

# Upper Hutt City demographic & housing demand analysis

2014-2043 Update

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MAKING SENSE OF  
THE NUMBERS



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## Making sense of the numbers

Upper Hutt City Council (UHCC) is currently reviewing its Urban Growth Strategy. To help inform this process, UHCC commissioned BERL to provide an assessment of the City's housing needs.

This research report uses Statistics New Zealand (SNZ) projections data in conjunction with the BERL Regional database and the 2013 Census to provide an assessment of the number of dwellings required to accommodate the projected population and the corresponding number of households. Allowing for post-census adjustments and using sub-regional data we estimate the 2014 population for Upper Hutt City at 41,800.

This suggests that the City's population continues to grow consistently within the range of the SNZ medium to high scenarios. We believe the medium scenario to be relatively conservative based on our analysis of past growth, while the high scenario may be too optimistic. Consequently, we have developed a "moderated" scenario.

**We recommend the numbers underlying the moderated scenario as the most likely future population outcome.**

While the economic scenario for the region will see some volatility, the longer-term attractions are consistent with the moderated population scenario. The City will benefit from an ongoing average level of net inward migration into New Zealand. While much of this national increase will be experienced in the Auckland isthmus, the Wellington region will grow in line with the overall shift to urban centres. In addition, investment in infrastructure connections as well as the shift to even more service sector employment will also favour the region. While much discussion continues around the role or function of the Upper Hutt City within the wider Wellington region economy, the availability of land, the attractions of cycle, river and bush trails, and its desirable family-friendly environment indicates it will continue to be seen as a viable location for those new to the region.

As for all projections, it would be wise to ensure planning decisions retained a sufficient degree of flexibility to allow for a population outcome within a range around this moderated scenario. We believe an outcome below the medium scenario, or one above the high scenario, to be unlikely.

Under the moderated scenario Upper Hutt City's population will grow considerably over the next three decades. More specifically, the City would gain 6,500 people by 2033 and 8,100 people by 2043. Taking into account changes to household size and family type this suggest an increase in the number of dwellings required of 2,500 dwellings between 2013 and 2033; or 4,500 additional dwellings between 2013 and 2043.

As to the supply of new housing, figures for the latest ten years indicate the City added an annual average of close to 160 new dwellings. We note though the average for the latest 5 years was somewhat lower at 135 per year. A continuation over the long term of a level of activity in the 150-160 range, annually, is consistent with appropriate supply response given the recommended moderated population projection and the consequent demand for housing.

2013-2043 change	Population scenario			Housing supply response	
	Medium	Moderated	High	@130 per year	@160 per year
Additional population	5,100	8,100	11,300		
Additional households	3,300	4,500	5,900	3,900	4,800

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## 1 Introduction

Upper Hutt City Council (UHCC) adopted its Urban Growth Strategy (UGS) in September 2007, and a review of the UGS is currently underway. UHCC commissioned BERL to provide an assessment of the City's housing needs to inform the UGS review process.

This research report uses Statistics New Zealand (SNZ) projections data in conjunction with the BERL Regional database and the 2013 Census to provide an assessment of the number of dwellings required to accommodate the projected population and the corresponding number of households. Census data from SNZ contains the usually resident population count and number of dwellings by territorial authority area, while the sub-national projections data provides information on each territorial authority based on three growth scenarios – “low”, “medium” and “high”. We also provide context on how the City and the Region have grown recently and over the longer term with economic information from BERL's Regional Database.

The most recent population projections from SNZ that provide territorial authority-level information were updated in February 2015 while the most recent family and household projections at that level were updated in December 2010. The projected population figures are converted to an estimate of required (occupied) dwellings using the projected number of residents per household.<sup>1</sup>

The latest actual figure for UHCC's population in 2013 was 40,200 as measured by the Census usually resident population count.<sup>2</sup> After we allow for post-census adjustment and project outward using the sub-regional estimate we find that in 2014 the population for Upper Hutt City rises to 41,800.

We project the population out to 2043 using information from SNZ's “medium” and “high” growth scenarios for Upper Hutt City. We also provide a “moderated” scenario which is an approximate average of the “medium” and “high” growth tracks. This provides an alternative path for the Council's consideration, as well as a likely range.

Various factors could move the actual growth path towards the lower/higher end of this range. Positive factors include rising job opportunities and incomes, lifestyle choices, and factors that make Upper Hutt City a more desirable place to settle within the Wellington Region. Appendix B provides a brief overview of these attractors.

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<sup>1</sup> SNZ defines a dwelling as “any building or structure, or part thereof, that is used (or intended to be used) for the purpose of human habitation. It can be of a permanent or temporary nature and includes structures such as houses, motels, hotels, prisons, motor homes, huts and tents. There can be more than one dwelling within a building, for example an apartment building where each separate apartment or unit is considered a dwelling.”

<sup>2</sup> See section 2.1 for a discussion of the difference between the March Census night population count and the (unofficial) adjusted June population base used for the projections.

