macro perspective > micro analysis

Queenstown Lakes District

Growth Projections

March 2011

Prepared for:
Queenstown Lakes District Council

QUEENSTOWN LAKES DISTRICT COUNCIL

rationale

Quality Assurance Statement	
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1	1/3/11	Working Draft	TL	WC	
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3	29/3/11	Final Draft	TL	JR	TL

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Executive Summary

The Queenstown Lakes District was the fastest growing area in New Zealand between 2001 and 2006. Census counts show that the population of the District has increased by 30% over the 5 years between 2001 and 2006. The number of occupied homes in the District has grown by the same amount. Employment has also grown quickly, and this has benefited the overall economic and social wellbeing of the District, and the wider Central Otago area.

The Queenstown Lakes District growth projections were last updated in 2008 based on the 2006 Census data but at the time the Statistics New Zealand 2006 (base) projections were still unavailable. This update now considers the latest projections produced by both Statistics New Zealand and the Tourism Strategy Group.

The growth projections are produced at the Census Area Unit level for the entire Queenstown Lakes District and have been produced in 5 yearly increments from 2006 out until 2031.

The projections will cover the usually resident population, visitors staying in private residences and visitor accommodation, day visitors, residential dwellings (split into occupied and unoccupied) and visitor units. Other than helping in developing the projections, employment and commercial land needs are not covered in these projections.

The basic methodology developed in the 2004 Growth Options Study has been retained to project the growth for the Queenstown Lakes District. This methodology used two different approaches for the Wakatipu and Wanaka areas. This was due to a belief that different factors drive the growth in each area.

Wakatipu projections

The Wakatipu projections include all of the areas covered by the Wakatipu and Arrowtown wards, which incorporates the following Census Area Units: Frankton, Glenorchy, Kelvin Heights, Sunshine Bay, Wakatipu, Lake Hayes, Arrowtown, Queenstown Bay and Queenstown Hill.

The following graph shows a comparison against the last projections produced for the 2009/19 CCP. This shows how the new projections initially start off a bit higher than those previously used in the 2009/19 CCP but then end up being very similar by 2026. There are two key reasons for this:

- The 2006 resident population has been adjusted up by Statistics New Zealand to account for;

    1. net census undercount (+80,000)[1]

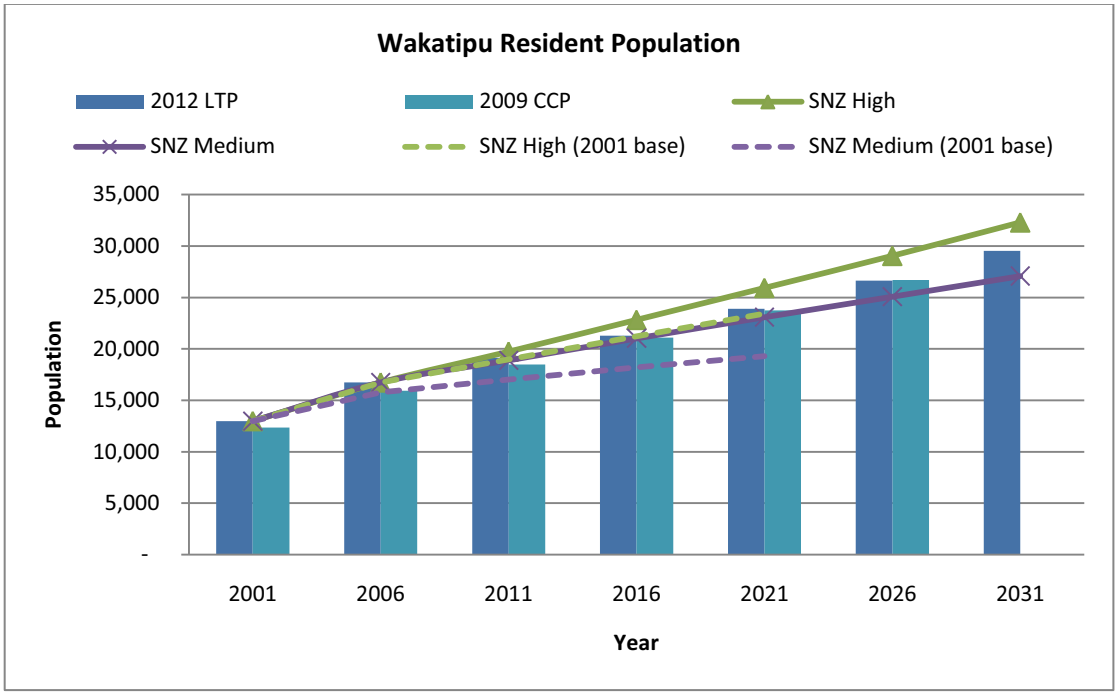
    2. residents temporarily overseas on census night (+64,000)

[1] Note that the values in brackets are the national adjustments and are not just for the Queenstown Lakes District.

3. births, deaths, and net migration between census night (7 March 2006) and 30 June 2006 (+9,000)

4. reconciliation with demographic estimates at ages 0–4 years (+3,000).

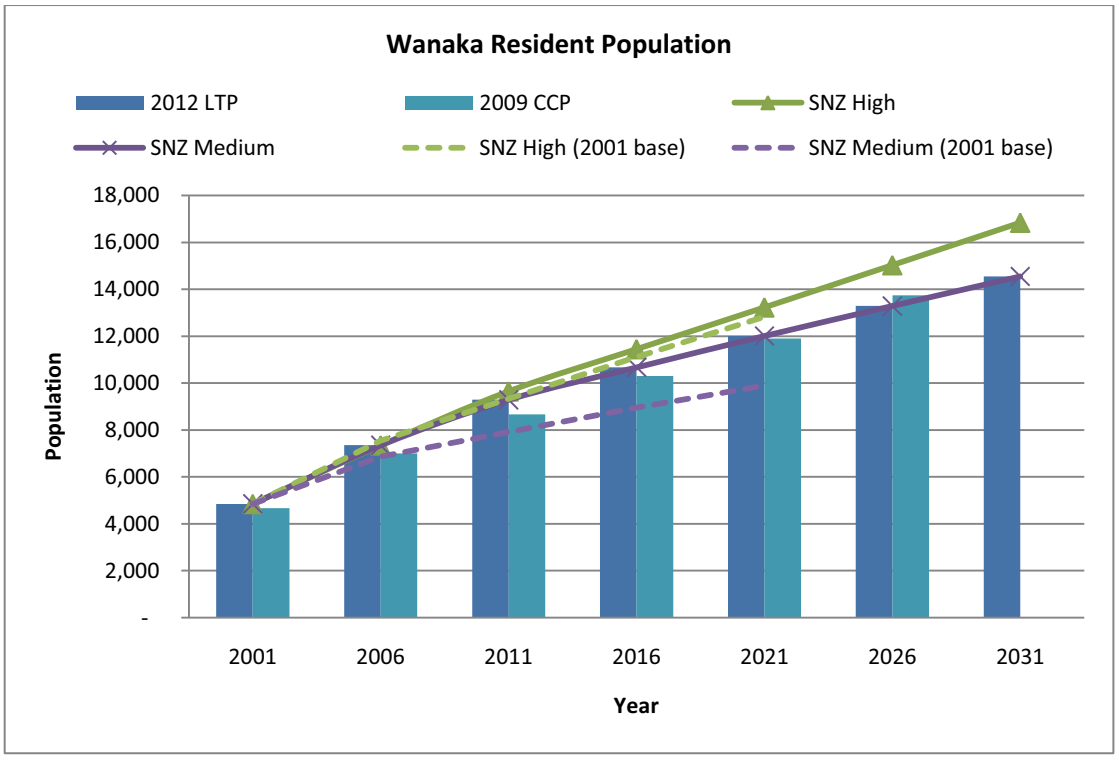
- The Tourism Strategy Group have reduced their visitor projections from a 2.9% annual increase assumed in 2007 to 2.2% as used in these new projections.



Wanaka projections

The Wanaka projections include all of the areas covered by the Wanaka Ward, which incorporates the following Census Area Units: Hawea, Wanaka and Matukituki.

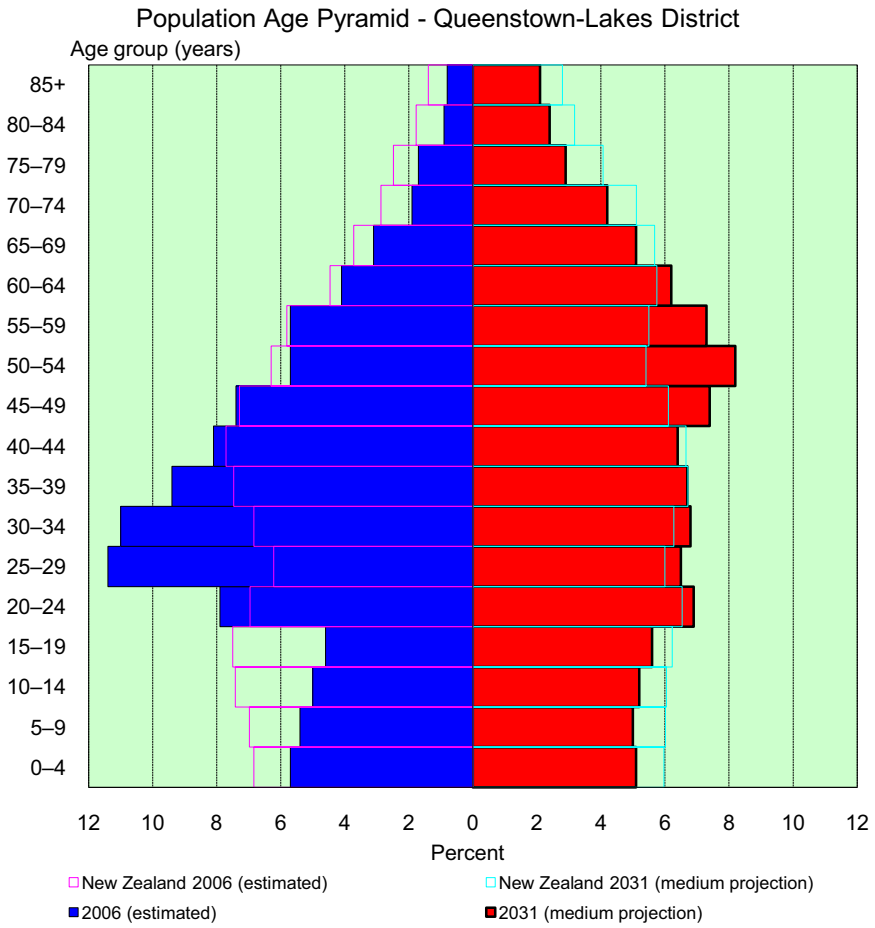
The following graph shows a comparison against the last projections produced for the 2009/19 CCP. This shows how the new projections initially start off slightly higher than those previously used in the 2009/19 CCP but then end up being very similar by 2021. The key reason for this is again the adjustments made to the census night count.



Age structure projections

New Zealand has an ageing population and this is putting more importance on the population projections to provide information about the changing age structure, which is at least as important as changes in total numbers.

The following graph highlights the changing age structure projections for the Queenstown Lakes District, compared to New Zealand as a whole. The Queenstown Lakes District median age is projected to move from 34.5 years to 41.7 years,



Small community projections

Projections for the small communities of Glenorchy, Kingston, Gibbston, Cardrona, Luggate, Hawea and Makarora have also been updated. This has not been a detailed update but one more to reflect the changing Census Area Unit projections to which each community belongs.

1 Background

The Queenstown Lakes District was the fastest growing area in New Zealand between 2001 and 2006. Census counts show that the population of the District has increased by 30% over the 5 years between 2001 and 2006. The number of occupied homes in the District has grown by the same amount. Employment has also grown quickly, and this has benefited the overall economic and social wellbeing of the District, and the wider Central Otago area.

Many of the growth pressures that the Queenstown's Lakes District faces are driven by forces outside of the District. The District is an international tourism destination, which is a key industry and driver for economic growth across the District and the wider region. Located in a nationally significant landscape, the area draws in a large amount of investment (both local and international) in homes, services and visitor related activities.

Queenstown Lakes District Council (QLDC) use population and growth projections for long-term strategic decision making relating to all areas of infrastructure, in planning, and in other aspects of their business. The previous projections were completed in 2008 and were based on the 2006 Census. The projections need updating to reflect the latest Statistics New Zealand (SNZ) and Tourism Strategy Group (TSG) projections.

The '2006 (base) – 2031 update' population projections(Statistics New Zealand, released on 24 February 2010) are the most recent projections available from Statistics New Zealand at the time of writing this document. The most recent projections from the Tourism Strategy Group are the '2010 – 2016 Forecasts – Regional' (Tourism Strategy Group, August 2010).

As a result of the Christchurch earthquake on 22 February 2011 the 2011 Census planned for 8 March 2011 has been cancelled. Alternative 2011 Census options are still being considered at the time of writing. These projections (and any subsequent updates) will have to rely on the increasingly out of date 2006 census until new information is available. However the approach adopted is considered robust and should provide appropriate guidance until the data is reviewed considering future census data.

1.1 Objectives

The objective of the project is to update the existing growth projections with the latest information available. The key improvements proposed are:

- To update the projections with the latest data from Statistics New Zealand.
- To update the projections with the latest data from the Tourism Strategy Group (previously the Tourism Research Council).
- To update the projections with the latest Queenstown Lakes District Council dwelling capacity model.

2 How the growth projections are developed

2.1 What do the growth projections cover?

The growth projections are produced at the Census Area Unit level for the entire Queenstown Lakes District. This enables them to be compared against the Statistics New Zealand (SNZ) projections and also enables them to be broken down and spread across the meshblocks that make up the Census Area Units.

The projections have been produced in 5 yearly increments from 2006 out until 2031 which is consistent with the latest SNZ projections.

The projections include the usually resident population, visitors staying in private residences and commercial accommodation, day visitors, residential dwellings (split into occupied and unoccupied) and visitor units. Other than helping in developing the projections, figures for full time equivalent (FTE) workers and commercial land needs are not covered in these projections.

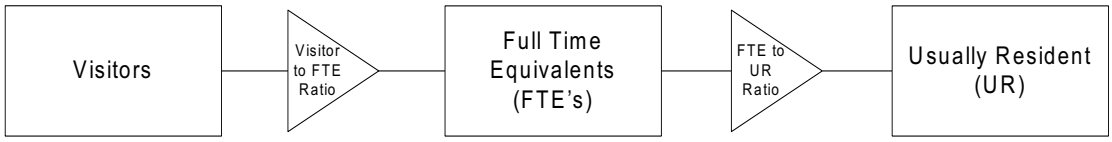
2.2 The process of developing the projections

The basic methodology developed in the 2004 Growth Options Study has been retained to project the growth for the Queenstown Lakes District. This methodology used two different approaches for the Wakatipu and Wanaka areas. This was due to a belief that different factors drive the growth in each area.

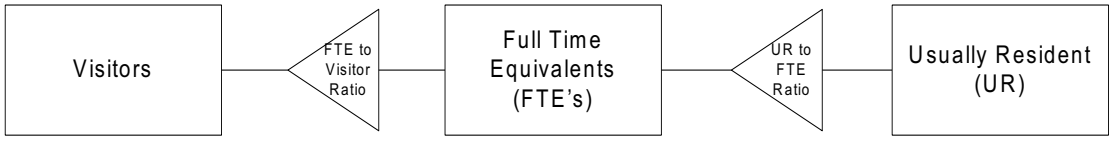
The key difference between the two methodologies was that for the Wakatipu area visitor projections were used as the starting point versus the usually resident population projections used for Wanaka. These different methodologies are outlined below.

Figure 1: Process Overview

Wakatipu



Wanaka



2.2.1 The process of developing the projections for the Wakatipu

The following process was used to develop the projections for the Wakatipu:

1. Consideration of the existing Statistics New Zealand projections.

2. Establish a broad relationship between visitor growth, employment growth and population growth.

3. Using visitor growth as the main driver of employment and population growth in the area, determine likely growth in visitor numbers, based on the number of visitor nights projected by the Tourism Strategy Group(Tourism Strategy Group, August 2010).

4. From the total visitor numbers, project out the number of full time equivalent (FTE's) workers, based on the current ratio between the number of visitors and the number of workers. The trend has been for the ratio between the number of workers and the number of visitors to increase over time.

5. Based on the growth of employment (FTE's), determine the likely population based on the current ratio of permanent residents to FTE's.

6. Based on the number of permanent residents, determine the number of occupied and unoccupied houses. This is achieved by first applying an assumed number of people per household to the permanent population. This figure is derived from the 2006 census. This then gives the number of permanent homes. A ratio between permanent and temporary homes is then applied to gain the total number of dwellings.

7. Based on the number of visitor nights projected by the Tourism Strategy Group and an assumed occupancy per stay unit, determine the additional number of stay units required.

8. Based on the total number of dwellings and the total number of stay units, determine the peak day population. This is achieved by first applying an assumed number of people per dwelling to the total number of dwellings and secondly by applying an assumed number of visitors per stay unit to the total number of stay units. These figures are derived from the 2004/05 Peak Population Survey(Rationale Ltd, Final Version 16/03/05).

2.2.2 The process of developing the projections for Wanaka

A different approach was taken to that for the Wakatipu, because the drivers of growth in Wanaka are different to those in the Wakatipu. In Wanaka the following process has been adopted:

1. Population projections as provided by Statistics New Zealand were used as the starting point. The medium series projections have been used rather than the high projections as used in the past.

