	IN THE MATTER	of the Resource Management Act 1991
	AND	
	IN THE MATTER	of Hearing Streams 1A and 1B – Introduction, Strategic Direction and Urban Development

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STATEMENT OF EVIDENCE OF FRASER JAMES COLEGRAVE
ON BEHALF OF QUEENSTOWN LAKES DISTRICT COUNCIL

HOUSING SUPPLY AND POPULATION PROJECTIONS

19 FEBRUARY 2016

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1. INTRODUCTION

1.1 My full name is Fraser James Colegrave. I hold the position of Managing Director at Insight Economics Limited. I have been in this position since October 2013. Prior to that, I was a founding director of Covec Limited for 12 years.

1.2 I hold a Bachelor of Commerce, Majoring in Economics with First Class Honours from the University of Auckland. I have over 20 years' commercial experience in economics.

1.3 I have been engaged by the Queenstown Lakes District Council (**QLDC**) to provide evidence for the Introduction and Strategy hearing for the Proposed District Plan (**PDP**).

1.4 I have been advising the QLDC on a range of population and housing-related issues since 2014. I have also been actively involved in a range of other matters across the district on behalf of other parties. For example, I have been heavily involved in a range of matters related to Plan Changes 19, 24 and 50, and last year I assisted Millbrook Resort with a private plan change request. As a result, I am familiar with the identified urban areas of the district and its general economic structure.

1.5 I confirm that I have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2014 and that I agree to comply with it. I confirm that I have considered all the material facts that I am aware of that might alter or detract from the opinions that I express, and that this evidence is within my area of expertise, except where I state that I am relying on the evidence of another person.

2. EXECUTIVE SUMMARY

2.1 The key findings from my evidence are that:

    (a) the district population is expected to continue growing rapidly, with projected annual growth rates between 2.5% and 3.5%;

    (b) similarly, strong growth in tourism nights is expected to continue, with projected annual growth of around 3.3% per annum; and

<blockquote>
(c)   according to the latest population and tourism night data, both projections are tracking well.
</blockquote>

3. SCOPE

3.1   In this evidence I address:

(a)   population growth projections; and

(b)   visitor accommodation projections.

3.2   Attached to this evidence is:

(a)   **Attachment A** - Insight Economics: *Medium to High Density Housing Study: Stage 1a – Review of Background Data*, July 2014; and

(b)   **Attachment B** - Insight Economics: *Queenstown Visitor Accommodation Projections – letter to Matthew Paetz*, April 2015.

3.3   I have referred to these documents and the information that I relied upon when preparing them for the purposes of this evidence. As I explain later in this evidence, I have also considered the most recent data from the *Commercial Accommodation Monitor* and Statistics New Zealand in order to check our projections.

4. POPULATION GROWTH PROJECTION

4.1   In 2014, my company – Insight Economics – was commissioned by QLDC to review various background data related to district population and housing.

4.2   Amongst other things, it included a peer review of the population projections recently produced by other parties for the Council.[1] Our peer review identified a number of issues with the existing projections which, in our opinion, limited their reliability.

4.3   For example, some projections assumed pessimistic growth in key underlying drivers, such as tourism nights, while others appeared internally-inconsistent. As a result, QLDC asked us to derive new population projections.

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[1] Insight Economics, *Medium to High Density Housing Study: Stage 1a – Review of Background Data,* July 2014.

4.4 My population projections were generated using the same method as Statistics New Zealand. This approach, which is more formally known as the 'cohort component methodology', is illustrated below.

Population End of 2015	=	**Population** Start of 2015	+	**Births** 2015	–	**Deaths** 2015	+	**Net Migration** 2015

4.5 Put simply, my approach projected the future population by rolling forward the current population on the basis of projected future births, deaths and migration.

4.6 Having identified a suitable methodology, I next reviewed the most appropriate assumptions to use for births, deaths and migration.

4.7 Where possible, I pegged our assumptions to those used by Statistics New Zealand. For instance, I used their assumptions on fertility and survivorship (which feed directly into estimates of future births and deaths, respectively).

4.8 After examining Statistics New Zealand's future migration assumptions, my colleagues and I derived our own. This was because Statistics New Zealand were inexplicably (in my view) assuming much lower net migration than in the past, even though I believed that it would continue at similar levels.

4.9 For example, at the time of writing my report, the airport had just confirmed that night flights would commence in 2016 or 2017.[2] This, in turn, would increase the District's tourism capacity and enable strong ongoing growth in tourism nights. As tourism continued to grow, more tourism jobs would be created. And, as jobs grew, the District would attract more workers.

4.10 Given the likelihood of strong ongoing net migration, I projected it forward by assuming that annual net migration over the first five years would equal the average over the previous ten years, and that this would increase at 5% every five years thereafter.

4.11 Plugging these various assumptions into our model resulted in a projected annual population growth of 3.4% to 2031 under the medium scenario, which

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[2] I note these are now confirmed to commence, from Auckland, this year.

was below the historic average of 4.3%, but above most of the projections existing at the time.

4.12 Table 1 below shows our projections at five year intervals, while Figure 1 compares our medium projection to the official projections prevailing at the time (by Statistics New Zealand).

Table 1: Insight Economics Population Projections (2011 base)

Year	Low	Medium	High
2006	24,090	24,090	24,090
2011	29,450	30,490	29,560
2016	33,900	36,780	35,430
2021	37,520	42,810	41,620
2026	40,440	48,550	48,130
2031	42,720	53,930	55,010

Figure 1: Insight Economics Medium District Population Projection (2011 base)
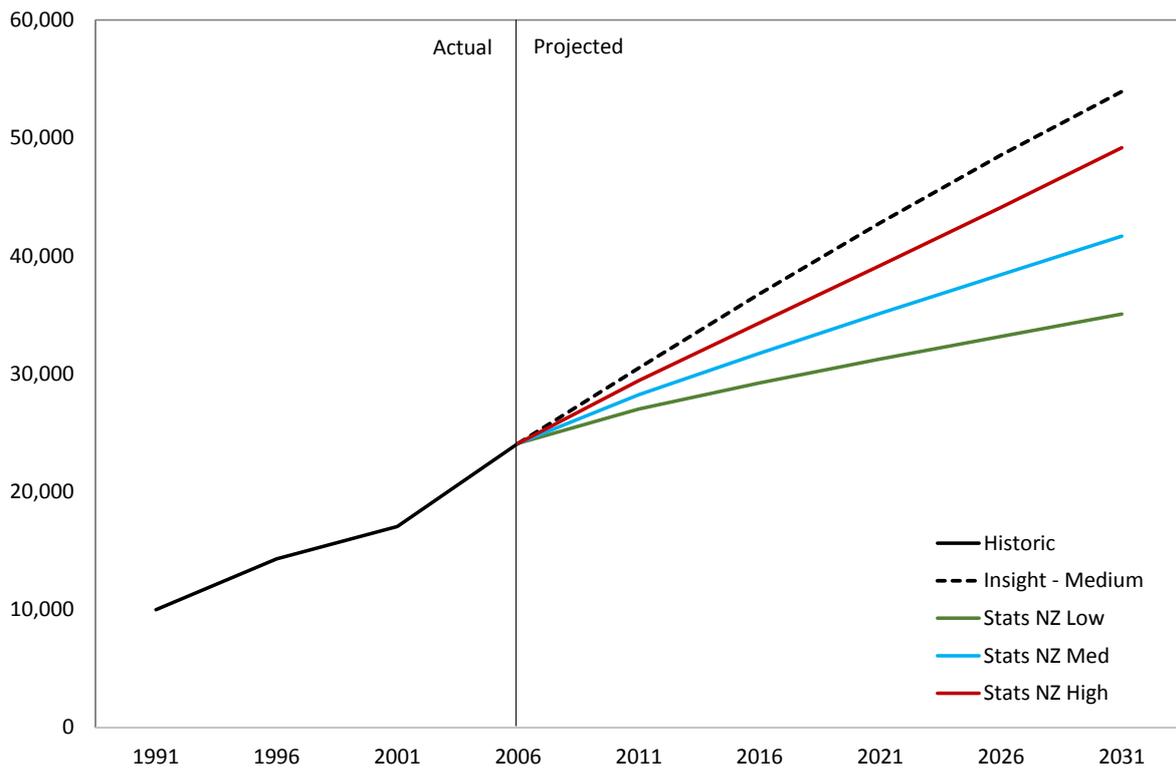
4.13 According to the latest population estimates produced by Statistics New Zealand[3], our projections are tracking well so far. Specifically, Statistics New Zealand data from February 2016 estimates that the district's population has grown at an annual rate of 3.35% since 2011, which is only marginally lower than our projection of 3.4%.

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[3] Retrieved on 15 February 2016 from http://www.stats.govt.nz/browse_for_stats/population/estimates_and_projections.aspx.

4.14 I am therefore confident that our high level projections remain relevant for strategic planning purposes.

5. VISITOR ACCOMMODATION PROJECTION

5.1 In April 2015, my company was commissioned by QLDC to project future tourism nights. Due to time and resource constraints, the analysis was very high level. Nevertheless, I now briefly explain our methodology and key findings.

5.2 The analysis commenced by delineating a study area and setting a time horizon. To that end, the study area was aligned with the Queenstown Regional Tourism Organisation boundaries,[4] while the time horizon was set to 2035.

5.3 Next, I reviewed various existing projections of commercial accommodation nights for the study area, as summarised in Figure 2 below.

**Figure 2: Existing Projections of Commercial Nights**

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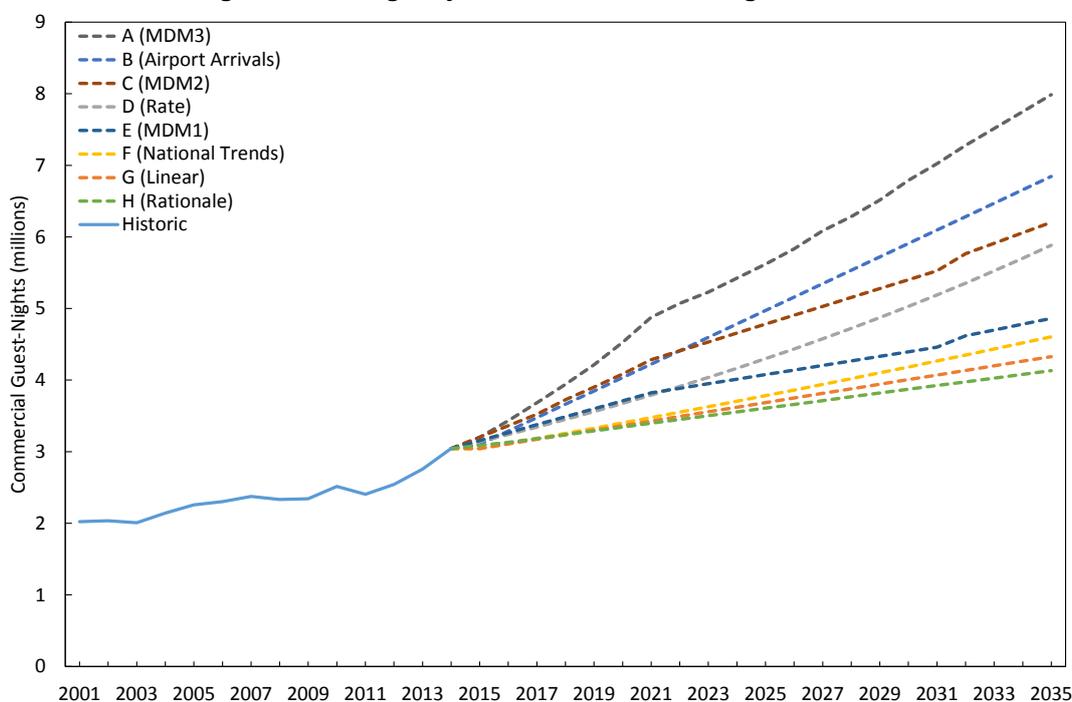
[4] This includes Wakatipu and Arrowtown, but excludes Wanaka.