## 2 Method

This section discusses the methodology used in this report. We begin by noting the method and key inputs to this analysis. Appendix A details key assumptions used in this analysis.

We use the recently released 2013 Census sub-regional population projections for Upper Hutt City. In addition to that, we have split the demand/supply side projections and their consolidated analysis into three separate subsections to give the report more cohesion.

### 2.1 Demand side projections

#### Population projections

The population projections provided in this report were derived by making assumptions surrounding population growth based on Census data. The Census counts people as at the night of the census; the latest one was held on 5 March 2013. It provides a snapshot of the usually resident population as at that time, but it does not make an allowance for New Zealand residents temporarily overseas or for net census undercount. The SNZ official projections allow for such factors in a post-census adjustment and therefore these projections use a June rather than March base. For our analysis we have used the adjusted June figures for greater accuracy.

The June 2013 population figure was then projected out to 2043 using average annual growth rates based on the SNZ 2013-2043 sub-regional population projections and the BERL Regional database. The SNZ projections have three growth scenarios: “low”, “medium” and “high” growth. Each scenario reports the projected population in 5-year brackets and is underpinned by a set of fertility, life expectancy and migration assumptions.

We project the population out to 2043 using SNZ’s “medium” and “high” growth scenarios. For reasons outlined in the following section, we also develop a “moderated” scenario which is an approximate average of the “medium” and “high” growth scenarios. This provides an intermediate path for the Council’s consideration within this range. Indeed, this moderated scenario is our recommendation as the more likely future population outcome for the City.

#### Dwellings projections

The projected population figure at each point in time was converted to a number of (occupied) dwellings based on the average number of people per household. As some people in the population do not live in households – defined as people living in private dwellings – we scaled down the total population figure to the number of people living in households before calculating the number of households (and occupied dwellings). This figure was calculated from the number of people SNZ projects will live in households relative to the projected total population. The average number of people per household was based on SNZ’s medium series household projections for Upper Hutt City. However as this series has not been updated to the 2013 base year we have used inter-year and long run averages taken from the 2006 base year projections (released in July 2009).

Our projections of dwellings focus on occupied dwellings, and do not include additional dwellings that may form part of the overall required stock of housing.

That is, the projections do not allow for the increase in the total stock of dwellings, which also includes dwellings that are under construction or unoccupied at any particular point of time.

## 2.2 Supply side projections

### Dwelling construction projections

The projected supply of dwellings were generated by using information from the 2007 UGS report and historical information on dwelling consents issued provided to us by the UHCC.

More specifically, we first imputed several per annum rates of dwelling construction and then used them to project out to 2043. To be more precise, we imputed a single rate from the UGS (with information on potential construction between 2006 and 2026) and multiple rates (by taking averages) from the twelve year historical dataset provided directly to us by the council.

### 3 Population projections

The latest SNZ population estimate (allowing for post-census adjustments and using sub-regional data) shows that the population of Upper Hutt City stood at 41,800 people as of June 2014.

We note that the figure of 41,800 for the 2014 year is arithmetically closer to the SNZ high population growth scenario than to SNZ’s medium growth scenario. However, we do not consider the difference in the magnitudes in the scenarios for 2014 (i.e. 41,800 compared to 41,700) to be significant, given the level of accuracy in the estimation techniques being used. This latest figure of 41,800 though does provide support to our conclusion that the City’s population continues to grow consistently **within the range** given by the SNZ medium to high scenarios.

Further, in BERL’s experience the SNZ medium growth scenarios are generally too conservative. Over the decade to 2014, Upper Hutt City’s population grew by an average of 0.8 percent per annum<sup>3</sup>. Indeed, we believe the minimal growth projected between 2033 and 2043 in the SNZ medium scenario to be highly conservative. That scenario sees the City stall at a population near the 46,000 mark. In contrast, the high scenario which sees the City’s population well over the 50,000 mark by the late-2030s may be veering on the optimistic side.