2. Employment growth was based on the growth of the population. The trend was for the ratio between permanent residents and workers to decrease over time.

3. Finally, growth in visitor numbers was estimated based on the growth of the population on the basis that as more people live in the area, there will be a bigger service base, more activities, better transport links and these features will draw in more visitors to the area.

The growth in visitor numbers was also matched against the Tourism Strategy Group projections.

4. Based on the number of permanent residents, the number of occupied and unoccupied houses was determined. This is achieved by first applying an assumed number of people per household to the permanent population. This figure is derived from the 2006 census. This then gives the number of permanent homes. A ratio between permanent and temporary homes is then applied to gain the total number of dwellings.

5. Based on the number of visitor nights projected by the Tourism Strategy Group and an assumed occupancy per stay unit, the additional number of stay units required was determined.

6. Based on the total number of dwellings and the total number of stay units, determine the peak day population. This is achieved by first applying an assumed number of people per dwelling to the total number of dwellings and secondly by applying an assumed number of visitors per stay unit to the total number of stay units. These figures are derived from the 2004/05 Peak Population Survey.

2.3 Where will development go?

Once the high level projections have been produced we then need to determine where this future growth is most likely to occur. This is a difficult thing to try and predict as there are so many factors that influence it. As a starting point the past growth trends have been used to direct growth into each Census Area Unit.

Council also produces a Dwelling Capacity Model which estimates the residual dwelling capacity in each district plan zone and at areas defined as dwelling capacity areas. This is used to determine when a zone has reached capacity. If it has, then the model redirects this growth to those zones with the most residual capacity.

The Dwelling Capacity Model only assumes that the available land will be used for residential dwellings, therefore it is necessary to reduce the residual dwelling capacity numbers it produces to allow for the future visitor accommodation and other land uses that may be developed in these areas.

As the dwelling capacity areas and the Census Area Units do not match up very well, a matrix had to be developed to match the planning zones and the residual dwelling capacity to the Census Area Units.

3 Development of the Wakatipu projections

The Wakatipu projections include all of the areas covered by the Wakatipu and Arrowtown wards, which incorporate the following Census Area Units: Frankton, Glenorchy, Kelvin Heights, Sunshine Bay, Wakatipu, Lake Hayes, Arrowtown, Queenstown Bay and Queenstown Hill.

3.1 Population projections

Historic data is used to determine the current ratios between visitors, full time equivalents (FTE's) and the usually resident population. These are shown in the table below.

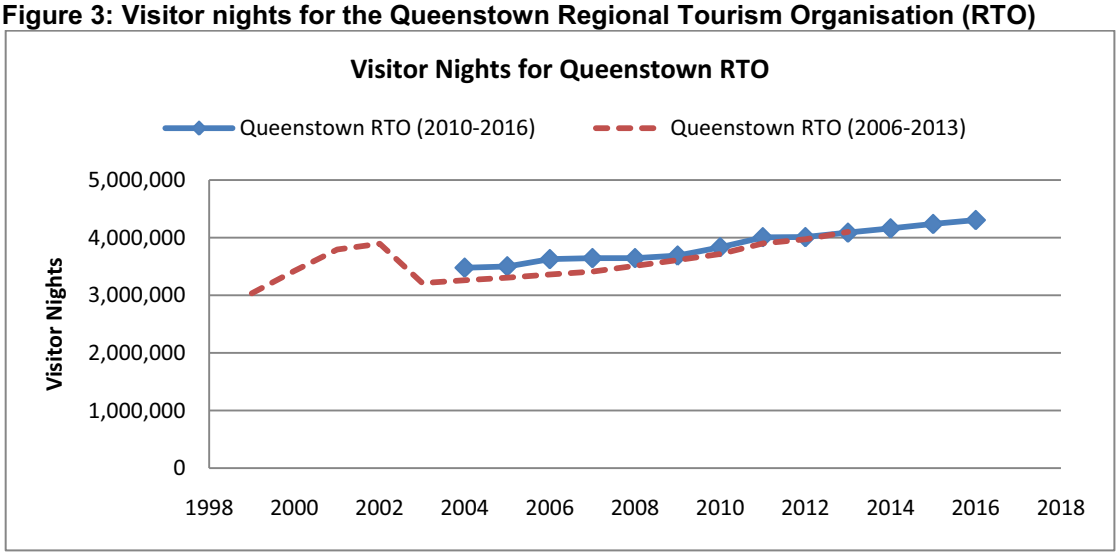
Figure 2: Wakatipu population ratios

	1996	2001	2006
Employment (FTEs)	6,098	7,064	9,561
Visitors (per day)		10,399	9,936
Estimated Resident Population	10,668	12,990	16,750

	1996	2001	2006
Residents / Visitor		1.25	1.69
FTEs / Visitor		0.68	0.96
Residents / FTE	1.75	1.84	1.75

Unfortunately visitor numbers for 1996 could not be sourced, however from the data that is available it is clear to see that since 2003 the visitors to the Queenstown region have stabilised and are again on the increase. This is more clearly shown in the following graph.

Figure 3: Visitor nights for the Queenstown Regional Tourism Organisation (RTO)



The above graph also shows the projected visitor nights out until 2016 as projected by the Tourism Strategy Group. This information has been used as the starting basis for the Wakatipu growth projections.

The discrepancy in historic data between the two sets of projections is due to a change in methodology relating to domestic tourism data sourced from the Domestic Tourism Survey. In

summary the 2009 data from this survey was considered the most accurate and the travel propensities assessed from 2009 have been back-cast onto previous years.

The visitor nights have been trended beyond 2016 based on the straight line trend between 2010 and 2016. This results in a 35% increase in visitor numbers from 2011 to 2031 as can be seen below.

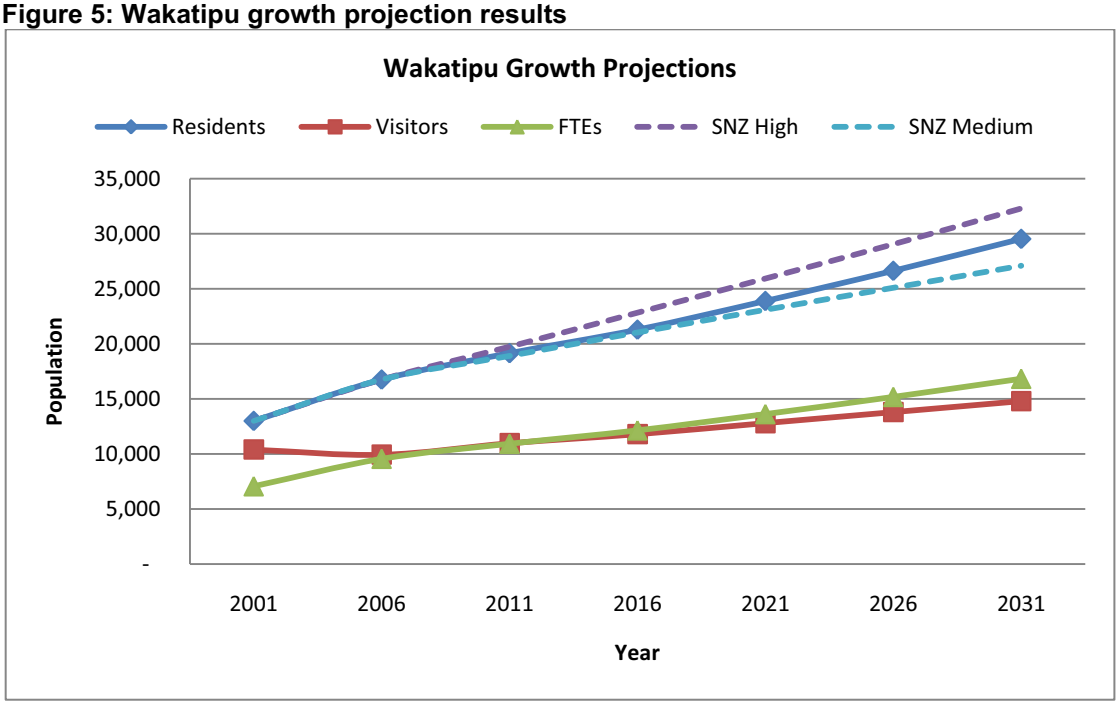
Figure 4: Wakatipu growth projection development

Visitors	2006	2011	2016	2021	2026	2031
Annual % Increase		2.02%	1.45%	1.65%	1.51%	1.40%
Total Visitors	9,936	10,981	11,801	12,805	13,801	14,796
Employment	2006	2011	2016	2021	2026	2031
Ratio (FTE / Visitor)	0.96	1.00	1.03	1.06	1.10	1.14
Total FTE's	9,561	10,927	12,143	13,625	15,185	16,836
Residents	2006	2011	2016	2021	2026	2031
Ratio (Residents / FTE)	1.75	1.75	1.75	1.75	1.75	1.75
Total Residents	16,750	19,150	21,288	23,894	26,638	29,543
Annual % Increase		2.71%	2.14%	2.34%	2.20%	2.09%

The ratio between FTE's and visitors has been assumed to increase over time as Queenstown grows and becomes more diverse than just a visitor destination. This results in around 5,900 additional FTE's from 2011 to 2031.

It has been assumed that the resident population to FTE ratio will remain constant over time. This results in the resident population increasing by around 10,400 residents from 2011 to 2031.

Figure 5: Wakatipu growth projection results



The above graph shows that the projections developed by this process compare very favourably with those produced by SNZ and actually predict similarly to the SNZ medium series out to 2016 and then at a slightly higher rate out until 2031. Even though the SNZ medium series projections are considered the most suitable by Statistics New Zealand they have a history of lifting their projections for the Wakatipu each time they release them as shown in Figure 6 below. It is therefore believed that matching somewhere between the SNZ medium and high series projections will be more accurate in the long-term.

The following graph shows a further comparison against the last projections produced for the 2009/19 CCP. This shows how the new projections initially start off a bit higher than those previously used in the 2009/19 CCP but then end up being very similar by 2026. There are two key reasons for this:

- The 2006 resident population has been adjusted up by Statistics New Zealand to account for;

    1. net census undercount (+80,000)[2]

    2. residents temporarily overseas on census night (+64,000)

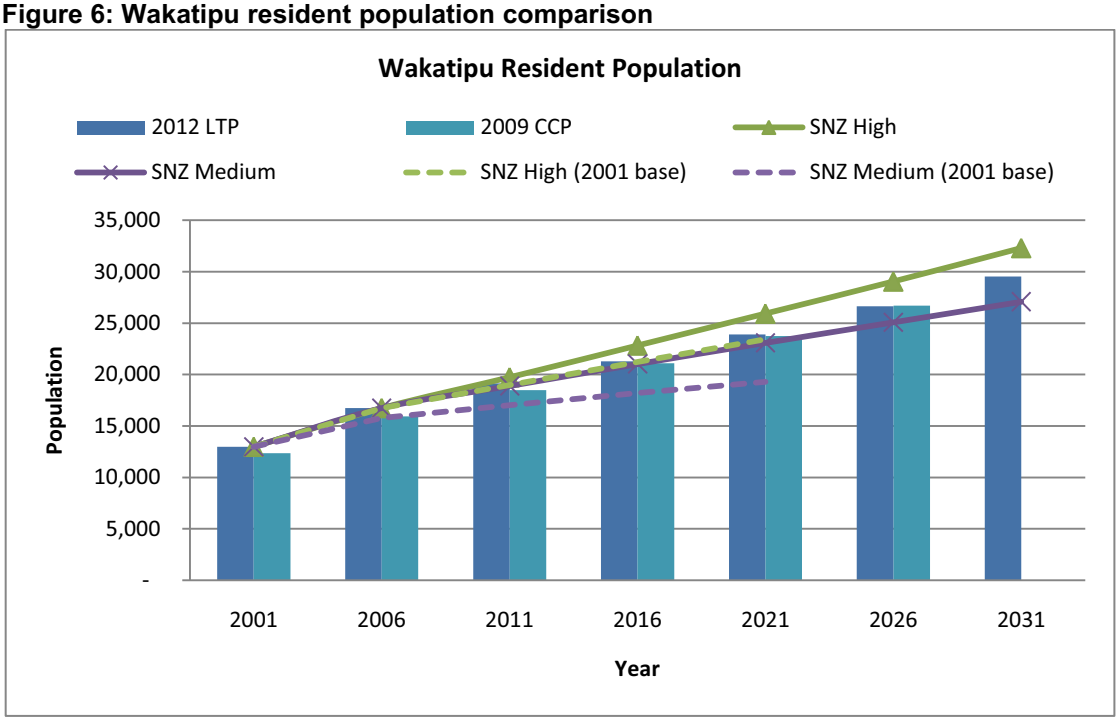
    3. births, deaths, and net migration between census night (7 March 2006) and 30 June 2006 (+9,000)

    4. reconciliation with demographic estimates at ages 0–4 years (+3,000).

- The Tourism Strategy Group have reduced their visitor projections from a 2.9% annual increase assumed in 2007 to 2.2% as used in these new projections.

[2] Note that the values in brackets are the national adjustments and are not just for the Queenstown Lakes District.

Figure 6: Wakatipu resident population comparison



3.2 Growth in residential dwellings

The resident population can now be used to predict the number of residential dwellings (private dwellings) required to house the population. Residential dwellings are split into the following dwelling types:

- Occupied private dwellings – An occupied private dwelling accommodates a person or a group of people. It is not generally available for public use. The main purpose of a private dwelling is as a place of habitation.
- Household – A household is either one person who usually resides alone, or two or more people who usually reside together and share facilities (such as eating facilities, cooking facilities, bathroom and toilet facilities, and a living area), in a private dwelling.
- Unoccupied dwellings – unoccupied at all times during the 12 hours following midnight on the night of the census, and suitable for habitation. It has been assumed that all unoccupied dwellings are private dwellings.

The total residential dwellings are relevant to the peak day population as this is when the majority of dwellings are occupied, generally over the summer peak.

Historic census data was used to show the portion of occupied and unoccupied private dwellings. Based on the forecast ratio of resident population to households and unoccupied dwellings the growth rate of residential dwellings can be estimated from the population projections. The table below shows the historic ratios used to predict occupied and unoccupied residential dwellings.

Figure 7 : Wakatipu usually resident and residential dwelling ratios

	1991	1996	2001	2006
Usually Resident Population	7,236	10,668	12,366	15,945
Usually Resident / Occupied Private Dwelling	2.52	2.61	2.55	2.59
Occupied Private Dwellings to Total Dwellings	0.61	0.70	0.71	0.74
Occupied Private Dwellings	2,874	4,083	4,848	6,156
Unoccupied Dwellings	1,809	1,716	1,989	2,127
Total Residential Dwellings	4,683	5,799	6,837	8,283
Change in Residential Dwellings per year		223	208	289
Usually Resident per Residential Dwelling	1.55	1.84	1.81	1.93

The number of residential dwellings is steadily increasing and so is the occupancy of these dwellings. This trend has been assumed to continue into the future for a number of reasons; including the fact that it is expected holiday homes will become less affordable in the district.

Using these ratios and any trends they are showing results in the following demand for residential dwellings in the Wakatipu.

Figure 8: Wakatipu future demand for residential dwellings

	2006	2011	2016	2021	2026	2031
Estimated Resident Population [3]	16,750	19,150	21,288	23,894	26,638	29,543
Residents / Household	2.60	2.59	2.56	2.53	2.51	2.48
Households to Total Dwellings	0.78	0.78	0.78	0.79	0.79	0.79
Households	6,432	7,407	8,323	9,434	10,622	11,905
Unoccupied Dwellings	1,851	2,059	2,284	2,545	2,831	3,137
Total Residential Dwellings	8,283	9,466	10,607	11,979	13,453	15,042
Change per year		237	228	274	295	318
Usually Resident per Residential Dwelling	2.02	2.02	2.01	1.99	1.98	1.96

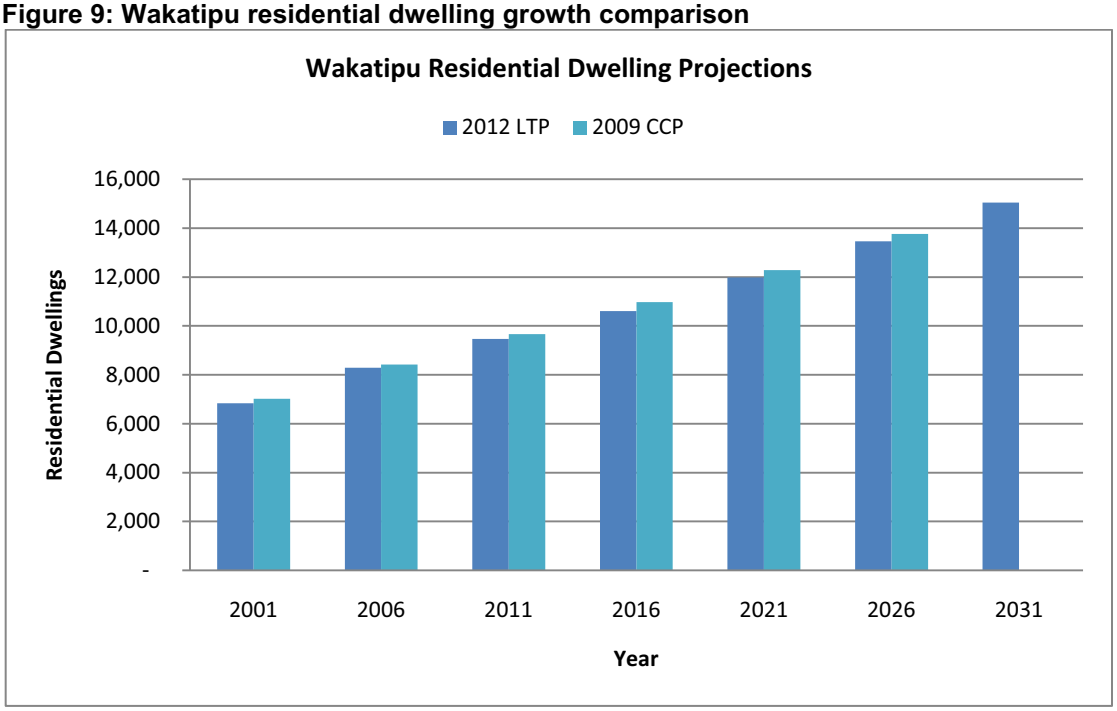
The following assumptions were made in the above projections:

- The ratio of residents per household will converge to an average of 2.3 residents per household by 2061.
- The percentage of households will increase as holiday homes become less prevalent. It has been assumed that the percentage will converge to 80% by 2061.