5.4   After reviewing the various projections above, I deemed the lower cluster (i.e. series E to H) unduly pessimistic because they:

(a)   represented significant slow-downs in tourism growth despite the most recent data showing the opposite; and

(b)   ignored the likely uplifts associated with expansions to airport and convention centre capacity.

5.5   As a result, I dropped the four lowest projections and used the remaining four to inform our own projections.   Specifically, I derived the following three projections of tourism nights. Unlike the projections above, ours also included an allowance for tourism nights spent in "peer to peer accommodation" (e.g. holiday homes listed for rent on Bookabach).

Figure 3: Projections of Total Guest-Nights (incl peer-to-peer)
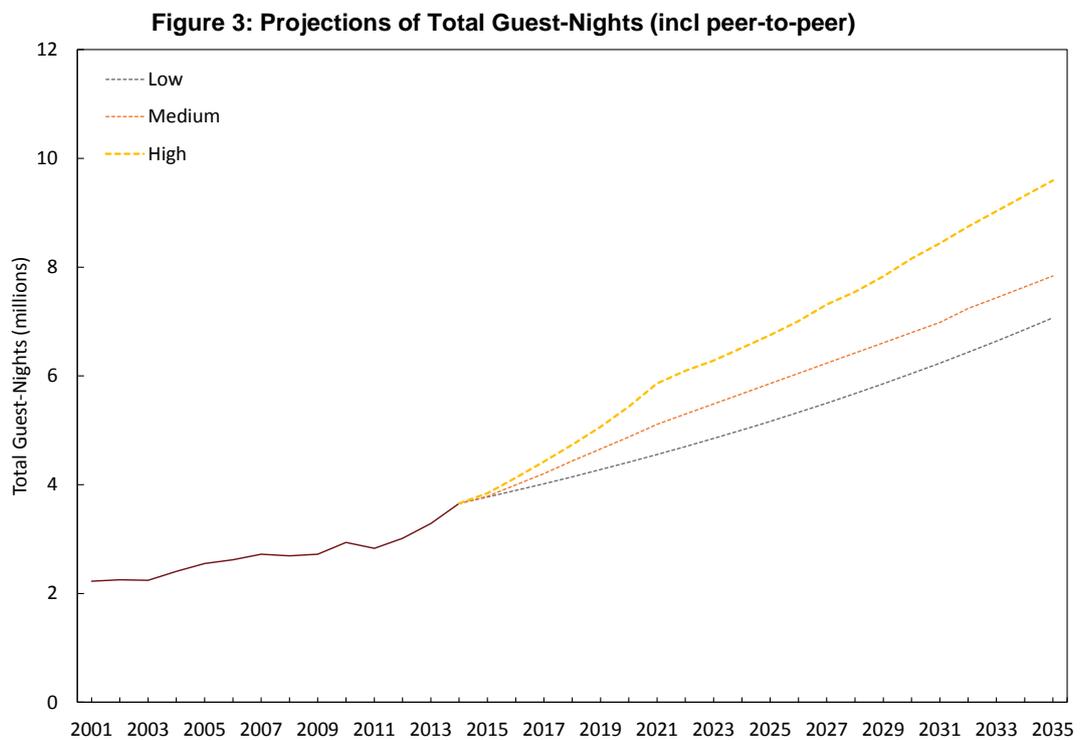
5.6   These projections translated to annual growth rates of 3.2%, 3.7% and 4.2% for the low, medium and high projections, respectively. Having derived the annual guest night projections above, the next step was to split them by accommodation type. e.g. hotel, motel, backpackers etc.

5.7   To derive these splits, we first reviewed the *Commercial Accommodation Monitor*[5] to look for any obvious trends. This revealed ongoing declines in the district market shares of both backpackers and holiday parks, mostly in favour of hotels.

5.8   Acknowledging these trends, and assuming that the market share of peer-to-peer accommodation would slowly increase, I projected future market shares for each accommodation type and overlaid them with our projections of total nights to yield projections by accommodation type for the district.

5.9   Finally, I converted our projections of future nights into estimates of future capacity requirements by extrapolating long-run trends in average occupancy. The following table shows our final estimates of capacity required by type.[6]

Table 2: Current and Future Accommodation Capacity Requirements

Stay-Unit Capacity	2015	2035	Growth p.a.
Hotels	3,120	7,090	4.2%
Motels	1,180	2,390	3.6%
Backpackers	2,190	3,710	2.7%
Holiday Parks	1,100	1,400	1.2%
Commercial accommodation total	**7,590**	**14,590**	**3.3%**

5.1   Overall, I projected commercial accommodation nights/requirements to increase by 3.3% per annum, with higher growth for hotels and motels.

5.2   According to the most recent *Commercial Accommodation Monitor* data, my projections are likely to be quite conservative. For example, they show that total guest nights in 2015 were 6.4% higher than 2014.

6.   CONCLUSION

6.1   The projections undertaken by my company indicate ongoing, and in my view sustained, population growth for the district for the foreseeable future. I am satisfied that the assumptions and methodology that I have used in developing these projections are sound and that the projections are realistic. Indeed, they have been borne out by recent official statistics. I also consider that the

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[5]   This is an official monthly survey of commercial accommodation capacity and occupancy. It provides the most detailed and timeline information on regional tourism activity.

[6]   Please note that this table excludes peer to peer because there was insufficient information on current capacity to include it in this format.

projections are appropriate for the purposes of QLDC's strategic planning as part of the review of the district plan.

6.2   In addition, I have projected future tourism nights for the district, so that QLDC is able to consider and appropriately plan for this important component in the local economy. I have projected that commercial accommodation nights/requirements will increase by 3.3% per annum, with higher growth for hotels and motels.

6.3   I have not done any further analysis as to the specific implications of this projected growth for the district's housing supply and affordability issues. I am however aware of problems in this regard in the district, and it is my opinion that the projected growth will likely present considerable challenges for ensuring that existing supply and affordability problems do not become exacerbated.

6.4   Given that the district relies heavily on the tourism sector and the quality of the natural environment, it is my opinion that it will be of vital importance to the local economy that growth in population and tourism nights is appropriately and sustainably provided for.

Fraser James Colegrave
19 February 2016

ATTACHMENT A

Medium to High Density Housing Study: Stage 1a – Review of Background Data

PREPARED FOR

QUEENSTOWN LAKES DISTRICT COUNCIL

INSIGHT ECONOMICS   CLEAR AND CONCISE SOLUTIONS BASED ON RIGOROUS RESEARCH AND ANALYSIS

Authorship

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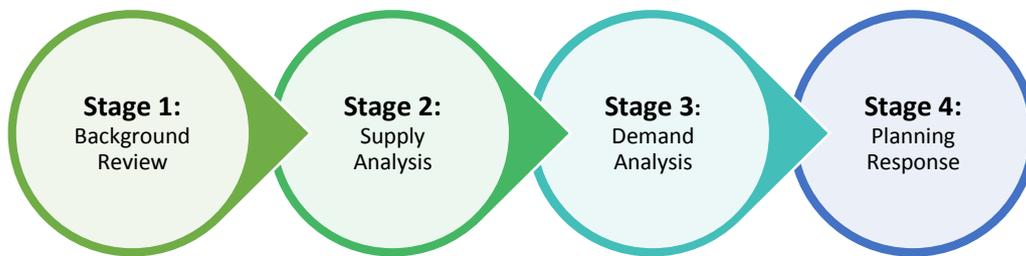# Contents

1   Introduction

1.1   Context and Purpose of this Report

Queenstown Lakes District Council (QLDC) is currently reviewing its District Plan. To assist, we were commissioned to help project the supply and demand for medium to high density housing over the next 15 to 20 years, and help identify options to meet any potential shortfalls in land supply.

1.2   Staged Approach and Scope of this Report

The project has been split up into four stages, with this report covering stage one. Its main aim is to inform the rest of the project by summarising key background information, as illustrated below.

Figure 1: Project Stages

Stage 1: Background Review → Stage 2: Supply Analysis → Stage 3: Demand Analysis → Stage 4: Planning Response

1.3   Ward Boundaries and Terminology

This report presents a lot of detailed information. To enable comparisons within the district, it presents most of the information by the three wards that comprise the district. They are: Wakatipu, Arrowtown, and Wanaka. When referring to the district as a whole, we use the terms "Queenstown" or "the district" interchangeably.

1.4   Structure of the Report

The remainder of this report is structured as follows:

- **Section 2** presents key information about district residents and households.

- **Section 3** summarises information about district dwellings.

- **Section 4** reviews various projections currently used for planning purposes, and

- **Section 5** presents revised population projections for consideration.

2   Residents & Households

This section summarises key information about district residents and households.

2.1   Resident Demographic Profile

Table 1 summarises demographic information from the 2013 census. For the sake of comparison, it also includes the national averages.

Table 1: Census 2013 Demographic Profile

| Indicators	Wakatipu	Arrowtown	Wanaka	NZ
Population				
2006	13,800	2,200	7,000	4,028,000
2013	16,700	2,400	9,000	4,242,100
Growth p.a. (%)	2.8%	1.8%	3.7%	0.7%
Gender				
Male	51%	49%	49%	49%
Female	49%	51%	51%	51%
Age Profile				
0-14 Years	17%	24%	20%	20%
15-29 Years	23%	12%	13%	20%
30-44 Years	29%	26%	24%	20%
45-59 Years	18%	20%	21%	20%
60 +	12%	18%	22%	20%
Ethnicity				
European	87%	93%	93%	74%
Māori	6%	5%	4%	14%
Pacific Peoples	1%	0%	1%	6%
Asian	6%	1%	2%	6%
MELAA	0%	0%	0%	1%
Birthplace				
NZ born	61%	79%	77%	75%
Overseas born	39%	21%	23%	25%
Study				
Full-time Study	6%	5%	5%	9%
Part-time Study	4%	3%	4%	3%
Not Studying	90%	92%	92%	88%
Qualifications				
No Qualification	10%	13%	12%	21%
Secondary/Vocational	65%	64%	64%	59%
Tertiary	25%	23%	24%	20%
Marital Status				
Married	44%	59%	55%	48%
Separated/Divorced/Widowed	11%	14%	14%	17%
Never Married	45%	27%	31%	35%

The table above shows that:

- Since 2006, residential growth has exceeded the national average in all three wards, with Wanaka recording the highest (at 3.7% per annum).

- The district's age profile differs significantly from the national average. These differences are most pronounced in Wakatipu, which has far more people aged 30-44.

- Residents strongly identify as European, with very few identifying themselves as Maori or pacific peoples.

- Almost 40% of residents were born overseas, compared to only 25% nationally.