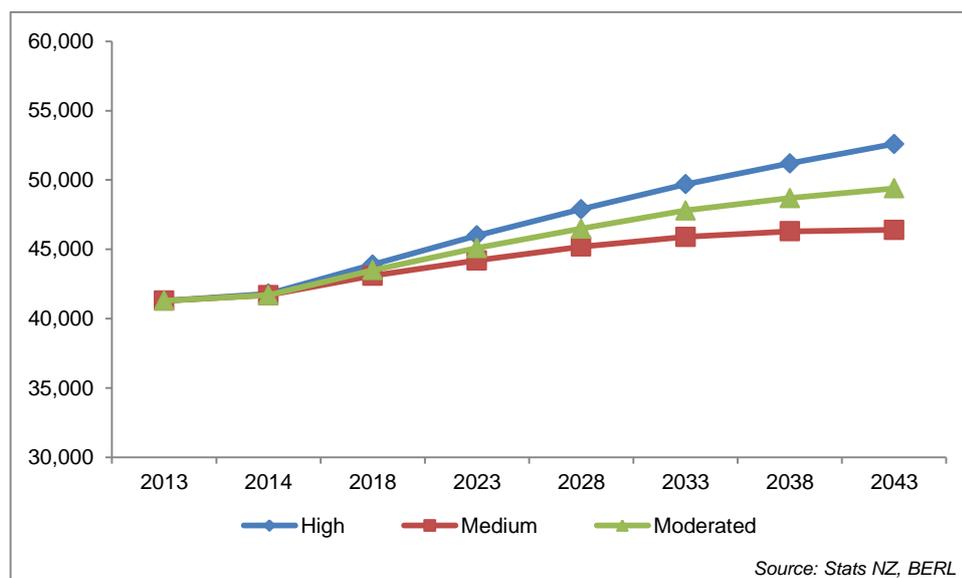
Consequently, we believe it is appropriate to consider a range between the medium and high growth scenarios; this is what we label the “moderated” scenario.

#### 3.1 The numbers

Figure 1 illustrates the three population growth scenarios for Upper Hutt City to 2043. Two series relate to SNZ’s medium and high scenarios, while the ‘moderated’ scenario has been developed by BERL. The corresponding numbers are listed in Table 3-1.

Our analysis (updated from earlier reports), suggests Upper Hutt City would gain 6,500 people by 2033 and 8,100 people by 2043 under the moderated growth scenario. These changes are calculated from 2013, the SNZ base year.

Figure 1 Upper Hutt City Resident Population Projections to 2043, Statistics New Zealand



<sup>3</sup> This is noticeably higher than the 0.4% growth to 2043 implied in the SNZ medium population growth projection.

Table 3-1 Projected population growth, 2013 to 2043 (years ending 30 June)

UH City projected population	2013	2014	2018	2023	2028	2033	2038	2043	Change 2013 to	
									2033	2043
High series	41,300	41,800	43,900	46,000	47,900	49,700	51,200	52,600	8,400	11,300
Avg % p.a.		1.23%	1.23%	0.94%	0.81%	0.74%	0.60%	0.54%	0.93%	0.81%
Moderated	41,300	41,700	43,500	45,100	46,500	47,800	48,700	49,400	6,500	8,100
Avg % p.a.		1.04%	1.04%	0.72%	0.63%	0.52%	0.39%	0.29%	0.73%	0.60%
Medium	41,300	41,700	43,100	44,200	45,200	45,900	46,300	46,400	4,600	5,100
Avg % p.a.		0.86%	0.86%	0.51%	0.45%	0.31%	0.17%	0.04%	0.53%	0.39%

\*Note: population figures rounded to the nearest hundred.

Source: BERL, StatsNZ

### 3.2 Drivers of this growth

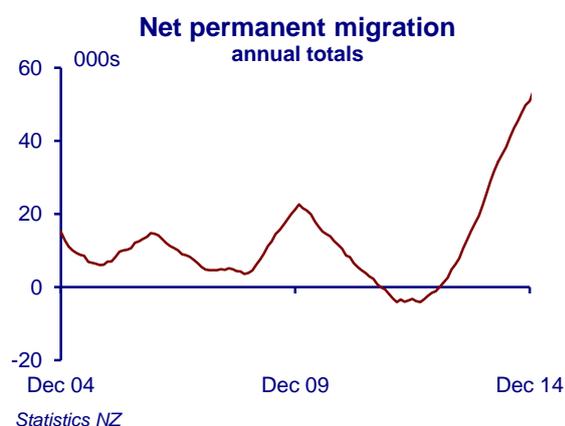
The underlying drivers of population growth are complex. It is beyond the scope of this research note to explore this, although we outline some of these drivers in Appendix B.

In summary though, population growth arises from a combination of social and economic drivers. There are many views (with little agreement) as to which drivers dominate. However, job prospects in particular and economic prospects in general must be noted as drivers of migration and so population growth. Similarly, attractiveness of place and amenity, along with location, facilities, infrastructure (both hard and soft) and connections also play a role in determining population growth.

While the high growth scenario may be optimistic for some, we believe the medium scenario (that suggests little growth beyond 2033) to be too much on the conservative side.

We note, in particular, that the New Zealand population is in the midst of a strong upward cycle in terms of net migration inflow. As Figure 2 illustrates, the country experienced a net inflow of more than 50,000 for the year to December 2014. Given favourable employment prospects compared to Australia over the immediate short term, this migration inflow is set to remain well above long-term averages for at least the next couple of years.

Figure 2 Net permanent migration to New Zealand, annual totals



We would argue that this supports a short-term population scenario that is more positive than implied by the SNZ medium scenario. This short-term population scenario has the potential to embed growth momentum over the next few years. New migrants to a country tend to remain there for a considerable period of time due

to economic costs associated with a repeat move. This potential effect has may well cause the SNZ medium scenario to lag future developments.

