notably growing (albeit also numerically smaller) CAUs were Waingawa (Carterton District), with growth there also accelerating in the 2006-2013 period; several CAUs along the Wellington City and Porirua City boundary; and Riverstone CAU in Upper Hutt.

Fringe growth in the 2006-2013 period is clear in the western CAUs of South Wairarapa, the northern CAUs of Upper Hutt, and generally across the Carterton District. Fringe growth would appear to have diminished slightly in the eastern CAUs of Lower Hutt.

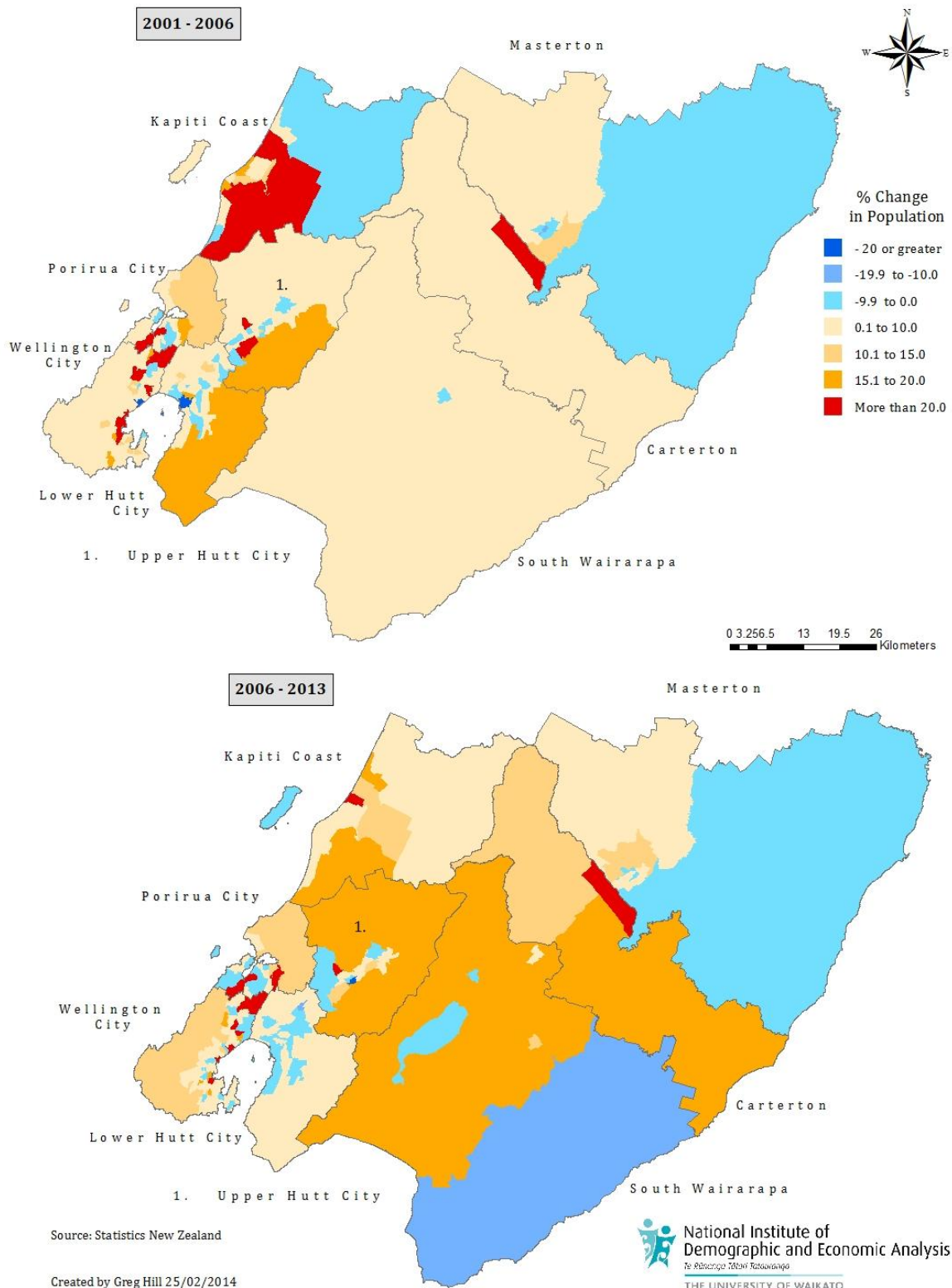
By contrast, sizeable decline occurred in the Tutarumuri CAU of South Wairarapa, although again it must be noted that the CAU is very small (393 people in 2013). Notably all TAs, with the exception of Carterton, experienced patches of decline, ranging from one-third of the CAUs of Upper Hutt, Lower Hutt, Masterton and South Wairarapa to just 2.5 per cent for Wellington City (Table 2.2.1 and Figure 2.2.1). As elsewhere in New Zealand (see Map 2.2.2), the number of Greater Wellington CAUs experiencing decline increased across the 2006-2013 period, and did so for all but Masterton (and Carterton, which had no CAUs decline).



**2.2: Do Census Area Unit level data indicate growth being accommodated by intensification rather than fringe growth?**

Map 2.2.1:

**Percentage change in the usually resident population of Census Area Units (CAU) within each Territorial Authority (TA) boundary, 2001-2006 and 2006-2013: Wellington Region**





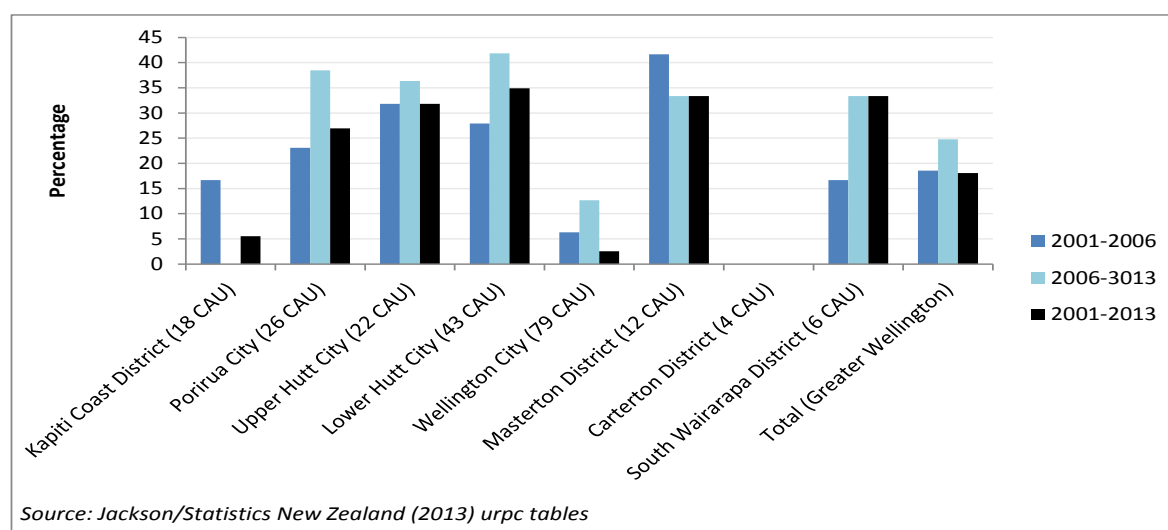
**Table 2.2.1: Census Area Units Declining in Size by TA, 2001-2006, 2006-2013, and 2001-2013**

	Number of CAUs*	2001-2006	2006-2013	2001-2013	2001-2006	2006-2013	2001-2013
		NUMBER			Percentage		
Kapiti Coast District (18 CAU)	<b>18</b>	3	0	1	16.7	0.0	5.6
Porirua City (26 CAU)	<b>26</b>	6	10	7	23.1	38.5	26.9
Upper Hutt City (22 CAU)	<b>22</b>	7	8	7	31.8	36.4	31.8
Lower Hutt City (43 CAU)	<b>43</b>	12	18	15	27.9	41.9	34.9
Wellington City (79 CAU)	<b>79</b>	5	10	2	6.3	12.7	2.5
Masterton District (12 CAU)	<b>12</b>	5	4	4	41.7	33.3	33.3
Carterton District (4 CAU)	<b>4</b>	0	0	0	0.0	0.0	0.0
South Wairarapa District (6 CAU)	<b>6</b>	1	2	2	16.7	33.3	33.3
Total (Greater Wellington)	<b>210</b>	39	52	38	18.6	24.8	18.1