- Compared to the national average, district residents are less likely to be in part-time or full-time study. However, they have much higher average educational attainment.

- Marital status differs markedly across the district, with a relatively low rate in Wakatipu, but higher rates elsewhere.

One of the key features of the data above is the district's unique age profile. To examine this further, we created a population pyramid. This is shown below, where the bulge between ages 25 and 44 is quite clear.

Figure 2: Population Pyramids
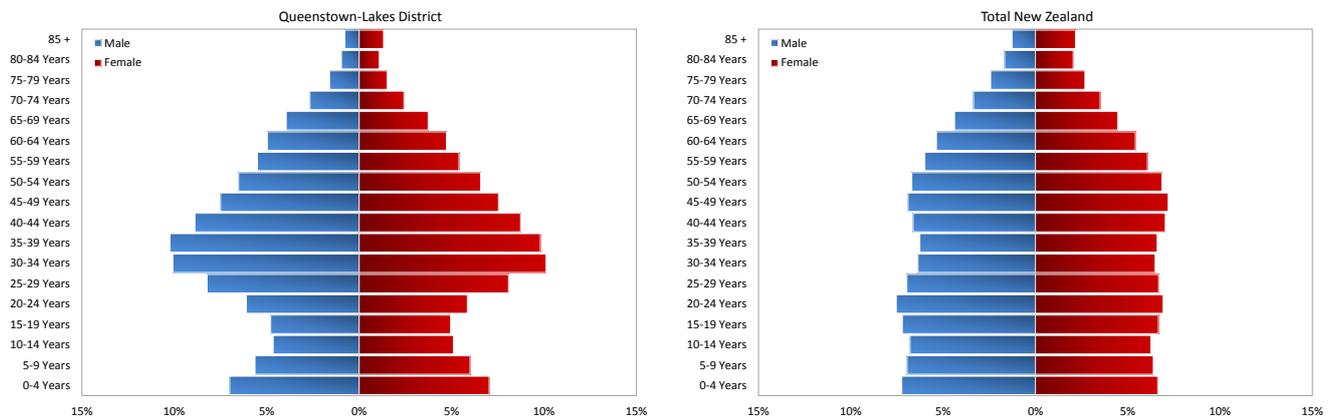
Another interesting demographic feature, which is not clear from the data above, is that district residents tend to be quite mobile, and not stay in any one place for too long. For example, the following table shows where people who were aged 18 to 29 at the last census (and tend to be the most mobile) lived 5 years earlier.

Table 2: Usual Residence 5 Years Ago (18 to 29 yrs old)

Origin	Shares
Queenstown-Lakes District	22%
Rest of NZ	34%
Rest of World	41%
Response Unidentifiable	3%
Total	**100%**

Table 2 confirms that younger district residents are indeed highly mobile, with only 22% living in the district for five years or more. Over 40% of those living in the district at the

last census had arrived from overseas during the preceding five years with over half of those coming from Europe. Interestingly, many of those came from Scandinavia.

2.2 Households

Table 3 summarises information about families and households. Again, New Zealand has been included as a point of reference.

<div align="center">

Table 3: Census 2013 Family and Household Profile

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Family and Household	Wakatipu	Arrowtown	Wanaka	New Zealand
Household Composition				
One-family household	69%	74%	74%	68%
Two or more family household	2%	1%	1%	3%
Multi-person (flat)	10%	3%	5%	5%
One-person household	19%	22%	21%	24%
Family Type				
Couple without children	53%	46%	52%	41%
Couple with child(ren)	39%	44%	39%	41%
One parent with child(ren)	7%	10%	9%	18%
Residents per Hhld				
2001	2.56	2.50	2.42	2.70
2006	2.56	2.40	2.49	2.70
2013	2.65	2.50	2.44	2.70
Number of Motor Vehicles				
None	4%	3%	3%	8%
One	32%	33%	30%	38%
Two	44%	48%	48%	38%
Three +	20%	17%	19%	16%
Average	1.9	1.9	1.9	1.7

The information summarised above shows that:

- District households have a similar composition to the national average, however, Arrowtown and Wanaka have more one-family households.

- Conversely, Wakatipu has more multi-person (flatting) households, but fewer people living alone.

- All three wards have more couples without children than the national average, and far fewer solo parents.

- Average household sizes are quite small, particularly in Wanaka.

- Despite having smaller households, district residents have higher-than-average vehicle ownership rates.

2.3 Income and Employment

Table 4 below displays income and employment data from census 2013.

Table 4: Income and Employment Information for Queenstown Lakes District

Income and Employment	Wakatipu	Arrowtown	Wanaka	NZ
Income Profile				
Median Personal Income (pa)	$36,800	$37,900	$32,800	$28,500
Median Family Income	$81,300	$85,000	$72,700	$72,700
Employment				
Employed	80%	77%	72%	62%
Unemployed	2%	2%	2%	5%
Not in Labour Force	18%	22%	26%	33%
Employment Status				
Paid Employee	75%	68%	63%	79%
Employer	9%	13%	12%	7%
Sole Trader	15%	18%	22%	12%
Unpaid Family Worker	1%	2%	3%	2%
Type of Work				
Managers	22%	23%	24%	19%
Professionals	16%	20%	19%	22%
Technicians	15%	16%	16%	12%
Service Workers	13%	9%	9%	9%
Administrative	10%	11%	9%	12%
Sales	11%	8%	9%	9%
Machinery	4%	5%	3%	5%
Labourers	9%	8%	11%	11%
Hours Worked				
1–9	3%	4%	6%	5%
10–19	5%	7%	8%	7%
20–29	8%	11%	12%	9%
30–39	17%	15%	16%	14%
40–49	47%	42%	37%	44%
50–59	12%	13%	12%	11%
60 +	8%	8%	10%	8%
Average	42.2	40.4	39.7	40.2
Travel to Work				
Worked at Home	10%	11%	15%	9%
Did Not Go to Work Today	11%	11%	12%	11%
Car	58%	67%	59%	66%
Public Transport	2%	1%	0%	5%
Walk/Bike	17%	9%	12%	8%
Other	2%	1%	1%	2%

Some of the key points arising from the information above include that:

- Compared to New Zealand, district personal and family incomes are high. However, family incomes in Wanaka are noticeably average.

- Labour force participation rates are high, particularly in Wakatipu. So, too are employment rates. Unemployment rates are very low.

- The district has a number of sole traders, especially in Wanaka.

- The district has a lot of managers, but relatively few professionals. Service workers are predominant in Wakatipu due to its tourism focus.

- Wakatipu residents work longer hours than the national average.

- Although district households have high rates of car ownership, they appear less reliant on cars for commuting. This is partly because a relatively high proportion of Wakatipu workers walk or cycle instead.

2.4   Possible Implications for Future Dwelling Demand

The data above has the following potential implications for future dwelling demand:

- If growth continues at a rapid pace – a prospect that we assess shortly – the district will continue to experience high growth in dwelling demand.

- Given the highly mobile nature of district residents, many are likely to be seeking flexible, short-term living arrangements.

- In addition, many Wakatipu residents will also be seeking flatting opportunities.

- Although the district workforce tends to be younger and more mobile than the national average, median wages are relatively high. This suggests that there could be more demand for higher priced living options than previously thought.

- However, having said that, there will also be significant demand for cheaper options, particularly amongst younger working residents.

- District residents are far more likely to walk or cycle to work than the rest of New Zealand, particularly in Wakatipu. This could provide some headroom for Council to reduce parking requirements on future commercial and residential developments. However, further work is required to properly test this theory.

3 Dwellings

This section summarises data about district dwellings.

3.1 Census Information

Table 5 summarises census information about district dwellings.

Table 5: Census 2013 Dwelling Profile

Dwellings	Wakatipu	Arrowtown	Wanaka	New Zealand
Dwelling Type				
House	64%	86%	90%	82%
Flat/Apartment	36%	14%	10%	18%
Home Ownership				
Own	54%	66%	68%	65%
Rent	46%	34%	32%	35%
Average Rent				
2001	$194	$170	$160	$160
2006	$306	$280	$258	$200
2013	$384	$360	$300	$280
Sector of Landlord				
Private	96%	97%	97%	84%
Public	3%	3%	3%	16%
Years at Usual Residence				
0 Years	34%	24%	27%	22%
1–4 Years	33%	35%	34%	30%
5–9 Years	16%	22%	21%	21%
10–14 Years	8%	11%	10%	11%
15–29 Years	7%	8%	6%	11%
30 Years or More	1%	1%	2%	5%
Average	4.9	5.9	5.5	7.9
Bedrooms				
One	9%	3%	5%	6%
Two	18%	13%	13%	19%
Three	41%	52%	41%	44%
Four +	32%	32%	41%	31%
Average Number of Bedrooms	3.1	3.2	3.3	3.1

Table 5 shows that:

- Wakatipu has a unique mix of dwellings, with far more flats/apartments, and far fewer houses, than the rest of the district (and the rest of NZ)

- However, home ownership rates are much lower in Wakatipu than the national average, while those in the rest of the district are slightly higher than average.

- Average rents are quite high across the district, but less so in Wanaka.

- Very few dwellings are rented from the public sector, which suggests low reliance on State and/or Council housing provision.

- Residents are more mobile than the NZ average, particularly in Wakatipu.

- Dwellings are of average size, but slightly larger in Arrowtown and Wanaka.

3.2   Building Consents

While the census data provides a useful snapshot of the dwelling stock as it stood on census day, it does not reveal it evolved to reach that point. To understand that better, we analysed detailed building consent data dating back to 1999.

According to our database, consents for 8,500 new dwellings were issued in the district between 1999 and 2013 (inclusive). Figure 3 shows the trend over time.

Figure 3: New Dwellings consented Queenstown-Lakes vs NZ
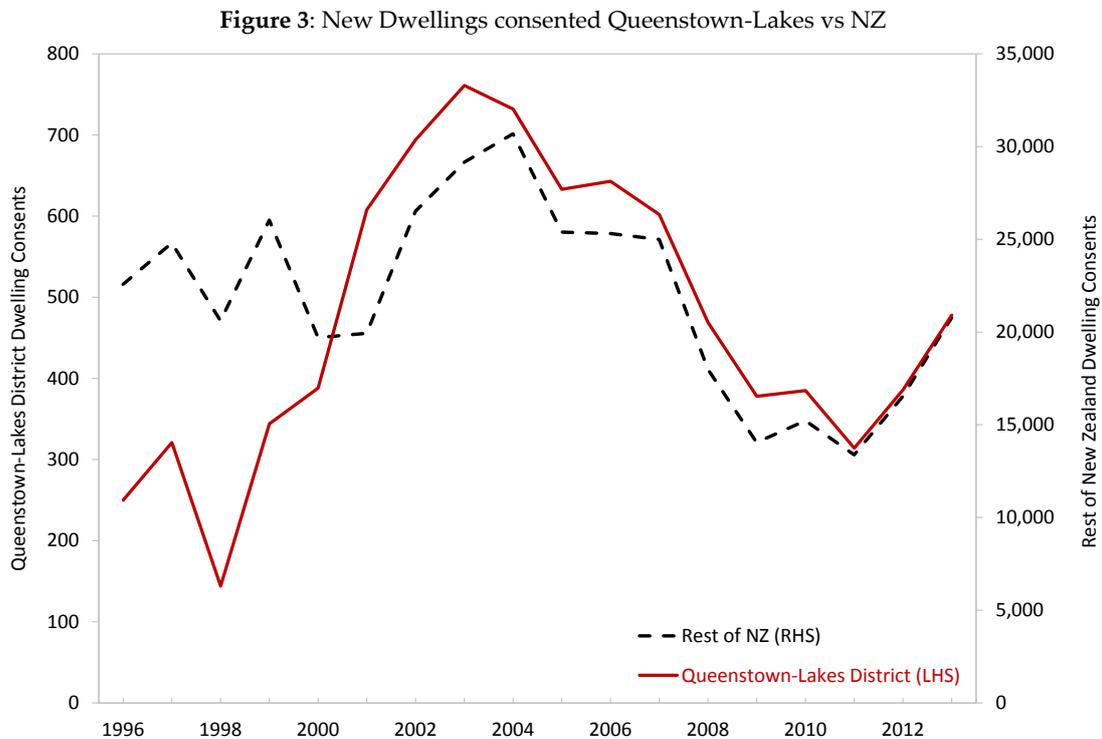
Figure 3 shows that district consents for new dwellings are quite volatile, but tend to mirror national trends, particularly since 2003.