In addition, the attraction of the wider Wellington region (and within it, Upper Hutt City) remains positive. Similar to the situation in most developed economies, population growth in urban centres will outpace those in regional centres. In the New Zealand situation, while the Auckland isthmus will dominate much of the country's population growth, Wellington will also continue to contribute to the nation's population increase.

While much discussion continues around the role or function of the City within the wider Wellington region economy, the availability of land, the attractions of cycle, river and bush trails, and its attraction as a family-friendly environment indicates it will continue to be seen as a viable location to many attracted to the region.

### 3.3 The economic context

The latest decade has seen considerable upheaval in the global economy. New Zealand has not been immune from the consequences of such turmoil, and it should be noted that structures and trading relationships around the globe remain fragile in many areas.

The economy of Upper Hutt City has suffered during this period. Central government restructuring and the ongoing shift of New Zealand's business centre towards the Auckland area has had its impact on the region and the City. The outlook over the short term suggests a period of, at best, consolidation as commodity prices stall and Asian markets slow. However, the ongoing impetus from migration and investment in housing, infrastructure and earthquake strengthening activities will underpin the New Zealand economy in general and the urban centres in particular. In addition, both urban and regional New Zealand will be looking for boosts from the non-dairy export sector as the exchange rate declines.

Over the longer term, the positioning of the Wellington region (and Upper Hutt City within that) will continue to be questioned. Its reliance on direct central government activities will continue to decline, however its indirect dependence on the public sector remains. Core service activities – for example schools, hospitals, research institutes, tertiary education – are likely to continue to be driven by the public sector. However, the development of newer service sector offerings – for example, data storage and retrieval services, software hubs, film and associated creative industries, health and care service provisions, training providers, leisure and tourism, and facilities – will reflect the increasing importance of small private sector enterprises.

The requirements for skilled labour in these activities will reinforce the attraction of population, which could in turn further underpin the economic potential of the region, including Upper Hutt City.

### 3.4 Recommended population scenario

In the light of this discussion and out analysis, we recommend the numbers underlying the moderated scenario as the more likely future population outcome for the City.

As for all projections, we acknowledge there are risks that could lead to a higher or lower population outcome. Clearly therefore, it would be wise to ensure planning decisions retained a sufficient degree of flexibility to allow for a population outcome within a range around this moderated scenario.

Further, we believe an outcome below the medium scenario, or one above the high scenario to be unlikely.

## 4 Housing supply and demand

### 4.1 Current and projected future supply of dwellings

Upper Hutt City's population has continued to grow over the seven years between the 2006 and the 2013 Census, at an average annual rate of 0.64%.

The Council's 2007 Urban Growth Strategy (UGS) indicates that supply, allowing for changes in urban form, would be in the range of 2,100 dwellings between 2006 and 2026. This indicates the addition of about 105 dwellings per annum. This figure of 2,100 dwellings does not, however, include larger strategic sites. Therefore, the figure of 105 dwellings per annum is likely to understate the potential in supply.

In terms of consents issued for new dwellings, the average number over the 5 years to 2014 was an annual 136. Over the latest 10 years this average was 159 per year. The more recent period experienced around 130-140 new dwellings per year, noting this included the immediate post-GFC period of subdued activity. In contrast, a level of new dwellings activity in the range of 150-160 new dwellings per year is consistent with the longer-term average.

In light of the recent trends and UGS figure, we consider a range from 105 to 160 dwellings per annum. This range leads to projections for the supply of new dwellings built from 2013 as per Table 4-1. These projections rely on the assumption that new dwelling construction will follow a smooth path over the long run.

Table 4-1 Dwelling supply increase relative to 2013 base

Dwellings built per annum	Dwellings built from 2013 to	
	2033	2043
105	2,100	3,150
130	2,600	3,900
140	2,800	4,200
150	3,000	4,500
160	3,200	4,800

Source: UHCC, BERL

### 4.2 Household projections and demand for dwellings

Based on the three population projection scenarios outlined above, we estimate the number of households and dwellings required to house the growth in population.

Table 4-2 to Table 4-4 show the projected number of occupied dwellings in Upper Hutt City to 2043 under the three projection scenarios.

Under our recommended moderated growth scenario, Upper Hutt City would be set to gain approximately 2,500 additional households between 2013 and 2033, rising to 4,500 between 2013 and 2043.

Table 4-2 Projected household demand, 2013 to 2043 (years ending 30 June), high series

Upper Hutt City High series	2013	2014	2018	2023	2028	2033	2038	2043	Change 2013 to	
									2033	2043
Pop/dwelling	2.5	2.5	2.6	2.5	2.6	2.5	2.5	2.4		
Dwellings (occupied)	16,300	16,500	17,200	18,100	18,700	19,600	20,800	22,200	3,300	5,900
Additional dwellings (from 2006)		200	900	1,800	2,400	3,300	4,500	5,900		

\*Note: dwellings to the nearest ten.

