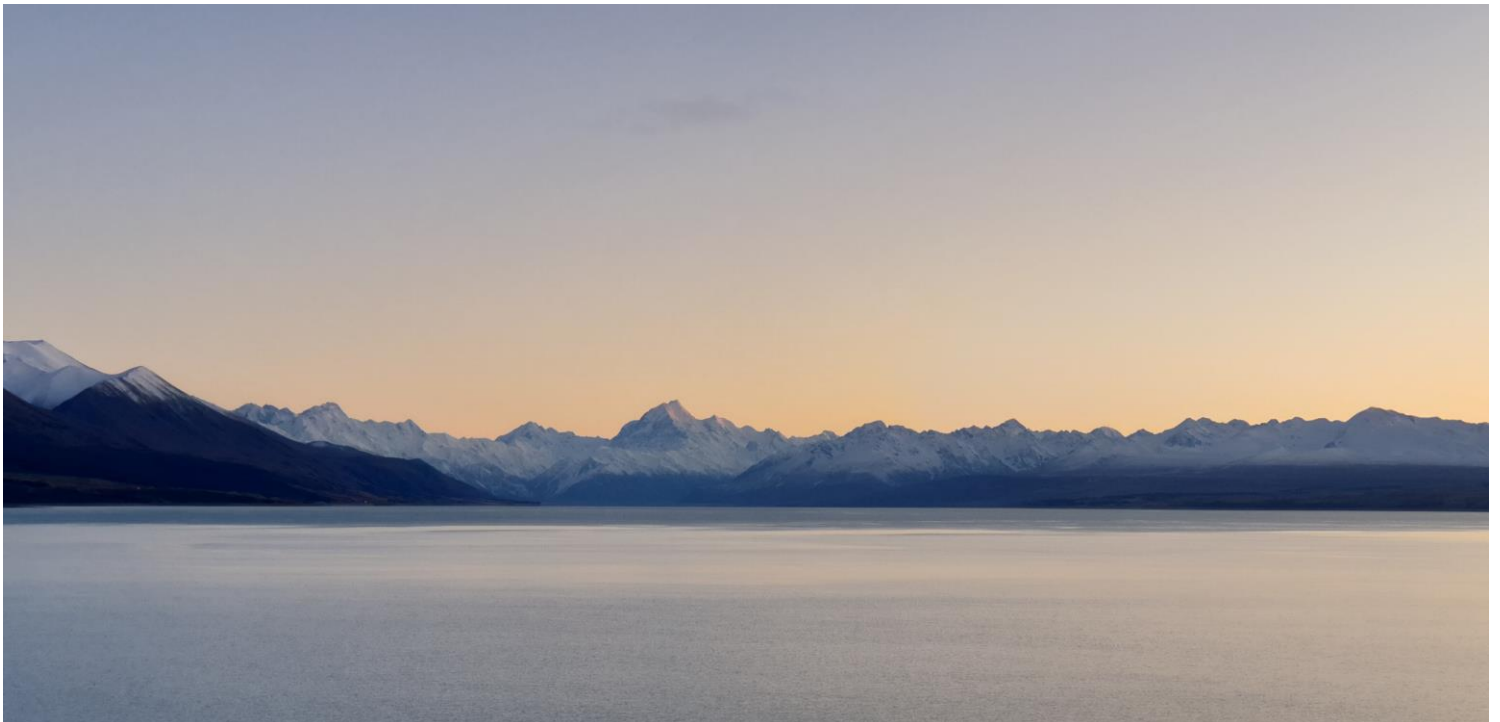




Mackenzie District Growth Projections - 2020

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Mackenzie District Growth Projections - 2020

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Rationale Limited	Project Manager:	Andy Longman
5 Arrow Lane	Prepared by:	Emily Gualter, Andy Longman
PO Box 226	Reviewed by:	Jimmy Sygrove, Tom Lucas
Arrowtown 9351	Approved for issue by:	Edward Guy
Phone: +64 3 442 1156	Job number:	J001067

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Glossary

OUTPUT DEFINITIONS

Term	Definition
Usually Resident Population	The number of people who usually live in an area.
Total Dwellings	Any building structure, or any part of a building structure, that is used or intended to be used for human inhabitation.
Occupied Dwellings	Any dwelling which is usually has people residing in it.
Unoccupied Dwellings	Any dwelling which is usually does not have people have residing in it. These are primarily holiday homes.
Filled Jobs	The total number of jobs that are based in an area. These may be full time or part time jobs.
Rating Units - Total SUIPs	The total number of rating units. This is the sum of the individual rating units below.
Rating Units - Urban SUIPs	The number of rating units who are charged under the Urban rate.
Rating Units - Rural 1 SUIPs	The number of rating units who are charged under the Rural 1 rate.
Rating Units - Rural 2 SUIPs	The number of rating units who are charged under the Rural 2 rate.
Rating Units - Business SUIPs	The number of rating units who are charged under the Business rate.
Average Day Visitor Nights	The mean number of visitors that are within an area overnight, within in a 12-month period.
Peak Day Visitor Nights	The number of visitors that are within an area overnight, on the busiest night within in a 12-month period.
Average Day Visitor Numbers	The mean number of visitors that are within an area at any time in the day, within in a 12-month period.
Peak Day Visitor Numbers	The number of visitors that are within an area at any time in the day, on the busiest night within in a 12-month period.

OTHER DEFINITIONS

Term	Definition
Rating Unit	The unit of liability for rates is the rating unit. It is based on the concept of ownership – where, in particular, 1 certificate of title = 1 rating unit. Valuation rules allow for exceptions and oddities, as not all land in New Zealand has a certificate of title.
SUIP - Separately Used or Inhabited Part	<p>A SUIP is every rating unit and, without limitation, every additional dwelling, commercial or community activity. This includes:</p> <ul style="list-style-type: none"> a) any part or parts of a rating unit that is used or occupied by the ratepayer for more than one single use. b) any parts, whether or not actually occupied at any particular time, which are used for rental (or other form of occupation) on an occasional or long-term basis. c) vacant land and vacant premises offered or intended for use or habitation and usually used as such are defined as 'used'. <p>For the purposes of clarity, every rating unit has a minimum of one SUIP.</p>

Statistical Area 1 (SA1)	The main purpose of the SA1 geography is to provide an output geography that allows the release of more low-level data than is available at the meshblock level. Built by joining meshblocks, SA1s have an ideal size range of 100–200 residents, and a maximum population of about 500.
Statistical Area 2 (SA2)	The main purpose of the SA2 geography is to provide an output geography for higher aggregations of population data than can be provided at the SA1 level. The SA2 geography aims to reflect communities that interact together socially and economically. In populated areas, SA2s generally contain similar-sized populations. Statistical areas either define or aggregate to define urban rural areas, territorial authorities, and regional councils.
Peaking Factor	The ratio between peak day visitor numbers and average day visitor numbers
Net Migration	People moving into an area, less the people moving out of an area.

TAKAPŌ OR TEKAPO?

Throughout this document we have referred to Takapō using its current spelling 'Tekapo'. While we acknowledge the traditional Mana Whenua spelling of Takapō, we have stuck with Tekapo as the name is hard coded into the Statistics NZ modelling.

1 Executive Summary

This report presents Mackenzie District's 2020 growth projections, which seek to understand how Mackenzie might grow over the next 30 years.

Understanding growth is an extremely important component to consider when planning for the District's future and these growth projections will be used to inform a wide range of key projects, plans and strategies.

Projections through to 2050 are made for the following categories:

- Usually resident population
- Employment
- Number of dwellings
- Rating units
- Visitors

1.1 Methodology

In the past MDC have used the growth projections prepared by Statistics New Zealand (StatsNZ). Since 2013, growth in the district has far exceeded even the most ambitious predictions, as seen in Figure 1 below. This has been driven by growth in the tourism industry, which has attracted both visitors and residents.

Due to the delayed release of the StatsNZ growth projections based on the 2018 Census and their typically conservative nature, MDC has commissioned these growth projections to provide a single source of the truth for council and to help understand the future growth in their district.

The 2020 projections have been developed using a bottom up approach. Individual growth drivers for each Statistical Area 2 (SA2) have been developed using employment and job growth as the basis of the modelling.