Next, Figure 4 looks at how the size of new dwellings has changed over time. Again, the district appears to broadly follow the national trend, with the average size creeping up gradually over time. However, average size dropped sharply twice. This was due to a larger-than usual number of apartments being built in those years, which have smaller average floor areas. These spikes in apartment consents are illustrated in Figure 5, which shows the proportion of annual dwelling consents by dwelling type.

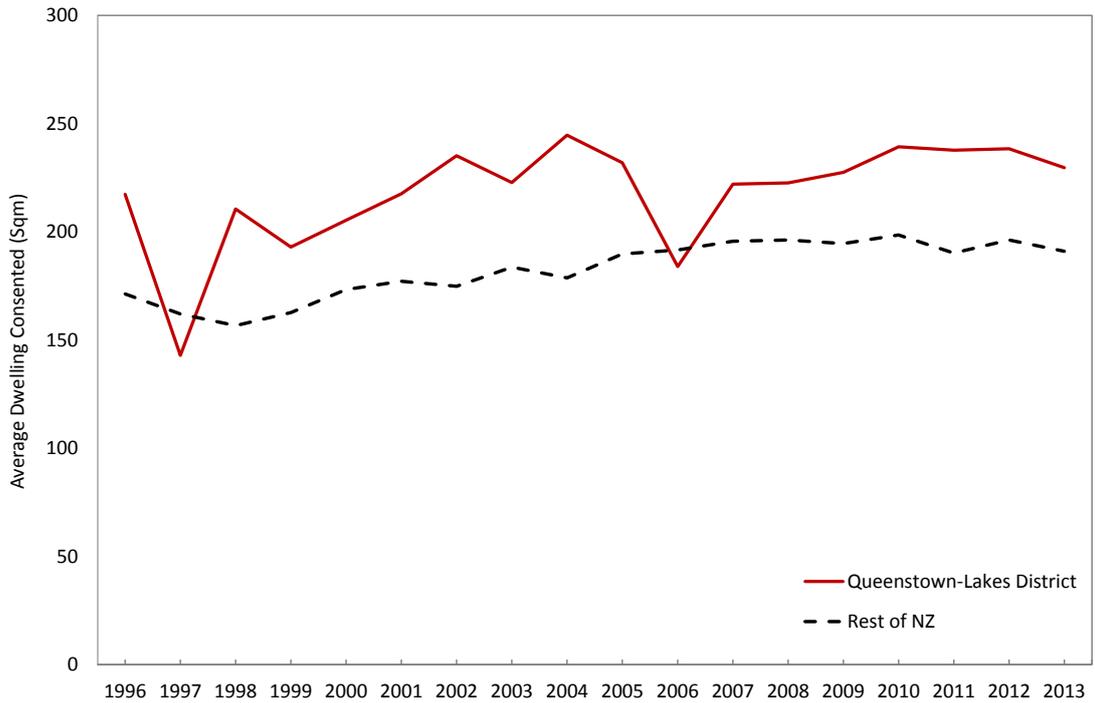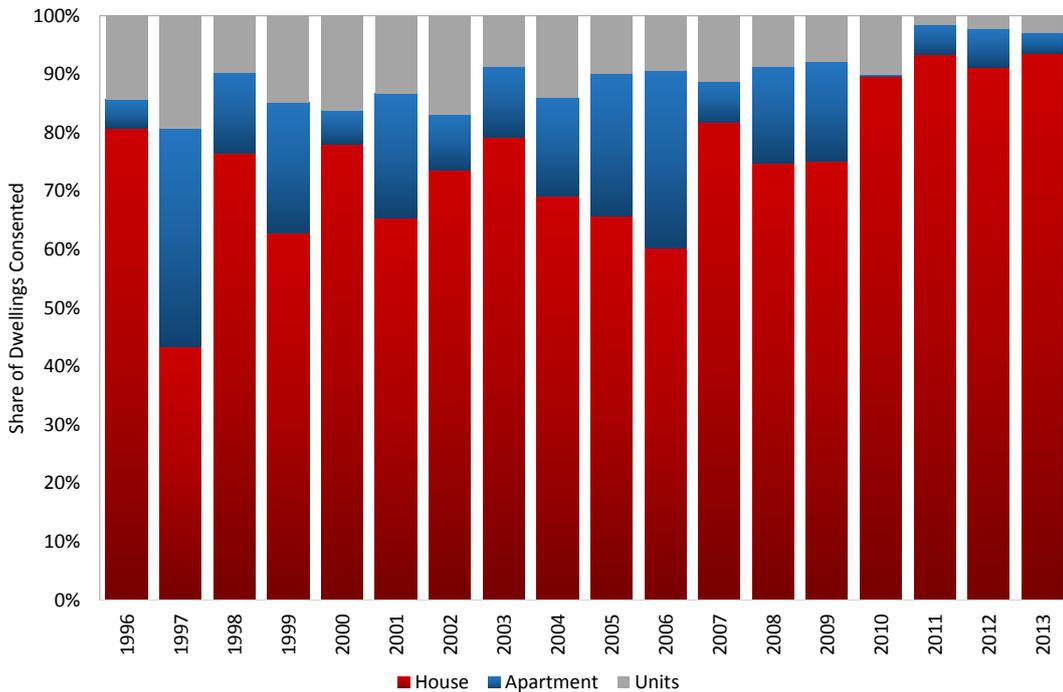**Figure 4**: Average Dwelling Size over Time

Figure 5: Share of Dwelling Consents by Type

Notwithstanding the occasional spikes in apartment consents shown above, there has been a notable increase in the share of new dwelling consents that were for houses. For example, over the last three years, houses accounted for 93% of new dwelling consents.

3.3 Housing New Zealand Bond Data

Finally, we use detailed bond data lodged with the Ministry of Business, Innovation and Employment (MBIE) to understand rental trends. These track the average rent paid by:

- District sub-areas
- Quarter,
- Dwelling type, and
- Number of bedrooms.

3.3.1 Rental Trends for all Dwellings

To begin, Figure 6 plots the trend in district-wide rents for all dwellings.

Figure 6: Average Quarterly District Rent, 1993 - 2014[1]
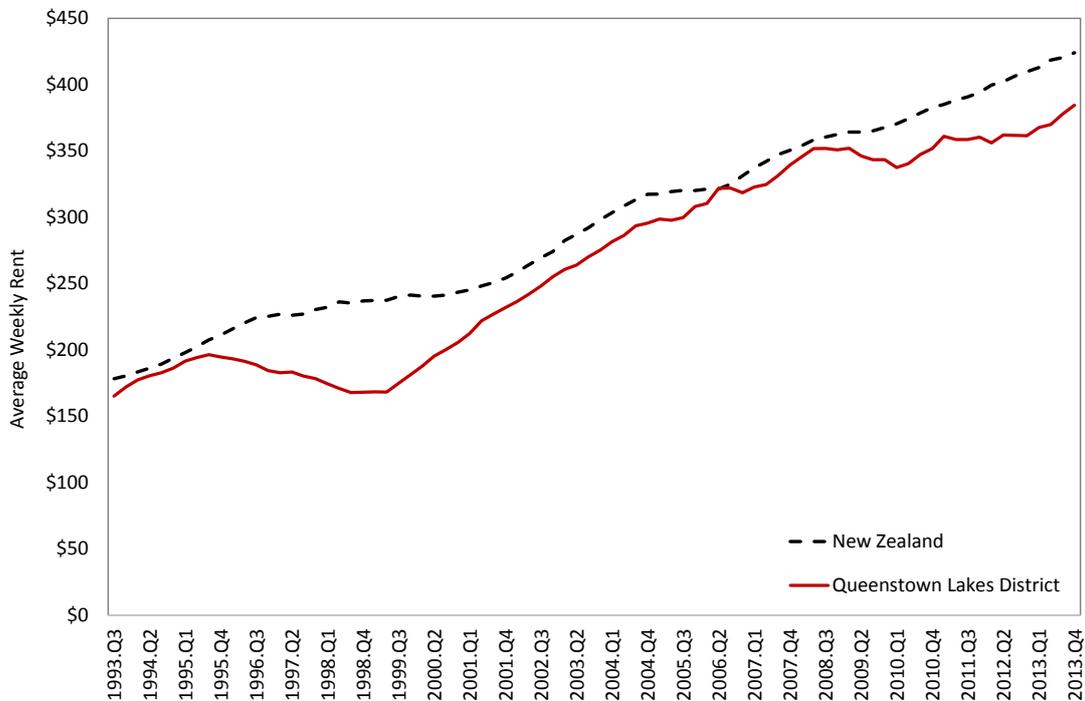
Figure 6 shows that average rents have increased steadily over the last 20 years, both in Queenstown and the rest of New Zealand. While

3.3.2 Rental Trends by Dwelling Type

Figure 7 shows the 20-year trend by dwelling type. It shows that rents for houses and apartments have grown quicker than for units/flats etc, although the underlying trends are similar.

