



THE UNIVERSITY OF
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Te Whare Wānanga o Waikato

**2016 update of area unit population, household, and labour force
projections for the Waikato Region, 2013-2061**

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The projections discussed in this report are based on historical data and assumptions made by the authors. While the authors believe that the projections can provide plausible and indicative inputs into planning and policy formulation, the reported numbers cannot be relied upon as providing precise forecasts of future population levels. The University of Waikato will not be held liable for any loss suffered through the use, directly or indirectly, of the information contained in this report.

* This report is a revised version of the November 2016 report of the same title. The only differences relate to changes in the medium-variant area unit projections for Waipa District, arising from an earlier error in the land use data that were supplied to us.

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Executive Summary

This report provides a set of updated 2016 demographic projections at the Census Area Unit (CAU) level for the Waikato Region. Projections prepared for each CAU include population, household, and labour force projections for selected years (2021, 2031, 2041, 2051, and 2061). This report builds on a previous report on demographic projections at the territorial authority level, and uses a common set of underlying assumptions, as well as updating earlier reports based on earlier data.

The projections were generated by statistically downscaling the territorial authority projections using the results obtained from a land use change model, embedded within the WISE (Waikato Integrated Scenario Explorer) model. The statistical downscaling method involves generating a regression model that predicts CAU-level population on the basis of the amount of land use of different types that is present in each CAU. The resulting models were fairly good, in terms of their in-sample and out-of-sample predictive performance.

The CAU-level population projections closely follow the pattern at the territorial authority level, but with additional local-level detail. Waikato District, Hamilton City, and Waipa District provide the majority of population growth over the projection period. However, this population growth is especially concentrated in the peri-urban area immediately surrounding Hamilton City, and the area closest to Auckland, while rural and peripheral areas decline in population. The household and labour force projections closely follow the population projections.

1. Introduction

At a meeting of strategic planners from the Future Proof partner councils (Hamilton City Council, Waikato District Council, Waipa District Council, and Waikato Regional Council and the New Zealand Transport Agency), it was agreed to update the earlier demographic projections initially undertaken in 2014 by the University of Waikato (Jackson *et al.*, 2014; Cameron and Cochrane, 2014a) and subsequently updated in 2015 to account for the release of 2013 Census data (Cameron and Cochrane, 2015b). That earlier work also included corresponding Census Area Unit (CAU) projections (Cameron and Cochrane, 2014b; 2015a).

This report briefly summarises the updated Waikato 2016-update population projections for CAUs in the Waikato Region. These updated CAU-level projections follow the same methodology as that reported in Cameron and Cochrane (2015a), thereby ensuring that the demographic projections follow an established and agreed methodology for projection of the population and labour force at the census area unit level.

The projections presented in this report use the outputs of demographic projections at the Territorial Authority (TA) level (Cameron and Cochrane, 2016), as well as land use projections developed in consultation with local council planners (Fenton, 2016). The TA-level projections come from the Whole-of-Waikato population model (Cameron and Cochrane, 2016) which is both incorporated into, and can be run separately from, the Waikato Integrated Scenario Explorer (WISE) model (Rutledge *et al.*, 2008; 2010). The WISE model is a systems-based integrated model that incorporates economic, demographic, and environmental components across the Waikato Region. The land use projections come from the WISE model, enhanced by additional modelling of population densities in residential areas (Fenton, 2016). In sum, the project involved estimating demographic projections for each CAU in the Waikato Region.

The report is structured as follows:

- Section 2 details the data and methodology used in preparing the projections;
- Section 3 presents and briefly discusses the CAU level population and household projections;
- Section 4 concludes.

2. Data and Methods

2.1 Data

The data used in the formulation of these projections was sourced from the baseline medium-variant and low-variant TA-level population projections reported in Cameron and Cochrane (2016), and from the land use outputs of the WISE model (Rutledge *et al.*, 2008; 2010; Fenton, 2016). The decision to produce only medium-variant and low-variant projections was based on discussions with council planners. Much of the data that was used in deriving the TA-level population projections is from Statistics New Zealand (SNZ). The boundaries for the projections are mostly consistent with boundaries at the time of the 2013 Census of Population and Dwellings. The exception is some parts of the Kainui, Eureka, and Gordonton CAUs (in Waikato District), that will become part of Hamilton City once the Waikato Expressway is complete. We assumed that these areas were already part of Hamilton City for the purposes of these projections.¹ In all cases, the projections presented in this report are only for CAUs within the Waikato Region. Thus, some CAUs in Waitomo District, Taupo District, and Rotorua District, are excluded because they lie outside the Waikato region.

2.2 Statistical Downscaling Method

There is not one universally accepted method for deriving small-area population projections. For instance, Statistics New Zealand uses the standard Cohort Component Method (CCM) to project population at the CAU-level for New Zealand.² However, we argue that the CCM is inappropriate for use for small-area projections (such as at the CAU level), at the least because of the unavailability of geographically-disaggregated data on birth rates, mortality rates, and migration (Smith and Shahidullah, 1995). Moreover pure demographic projections, such as those obtained from the CCM, are unable to take account of a myriad of socio-economic, infrastructural, physical land use and other contextual factors that exert substantial influence over the spatial allocation of population and households at smaller geographical levels. Finally, the degree of uncertainty present in CCM projections at smaller geographic

¹ We added the parts of Kainui CAU that will become part of Hamilton City to the Sylvester CAU, and the parts of the Gordonton and Eureka CAUs that will become part of Hamilton City to the Huntington CAU. Since these areas are mostly unpopulated at the start of the projection period, we made no adjustment to the initial populations of these CAUs.

² See http://www.stats.govt.nz/browse_for_stats/population/estimates_and_projections/area-unit-population-projections.aspx.

levels increases substantially as the total population being projected decreases in absolute size (Cameron and Poot, 2011).

Because of the general unsuitability of pure demographic models to project population growth at the small-area level, planners and academics have applied a variety of alternative and largely non-demographic methods. The most common methods are collectively termed Urban Growth Models, and are described and reviewed in Triantakou and Mountrakis (2012). These methods include: (1) Cellular Automata (CA) modelling; (2) Artificial neural networks modelling; (3) Fractal modelling; (4) Linear or logistic regression; (5) Agent-based modelling; and (6) Decision-trees modelling. A detailed review of each of these methods is outside the scope of this report, but they share an advantage over the pure demographic models in taking more explicitly taking account of the local socio-economic conditions and physical constraints at the small-area level. However, we note that in general none of these methods specifically model the underlying demographic processes that drive population change, which is a significant limitation.

An alternative to both pure demographic approaches (such as the Cohort Component Method) and non-demographic approaches (such as Urban Growth Models) is to combine the two approaches in order to leverage their particular strengths. By using demographic projections to derive estimates of the future population at a relatively broad geographical scale, then using a non-demographic approach to systematically downscale or apportion the population to the small-area level, we take account of both the underlying demographic processes that drive population change, and the local-level conditions that primarily determine the spatial allocation of households and people. Moreover, by combining the two methods the demographic model is not overextended to a point where the data necessary to derive population projection assumptions (fertility, mortality, and migration) are not readily available.

One combined approach is to allocate population on the basis of constrained future housing availability (the 'housing unit' method). For instance, Roskrug et al. (2011) used future zoning changes, combined with assumptions about rates of infill housing, to project the theoretical maximum number of housing units in each CAU and to allocate population within the Waikato District.

In this project, we used an alternative method that uses statistical downscaling combined with projections of future land use to allocate TA-level population to each CAU. First, the

population was projected at the TA level. These projections and the methodology employed to estimate them are described elsewhere (Cameron and Cochrane, 2014a; 2015b; 2016; Jackson et al., 2014). The TA-level projected populations (medium-variant and low-variant) were taken as inputs into the next stages.

Second, land use was projected using the WISE model. The WISE model is a systems-based integrated model that incorporates economic, demographic, and environmental components across the entire Waikato Region (Rutledge *et al.*, 2008; 2010; Fenton, 2016). The WISE model begins with a base land use map in 2013, incorporating 24 different land uses, including three different residential land use classes (medium-high density, low density, and lifestyle blocks) (Rutledge *et al.*, 2010). At each (annual) time step, the economic and demographic models generate demands for economic and residential land use, which are inputs into a dynamic, spatially explicit land use change model (Huser *et al.*, 2009; van Delden *et al.*, 2008). The demographic input into the WISE model is the set of medium-variant or low-variant TA-level population projections for the Waikato region developed in the first step.

The land use change model is a Cellular Automata (CA) model specified as one-hectare grid cells (100m x 100m). The CA model apportions land to different uses at each time step based on a combination of four factors: (1) zoning (which constrains the land uses that are available in each cell); (2) suitability (the biophysical suitability of land for different uses); (3) accessibility (assesses the attractiveness of a location for different land uses based on the proximity to desirable or undesirable features); and (4) local influence (assesses the attractiveness of a location for a land use based on the composition of land use in the surrounding neighbourhood). The CA land use model attempts to meet the external demands for land (from the economic and demographic models) by assigning cells with the highest transition potentials (determined by their zoning, suitability, accessibility and local influence) to new land uses. Transitions are made at each (annual) time step.

The demand for residential land of each type is determined by first assigning a given proportion of population in each territorial authority to each residential land use type, and a proportion to all non-residential land uses. The proportions are generally stable but vary over time for some territorial authorities. Second, the number of residential land use cells of each type required is determined by combining the population in each residential land use calculated in the first step with population density values for each residential land use type.

One key change from earlier CAU projections is that the population density for each residential land use type is allowed to vary by CAU – details of the methods employed to derive these densities are provided in Fenton (2016).

The CAU-level populations were then projected in two parts: (1) the population located in residential land uses; and (2) the population located in non-residential land uses. The area of each land use type (in hectares) and the residential population densities (by residential land use type) were exported from the WISE model for 2013, 2021, 2031, 2041, 2051, and 2061. The number of hectares of each residential land use type and the residential population densities were used to calculate the residential population (i.e. the population located in residential land uses) for each year.

To estimate the non-residential population (i.e. the population located in non-residential land uses), linear regression models were used. The 2013 data were used to construct an initial regression model that estimates the population associated with each hectare of each non-residential land use type (represented by each model parameter). The dependent variable was the population of each CAU after subtracting the population located in residential land uses. Eleven land uses were initially excluded from the models (bare surfaces, indigenous vegetation, other exotic vegetation, wetlands, fresh water, marine, aquaculture, utilities, mines and quarries, urban parks, and airports), because they were unlikely to contain much population. The three residential land uses were also excluded from the models, as the population in those land uses was already accounted for (as noted above). That leaves ten land use variables in the model. Separate regression models were fitted for Waikato District, Hamilton City, and Waipa District, with a fourth combined model fitted for the remaining TAs. The fourth model initially included TA-level fixed effects to account for unobserved differences in population density profile between each TA. Each model was reduced to a final preferred model by removing the least significant variable in a stepwise fashion until the root mean squared error (RMSE) was minimised.