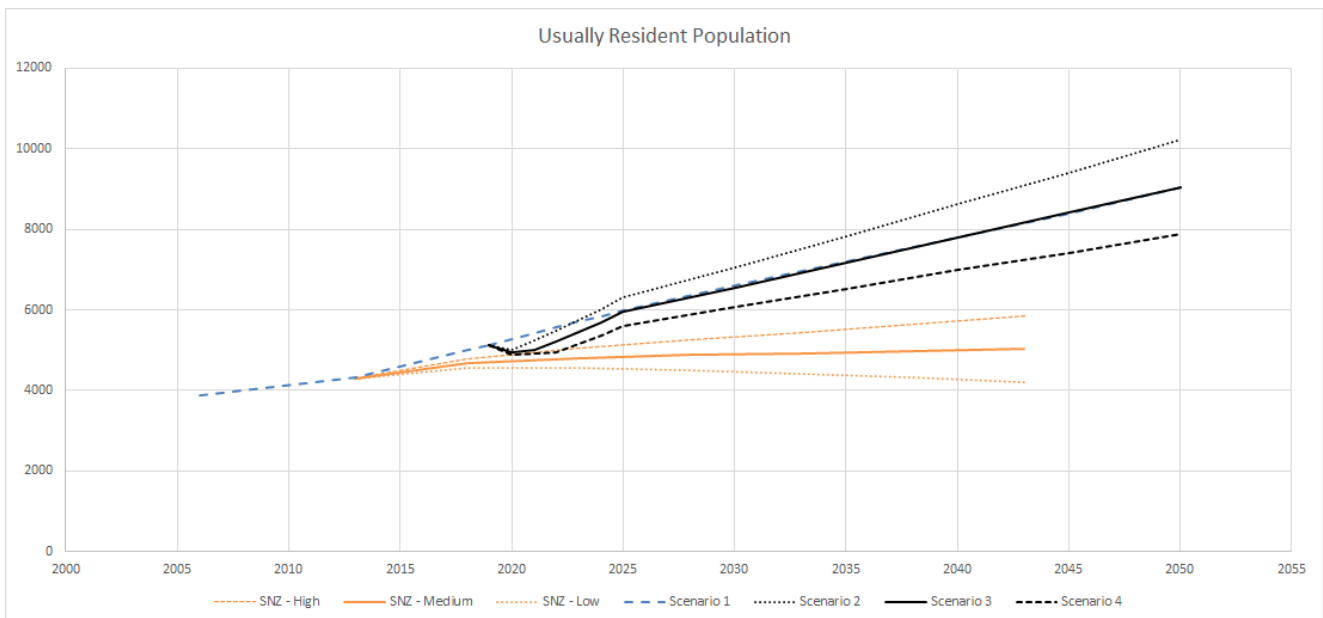


Figure 1. Mackenzie's usually resident population compared to the 2017 StatsNZ predictions.

1.2 Growth Scenarios

Four growth scenarios have been modelled for each parameter representing different levels of ambition in terms of the district's growth over the next thirty years.

Table 1. Summary of the four growth scenarios.

	Scenario	Description
Scenario 1	Business as Usual (Pre COVID-19)	Used as a baseline to compare the other three scenarios. It assumes that there has been no impact from COVID-19 and there is no limit on the number of dwellings that can be constructed.
Scenario 2	High	Assumes that COVID-19 has a minimal impact on the district. While there are some job losses, the district recovers to a level above the business as usual scenario. There has been an allowance for currently zoned land to reach capacity.
Scenario 3	Medium	Models the expected impact from COVID-19. This assumes that all parameters return to the business as usual prediction by 2025. There is an allowance for capacity constraints of the currently zoned land.
Scenario 4	Low	Models a situation in which COVID-19 has a higher than expected impact on the district, i.e. more job losses, and only recovers to 5% less than the business as usual scenario by 2025.

1.3 Mackenzie District Growth Projections Summary

Table 2. Mackenzie District growth projections summary.

	2006	2013	2018	2020	2025	2030	2035	2040	2045	2050
Usually Resident Population	3890	4310	5010	4950	5948	6561	7180	7792	8406	9050
Total Dwellings	2793	3300	3747	3872	4600	5089	5517	5735	5925	6120
Occupied Dwellings	1647	1842	2244	2239	2726	3028	3271	3541	3701	3858
Unoccupied Dwellings	1137	1449	1482	1633	1873	2062	2246	2194	2224	2261
Number of Jobs	1740	1910	2330	1876	2953	3232	3536	3867	4227	4618
Number of Businesses	810	891	945	791	1113	1197	1288	1386	1492	1606
Visitor Accommodation				20	41	47	53	59	65	71
Rating Units - Total SUIPs				5151	6166	6827	7402	7723	7968	8223
Rating Units - Commercial Accommodation SUIPs				97	110	126	142	159	173	190
Rating Units - Residential SUIPs				3887	4698	5216	5645	5842	5982	6129
Rating Units - Industrial SUIPs				119	145	159	175	192	211	232
Rating Units - Other Commercial SUIPs				154	185	201	220	238	260	283
Rating Units - Other SUIPs				894	1028	1125	1220	1292	1342	1389
Peak Day Visitor Nights			16313	9239	18950	21674	24397	27121	29844	32568
Average Day Visitor Nights			4172	2363	4847	5543	6240	6937	7633	8330
Peak Day Visitor Numbers			30682	17378	35642	40764	45886	51009	56131	61253
Average Day Visitor Numbers			5497	3113	6386	7303	8221	9139	10056	10974

Table 3. Mackenzie District short- and long-term forecasts.

	Historic Growth (2006 - 2019)			Short Term Forecast (2019 - 2025)			Long Term Forecast (2019 - 2050)		
	Total Growth	Av. Annual Growth	Av. Annual Growth Rate	Total Growth	Av. Annual Growth	Av. Annual Growth Rate	Total Growth	Av. Annual Growth	Av. Annual Growth Rate
Usually Resident Population	1,240	95	2.2%	818	136	2.5%	3,920	126	1.8%
Total Dwellings	1,075	83	2.5%	731	122	2.9%	2,251	73	1.5%
Occupied Dwellings	680	52	2.7%	400	67	2.7%	1,531	49	1.6%
Unoccupied Dwellings	404	31	2.4%	332	55	3.3%	720	23	1.2%
Number of Jobs	710	55	2.7%	503	84	3.2%	2,168	70	2.1%
Number of Businesses	138	11	1.2%	165	27	2.7%	658	21	1.7%
Visitor Accommodation				5	1	2.2%	35	1	2.2%
Rating Units - Total SUIPs				1020	170	3.1%	3,077	99	1.5%
Rating Units - Commercial Accommodation SUIPs				13	2	2.1%	93	3	2.2%
Rating Units - Residential SUIPs				813	135	3.2%	2,244	72	1.5%
Rating Units - Industrial SUIPs				26	4	3.3%	113	4	2.2%
Rating Units - Other Commercial SUIPs				31	5	3.1%	129	4	2.0%
Rating Units - Other SUIPs				137	23	2.4%	498	16	1.4%
Peak Day Visitor Nights				2302	384	2.2%	15,919	514	2.2%
Average Day Visitor Nights				589	98	2.2%	4,072	131	2.2%
Peak Day Visitor Numbers				4329	722	2.2%	29,941	966	2.2%
Average Day Visitor Numbers				776	129	2.2%	5,364	173	2.2%

1.4 Employment

It is likely that Mackenzie will experience a larger impact than other areas around the country in terms of COVID-19 job losses. This is due to the importance of the local tourism industry to the economy, and its dependence on international visitors.

However, it is likely to recover by around 2025, based on current assumptions¹ around the reopening of New Zealand's borders and the speed at which tourists are likely to return to New Zealand.