Source: BERL, StatsNZ

Table 4-3 Projected household demand, 2013 to 2043 (years ending 30 June), moderated series

Upper Hutt City Moderated series	2013	2014	2018	2023	2028	2033	2038	2043	Change 2013 to	
									2033	2043
Pop/dwelling	2.5	2.5	2.5	2.5	2.6	2.5	2.5	2.4		
Dwellings (occupied)	16,300	16,400	17,100	17,700	18,200	18,800	19,700	20,800	2,500	4,500
Additional dwellings (from 2006)		100	800	1,400	1,900	2,500	3,400	4,500		

\*Note: dwellings to the nearest ten.

Source: BERL, StatsNZ

Table 4-4 Projected household demand, 2013 to 2043 (years ending 30 June), medium series

Upper Hutt City Medium series	2013	2014	2018	2023	2028	2033	2038	2043	Change 2013 to	
									2033	2043
Pop/dwelling	2.5	2.5	2.6	2.5	2.6	2.5	2.5	2.4		
Dwellings (occupied)	16,300	16,400	16,900	17,400	17,700	18,100	18,800	19,600	1,800	3,300
Additional dwellings (from 2006)		100	600	1,100	1,400	1,800	2,500	3,300		

\*Note: dwellings to the nearest ten.

Source: BERL, StatsNZ

Under the high growth scenario, Upper Hutt City would gain 3,300 additional households between 2013 and 2033, rising to 5,900 between 2013 and 2043.

The medium growth scenario is noticeable lower with the City requiring an additional 1,800 dwellings between 2013 and 2033, rising to 3,300 between 2013 and 2043.

It is important to note that the average household size is projected to fall over the projection time frame, and therefore more dwellings are required to allow for both (1) an increasing number of people and (2) fewer people per dwelling on average. The latter effect is particularly obvious out to 2043, where the net population gain in the moderated scenario is 8,100 people but 4,500 dwellings are required.

These two assumptions within the projections reflect the ongoing structural change in the City's demographic profile as the number of single people and childless couples have risen considerably in the last decade.

### 4.3 State of the future housing market

This section studies the long run relationship between the demand and supply projections for dwellings in Upper Hutt City over the next twenty and thirty years.

Table 4-5 Projected dwelling imbalances, high population scenario

Dwellings built per annum	Projected imbalance of dwellings	
	2033	2043
105	-1,200	-2,750
130	-700	-2,000
140	-500	-1,700
150	-300	-1,400
160	-100	-1,100

Source: UHCC, BERL

Under the high growth scenario, as shown in Table 4-5, around 3,300 additional dwellings would be required by 2033 and 5,900 by 2043. This implies that even at the long term average rate of 160 new dwellings per annum there would be insufficient supply by 2033 (3,000 built versus 3,200 required) and this gap would rise even higher by 2043 (4,800 built versus 5,900 required).

Given the projected additional housing required, there is a potential under-supply of 100-1,200 dwellings by 2033 and 1,100-2,750 by 2043. In order to match supply with demand the growth rate has to average 165 dwellings per annum between 2013 and 2033 and 197 per annum between 2013 and 2043. As noted above, however, strategic sites allowing for residential infill or large scale subdivisions may go some way towards meeting this projected need.

Table 4-6 Projected dwelling imbalances, moderated scenario

Dwellings built per annum	Projected imbalance of dwellings	
	2033	2043
105	-400	-1350
130	100	-600
140	300	-300
150	500	0
160	700	300

Source: UHCC, BERL

Under the moderated growth scenario, as shown in Table 4-6, around 2,500 additional dwellings would be required by 2033 and 4,500 by 2043. At a rate of 160 new dwellings supplied per annum, there would likely be an over-supply in both 2033 (3,200 built versus 2,500 required) and 2043 (4,800 built versus 4,500 required). However a minimum per annum rate of 125 new dwellings must be maintained to match demand in 2033 while a minimum rate of 150 new dwellings must be maintained to do the same in 2043.

Table 4-7 Projected dwelling imbalances, medium population scenario

Dwellings built per annum	Projected imbalance of dwellings	
	2033	2043
105	300	-150
130	800	600
140	1,000	900
150	1,200	1,200
160	1,400	1,500

Source: UHCC, BERL

Under the medium growth scenario, as shown in Table 4-7, around 1,800 additional dwellings would be required by 2033 and 3,300 by 2043. This indicates that in order to keep supply in line with demand 90 new dwellings must be built per annum between 2013 and 2033 and this figure must rise to 110 by 2043.

## 5 Conclusions

This report has provided an assessment of Upper Hutt City's housing needs over the next three decades to help inform the UHCC's UGS review process.

In order to provide this we have combined demand side scenarios based on SNZ's official sub-national projections with supply side scenarios based on data collected by UHCC.