This approach was validated and an evaluation based on 2006-2013 data was reported in Cameron and Cochrane (2014b; 2015c; 2015d) as well as reported in detail in a subsequent working paper (Cameron and Cochrane, 2015e). This validation involved a comparison with a naïve projection, and four alternative regression-based models for projecting the non-residential population. To summarise though, the root mean squared error (RMSE) and other measures of forecast accuracy do not differ substantially between in-sample and out-of-

sample predictions. Thus we conclude that the models perform reasonably well in estimating population using land use data. However, because the 2006-base evaluation and the current projections are derived from different base land use maps, the models employed in the projections here differ from those used in the earlier projections. The final (2013-base) model results are presented in Table 1, with standard errors in parentheses below each coefficient estimate.³

Table 1: Regression results

Variable	Model			
	Waikato District	Hamilton City	Waipa District	Rest of Waikato
FE - Thames-Coromandel	-	-	-	1100.2*** (239.4)
FE – Hauraki	-	-	-	475.1* (244.1)
FE – South Waikato	-	-	-	236.2 (193.5)
FE – Waitomo	-	-	-	495.9** (247.6)
FE – Taupo	-	-	-	475.4*** (173.5)
Commercial	-	-	-	-
Community Services	-	10.02* (5.58)	-	11.88* (6.429)
Horticulture	-	-101.9*** (73.13)	-	-7.801*** (2.119)
Vegetable Crops	-	-	-	-
Other Crops	-	-	1.617* (0.919)	-
Dairy Farming	0.071*** (0.016)	-	0.048*** (0.016)	0.063*** (0.008)
Sheep/Beef Farming	-	-	0.032 (0.019)	-
Other Agriculture	-	-	0.732** (0.344)	1.356** (0.646)
Forestry	-	-	-	-
Manufacturing	-	-	-	3.737* (1.968)
N	31	46	29	91
Adjusted R ²	0.380	0.176	0.785	0.544
RMSE	461	491	186	547

* p<0.1; ** p<0.05; *** p<0.01.

³ Note that because of changes in the land use pattern for 2013, these models are also different to those reported in Cameron and Cochrane (2015a).

The regression models mostly do a reasonably good job of predicting in-sample, with adjusted coefficients of determination (adjusted R^2) of between 0.176 (Hamilton City) and 0.785 (Waipa District), and RMSE of between 186 (Waipa District) and 547 (Rest of Waikato). These RMSE values are unfortunately higher than those estimated in the previous CAU-level projections model (Cameron and Cochrane, 2015), which reflects changes in the base land use map, but also changes in the assumed proportions and densities of population in residential land use types. Ideally, the coefficient values would loosely be interpreted as the number of people (on average) residing in that land use class. However, this interpretation is problematic because the models may be subject to a high degree of multicollinearity. In part, this multicollinearity is driven by the nature of the land use change model, particularly because of the local influence parameters, wherein some land uses co-locate while others are kept apart. Multicollinearity doesn't create problems for the predictions from these models, as coefficients from models exhibiting multicollinearity are unbiased, but inefficient (Angrist and Pischke, 2008).

The regression models, along with the population densities and residential land use from the WISE model, provide a way of statistically downscaling the population of each TA into the component CAUs. This was achieved by using the 2013-base regression model parameters (the estimated number of people per hectare of a given land use), and the estimates of future land use and residential population density to estimate the population in each of four future years (2021, 2031, 2041, 2051, and 2061).

First, the residential population was estimated using the residential population densities and the projected residential land in each year from WISE. Second, the non-residential population was estimated using the regression models in Table 1 and the projected non-residential land in each year from WISE. When added together, this provides an un-scaled population projection for each CAU. However, two issues arose with these un-scaled projections: (1) the projections demonstrated significant discontinuity with the known population trend between 2006 and 2013 for a number of CAUs; and (2) a number of CAUs were projected to quickly fall to zero population. To reduce the impact of the discontinuities, the in-sample residual was calculated for each CAU in 2013 (being the difference between the actual 2013 population and the estimated population using the regression model). This in-sample residual was added

to the projected CAU populations. To reduce the impact of projected de-population of (particularly rural) CAUs, each un-scaled CAU population projection was constrained so that population would not fall by more than 25 percent over any ten-year period. This maximum constraint is similar to the maximum long-run population decline observed in any CAU over the period 2006-2013. Moreover, this adjustment is justifiable as the spatial distribution of population is subject to a substantial degree of inertia – once houses have been constructed in a given location, some population is likely to remain in that location for a long time. That is, population decline at small spatial scales is a relatively slow process, unlike that projected in the initial models.

Second, the combined population of all CAUs in each TA was compared with the projected population of the TA from the cohort component model. Discrepancies between the CAU-based population total and the TA-level projection were eliminated by scaling (up or down) the population in each CAU until the two totals matched. This resulted in CAU-level population projections for each year, where the sum of the CAUs in each TA matches the projected TA-level population.

Cameron and Cochrane (2015a) considered several alternative methods for the development of CAU-level household projections, in an extension of earlier work by Cameron and Cochrane (2014b). Applying similar regression-based models to those described above, using land use and CAU-level population as predictors, did a poor job of modelling the number of households in each CAU, leading to a number of unresolvable and unsatisfactory discontinuities in the data. Instead, Cameron and Cochrane (2015a) applied CAU-specific ratios of households to population to derive the number of households in each CAU from the projection population in that CAU. In this paper, we follow the same method. For this purpose we used the ratio of households to population for 2013, and held the ratio constant for each subsequent projection. This leads to CAU-level household projections that sum to more than the corresponding TA-level projections (because of declining average household size over time), so we scale the resulting CAU-level projections to match the TA-level total households in each year.

Labour force projections were developed from the population projections in each CAU by applying a constant TA-level ratio of labour force to population derived from the corresponding TA-level projection. The accuracy of labour force projections at the CAU level is not as critical as for population or household projections, so applying the simplest

method to derive these projections is appropriate. It is important to note that the labour force projections relate to the location of *residence* of the labour force, not the location of employment.

3. Demographic Projections at the Census Area Unit Level for the Waikato Region

This section briefly discusses the population projections for each CAU in the Waikato Region, for both the medium-variant and low-variant projections. The population projections themselves are available in the Appendices, with associated household projections and labour force projections. As noted in Cameron and Cochrane (2014a; 2015b; 2016), these projections should be viewed as one possible future, based on known assumptions about future fertility, mortality and net migration, and should not be interpreted as forecasts of the future population distribution. However, the projection assumptions are based on a continuation of previous population trends that can reasonably be expected to continue into the future.

Table 2 summarises the fastest and slowest growing CAUs for the medium-variant population projection over the periods 2006-13, 2013-2021, 2021-2031, 2031-2041, 2041-2051, and 2051-2061, both in terms of absolute growth (or decline) and relative growth (or decline). In the historical period, the fastest growing CAUs are on the northern fringes of Hamilton City (Huntington, Horsham Downs, and Sylvester), while the fastest declining CAUs are typically rural areas, particularly in the South Waikato District (Strathmore and Mangakino).

In the CAU-level projections the urban fringes of Hamilton City are projected to see the most substantial growth, especially in the north of the city, followed by growth in the south and west (especially Peacocke and Temple View). A substantial area of projected new growth is Pokeno in Waikato District, near the northern border of the region with Auckland City. Rural areas are projected to experience the most substantial decline, along with some somewhat surprising redistributions within the CAUs of Hamilton City. In the latter cases, these arise because of projected changes in land use and household size across the entire TA, with population being reallocated accordingly. For instance, the decline in population (by 368) in Peachgrove from 2021-2031 happens in spite of a small shift in land use from low density residential to high-medium density residential, because of increases in these land uses also

occurring in other parts of Hamilton City attracting population away from Peachgrove. Similar effects are observed for other parts of Hamilton City, when urban land is made newly available for residential land uses.

Table 2: Fastest and slowest growing CAUs, medium-variant projection

Period	Absolute population change		Relative population change	
	Most growth	Most decline	Fastest growth	Fastest decline
<i>Historical:</i>				
2006-2013	Huntington (+4370)	Strathmore (-290)	Sylvester (+43.0%)	Rangipo (-12.3%)
	Horsham Downs (+2470)	Mangakino (-270)	Swayne (+30.3%)	Mangakino (-4.1%)
	Sylvester (+2020)	Waihou-Walton (-260)	Huntington (+11.2%)	Kerepehi (-2.3%)
<i>Projected:</i>				
2013-2021	Sylvester (+4315)	Swarbrick (-430)	Rotokauri (+45.7%)	Broadlands (-3.4%)
	Peacocke (+3851)	Ohinemuri (-405)	Newstead (+37.6%)	Taharoa (-3.1%)
	Horsham Downs (+3553)	Peachgrove (-368)	Burbush (+29.8%)	Marokopa (-2.3%)
2021-2031	Peacocke (+12823)	Sylvester (-598)	Burbush (+18.4%)	Wairakei-Aratiatia (-2.6%)
	Burbush (+6427)	Huntington (-502)	Peacocke (+14.6%)	Broadlands (-2.6%)
	Pokeno (+5477)	Bryant (-270)	Te Rapa North (+12.8%)	Mahoenui (-2.1%)
2031-2041	Huntington (+8116)	Eureka (-521)	Temple View (+13.8%)	Taharoa (-3.4%)
	Temple View (+7295)	Te Kuiti (-300)	Redoubt (+7.9%)	Wairakei-Aratiatia (-2.6%)
	Sylvester (+3815)	Glenside (-286)	Huntington (+6.6%)	Broadlands (-2.6%)
2041-2051	Sylvester (+13258)	Te Rerenga (-720)	Sylvester (+9.1%)	Taharoa (-3.7%)
	Newstead (+4689)	Putaruru (-423)	Newstead (+4.7%)	Mahoenui (-3.6%)
	Huntington (+2156)	Te Kuiti (-390)	Opuawhanga (+4.3%)	Omori (-2.6%)
2051-2061	Sylvester (+7735)	Te Rerenga (-996)	Sylvester (+3.0%)	Pauanui Beach (-3.4%)
	Newstead (+1782)	Ngahinapouri (-960)	Rotoorangi (+1.7%)	Te Rerenga (-3.1%)
	Hautapu (+1243)	Whitianga (-551)	Pukerimu (+1.4%)	Kawhia Community (-3.1%)

Table 3 summarises the corresponding fastest and slowest growing CAUs for the low-variant population projection. For the most part, the same CAUs are the fastest growing as in the medium-variant projection, although comparing Tables 2 and 3 demonstrates the much

slower population growth in the low-variant projection, as well as the delayed timing of growth in areas on the fringes of Hamilton City. As with the medium-variant projection, rural areas dominate the list of CAUs projected to experience the most substantial decline.

Table 3: Fastest and slowest growing CAUs, low-variant projection

Period	Absolute population change		Relative population change	
	Most growth	Most decline	Fastest growth	Fastest decline
<i>Historical:</i>				
2006-2013	Huntington (+4370)	Strathmore (-290)	Sylvester (+43.0%)	Rangipo (-12.3%)
	Horsham Downs (+2470)	Mangakino (-270)	Swayne (+30.3%)	Mangakino (-4.1%)
	Sylvester (+2020)	Waihou-Walton (-260)	Huntington (+11.2%)	Kerepehi (-2.3%)
<i>Projected:</i>				
2013-2021	Sylvester (+3470)	Ohinemuri (-480)	Rotokauri (+44.0%)	Taharoa (-3.7%)
	Rotokauri (+3149)	Swarbrick (-432)	Newstead (+34.1%)	Broadlands (-3.4%)
	Peacocke (+3122)	Marokopa (-335)	Peacocke (+26.5%)	Marokopa (-2.9%)
2021-2031	Peacocke (+12601)	Huntington (-410)	Burbush (+31.9%)	Mahoenui (-3.3%)
	Hautapu (+4919)	Bryant (-344)	Peacocke (+16.0%)	Wairakei-Aratiatia (-2.7%)
	Burbush (+3815)	Glenview (-308)	Hautapu (+9.2%)	Broadlands (-2.7%)
2031-2041	Huntington (+4425)	Te Rerenga (-782)	Temple View (+9.1%)	Mahoenui (-3.7%)
	Burbush (+3726)	Eureka (-594)	Burbush (+6.7%)	Taharoa (-3.7%)
	Pokeno (+3460)	Te Kuiti (-359)	Lake Ngaroto (+6.6%)	Wairakei-Aratiatia (-2.6%)
2041-2051	Huntington (+8653)	Te Rerenga (-984)	Huntington (+5.1%)	Taharoa (-4.3%)
	Sylvester (+3436)	Kainui (-837)	Temple View (+3.8%)	Piopio (-3.7%)
	Temple View (+2171)	Peacocke (-800)	Sylvester (+3.7%)	Te Rerenga (-3.4%)
2051-2061	Sylvester (+3809)	Te Rerenga (-805)	Opuawhanga (+3.8%)	Mahoenui (-5.0%)
	Huntington (+1787)	Turangi (-645)	Sylvester (+2.9%)	Taharoa (-5.0%)
	Waerenga (+603)	Kainui (-620)	Waerenga (+1.4%)	Piopio (-4.5%)

4. Discussion and Conclusion

This report briefly outlined the methods and results of updated Census-Area-Unit-level demographic projections for the Waikato Region from 2013 to 2061. Following an earlier report on Territorial-Authority-Level population projections (Cameron and Cochrane, 2016), the overall picture is one of regional population growth. However, this overall growth masks substantial variation at the local level, with urban areas, peri-urban areas surrounding Hamilton City, and areas closer to Auckland continuing to grow throughout the projection period, while rural and peripheral areas tend to decline in population.