These assumptions result in a reduction in the projected dwellings for the Wakatipu over those projected in the 2009/19 CCP as shown below. The key driver for this result can be linked back to the lower Tourism Strategy Group visitor projections.

[3] As we are now using the estimated resident population we must also use households instead of occupied private dwellings.

Figure 9: Wakatipu residential dwelling growth comparison



3.3 Growth in visitor units

Visitor units are the same as Statistics New Zealand's definition of 'stay unit'. A stay unit is the unit of accommodation which is available to be charged out to guests, e.g. a powered site in a caravan park, a bed in a backpacker, a room in a hotel or motel.

The visitor nights projected by the Tourism Strategy Group and extended in 3.1 above to give the visitor numbers have been used to determine the additional visitor units required. Historic data shows an increasing trend for more visitors to be staying in commercial visitor accommodation. This trend has been assumed to continue into the future as shown below increasing from 63.4% to 72.8% by 2031. The additional guest nights are divided by 365 to give the average daily guest nights and then divided by 2 visitors / stay unit to give the number of additional units required. The same vacancy rates are thus assumed in the future as is the case at present. This methodology does not cater for peaks as it is assumed that the existing stock of visitor units has capacity to cater for the peaks.

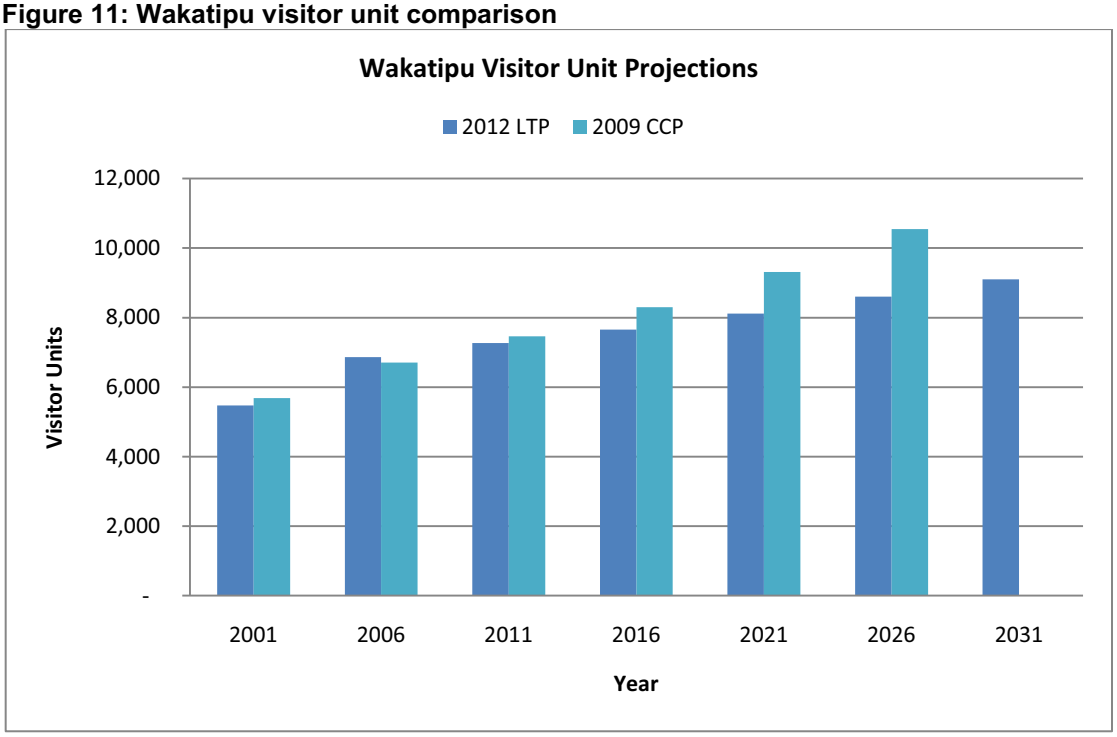
Figure 10: Wakatipu visitor unit projections

	2006	2011	2016	2021	2026	2031
Avg Annual Growth	-	2.02%	1.45%	1.65%	1.51%	1.40%
Visitor Nights	3,626,546	4,008,174	4,307,351	4,673,855	5,037,232	5,400,609
Guest Nights	2,298,463	2,593,138	2,873,967	3,213,205	3,565,082	3,931,684
% Guest Nights	63.4%	64.7%	66.7%	68.7%	70.8%	72.8%
Additional Guest Nights	-	294,675	280,828	339,239	351,877	366,602
Additional Units	-	404	385	465	482	502

In the previous growth projections model it was assumed that the split of visitors staying in commercial visitor accommodation would increase to 85% by 2029. When the reduced growth in

visitor nights is also considered this update predicts a significantly lower number of future visitor units as shown below.

Figure 11: Wakatipu visitor unit comparison



Note: The variances in 2001 and 2006 are due to the Commercial Accommodation Monitor data used in the old projections only being provided at the district level, assumptions therefore had to be made to split this data between Wakatipu and Wanaka.

3.4 Land availability

Queenstown Lakes District Council maintains a Dwelling Capacity Model (DCM) which shows the number of residential dwellings in each area and the additional capacity for further dwellings. The additional capacity is based on the current district plan zoning rules and some considerations of the feasibility of maximizing the development potential provided for by those rules.

The following table shows the current and additional capacity of each dwelling capacity area for the Wakatipu, as calculated in the July 2010 run of the Dwelling Capacity Model.

Figure 12 : Wakatipu dwelling capacity

Capacity Study Areas	Existing Dwellings	Residual Capacity	Total Dwelling Capacity
Fernhill Medium Density Residential	1,060	278	1,338
Fernhill Low Density Residential	1	59	60
Queenstown Town Centre	33	103	136
Queenstown High Density	1,303	2,510	3,813
Queenstown Hill Medium Density Residential	793	176	969
Queenstown Hill Low Density Residential	417	579	996
Queenstown Heights Low Density Residential	12	277	289
Frankton Low Density Residential	692	129	821
Remarkables Park	95	2,280	2,375
Five Mile	1	2,999	3,000
Quail Rise	154	64	218
Kelvin Heights Low Density Residential	590	1,839	2,429
Arrowtown Historic	217	25	242
Arrowtown Low Density Residential	1,033	167	1,200
Arthurs Point	264	445	709
Lake Hayes	43	76	119
Lake Hayes Estates	274	86	360
Jacks Point	58	1,536	1,594
Millbrook	157	293	450
Bendemeer	1	74	75
Waterfall Park	-	100	100
Meadow Park	34	66	100
Rural Visitor	8	5,387	5,395
Wakatipu Rural Residential	387	531	918
Wakatipu Rural Lifestyle	212	166	378
Wakatipu Rural General	587	422	1,009
Glenorchy Rural General	41	47	88
Gibbston Valley	61	-	61
Glenorchy Rural Residential[4]	24	32	56
Glenorchy Rural Lifestyle	28	305	333
Kingston Township	180	861	1,041
Kinloch Township	7	10	17
Glenorchy Township	112	344	456
Total	8,879	22,266	31,145

Note: This data is based on the July 2010 version of the Dwelling Capacity Model and counts 'Approved Not Yet Built' as existing dwellings.

It should be noted that the Five Mile/Frankton Flats development is included above even though this plan change has yet to be incorporated into the Dwelling Capacity Model.

The dwelling capacity areas are different to the Census Area Units and one or many dwelling capacity areas make up one Census Area Unit. One dwelling capacity area can also be across two different Census Area Units. The following table shows how the dwelling capacity areas match up against the Census Area Units.

[4] It has been assumed that the non-residential dwellings in this zone are country dwellings and therefore should be considered as residential dwellings.

Figure 13: Wakatipu Dwelling Capacity Model and census comparison

Census Area Unit	2010 Existing Dwellings (from DCM)	2006 Census Total Private Dwellings	Difference between DCM and Census	Residual Capacity
Frankton	785	873	(88)	354
Glenorchy	399	378	21	5,800
Kelvin Heights	643	606	37	2,074
Sunshine Bay	1,101	1,020	81	438
Wakatipu	1,692	1,164	528	8,330
Lake Hayes	179	135	44	294
Arrowtown	1,295	1,248	47	259
Queenstown Bay	1,078	1,101	(23)	2,899
Queenstown Hill	1,706	1,758	(52)	1,818
Total	8,879	8,283	596	22,266

The match up between the two sets of data is not great and it is believed to be because of the different definitions of dwellings. Overall the Dwelling Capacity Model should show more dwellings than the census since it includes another four year's growth. The lower numbers in Frankton, Queenstown Bay and Queenstown Hill are assumed to be due to 'workers accommodation', where residents are living in dwellings that are rated for visitor accommodation. These dwellings are therefore not included in the Dwelling Capacity Model but are captured by the Census. The dwelling numbers from the Dwelling Capacity Model are considered the most appropriate for this study and have been used as the basis for projecting future residential dwellings.

The Dwelling Capacity Model does not speculate as to the future uptake of the residual dwelling capacity, or what proportion of that capacity could be taken up by other uses, particularly visitor accommodation. Therefore an assessment has been made on how much of this additional capacity may be taken up by visitor accommodation.

The visitor unit projections are used to reduce the residual dwelling capacity. This is done by first assessing how many visitor units there are in a typical visitor accommodation dwelling. For Wakatipu this has been assessed as 4.0 units/dwelling in July 2010. Therefore the projected number of visitor units can be divided by 4.0 to estimate the dwelling capacity taken up by future visitor accommodation.

The split of existing non residential dwellings between the Census Area Units has been used to allocate the visitor units to each Census Area Unit. This has created a large shift towards visitor units in the Frankton and Queenstown Hill Census Area Units compared to the assumptions used in the previous projections.

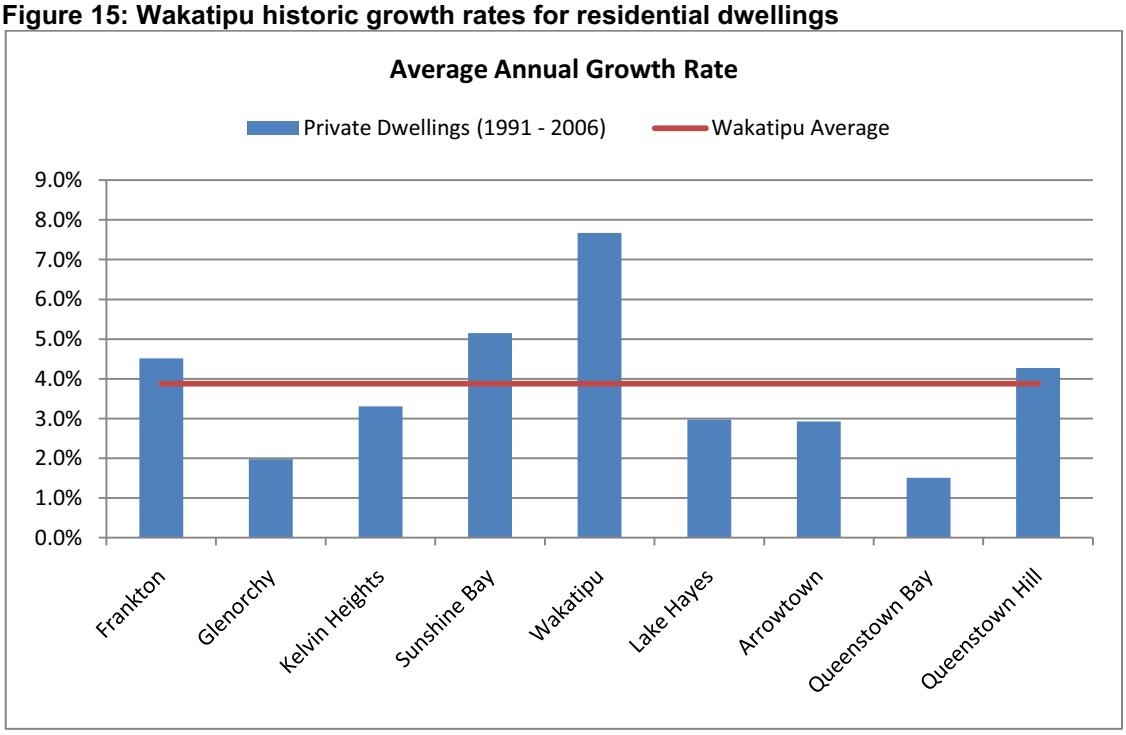
Figure 14: Wakatipu future visitor accommodation allowances

Census Area Unit	Residual Dwelling Capacity	Existing Non Residential Dwellings	Possible Future VA Dwellings	Net Residual Dwelling Capacity
Frankton	354	54	28	326
Glenorchy	5,800	52	63	5,738
Kelvin Heights	2,074	11	57	2,017
Sunshine Bay	438	47	41	397
Wakatipu	8,330	14	79	8,251
Lake Hayes	294	4	11	283
Arrowtown	259	50	43	216
Queenstown Bay	2,899	804	117	2,782
Queenstown Hill	1,818	781	128	1,690
Total	22,266	1,817	566	21,700

3.5 Growth allocation

This information assessed in 3.4 above is used to help determine where new development is most likely to occur along with the historic dwelling growth rates in each Census Area Unit. These historic growth rates are shown below.

Figure 15: Wakatipu historic growth rates for residential dwellings



The Wakatipu Census Area Unit has been experiencing the highest growth rate but Queenstown Hill has experienced the highest increase in residential dwellings. This is shown in the following table.

Figure 16: Wakatipu historic growth in residential dwellings

Census Area Unit	1991	1996	2001	2006	New Residential Dwellings (1991 - 2006)	Average Annual Growth Rate
Frankton	450	636	807	873	423	4.5%
Glenorchy	282	342	408	378	96	2.0%
Kelvin Heights	372	456	504	606	234	3.3%
Sunshine Bay	480	735	825	1,020	540	5.2%
Wakatipu	384	531	786	1,164	780	7.7%
Lake Hayes	87	96	111	135	48	3.0%
Arrowtown	810	939	1,023	1,248	438	2.9%
Queenstown Bay	879	1,017	978	1,101	222	1.5%
Queenstown Hill	939	1,047	1,392	1,758	819	4.3%
Total	4,683	5,799	6,834	8,283	3600	3.9%

The growth projections model assumes that each Census Area Unit will take a share of the new development based on these growth rates. When a Census Area Unit reaches capacity the overflow gets spread across those Census Area Units with spare capacity.

The growth rate in each Census Area Unit is thus a combination of:

- Future growth based on historic Census Area Unit growth rates.
- Residual capacity for residential development.
- Additional demand from other Census Area Units already at capacity.

In addition the model has been adjusted to prevent overflow from Census Area Units already at capacity from being allocated to the Glenorchy Census Area Unit. This is assumed to be more appropriate considering the work opportunities and travel times involved between the Glenorchy CAU and those within the Wakatipu Basin.

Based on these assumptions the model arrived at the following dwelling and visitor unit projections out until 2031.

Figure 17: Wakatipu residential dwelling projections

Census Area Unit	2006	2011	2016	2021	2026	2031
Frankton	873	837	939	1,061	1,111	1,111
Glenorchy	378	425	471	525	582	643
Kelvin Heights	606	685	766	877	1,021	1,180
Sunshine Bay	1,020	1,174	1,321	1,498	1,498	1,498
Wakatipu	1,164	1,808	2,078	2,519	3,198	3,986
Lake Hayes	135	190	212	240	272	307
Arrowtown	1,248	1,380	1,512	1,512	1,512	1,512
Queenstown Bay	1,101	1,147	1,270	1,437	1,647	1,876
Queenstown Hill	1,758	1,819	2,039	2,311	2,613	2,931
Total	8,283	9,466	10,607	11,979	13,454	15,044

Figure 18: Wakatipu visitor unit projections

Census Area Unit	2006	2011	2016	2021	2026	2031
Frankton	204	222	241	264	288	313
Glenorchy	197	237	281	330	385	444
Kelvin Heights	41	77	117	163	213	268
Sunshine Bay	178	206	234	267	303	342
Wakatipu	54	104	159	221	290	365
Lake Hayes	13	20	28	36	46	56
Arrowtown	189	218	247	281	318	358
Queenstown Bay	3,036	3,130	3,208	3,308	3,405	3,499
Queenstown Hill	2,952	3,053	3,138	3,246	3,353	3,457
Total	6,865	7,268	7,653	8,118	8,600	9,102

3.6 Building up the population profile

3.6.1 Average day

The average day population has been broken down into the following categories; usually resident, visitors staying in private residences, visitors staying in visitor accommodation and day visitors. In addition the dwellings are split to show the occupied and unoccupied proportions. Each of these categories is discussed below as to how they are populated.