\*Units which had people living in them in 2006

Source: Jackson/Statistics New Zealand (2013) urpc tables

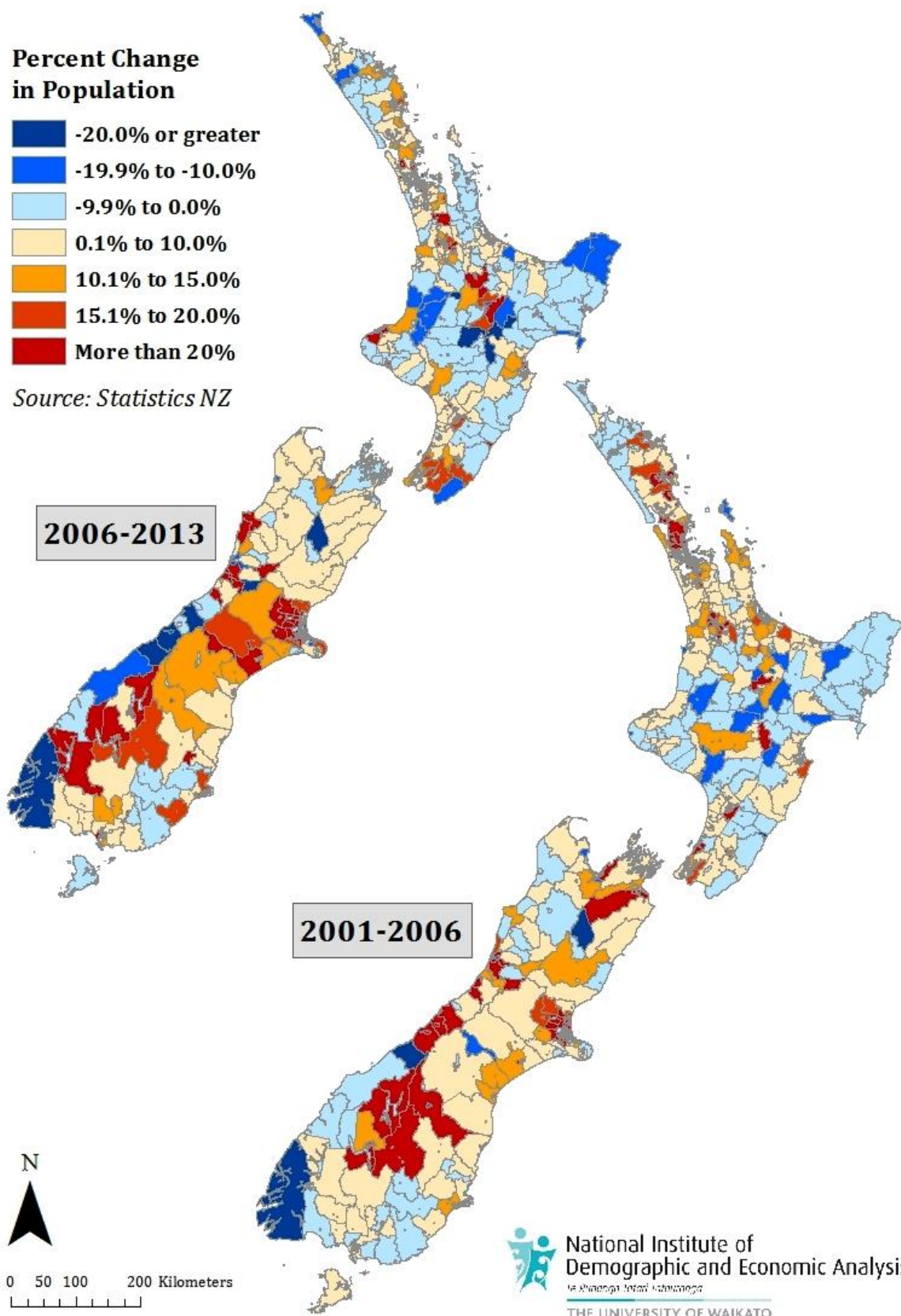
**Figure 2.2.1: Census Area Units Declining in Size by TA, 2001-2006, 2006-2013, and 2001-2013**



Source: Jackson/Statistics New Zealand (2013) urpc tables

To add a little more context to the trends for Greater Wellington, Map 2.2.2 shows that almost one-third of New Zealand's CAUs with a population of over 10 residents declined in number across the period (affecting 613 of the total 1,869 CAUs). This is a notable increase from the 475 CAUs (25.4 per cent) which recorded a decline in population over the previous inter-censal period (2001-2006). Perhaps the most striking change is the growing, and in many cases deepening, spread of decline in the North Island.

**Map 2.2.2: Percentage Change in the Usually Resident Population of Census Area Units (CAU), 2001-2006 and 2006-2013: Total New Zealand**



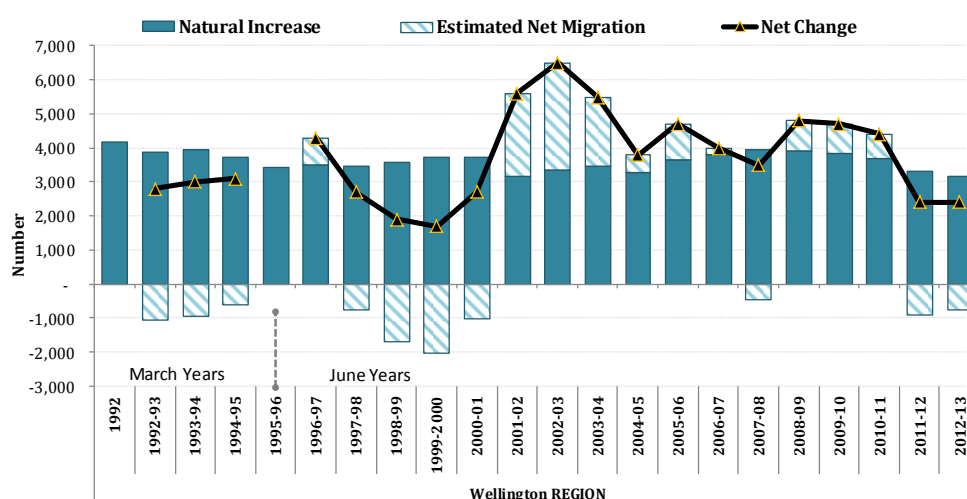
## 3.0 Components of Change

### 3.1: What have been the components of change for region and district?

This section provides an update of Section 2.0 (Components of Change) of the *Greater Wellington Demographic Profile 1986-2031*. The births and deaths data underlying the natural increase component of change are free from any methodological issues related to the 2013 census, as they are drawn from a different data collection (Vital Registrations). Trends in natural increase can thus be taken at face value (albeit they are occasionally revised by Statistics New Zealand to correct for late registrations). Figure 3.1.1 suggests that the region's natural increase has declined over the last two years—as was the case nationally (Figure 3.1.2).

The estimated net migration component in Figures 3.1.1 and 3.1.2 is, by contrast, affected by the lack of 2013 census-based ERP data. This is because it is calculated as a 'residual' component—the difference between net population change (which is based on ERP data) and natural increase (see notes on page 3). For the purposes of examining trends in the components of change, it is impractical to calculate net change on the URP count because this count is not available for inter-censal years. Accordingly, for the time being we must assume the data in Figure 3.1.1 provide an approximation of the region's net migration, and the indication is that it has been negative over the past two years. Notably it was also negative at national level between 2011 and 2012 (Figure 3.1.2).

**Figure 3.1.1: Natural Increase, Net Migration and Net Change 1991-2013, Greater Wellington Region**



Source: Compiled from Statistics New Zealand, Infoshare

(1) 1992-1995 Estimated Defacto Population (March Years); Statistics New Zealand, Yearbook collection 1893-2012

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

Table reference: DPE051AA and DPE052AA, Boundaries at 1 January 2013. Last updated: 22 October 2013 10:45am

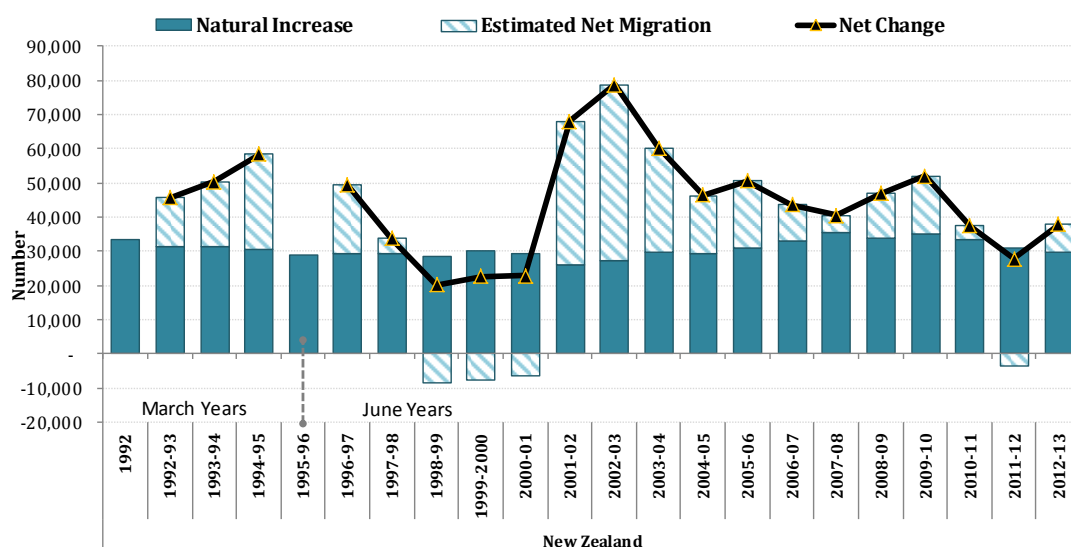
(3) Live births and Deaths by area, city/district councils and regional councils (Total population) (Annual-Jun)

Table reference: VSB011AA, VSB016AA, VSD008AA, VSD018AA Last updated: 16 August 2013 10:45am

\*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 3.1.2: Natural Increase, Net Migration and Net Change 1991-2013, Total New Zealand**



Source: Compiled from Statistics New Zealand, Infoshare

(1) 1992-1995 Estimated Defacto Population (March Years); Statistics New Zealand, Yearbook collection 1893-2012

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

Table reference: DPE051AA and DPE052AA, Boundaries at 1 January 2013. Last updated: 22 October 2013 10:45am

(3) Live births and Deaths by area, city/district councils and regional councils (Total population) (Annual-Jun)

Table reference: VSB011AA, VSB016AA, VSD008AA, VSD018AA Last updated: 16 August 2013 10:45am