Comparing these results with the projections reported in Cameron and Cochrane (2014b) and Cameron and Cochrane (2015a), these projections show a lot more consistency with our *a priori* expectations compared with the 2014 projections. Expected growth cells in the outskirts of Hamilton City are projected to absorb most of the population growth, along with urban and peri-urban areas in the north of the region. These areas are projected to have the largest absolute and relative increases in population over the projection period, following the expected spatial pattern of growth in the region. In contrast, the fastest declining CAUs are those with small initial populations, as well as rural service towns. The same CAUs consistently rank at the top (or bottom) in terms of growth, which demonstrates that the projections do not wildly fluctuate over time. This gives us a high degree of confidence in the validity of these projections. However, in comparison with the 2015 projections these projections show some unexpected fluctuations in the population of urban CAUs in Hamilton City, which arise because of modelled changes in urban land use and residential densities.

One final point should be highlighted. At such small scales as those explored in this report, both population projections and planning decisions are endogenous and this creates a potential self-fulfilling prophesy quality to these projections. For instance, if population is projected to increase in a given census area unit, then planners may create infrastructure that supports the additional population, leading to more development in that area and more population. However, if population had been projected to increase elsewhere instead, then infrastructure spending, development and population growth would be directed towards that area instead. Thus, these projections should not be taken as a ‘most likely’ future, but as one tool among many in the planning process.

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Appendix

Appendix Table A1: CAU-level population estimates (2006, 2013) and projections (2021-2061), medium-variant projection

TA/CAU	2006	2013	2021	2031	2041	2051	2061
Thames-Coromandel District							
Coromandel	1520	1580	1724	1840	1841	1746	1582
Hikuaui	3340	3340	3443	3477	3454	3189	2869
Moanataiari	2540	2530	2527	2542	2519	2424	2251
Parawai	4390	4460	4542	4589	4549	4369	4043
Pauanui Beach	760	780	829	901	897	724	514
Tairua	1300	1280	1308	1332	1232	1098	886
Te Puru-Thornton Bay	960	880	903	912	891	846	761
Te Rerenga	4300	4300	4455	4537	4378	3658	2663
Whangamata	3640	3630	3678	3709	3641	3340	2827
Whitianga	3880	4550	4918	5426	5430	5138	4587
Hauraki District							
Hauraki Plains	2610	2610	2634	2643	2619	2493	2257
Kaiaua	690	820	857	928	954	932	852
Kerepehi	530	450	465	474	470	442	386
Ngatea	1190	1290	1298	1354	1307	1191	899
Ohinemuri	3240	3250	2845	2697	2495	2177	1859
Paeroa	4080	4070	4551	4877	4916	4699	4355
Turua	1370	1380	1370	1385	1297	995	881
Waihi	4600	4730	4926	5162	5163	4883	4458
Waikato District							
Buckland South	820	890	1132	1507	1908	2687	2656
Eureka	1890	2290	2644	2857	2336	2173	2132
Gordonton	980	1200	1229	1374	1123	1045	1025
Horotiu	820	800	933	1233	1408	1566	1686
Huntly East	4050	4310	4708	5032	5077	4993	5395
Huntly West	3060	3010	3068	3197	3214	3169	3345
Kainui	2510	2910	3551	4340	4488	4175	4097
Mangatawhiri	1420	1600	1773	1858	2583	2839	3000
Maramarua	980	1060	1277	1472	1831	2284	2537
Matangi	1840	2250	2453	2457	2680	2998	3174
Meremere	480	490	687	729	724	697	736
Ngaruawahia	5300	5440	5396	5549	5630	5606	5915
Onewhero	3890	4000	4009	4354	4782	5235	5550
Opuawhanga	230	240	261	289	539	823	808
Otaua	2230	2370	2545	2478	2832	3287	3522
Pokeno	1760	1860	2587	8063	11864	11863	12682
Pukeoware	240	240	254	250	279	320	339
Raglan	2720	2870	3523	3878	3631	3378	3394
Redoubt	200	210	630	1431	3072	3432	3626
Rotowaro	0	0	0	0	0	0	0
Tamahere-Tauwhare	4750	5910	6549	6636	7542	8677	9225
Taupiri Community	470	440	524	625	640	633	667
Te Akau	990	970	1105	1236	1487	1960	2132
Te Kauwhata	1240	1540	2150	2941	3016	3015	3153
Te Kowhai	1310	1570	1710	1725	1989	2278	2425
Te Uku	1710	1990	2509	2616	2994	4228	4564
Tuakau	3640	4400	5038	5750	5489	5492	6122

TA/CAU	2006	2013	2021	2031	2041	2051	2061
Waerenga	1830	2670	3222	3787	4770	5405	5948
Waikato Western Hills	3920	4160	4694	5003	5820	6792	7417
Whatawhata	2120	2600	3097	3240	3734	4205	4565
Whitikahu	2110	2220	2255	2265	2571	2966	3196
Matamata-Piako District							
Hinuera	910	950	951	947	927	915	902
Matamata North	2680	3030	3135	3305	3412	3412	3417
Matamata South	3750	4340	4544	5221	5668	5769	6013
Morrinsville East	4150	4610	5094	5520	5920	5941	5945
Morrinsville West	2620	2700	2836	2986	3097	3094	3110
Okauia	1960	2050	2068	2081	2145	2224	2212
Springdale	2550	2560	2545	2552	2572	2577	2601
Tahuroa	2590	2770	2881	3201	3494	3577	3664
Te Aroha	3850	4060	4347	4912	4995	5027	5079
Te Poi	840	840	813	803	800	791	791
Waharoa	530	490	580	583	583	582	583
Waihou-Walton	4450	4190	4177	4162	4126	4103	4094
Waitoa	320	320	465	468	468	467	467
Hamilton City							
Bader	3920	4250	4418	4446	4350	4373	4674
Beerescourt	3220	3350	3378	3230	3068	3052	3055
Bryant	5930	5930	5893	5624	5339	5316	5324
Brymer	2380	2790	2923	2820	2816	2790	2793
Burbush	210	180	1452	7879	10028	10031	10040
Chartwell	2440	2650	2681	2565	2436	2417	2416
Chedworth	3670	3690	3812	3655	3471	3444	3442
Clarkin	3130	3230	3188	3066	2912	2882	2877
Claudlands	2480	2560	2291	2308	2307	2341	2451
Crawshaw	2960	2980	2990	2889	2745	2712	2706
Dinsdale North	3900	4340	4346	4155	3950	3913	3907
Dinsdale South	4160	4140	4198	4204	4031	4006	4018
Enderley	4060	4430	4373	4574	4674	4808	5026
Fairview Downs	3480	3540	3673	3517	3347	3316	3319
Flagstaff	3900	4050	4400	4216	4018	4007	4026
Frankton Junction	1750	1880	1843	1885	1954	1905	1995
Glenview	5280	5450	5756	5506	5220	5183	5183
Grandview	3110	3340	3277	3161	3002	2970	2964
Hamilton Central	2820	3110	2996	3339	3718	3779	4232
Hamilton East	3820	4090	4064	4499	4913	4949	5399
Hamilton Lake	4030	4340	4418	4698	4875	4910	5050
Hillcrest West	3730	3850	3801	3668	3485	3430	3415
Horsham Downs	2680	5150	8703	11656	13333	13359	13701
Huntington	3980	8350	9621	9119	17235	19391	20495
Insoll	2690	2700	2668	2572	2444	2406	2395
Maeroa	3740	3850	3909	3741	3554	3516	3510
Melville	4960	5030	4977	4808	4568	4514	4503
Nawton	4600	4760	4711	4493	4267	4232	4229
Naylor	4380	4580	4444	4482	4438	4504	4670
Newstead	180	230	2960	6860	8070	12760	14542
Peachgrove	2940	3410	3042	3174	3259	3295	3482
Peacocke	470	560	4411	17234	19805	19740	19889
Porritt	1760	1850	2025	1980	1884	1859	1855
Pukete	2490	2420	2405	2307	2190	2176	2177
Pukete West	2180	2140	2129	2042	1987	1966	1962
Queenwood	3120	3210	3266	3119	2962	2941	2950

TA/CAU	2006	2013	2021	2031	2041	2051	2061
Riverlea	2630	2740	2890	2764	2624	2617	2615
Rotokauri	190	180	3647	6665	7984	8108	8535
Rototuna	3300	3390	3335	3195	3034	3011	3010
Silverdale	2630	2750	2809	2837	2760	2782	2833
Swarbrick	4240	4730	4300	4507	4725	4923	5365
Sylvester	180	2200	6335	5737	9552	22811	30546
Te Rapa	230	350	487	854	874	852	843
Te Rapa North	170	150	164	545	678	721	817
Temple View	1400	1270	1506	2747	10042	10685	10693
University	5220	6010	5835	6123	6233	6261	6505
Waipa District							
Allen Road	160	220	252	275	281	263	255
Cambridge Central	810	790	806	787	822	795	792
Cambridge North	2990	3140	2976	2923	3049	2928	2826
Cambridge West	2640	2820	2678	2872	3015	2903	2908
Hautapu	1660	1990	4429	9593	11673	13309	13770
Kaipaki	940	1020	1099	1173	1246	1267	1286
Karapiro	2520	2760	2950	3106	3247	3572	3619
Kihikihi	2030	2060	2223	2266	2362	2291	2286
Kihikihi Flat	710	820	1936	2318	2985	3260	3309
Lake Cameron	1080	1230	1387	1695	1911	2119	2122
Lake Ngaroto	530	580	868	1536	2385	2515	2520
Leamington East	3850	3990	3747	3669	3834	3693	3669
Leamington West	3100	3680	3664	3908	4085	3922	3891
Ngahinapouri	2030	2210	2516	2897	3126	3518	3623
Ohaupo	430	530	547	616	706	688	687
Pirongia	1370	1480	1548	1579	1643	1638	1637
Pokuru	470	550	566	579	590	585	583
Pukerimu	410	480	997	2225	2609	2942	2928
Rotongata	850	860	890	904	940	942	947
Rotoorangi	1750	2010	2062	2341	3130	3373	3992
Swayne	240	1530	2381	2364	2453	2366	2348
Te Awamutu Central	3240	3450	3219	3327	3505	3358	3332
Te Awamutu East	2590	2900	3227	3207	3365	3236	3208
Te Awamutu South	3030	3040	2984	2914	3052	2980	2975
Te Awamutu West	1260	1370	1501	1473	1562	1503	1491
Te Pahu	1220	1330	1402	1475	1536	1548	1555
Te Rahu	900	940	1173	1262	1357	1380	1399
Te Rore	430	440	456	468	483	485	487
Tokanui	450	460	468	465	467	445	419
Otorohanga District							
Kawhia Community	400	350	357	419	408	335	244
Otorohanga	2660	2650	2794	3000	3022	2885	2579
Otorohanga Rural East	4100	4180	4140	4270	4255	4076	3855
Otorohanga Rural West	1720	1930	1985	1990	1892	1753	1558
Te Kawa	430	480	495	511	511	500	467
South Waikato District							
Amisfield	160	160	170	162	155	142	128
Aotea	3240	3150	3135	3100	2929	2660	2265
Arapuni	2190	2310	2248	2191	2035	1877	1746
Kinleith	240	250	244	244	232	218	193
Lichfield	990	1040	1012	983	947	907	878
Mangakaretu	220	240	387	387	384	379	373
Matarawa	2080	1980	1948	1948	1856	1686	1481