Occupied and unoccupied dwellings

It has been assumed that all households are occupied on the average day. In the future it has been assumed that the split will converge to 80% occupied in all areas by 2061. This assumes an increase in the percentage of unoccupied dwellings in some Census Area Units but a trend away from unoccupied (holiday homes) in other areas.

Usually resident

The 2006 usually resident population in each Census Area Unit is based on the 2006 census data. In the future the resident population is distributed based on the number of households and it has been assumed that the number of residents per household will converge to 2.3 residents per household by 2061. This is the average household size forecast for the district by Statistics New Zealand in 2031. It is also assumed that all residents are at home on the average day.

Visitors

Visitors have been split between those staying in private residences and those staying in visitor accommodation. This split is based on historical trends between Visitor Nights and Guest Nights, which results in a greater percentage of visitors staying in visitor accommodation in the future. Day Visits are based on those developed by the Tourism Strategy Group. These splits are shown below:

Figure 19: Wakatipu visitor breakdown

Year	Day Visits	Visitor Nights	Guest Nights	% Guest Nights
2004	684,149	3,477,512	2,085,517	60.0%
2005	678,001	3,501,827	2,226,502	63.6%
2006	702,886	3,626,546	2,298,463	63.4%
2007	701,869	3,644,327	2,313,746	63.5%
2008	699,887	3,644,117	2,402,477	65.9%
2009	734,400	3,688,545	2,254,808	61.1%
2010	739,617	3,833,709	2,463,496	64.3%
2011	756,181	4,008,174	2,593,138	64.7%
2012	758,598	4,009,497	2,610,241	65.1%
2013	766,377	4,087,280	2,677,442	65.5%
2014	773,927	4,162,479	2,743,569	65.9%
2015	781,662	4,238,676	2,810,969	66.3%
2016	788,790	4,307,351	2,873,967	66.7%
2021	827,539	4,673,855	3,213,205	68.7%
2026	865,720	5,037,232	3,565,082	70.8%
2031	903,900	5,400,609	3,931,684	72.8%

The visitor numbers are spread evenly across the dwellings for those staying in private residences and the visitor units for those staying in visitor accommodation.

Day visitors are harder to determine where it is best to locate them. As a default to any better method we have apportioned them across the Census Area Units based on dwelling numbers. It is therefore recommended that day visitor numbers are used with caution and preferably only at the Wakatipu level.

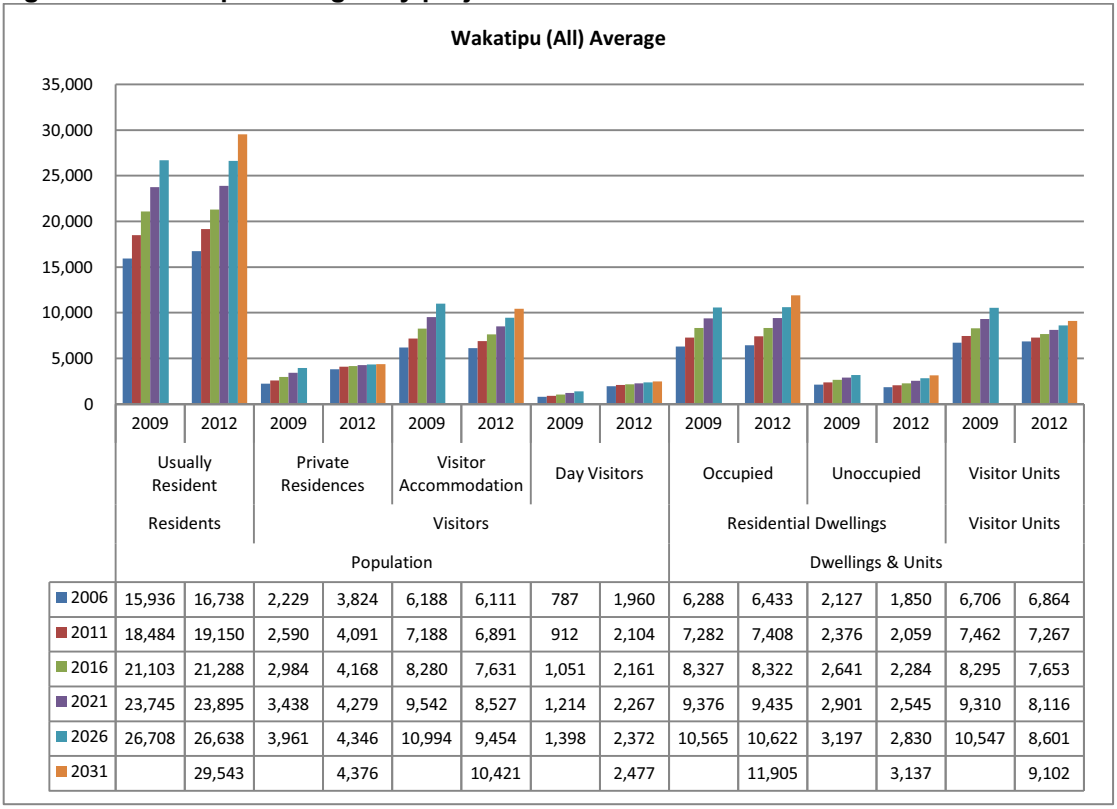
Earlier work performed by Market Economics Ltd showed that Arrowtown has a very different visitor split to the rest of the Wakatipu. This work has therefore been used to split the visitors up for Arrowtown and since we have no better information we have assumed that the ratios will stay the same into the future.

Arrowtown Visitor Splits	Percentage
Overnight Visitors	5% of Queenstown RTO
Visitors staying in private residences	71%
Visitors staying in visitor accommodation	29%
Day Visits	8% of Queenstown RTO

Comparison to 2009 CCP

The following graph highlights the changes from the last projections produced for the 2009 CCP. Significant changes are the increase in visitors staying in private residences and day visitors.

Figure 20: Wakatipu average day projections



	2009	2012	2009	2012	2009	2012	2009	2012	2009	2012	2009	2012	2009	2012
	Usually Resident		Private Residences		Visitor Accommodation		Day Visitors		Occupied		Unoccupied		Visitor Units	
	Residents		Visitors						Residential Dwellings				Visitor Units	
	Population								Dwellings & Units					
2006	15,936	16,738	2,229	3,824	6,188	6,111	787	1,960	6,288	6,433	2,127	1,850	6,706	6,864
2011	18,484	19,150	2,590	4,091	7,188	6,891	912	2,104	7,282	7,408	2,376	2,059	7,462	7,267
2016	21,103	21,288	2,984	4,168	8,280	7,631	1,051	2,161	8,327	8,322	2,641	2,284	8,295	7,653
2021	23,745	23,895	3,438	4,279	9,542	8,527	1,214	2,267	9,376	9,435	2,901	2,545	9,310	8,116
2026	26,708	26,638	3,961	4,346	10,994	9,454	1,398	2,372	10,565	10,622	3,197	2,830	10,547	8,601
2031		29,543		4,376		10,421		2,477		11,905		3,137		9,102

3.6.2 Peak day

The peak day population has been broken down into the following categories; usually resident, visitors staying in private residences, visitors staying in visitor accommodation and day visitors. In addition the dwellings are split to show the occupied and unoccupied proportions. Each of these categories is discussed below as to how they are populated.

Occupied and unoccupied dwellings

The 2006 split is based on the 89% occupancy measured in the 2004/05 Peak Population Survey. In the future it has been assumed that this split will remain constant.

Usually resident

The 2006 usually resident population in each Census Area Unit is based on the 2006 census data. In the future the usually resident population is distributed based on the number of occupied dwellings and it has been assumed that all residents are at home on the peak day.

Visitors

Visitors have been split between those staying in private residences, those staying in visitor accommodation and day visitors.

Visitors staying in private residences have been assessed by assuming a standard occupancy per dwelling. This occupancy was determined from the 2004/05 Peak Population Survey and has been assumed to reduce as the number of holiday homes reduces over time. It is based on assuming

1.4 visitors per household and 3.4 visitors per unoccupied dwelling (holiday home). These occupancy figures are shown below.

Figure 21: Wakatipu peak day visitors per private residence

	2006	2011	2016	2021	2026	2031
Peak no. of visitors per private residence	1.78	1.77	1.77	1.76	1.76	1.75

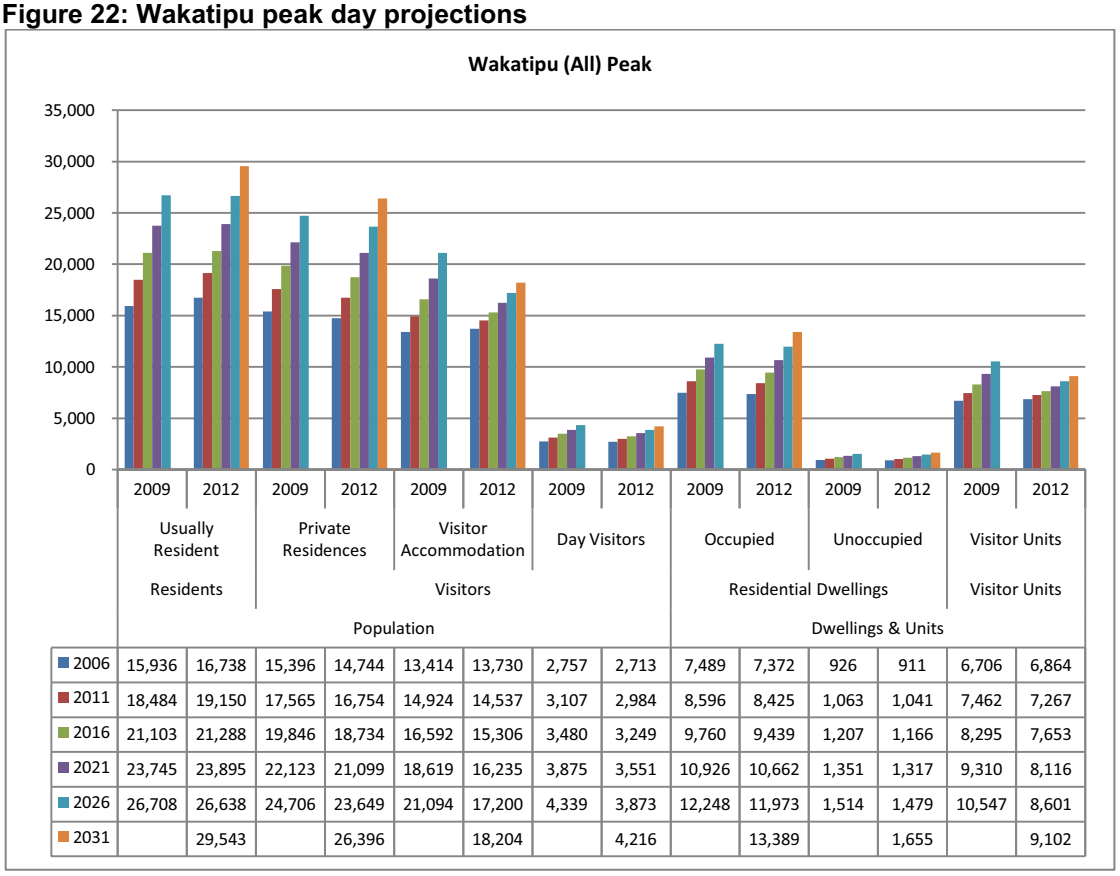
Visitors staying in visitor accommodation have been assessed by assuming 2.0 occupants per visitor unit as determined from the peak population survey.

Day visitors have been assessed from the overnight visitors by assuming the same ratio of day visitors to the overnight visitors as used for the average day projections.

Comparison to 2009 CCP

The following graph highlights the changes from the last projections produced for the 2009 CCP. The significant changes are the reduced growth in visitor units and visitors staying in visitor accommodation.

Figure 22: Wakatipu peak day projections



	2009	2012	2009	2012	2009	2012	2009	2012	2009	2012	2009	2012	2009	2012
	Usually Resident		Private Residences		Visitor Accommodation		Day Visitors		Occupied		Unoccupied		Visitor Units	
	Residents		Visitors						Residential Dwellings				Visitor Units	
	Population								Dwellings & Units					
2006	15,936	16,738	15,396	14,744	13,414	13,730	2,757	2,713	7,489	7,372	926	911	6,706	6,864
2011	18,484	19,150	17,565	16,754	14,924	14,537	3,107	2,984	8,596	8,425	1,063	1,041	7,462	7,267
2016	21,103	21,288	19,846	18,734	16,592	15,306	3,480	3,249	9,760	9,439	1,207	1,166	8,295	7,653
2021	23,745	23,895	22,123	21,099	18,619	16,235	3,875	3,551	10,926	10,662	1,351	1,317	9,310	8,116
2026	26,708	26,638	24,706	23,649	21,094	17,200	4,339	3,873	12,248	11,973	1,514	1,479	10,547	8,601
2031		29,543		26,396		18,204		4,216		13,389		1,655		9,102

4 Development of the Wanaka projections

The Wanaka projections actually include all of the areas covered by the Wanaka Ward, which incorporates the following Census Area Units: Hawea, Wanaka and Matukituki.

4.1 Population projections

Historic data is used to determine the current ratios between visitors, full time equivalents (FTE's) and the resident population. These are shown in the table below.

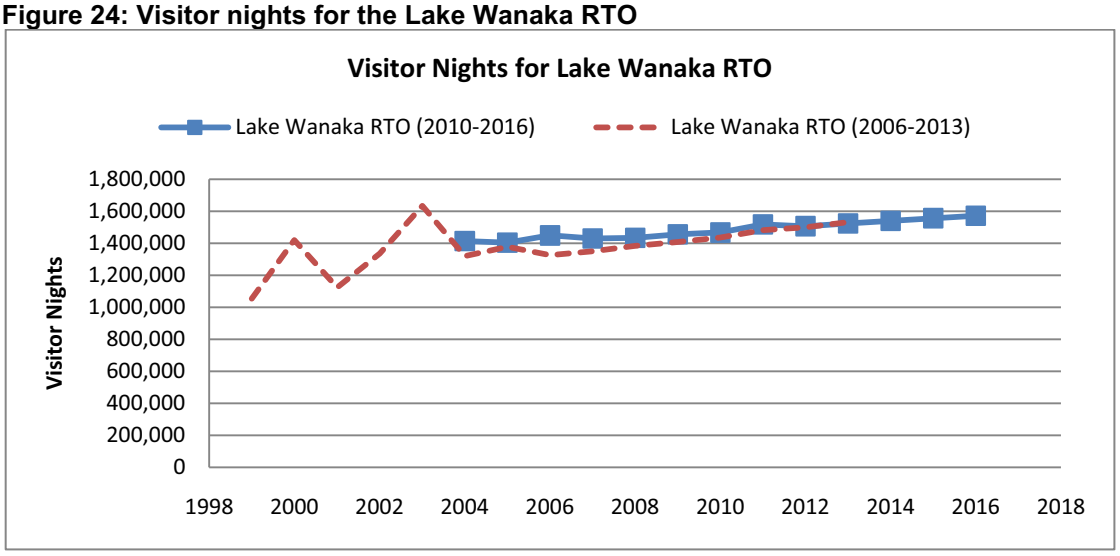
Figure 23: Wanaka population ratios

	1996	2001	2006
Employment (FTEs)	1,583	2,133	3,797
Visitors (per day)		3,080	3,971
Estimated Resident Population	3,618	4,850	7,350

	1996	2001	2006
Residents / Visitor		1.57	1.85
FTEs / Visitor		0.69	0.96
Residents / FTE	2.29	2.27	1.94

Unfortunately visitor numbers for 1996 could not be sourced, however from the data that is available it is clear to see that since 2003 the visitors to the Wanaka region have stabilized and are again on the increase. This is more clearly shown in the following graph.

Figure 24: Visitor nights for the Lake Wanaka RTO



The above graph also shows the projected visitor nights out until 2016 as projected by the Tourism Strategy Group. Unlike the Wakatipu projections this information is not used as the starting point for the Wanaka growth projections.

Instead the Statistics New Zealand medium series, 2006(base) – 2031 update, population projections have been used. These are considered the most suitable for assessing future population changes.