The results presented in this report suggest that Upper Hutt City's population will grow considerably over the next three decades. Under our recommended moderated scenario, the City stands to gain an additional 8,100 people by 2043.

This population growth in conjunction with changes to household size and family type sees the number of households growing by an additional 4,500 between 2013 and 2043. This provides an indication of the additional number of new dwellings required to be constructed in the City over this period.

Over the latest ten years the City added an annual average of close to 160 new dwellings. We note though the average for the latest 5 years was somewhat lower at 135 per year.

A continuation over the long term of a level of activity in the 150-160 range, annually, is consistent with appropriate supply response for the moderated population projection scenario and consequent demand for housing.

As for all projections, we acknowledge there are risks that could lead to a higher or lower population outcome. Consequently, these risks also impact on the household and so housing demand projections. Therefore, it would be wise to ensure planning decisions retained a sufficient degree of flexibility to allow for a population outcome within a range around our recommended moderated scenario. However, we believe an outcome below the medium scenario, or one above the high scenario to be unlikely.

## Appendix A Key assumptions around demand side projections

1. We use a 30 June 2013 projection base and employ average annual population growth rates for Upper Hutt City derived from the three – “low”, “medium”, “high” – SNZ growth scenarios to give the change in population to 2033 and 2043.
2. SNZ explains that “population estimates and projections are not directly comparable with Census counts. Census counts give a snapshot of the population at that time but make no allowance for New Zealand residents temporarily overseas or for net census undercount.”
3. SNZ defines a dwelling as “any building or structure, or part thereof, that is used (or intended to be used) for the purpose of human habitation. It can be of a permanent or temporary nature and includes structures such as houses, motels, hotels, prisons, motor homes, huts and tents. There can be more than one dwelling within a building, for example an apartment building where each separate apartment or unit is considered a dwelling.”
5. BERL’s projections of dwellings focus on occupied dwellings, and do not include additional dwellings that may form part of the overall stock of housing, such as dwellings under construction or unoccupied dwellings. These projections are based on SNZ’s sub-regional family and household projections (2006 base) due to the 2013 base not being released yet.
6. The projected population figures are converted to an estimate of required (occupied) dwellings using the projected number of residents per household. We scale down the projected total population figure to the number of people living in households before calculating the number of households (and occupied dwellings). This scalar is calculated from the number of people SNZ projects will live in households relative to the projected total population.
7. We assume one occupied dwelling per household.
8. A household consists of either one person usually living alone, or two or more people usually living together and sharing facilities (for example, eating facilities, cooking facilities, bathroom and toilet facilities, a living area), in a private dwelling.
9. Therefore, the household base figure and projections exclude people living in non-private dwellings, such as aged care facilities.
10. The population per household figure implicitly takes into account people living in non-private dwellings. Thus while there may be population growth, the population per household ratio accounts for some of those population being in non-private dwellings when calculating the number of households (and occupied dwellings).

### Sub-populations with special needs

Upper Hutt City has a number of sub-populations that may have special accommodation needs. This includes inmates at Rimutaka prison, personnel at Trentham Military Camp and older people living in non-private shared facilities. Below we consider some of the issues related to these sub-populations and the population projections and housing demand analysis.

A prison's population is typically recorded within the area unit it is located in. A caveat to this, however, is that this allocation depends on whether an inmate writes that this is the person's temporary address (Census night population) or the person's usual residence. Thus, it is likely that the Rimutaka prison population is included in the base count (and also the projected figures).

Statistics New Zealand's projections assume, however, that Rimutaka prison's population will remain constant. Therefore, the projected growth in Upper Hutt City's population would be for non-imprisoned people. It is the growth figure, rather than the base, that is important to the dwelling calculations.

Residents of Rimutaka Prison are not counted as households as they do not live in private dwellings. As such they do not affect the base number of households, the number of occupied private dwellings, or the average household size. These insights would apply to people living in retirement homes (or other non-private aged care facilities) and military personnel housed at Trentham.

Therefore, the projections of additional dwellings are unlikely to be significantly influenced by the appearance of the prison population in the base population count.

The estimated population growth includes an increasing proportion of older people. This would not necessarily reduce the need for private dwellings to accommodate these people. Older people moving from a private to non-private shared facility would reduce the demand for private dwellings. However, an increasing proportion of older people 'aging in place' would increase the demand for private dwellings. Furthermore, the types of dwellings these people may wish to live in may change, for example, to improve access for people with reduced mobility or smaller household size. This may require the addition of particular types of dwellings to accommodate those needs and retain these population groups.

While older people that live in non-private dwellings are counted in the population projection they do not contribute to the number of households. This does not affect the average household size in our analysis as we take these parameters from the SNZ sub-national household projections.

## Appendix B Drivers of population growth

There are a series of factors that draw the actual growth path towards the lower/higher end of the range of population projections. This includes factors, such as jobs, lifestyle, income growth and characteristics affecting the desirability of Upper Hutt City a place to settle in the Wellington Region.