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[1] 1999.Q2 – 1999.Q4 were linearly interpolated to remove outliers in the data, due to a compositional change in the stock of dwellings over this time.
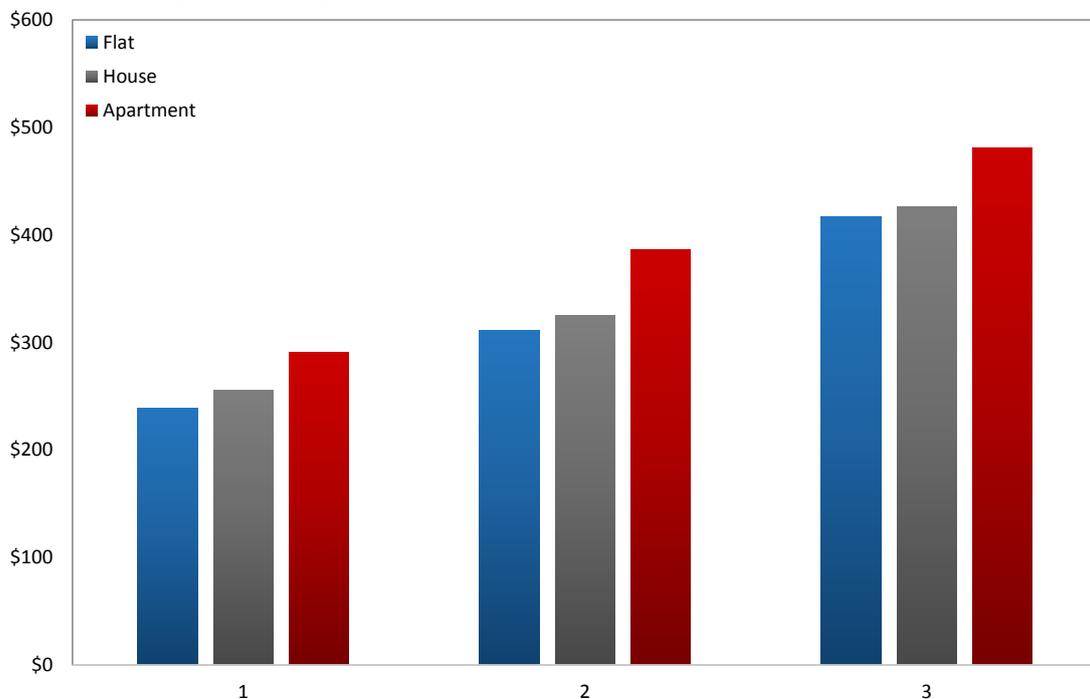
Figure 7: Smoothed Average Rent by Property Type in Queenstown, 1993 - 2014
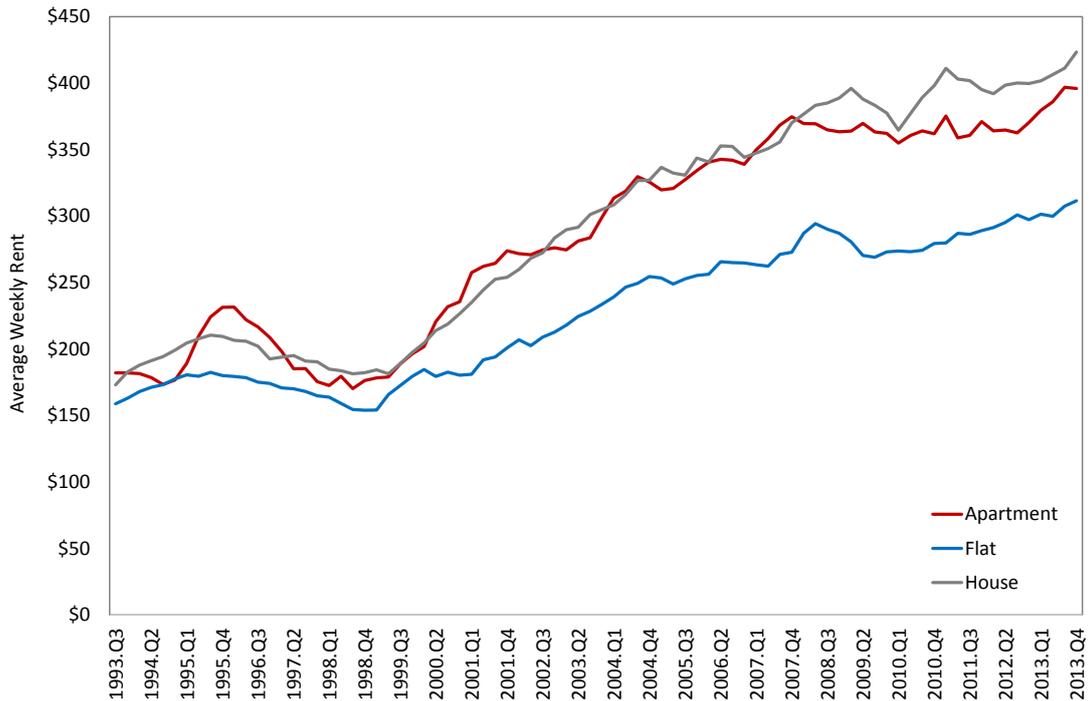
3.3.3 Current Rents by Dwelling Type and Number of Bedrooms

Next, Figure 8 shows current average rents by dwelling type and number of bedrooms.

Figure 8: Average Rent paid for Number of Bedrooms, Year End March 2014

While houses tend to have the highest rents overall – as shown in Figure 7 – Figure 8 shows that apartments are actually more expensive on a room-by-room basis. To explore this further, the following table shows the average rents by dwelling types and

number of bedrooms. Please note that some cells are blank because no new tenancies were lodged during that period.

Table 6: Average Rent by Number of Bedrooms Year Ending March 2014

Dwelling Type/bedrooms	1	2	3	4	5+
Apartment	$290	$370	$480	-	-
Flat	$240	$310	$420	$400	-
House	$260	$320	$430	$510	$610

3.4   Possible Implications for Future Dwelling Demand

The district has a fairly distinctive dwelling mix, with quite high numbers of attached dwellings in Wakatipu, but relatively low numbers elsewhere. However, recent dwelling consent trends signal much stronger growth in detached dwellings, which may alter the overall mix considerably in time.

Although the district has a fairly low reliance on public sector housing provision, home ownership rates are low in Wakatipu. This, in turn, is likely to reflect higher-than-usual demand for short-term, flexible living arrangements associated with younger, highly-mobile residents.

If recent trends continue, the district is likely to see a steady stream of consents for ever-larger stand-alone dwellings, with only moderate consents for other dwelling types.

4   Projections

While a good understanding of the past and present is important, so too is solid understanding of the district's likely future. Accordingly, this section briefly reviews various projections that have informed recent Council planning.

4.1   Projections Reviewed

Council identified three sets of projections that they use most often. They were:

1. Rationale's projections of population, visitor nights and employment, [2]
2. McDermott Miller's projections of visitor nights and employment, [3] and
3. Statistics New Zealand official population projections

The remainder of this section analyses the plausibility of the projections themselves and also analyses the robustness of the underlying inputs and assumptions.

4.2   Rationale

4.2.1   Underlying Logic

In 2011, Rationale generated projections of tourism nights, population and employment for the district. The following diagram illustrates the logic underlying their projections.

Figure 9: Logic Underlying the Rationale Projections

Put simply, Rationale first project tourism nights, which are then converted to employment and next residents. Later, residents are translated to households before finally being converted to dwellings. Given the district's strong tourism focus, we consider this a logical and sensible approach.

4.2.2   Inputs

As tourism nights are the key driver of Rationale's projections, we benchmarked their assumed growth rate against the historic average. In doing so, we found that Rationale had assumed average annual tourism nights growth of only 1.4% against a historic average of 4%. While we accept that tourism growth may not continue at the same pace as it has in the past, this does seem quite low (particularly now in light of pending increases in airport operating hours).

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[2] Rationale, *Queenstown Lakes District Growth Projections*, March 2011

[3] McDermott Miller, *Review of District Plan Business Zones Capacity and Development of Zoning Hierarchy*, November 2013

4.2.3   Outputs

Next, we compared Rationale's population projections (the most commonly used ones) with the historic average, as well as the averages underlying Statistics New Zealand's official projections (which we discuss further below). Table 7 summarises the results.

Table 7: Comparison of Population Growth Rates

Series/Report	Pop Growth p.a.
Stats Low projection	1.4%
Stats Medium projection	2.2%
Stats High projection	2.9%
Rationale 2011	2.4%
Historic Average	**4.3%**

Table 7 shows that Rationale's population projections are quite low relative the historic average, but in line with the official population projections. The following graph shows how these various projections play out over a 20 year period.

Figure 10: Population Projections for QLD
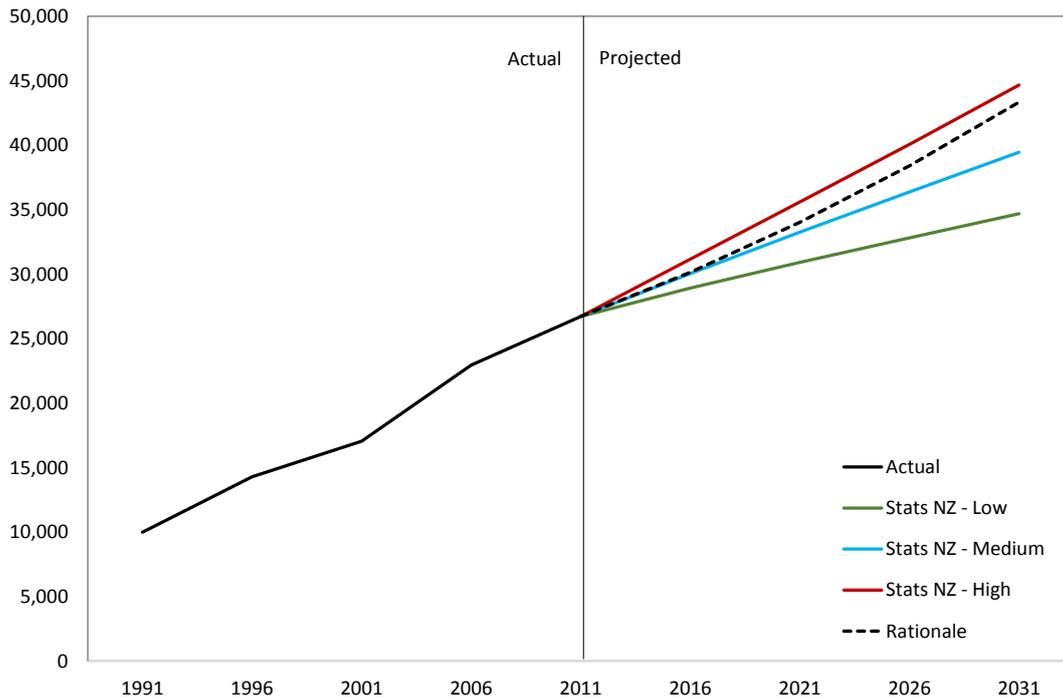
4.3   McDermott Miller

In late 2013 McDermott Miller was commissioned to investigate the supply of commercial and town centre land. As part of this, they generated their own population and tourism projections.

4.3.1   Logic

The following diagram illustrates the logic used in McDermott Miller's report.

Figure 11: Logic used fir McDermott Miller Projections

McDermott Miller's approach was similar to Rationale, in that they also started from tourism nights. However, unlike Rationale, McDermott Miller adopted a scenario-based approach so that a range of potential outcomes could be tests. We agree with their use of scenarios, and consider them a valuable addition to any baseline projection.

Following are descriptions of the scenarios used, as paraphrased from their report.

- **Status Quo** – this is the baseline scenario. It assumes no significant changes to the tourism product or operating hours of the airport. Visitor nights grow linearly based on recent growth rates until 2021 where they are halved.

- **Tourism Driven Variant 1 (TDV1)** – Airport expansion and marketing double the international visitor growth rate and lifts the daily international visitor spend 5%; Wanaka grows at status quo rate.

- **Tourism Driven Variant 2 (TDV2)** – Significant investment in tourism-related developments leads to three times the status quo of growth in international visitor nights and a 25% increase in spending per visitor; complemented by a 10% increase in daily domestic visitor spending. Wanaka grows at the status quo rate.

4.3.2 Inputs

Once again we compare the key input (visitor night growth) with the historical average.