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

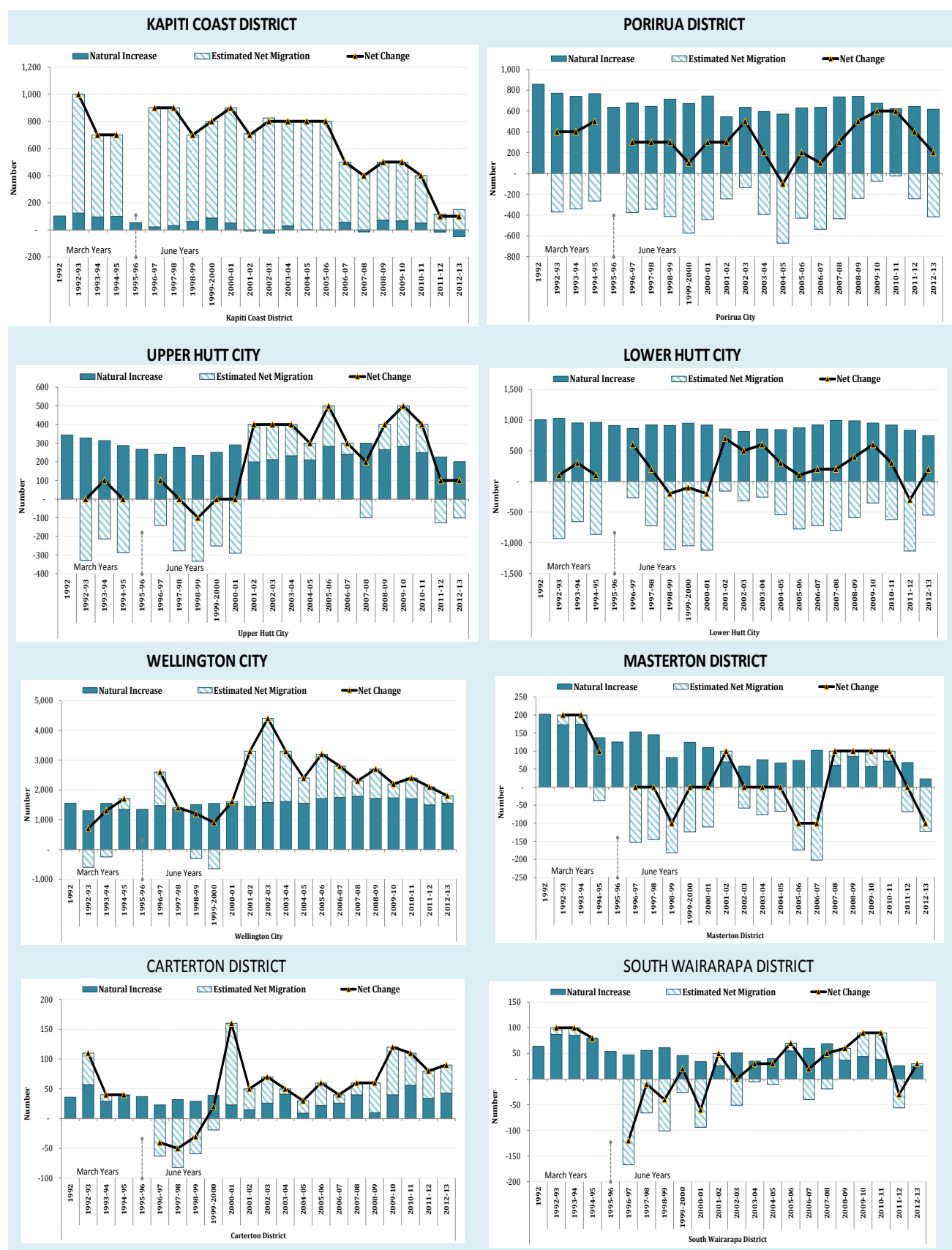
Figure 3.1.3 provides comparable data for the region's TAs. Reflecting the trends for Greater Wellington and Total New Zealand, the data show declining natural increase in all TAs. Natural increase is now negative for the Kapiti Coast, and very low for Masterton and South Wairarapa, in each case reflecting their older age structures (next section).

Providing support for the analyses based on URP data in Sections 1 and 2, net migration is positive for Kapiti Coast and Wellington City, albeit declining significantly over the past two years, and for Carterton, where it has increased. All other TAs appear to have experienced negative net migration over the past two years, but generally less so between 2012 and 2013—and perhaps becoming marginally positive in South Wairarapa.

The components of change data suggest that the URP data in Sections 1 and 2 provide a reasonably accurate account of trends over the past two inter-censal periods. The natural Increase component is both unaffected by the methodological issues affecting the 2013 census data, and is intuitively correct when the age structure of each TA is taken into consideration.



**Figure 3.1.3: Natural Increase, Net Migration and Net Change 1991-2013, Greater Wellington TAs**



## 4.0 Age Structures

### *4.1: Is there any material change to the regional or TA age structures?*

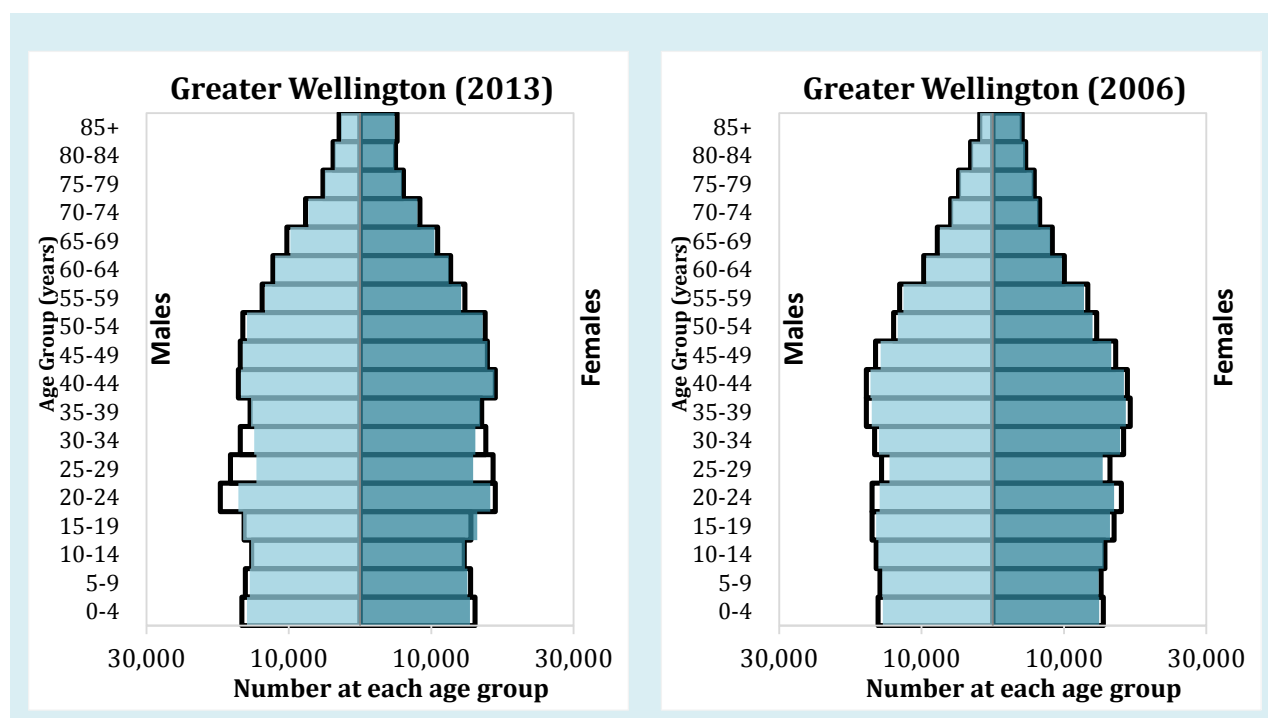
Conventionally, age-structural analysis is based on percentage distribution, that is, the percentage of the total population to be found in each age-sex group. However for the purposes of comparing URP and ERP age structures, this practice generates misleading results, because the ‘missing persons’ (due to being temporarily overseas on census night, or not counted) in the URP data are not evenly distributed across the age structure; rather they tend to be disproportionately concentrated at the young adult ages. Accordingly, the analysis in this section is based on raw numbers (data based on percentage distribution is included at Appendix C).

Figure 4.1.1 shows the comparison for Greater Wellington, where the 2013 URP data (denoted by the shaded bars) differs notably from the ERP data (unshaded bars) at 20-24, 25-29 and 30-34 years only (left-hand graph) – see also Table 4.1.1. These are the ages at which the greatest number is likely to be temporarily overseas or undercounted on census night, and most will be captured in the 2013 census-based ERP. The claim is supported in the comparison of the 2006 URP and 2006 census-based ERP (right-hand graph), the latter of which includes the adjustment for those temporarily overseas and census undercount. It also includes births and estimated immigration, and excludes deaths and estimated emigration, that occurred between March (Census night) 2006 and the end-June ERP. The arguably small difference between the 2006 URP and 2006 census-based ERP is primarily accounted for by people temporarily overseas.

Of some importance, Table 4.1.1 indicates a greater number at 10-14 and 15-19 years of age (+184 and +982 respectively) enumerated on the URP count than the ERP count for 2013. This apparent ‘overcount’ indicates that the Greater Wellington population did in fact contain more people at these ages than was expected, and that these numbers will be further inflated when the adjustments for those temporarily overseas on census night, and census undercount, are included. By contrast, URP numbers are lower than ERP numbers at all other ages, most notably at 20-34 years for the reasons outlined above.