¹ Tourism New Zealand, TNZ Scenario Models, April-May 2020. <https://www.tourismnewzealand.com/media/4119/tnz-scenario-model-may-2020.pdf>

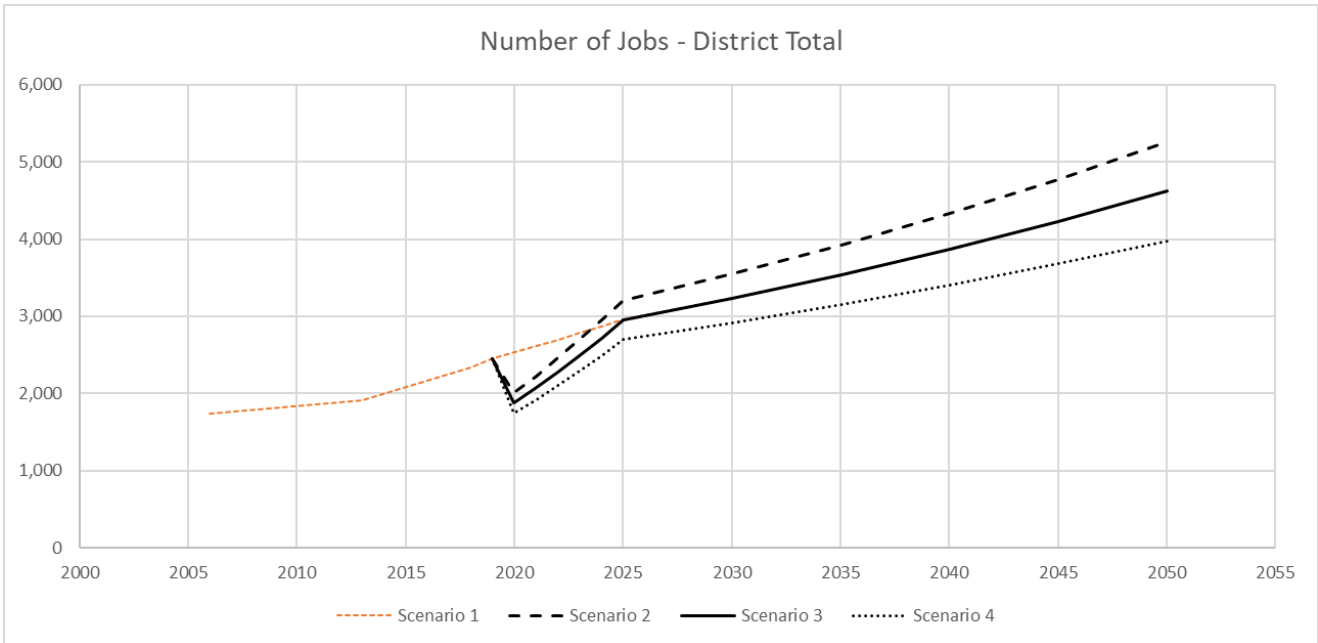


Figure 2. MDC employment projections.

1.5 Usually Resident Population

MDC's population is predicted to continue to grow in all areas, at differing rates.

Both Tekapo is predicted to reach dwelling capacity in approximately 2030 and Twizel approximately 2040. This capacity is calculated based on the currently zoned residential land in MDC's Operative District Plan and current development patterns.

Following capacity being reached, the additional population, and dwellings, (i.e. unrestricted growth) generated by growth fall into the district overflow category. At this point there is too much uncertainty to predict exactly where these people will live. It is assumed that the 'District Overflow' will remain in the district if more dwellings are made available. This is predicted to occur in Tekapo between 2040 and 2045. It is not predicted to occur in Twizel before 2050.

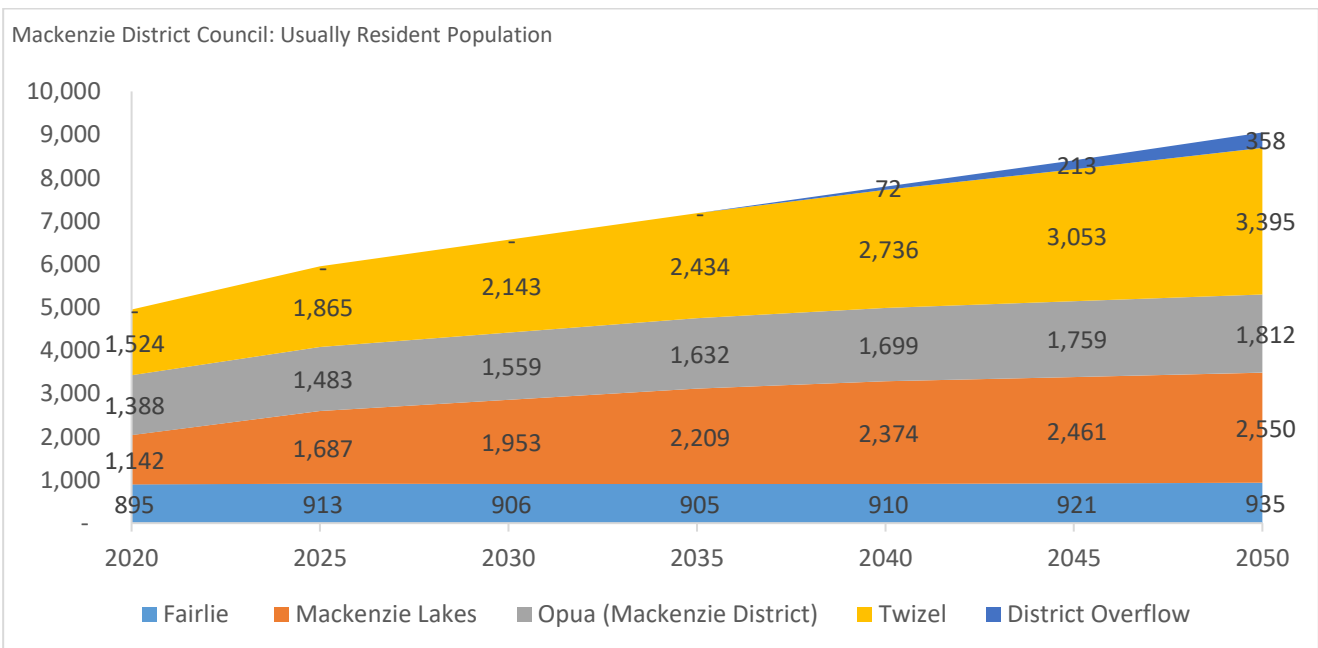


Figure 3. MDC's usually resident population.

1.6 Dwellings

As the population increases and towns begin to reach their capacity in terms of available zoned land for residential housing, the proportion of occupied dwellings to unoccupied dwellings will begin to increase.