This Appendix provides a brief overview of these attractors. It is based on previous research completed by BERL, with insights drawn for UHCC. We have not updated the figures as part of this project, but this could be done as part of a future update.

The four most common reasons migrants chose New Zealand were the relaxed pace of life, the environment, family, and employment opportunities (Department of Labour, 2009).<sup>4</sup>

Appendix Table 1 Reasons migrants chose New Zealand

Reasons	Percent
Relaxed pace of life or lifestyle	44.2
Climate or the clean green environment	39.6
A better future for my children	39
Employment opportunity	28.3
Friendly people	27.6
Safety from crime	26.8
Join family members	22.6
Easy access to outdoor or sporting activities	22.4
Educational opportunities	18.1
Marry or live with a NZ spouse or partner	16
Political stability	14.7
Economic conditions	13.4
To study	10.2
Accompany family members	7.4
Others	4.3

Source: Department of Labour (2009)

The attractiveness of New Zealand, especially in terms of the rate of economic growth achieved, has been associated with increased rates of net inward migration. It therefore seems logical to assume that a change that facilitates quality residential and business development in a region will also tend to attract migrants to settle in that region.

Jobs aside, the extent to which an area can accommodate (net) inward migration, though, depends on the availability of suitable housing and other community infrastructure. By enhancing these factors and attracting both people and jobs it is possible to:

- lift productivity and incomes, which will act – at the margin - as pull factors to Upper Hutt City.
- improve the City’s ability to act as a satellite settlement to Wellington City, increasing the growth potential of both Cities and thereby enhancing Upper Hutt City’s liveability<sup>5</sup>
- relieve pressure associated with further population growth in Wellington City, such as increased land values and congestion. That is, Upper Hutt City will be relatively more affordable.

<sup>4</sup> Department of Labour (2009) New Faces, New Futures: New Zealand. Findings from the Longitudinal Immigration Survey.

<sup>5</sup> The NSW’s metropolitan transport strategy “City of Cities” emphasises the crucial role of an integrated city system to permit optimal growth. Within this strategy, wider Sydney acts as a networked entity, with strong satellite cities supporting the core. In this view, the cities are not competitors but components in a system that act to relax the growth constraint at the centre.

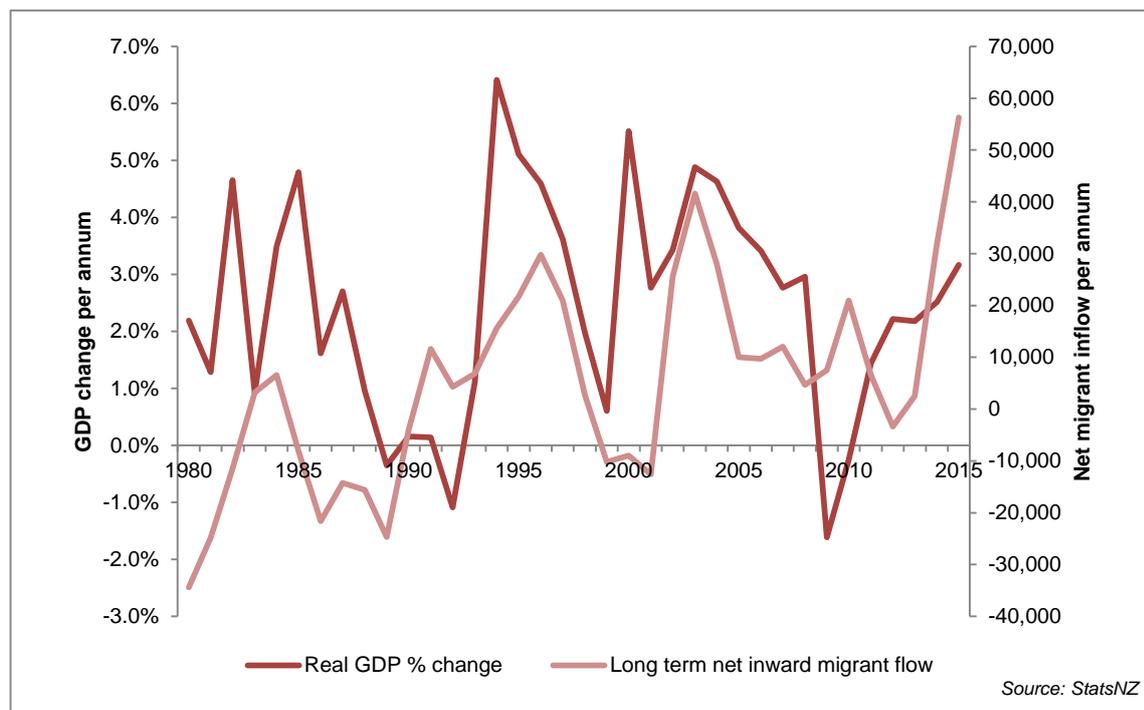
### Economic attraction and migration

New Zealand 'normally' experiences a net inward flow of overseas migrants. However, from time-to-time New Zealand also experiences a significantly strong net outward flow of people as well. We have explored the fundamental proposition that growth attracts inward migration by plotting and analysing the relationship between the annual percent change in real GDP (based on March 2009/2010 prices) and the annual net migrant flow (based on the March year end count) over the period 1980 to 2015. We find a strong relationship showing that higher GDP growth appears to cause higher migrant inflow.