**Figure 4.1.1: Age-Sex Structures for Greater Wellington by Usually Resident (Shaded Bars) and Estimated Resident (Unshaded Bars) Population Counts (Numbers), 2013 and compared with 2006**



**Table 4.1.1: Numerical difference between URP and ERP numbers by TA and age group, 2013**

	Wellington City	Lower Hutt City	Porirua City	Kapiti Coast District	Upper Hutt City	Masterton District	South Wairarapa District	Carterton District	Greater Wellington
0-4	-627	-344	-229	-44	-89	-61	4	10	-1367
5-9	-675	-440	-111	91	-111	143	5	31	-1067
10-14	69	-229	65	14	73	133	42	31	194
15-19	1637	-495	-29	17	-346	25	37	129	982
20-24	-385	-1028	-511	-445	-557	-277	6	-41	-3238
25-29	-4915	-549	-536	-156	-270	-22	17	-30	-6468
30-34	-3471	-3	-46	-4	91	-15	48	25	-3408
35-39	-1383	314	206	187	121	93	27	54	-372
40-44	-1017	-60	61	175	245	116	-6	57	-442
45-49	-556	-199	114	105	148	18	29	30	-331
50-54	-570	-248	-149	-14	-70	3	43	61	-951
55-59	-493	-266	-12	-125	39	-76	-13	21	-935
60-64	-434	-59	66	-73	-157	37	10	39	-578
65-69	-482	-172	-78	-90	-88	-67	-13	32	-948
70-74	-363	-136	-58	-102	-55	-20	-79	17	-799
75-79	-152	-84	-12	-126	-53	-17	-16	-20	-510
80-84	-25	-86	20	-129	-102	-19	-29	-1	-368
85+	-48	-116	-28	-207	-127	-52	-13	-9	-597
Total all ages	-13941	-4159	-1283	-896	-1318	-51	98	415	-21288

Notes: Numbers do not sum to 100% due to rounding of smaller cells

Gains (URP greater than ERP) are bolded





For the most part, the data in Table 4.1.1 for the TAs of the Greater Wellington region show a similar pattern to that for Greater Wellington: deficits at most ages denoting that the URP is lower than the ERP, with the greatest impact across the young adult—in Wellington City extending to mid adult—ages (see also Figure 4.1.2). However, a number of anomalous situations stand out, where the URP is greater than the ERP (shaded cells on Table 4.1.1). These data indicate greater than expected numbers that will be further inflated when the 2013 ERP adjustments are made. Although relatively small in number, they suggest widespread gains at what can be taken as key ‘familial’ ages (parents and children) for South Wairarapa and Carterton, and to a lesser extent for Masterton, Upper Hutt City, Kapiti Coast and Porirua City. Lower Hutt shows gain at 35-39 years only, potentially indicating a disproportionate gain of adults without accompanying children. Wellington City also shows higher URP than ERP numbers at 10-14 and 15-19 years, at the same time as ‘losing’ a disproportion of people at the young and mid adult ages.

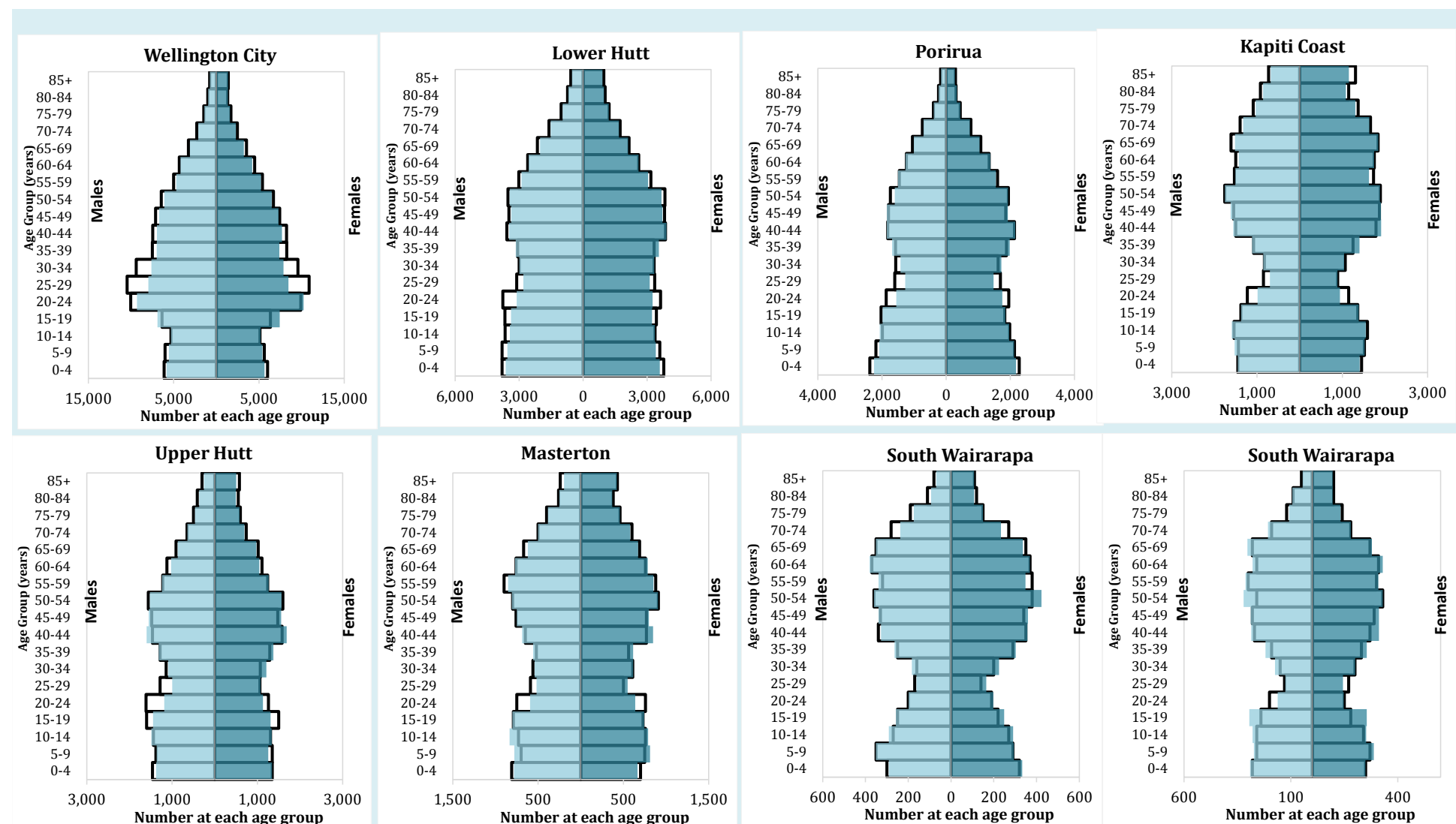
Notable also from Table 4.1.1 is that Kapiti Coast, Upper Hutt City and Lower Hutt City have somewhat fewer people on the URP count than the ERP count at the oldest ages. People in these age groups are less likely to be temporarily overseas on census night or undercounted, indicating either that the life expectancy assumption in the ERP was slightly too high, or that there has been a net migration loss of people at those ages. The deficit is unlikely to be due to disproportionate deaths, because numbers at 85+ years are growing significantly, and would offset any additional deaths.

In sum, comparing the URP and ERP data by age and sex reveals intuitively correct patterns that, on the one hand, indicate minimal material change to the regional age structure, but on the other, have some impact at the TA level. Specifically, the data in Table 4.1.1 provide important elaboration to the findings in Table 1.1.1 above, namely, that the larger than anticipated total URP counts for Carterton and South Wairarapa are evident across a large number of age groups, and are thus unlikely to be ‘small population size’ errors—albeit the numbers will have been subject to a greater degree of rounding than for the larger TAs. The data also suggest that while most other Greater Wellington TAs are likely to have slightly smaller populations than was expected, particularly Wellington City, there would appear to be an element of familial movement involved—plausibly accounting for some of the disproportionately lower URP than ERP numbers at 25-44 years for Wellington City.





Figure 4.1.2: Age-Sex Structures in 2013 by Usually Resident (Shaded Bars) and Estimated Resident (Unshaded Bars) Population Counts (Numbers)