TA/CAU	2006	2013	2021	2031	2041	2051	2061
Paraonui	1830	1820	1798	1765	1618	1436	1255
Parkdale	730	700	689	694	629	526	453
Putaruru	3840	3940	3924	3970	3785	3362	2995
Stanley Park	2120	2140	2136	2096	1996	1849	1651
Strathmore	2470	2180	2151	2146	2018	1854	1636
Tapapa	1060	1050	1043	1037	1017	978	935
Tirau	750	720	712	708	671	594	512
Tokoroa Central	830	760	744	748	688	629	555
Wawa	480	740	744	750	742	725	705
Waitomo District							
Mahoenui	490	420	395	319	277	191	200
Marokopa	1600	1610	1341	1272	1180	1073	964
Mokauiti	1210	1070	1015	989	944	895	811
Piopio	480	420	392	372	342	315	252
Taharoa	230	240	186	172	122	84	66
Te Kuiti	4580	4430	4534	4366	4066	3676	3133
Waipa Valley	1010	1100	1089	1066	1020	958	868
Taupo District							
Acacia Bay	1270	1510	1585	1635	1640	1601	1516
Broadlands	540	680	515	394	303	232	177
Hilltop	3700	3730	3769	3836	3889	3820	3674
Kinloch	340	520	739	784	803	785	692
Kuratau	280	290	331	333	334	316	298
Lakewood	1270	1500	1713	2019	2229	2239	2168
Mangakino	1060	790	869	899	926	925	871
Marotiri	1440	1650	1656	1640	1562	1373	1243
Maunganamu	210	430	581	585	588	578	560
Motuoapa	230	250	314	444	475	462	366
Nukuhau	1560	1600	1665	1697	1710	1680	1615
Omori	230	200	273	285	302	232	176
Oruanui	2020	2380	2479	2524	2560	2510	2440
Rangatira	90	80	131	132	170	167	163
Rangatira Park	640	730	810	817	819	804	771
Rangipo	250	100	103	104	104	103	104
Richmond Heights	2210	2220	2536	3397	3513	3446	3300
Tatua	190	300	310	318	323	317	305
Tauhara	4470	4350	4376	4481	4488	4440	4296
Taupo Central	3740	3780	3870	3931	3965	3891	3745
Taupo East	10	10	50	50	51	51	50
Tokaanu	200	200	206	205	203	155	133
Tongariro	450	530	568	576	594	568	458
Turangi	3370	3140	3225	3369	3389	3196	2843
Waipahihi	1800	1980	2187	2376	2396	2344	2237
Wairakei-Aratiatia	700	640	569	436	335	257	195
Waitahanui	470	440	503	536	536	437	380
Wharewaka	470	510	606	730	1200	1375	1317
Rotorua District							
Arahiwi	150	180	446	446	440	422	393
Golden Springs	1330	1410	1329	1359	1340	1245	1113
Ngakuru	1750	1770	1701	1715	1682	1523	1322
Reporoa	500	470	445	485	465	420	346

Appendix Table A2: CAU-level population estimates (2006, 2013) and projections (2021-2061), low-variant projection

TA/CAU	2006	2013	2021	2031	2041	2051	2061
Thames-Coromandel District							
Coromandel	1520	1580	1626	1630	1573	1432	1224
Hikuai	3340	3340	3334	3246	3111	2724	2324
Moanataiari	2540	2530	2518	2502	2455	2315	2049
Parawai	4390	4460	4482	4480	4387	4133	3669
Pauanui Beach	760	780	817	791	699	599	393
Tairua	1300	1280	1239	1184	1081	833	547
Te Puru-Thornton Bay	960	880	884	869	840	772	671
Te Rerenga	4300	4300	4285	4109	3327	2344	1538
Whangamata	3640	3630	3604	3588	3430	3037	2465
Whitianga	3880	4550	4532	4515	4406	4066	3482
Hauraki District							
Hauraki Plains	2610	2610	2553	2497	2282	2096	1924
Kaiaua	690	820	859	887	878	784	585
Kerepehi	530	450	460	462	417	309	230
Ngatea	1190	1290	1262	1253	983	719	509
Ohinemuri	3240	3250	2770	2504	2290	1876	1395
Paeroa	4080	4070	4374	4507	4509	4143	3637
Turua	1370	1380	1208	1108	900	773	652
Waihi	4600	4730	4833	4873	4824	4448	4016
Waikato District							
Buckland South	820	890	1054	1380	1516	1586	1658
Eureka	1890	2290	2529	2649	2055	1680	1763
Gordonton	980	1200	1217	1274	988	808	674
Horotiu	820	800	888	1025	1177	1247	1264
Huntly East	4050	4310	4225	4941	4970	4846	4827
Huntly West	3060	3010	3095	3163	3196	3128	3054
Kainui	2510	2910	3456	4102	4591	3754	3134
Mangatawhiri	1420	1600	1736	1749	2288	2430	2664
Maramarua	980	1060	1241	1347	1496	1632	1693
Matangi	1840	2250	2380	2401	2540	2714	2841
Meremere	480	490	695	725	728	705	683
Ngaruawahia	5300	5440	5371	5506	5612	5533	5416
Onewhero	3890	4000	3977	4266	4458	4609	4836
Opuawhanga	230	240	257	277	349	372	540
Otaua	2230	2370	2470	2386	2525	2742	2893
Pokeno	1760	1860	2550	5758	9218	11226	11687
Pukeoware	240	240	247	243	256	276	289
Raglan	2720	2870	3451	3840	3763	3490	3319
Redoubt	200	210	655	1471	2455	3380	3527
Rotowaro	0	0	0	0	0	0	0
Tamahere-Tauwhare	4750	5910	6366	6365	6848	7428	7738
Taupiri Community	470	440	527	597	622	616	604
Te Akau	990	970	1073	1122	1207	1288	1320
Te Kauwhata	1240	1540	2151	2834	3018	3011	2935
Te Kowhai	1310	1570	1681	1669	1815	1957	2015
Te Uku	1710	1990	2452	2511	2724	2876	2920
Tuakau	3640	4400	5008	5739	5636	5370	5369

TA/CAU	2006	2013	2021	2031	2041	2051	2061
Waerenga	1830	2670	3102	3509	3742	4041	4644
Waikato Western Hills	3920	4160	4499	4613	4958	5298	5483
Whatawhata	2120	2600	2948	3075	3349	3615	3743
Whitikahu	2110	2220	2247	2201	2332	2476	2526
Matamata-Piako District							
Hinuera	910	950	938	914	894	876	855
Matamata North	2680	3030	3083	3109	3152	3161	3145
Matamata South	3750	4340	4482	4850	5034	5014	4930
Morrinsville East	4150	4610	4828	5139	5243	5228	5208
Morrinsville West	2620	2700	2827	3032	3088	3048	3042
Okauia	1960	2050	1997	1960	1909	1850	1790
Springdale	2550	2560	2518	2516	2526	2455	2404
Tahuroa	2590	2770	2775	2961	3049	2959	2911
Te Aroha	3850	4060	4279	4595	4674	4435	4209
Te Poi	840	840	809	792	787	777	740
Waharoa	530	490	581	582	584	583	582
Waihou-Walton	4450	4190	4145	4109	4059	3885	3782
Waitoa	320	320	466	467	468	467	467
Hamilton City							
Bader	3920	4250	4437	4411	4303	4280	4255
Beerescourt	3220	3350	3400	3207	3039	2888	2892
Bryant	5930	5930	5927	5583	5287	5021	5031
Brymer	2380	2790	2921	2800	2789	2663	2659
Burbush	210	180	254	4069	7796	8061	8127
Chartwell	2440	2650	2715	2566	2434	2311	2312
Chedworth	3670	3690	3786	3610	3425	3251	3252
Clarkin	3130	3230	3199	3034	2882	2735	2733
Claudlands	2480	2560	2316	2296	2277	2348	2333
Crawshaw	2960	2980	3021	2869	2727	2588	2584
Dinsdale North	3900	4340	4330	4130	4024	3825	3824
Dinsdale South	4160	4140	4177	4108	3962	3789	3789
Enderley	4060	4430	4394	4542	4630	4786	4809
Fairview Downs	3480	3540	3639	3471	3300	3138	3135
Flagstaff	3900	4050	4443	4201	3991	3814	3819
Frankton Junction	1750	1880	1851	1873	1948	1905	1939
Glenview	5280	5450	5779	5471	5294	5033	5009
Grandview	3110	3340	3308	3138	2981	2829	2827
Hamilton Central	2820	3110	2967	3309	3668	4031	4102
Hamilton East	3820	4090	4067	4476	4874	5142	5228
Hamilton Lake	4030	4340	4461	4669	4846	4887	4837
Hillcrest West	3730	3850	3818	3642	3468	3290	3279
Horsham Downs	2680	5150	8077	11444	12694	12610	12568
Huntington	3980	8350	9473	9063	13488	22141	23928
Insoll	2690	2700	2678	2554	2432	2307	2300
Maeroa	3740	3850	3917	3715	3528	3349	3346
Melville	4960	5030	5025	4774	4538	4308	4290
Nawton	4600	4760	4715	4461	4232	4018	4019
Naylor	4380	4580	4476	4456	4386	4443	4419
Newstead	180	230	2406	5648	6783	7710	7756
Peachgrove	2940	3410	3076	3158	3229	3364	3349
Peacocke	470	560	3682	16283	19514	18714	18721
Porritt	1760	1850	2047	2010	1920	1837	1831
Pukete	2490	2420	2425	2290	2171	2061	2063
Pukete West	2180	2140	2135	2029	1971	1870	1869
Queenwood	3120	3210	3278	3097	2936	2788	2790