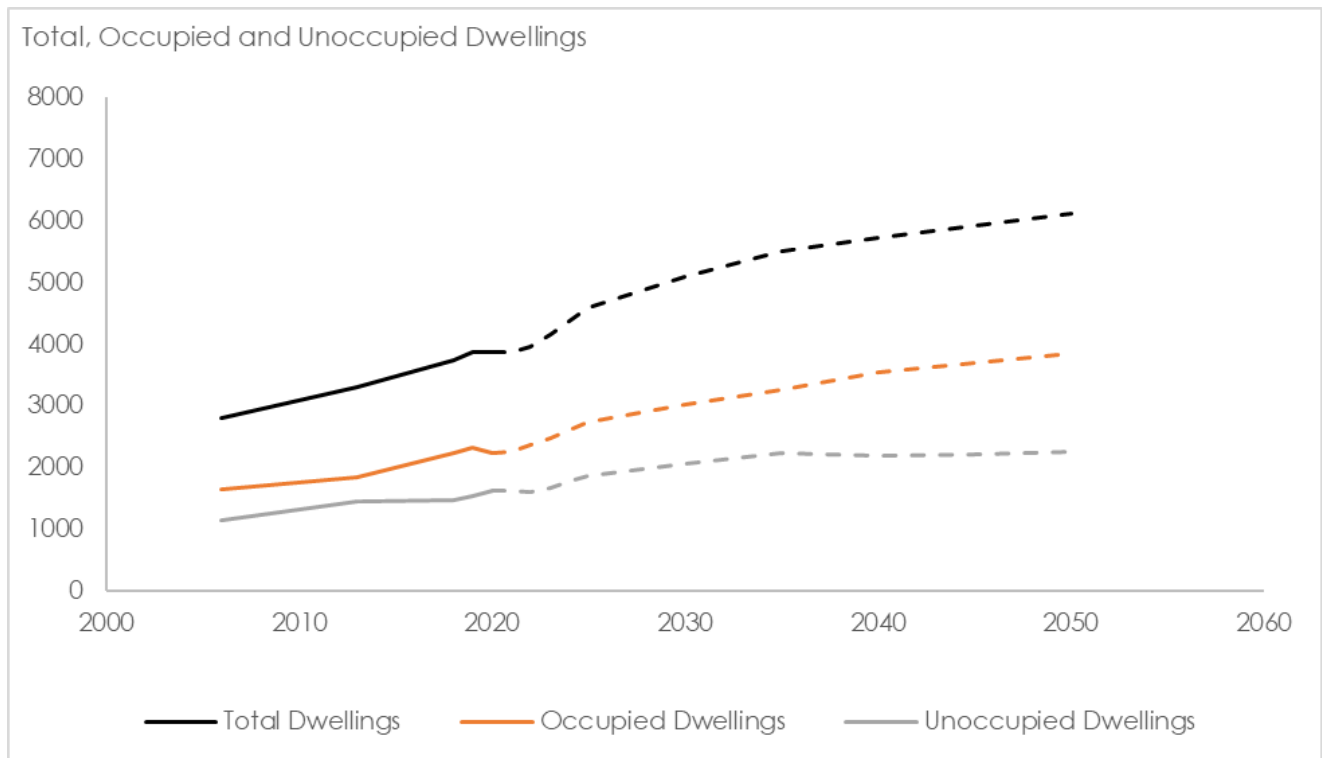


Figure 4. Total occupied and unoccupied dwellings in the Mackenzie District.

1.7 Visitors

Due to COVID-19 and the closure of New Zealand's borders, the number of international tourists visiting Mackenzie has significantly reduced in the projections from 2020 to 2025. Based on the current Tourism New Zealand modelling², it has been assumed that tourism will return to the business as usual scenario by 2025.

The reduced number of visitors will have flow on effects in the district in terms of employment and population growth.

² Tourism New Zealand, TNZ Scenario Models, April-May 2020. <https://www.tourismnewzealand.com/media/4119/tnz-scenario-model-may-2020.pdf>

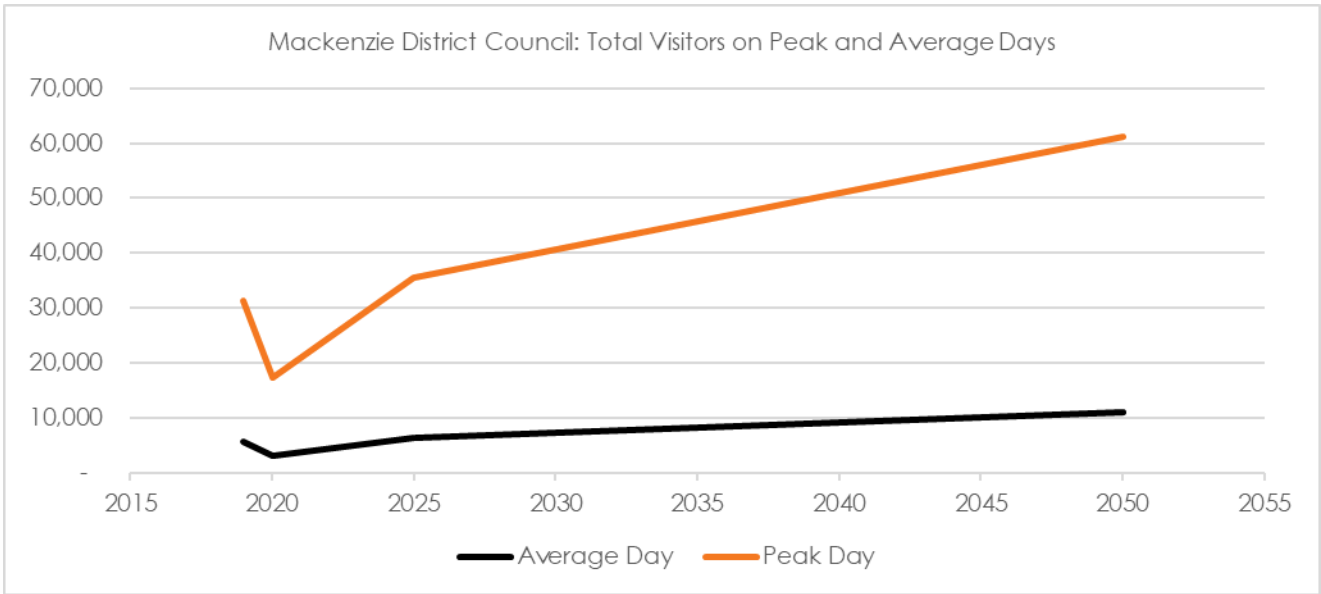


Figure 5. Comparison between peak and average number of visitors.

1.8 Total Rating Units

The total number of rating units is predicted to continue to increase. Mackenzie District sets rates based on the Separately Used or Inhabited Rating Units (SUIP) encompassing all rating units including all non-residential.

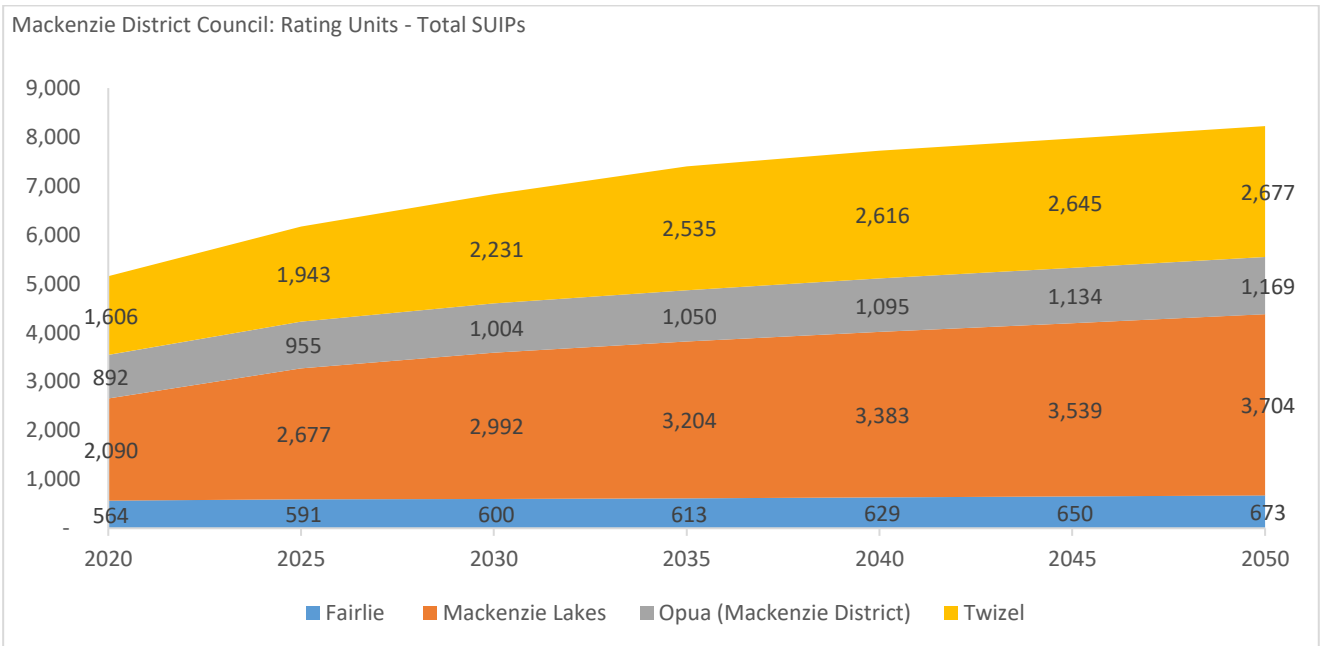


Figure 6. Mackenzie Total Rating Units – total separately used or inhabited part of a rating unit (SUIPs).

1.9 Recommendation

It is recommended that MDC adopt Scenario 3 as the expected level of growth for the next thirty years and use this information to inform key projects, plans and strategies.

Scenario 3 has been recommended as there will clearly be short term effects due to COVID-19. However, it is not yet known what the long-term effects will be.