Figure 25: Wanaka growth projection development

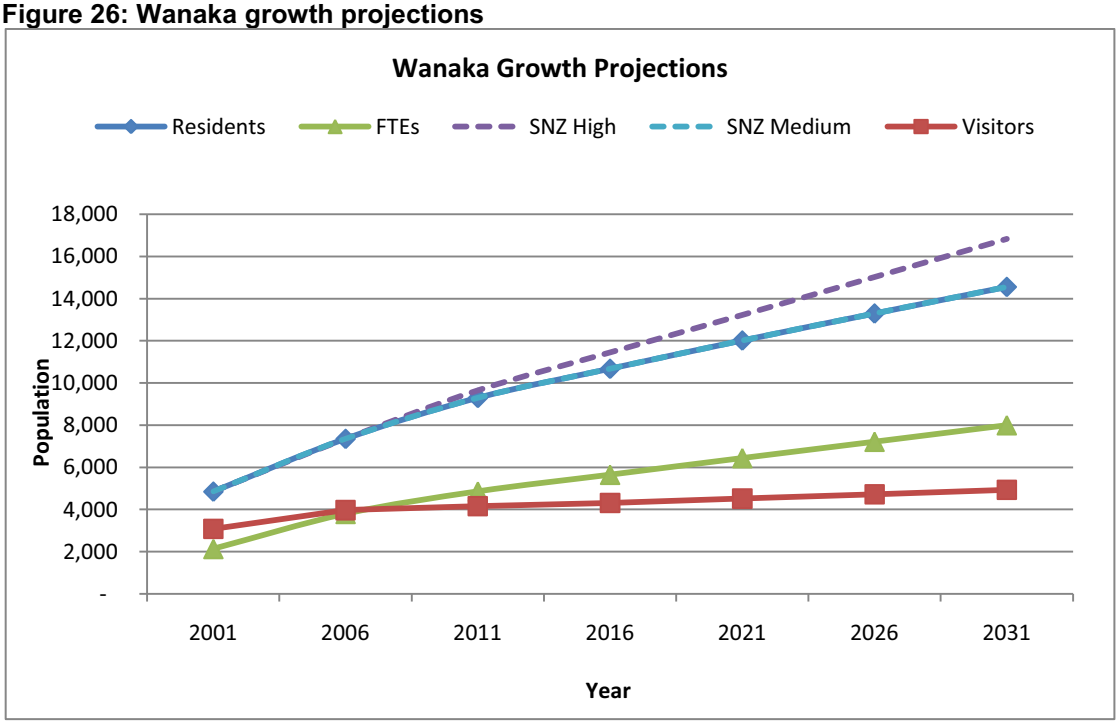
Residents	2006	2011	2016	2021	2026	2031
Annual % Increase	8.67%	4.80%	2.81%	2.39%	2.05%	1.83%
Total Residents	7,350	9,290	10,670	12,010	13,290	14,550
Employment	2006	2011	2016	2021	2026	2031
Ratio (Residents / FTE)	1.94	1.91	1.89	1.86	1.84	1.82
Total FTE's	3,797	4,860	5,652	6,442	7,219	8,003
Visitors	2006	2011	2016	2021	2026	2031
Ratio (FTEs / Visitor)	0.96	1.17	1.31	1.43	1.53	1.62
Total Visitors	3,971	4,160	4,308	4,515	4,723	4,931

In the previous version of the projections the Statistics New Zealand high series, 2006 – 2021 (2001 Base), were used as the basis for Wanaka. The new medium series used in this version actually matches more closely to this old high series and is therefore considered more appropriate this time around. This results in the usually resident population nearly doubling from 2006 to 2031.

Recent trends show that the usually resident population to FTE ratio has been declining over time and it has been assumed that this trend will continue. This results in the FTE's more than doubling from 2006 to 2031.

The ratio between FTE's and visitors has been assumed to increase over time as shown by the recent trend. This results in visitors to the Wanaka area not increasing as fast as residents and is supported by the 2010 – 2016 Tourism Strategy Group projections. For consistency the visitor growth has been matched to that forecast by the Tourism Strategy Group.

Figure 26: Wanaka growth projections

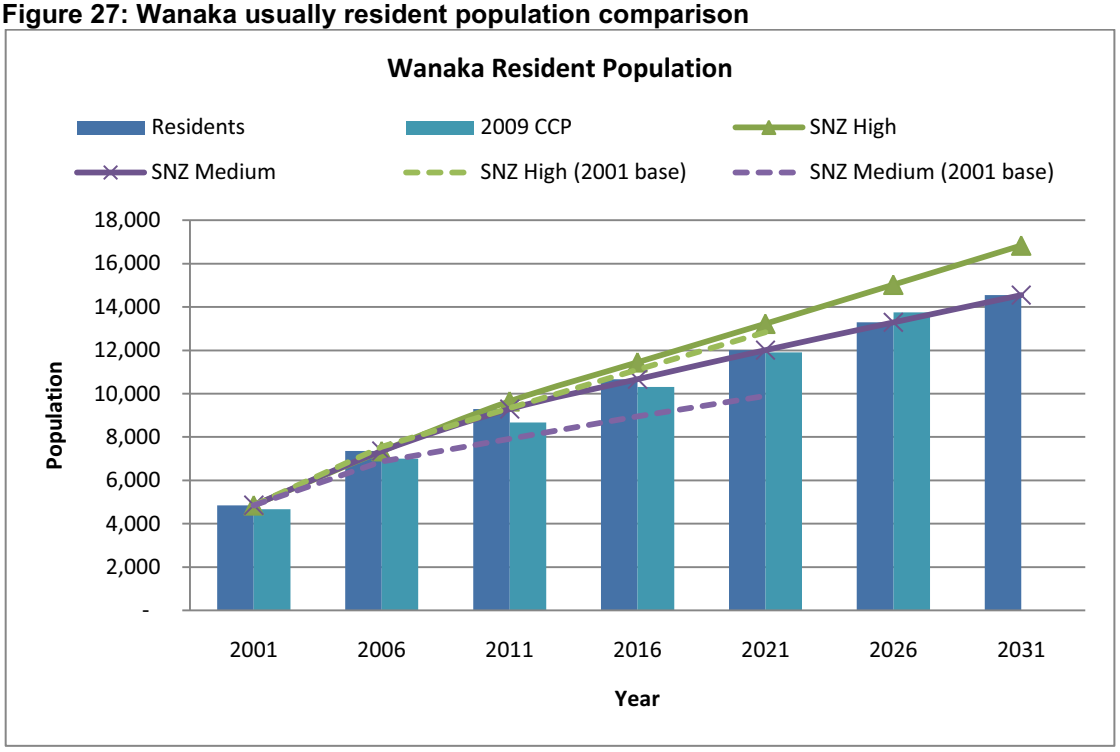


The following graph shows a further comparison against the last projections produced for the 2009/19 CCP. This shows how the new projections initially start off a bit higher than those previously used in the 2009/19 CCP but then end up being very similar by 2021. There is a key reason for this:

- The 2006 resident population has been adjusted up by Statistics New Zealand to account for;

  1. net census undercount (+80,000)[5]
  2. residents temporarily overseas on census night (+64,000)
  3. births, deaths, and net migration between census night (7 March 2006) and 30 June 2006 (+9,000)
  4. reconciliation with demographic estimates at ages 0–4 years (+3,000).

Figure 27: Wanaka usually resident population comparison



4.2 Growth in residential dwellings

The resident population can now be used to predict the number of residential dwellings (private dwellings) required to house the population. Residential dwellings are split into the following dwelling types:

[5] Note that the values in brackets are the national adjustments and are not just for the Queenstown Lakes District.

- Occupied private dwellings – An occupied private dwelling accommodates a person or a group of people. It is not generally available for public use. The main purpose of a private dwelling is as a place of habitation.

- Household – A household is either one person who usually resides alone, or two or more people who usually reside together and share facilities (such as eating facilities, cooking facilities, bathroom and toilet facilities, and a living area), in a private dwelling.

- Unoccupied dwellings – unoccupied at all times during the 12 hours following midnight on the night of the census, and suitable for habitation. It has been assumed that all unoccupied dwellings are private dwellings.

The total residential dwellings are relevant to the peak day population as this is when the majority of dwellings are occupied, generally over the summer peak.

Historic census data was used to show the portion of occupied and unoccupied private dwellings. Based on the forecast ratio of resident population to households and unoccupied dwellings the growth rate of residential dwellings can be estimated from the population projections. The table below shows the historic ratios used to predict occupied and unoccupied residential dwellings.

Figure 28 : Wanaka usually resident and dwelling ratios

	1991	1996	2001	2006
Usually Resident Population	2,751	3,618	4,677	7,002
Usually Resident / Occupied Private Dwelling	2.29	2.36	2.41	2.38
Occupied Dwellings to Total Dwellings	0.52	0.56	0.57	0.63
Private Occupied Dwellings	1,203	1,536	1,941	2,937
Unoccupied Dwellings	1,119	1,224	1,437	1,710
Total Residential Dwellings	2,322	2,760	3,378	4,647
Change in Dwellings per year		88	124	254
Usually Resident per Residential Dwelling	1.18	1.31	1.38	1.51

The number of residential dwellings is steadily increasing and so is the occupancy of these dwellings. This trend has been assumed to continue into the future as holiday homes become less affordable in the district.

Using these ratios and any trends they are showing results in the following demand for residential dwellings in the Wanaka area.

Figure 29: Wanaka future demand for residential dwellings

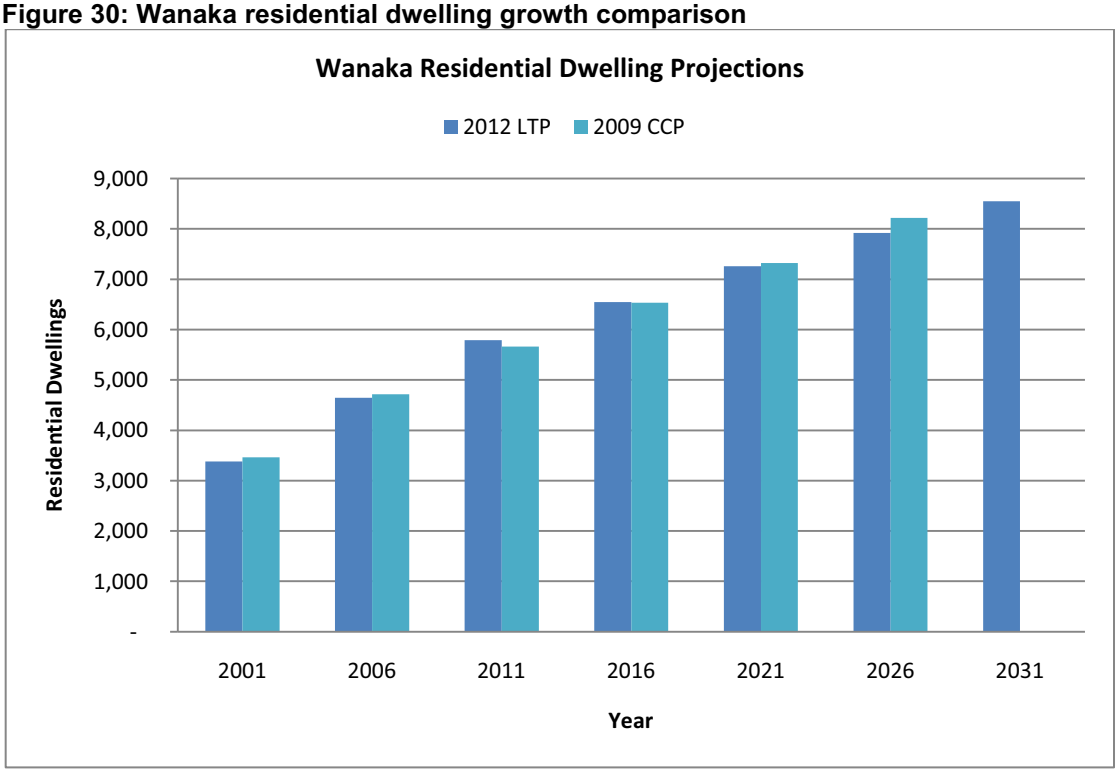
	2006	2011	2016	2021	2026	2031
Estimated Resident Population	7,350	9,290	10,670	12,010	13,290	14,550
Residents / Household	2.39	2.39	2.38	2.37	2.36	2.35
Households to Total Dwellings	0.66	0.67	0.69	0.70	0.71	0.72
Households	3,070	3,895	4,489	5,071	5,632	6,188
Unoccupied Dwellings	1,577	1,893	2,058	2,190	2,288	2,362
Total Residential Dwellings	4,647	5,788	6,547	7,261	7,920	8,550
Change in Dwellings per year		228	152	143	132	126
Usually Resident per Residential Dwelling	1.58	1.61	1.63	1.65	1.68	1.70

The following assumptions were made in the above projections:

- The ratio of residents per household will converge to an average of 2.3 residents per household by 2061.
- The percentage of households will increase as holiday homes become less prevalent. It has been assumed that the percentage will converge to 80% by 2061.

These assumptions result in an early increase but an overall reduction of the projected residential dwellings for Wanaka compared to those projected in the 2009/19 CCP as shown below.

Figure 30: Wanaka residential dwelling growth comparison



4.3 Growth in visitor units

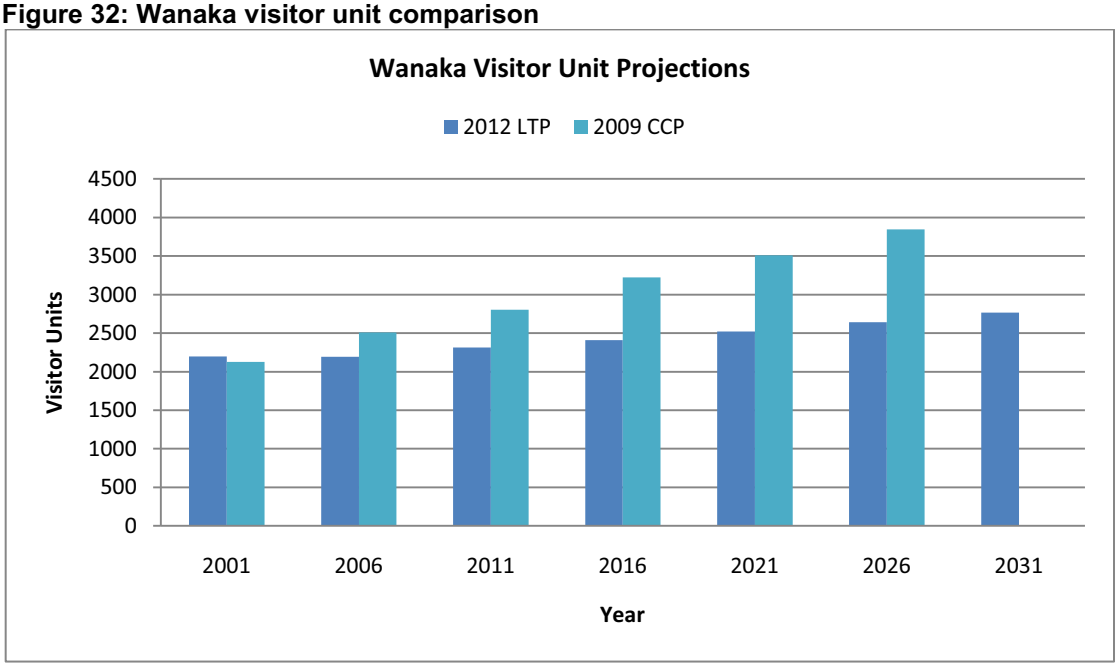
The visitor nights projected by the Tourism Strategy Group and extrapolated in 4.1 above to give the visitor numbers have been used to determine the additional visitor units required. Historic data shows an increasing trend for more visitors to be staying in visitor accommodation. This trend has been assumed to continue into the future as shown below increasing from 35.5% to 51.9% by 2031. The additional guest nights are divided by 365 to give the average daily guest nights and then divided by 2 visitors / stay unit to give the number of additional units required. This methodology does not cater for peaks as it is assumed that the existing stock of visitor units has capacity to cater for the peaks.

Figure 31: Wanaka visitor unit projections

	2006	2011	2016	2021	2026	2031
Average Annual Growth		0.9%	0.7%	0.9%	0.9%	0.9%
Visitor Nights	1,449,264	1,518,424	1,572,279	1,647,827	1,723,740	1,799,654
Guest Nights	514,937	602,991	672,230	754,682	841,911	933,761
% Guest Nights	35.5%	39.7%	42.8%	45.8%	48.8%	51.9%
Additional Guest Nights		88,054	69,239	82,452	87,229	91,850
Additional Units		121	95	113	119	126

In the previous growth projections model it was assumed that the split of visitors staying in visitor accommodation would increase to 77.1% by 2029. Hence when the reduced growth in visitor nights is considered this update predicts a significantly lower number of future visitor units as shown below.

Figure 32: Wanaka visitor unit comparison



Note: The variances in 2001 and 2006 are due to the Commercial Accommodation Monitor data used in the old projections only being provided at the district level, assumptions therefore had to be made to split this data between Wakatipu and Wanaka.

4.4 Land availability

Queenstown Lakes District Council maintains a Dwelling Capacity Model (DCM) which shows the number of residential dwellings in each area and the additional capacity for further dwellings. The additional capacity is based on the current district plan zoning rules and some consideration of the feasibility of maximizing the development potential provided for by those rules.

The following table shows the current and additional capacity of each dwelling capacity area for the Wanaka area, as calculated in the July 2010 run of the Dwelling Capacity Model.

Figure 33 : Wanaka dwelling capacity

Capacity Study Areas	Existing Dwellings	Residual Capacity	Total Dwelling Capacity
Wanaka Town Centre	10	52	62
Wanaka High Density	237	548	785
Albert Town	408	304	712
Makarora	40	-	40
Luggate	112	69	181
Hawea	510	641	1,151
North Wanaka	1,706	1,373	3,079
South Wanaka	1,039	851	1,890
3 Parks	-	750	750
Penrith Park	62	68	130
Peninsular Bay	46	354	400
Rural Visitor	27	1,398	1,425
Wanaka Rural Res[6]	431	500	931
Greater Hawea Rural Res	156	340	496
Wanaka Rural Lifestyle	164	139	303
Greater Hawea Rural Lifestyle[7]	47	25	72
Makarora Rural Lifestyle	20	-	20
Wanaka Rural General	179	113	292
Hawea Rural General	270	95	365
Total	5,464	7,620	13,084

Note: This data is based on the July 2010 version of the Dwelling Capacity Model and counts 'Approved Not Yet Built' as existing dwellings.