TA/CAU	2006	2013	2021	2031	2041	2051	2061
Riverlea	2630	2740	2866	2725	2600	2469	2469
Rotokauri	190	180	3329	5021	6903	7186	7199
Rototuna	3300	3390	3355	3172	3009	2857	2858
Silverdale	2630	2750	2773	2819	2740	2704	2687
Swarbrick	4240	4730	4298	4490	4629	5115	5072
Sylvester	180	2200	5670	5893	7919	11355	15165
Te Rapa	230	350	396	458	622	638	630
Te Rapa North	170	150	132	264	485	492	492
Temple View	1400	1270	1484	1998	4761	6932	7407
University	5220	6010	5885	6091	6202	6437	6341
Waipa District							
Allen Road	160	220	245	258	262	235	211
Cambridge Central	810	790	790	778	787	757	749
Cambridge North	2990	3140	2987	2886	2891	2876	2832
Cambridge West	2640	2820	2680	2805	2822	2812	2780
Hautapu	1660	1990	3469	8388	9905	10137	9980
Kaipaki	940	1020	1071	1122	1137	1121	1076
Karapiro	2520	2760	2911	2941	2974	2933	2804
Kihikihi	2030	2060	2197	2171	2214	2207	2180
Kihikihi Flat	710	820	1844	2171	2460	2514	2421
Lake Cameron	1080	1230	1351	1469	1575	1540	1478
Lake Ngaroto	530	580	901	1264	2398	2446	2375
Leamington East	3850	3990	3735	3618	3628	3612	3585
Leamington West	3100	3680	3649	3713	3873	3825	3752
Ngahinapouri	2030	2210	2394	2610	2732	2752	2709
Ohaupo	430	530	535	583	647	623	594
Pirongia	1370	1480	1518	1540	1565	1571	1568
Pokuru	470	550	562	563	564	553	514
Pukerimu	410	480	980	1665	2176	2176	2168
Rotongata	850	860	881	883	891	893	874
Rotoorangi	1750	2010	2055	2060	2085	2043	1945
Swayne	240	1530	2370	2337	2336	2323	2310
Te Awamutu Central	3240	3450	3212	3193	3320	3303	3228
Te Awamutu East	2590	2900	3163	3159	3172	3121	3053
Te Awamutu South	3030	3040	2974	2877	2885	2914	2865
Te Awamutu West	1260	1370	1486	1450	1473	1464	1455
Te Pahu	1220	1330	1382	1401	1430	1380	1315
Te Rahu	900	940	1107	1167	1211	1213	1187
Te Rore	430	440	451	456	463	466	468
Tokanui	450	460	467	462	450	418	379
Otorohanga District							
Kawhia Community	400	350	342	395	359	257	174
Otorohanga	2660	2650	2639	2742	2701	2446	2108
Otorohanga Rural East	4100	4180	4078	3985	3786	3527	3220
Otorohanga Rural West	1720	1930	1899	1865	1690	1492	1182
Te Kawa	430	480	493	490	481	469	447
South Waikato District							
Amisfield	160	160	160	158	149	136	120
Aotea	3240	3150	2982	2928	2677	2315	1874
Arapuni	2190	2310	2138	1935	1779	1575	1477
Kinleith	240	250	234	224	210	184	164
Lichfield	990	1040	998	960	904	850	809
Mangakaretu	220	240	386	384	379	371	363
Matarawa	2080	1980	1950	1891	1742	1558	1258

TA/CAU	2006	2013	2021	2031	2041	2051	2061
Paraonui	1830	1820	1741	1577	1253	955	734
Parkdale	730	700	658	630	504	360	263
Putaruru	3840	3940	3840	3643	3317	2862	2497
Stanley Park	2120	2140	2087	2041	1929	1745	1544
Strathmore	2470	2180	2149	2120	1988	1783	1436
Tapapa	1060	1050	1029	1007	943	881	833
Tirau	750	720	671	640	605	529	402
Tokoroa Central	830	760	726	715	655	591	508
Wawa	480	740	739	743	720	686	657
Waitomo District							
Mahoenui	490	420	340	244	167	165	99
Marokopa	1600	1610	1275	1164	1051	937	803
Mokauiti	1210	1070	990	945	861	769	680
Piopio	480	420	389	326	257	177	112
Taharoa	230	240	177	153	105	67	40
Te Kuiti	4580	4430	4449	4161	3802	3281	2737
Waipa Valley	1010	1100	1076	1028	939	853	767
Taupo District							
Acacia Bay	1270	1510	1557	1575	1584	1539	1432
Broadlands	540	680	516	393	302	231	173
Hilltop	3700	3730	3823	3861	3878	3800	3621
Kinloch	340	520	690	752	756	719	541
Kuratau	280	290	324	325	299	262	197
Lakewood	1270	1500	1673	1840	1849	1811	1740
Mangakino	1060	790	842	866	870	839	780
Marotiri	1440	1650	1648	1632	1559	1351	1161
Maunganamu	210	430	496	570	573	561	537
Motuoapa	230	250	267	272	273	208	157
Nukuhau	1560	1600	1658	1676	1683	1649	1571
Omori	230	200	272	280	278	212	160
Oruanui	2020	2380	2414	2491	2500	2422	2233
Rangatira	90	80	131	132	132	132	130
Rangatira Park	640	730	804	812	817	800	760
Rangipo	250	100	103	103	104	103	99
Richmond Heights	2210	2220	2337	2594	2688	2630	2500
Tatua	190	300	304	309	312	307	270
Tauhara	4470	4350	4400	4442	4474	4413	4232
Taupo Central	3740	3780	3830	3861	3907	3832	3647
Taupo East	10	10	50	50	51	50	50
Tokaanu	200	200	200	193	156	134	132
Tongariro	450	530	530	520	486	399	326
Turangi	3370	3140	3229	3300	3210	2603	1957
Waipahihi	1800	1980	2083	2234	2293	2239	2115
Wairakei-Aratiatia	700	640	548	418	321	245	184
Waitahanui	470	440	476	513	454	347	261
Wharewaka	470	510	537	608	611	595	560
Rotorua District							
Arahiwi	150	180	446	438	427	403	370
Golden Springs	1330	1410	1310	1315	1273	1157	994
Ngakuru	1750	1770	1655	1625	1545	1370	1138
Reporoa	500	470	438	464	430	361	311

Appendix Table A3: CAU-level household estimates (2013) and projections (2021-2061), medium-variant projection

TA/CAU	2013	2021	2031	2041	2051	2061
Thames-Coromandel District						
Coromandel	655	764	860	883	855	783
Hikuai	1300	1434	1527	1556	1467	1334
Moanataiari	1194	1276	1354	1376	1352	1269
Parawai	1831	1995	2125	2161	2119	1982
Pauanui Beach	355	403	462	472	389	279
Tairua	573	626	672	638	581	473
Te Puru-Thornton Bay	406	446	475	476	461	420
Te Rerenga	1815	2013	2161	2139	1825	1343
Whangamata	1591	1725	1834	1847	1730	1480
Whitianga	1888	2184	2540	2608	2520	2273
Hauraki District						
Hauraki Plains	969	1058	1128	1163	1137	1045
Kaiaua	344	389	447	478	480	446
Kerepehi	169	189	204	211	204	181
Ngatea	553	603	668	671	627	481
Ohinemuri	1332	1262	1271	1223	1096	950
Paeroa	1713	2073	2360	2476	2430	2287
Turua	503	541	581	566	446	401
Waihi	2085	2350	2616	2723	2644	2452
Waikato District						
Buckland South	304	415	583	755	1086	1091
Eureka	783	970	1107	926	880	878
Gordonton	357	392	463	387	368	367
Horotiu	291	365	509	594	675	739
Huntly East	1607	1883	2126	2193	2204	2421
Huntly West	943	1031	1135	1166	1176	1261
Kainui	987	1292	1668	1763	1676	1672
Mangatawhiri	567	674	746	1061	1191	1279
Maramarua	385	498	606	771	983	1110
Matangi	768	898	950	1059	1211	1303
Meremere	157	236	264	268	264	283
Ngaruawahia	1795	1911	2075	2153	2190	2349
Onewhero	1466	1577	1809	2031	2272	2448
Opuawhanga	85	99	115	220	344	343
Otaua	846	974	1002	1171	1389	1513
Pokeno	639	954	3140	4723	4826	5244
Pukeoware	88	100	104	118	138	149
Raglan	1194	1572	1828	1750	1663	1699
Redoubt	75	242	581	1274	1455	1562
Rotowaro	0	0	0	0	0	0
Tamahere-Tauwhare	1958	2328	2492	2895	3404	3678
Taupiri Community	169	216	272	285	288	309
Te Akau	363	444	525	645	870	961
Te Kauwhata	576	863	1247	1308	1336	1420
Te Kowhai	570	667	710	837	979	1060
Te Uku	714	966	1064	1245	1797	1971
Tuakau	1507	1851	2232	2178	2227	2523

TA/CAU	2013	2021	2031	2041	2051	2061
Waerenga	695	901	1118	1440	1667	1865
Waikato Western Hills	1501	1817	2045	2433	2901	3220
Whatawhata	868	1109	1226	1444	1662	1834
Whitikahu	739	806	855	992	1170	1281
Matamata-Piako District						
Hinuera	348	360	366	362	361	358
Matamata North	1306	1395	1503	1568	1584	1594
Matamata South	1716	1856	2179	2389	2457	2574
Morrinsville East	1838	2097	2322	2515	2551	2565
Morrinsville West	1014	1100	1183	1240	1251	1264
Okauia	749	781	803	836	875	875
Springdale	923	948	971	989	1001	1016
Tahuroa	983	1055	1198	1321	1367	1407
Te Aroha	1723	1905	2199	2259	2297	2333
Te Poi	295	295	298	300	299	301
Waharoa	152	186	191	193	195	196
Waihou-Walton	1524	1569	1597	1599	1607	1611
Waitoa	124	187	192	194	195	197
Hamilton City						
Bader	1488	1651	1744	1796	1867	2032
Beerescourt	1291	1390	1396	1395	1435	1462
Bryant	2205	2339	2344	2342	2411	2458
Brymer	889	994	1007	1059	1084	1105
Burbush	59	510	2908	3895	4028	4105
Chartwell	936	1010	1015	1015	1041	1059
Chedworth	1266	1397	1406	1405	1441	1467
Clarkin	1135	1196	1208	1208	1235	1255
Claudelands	1079	1031	1091	1147	1204	1283
Crawshaw	942	1009	1024	1023	1046	1062
Dinsdale North	1475	1577	1583	1584	1622	1649
Dinsdale South	1456	1576	1658	1673	1719	1755
Enderley	1569	1653	1816	1953	2077	2210
Fairview Downs	1154	1278	1285	1287	1318	1343
Flagstaff	1534	1780	1791	1796	1851	1894
Frankton Junction	755	790	848	925	933	995
Glenview	1937	2184	2194	2189	2247	2287
Grandview	1123	1176	1191	1191	1218	1237
Hamilton Central	1366	1405	1644	1927	2024	2308
Hamilton East	1378	1462	1700	1954	2034	2260
Hamilton Lake	1584	1722	1923	2100	2186	2289
Hillcrest West	1232	1298	1316	1315	1339	1357
Horsham Downs	1553	2802	3941	4744	4914	5131
Huntington	2657	3268	3253	6470	7526	8099
Insoll	777	819	829	829	844	855
Maeroa	1453	1575	1583	1583	1619	1645
Melville	1675	1769	1795	1794	1833	1862
Nawton	1697	1793	1795	1794	1840	1872
Naylor	1809	1874	1985	2068	2169	2290
Newstead	84	1157	2815	3486	5698	6611
Peachgrove	1325	1263	1383	1495	1562	1681
Peacocke	221	1862	7639	9239	9520	9766
Porridd	614	718	737	738	753	765
Pukete	848	900	906	906	930	947
Pukete West	705	748	754	772	790	802
Queenwood	1198	1301	1304	1304	1338	1367