Due to this uncertainty it is recommend that annual "check-ins" are completed with the most up-to-date data to monitor the impact of COVID-19 and the progress of recovery, in particular the border reopening and international tourism resuming. At this time growth can be re-projected.

2 Purpose

*How much growth is going to occur in the Mackenzie District over the next 30 years?
Where is it going to occur? And what are its likely drivers?*

Understanding how the Mackenzie could grow over the next 30 years, in terms of population, number of dwellings, rating units and visitors is an extremely important component of the District's future planning.

This summary report and accompanying model explains the methodology used to calculate the predicted growth, including the data used and assumptions that have been made, and presents a number of outputs which can be used to inform a range of key projects, plans and strategies, including:

- District Plan Review
- Spatial planning
- Infrastructure Strategy
- Asset Management Plans
- District Plan changes
- Tourism Strategy
- Long Term Plan

3 Context

In the past MDC have used the growth projections prepared by StatsNZ. Since 2013, growth in the district has far exceeded even the most ambitious predictions, as seen in Figure 1 below. This has been driven by growth in the tourism industry, which has attracted both visitors and residents.

This growth coupled with the delayed release and the typically conservative nature of the StatsNZ projections has led MDC to commission these growth projections to understand the future growth in their district.

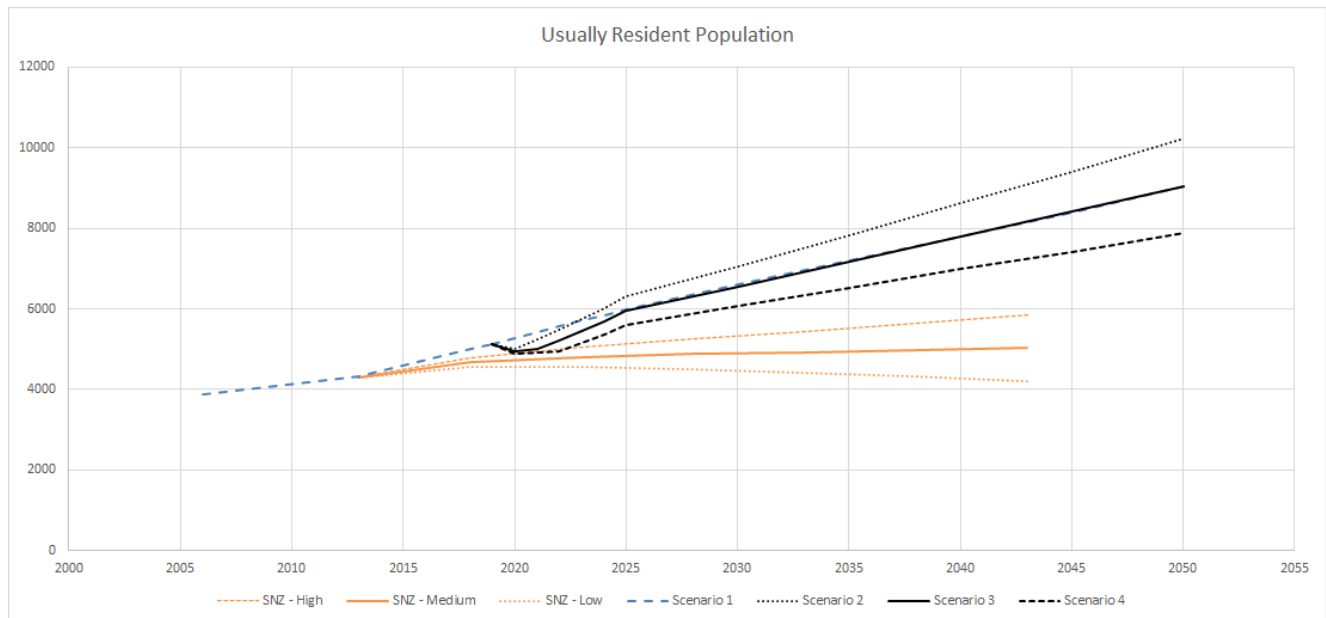


Figure 7. Mackenzie's usually resident population compared to the previous StatsNZ predictions.

3.1 Statistics New Zealand

The release of data from the 2018 Census has been significantly delayed. High level insights were first released in September 2019, approximately one year later than expected. At the time of writing, July 2020, the StatsNZ growth projections had not been released, and are not expected until late 2020/21.

3.2 COVID-19

The COVID-19 pandemic and lockdown occurred in New Zealand during the development of the 2020 growth projections. The pandemic has had significant and lasting social and economic effects on New Zealand, which will impact the future growth in Mackenzie.

As a district that has experienced strong growth in recent times driven by the tourism industry, the effect of the border closure and the domestic lockdown has halted tourism to the area and lowered gross domestic product (GDP).

MDC's future growth will be dependent on:

- New Zealanders continuing to travel domestically while the borders remain closed
- Whether or not an Australian bubble develops
- The length of time the border remains closed and the time taken for tourism numbers to return to 'normal'

Note: the data used in these growth projections is based on the most accurate information available as at May 2020.

4 Scope

The growth projections are built up based on Statistical Area 2 (SA2), which is a geographic area defined by Stats NZ in MDC. Stats NZ aim to reflect communities that interact together socially and economically. SA2's in territorial authorities generally have a population between 1,000 and 3,000 residents. However, in rural areas many SA2's have less than 1000 residents due the sparse populations that cover a large area.

Unfortunately, Tekapo, due to its size, is not recognised as its own SA2 and therefore has required special analysis to understand growth in the town and the impacts this might have on the wider district into the future.

The same level of detail is not able to be achieved for Tekapo as the data is not available below the SA2 geographic area. Tekapo comprises two Statistical Area 1 (SA1) units, which is equivalent to a meshblock.

Table 4. Areas of focus.

District	Statistical Area 2	Statistical Area 1
Mackenzie District Council	Fairlie	
	Twizel	
	Mackenzie Lakes	Tekapo
	Opua (Mackenzie District)	

Table 5. Modelling outputs by geographical area.

		District	Statistical Area 2	Tekapo
Population	Usually Resident Population	✓	✓	✓
Dwellings	Total Dwellings	✓	✓	✓
	Occupied Dwellings	✓	✓	✓
	Unoccupied Dwellings	✓	✓	✓
Employment	Filled Jobs	✓	✓	
Rating Units	Total SUIPs	✓	✓	
	Commercial Accommodation SUIPs	✓	✓	
	Industrial SUIPs	✓	✓	
	Other Commercial SUIPs	✓	✓	

		District	Statistical Area 2	Tekapo
Visitors	Other SUIPs			
	Residential SUIPs	✓	✓	
	Average Day Visitor Nights	✓	✓	
	Peak Day Visitor Nights	✓	✓	
	Average Day Visitor Numbers	✓	✓	
	Peak Day Visitor Numbers	✓	✓	