Note: Difference scales on X-axis

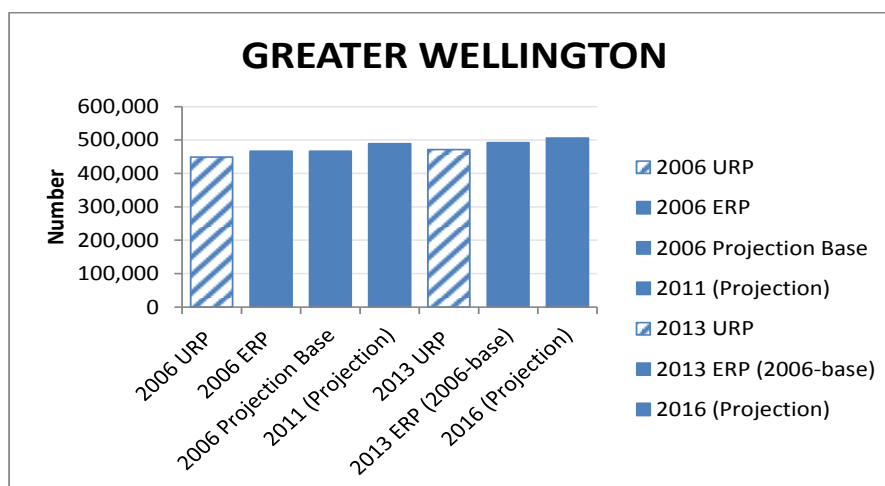


## 5.0 Population Projections

### 5.1: Do any discrepancies materially affect the longer range projections (to 2031) in the earlier work?

As indicated in the previous sections, where URP counts are lower than the ERP, a portion of the discrepancy will be accounted for in the forthcoming ERP adjustments for people temporarily overseas on census night, census undercount, and births, deaths and migration occurring between census night and end-June. The analysis in Section 1 suggested that the reduction in the discrepancy can be relatively large. By contrast, where the URP is greater than the ERP, the subsequent adjustments will further increase that 'unexpected' gain. It is not plausible to accurately estimate by how much the adjustments will affect the longer range projections, except to say that over the longer-term, short-term declines or increases in, for example, net migration, tend to be smoothed out. New Zealand experienced very low net migration gain in 2007-2008, and 2010-2011, and net migration loss between 2011 and 2012. These 'shortfalls' were experienced throughout the country, but over the longer-term are likely to be made up in high net migration gain years. Accordingly, rather than attempt to quantify the impact of the URP/ERP discrepancies, a range of enumeration measures, including the projections for 2011 and 2016, are presented and deliberated on. The data for Greater Wellington show that the 2013 URP remains within sight of the 2016 projection (Figure 5.1.1). However the data in Table 5.1.1 suggests that by comparison with South Wairarapa, Carterton, and Masterton, whose URP counts already exceed or match the 2016 projection (by +1.0, +7.2, and -0.2 per cent respectively), there is a chance that Greater Wellington will fall short of the projection. Wellington City, Lower Hutt City and Kapiti Coast would also appear vulnerable (to not meeting the 2016 projection) by virtue of their somewhat lower 2013 URP than 2013 ERP and 2016 projection counts.

**Figure 5.1.1: Comparison of various enumeration measures, 2006, 2011, 2013, 2016, Greater Wellington**



**Table 5.1.1: Comparison of various enumeration measures, 2006, 2011, 2013, 2016, Greater Wellington and TAs**

	Wellington City	Lower Hutt City	Porirua City	Kapiti Coast District	Upper Hutt City	Masterton District	South Wairarapa District	Carterton District	GREATER WELLINGTON
2006 URP	179,466	97,704	48,546	46,197	38,412	22,626	8,889	7,098	448,968
2006 ERP (adjusted)	187,700	101,300	50,600	47,500	39,700	23,200	9,120	7,260	466,300
2006 Projection Base	187,700	101,260	50,610	47,470	39,650	23,170	9,140	7,280	466,250
2011 (Projection)	200,460	103,560	52,680	50,570	41,490	23,380	9,370	7,530	489,100
2013 URP	190,959	98,241	51,717	49,104	40,182	23,349	9,528	8,235	471,327
2013 ERP (2006-base)	204,000	102,900	53,300	50,000	41,700	23,400	9,430	7,820	492,500
2016 (Projection)	211,780	104,670	53,870	53,400	41,950	23,390	9,430	7,680	506,100
2013 URP cf 2016 projection (Number)	-20,821	-6,429	-2,153	-4,296	-1,768	-41	98	555	-34,773
(%)	-9.8	-6.1	-4.0	-8.0	-4.2	-0.2	1.0	7.2	-6.9

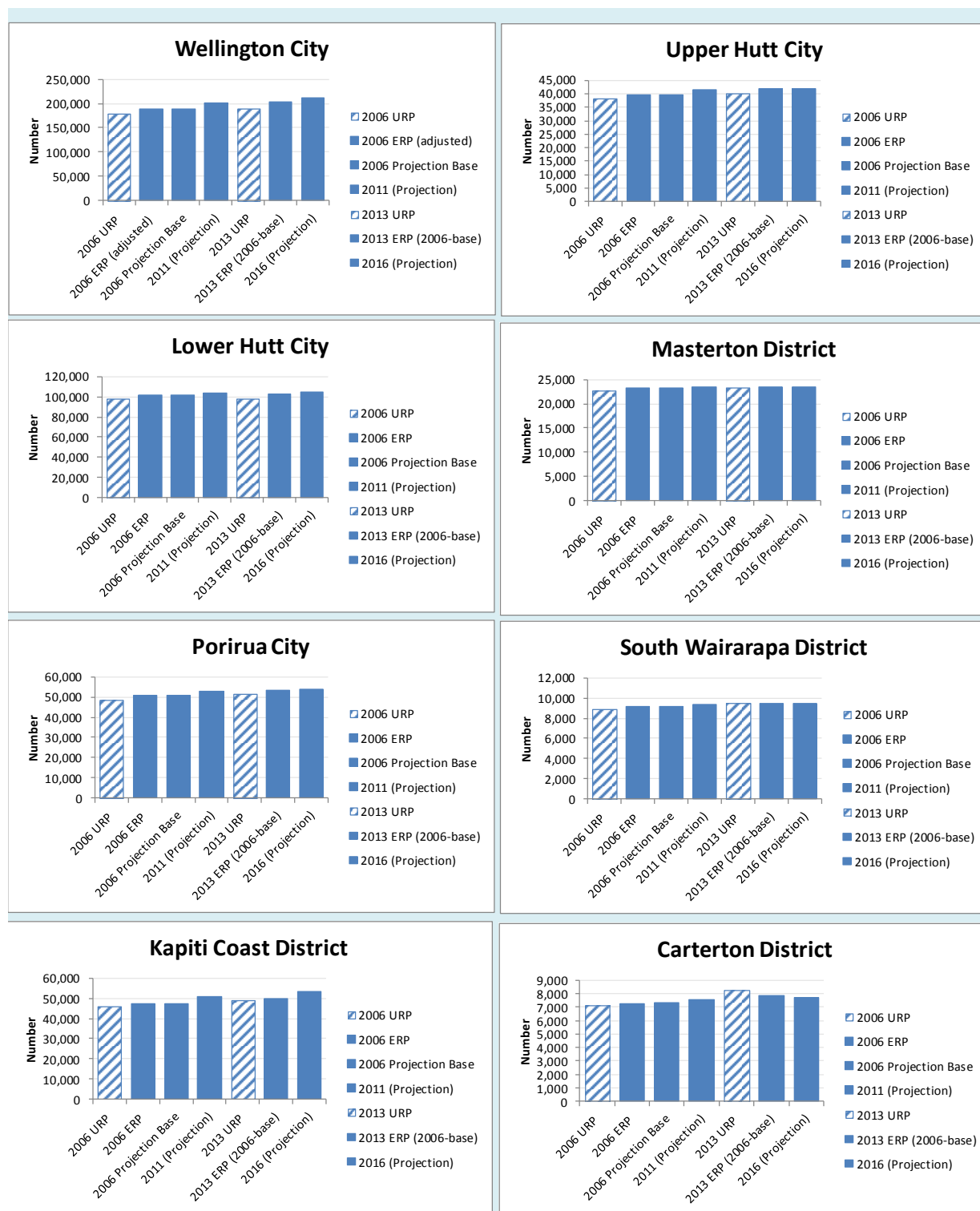
Figure 5.1.2 provides a graphical representation of the data for each of the Greater Wellington region TAs. The greater 2013 URP than 2016 projection for South Wairarapa and Carterton stand out, as does the closeness of these enumeration measures for Masterton. It would seem unlikely that these TAs will not match or exceed their projected 2016 population, in 2016.

Despite the 2013 URP for Kapiti Coast being substantially short (-6.0 per cent) of its 2016 projection (as might be expected), it is not greatly short of its 2013 ERP (2006-base), and thus may have a good chance of meeting the 2016 projection. On these measures, Porirua City and Upper Hutt City each have slightly greater gaps to fill—around 1,500 between the 2013 URP and 2013 ERP, and respectively 2,153 and 1,769 between the 2013 URP and 2016 projection, but as proposed throughout, it can be expected that these discrepancies will be reduced with the 2013-census based adjustments, and thus the 2016 projection may be achievable.

Finally, it must be noted that four factors affect whether future population size and structure will vary greatly from projected trajectories: a) the size and age-sex structure of the baseline population; b) the assumptions for fertility; c) the assumptions for survivorship; and d) the assumptions for migration (see Appendix D for projection methodology). All factors interact, and are thus likely to affect the projections in too many ways to accurately assess within the scope of this report.