During the period 1980 to the present the net inward migration flows have ranged between a net outflow of 34,400 people in a year in 1980 (the second oil shock) and a net inflow of 56,200 people in 2015 (strong economic and labour market growth compared to other developed nations). This is highlighted below in Appendix Figure 1.

The strength of the New Zealand economy appears to be a major factor determining the rate of net migrant inflow. By plotting the strength of the economy, measured by the percentage change in real GDP, from 1980 to 2015 it appears that the GDP change is related to the net migrant flow for much of the time.

Appendix Figure 1 Net inward migration and GDP growth, 1980 to 2015

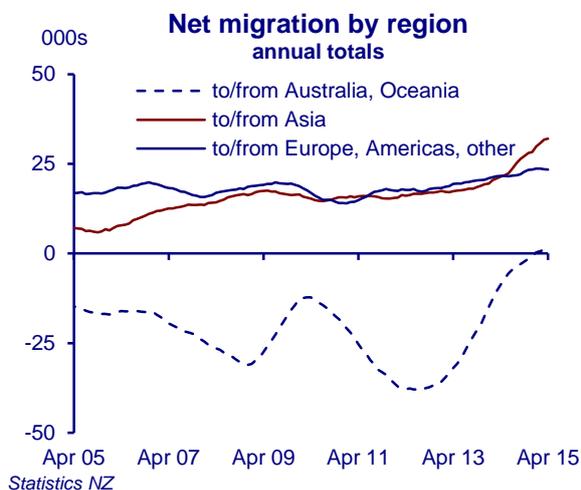


The figure indicates that periods of higher GDP are associated with higher net inward migration flows. Our statistical analyses show that higher GDP growth appears to be a strong and highly significant cause of higher migrant inflow. We believe our analysis supports the fundamental proposition that increased growth results in increased net inward migration, increasing New Zealand's total population.

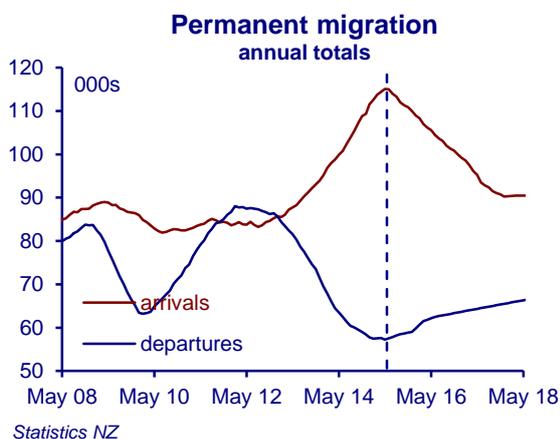
The implication of this historical relationship is that for every one percent increase in GDP the migrant inflow has increased by 0.1 percent of the current resident population (although the relationship is not statistically significant at 5 percent level of significance). Since the resident population is approximately 4.6 million people a one percent increase in real GDP per annum increases the net migrant inflow by about 5,700 people. The downside is that if average GDP growth falls below two percent to three percent per annum, the net migrant flow is negative. (If GDP growth was zero the migrant outflow would average 3,700 to 6,900.)

### Current state of Migration

The migrant net inflows are running at 57,000 for year ending April 2015 which is an all-time record. To put it in perspective the last peak was 42,500 in the 12 months to May 2003, and before that there was 28,000 in 1994, and 27,000 in 1974.



The overall picture of net permanent and long-term migration is playing out very much as we have commented for some time, with the total to June 2015 still expected to be about 58,000. Flows to and from most world regions are reaching a plateau, and this includes the all-important Australia, and also Europe and the Americas. The net inflow from Asia is still growing, but is slowing. As we have noted before, a lot of this impetus is from a very successful drive to attract students from India. Given the large settled population in New Zealand of people with Indian ethnicity, it can be expected that a significant share of these students, as graduates will wish to obtain employment here adding to our skill base.



We are forecasting the plateaux to ease into some slow decline as the relative fortunes of the Northern and Southern economies change. The forecast 58,000 net inflow to June 2015 is expected to decline to about 42,000 for the year to June 2016, and closer to a net inflow of 20,000 in the year to June 2017.

Again to provide some perspective, the net inflows to New Zealand in the past have generally fluctuated around a trend of 10,000 inflow per year, since the 1950s. The flow forecast for 2017, running at 20,000 per year are still a good strong input to the growth of the country.