The dwelling capacity zones are different to the Census Area Units and one or many dwelling capacity zones make up one Census Area Unit. One dwelling capacity zone can also be across two different Census Area Units. The following table shows how the dwelling capacity zones match up against the Census Area Units.

[6] It has been assumed that the non-residential dwellings in this zone are country dwellings and therefore should be considered as residential dwellings.
[7] It has been assumed that the non-residential dwellings in this zone are country dwellings and therefore should be considered as residential dwellings.

Figure 34: Wanaka Dwelling Capacity Model and census comparison

Census Area Unit	Existing Dwellings (from DCM)	Census Total Private Dwellings	Difference between DCM and Census	Residual Capacity
Hawea	1,187	1,014	173	1,170
Wanaka	4,058	3,435	623	4,964
Matukituki	219	198	21	1,486
Total	5,464	4,647	817	7,620

Overall the Dwelling Capacity Model should show more dwellings than the census since it includes another four years of growth. The lower numbers in Hawea and Matukituki though are presumed to be affected by the different definitions of dwellings as discussed in 3.4 above but to a lesser extent.

The Dwelling Capacity Model does not speculate as to the future uptake of the residual dwelling capacity, or what proportion of that capacity could be taken up by other uses, particularly visitor accommodation. Therefore an assessment has been made on how much of this additional capacity may be taken up by visitor accommodation.

The visitor unit projections are used to reduce the residual dwelling capacity. This is done by first assessing how many visitor units there are in a typical visitor accommodation dwelling. For Wanaka this has been assessed as 4.9 units/dwelling in July 2010. Therefore the projected number of visitor units can be divided by 4.9 to estimate the dwelling capacity taken up by future visitor accommodation.

The split of existing non residential dwellings between the Census Area Units has been used to allocate the visitor units to each Census Area Unit. This has created a large shift towards visitor units in the Matukituki Census Area Unit compared to the assumptions used in the previous projections.

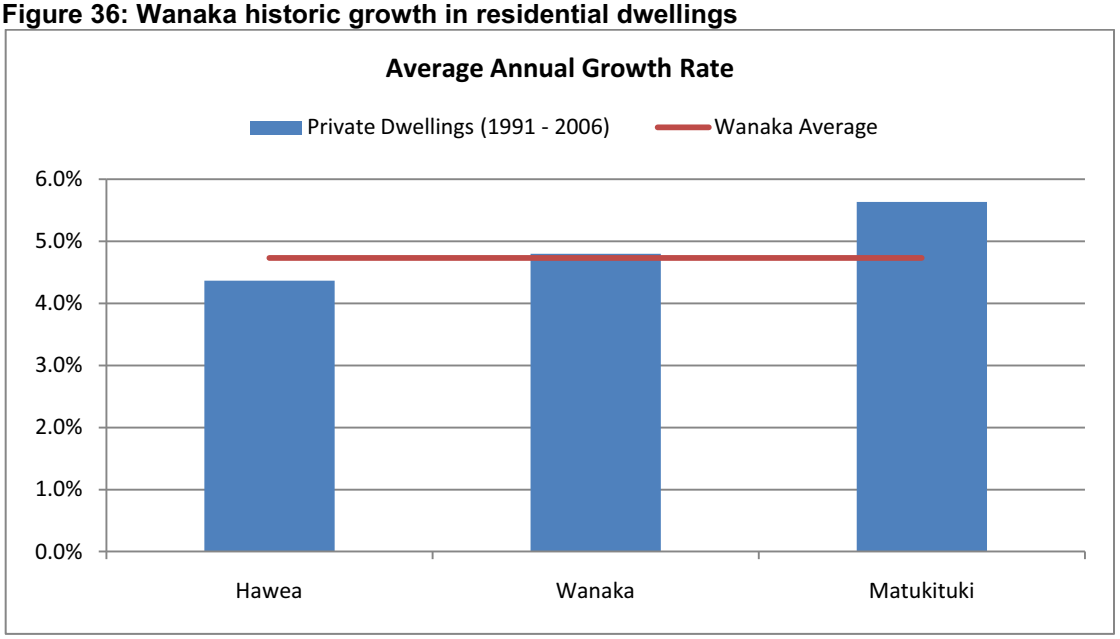
Figure 35: Wanaka future visitor accommodation allowances

Census Area Unit	Residual Capacity	Existing Non Residential Dwellings	Possible Future VA Dwellings	Net Residual Dwelling Capacity
Hawea	1,170	6	10	1,160
Wanaka	4,964	380	64	4,900
Matukituki	1,486	207	45	1,442
Total	7,620	593	118	7,502

4.5 Growth allocation

This information assessed in 4.4 above is used to help determine where new development is most likely to occur along with the historic dwelling growth rates in each Census Area Unit. These historic growth rates are shown below.

Figure 36: Wanaka historic growth in residential dwellings



The Matukituki Census Area Unit has been experiencing the highest growth rate but Wanaka has experienced the highest increase in residential dwellings. This is shown in the following table.

Figure 37: Wanaka historic growth in residential dwellings

Census Area Unit	1991	1996	2001	2006	New Residential Dwellings (1991 - 2006)	Average Annual Growth Rate
Hawea	534	609	723	1,014	480	4.4%
Wanaka	1,701	2,034	2,514	3,435	1,734	4.8%
Matukituki	87	117	141	198	111	5.6%
Total	2,322	2,760	3,378	4,647	2,325	4.7%

The growth projections model assumes that each Census Area Unit will take a share of the new development based on these growth rates. When a Census Area Unit reaches capacity the overflow gets spread across those Census Area Units with spare capacity.

The growth rate in each Census Area Unit is thus a combination of:

- Future growth based on historic Census Area Unit growth rates.
- Residual capacity for residential development.
- Additional demand from other Census Area Units already at capacity.

Based on these assumptions the model arrived at the following dwelling and visitor unit projections out until 2031.

Figure 38: Wanaka residential dwelling projections

Census Area Unit	2006	2011	2016	2021	2026	2031
Hawea	1,014	1,257	1,419	1,571	1,711	1,844
Wanaka	3,435	4,299	4,865	5,397	5,887	6,357
Matukituki	198	232	264	294	322	349
Total	4,647	5,788	6,547	7,261	7,920	8,550

Figure 39: Wanaka visitor unit projections

Census Area Unit	2006	2011	2016	2021	2026	2031
Hawea	22	32	42	54	58	70
Wanaka	1,405	1,470	1,518	1,576	1,648	1,715
Matukituki	766	812	849	892	935	983
Total	2,194	2,314	2,409	2,522	2,641	2,767

4.6 Building up the population profile

4.6.1 Average day

The average day population has been broken down into the following categories; usually resident, visitors staying in private residences, visitors staying in visitor accommodation and day visitors. In addition the dwellings are split to show the occupied and unoccupied proportions. Each of these categories is discussed below as to how they are populated.

Occupied and unoccupied dwellings

It has been assumed that all households are occupied on the average day. In the future it has been assumed that the split will converge to 80% occupied in all areas by 2061. This assumes a trend away from unoccupied (holiday homes) in the Wanaka and Hawea Census Area Units.

Usually resident

The 2006 usually resident population in each Census Area Unit is based on the 2006 census data. In the future the resident population is distributed based on the number of households and it has been assumed that the number of residents per household will converge to 2.3 residents per household by 2061. This is the average household size forecast for the district by Statistics New Zealand in 2031. It is also assumed that all residents are at home on the average day.

Visitors

Visitors have been split between those staying in private residences and those staying in visitor accommodation. This split is based on historical trends between Visitor Nights and Guest Nights, which results in a greater percentage of visitors staying in visitor accommodation in the future. Day Visits are based on those developed by the Tourism Strategy Group. These splits are shown below:

Figure 40: Wanaka visitor breakdown

Year	Day Visits	Visitor Nights	Guest Nights	% Guest Nights
2004	305,017	1,413,801	512,363	36.2%
2005	301,639	1,404,617	508,377	36.2%
2006	312,698	1,449,264	514,937	35.5%
2007	310,675	1,430,609	534,338	37.4%
2008	313,114	1,433,746	543,561	37.9%
2009	328,993	1,456,401	544,185	37.4%
2010	331,099	1,467,469	592,071	40.3%
2011	337,677	1,518,424	602,991	39.7%
2012	338,088	1,507,137	607,683	40.3%
2013	341,053	1,523,904	623,719	40.9%
2014	343,958	1,540,153	639,745	41.5%
2015	346,958	1,557,194	656,302	42.1%
2016	349,715	1,572,279	672,230	42.8%
2021	374,258	1,647,827	754,682	45.8%
2026	395,400	1,723,740	841,911	48.8%
2031	416,543	1,799,654	933,761	51.9%

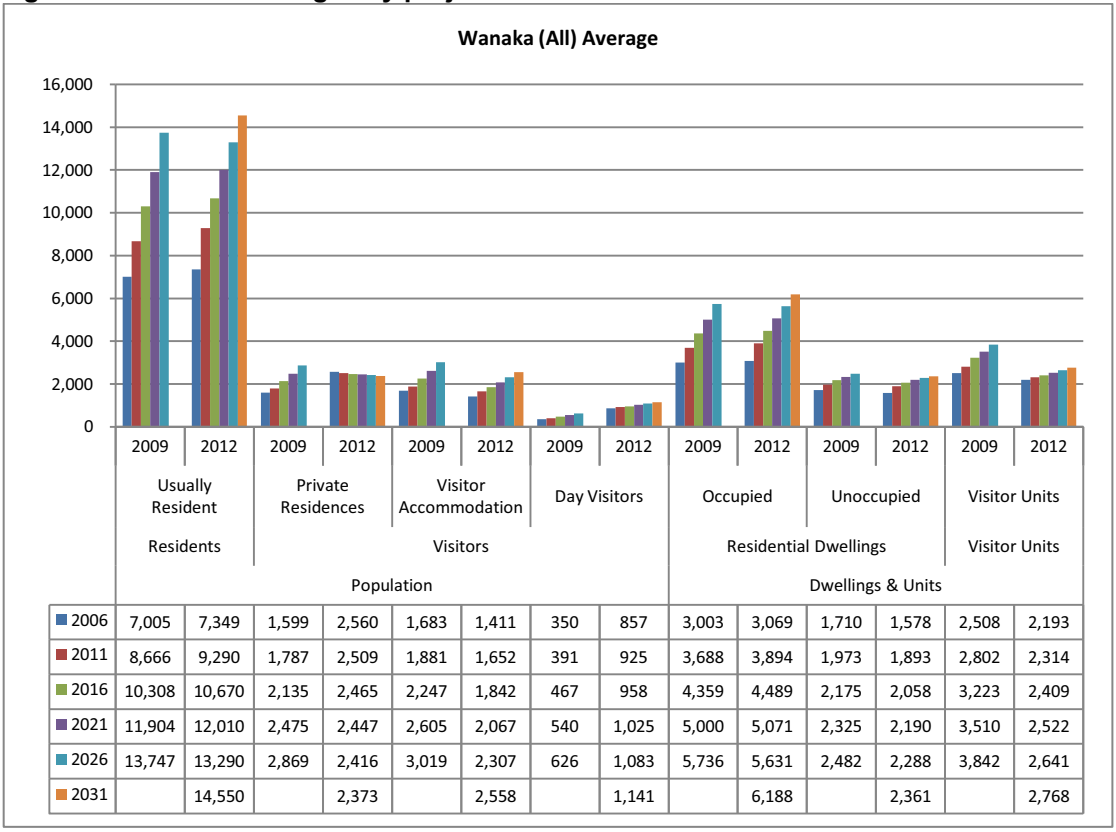
Once this breakdown of the visitor numbers has been performed they are spread evenly across the dwellings for those staying in private residences and the visitor units for those staying in visitor accommodation.

Day visitors are harder to determine where it is best to locate them. As a default to any better method we have apportioned them across the Census Area Units based on dwelling numbers. It is therefore recommended that day visitor numbers are used with caution and preferably only at the Wanaka level.

Comparison to 2009 CCP

The following graph highlights the changes from the last projections produced for the 2009 CCP. Significant changes are the increase in visitors staying in private residences and day visitors.

Figure 41: Wanaka average day projections



	2009	2012	2009	2012	2009	2012	2009	2012	2009	2012	2009	2012	2009	2012
	Usually Resident		Private Residences		Visitor Accommodation		Day Visitors		Occupied		Unoccupied		Visitor Units	
	Residents		Visitors						Residential Dwellings				Visitor Units	
	Population								Dwellings & Units					
2006	7,005	7,349	1,599	2,560	1,683	1,411	350	857	3,003	3,069	1,710	1,578	2,508	2,193
2011	8,666	9,290	1,787	2,509	1,881	1,652	391	925	3,688	3,894	1,973	1,893	2,802	2,314
2016	10,308	10,670	2,135	2,465	2,247	1,842	467	958	4,359	4,489	2,175	2,058	3,223	2,409
2021	11,904	12,010	2,475	2,447	2,605	2,067	540	1,025	5,000	5,071	2,325	2,190	3,510	2,522
2026	13,747	13,290	2,869	2,416	3,019	2,307	626	1,083	5,736	5,631	2,482	2,288	3,842	2,641
2031		14,550		2,373		2,558		1,141		6,188		2,361		2,768

4.6.2 Peak day

The peak day population has been broken down into the following categories; usually resident, visitors staying in private residences, visitors staying in visitor accommodation and day visitors. In addition the dwellings are split to show the occupied and unoccupied proportions. Each of these categories is discussed below as to how they are populated.

Occupied and unoccupied dwellings

The 2006 split is based on the 90% occupancy measured in the 2004/05 Peak Population Survey. In the future it has been assumed that this split will remain constant.

Usually resident

The 2006 usually resident population in each Census Area Unit is based on the 2006 census data. In the future the usually resident population is distributed based on the number of occupied dwellings and it has been assumed that all residents are at home on the peak day.

Visitors

Visitors have been split between those staying in private residences, those staying in visitor accommodation and day visitors.

Visitors staying in private residences have been assessed by assuming a standard occupancy per dwelling. This occupancy was determined from the 2004/05 Peak Population Survey and has been assumed to reduce as the number of holiday homes reduces over time. It is based on assuming

2.7 visitors per household and 4.5 visitors per unoccupied dwelling (holiday home). These occupancy figures are shown below.

Figure 42: Wanaka peak day visitors per private residence

	2006	2011	2016	2021	2026	2031
Peak no. of visitors per private residence	3.31	3.29	3.27	3.24	3.22	3.20

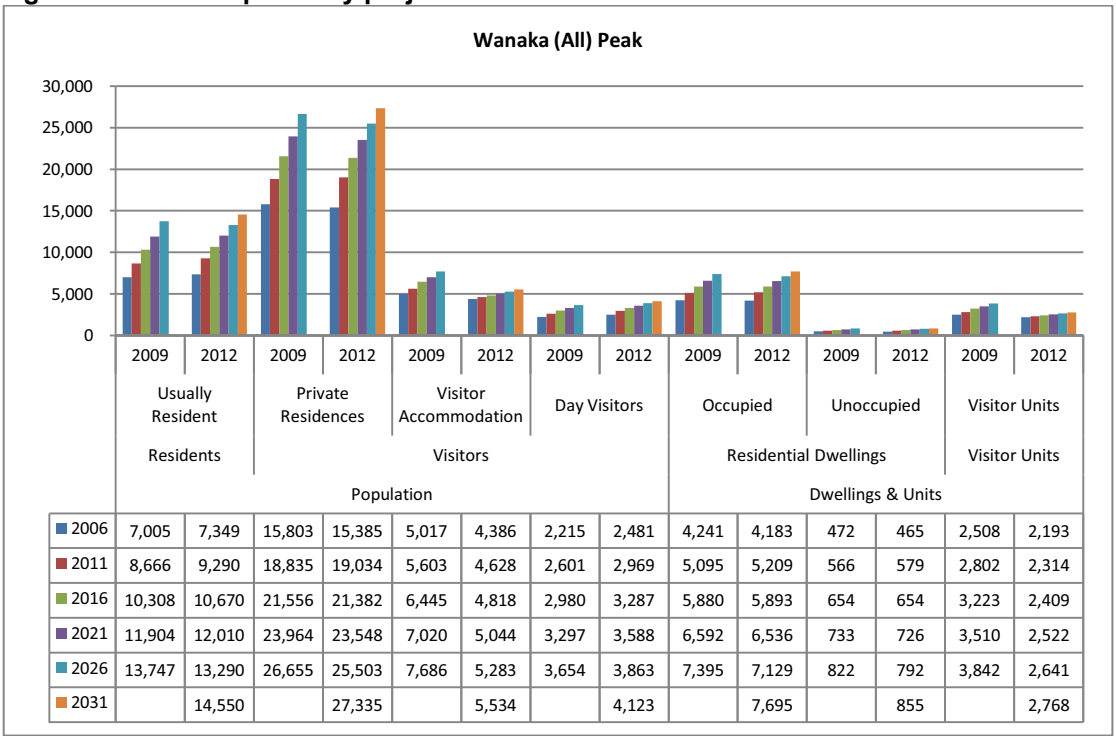
Visitors staying in visitor accommodation have been assessed by assuming 2.0 occupants per visitor unit as determined from the peak population survey.