TA/CAU	2013	2021	2031	2041	2051	2061
Riverlea	992	1117	1122	1120	1155	1175
Rotokauri	59	1282	2459	3101	3255	3489
Rototuna	1173	1232	1239	1238	1270	1293
Silverdale	917	1000	1060	1086	1131	1173
Swarbrick	1834	1780	1959	2161	2328	2583
Sylvester	642	1975	1878	3291	8125	11077
Te Rapa	231	343	632	680	685	691
Te Rapa North	47	54	191	250	274	317
Temple View	334	422	809	3113	3424	3489
University	1687	1749	1927	2064	2144	2268
Waipa District						
Allen Road	75	93	108	114	108	107
Cambridge Central	355	393	411	440	434	438
Cambridge North	1179	1213	1278	1367	1337	1306
Cambridge West	1232	1271	1461	1573	1542	1564
Hautapu	666	1609	3736	4662	5414	5670
Kaipaki	364	426	487	531	550	565
Karapiro	971	1126	1272	1363	1527	1567
Kihikihi	753	882	964	1031	1018	1028
Kihikihi Flat	299	766	983	1298	1444	1483
Lake Cameron	414	507	664	768	867	879
Lake Ngaroto	208	339	643	1023	1099	1115
Leamington East	1537	1567	1645	1763	1730	1739
Leamington West	1391	1503	1719	1843	1802	1810
Ngahinapouri	762	942	1163	1287	1475	1538
Ohaupo	193	216	261	307	305	308
Pirongia	532	604	661	705	716	724
Pokuru	193	216	236	247	250	251
Pukerimu	168	379	907	1090	1252	1261
Rotongata	302	339	369	394	402	409
Rotoorangi	706	787	958	1313	1441	1726
Swayne	454	768	817	869	854	858
Te Awamutu Central	1422	1440	1596	1724	1683	1690
Te Awamutu East	1145	1383	1474	1586	1554	1559
Te Awamutu South	1219	1300	1361	1462	1454	1469
Te Awamutu West	492	585	615	669	656	658
Te Pahu	479	548	618	661	678	690
Te Rahu	345	468	540	595	617	632
Te Rore	162	182	200	212	217	220
Tokanui	152	168	180	185	179	171
Otorohanga District						
Kawhia Community	146	162	203	208	181	138
Otorohanga	983	1127	1289	1368	1383	1289
Otorohanga Rural East	1255	1351	1484	1559	1581	1560
Otorohanga Rural West	687	769	821	823	807	748
Te Kawa	149	167	184	194	201	196
South Waikato District						
Amisfield	63	72	72	72	68	63
Aotea	1093	1166	1211	1195	1122	971
Arapuni	859	896	917	890	849	803
Kinleith	95	99	104	104	100	90
Lichfield	385	402	410	413	408	402
Mangakaretu	92	158	166	172	176	176
Matarawa	780	823	864	860	808	721

TA/CAU	2013	2021	2031	2041	2051	2061
Paraonui	720	762	786	753	691	614
Parkdale	268	283	300	284	245	215
Putaruru	1595	1702	1809	1802	1655	1499
Stanley Park	812	868	895	890	853	774
Strathmore	783	828	868	853	810	727
Tapapa	385	410	428	439	437	424
Tirau	313	331	346	343	314	275
Tokoroa Central	300	315	332	319	302	271
Wawa	281	303	321	332	335	331
Waitomo District						
Mahoenui	167	167	143	130	93	99
Marokopa	609	541	542	525	497	456
Mokauiti	398	403	415	414	409	378
Piopio	170	169	170	163	156	127
Taharoa	86	72	70	52	37	30
Te Kuiti	1625	1774	1804	1756	1654	1439
Waipa Valley	383	404	418	418	409	379
Taupo District						
Acacia Bay	570	630	685	705	705	677
Broadlands	213	170	137	108	85	66
Hilltop	1422	1513	1622	1688	1699	1657
Kinloch	198	296	331	348	349	312
Kuratau	114	137	145	149	145	139
Lakewood	594	715	887	1005	1034	1016
Mangakino	312	361	394	416	426	407
Marotiri	552	583	609	595	536	492
Maunganamu	150	213	226	234	235	231
Motuoapa	105	139	207	227	226	182
Nukuhau	609	667	716	741	746	728
Omori	93	134	147	160	126	97
Oruanui	819	899	963	1003	1008	993
Rangatira	39	67	72	94	95	94
Rangatira Park	291	340	361	372	374	364
Rangipo	30	33	35	36	36	37
Richmond Heights	783	942	1329	1411	1418	1377
Tatua	99	108	116	121	122	119
Tauhara	1562	1656	1786	1836	1861	1826
Taupo Central	1481	1598	1710	1770	1780	1738
Taupo East	3	16	17	17	18	18
Tokaanu	75	81	85	86	68	59
Tongariro	129	146	156	165	161	132
Turangi	1176	1272	1400	1445	1397	1260
Waipahihi	762	887	1014	1050	1053	1019
Wairakei-Aratiatia	204	191	154	122	95	74
Waitahanui	162	195	219	225	188	166
Wharewaka	252	315	400	675	793	770
Rotorua District						
Arahiwi	108	300	328	336	332	316
Golden Springs	928	982	1097	1127	1078	983
Ngakuru	1210	1305	1437	1468	1368	1212
Reporoa	329	350	417	416	387	325

Appendix Table A4: CAU-level household estimates (2013) and projections (2021-2061), low-variant projection

TA/CAU	2013	2021	2031	2041	2051	2061
Thames-Coromandel District						
Coromandel	655	721	762	755	702	606
Hikuai	1300	1389	1426	1403	1254	1082
Moanataiari	1194	1271	1333	1343	1293	1156
Parawai	1831	1968	2076	2087	2007	1801
Pauanui Beach	355	397	406	368	322	214
Tairua	573	593	598	561	441	293
Te Puru-Thornton Bay	406	436	452	449	422	370
Te Rerenga	1815	1935	1958	1628	1171	777
Whangamata	1591	1690	1775	1743	1575	1292
Whitianga	1888	2012	2115	2119	1996	1728
Hauraki District						
Hauraki Plains	969	1027	1070	1017	960	895
Kaiaua	344	390	429	442	406	307
Kerepehi	169	187	200	188	143	108
Ngatea	553	586	620	506	381	274
Ohinemuri	1332	1230	1183	1127	949	717
Paeroa	1713	1994	2188	2278	2152	1919
Turua	503	477	466	394	348	298
Waihi	2085	2308	2478	2553	2420	2219
Waikato District						
Buckland South	304	387	536	602	644	685
Eureka	783	929	1030	818	683	730
Gordonton	357	389	431	342	286	243
Horotiu	291	347	425	499	540	557
Huntly East	1607	1692	2095	2157	2149	2179
Huntly West	943	1041	1127	1165	1166	1158
Kainui	987	1259	1582	1812	1514	1287
Mangatawhiri	567	661	705	944	1024	1143
Maramarua	385	485	557	633	706	745
Matangi	768	872	932	1008	1101	1173
Meremere	157	239	264	271	268	264
Ngaruawahia	1795	1904	2066	2155	2171	2163
Onewhero	1466	1566	1779	1902	2009	2146
Opuawhanga	85	97	111	143	156	231
Otaua	846	947	969	1049	1164	1250
Pokeno	639	941	2250	3686	4587	4861
Pukeoware	88	97	101	109	120	128
Raglan	1194	1542	1816	1821	1726	1671
Redoubt	75	252	599	1023	1439	1529
Rotowaro	0	0	0	0	0	0
Tamahere-Tauwhare	1958	2266	2398	2640	2927	3103
Taupiri Community	169	218	261	278	282	281
Te Akau	363	432	478	526	574	599
Te Kauwhata	576	865	1206	1315	1340	1330
Te Kowhai	570	656	689	767	845	886
Te Uku	714	945	1025	1138	1228	1269
Tuakau	1507	1842	2236	2246	2187	2226

TA/CAU	2013	2021	2031	2041	2051	2061
Waerenga	695	868	1040	1134	1252	1465
Waikato Western Hills	1501	1743	1893	2081	2273	2394
Whatawhata	868	1057	1167	1301	1435	1512
Whitikahu	739	804	834	904	981	1018
Matamata-Piako District						
Hinuera	348	355	355	352	348	343
Matamata North	1306	1374	1421	1458	1478	1481
Matamata South	1716	1832	2034	2136	2151	2130
Morrinsville East	1838	1989	2172	2242	2261	2268
Morrinsville West	1014	1097	1207	1244	1241	1247
Okauia	749	755	760	749	733	715
Springdale	923	939	962	978	961	947
Tahuroa	983	1018	1114	1160	1138	1128
Te Aroha	1723	1877	2067	2128	2041	1951
Te Poi	295	294	295	297	296	284
Waharoa	152	187	192	195	197	198
Waihou-Walton	1524	1558	1584	1584	1533	1502
Waitoa	124	187	192	195	197	198
Hamilton City						
Bader	1488	1659	1735	1771	1821	1845
Beerescourt	1291	1400	1390	1377	1353	1381
Bryant	2205	2354	2334	2311	2270	2318
Brymer	889	994	1003	1045	1031	1050
Burbush	59	89	1506	3017	3227	3315
Chartwell	936	1024	1018	1010	992	1011
Chedworth	1266	1388	1392	1381	1356	1383
Clarkin	1135	1201	1199	1191	1169	1190
Claudelands	1079	1043	1088	1129	1203	1219
Crawshaw	942	1020	1019	1013	994	1012
Dinsdale North	1475	1572	1578	1608	1581	1610
Dinsdale South	1456	1570	1624	1639	1621	1651
Enderley	1569	1662	1808	1928	2061	2110
Fairview Downs	1154	1267	1272	1264	1244	1266
Flagstaff	1534	1798	1789	1778	1757	1793
Frankton Junction	755	794	845	919	930	964
Glenview	1937	2194	2185	2212	2175	2206
Grandview	1123	1188	1186	1178	1156	1177
Hamilton Central	1366	1392	1634	1894	2153	2233
Hamilton East	1378	1464	1696	1931	2107	2183
Hamilton Lake	1584	1739	1916	2079	2169	2188
Hillcrest West	1232	1305	1310	1304	1280	1300
Horsham Downs	1553	2602	3880	4500	4624	4696
Huntington	2657	3220	3242	5046	8566	9435
Insoll	777	823	826	822	807	820
Maeroa	1453	1579	1576	1566	1537	1565
Melville	1675	1787	1787	1776	1744	1770
Nawton	1697	1795	1787	1773	1741	1775
Naylor	1809	1888	1978	2036	2133	2163
Newstead	84	941	2324	2919	3432	3519
Peachgrove	1325	1277	1380	1475	1590	1613
Peacocke	221	1555	7237	9070	8997	9172
Porridd	614	726	750	750	742	753
Pukete	848	908	902	895	879	896
Pukete West	705	751	751	763	749	763
Queenwood	1198	1306	1299	1288	1265	1290

TA/CAU	2013	2021	2031	2041	2051	2061
Riverlea	992	1108	1109	1106	1087	1108
Rotokauri	59	1171	1858	2671	2876	2936
Rototuna	1173	1240	1233	1223	1201	1225
Silverdale	917	988	1056	1074	1096	1110
Swarbrick	1834	1780	1957	2110	2411	2436
Sylvester	642	1769	1934	2718	4032	5487
Te Rapa	231	279	339	482	512	515
Te Rapa North	47	44	92	178	187	190
Temple View	334	416	590	1470	2215	2411
University	1687	1765	1922	2047	2197	2206
Waipa District						
Allen Road	75	90	101	106	96	88
Cambridge Central	355	384	405	421	411	412
Cambridge North	1179	1214	1257	1293	1306	1301
Cambridge West	1232	1267	1422	1468	1486	1486
Hautapu	666	1256	3256	3947	4102	4085
Kaipaki	364	414	465	483	484	470
Karapiro	971	1108	1200	1245	1247	1206
Kihikihi	753	869	921	964	976	975
Kihikihi Flat	299	727	917	1067	1108	1079
Lake Cameron	414	492	573	631	627	608
Lake Ngaroto	208	350	527	1026	1063	1044
Leamington East	1537	1557	1617	1664	1683	1689
Leamington West	1391	1493	1628	1743	1748	1735
Ngahinapouri	762	894	1044	1122	1148	1143
Ohaupo	193	211	246	281	274	264
Pirongia	532	590	642	670	683	690
Pokuru	193	213	229	235	235	221
Pukerimu	168	371	676	907	921	928
Rotongata	302	335	360	372	379	375
Rotoorangi	706	781	840	873	868	836
Swayne	454	761	805	826	834	839
Te Awamutu Central	1422	1433	1527	1629	1647	1628
Te Awamutu East	1145	1352	1447	1491	1490	1475
Te Awamutu South	1219	1291	1339	1378	1414	1406
Te Awamutu West	492	577	603	629	635	639
Te Pahu	479	539	586	613	601	580
Te Rahu	345	440	498	530	539	534
Te Rore	162	179	195	203	207	210
Tokanui	152	167	178	178	168	154
Otorohanga District						
Kawhia Community	146	156	192	185	141	100
Otorohanga	983	1070	1187	1235	1188	1070
Otorohanga Rural East	1255	1339	1396	1401	1386	1323
Otorohanga Rural West	687	739	775	742	696	576
Te Kawa	149	168	178	184	191	190
South Waikato District						
Amisfield	63	68	71	71	66	60
Aotea	1093	1114	1158	1112	996	821
Arapuni	859	856	820	792	726	694
Kinleith	95	95	97	95	87	78
Lichfield	385	398	405	401	391	379
Mangakaretu	92	159	167	173	176	175
Matarawa	780	827	849	822	761	626