4.1 Areas of focus

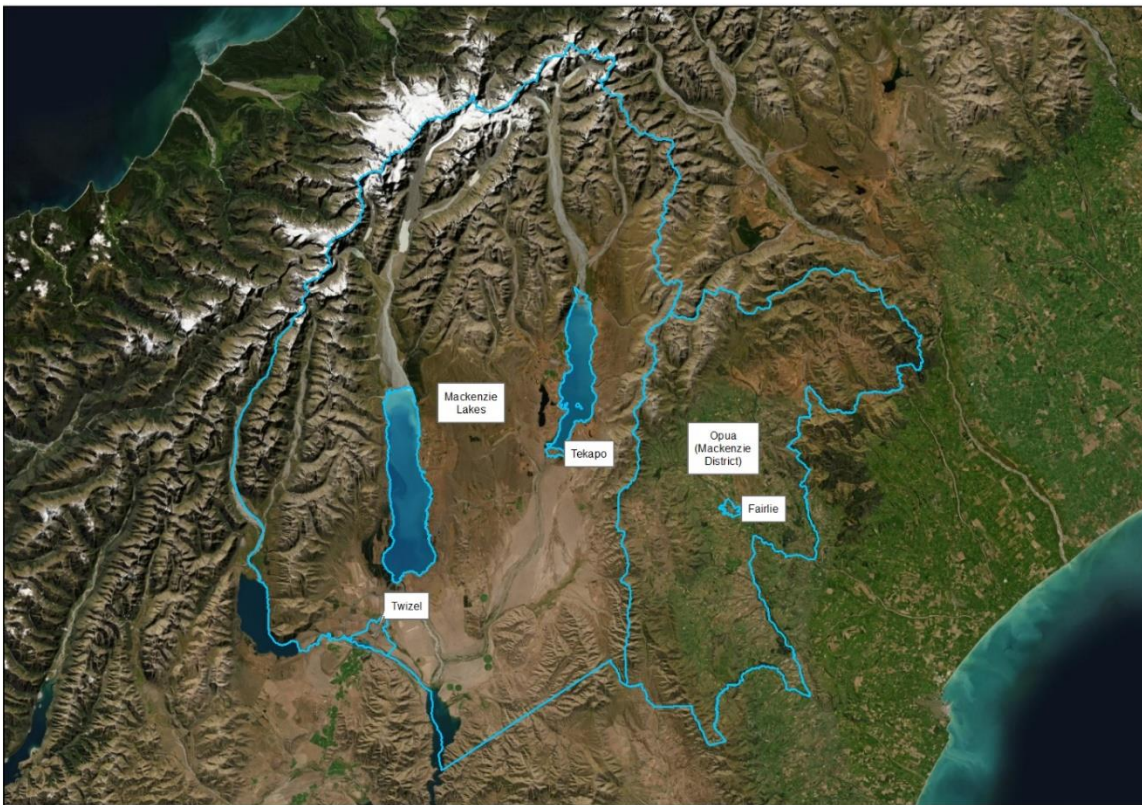


Figure 8. Areas of focus

4.2 Town Boundaries



Figure 9: Twizel SA2 Boundary



Figure 10: Tekapo Boundary (Two SA1 Units)



Figure 10: Fairlie SA2 Boundary

5 Methodology

These growth projections have been developed using a bottom up approach. Individual growth drivers were used for each Statistical Area 2 (SA2). These were then summed to understand the growth in each ward and the district as a whole. From there, Tekapo was apportioned out to give a micro view.

The following figure described the process, at a high level, that was taken to develop the projections. A detailed methodology of this proceed is available in Appendix E.

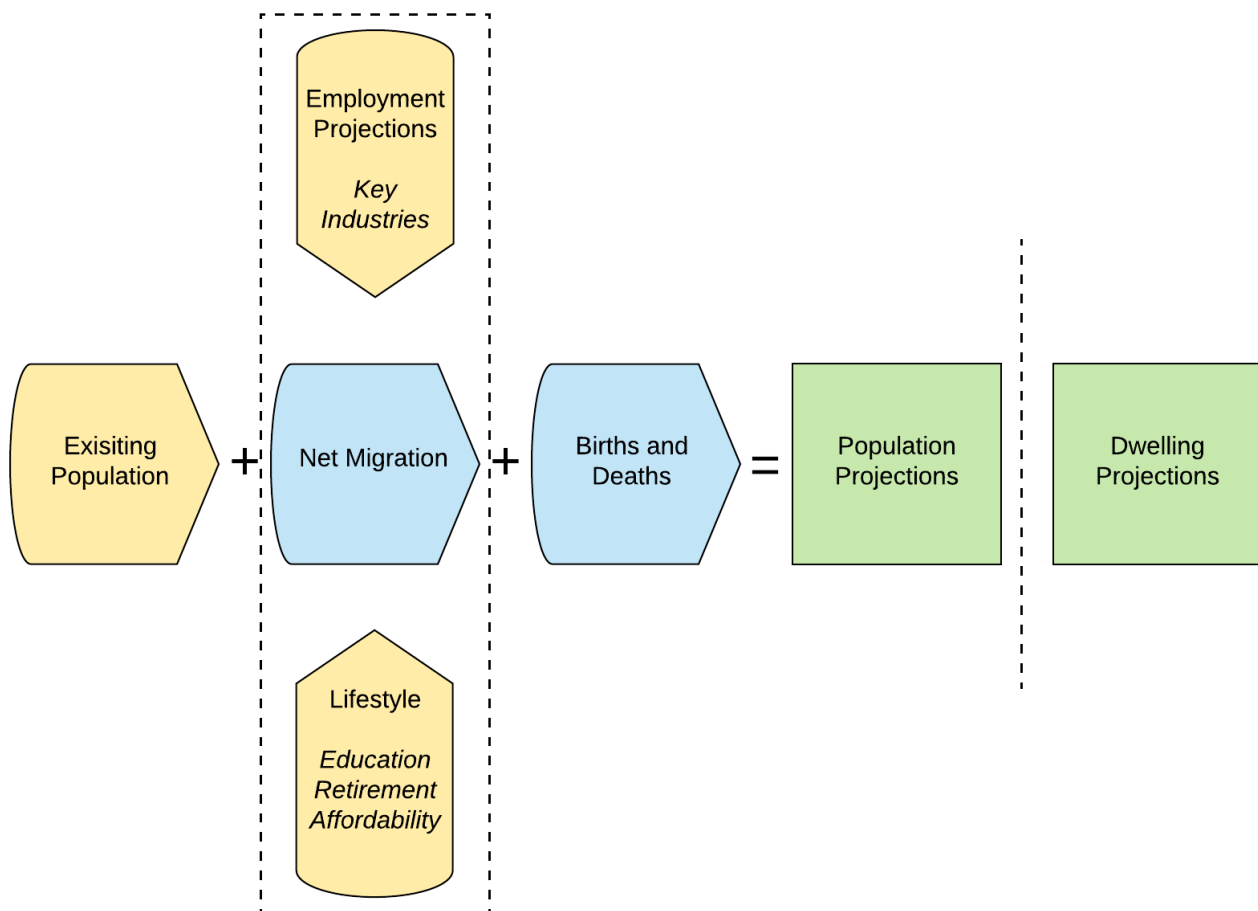


Figure 11. Growth Projections methodology – simplified.

5.1 Net Migration

The migration model has been derived from observed trends in people moving to or from the area. It has been assumed that people move to/away from the area for one of two reasons, either employment or lifestyle.

The predictions have then been correlated against the observed migration trends between 2013 and 2018.

5.1.1 EMPLOYMENT

Historic employment records were analysed and used to understand the key industries in each area and how these have changed and evolved since 2000.

To predict future growth in jobs, an annual growth rate was calculated using an average of the growth in each of the key industries over the past three years through to 2025, and the past ten years to 2050. The exception to this rule was agriculture where the MBIE forecast NZ Wide Annual Growth to 2028 of 0.3% growth has been applied, this is due to various instabilities in the sector.

The growth rate derived from this process has been applied to the number of jobs in the previous year.

In each area a percentage of migration was accounted for based on people moving in to fill new jobs or leaving as the number of jobs decreased. There was also allowance, in some areas, for dependents. These assumptions are detailed within the appendices for each area of focus.

5.1.2 LIFESTYLE

Migration for other reasons such as lifestyle, access to better care, education and career opportunities was accounted for based on the population's past propensity to move in or out for these reasons.

5.2 Births and deaths

Population was calculated as the previous year's population plus migration (for any reason) which was then overlaid by StatsNZ Births and Deaths data.

5.3 Population and Dwellings

5.3.1 DWELLINGS PROJECTIONS

The number of occupied dwellings were projected by:

1. Taking the number of people per occupied household from the 2018 census.
2. Occupied dwelling = usually resident population / people per occupied household.

The total number of dwellings were projected by:

1. Using the ratio of total dwellings to occupied dwellings from the 2018 census.
2. Future total dwellings = Future occupied dwellings multiplied by the ratio of total dwellings to occupied dwellings.

Note:

- The total number of dwellings is not allowed to decrease year to year in the model, this is because the model assumes that if a house/building is demolished it will be replaced.
 - If population growth is negative, then the total number of dwellings is taken from the year before, so that the number of dwellings remain constant.
- Unoccupied Dwellings³ = total dwellings – occupied dwellings
- If the population (and occupied dwellings) decreases, unoccupied dwellings increase to make up the shortfall to keep total dwellings constant.
- In Tekapo and Twizel, it was not possible to project an unlimited level of development as this is restricted by land availability and the district plan. The capacity of available land was used as an upper limit. The table below shows the dwelling limits for each growth scenario.
 - Growth over and above what is restricted by current capacity of zoned land falls into the District Overflow category.