Day visitors have been assessed from the overnight visitors by assuming the same ratio of day visitors to the overnight visitors as used for the average day projections.

Comparison to 2009 CCP

The following graph highlights the changes from the last projections produced for the 2009 CCP. The significant changes are the reduced growth in visitor units and visitors staying in visitor accommodation.

Figure 43: Wanaka peak day projections



	Usually Resident 2009	Usually Resident 2012	Private Residences 2009	Private Residences 2012	Visitor Accommodation 2009	Visitor Accommodation 2012	Day Visitors 2009	Day Visitors 2012	Occupied 2009	Occupied 2012	Unoccupied 2009	Unoccupied 2012	Visitor Units 2009	Visitor Units 2012
2006	7,005	7,349	15,803	15,385	5,017	4,386	2,215	2,481	4,241	4,183	472	465	2,508	2,193
2011	8,666	9,290	18,835	19,034	5,603	4,628	2,601	2,969	5,095	5,209	566	579	2,802	2,314
2016	10,308	10,670	21,556	21,382	6,445	4,818	2,980	3,287	5,880	5,893	654	654	3,223	2,409
2021	11,904	12,010	23,964	23,548	7,020	5,044	3,297	3,588	6,592	6,536	733	726	3,510	2,522
2026	13,747	13,290	26,655	25,503	7,686	5,283	3,654	3,863	7,395	7,129	822	792	3,842	2,641
2031		14,550		27,335		5,534		4,123		7,695		855		2,768

5 Development of the age structure

Statistics New Zealand state the following is largely due to the general ageing of the population:

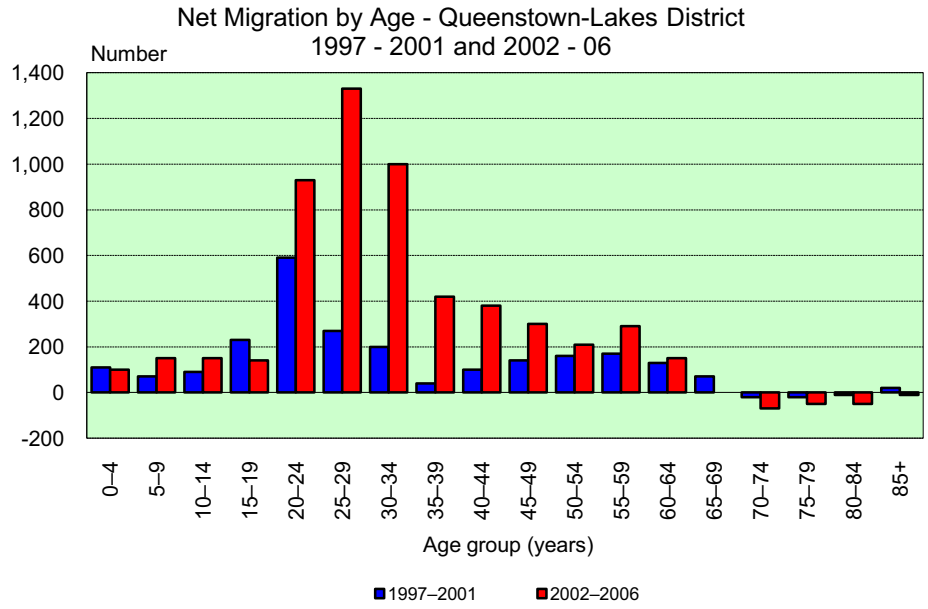
- Fewer people per household are projected in all territorial authorities and regions.
- More people are moving into older ages where they are most likely to live in couple without children families or one-person households. As a result, some areas with a projected decrease in population may have a projected increase in households.

This reinforces the importance of the population projections in providing information about the changing age structure, which is at least as important as changes in total numbers.

The Queenstown Lakes District growth projections do not project the age structure so the age structure is based on that forecast by Statistics New Zealand's medium series(Statistics New Zealand, released on 24 February 2010).

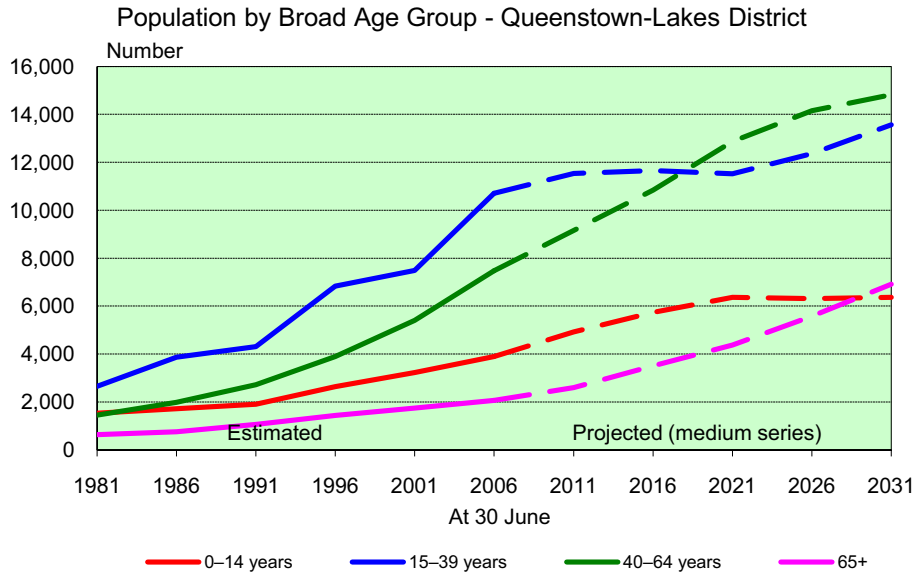
Since the Queenstown Lakes District population growth is heavily influenced by migration it is important to understand the age structure of those migrating into the district. The following graph shows the recent trends regarding the age structure of those migrating to the district.

Figure 44: Net migration by age



Despite the significant number of those in the 15 - 39 age group migrating to the district in the past Statistics New Zealand is not forecasting significant growth in this age group in the future. This is highlighted in the following graph.

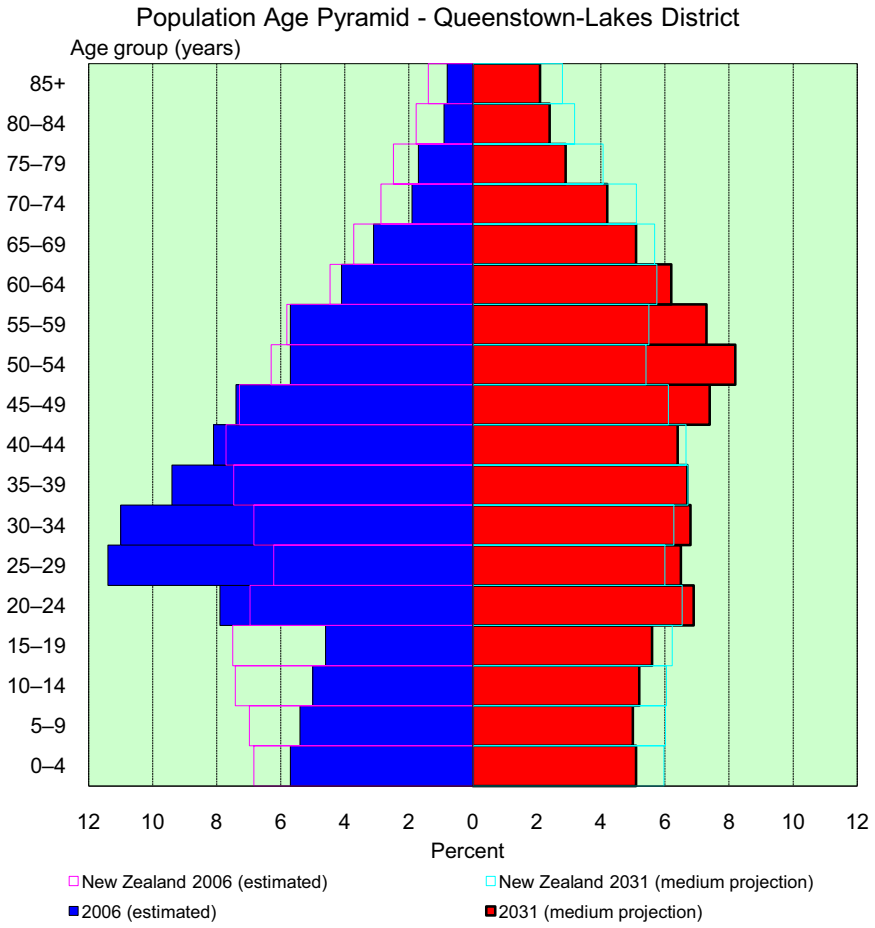
Figure 45: Population projections by broad age group



On a first glance it appears unusual that the 15 - 39 age group is not forecast to grow between 2006 and 2021. However when one considers the general ageing of the population and the fact there is generally a net migration into the district across all age groups below 70 it appears to make sense. In other words since the majority of the existing population will be moving from the 15 – 39 age group into the 40 – 64 age group there is still significant net migration projected for the district in the 15- 39 age group. This will ensure the tourism industry is well serviced into the future.

The following graph highlights the age structure change from 2006 to 2031 and also compares this change against the New Zealand trend.

Figure 46: Population age pyramid



6 Development of the small community projections

In 2008 projections were developed for the small communities of Glenorchy, Kingston, Gibbston, Cardrona, Luggate, Hawea and Makarora. These were developed from the meshblock level projections developed at the time for the entire district.

This update of the growth projections has not been completed at the meshblock level, therefore to update the projections for the small communities we have made the following assumptions:

- The percentage of each variable in a small community versus its relevant Census Area Unit will remain unchanged from that developed in 2008. (i.e. if Kingston had 30% of the residents in the Glenorchy CAU in the 2008 Projections then it will have 30% of the residents in the updated Glenorchy CAU projections).

- Since the 2008 Projections did not go out to 2031, the percentage of each variable in a small community versus its relevant Census Area Unit, in 2026, has been used to estimate the 2031 numbers.

There are two exceptions to this assumption which are outlined below:

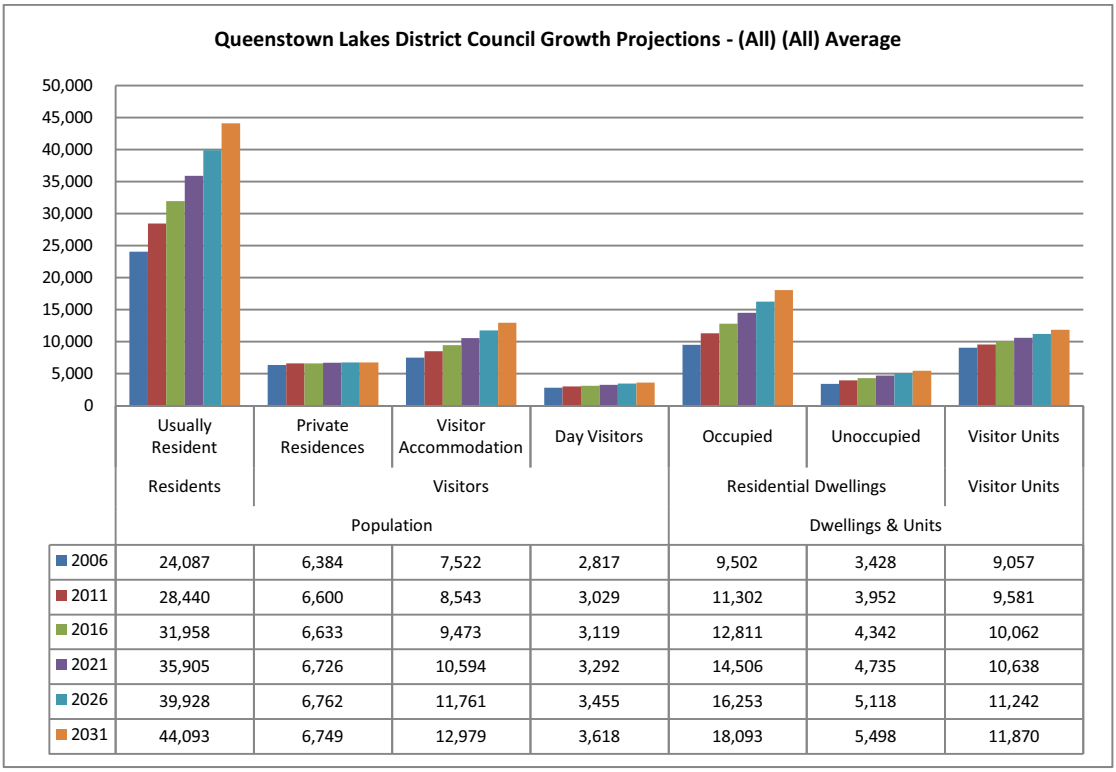
- It has been assumed that no growth will occur in Makarora. The growth that had previously been identified for Makarora is now assumed to occur in Hawea.

- The above assumptions resulted in negative usually resident and dwelling growth in Glenorchy which was not considered appropriate considering historic trends. It was therefore considered more appropriate to stick with the 2008 usually resident and dwelling projections for Glenorchy from 2016 onwards.

7 Growth projections for the district

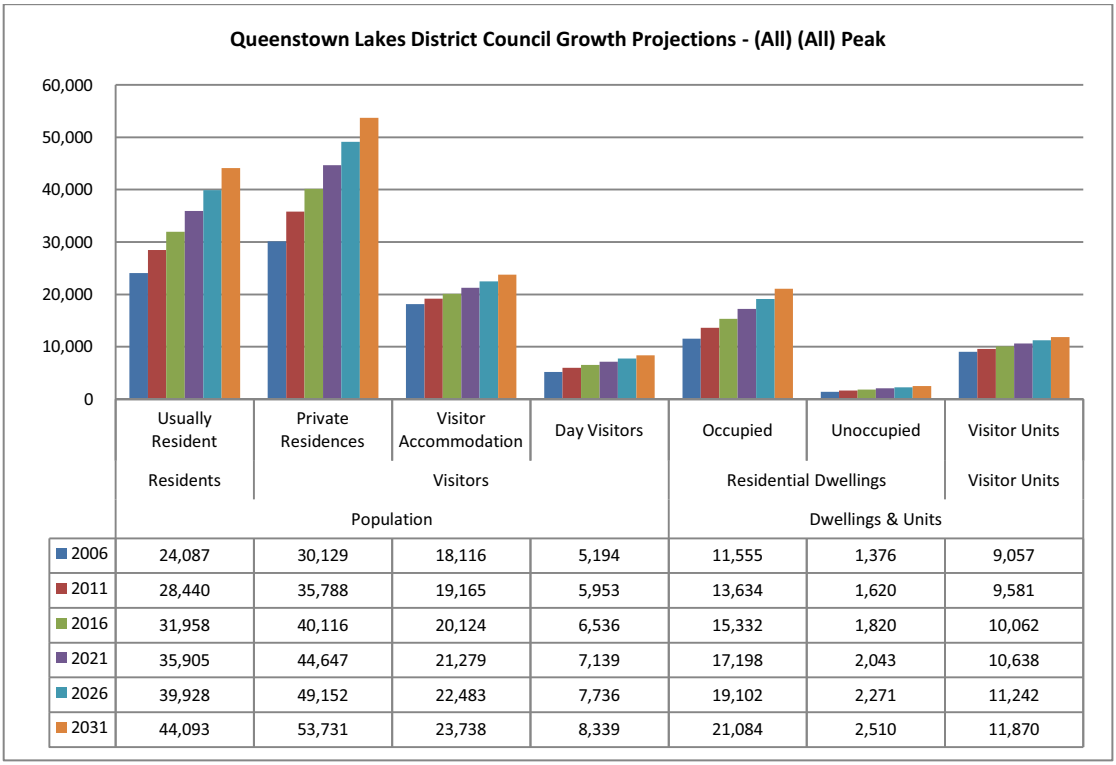
The final growth projections are available in Microsoft Excel and have been presented in PivotChart format for the average day and peak day scenarios. These formats are shown below.