**Figure 5.1.2: Comparison of various enumeration measures, 2006, 2011, 2013, 2016, Greater Wellington TAs**



## Appendices

### Appendix A: Population Size and Growth, Wellington Region and Total New Zealand 1986-2013 by enumeration measure

		Wellington REGION			New Zealand		
		Population Number	URP (2006 & 2013) <sup>3</sup>	Discrepancy (%)	Population Number	URP (2006 & 2013) <sup>3</sup>	Discrepancy (%)
Estimated Defacto Population (Adjusted for 1991 Census) (March Years) <sup>(1)</sup>	1986	395,610			3,307,084		
	1987	394,500			3,315,410		
	1988	395,800			3,339,160		
	1989	395,600			3,347,140		
	1990	397,200			3,373,400		
Estimated Defacto Population (unadjusted for Census 1996) (March Years) <sup>(1)</sup>	1991	402,892			3,515,980		
	1992	404,200			3,552,240		
	1993	407,000			3,597,850		
	1994	410,000			3,648,260		
	1995	413,100			3,706,710		
Estimated Usual Resident Population (June Years) <sup>(2)</sup>	1996	426,900			3,732,000		
	1997	431,200			3,781,300		
	1998	433,900			3,815,000		
	1999	435,800			3,835,100		
	2000	437,500			3,857,700		
	2001	440,200			3,880,500		
	2002	445,800			3,948,500		
	2003	452,300			4,027,200		
	2004	457,800			4,087,500		
	2005	461,600			4,133,900		
	2006	466,300	448,968	-3.7	4,184,600	4,027,959	-3.7
	2007	470,300			4,228,300		
	2008	473,800			4,268,900		
	2009	478,600			4,315,800		
	2010	483,300			4,367,800		
	2011	487,700			4,405,200		
	2012	490,100			4,433,000		
	2013	492,500	471,327	-4.3	4,470,800	4,242,045	-5.1
Change 2006-2013 (%)		5.6	5.0		6.8	5.3	

Source: (1) Statistics New Zealand, Yearbook collection 1893-2013

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

Table reference: DPE051AA and DPE052AA, Boundaries at 1 January 2013. Last updated: 22 October 2013 10:45am

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

<sup>3</sup> Statistics New Zealand (2014) Usually Resident Population Counts



## Appendix B: Population Size and Growth, TA by CAU, 2001-2006, 2006-2013, and 2001-2013

	2001	2006	2013	2001-2006 (N Change)	2006- 2013 (N Change)	Total N Change 2001- 2013	2001- 2006 (% change)	2006- 2013 (% Change)	Total Change 2001- 2013
<b>Kapiti Coast District (18 CAU)</b>									
563701 Waikanae Beach	2451	2895	3048	444	153	597	18.1	5.3	24.4
563703 Waikanae East	1791	1986	2178	195	192	387	10.9	9.7	21.6
563704 Peka Peka	195	252	360	57	108	165	29.2	42.9	84.6
563705 Waikanae Park	1821	1899	1950	78	51	129	4.3	2.7	7.1
563706 Waikanae West	3309	3453	3462	144	9	153	4.4	0.3	4.6
563920 Kaitawa	390	477	543	87	66	153	22.3	13.8	39.2
564022 Otaki Forks	1476	1410	1488	-66	78	12	-4.5	5.5	0.8
564023 Te Horo	642	675	807	33	132	165	5.1	19.6	25.7
564400 Otaki	5643	5466	5778	-177	312	135	-3.1	5.7	2.4
565901 Paraparaumu Beach Nort	3165	3255	3564	90	309	399	2.8	9.5	12.6
565902 Otaihanga	993	1110	1206	117	96	213	11.8	8.6	21.5
565903 Paraparaumu Beach Sout	3921	4677	4941	756	264	1020	19.3	5.6	26.0
566000 Paraparaumu Central	6810	8205	8682	1395	477	1872	20.5	5.8	27.5
566101 Raumati Beach	4155	4470	4848	315	378	693	7.6	8.5	16.7
566102 Raumati South	3324	3546	3594	222	48	270	6.7	1.4	8.1
566200 Paekakariki	1731	1602	1665	-129	63	-66	-7.5	3.9	-3.8
566301 Kapiti Island	9	9	9	0	0	0	0.0	0.0	0.0
566302 Maungakotukutuku	618	816	978	198	162	360	32.0	19.9	58.3
<b>Total Kapiti Coast District</b>	<b>42447</b>	<b>46197</b>	<b>49104</b>	<b>3750</b>	<b>2907</b>	<b>6657</b>	<b>8.8</b>	<b>6.3</b>	<b>15.7</b>
<b>Porirua City (26 CAU)</b>									
565601 Pauatahanui	831	948	1080	117	132	249	14.1	13.9	30.0
565602 Endeavour	2925	3417	3765	492	348	840	16.8	10.2	28.7
565603 Resolution	84	99	135	15	36	51	17.9	36.4	60.7
565604 Adventure	1239	1269	1359	30	90	120	2.4	7.1	9.7
565700 Paekakariki Hill	117	129	147	12	18	30	10.3	14.0	25.6
570400 Titahi Bay North	2373	2433	2457	60	24	84	2.5	1.0	3.5
570500 Onepoto	1857	1845	1800	-12	-45	-57	-0.6	-2.4	-3.1
570600 Titahi Bay South	3126	3246	3564	120	318	438	3.8	9.8	14.0
570700 Elsdon-Takapuwahia	2262	2265	2211	3	-54	-51	0.1	-2.4	-2.3
570800 Porirua Central	231	315	381	84	66	150	36.4	21.0	64.9
570900 Porirua East	2043	2091	2043	48	-48	0	2.3	-2.3	0.0
571000 Ranui Heights	1263	1344	1359	81	15	96	6.4	1.1	7.6
571100 Cannons Creek North	3156	3309	3132	153	-177	-24	4.8	-5.3	-0.8
571200 Cannons Creek South	1626	1560	1533	-66	-27	-93	-4.1	-1.7	-5.7
571300 Cannons Creek East	3873	3771	3594	-102	-177	-279	-2.6	-4.7	-7.2
571400 Waitangirua	4233	4077	4023	-156	-54	-210	-3.7	-1.3	-5.0
571501 Papakowhai North	2181	2304	2280	123	-24	99	5.6	-1.0	4.5
571502 Papakowhai South	3	117	2292	114	2175	2289	3800.0	1859.0	76300.0
571600 Ascot Park	2811	2706	2667	-105	-39	-144	-3.7	-1.4	-5.1
571800 Pukerua Bay	1692	1722	1896	30	174	204	1.8	10.1	12.1
571900 Plimmerton	2052	2058	2115	6	57	63	0.3	2.8	3.1
572000 Mana-Camborne	2238	2280	2553	42	273	315	1.9	12.0	14.1
572100 Paremata-Postgate	2391	2397	2547	6	150	156	0.3	6.3	6.5
572200 Discovery	2730	2817	2751	87	-66	21	3.2	-2.3	0.8
572300 Mana Island	-	-	3	-	-	-	-	-	-
622201 Inlet-Porirua Harbour	30	18	27	-12	9	-3	-40.0	50.0	-10.0
<b>Total Porirua City</b>	<b>47367</b>	<b>48546</b>	<b>51717</b>	<b>1179</b>	<b>3171</b>	<b>4350</b>	<b>2.5</b>	<b>6.5</b>	<b>9.2</b>



## Appendix B (cont.): Population Size and Growth, TA by CAU, 2001-2006, 2006-2013, and 2001-2013

	2001	2006	2013	2001-2006 (N Change)	2006- 2013 (N Change)	Total N Change 2001- 2013	2001- 2006 (% change)	2006- 2013 (% Change)	Total Change 2001- 2013
Upper Hutt City (22 CAU)									
564510 Heretaunga	1257	1200	1194	-57	-6	-63	-4.5	-0.5	-5.0
564520 Trentham South	630	1023	1131	393	108	501	62.4	10.6	79.5
564530 Pinehaven	2727	2721	2688	-6	-33	-39	-0.2	-1.2	-1.4
564601 Moonshine Valley	204	204	198	0	-6	-6	0.0	-2.9	-2.9
564602 Riverstone Terraces	72	660	1383	588	723	1311	816.7	109.5	1820.8
566500 Te Marua	978	1068	1152	90	84	174	9.2	7.9	17.8
566610 Akatarawa	636	618	567	-18	-51	-69	-2.8	-8.3	-10.8
566620 Emerald Hill	2541	2721	2763	180	42	222	7.1	1.5	8.7
566700 Maoribank	2397	2553	2835	156	282	438	6.5	11.0	18.3
566800 Clouston Park	2214	2328	2460	114	132	246	5.1	5.7	11.1
566900 Totara Park	2871	2853	2874	-18	21	3	-0.6	0.7	0.1
567000 Ebdentown	2178	2142	2163	-36	21	-15	-1.7	1.0	-0.7
567100 Upper Hutt Central	291	321	309	30	-12	18	10.3	-3.7	6.2
567200 Maidstone	144	138	114	-6	-24	-30	-4.2	-17.4	-20.8
567300 Wallaceville	2061	2157	2151	96	-6	90	4.7	-0.3	4.4
567400 Elderslea	3126	3201	3243	75	42	117	2.4	1.3	3.7
567500 Poets Block	2295	2220	2223	-75	3	-72	-3.3	0.1	-3.1
567600 Brentwood	1986	2097	2097	111	0	111	5.6	0.0	5.6
567700 Trentham North	2646	2766	2940	120	174	294	4.5	6.3	11.1
567800 Heretaunga-Silverstream	3555	3618	3588	63	-30	33	1.8	-0.8	0.9
567901 Cloustonville	324	351	408	27	57	84	8.3	16.2	25.9
567902 Mangaroa	1242	1461	1695	219	234	453	17.6	16.0	36.5
Total Upper Hutt City	36372	38415	40179	2043	1764	3807	5.6	4.6	10.5