TA/CAU	2013	2021	2031	2041	2051	2061
Paraonui	720	742	711	593	468	367
Parkdale	268	272	275	232	171	127
Putaruru	1595	1674	1681	1607	1436	1277
Stanley Park	812	853	882	876	821	740
Strathmore	783	832	868	855	794	651
Tapapa	385	407	421	414	401	386
Tirau	313	314	317	314	285	221
Tokoroa Central	300	309	322	310	289	254
Wawa	281	302	322	327	323	315
Waitomo District						
Mahoenui	167	145	110	79	82	50
Marokopa	609	516	500	474	440	386
Mokauiti	398	395	400	382	356	322
Piopio	170	169	150	124	89	57
Taharoa	86	68	63	45	30	18
Te Kuiti	1625	1748	1735	1663	1496	1277
Waipa Valley	383	401	407	390	369	340
Taupo District						
Acacia Bay	570	619	660	685	683	645
Broadlands	213	170	137	108	85	65
Hilltop	1422	1534	1634	1694	1704	1648
Kinloch	198	276	318	330	322	246
Kuratau	114	134	142	135	121	92
Lakewood	594	697	809	839	843	822
Mangakino	312	350	380	394	390	368
Marotiri	552	580	606	597	531	464
Maunganamu	150	182	221	229	230	224
Motuoapa	105	118	127	131	103	78
Nukuhau	609	665	708	734	738	714
Omori	93	133	144	148	116	89
Oruanui	819	875	952	986	980	917
Rangatira	39	67	71	74	76	76
Rangatira Park	291	337	360	373	375	362
Rangipo	30	32	34	36	36	36
Richmond Heights	783	868	1016	1086	1091	1053
Tatua	99	106	113	118	119	107
Tauhara	1562	1664	1772	1842	1865	1815
Taupo Central	1481	1581	1681	1755	1767	1707
Taupo East	3	16	17	17	18	18
Tokaanu	75	79	80	67	59	59
Tongariro	129	136	140	136	114	95
Turangi	1176	1273	1372	1377	1146	875
Waipahihi	762	844	955	1011	1014	972
Wairakei-Aratiatia	204	184	148	117	92	70
Waitahanui	162	185	210	192	150	115
Wharewaka	252	279	334	346	346	330
Rotorua District						
Arahiwi	108	301	324	330	321	300
Golden Springs	928	972	1069	1080	1012	887
Ngakuru	1210	1275	1372	1361	1243	1055
Reporoa	329	346	402	389	336	296

Appendix Table A5: CAU-level labour force projections (2021-2061), medium-variant projection

TA/CAU	2021	2031	2041	2051	2061
Thames-Coromandel District					
Coromandel	885	975	973	880	751
Hikuai	1768	1844	1825	1607	1363
Moanataiari	1298	1348	1331	1222	1069
Parawai	2332	2433	2403	2202	1920
Pauanui Beach	426	478	474	365	244
Tairua	672	706	651	553	421
Te Puru-Thornton Bay	464	483	471	426	362
Te Rerenga	2288	2405	2313	1844	1265
Whangamata	1889	1967	1924	1683	1342
Whitianga	2525	2877	2869	2589	2179
Hauraki District					
Hauraki Plains	1365	1433	1437	1349	1162
Kaiaua	444	503	523	504	439
Kerepehi	241	257	258	239	199
Ngatea	673	734	717	644	463
Ohinemuri	1474	1463	1370	1178	957
Paeroa	2358	2645	2698	2542	2242
Turua	710	751	712	538	454
Waihi	2552	2799	2834	2642	2295
Waikato District					
Buckland South	642	890	1138	1611	1587
Eureka	1500	1687	1394	1302	1274
Gordonton	697	811	670	626	613
Horotiu	529	728	840	939	1007
Huntly East	2671	2972	3029	2993	3223
Huntly West	1741	1888	1918	1900	1999
Kainui	2015	2563	2678	2503	2448
Mangatawhiri	1006	1097	1541	1702	1792
Maramarua	724	869	1092	1369	1516
Matangi	1392	1451	1599	1797	1897
Meremere	390	431	432	418	440
Ngaruawahia	3061	3277	3359	3361	3534
Onewhero	2275	2571	2854	3138	3316
Opuawhanga	148	171	322	493	483
Otaua	1444	1463	1690	1971	2105
Pokeno	1467	4762	7079	7111	7577
Pukeoware	144	148	167	192	202
Raglan	1999	2290	2167	2025	2028
Redoubt	358	845	1833	2057	2166
Rotowaro	0	0	0	0	0
Tamahere-Tauwhare	3715	3919	4500	5201	5512
Taupiri Community	298	369	382	379	399
Te Akau	627	730	887	1175	1274
Te Kauwhata	1220	1737	1800	1807	1884
Te Kowhai	970	1019	1187	1365	1449
Te Uku	1423	1545	1787	2534	2727
Tuakau	2858	3396	3275	3292	3658

TA/CAU	2021	2031	2041	2051	2061
Waerenga	1828	2236	2846	3240	3554
Waikato Western Hills	2663	2955	3473	4071	4432
Whatawhata	1757	1914	2228	2521	2728
Whitikahu	1279	1338	1534	1778	1910
Matamata-Piako District					
Hinuera	524	537	531	527	518
Matamata North	1727	1873	1952	1963	1962
Matamata South	2504	2959	3243	3319	3453
Morrinsville East	2807	3128	3387	3418	3413
Morrinsville West	1562	1692	1772	1780	1786
Okauia	1140	1179	1227	1279	1270
Springdale	1402	1446	1471	1483	1493
Tahuroa	1587	1814	1999	2058	2104
Te Aroha	2395	2783	2858	2893	2916
Te Poi	448	455	458	455	454
Waharoa	319	331	334	335	335
Waihou-Walton	2302	2358	2361	2361	2350
Waitoa	256	265	268	269	268
Hamilton City					
Bader	2454	2568	2544	2500	2609
Beerescourt	1876	1866	1794	1745	1705
Bryant	3273	3249	3123	3039	2971
Brymer	1624	1629	1647	1595	1559
Burbush	807	4551	5864	5735	5604
Chartwell	1489	1482	1425	1382	1348
Chedworth	2117	2111	2030	1969	1921
Clarkin	1770	1771	1703	1648	1606
Claudelands	1273	1333	1349	1338	1368
Crawshaw	1661	1669	1605	1551	1510
Dinsdale North	2414	2400	2310	2237	2181
Dinsdale South	2331	2429	2357	2290	2243
Enderley	2429	2642	2733	2749	2806
Fairview Downs	2040	2031	1958	1896	1852
Flagstaff	2444	2436	2350	2290	2247
Frankton Junction	1024	1089	1143	1089	1114
Glenview	3197	3181	3053	2963	2893
Grandview	1820	1826	1756	1698	1655
Hamilton Central	1664	1929	2174	2160	2362
Hamilton East	2257	2599	2873	2829	3014
Hamilton Lake	2454	2714	2851	2807	2819
Hillcrest West	2111	2119	2038	1961	1906
Horsham Downs	4834	6733	7798	7637	7648
Huntington	5344	5267	10079	11085	11440
Insoll	1482	1486	1429	1375	1337
Maeroa	2171	2161	2078	2010	1959
Melville	2765	2777	2671	2581	2514
Nawton	2617	2595	2495	2419	2361
Naylor	2468	2589	2595	2575	2607
Newstead	1644	3963	4720	7295	8117
Peachgrove	1690	1833	1906	1884	1943
Peacocke	2450	9956	11582	11285	11102
Porritt	1125	1144	1102	1063	1035
Pukete	1336	1332	1281	1244	1215
Pukete West	1182	1180	1162	1124	1095
Queenwood	1814	1802	1732	1681	1647

TA/CAU	2021	2031	2041	2051	2061
Riverlea	1605	1597	1534	1496	1460
Rotokauri	2025	3850	4669	4635	4764
Rototuna	1852	1846	1774	1721	1680
Silverdale	1560	1639	1614	1591	1581
Swarbrick	2389	2604	2763	2814	2995
Sylvester	3518	3314	5586	13041	17050
Te Rapa	271	494	511	487	471
Te Rapa North	91	315	397	412	456
Temple View	837	1587	5873	6108	5969
University	3241	3537	3645	3579	3631
Waipa District					
Allen Road	145	162	164	151	147
Cambridge Central	465	464	480	458	456
Cambridge North	1716	1722	1782	1687	1627
Cambridge West	1544	1692	1762	1672	1674
Hautapu	2554	5650	6821	7667	7926
Kaipaki	634	691	728	730	740
Karapiro	1701	1829	1897	2058	2083
Kihikihi	1282	1335	1380	1320	1316
Kihikihi Flat	1116	1365	1744	1878	1905
Lake Cameron	800	998	1117	1221	1221
Lake Ngaroto	501	905	1394	1449	1451
Leamington East	2161	2161	2240	2127	2112
Leamington West	2113	2302	2387	2260	2240
Ngahinapouri	1451	1706	1827	2027	2085
Ohaupo	315	363	412	397	396
Pirongia	893	930	960	943	942
Pokuru	327	341	345	337	335
Pukerimu	575	1311	1525	1695	1685
Rotongata	513	533	549	543	545
Rotoorangi	1189	1379	1829	1943	2298
Swayne	1373	1392	1433	1363	1351
Te Awamutu Central	1856	1959	2048	1935	1918
Te Awamutu East	1861	1889	1966	1864	1847
Te Awamutu South	1721	1717	1784	1717	1713
Te Awamutu West	866	867	913	866	858
Te Pahu	809	869	898	892	895
Te Rahu	676	744	793	795	805
Te Rore	263	276	283	280	280
Tokanui	270	274	273	257	241
Otorohanga District					
Kawhia Community	216	274	279	235	170
Otorohanga	1689	1959	2068	2028	1794
Otorohanga Rural East	2503	2787	2913	2864	2682
Otorohanga Rural West	1200	1299	1295	1232	1084
Te Kawa	299	334	350	352	325
South Waikato District					
Amisfield	88	87	86	79	70
Aotea	1612	1668	1622	1477	1226
Arapuni	1156	1179	1127	1042	946
Kinleith	126	132	129	121	105
Lichfield	520	529	525	503	476
Mangakaretu	199	208	213	210	202
Matarawa	1002	1048	1028	936	802