Table 6. Capacity Assumptions for Tekapo and Twizel

Scenario	Description	Tekapo Maximum Dwellings	Twizel Maximum Dwellings
Scenario 1	BAU (Pre-COVID-19)	820	2,500
Scenario 2	High	920	2,700
Scenario 3	Medium	820	2,500
Scenario 4	Low	720	2,300

³ Unoccupied dwellings include holiday houses and houses rented for short term accommodation.

5.4 Visitor Projections

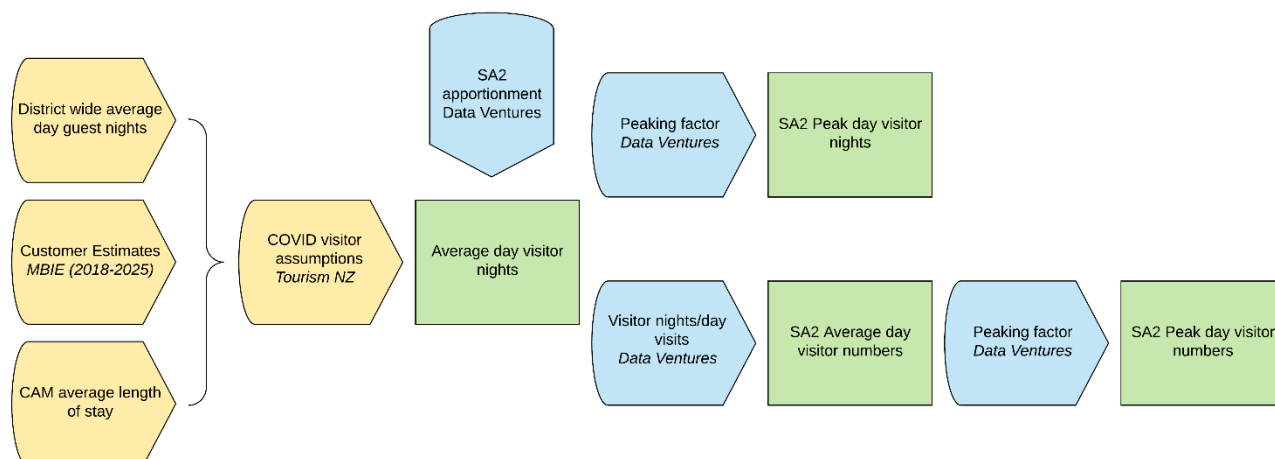


Figure 12. Visitor projections methodology.

The visitor projections methodology was calculated using the following steps which are illustrated below

1. The projections were based on the MBIE Customer forecasts (2018 – 2025).
2. The Commercial Accommodation Monitor (StatsNZ) average length of stay was used to calculate the average yearly visitor nights
3. Data from Data Ventures⁴ was used to apportion average visitor nights to the individual SA2s. This was used to calculate the average day visitor nights.
4. The Data Ventures data was also used to calculate the peaking factors (maximum visitor population/average visitor population)
5. The calculated peaking factors were applied to the average visitor nights to get peak day visitor nights
6. The Data Ventures data was used to calculate the day visitor to overnight visitor ratio (average visitor population/average 3am visitor population), to understand how many people were day-visitors.
7. This ratio was applied to the average day visitor nights and peak day visitor nights to calculate average and peak day visitor numbers.

5.5 Rateable Units

Future projections for number of rateable units were calculated from the current district-wide database by applying the growth rates for

- Dwellings (as calculated above) to project the Residential and Other Rating Units,
- Jobs to project the Other Commercial and Industrial Rating Units, and
- Visitor numbers to project the Commercial Accommodation Rating Units.

These were then combined to calculate the total rating units. This was completed at the SA2 level.

5.6 Data sources

Data was utilised from three key sources:

- Statistics New Zealand
- Data Ventures (commercial arm of StatsNZ)
- MBIE Tourism and Accommodation Data Sets

⁴ Data Ventures is the commercial arm of Stats NZ acting as a Data Broker/Data Trust. The data utilised in these growth projections comes of cellular users in New Zealand.

6 Growth Scenarios

Four scenarios have been modelled each with their own assumptions and level of growth as described below.

6.1 Scenario 1: Business as Usual (Pre COVID-19)

The business as usual scenario is used as a baseline to compare the other three scenarios. It assumes that there has been no impact from COVID-19 and then lines up with the Scenario 3 projections.

6.2 Scenario 2: High growth

Scenario 2 assumes that COVID-19 has a minimal impact on the district. While there are some job losses, it expects that the district will recover to a level above the business as usual scenario. The job assumptions are detailed below in the District Assumptions.

There has been an allowance for currently zoned land to reach capacity which assumes a 10% increase in density from Scenario 3.

Lifestyle migration drivers for Mackenzie Lakes and Twizel have not been adjusted due to the high levels of uncertainty around the impact of COVID-19 on the areas. Based on the available data through Data Ventures, a larger variation in population is already being observed.

Lifestyle migration drivers not relating to jobs for Fairlie and Opuā have been increased as it is expected that there will be minimal impact on the population due to COVID-19. This assumption has been grounded on the population demographic and top five industries.

6.3 Scenario 3: Medium growth

Scenario 3, the medium prediction, models the expected impact from COVID-19. This assumes that all parameters will come back to the business as usual prediction by 2025. The job assumptions are detailed below in the District Assumptions.

This model assumes a level of constrained growth due to the current zonings in the district plan. This assumes that 80% of currently zoned land is developed at similar densities as is currently occurring.

Scenario 3 uses the business as usual migration drivers and assumptions.

6.4 Scenario 4: Low growth

Scenario 4, the low prediction, models a situation in which COVID-19 has a higher than expected impact on the district (such as more job losses) and recovers to a level less than the business as usual scenario by 2025. The job assumptions are detailed below in the District Assumptions.

The migration drivers not relating to jobs for Mackenzie Lakes and Twizel have not been adjusted due to the high levels of uncertainty around the impact of COVID-19 on the areas. Based on the available data through Data Ventures, a larger variation in population is already being observed.

Whilst, migration drivers not relating to jobs for Fairlie and Opuā have been decreased as it is expected that there is minimal impact on the population due to COVID-19. This assumption has been grounded on the population demographic and top five industries.

7 District Assumptions, Outputs and Results

7.1 Mackenzie District Growth Projections Summary

Table 7. Mackenzie District growth projections summary.

	2006	2013	2018	2020	2025	2030	2035	2040	2045	2050
Usually Resident Population	3890	4310	5010	4950	5948	6561	7180	7792	8406	9050
Total Dwellings	2793	3300	3747	3872	4600	5089	5517	5735	5925	6120
Occupied Dwellings	1647	1842	2244	2239	2726	3028	3271	3541	3701	3858
Unoccupied Dwellings	1137	1449	1482	1633	1873	2062	2246	2194	2224	2261
Number of Jobs	1740	1910	2330	1876	2953	3232	3536	3867	4227	4618
Number of Businesses	810	891	945	791	1113	1197	1288	1386	1492	1606
Visitor Accommodation				20	41	47	53	59	65	71
Rating Units - Total SUIPs				5151	6166	6827	7402	7723	7968	8223
Rating Units - Commercial Accommodation SUIPs				97	110	126	142	159	173	190
Rating Units - Residential SUIPs				3887	4698	5216	5645	5842	5982	6129
Rating Units - Industrial SUIPs				119	145	159	175	192	211	232
Rating Units - Other Commercial SUIPs				154	185	201	220	238	260	283
Rating Units - Other SUIPs				894	1028	1125	1220	1292	1342	1389
Peak Day Visitor Nights			16313	9239	18950	21674	24397	27121	29844	32568
Average Day Visitor Nights			4172	2363	4847	5543	6240	6937	7633	8330
Peak Day Visitor Numbers			30682	17378	35642	40764	45886	51009	56131	61253
Average Day Visitor Numbers			5497	3113	6386	7303	8221	9139	10056	10974

Table 8. Mackenzie District short- and long-term forecasts.