## Appendix B (cont.): Population Size and Growth, TA by CAU, 2001-2006, 2006-2013, and 2001-2013

	2001	2006	2013	2001-2006 (N Change)	2006- 2013 (N Change)	Total N Change 2001- 2013	2001- 2006 (% change)	2006- 2013 (% Change)	Total Change 2001- 2013
Lower Hutt City (43 CAU)									
564800 Glendale	3525	3636	3804	111	168	279	3.1	4.6	7.9
564900 Parkway	2988	3012	3141	24	129	153	0.8	4.3	5.1
565000 Fernlea	1998	1956	1971	-42	15	-27	-2.1	0.8	-1.4
565100 Arakura	2526	2469	2448	-57	-21	-78	-2.3	-0.9	-3.1
565200 Homedale West	2487	2484	2460	-3	-24	-27	-0.1	-1.0	-1.1
565300 Homedale East	3081	3117	2928	36	-189	-153	1.2	-6.1	-5.0
565400 Pencarrow	456	540	546	84	6	90	18.4	1.1	19.7
568101 Tawhai	3123	3183	3345	60	162	222	1.9	5.1	7.1
568102 Holborn	2034	1986	2067	-48	81	33	-2.4	4.1	1.6
568103 Delaney	2343	2382	2412	39	30	69	1.7	1.3	2.9
568104 Manuka	1701	1677	1707	-24	30	6	-1.4	1.8	0.4
568201 Taita North	2856	3021	2610	165	-411	-246	5.8	-13.6	-8.6
568202 Taita South	2751	3036	2925	285	-111	174	10.4	-3.7	6.3
568301 Avalon East	2235	2295	2337	60	42	102	2.7	1.8	4.6
568302 Naenae North	4440	4746	4659	306	-87	219	6.9	-1.8	4.9
568303 Naenae South	3558	3546	3528	-12	-18	-30	-0.3	-0.5	-0.8
568401 Avalon West	2298	2367	2469	69	102	171	3.0	4.3	7.4
568402 Boulcott	2421	2448	2487	27	39	66	1.1	1.6	2.7
568501 Epuni West	2940	3087	3015	147	-72	75	5.0	-2.3	2.6
568502 Epuni East	2931	2976	2874	45	-102	-57	1.5	-3.4	-1.9
568601 Waterloo West	924	918	882	-6	-36	-42	-0.6	-3.9	-4.5
568602 Waterloo East	4134	4221	4245	87	24	111	2.1	0.6	2.7
568701 Waiwhetu North	1413	1437	1359	24	-78	-54	1.7	-5.4	-3.8
568702 Waiwhetu South	2178	2517	2598	339	81	420	15.6	3.2	19.3
568800 Gracefield	75	60	60	-15	0	-15	-20.0	0.0	-20.0
568900 Moera	1668	1608	1533	-60	-75	-135	-3.6	-4.7	-8.1
569001 Woburn North	1311	1317	1299	6	-18	-12	0.5	-1.4	-0.9
569002 Woburn South	417	420	390	3	-30	-27	0.7	-7.1	-6.5
569100 Hutt Central	3609	3738	3954	129	216	345	3.6	5.8	9.6
569201 Melling	537	615	645	78	30	108	14.5	4.9	20.1
569202 Alicetown	1869	1854	1971	-15	117	102	-0.8	6.3	5.5
569301 Normandale	2052	2085	2052	33	-33	0	1.6	-1.6	0.0
569302 Maungaraki	3411	3552	3777	141	225	366	4.1	6.3	10.7
569401 Tirohanga	1053	1197	1164	144	-33	111	13.7	-2.8	10.5
569402 Belmont	2418	2571	2697	153	126	279	6.3	4.9	11.5
569500 Kelson	2610	2616	2697	6	81	87	0.2	3.1	3.3
569600 Haywards-Manor Park	372	384	390	12	6	18	3.2	1.6	4.8
569800 Korokoro	1272	1284	1332	12	48	60	0.9	3.7	4.7
569900 Petone Central	843	879	906	36	27	63	4.3	3.1	7.5
570000 Esplanade	2436	2358	2487	-78	129	51	-3.2	5.5	2.1
570100 Wilford	3486	3369	3363	-117	-6	-123	-3.4	-0.2	-3.5
570300 Eastbourne	4704	4719	4665	15	-54	-39	0.3	-1.1	-0.8
622102 Seaview Marina	12	15	42	3	27	30	25.0	180.0	250.0
Total Lower Hutt City	95490	97701	98238	2211	537	2748	2.3	0.5	2.9





# Appendix B (cont.): Population Size and Growth, TA by CAU, 2001-2006, 2006-2013, and 2001-2013

	2001	2006	2013	2001-2006 (N Change)	2006- 2013 (N Change)	Total N Change 2001- 2013	2001- 2006 (%) change)	2006- 2013 (%) Change)	Total Change 2001- 2013
Wellington City (79 CAU)									
572500 Tawa South	3510	3582	3564	72	-18	54	2.1	-0.5	1.5
572600 Tawa Central	4095	4287	4377	192	90	282	4.7	2.1	6.9
572701 Linden	3798	3813	3999	15	186	201	0.4	4.9	5.3
572702 Greenacres	1260	1512	1581	252	69	321	20.0	4.6	25.5
572900 Thorndon-Tinakori Road	3132	3807	4125	675	318	993	21.6	8.4	31.7
573000 Lambton	3702	4776	5625	1074	849	1923	29.0	17.8	51.9
573101 Willis Street-Cambridge	2997	4518	7329	1521	2811	4332	50.8	62.2	144.5
573102 Wellington City-Marin	30	18	36	-12	18	6	-40.0	100.0	20.0
573200 Aro Street-Nairn Street	3312	3819	3900	507	81	588	15.3	2.1	17.8
573300 Mt Cook-Wallace Street	3525	4848	5112	1323	264	1587	37.5	5.4	45.0
573400 Mt Victoria West	5013	5226	5400	213	174	387	4.2	3.3	7.7
573511 Glenside North	150	339	348	189	9	198	126.0	2.7	132.0
573513 Churton Park North	1608	2484	2889	876	405	1281	54.5	16.3	79.7
573514 Churton Park South	2607	2997	3237	390	240	630	15.0	8.0	24.2
573522 Grenada North	348	339	348	-9	9	0	-2.6	2.7	0.0
573523 Grenada Village	918	984	1248	66	264	330	7.2	26.8	35.9
573524 Newlands East	453	600	708	147	108	255	32.5	18.0	56.3
573525 Takapu	174	234	306	60	72	132	34.5	30.8	75.9
573526 Horokiwi	174	183	180	9	-3	6	5.2	-1.6	3.4
573600 Johnsonville North	1722	1761	1860	39	99	138	2.3	5.6	8.0
573700 Johnsonville Central	3063	3387	3738	324	351	675	10.6	10.4	22.0
573801 Paparangi West	1134	1083	1113	-51	30	-21	-4.5	2.8	-1.9
573802 Johnsonville East	786	867	969	81	102	183	10.3	11.8	23.3
573901 Paparangi	1617	1659	1725	42	66	108	2.6	4.0	6.7
573902 Woodridge	759	1023	1329	264	306	570	34.8	29.9	75.1
573903 Newlands North	2448	2472	2655	24	183	207	1.0	7.4	8.5
574001 Newlands South	3252	3528	3699	276	171	447	8.5	4.8	13.7
574002 Ngauranga East	36	24	42	-12	18	6	-33.3	75.0	16.7
574100 Raroa	3060	3276	3729	216	453	669	7.1	13.8	21.9
574200 Khandallah Park-Broadm	2625	2757	2796	132	39	171	5.0	1.4	6.5
574302 Te Kainga	3435	3633	3765	198	132	330	5.8	3.6	9.6
574303 Ngauranga West		6	6						
574304 Rangoon Heights	2094	2235	2514	141	279	420	6.7	12.5	20.1
574401 Awarua	3000	3015	3156	15	141	156	0.5	4.7	5.2
574402 Ngaio South	2913	3042	3138	129	96	225	4.4	3.2	7.7
574500 Kaiwharawhara	15	63	144	48	81	129	320.0	128.6	860.0
574600 Wadestown	3357	3549	3513	192	-36	156	5.7	-1.0	4.6
574701 Crofton Downs	1305	1410	1545	105	135	240	8.0	9.6	18.4
574702 Wilton	1860	2034	2052	174	18	192	9.4	0.9	10.3
574703 Northland North	747	765	753	18	-12	6	2.4	-1.6	0.8
574800 Karori North	2256	2520	2595	264	75	339	11.7	3.0	15.0
574900 Karori Park	3936	4122	4338	186	216	402	4.7	5.2	10.2
575000 Karori East	3381	3465	3501	84	36	120	2.5	1.0	3.5
575100 Karori South	3651	3903	4248	252	345	597	6.9	8.8	16.4
575200 Northland	2385	2574	2694	189	120	309	7.9	4.7	13.0
575300 Kelburn	3492	3651	3612	159	-39	120	4.6	-1.1	3.4
575400 Taitville	423	447	450	24	3	27	5.7	0.7	6.4
575500 Mitchelltown	567	591	687	24	96	120	4.2	16.2	21.2
575600 Brooklyn	3684	3858	4071	174	213	387	4.7	5.5	10.5
575701 Vogeltown West	1011	1101	1110	90	9	99	8.9	0.8	9.8
575702 Vogeltown	780	789	894	9	105	114	1.2	13.3	14.6
575800 Kingston-Mornington	2139	2256	2208	117	-48	69	5.5	-2.1	3.2
575901 Brooklyn South	861	906	1032	45	126	171	5.2	13.9	19.9
575902 Happy Valley-Owhiro Bay	1410	1659	1743	249	84	333	17.7	5.1	23.6
576001 Island Bay West	3099	3327	3339	228	12	240	7.4	0.4	7.7
576002 Island Bay East	3243	3327	3525	84	198	282	2.6	6.0	8.7
576100 Melrose-Houghton Bay-S	3300	3492	3564	192	72	264	5.8	2.1	8.0
576200 Berhampore West	2367	2595	2601	228	6	234	9.6	0.2	9.9
576301 Berhampore West	2553	2691	3138	138	447	585	5.4	16.6	22.9
576302 Berhampore East	999	999	1008	0	9	9	0.0	0.9	0.9
576400 Newtown East	4395	4716	4875	321	159	480	7.3	3.4	10.9
576500 Adelaide	846	942	1023	96	81	177	11.3	8.6	20.9
576600 Oriental Bay	1059	1116	1053	57	-63	-6	5.4	-5.6	-0.6
576700 Roseneath	1545	1692	1731	147	39	186	9.5	2.3	12.0
576800 Hataitai North	3996	4470	4563	474	93	567	11.9	2.1	14.2
576901 Kilbirnie East	2901	3336	3216	435	-120	315	15.0	-3.6	10.9
576903 Kilbirnie West-Hataitai S	2934	3096	3207	162	111	273	5.5	3.6	9.3
576904 Evans Bay Marina	6	9	18	3	9	12	50.0	100.0	200.0
577000 Lyall Bay-Airport-Moa Po	2871	3006	3045	135	39	174	4.7	1.3	6.1
577101 Seatoun Tunnel West	594	657	699	63	42	105	10.6	6.4	17.7
577102 Strathmore Park	3633	3768	3705	135	-63	72	3.7	-1.7	2.0
577200 Miramar South	3141	3471	3579	330	108	438	10.5	3.1	13.9
577301 Miramar North	2337	2502	2505	165	3	168	7.1	0.1	7.2
577302 Miramar	2241	2322	2412	81	90	171	3.6	3.9	7.6
577400 Karaka Bay-Worser Bay	1329	1419	1443	90	24	114	6.8	1.7	8.6
577500 Seatoun	1998	2139	2235	141	96	237	7.1	4.5	11.9
577601 Maupuia	1416	1404	1497	-12	93	81	-0.8	6.6	5.7
577602 Miramar West	312	414	402	102	-12	90	32.7	-2.9	28.8
577700 Makara-Ohariu	702	759	840	57	81	138	8.1	10.7	19.7
Total Wellington City	163827	179466	190956	15639	11490	27129	9.5	6.4	16.6