Table 8: Projected Annual Growth in Visitor Nights

Series/Report	Visitor Growth p.a.
MDM - Status Quo	2.4%
MDM - TDV1	4.4%
MDM - TDV2	5.6%
Historic Average	**4.0%**

Table 8 shows that the tourism growth assumptions used by McDermott Miller are a closer fit with the historic average, although TDV2 may be a little too aggressive.

4.3.3 Outputs

Table 9 below benchmarks the average annual population growth rates for McDermott Miller's various scenarios against the historical average and statistics New Zealand's official projections..

Table 9: Average Annual Projected Growth in Population

| Series/Report	Pop Growth p.a.
Stats Low projection	1.4%
Stats Medium projection	2.2%
Stats High projection	2.9%
MDM - Status Quo	1.5%
MDM - TDV1	2.7%
MDM - TDV2	4.4%
Historic Average	4.3%

Table 9 reveals something quite interesting about the McDermott Miller projections. Take, for example, their population projection for TDV1. This equals 2.7% even though the corresponding tourism night projection was 4.4%. In our view, it seems unlikely that this level of tourism growth could be serviced by only 2.7% population growth, particularly given that the long run averages were 4% for tourism and 4.3% for population. This raises some questions about the method used to translate tourism nights into population and employment.

4.4   Official Statistics New Zealand Projections

As noted above, Statistics New Zealand produces official population forecasts under low, medium and high scenarios. Further, as also noted above, these official projections seem to imply significantly lower growth than the historic average. For instance, the medium projection translates to annual population growth of only 2.2%, which is just over half the historic average.

In order to better understand how the official projections were reached, we ordered customised data that showed all the underlying inputs. While the assumptions related to births and deaths looked fine, we spotted something unusual about the migration assumptions. In particular, the forecast migration numbers looked very low compared to the historic average, especially for younger adults. To illustrate this, Figure 12 plots the past and projected future number of net migrants aged 15-39 years olds. The red bars denote historic values, and the grey bars projected future values.
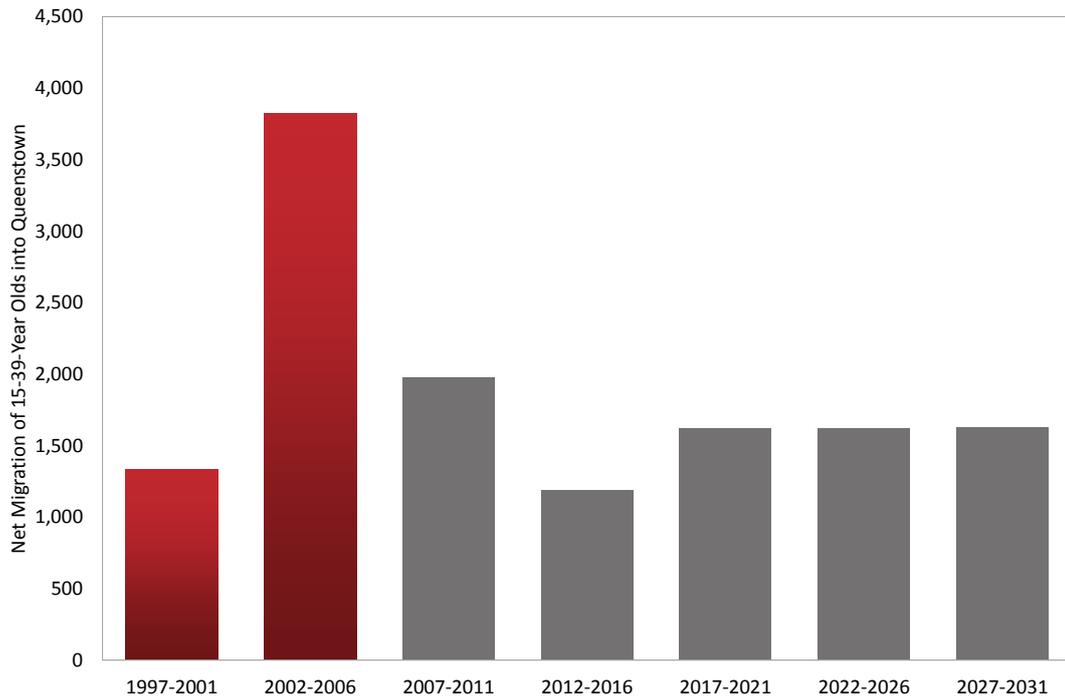
As we can see, the number of assumed future migrants aged 15 to 39 is low compared to the past, which is also why the official projections seem low relative to historic growth. As a final cross check, the following population pyramids compare the district's current age distribution with the distribution implied by the high official projection. Of particular note is the significant flattening out of people aged 25 to 44, who form the backbone of the district's tourism industry.

Figure 13: Population Pyramids for QLD in 2013 and 2013
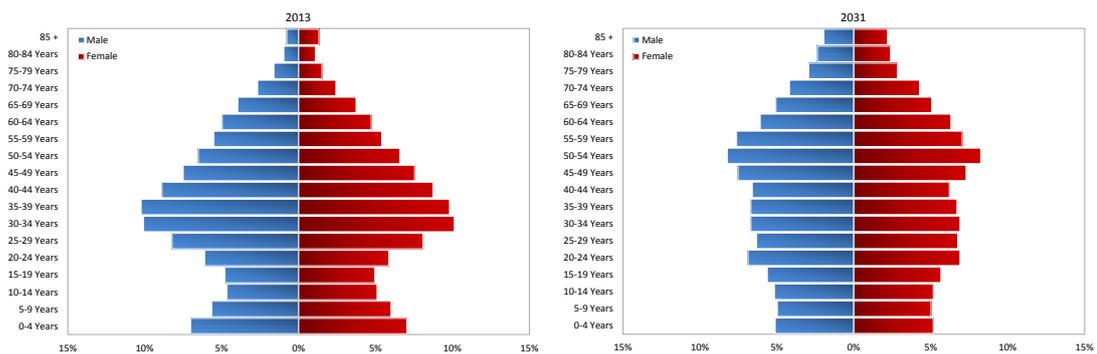
4.5   Summary of Findings

We now summarise our findings with regard to the various projections reviewed above. For ease of reference, Table 10 brings all the inputs and outputs together in one table.

Table 10: Summary of Projections (Inputs and Outputs)

Series/Report	Population	Employment	Visitor-Nights
Stats Low projection	1.4%	-	-
Stats Medium projection	2.2%	-	-
Stats High projection	2.9%	-	-
Rationale 2011	2.4%	2.5%	1.4%
MDM - Status Quo	1.5%	1.4%	2.4%
MDM - TDV1	2.7%	2.6%	4.4%
MDM - TDV2	4.4%	4.1%	5.6%
Historic Averages	**4.3%**	**5.1%**	**4.0%**

Our views can be summarised as follows:

- Given the historic average, we believe that the TDV2 tourism projections are too high, while Rationale's are too low. Same, too, for the corresponding population projections.

- Given the pending increase in airport hours/capacity, the Status quo tourism numbers look too low, while the TDV1 visitor projections look about right (if perhaps a little ambitious).

- However, the rate of population growth associated with TDV1 looks too low. Indeed, it seems unlikely that 4.4% annual tourism growth could be sustained on the back of 2.7% population growth.

- As a result, we believe that there is scope to generate a fresh set of population projections to inform the rest of the project, which we outline in the next section.

5 Revised Projections

Finally, this section outlines our revised population projections.

5.1 Methodology

We created a cohort component model akin to the method used by Statistics New Zealand for their official population projections. This model rolls forward the population from one year to the next on the basis of assumed births, deaths and net migration. This is illustrated below.

Figure 14: Cohort Component Model Methodology

5.2 Assumptions Used

Wherever possible, we have pegged our assumptions to those used by Stats NZ. For instance, we adopted their high fertility assumption and also their high survivorship assumption. However, rather than using their migration assumptions, we derived our own based on the 10 year historical average (1996 – 2006). Specifically, we set migration for the first five years equal to the 10 year average, and then let it grow 5% every five year. Figure 15 plots the resulting migration assumptions.

Figure 15: Migration Assumptions in Insight Economics Cohort Component Model
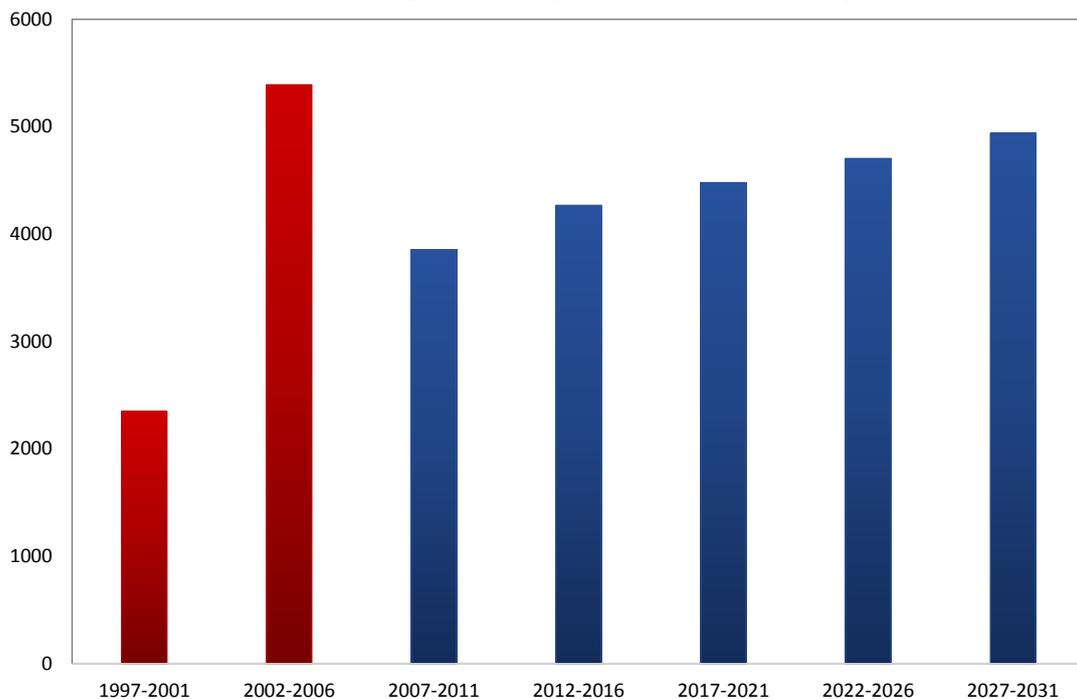
5.3   Results

Plugging these assumptions into our model generated an estimated population of around 55,000 by 2031. This represents as annual average growth rate of 3.4%, and is conservative relative to the historic annual growth rate of 4.3%. The following graph shows how our projections track over time relative to the official projections:

Figure 16: Revised Population Projections
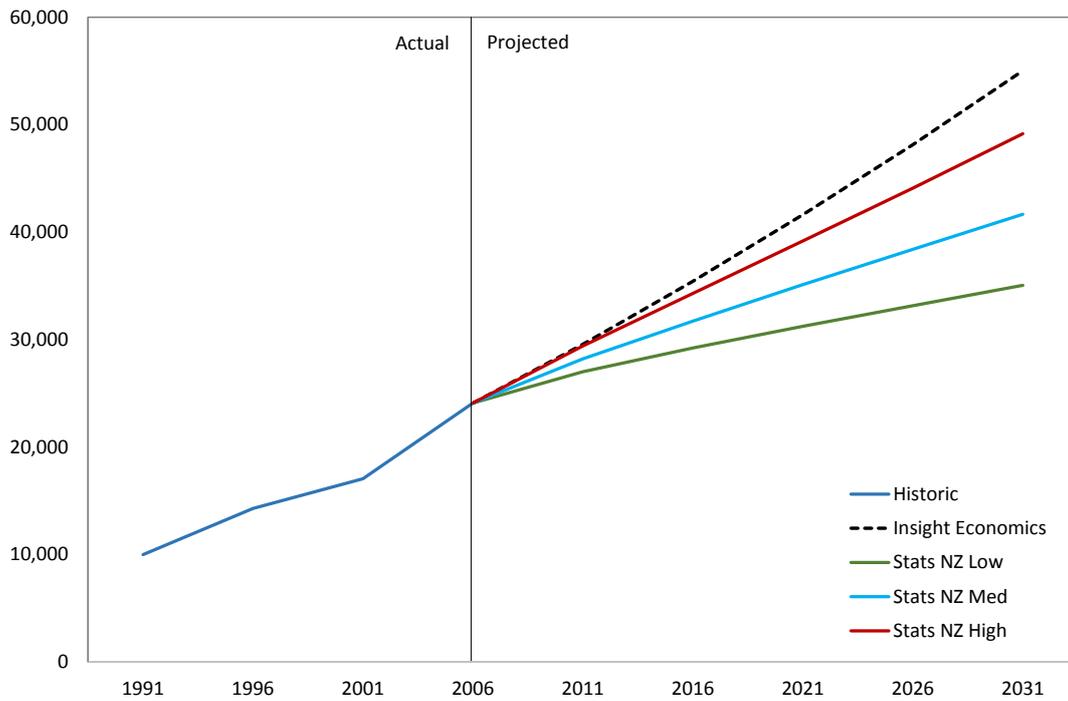
Finally, Figure 17 plots the population pyramid in 2031 associated with our projection alongside that for the Stats NZ high scenario. Ours is on the left, while Stats NZ on the right.

Figure 17: Revised Population Pyramid and Stats NZ High Projections 2031
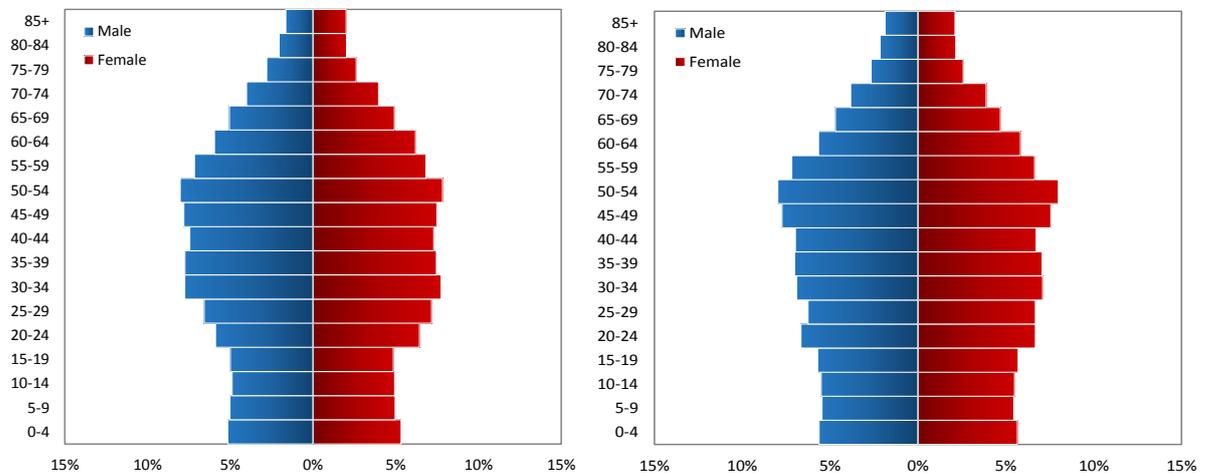
6   Conclusion and Recommendations

This report has reviewed a wide range of background data to inform our study of medium/high density housing. In addition, it has reviewed a range of tourism, population and employment projections that have been used in recent planning work.

The data strongly suggest that the district will continue to experience high population growth and hence that demand for new dwellings will also be strong. In fact, we believe that future growth is likely to exceed the levels associated with recent projections, particularly if the district's tourism industry continues to flourish. Accordingly, we believe the Council should start to consider how it might capitalise on these growth opportunities to secure a brighter economic future for ratepayers, both now and in the future. Failure to do so could cause the district to not reach its full potential.

ATTACHMENT B

Thursday, April 02, 2015

Matthew Paetz
Queenstown Lakes District Council
Private Bag 50072
Queenstown 9348
New Zealand

Dear Matthew,

**Re: Queenstown Visitor Accommodation Projections**

Context and Purpose of this Letter
Last month, QLDC commissioned us to produce indicative visitor accommodation projections for Queenstown to inform its District Plan Review. This letter summarises our approach and key findings. Please note that, due to time and budget constraints, the analysis is necessarily high level. However, we are confident that it provides a reliable basis for broad strategic planning.

Study Area and Time Horizon
We adopted a study area aligned with the Queenstown RTO boundary – as shown below – then generated annual forecasts of visitor nights and stay capacity by accommodation type to 2035.

Figure 1: South Island Regional Tourism Organisation Boundaries
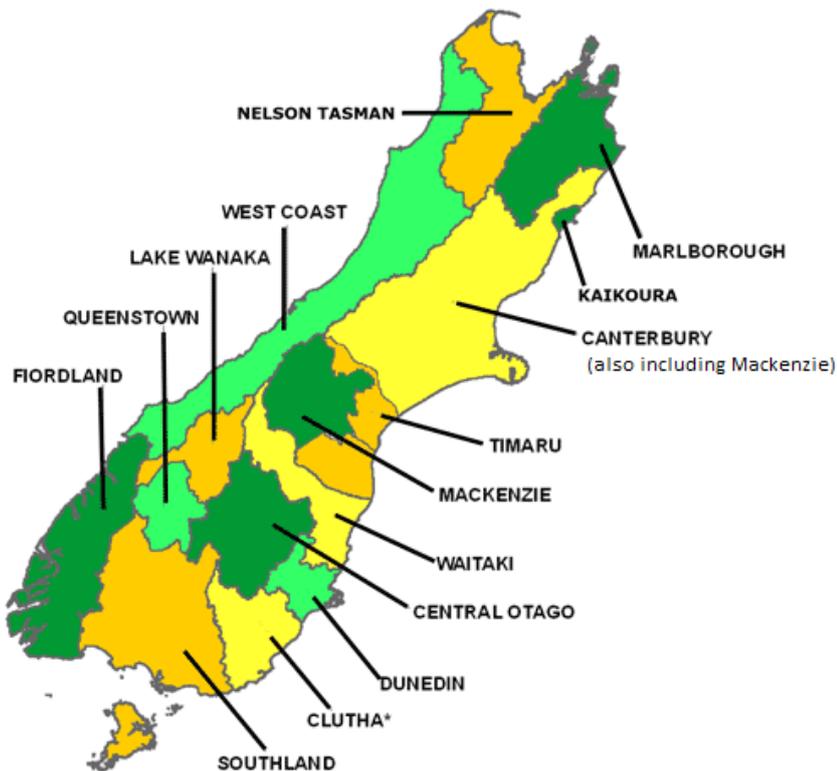
Accommodation Types

Our analysis includes all traditional forms of commercial accommodation plus peer-to-peer options, such as Book-a-Bach or Air BnB. However, it *excludes* people staying at their own holiday homes or with friends and relatives. This is illustrated in the figure below.

Figure 2: Visitor Accommodation Types Included in the Analysis
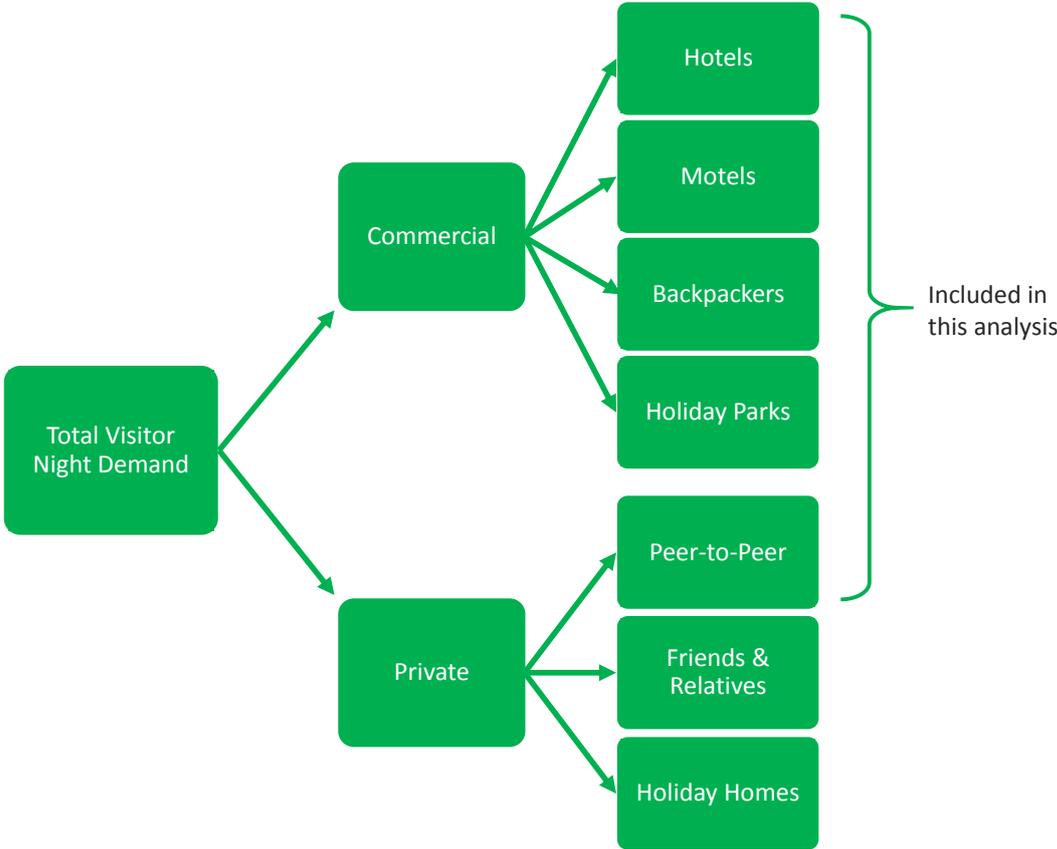
Steps in the Analysis

Following are the key steps in our analysis:

1. Survey all available tourism data for Queenstown.
2. Generate a number of forecasts for commercial visitor nights.
3. Select the most likely range based on known developments in the tourism industry.
4. Account for growth in peer to peer accommodation.
5. Forecast changes in market shares by accommodation type.
6. Convert to future capacity requirements.

Projecting Commercial Accommodation

As some readers may be aware, there is a significant shortage of timely tourism information available to support sub-national projections, such as those that form our focus here. For example, the most recent regional tourism projections were done in 2010.