7.1 District average day growth projections



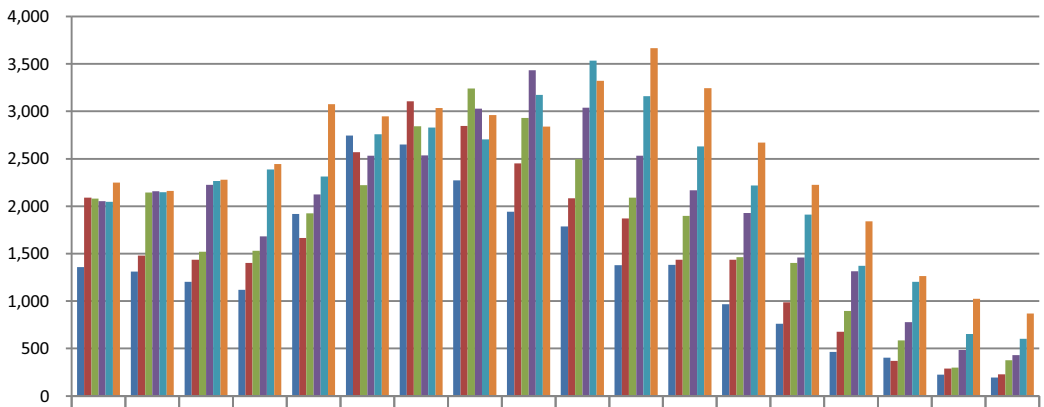
	Usually Resident	Private Residences	Visitor Accommodation	Day Visitors	Occupied	Unoccupied	Visitor Units
	Residents	Visitors			Residential Dwellings		Visitor Units
	Population				Dwellings & Units		
2006	24,087	6,384	7,522	2,817	9,502	3,428	9,057
2011	28,440	6,600	8,543	3,029	11,302	3,952	9,581
2016	31,958	6,633	9,473	3,119	12,811	4,342	10,062
2021	35,905	6,726	10,594	3,292	14,506	4,735	10,638
2026	39,928	6,762	11,761	3,455	16,253	5,118	11,242
2031	44,093	6,749	12,979	3,618	18,093	5,498	11,870

7.2 District peak day growth projections



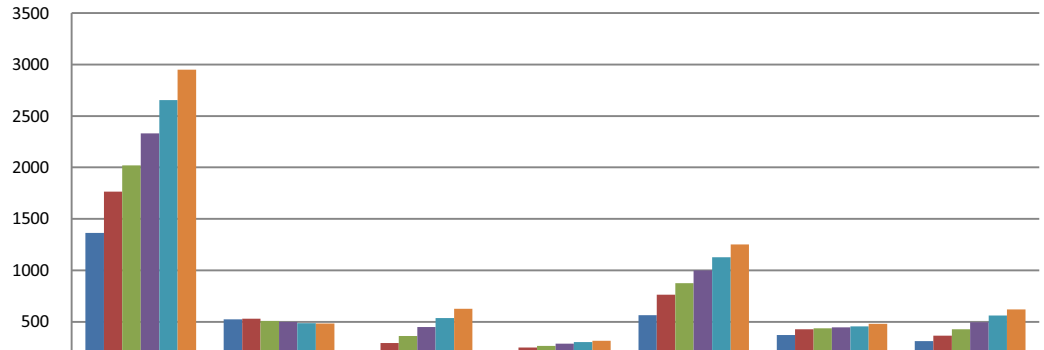
	Usually Resident	Private Residences	Visitor Accommodation	Day Visitors	Occupied	Unoccupied	Visitor Units
	Residents	Visitors			Residential Dwellings		Visitor Units
	Population				Dwellings & Units		
2006	24,087	30,129	18,116	5,194	11,555	1,376	9,057
2011	28,440	35,788	19,165	5,953	13,634	1,620	9,581
2016	31,958	40,116	20,124	6,536	15,332	1,820	10,062
2021	35,905	44,647	21,279	7,139	17,198	2,043	10,638
2026	39,928	49,152	22,483	7,736	19,102	2,271	11,242
2031	44,093	53,731	23,738	8,339	21,084	2,510	11,870

7.3 District age structure projections



	0-4 Years	5-9 Years	10-14 Years	15-19 Years	20-24 Years	25-29 Years	30-34 Years	35-39 Years	40-44 Years	45-49 Years	50-54 Years	55-59 Years	60-64 Years	65-69 Years	70-74 Years	75-79 Years	80-84 Years	85 Years and over
	0 - 14 Years			15 - 39 Years					40 - 64 Years					65+ Years				
2006	1,359	1,311	1,204	1,119	1,919	2,746	2,650	2,273	1,941	1,788	1,380	1,383	967	760	465	405	225	195
2011	2,092	1,480	1,436	1,401	1,664	2,569	3,105	2,845	2,452	2,084	1,871	1,436	1,436	988	678	371	290	229
2016	2,079	2,144	1,521	1,532	1,925	2,221	2,843	3,241	2,932	2,495	2,091	1,898	1,462	1,402	896	586	300	376
2021	2,055	2,159	2,227	1,682	2,124	2,533	2,535	3,028	3,433	3,039	2,533	2,167	1,928	1,458	1,314	777	484	430
2026	2,048	2,147	2,266	2,387	2,314	2,760	2,830	2,705	3,174	3,534	3,161	2,630	2,219	1,912	1,373	1,202	652	603
2031	2,250	2,160	2,280	2,446	3,076	2,946	3,036	2,961	2,841	3,323	3,666	3,245	2,672	2,224	1,841	1,264	1,024	869

7.4 Small community projections

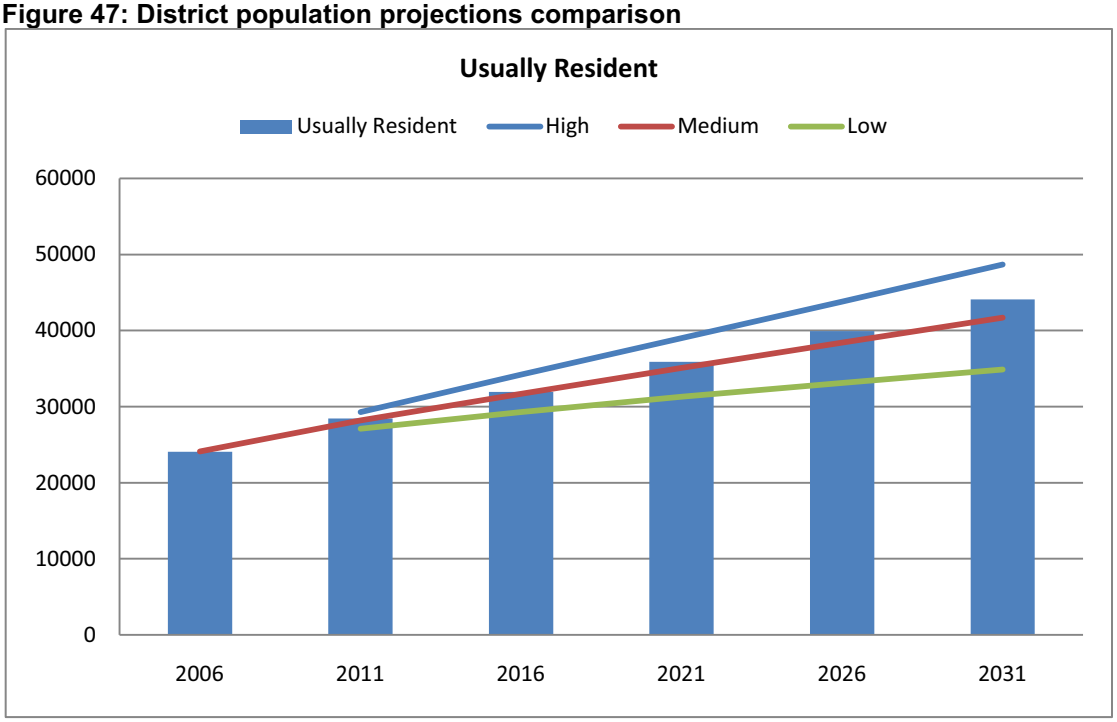


	Usually Resident	Private Residences	Visitor Accommodation	Day Visitors	Occupied	Unoccupied	Visitor Units
	Residents	Visitors			Residential Dwellings		Visitor Units
	Population				Dwellings & Units		
2006	1365	523	221	209	563	372	313
2011	1764	530	293	249	765	427	365
2016	2019	508	361	265	875	436	429
2021	2330	500	449	288	999	447	497
2026	2653	488	535	303	1126	456	562
2031	2949	485	626	317	1251	482	621

7.5 Comparison against the latest Statistics NZ projections

The latest Subnational Population Projections(Statistics New Zealand, released on 24 February 2010) have recently been released by Statistics New Zealand. The following graph shows how the SNZ population projections compare against our latest projections.

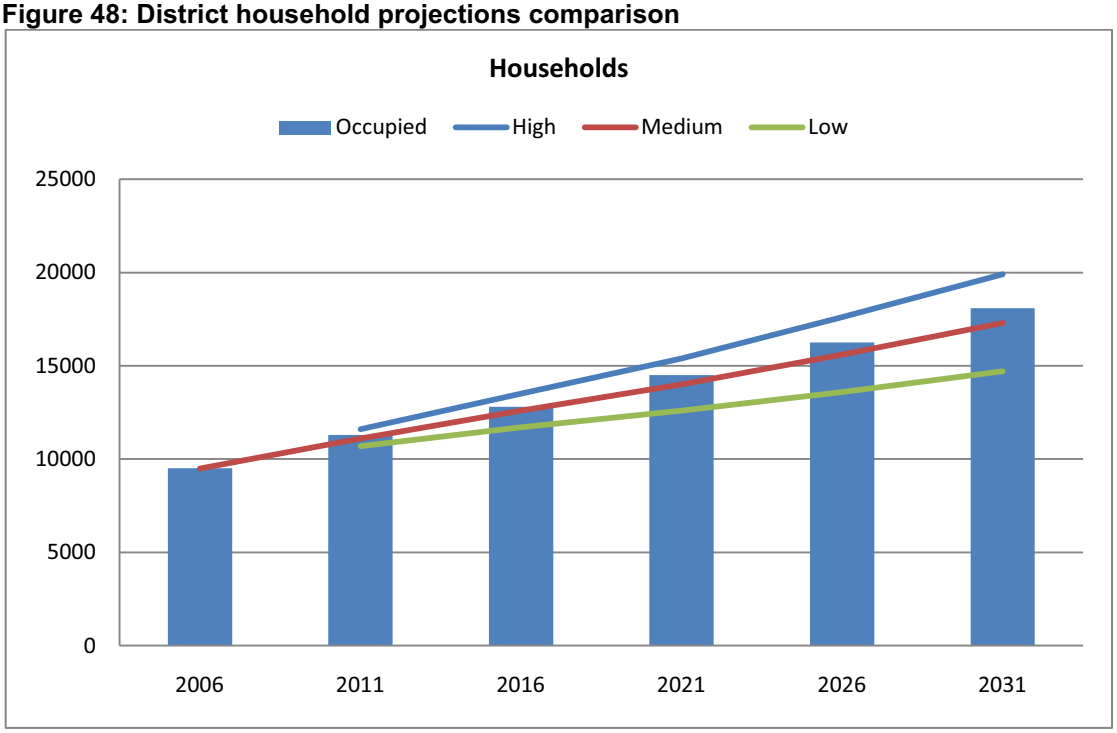
Figure 47: District population projections comparison



The projections match very closely the Statistics New Zealand medium series projections out into the future. Previously we have matched more closely to the high series but with the lift in Statistic New Zealands projections we believe the medium series is now more appropriate.

Statistics New Zealand have also recently released their Subnational Family and Household Projections(Statistics New Zealand, released on 13 December 2010). The high, medium and low series are directly related to the population series with one set of living arrangement type assumptions being used for all three series.

Figure 48: District household projections comparison



On the average day it is assumed that all households are occupied and therefore it is appropriate to compare the average day occupied figures against Statistics New Zealand's household projections.

8 Works Cited

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Statistics New Zealand. (released on 13 December 2010). *Subnational Family and Household Projections: 2006 (base) - 2031 update.* Retrieved February 2011
Statistics New Zealand. (released on 24 February 2010). *Subnational Population Projections: 2006 (base) - 2031 update.* Retrieved February 2011
Tourism Strategy Group. (August 2010). *New Zealand Tourism Forecasts 2010 - 2016.* Retrieved February 2011

Appendix A1

Matrices

Mapping the Dwelling Capacity Model zones to the Census Area Units for the Wakatipu.

	Wakatipu Census Area Units									
Wakatipu DCM Areas	Frankton	Glenorchy	Kelvin Heights	Sunshine Bay	Wakatipu	Lake Hayes	Arrowtown	Queenstown Bay	Queenstown Hill	
Fernhill MDR	0%	0%	0%	100%	0%	0%	0%	0%	0%	100%
Fernhill LDR	0%	0%	0%	100%	0%	0%	0%	0%	0%	100%
QT Town Centre	0%	0%	0%	0%	0%	0%	0%	76%	24%	100%
QT High Density	0%	0%	1%	3%	0%	0%	0%	59%	37%	100%
QT Hill MDh	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%
QT Hill LDR	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%
QT Heights Sublow density	0%	0%	0%	0%	48%	0%	0%	0%	52%	100%
Frankton low density	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Remarkables Park	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Five Mile	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%
Quail Rise	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%
Kelvin Heights Low Density	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%
Arrowtown Historic	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%
Arrowtown LDR	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%
Arthurs Point	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%
Lake Hayes	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%
Lake Hayes Estates	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%
Jacks Point	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%
Millbrook	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%
Bendemeer	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%
Waterfall Park	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%
Meadow Park	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%
Rural Visitor	0%	94%	0%	0%	0%	0%	0%	6%	0%	100%
Wakatipu Rural Res	0%	0%	0%	0%	75%	25%	0%	0%	0%	100%
Wakatipu Rural life	0%	0%	0%	0%	92%	3%	5%	0%	0%	100%
Wakatipu Rural General	0%	0%	7%	0%	85%	5%	0%	3%	0%	100%
Glenorchy Rural General	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%
Gibbston Valley	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%
Glenorchy Rural Res	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%
Glenorchy Rural Life	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%
Kingston Township	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%
Kinloch Township	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%
Glenorchy Township	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%

Mapping the residual dwelling capacity to the Census Area Units for the Wakatipu.

	Wakatipu Census Area Units									
Wakatipu DCM Areas	Frankton	Glenorchy	Kelvin Heights	Sunshine Bay	Wakatipu	Lake Hayes	Arrowtown	Queenstown Bay	Queenstown Hill	
Fernhill MDR	0%	0%	0%	100%	0%	0%	0%	0%	0%	100%
Fernhill LDR	0%	0%	0%	15%	0%	0%	0%	85%	0%	100%
QT Town Centre	0%	0%	0%	0%	0%	0%	0%	54%	46%	100%
QT High Density	0%	0%	9%	6%	0%	0%	0%	46%	39%	100%
QT Hill MDh	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%
QT Hill LDR	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%
QT Heights Sublow density	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%
Frankton low density	63%	0%	0%	0%	0%	0%	0%	0%	37%	100%
Remarkables Park	12%	0%	0%	0%	88%	0%	0%	0%	0%	100%
Five Mile	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%
Quail Rise	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%
Kelvin Heights Low Density	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%
Arrowtown Historic	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%
Arrowtown LDR	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%
Arthurs Point	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%
Lake Hayes	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%
Lake Hayes Estates	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%
Jacks Point	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%
Millbrook	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%
Bendemeer	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%
Waterfall Park	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%
Meadow Park	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%
Rural Visitor	0%	78%	0%	0%	0%	0%	0%	22%	0%	100%
Wakatipu Rural Res	0%	0%	0%	0%	74%	26%	0%	0%	0%	100%
Wakatipu Rural life	0%	0%	0%	0%	95%	4%	1%	0%	0%	100%
Wakatipu Rural General	0%	1%	0%	0%	98%	0%	0%	0%	0%	100%
Glenorchy Rural General	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%
Gibbston Valley	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%
Glenorchy Rural Res	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%
Glenorchy Rural Life	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%
Kingston Township	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%
Kinloch Township	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%
Glenorchy Township	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%

Mapping the Dwelling Capacity Model zones to the Census Area Units for Wanaka.

	Wanaka Census Area Units			
WA Capacity Study Areas	Hawea	Wanaka	Matukituki	
Wanaka Town Centre **	0%	100%	0%	100%
Wanaka High Density *	0%	100%	0%	100%
Albert Town	0%	100%	0%	100%
Makarora	100%	0%	0%	100%
Luggate	100%	0%	0%	100%
Hawea	100%	0%	0%	100%
North Wanaka	0%	100%	0%	100%
South Wanaka	0%	100%	0%	100%
3 Parks	0%	100%	0%	100%
Penrith Park #	0%	100%	0%	100%
Peninsular Bay #	0%	100%	0%	100%
Rural Visitor *	4%	0%	96%	100%
Wanaka Rural Res	0%	100%	0%	100%
Greater Hawea Rural Res	100%	0%	0%	100%
Wanaka Rural Lifestyle	0%	41%	59%	100%
Greater Hawea Rural Lifestyle	100%	0%	0%	100%
Makarora Rural Lifestyle	100%	0%	0%	100%
Wanaka Rural General	17%	29%	54%	100%
Hawea Rural General	100%	0%	0%	100%

Mapping the residual dwelling capacity to the Census Area Units for Wanaka.

	Wanaka Census Area Units			
WA Capacity Study Areas	Hawea	Wanaka	Matukituki	
Wanaka Town Centre **	0%	100%	0%	100%
Wanaka High Density *	0%	100%	0%	100%
Albert Town	0%	100%	0%	100%
Makarora	100%	0%	0%	100%
Luggate	100%	0%	0%	100%
Hawea	100%	0%	0%	100%
North Wanaka	0%	100%	0%	100%
South Wanaka	0%	100%	0%	100%
3 Parks	0%	100%	0%	100%
Penrith Park #	0%	100%	0%	100%
Peninsular Bay #	0%	100%	0%	100%
Rural Visitor *	71%	0%	29%	100%
Wanaka Rural Res	0%	100%	0%	100%
Greater Hawea Rural Res	100%	0%	0%	100%
Wanaka Rural Lifestyle	0%	37%	63%	100%
Greater Hawea Rural Lifestyle	100%	0%	0%	100%
Makarora Rural Lifestyle	100%	0%	0%	100%
Wanaka Rural General	0%	99%	1%	100%
Hawea Rural General	100%	0%	0%	100%