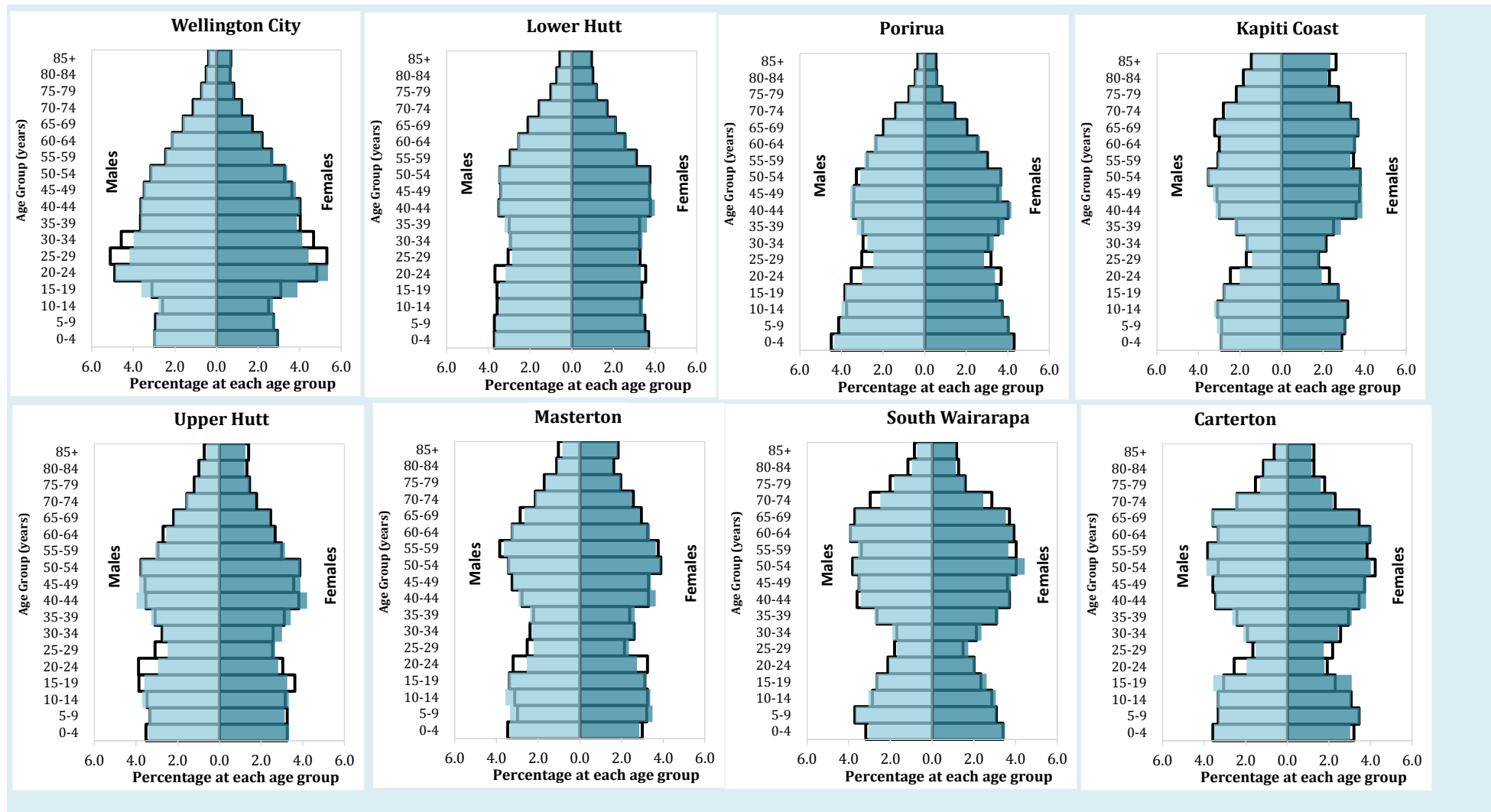


## Appendix B (cont.): Population Size and Growth, TA by CAU, 2001-2006, 2006-2013, and 2001-2013

	2001	2006	2013	2001-2006 (N Change)	2006- 2013 (N Change)	Total N Change 2001- 2013	2001- 2006 (% change)	2006- 2013 (% Change)	Total Change 2001- 2013
<b>Masterton District (12 CAU)</b>									
578301 Homebush-Te Ore Ore	513	573	549	60	-24	36	11.7	-4.2	7.0
578302 Opaki-Fernridge	1194	1254	1416	60	162	222	5.0	12.9	18.6
578401 Kopuaranga	1371	1443	1572	72	129	201	5.3	8.9	14.7
578402 Whareama	1746	1686	1683	-60	-3	-63	-3.4	-0.2	-3.6
578600 Masterton Central	684	585	579	-99	-6	-105	-14.5	-1.0	-15.4
578700 Masterton West	3078	3000	3030	-78	30	-48	-2.5	1.0	-1.6
578800 Masterton East	3477	3390	3576	-87	186	99	-2.5	5.5	2.8
578901 Solway North	2181	2220	2370	39	150	189	1.8	6.8	8.7
578902 Solway South	2829	2910	2991	81	81	162	2.9	2.8	5.7
579000 Ngaumutawa	1290	1377	1377	87	0	87	6.7	0.0	6.7
579100 Masterton Railway	279	297	282	18	-15	3	6.5	-5.1	1.1
579200 Lansdowne	3972	3885	3927	-87	42	-45	-2.2	1.1	-1.1
<b>Total Masterton District</b>	<b>22617</b>	<b>22623</b>	<b>23352</b>	<b>6</b>	<b>729</b>	<b>735</b>	<b>0.0</b>	<b>3.2</b>	<b>3.2</b>
<b>Carterton District (4 CAU)</b>									
579400 Waingawa	258	312	480	54	168	222	20.9	53.8	86.0
579501 Mt Holdsworth	1092	1179	1350	87	171	258	8.0	14.5	23.6
579502 Te Wharau	1395	1488	1722	93	234	327	6.7	15.7	23.4
579700 Carterton	4104	4122	4686	18	564	582	0.4	13.7	14.2
<b>Total Carterton District</b>	<b>6849</b>	<b>7098</b>	<b>8235</b>	<b>249</b>	<b>1137</b>	<b>1386</b>	<b>3.6</b>	<b>16.0</b>	<b>20.2</b>
<b>South Wairarapa District (6 CAU)</b>									
579802 Tuturumuri	438	438	393	0	-45	-45	0.0	-10.3	-10.3
579803 Kahutara	2580	2718	3213	138	495	633	5.3	18.2	24.5
579804 Inland Water-Lake Wairarapa									
579900 Greytown	2046	2064	2202	18	138	156	0.9	6.7	7.6
580000 Featherston	2328	2343	2253	15	-90	-75	0.6	-3.8	-3.2
580100 Martinborough	1356	1329	1470	-27	141	114	-2.0	10.6	8.4
<b>Total South Wairarapa District</b>	<b>8742</b>	<b>8889</b>	<b>9528</b>	<b>147</b>	<b>639</b>	<b>786</b>	<b>1.7</b>	<b>7.2</b>	<b>9.0</b>



**Appendix C: Age-Sex Structures in 2013 by Usually Resident (Shaded Bars) and Estimated Resident (Unshaded Bars) Population Counts (Percentage at each age)**



## Appendix D: Population projection methodology

Population projections are developed on the following basic principles:

- Using survivorship rates from the Life Table (which is used to estimate life expectancy), numbers at each age in the 'base population' are survived to the next age, separately for each sex.
- Survived numbers at each age are 'migrated' according to the age profile for migration, which differs by sex, region and TA. In some cases this process reduces the size of the cohort; in other cases it augments it.
- Birth rates at each age 15-49 years are applied to the resulting (survived and migrated) numbers of women at each age. The resulting number of births is split according to the sex ratio at birth (105 males: 100 females), and becomes the new population aged 0.
- All age groups are aged by one year, and the process is repeated as many times as the projection period covers.





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