Of all available sources, the commercial accommodation monitor is the most up-to-date available. Accordingly, we used it to generate projections of *commercial* visitor nights, then added estimates

of peer-to-peer nights to complete the analysis. In addition, we considered a range of other commercial night projections already posited by others, including the McDermott Miller projections completed for the council in 2013.

The following figure depicts the various commercial night forecasts considered.

Figure 3: Projections of Commercial Nights
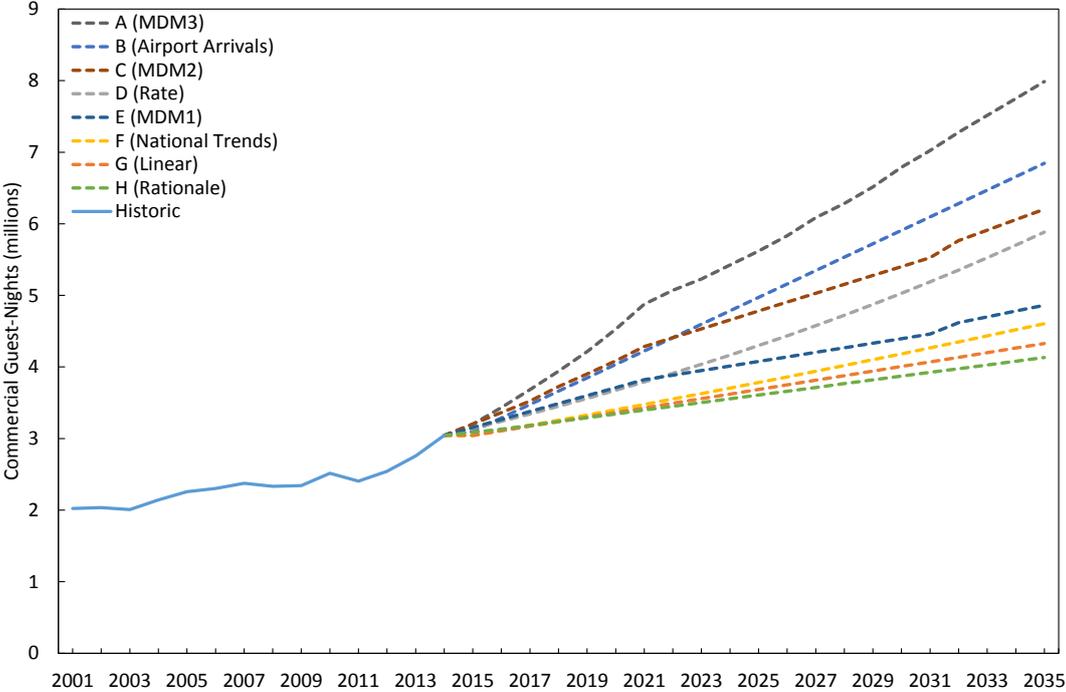
The significant range between the lowest and highest projections highlights the difficulty in predicting the future path of tourism nights. However, we consider the lower cluster of projections (E to H) to be unduly pessimistic because:

1. **They reflect a significant slow-down in growth** – while local tourism growth certainly was affected by the GFC, the worst is far from over with strong growth witnessed in recent times. In fact commercial guest-nights grew 25% over the past three years, which is the highest growth rate for some time.

2. **They appear to ignore pending increases in airport operating hours** – the airport has been given provisional permission to start night flights from mid-2016. This will significantly boost airport capacity and enable tourism growth to continue at a fast pace.

3. **They appear to ignore the potential uplift from convention tourism** – international convention centres have been proposed both in Lakeview and Frankton. Development of one or both of these projects will bring in a large number of conference attendees with obvious impacts on annual guest nights.

Consequently, we believe that the higher four projections (A to D) provide the most reliable for forecasting commercial accommodation demand in Queenstown and use them accordingly.

Peer to Peer Accommodation

A noted earlier, our projections of total nights also include peer to peer stays. Unfortunately, it is difficult to accurately predict these as there are no official records. The most reliable is the International Visitor Survey, which suggested that, for every 10 commercial visitor nights, two nights are spent in peer-to-peer rentals. Using this ratio, we scaled the commercial-night estimates in Figure 3 to create the total guest-night projections shown in the figure below.

**Figure 4**: Projections of Total Guest-Nights
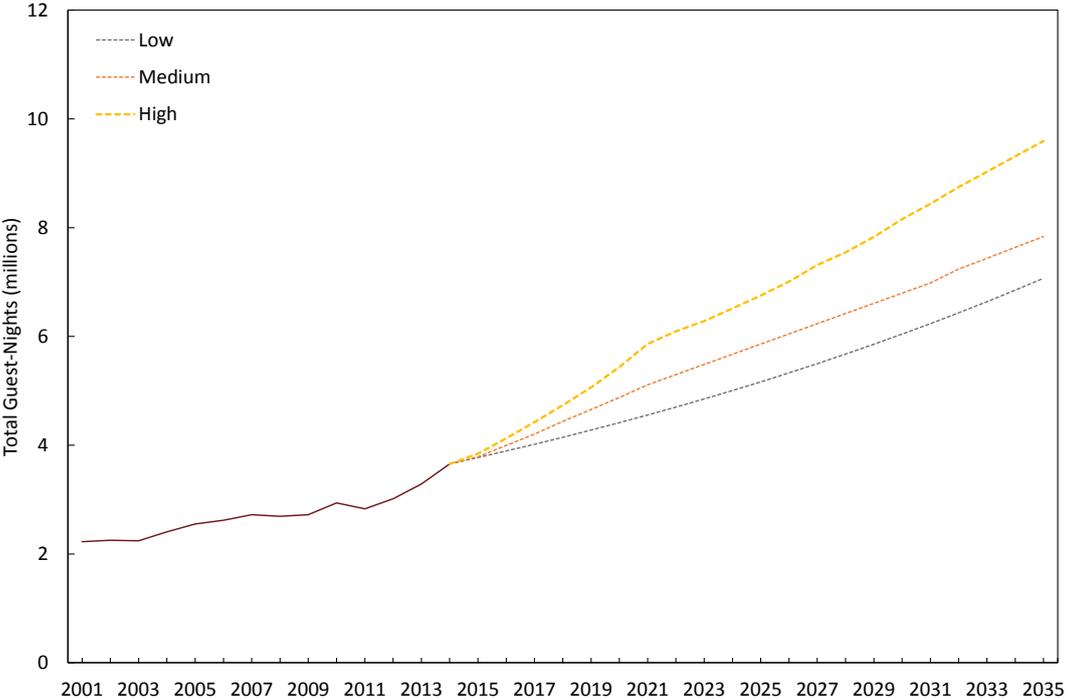
Guest-Night Demand by Accommodation Type

Once total guest night has been projected, we then considered likely shares by accommodation type. To begin, we first reviewed historical trends, which indicated a long-run decline in the market shares of both backpackers and holiday parks, mostly in favour of hotels.

Acknowledging these trends, we derived a set of market share projections to 2035. These assume, principally, that the market share of peer-to-peer providers will increase gradually over time. The following figure shows the results, which we consider the most likely scenario going forward.[1]

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[1] Please note, however, that a detailed Excel Spreadsheet has also been provided so that the effects of alternative assumptions can be assessed.

Figure 5: Growth in guest-nights by accommodation type
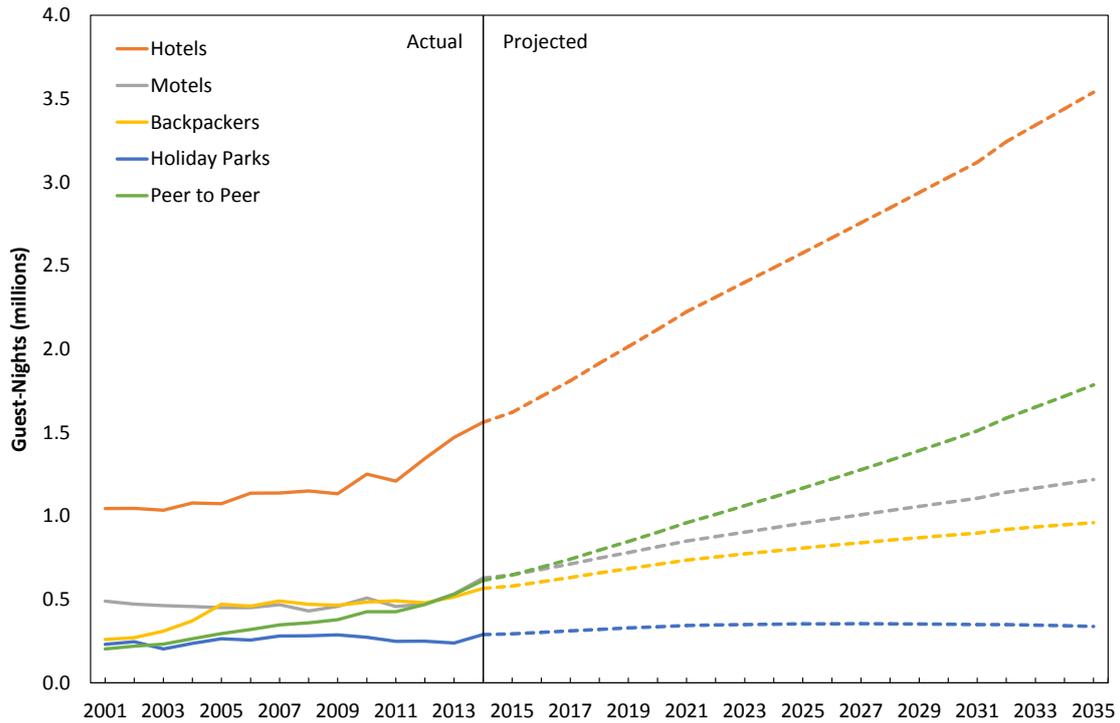
Future Demand for Each Accommodation Type

Finally, we used historical CAM data to convert our guest-night projections above into to estimates of stay-unit capacity. The following table shows the occupancy and average guest number assumptions applied.

Table 1: Assumptions used to estimate capacity requirements

	Average Occupancy[2]	Guests per Stay-Unit
Hotels	73%	1.9
Motels	58%	2.4
Backpackers	66%	1.1
Holiday Parks	30%	2.4

As these assumptions are based on long-run market data, they can be assumed to reflect the natural level of supply relative to demand. That is to say, they account for both seasonal peaks and troughs in tourism demand, as well as the ability of users to adapt to short-term capacity constraints (for example by using the pull-out couch in a motel room). Thus, these assumptions can reasonably be used to determine the additional stay-units which will be required to meet future demand in a 'market-preferred' way.

Note that there was no information available on the current stock of peer to peer units so occupancy could not be calculated. Instead, we present peer to peer capacity requirements simply as the growth in guest-nights that must be provided for.

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[2] We have applied the average occupancy based on the most recent year for which data was available.

Based on these assumptions, the following table presents the current state of supply in Queenstown, as well as the future growth that will be required to meet what we view as the most-likely scenario for future growth.

Table 2: Current and Future Accommodation Capacity Requirements

Stay-Unit Capacity	2015	2035	20-Year Growth
Hotels	3,120	7,090	+3,970
Motels	1,180	2,390	+1,210
Backpackers	2,190	3,710	+1,520
Holiday Parks	1,100	1,400	+300
Peer to Peer (Guest Nights)	645,950	1,785,220	+1,139,270

Sincerely,

Fraser Colegrave
Managing Director
Insight Economics Limited