TA/CAU	2021	2031	2041	2051	2061
Paraonui	924	949	896	797	680
Parkdale	354	373	348	292	245
Putaruru	2018	2136	2096	1866	1622
Stanley Park	1099	1128	1105	1026	894
Strathmore	1106	1154	1117	1029	886
Tapapa	536	558	563	543	506
Tirau	366	381	372	330	277
Tokoroa Central	382	402	381	349	300
Wawa	383	404	411	403	382
Waitomo District					
Mahoenui	231	200	183	128	133
Marokopa	784	799	779	720	640
Mokauiti	594	621	623	601	538
Piopio	229	234	225	211	167
Taharoa	109	108	81	56	44
Te Kuiti	2652	2743	2683	2468	2079
Waipa Valley	637	670	673	643	576
Taupo District					
Acacia Bay	883	945	947	904	846
Broadlands	287	228	175	131	99
Hilltop	2099	2216	2246	2158	2051
Kinloch	412	453	464	443	386
Kuratau	184	192	193	178	167
Lakewood	954	1167	1287	1265	1210
Mangakino	484	519	534	522	486
Marotiri	922	948	902	776	694
Maunganamu	324	338	340	327	313
Motuoapa	175	256	274	261	204
Nukuhau	927	980	988	949	902
Omori	152	165	175	131	99
Oruanui	1381	1458	1478	1418	1362
Rangatira	73	76	98	95	91
Rangatira Park	451	472	473	454	430
Rangipo	57	60	60	58	58
Richmond Heights	1412	1963	2029	1947	1842
Tatua	173	184	186	179	170
Tauhara	2437	2589	2592	2508	2398
Taupo Central	2155	2271	2290	2198	2091
Taupo East	28	29	29	29	28
Tokaanu	115	118	117	88	74
Tongariro	317	333	343	321	256
Turangi	1796	1946	1957	1805	1587
Waipahihi	1218	1373	1383	1324	1249
Wairakei-Aratiatia	317	252	193	145	109
Waitahanui	280	310	309	247	212
Wharewaka	337	422	693	777	735
Rotorua District					
Arahiwi	260	269	261	244	224
Golden Springs	775	820	797	720	635
Ngakuru	991	1034	999	880	754
Reporoa	260	293	276	243	197

Appendix Table A6: CAU-level labour force projections (2021-2061), low-variant projection

TA/CAU	2021	2031	2041	2051	2061
Thames-Coromandel District					
Coromandel	834	866	835	724	579
Hikuai	1710	1724	1651	1376	1100
Moanataiari	1292	1329	1303	1170	969
Parawai	2299	2380	2328	2088	1736
Pauanui Beach	419	420	371	303	186
Tairua	635	629	574	421	259
Te Puru-Thornton Bay	453	461	446	390	318
Te Rerenga	2198	2183	1766	1184	728
Whangamata	1849	1906	1821	1535	1166
Whitianga	2324	2398	2338	2055	1648
Hauraki District					
Hauraki Plains	1324	1359	1257	1135	985
Kaiaua	446	483	484	425	299
Kerepehi	238	252	230	167	118
Ngatea	654	682	541	390	261
Ohinemuri	1436	1363	1262	1017	714
Paeroa	2268	2453	2484	2244	1862
Turua	627	603	496	419	334
Waihi	2506	2652	2658	2410	2056
Waikato District					
Buckland South	598	817	906	951	991
Eureka	1435	1568	1228	1007	1053
Gordonton	690	754	591	484	403
Horotiu	504	607	704	747	756
Huntly East	2397	2925	2972	2904	2885
Huntly West	1755	1872	1911	1875	1826
Kainui	1961	2429	2745	2250	1873
Mangatawhiri	985	1036	1368	1456	1592
Maramarua	704	798	894	978	1012
Matangi	1350	1422	1519	1627	1698
Meremere	394	429	435	422	408
Ngaruawahia	3047	3260	3356	3316	3237
Onewhero	2256	2526	2666	2762	2890
Opuawhanga	146	164	209	223	323
Otaua	1401	1413	1510	1644	1729
Pokeno	1446	3409	5512	6729	6985
Pukeoware	140	144	153	166	173
Raglan	1957	2274	2250	2092	1984
Redoubt	372	871	1468	2026	2108
Rotowaro	0	0	0	0	0
Tamahere-Tauwhare	3611	3769	4095	4452	4625
Taupiri Community	299	354	372	369	361
Te Akau	608	664	722	772	789
Te Kauwhata	1220	1678	1805	1805	1754
Te Kowhai	953	988	1085	1173	1205
Te Uku	1391	1487	1629	1724	1745
Tuakau	2841	3398	3370	3219	3209

TA/CAU	2021	2031	2041	2051	2061
Waerenga	1760	2078	2237	2422	2776
Waikato Western Hills	2552	2731	2965	3176	3277
Whatawhata	1672	1821	2002	2167	2237
Whitikahu	1275	1303	1395	1484	1510
Matamata-Piako District					
Hinuera	518	521	515	507	493
Matamata North	1703	1773	1816	1829	1814
Matamata South	2476	2766	2900	2901	2843
Morrinsville East	2667	2931	3020	3025	3004
Morrinsville West	1562	1729	1779	1764	1754
Okauia	1103	1118	1100	1070	1032
Springdale	1391	1435	1455	1420	1386
Tahuroa	1533	1689	1756	1712	1679
Te Aroha	2364	2621	2693	2567	2427
Te Poi	447	452	453	450	427
Waharoa	321	332	336	337	336
Waihou-Walton	2290	2344	2338	2248	2181
Waitoa	257	266	270	270	269
Hamilton City					
Bader	2471	2565	2540	2470	2394
Beerescourt	1894	1866	1794	1667	1627
Bryant	3301	3248	3121	2898	2831
Brymer	1627	1629	1646	1537	1496
Burbush	142	2367	4602	4653	4573
Chartwell	1512	1493	1437	1334	1301
Chedworth	2108	2100	2021	1877	1830
Clarkin	1782	1765	1701	1579	1538
Claudlands	1290	1335	1344	1355	1313
Crawshaw	1682	1669	1609	1494	1454
Dinsdale North	2412	2402	2375	2208	2152
Dinsdale South	2326	2390	2339	2187	2132
Enderley	2447	2642	2733	2763	2706
Fairview Downs	2026	2019	1948	1811	1764
Flagstaff	2475	2443	2356	2202	2149
Frankton Junction	1031	1090	1150	1100	1091
Glenview	3218	3182	3125	2905	2819
Grandview	1842	1826	1760	1633	1591
Hamilton Central	1652	1925	2165	2327	2308
Hamilton East	2265	2603	2877	2968	2942
Hamilton Lake	2484	2716	2860	2821	2722
Hillcrest West	2126	2119	2047	1899	1845
Horsham Downs	4498	6657	7493	7278	7072
Huntington	5276	5272	7961	12779	13464
Insoll	1491	1486	1436	1332	1294
Maeroa	2181	2161	2083	1933	1883
Melville	2799	2777	2678	2486	2414
Nawton	2626	2595	2498	2319	2261
Naylor	2493	2592	2589	2564	2487
Newstead	1340	3285	4004	4450	4364
Peachgrove	1713	1837	1906	1942	1885
Peacocke	2051	9471	11518	10802	10534
Porritt	1140	1169	1134	1060	1030
Pukete	1351	1332	1281	1190	1161
Pukete West	1189	1180	1163	1080	1052
Queenwood	1825	1801	1733	1609	1570

TA/CAU	2021	2031	2041	2051	2061
Riverlea	1596	1585	1535	1425	1390
Rotokauri	1854	2921	4075	4147	4051
Rototuna	1868	1845	1776	1649	1608
Silverdale	1545	1640	1617	1560	1512
Swarbrick	2394	2612	2732	2953	2854
Sylvester	3158	3428	4674	6554	8533
Te Rapa	220	266	367	368	355
Te Rapa North	74	153	286	284	277
Temple View	826	1162	2810	4001	4168
University	3277	3543	3660	3716	3568
Waipa District					
Allen Road	141	153	154	136	122
Cambridge Central	457	462	464	441	435
Cambridge North	1726	1712	1706	1673	1643
Cambridge West	1549	1664	1665	1636	1614
Hautapu	2005	4976	5846	5897	5792
Kaipaki	619	666	671	652	624
Karapiro	1683	1745	1755	1706	1627
Kihikihi	1270	1288	1306	1284	1265
Kihikihi Flat	1066	1288	1452	1462	1405
Lake Cameron	781	872	929	896	858
Lake Ngaroto	521	750	1415	1423	1378
Leamington East	2159	2146	2141	2101	2081
Leamington West	2109	2203	2286	2225	2178
Ngahinapouri	1384	1548	1613	1601	1572
Ohaupo	309	346	382	362	345
Pirongia	877	913	923	914	910
Pokuru	325	334	333	322	298
Pukerimu	566	988	1284	1266	1258
Rotongata	509	524	526	520	508
Rotoorangi	1188	1222	1231	1188	1129
Swayne	1370	1386	1379	1352	1341
Te Awamutu Central	1857	1894	1959	1921	1874
Te Awamutu East	1828	1874	1872	1815	1772
Te Awamutu South	1719	1707	1703	1695	1663
Te Awamutu West	859	860	869	852	845
Te Pahu	799	831	844	803	763
Te Rahu	640	692	714	706	689
Te Rore	261	271	273	271	271
Tokanui	270	274	266	243	220
Otorohanga District					
Kawhia Community	208	260	248	183	122
Otorohanga	1605	1807	1870	1738	1480
Otorohanga Rural East	2481	2626	2621	2507	2261
Otorohanga Rural West	1155	1229	1170	1060	830
Te Kawa	300	323	333	333	314
South Waikato District					
Amisfield	83	86	84	76	65
Aotea	1541	1591	1499	1295	1016
Arapuni	1104	1052	996	881	801
Kinleith	121	121	117	103	89
Lichfield	516	522	506	476	439
Mangakaretu	199	208	212	208	197
Matarawa	1007	1028	975	872	682

TA/CAU	2021	2031	2041	2051	2061
Paraonui	899	857	701	534	398
Parkdale	340	342	282	202	143
Putaruru	1984	1980	1857	1602	1354
Stanley Park	1078	1109	1080	977	837
Strathmore	1110	1152	1113	998	779
Tapapa	532	547	528	493	452
Tirau	347	348	339	296	218
Tokoroa Central	375	389	367	331	276
Wawa	382	404	403	384	357
Waitomo District					
Mahoenui	200	154	111	112	66
Marokopa	749	737	701	635	537
Mokauiti	582	599	574	521	455
Piopio	228	207	172	120	75
Taharoa	104	97	70	46	27
Te Kuiti	2613	2636	2534	2223	1830
Waipa Valley	632	651	626	578	513
Taupo District					
Acacia Bay	868	916	923	877	806
Broadlands	288	229	176	131	98
Hilltop	2133	2244	2259	2167	2037
Kinloch	385	437	440	410	304
Kuratau	181	189	174	149	111
Lakewood	933	1069	1077	1032	979
Mangakino	470	503	507	479	439
Marotiri	919	948	908	770	653
Maunganamu	277	331	334	320	302
Motuoapa	149	158	159	119	88
Nukuhau	925	974	981	940	884
Omori	152	163	162	121	90
Oruanui	1347	1448	1456	1381	1256
Rangatira	73	77	77	75	73
Rangatira Park	448	472	476	456	427
Rangipo	57	60	61	58	56
Richmond Heights	1304	1508	1566	1500	1406
Tatua	170	180	182	175	152
Tauhara	2454	2582	2606	2516	2381
Taupo Central	2137	2244	2276	2185	2051
Taupo East	28	29	29	29	28
Tokaanu	112	112	91	76	74
Tongariro	296	302	283	228	184
Turangi	1802	1918	1870	1484	1101
Waipahihi	1162	1299	1336	1277	1190
Wairakei-Aratiatia	306	243	187	140	104
Waitahanui	266	298	265	198	147
Wharewaka	299	354	356	339	315
Rotorua District					
Arahiwi	261	266	256	235	212
Golden Springs	766	798	763	675	570
Ngakuru	967	986	926	799	653
Reporoa	256	282	258	210	179