	Historic Growth (2006 - 2019)			Short Term Forecast (2019 - 2025)			Long Term Forecast (2019 - 2050)		
	Total Growth	Av. Annual Growth	Av. Annual Growth Rate	Total Growth	Av. Annual Growth	Av. Annual Growth Rate	Total Growth	Av. Annual Growth	Av. Annual Growth Rate
Usually Resident Population	1,240	95	2.2%	818	136	2.5%	3,920	126	1.8%
Total Dwellings	1,075	83	2.5%	731	122	2.9%	2,251	73	1.5%
Occupied Dwellings	680	52	2.7%	400	67	2.7%	1,531	49	1.6%
Unoccupied Dwellings	404	31	2.4%	332	55	3.3%	720	23	1.2%
Number of Jobs	710	55	2.7%	503	84	3.2%	2,168	70	2.1%
Number of Businesses	138	11	1.2%	165	27	2.7%	658	21	1.7%
Visitor Accommodation				5	1	2.2%	35	1	2.2%
Rating Units - Total SUIPs				1020	170	3.1%	3,077	99	1.5%
Rating Units - Commercial Accommodation SUIPs				13	2	2.1%	93	3	2.2%

	Historic Growth (2006 - 2019)			Short Term Forecast (2019 - 2025)			Long Term Forecast (2019 - 2050)		
Rating Units - Residential SUIPs				813	135	3.2%	2,244	72	1.5%
Rating Units - Industrial SUIPs				26	4	3.3%	113	4	2.2%
Rating Units - Other Commercial SUIPs				31	5	3.1%	129	4	2.0%
Rating Units - Other SUIPs				137	23	2.4%	498	16	1.4%
Peak Day Visitor Nights				2302	384	2.2%	15,919	514	2.2%
Average Day Visitor Nights				589	98	2.2%	4,072	131	2.2%
Peak Day Visitor Numbers				4329	722	2.2%	29,941	966	2.2%
Average Day Visitor Numbers				776	129	2.2%	5,364	173	2.2%

7.2 Employment Projections

7.2.1 KEY INDUSTRIES AND TRENDS

The top five industries currently employ 72% of those working within the district.

In the last twenty years, there has been significant change in parts of the Mackenzie district. Historically, the district has had a strong agricultural industry, although in recent years this has been surpassed by tourism and associated industries such as accommodation and food services, and retail trade, which has created a significant number of jobs.

Table 9. Top five industries in the Mackenzie District.

Industry	Number of Employees in 2019	Percent of workforce in 2019	Average Annual Growth Rate - last 3 years	Average Annual Growth Rate - last 10 years
Accommodation and Food Services	810	33%	4.9%	3.1%
Agriculture, Forestry and Fishing	430	18%	0.1%	1.6%
Retail Trade	227	9%	12.9%	4.4%
Construction	149	6%	2.4%	3.5%
Education and Training	141	6%	2.0%	3.2%

7.2.2 COVID-19

Employment growth has been modelled using the below assumptions to consider various levels of impact and how quickly and strong the recovery is from COVID-19. These vary between each area, as they each have very different economic drivers.

Employment by industry was modelled using economic impact reports produced by Infometrics⁵. The Treasury⁶ Economic Scenario Report published in April 2020 was then used to understand recovery timeframes.

⁵ <https://www.businesshb.nz/asset/downloadasset?id=83fd2991-2eef-4325-907a-1103e8a0f6f5>, <https://www.tourismticker.com/wp-content/uploads/2020/06/impact-of-covid19-on-queenstown-lakes-economy-v6.pdf>, <https://www.waipadac.govt.nz/repository/libraries/id:26zqz4o7s1cxbyk7hfo7/hierarchy/agendasandminutes/Agendas%20May%202020/Extraordinary%20Audit%20%26%20Risk%20Committee%20Agenda%20-%2012%20May%202020.pdf>

⁶ <https://treasury.govt.nz/publications/tr/treasury-report-t2020-973-economic-scenarios-13-april-2020>

Table 10. Employment assumptions.

Scenario	Description	% Job loss due to COVID-19	Level of Recovery in 2025 Compared to BAU	Forecast Jobs in 2050 Compared to BAU
Twizel				
Scenario 1	BAU (Pre COVID-19)	0%	100%	100%
Scenario 2	High	-19%	110%	115%
Scenario 3	Medium	-23%	100%	100%
Scenario 4	Low	-28%	90%	85%
Mackenzie Lakes (includes Tekapo)				
Scenario 1	BAU (Pre COVID-19)	0%	100%	100%
Scenario 2	High	-31%	110%	115%
Scenario 3	Medium	-39%	100%	100%
Scenario 4	Low	-47%	90%	85%
Fairlie				
Scenario 1	BAU (Pre COVID-19)	0%	100%	100%
Scenario 2	High	-7%	105%	110%
Scenario 3	Medium	-9%	100%	100%
Scenario 4	Low	-10%	95%	90%
Opua (Mackenzie District)				
Scenario 1	BAU (Pre COVID-19)	0%	100%	100%
Scenario 2	High	-6%	105%	110%
Scenario 3	Medium	-7%	100%	100%
Scenario 4	Low	-9%	95%	90%

7.2.3 OUTPUT

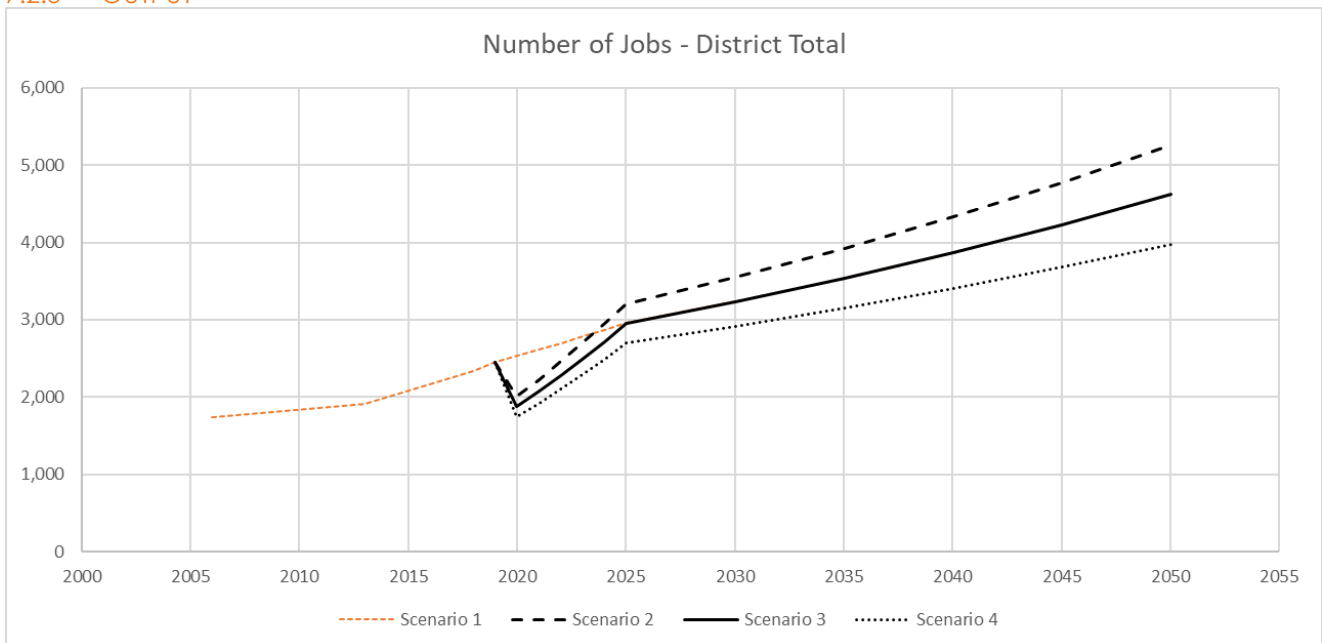


Figure 13. Number of Jobs

7.3 Population Projections

7.3.1 KEY MIGRATION DRIVERS

The key characteristics of Mackenzie's population are:

- A relatively recent influx of younger people to the area for the employment opportunities provided by the tourism industry.
- People later in their working lives or early retirement are moving to the area for the lifestyle.
- Older people (over 70) tend to leave the area, likely in search of better healthcare.

The key migration drivers for each area are discussed in detail in the appendices.

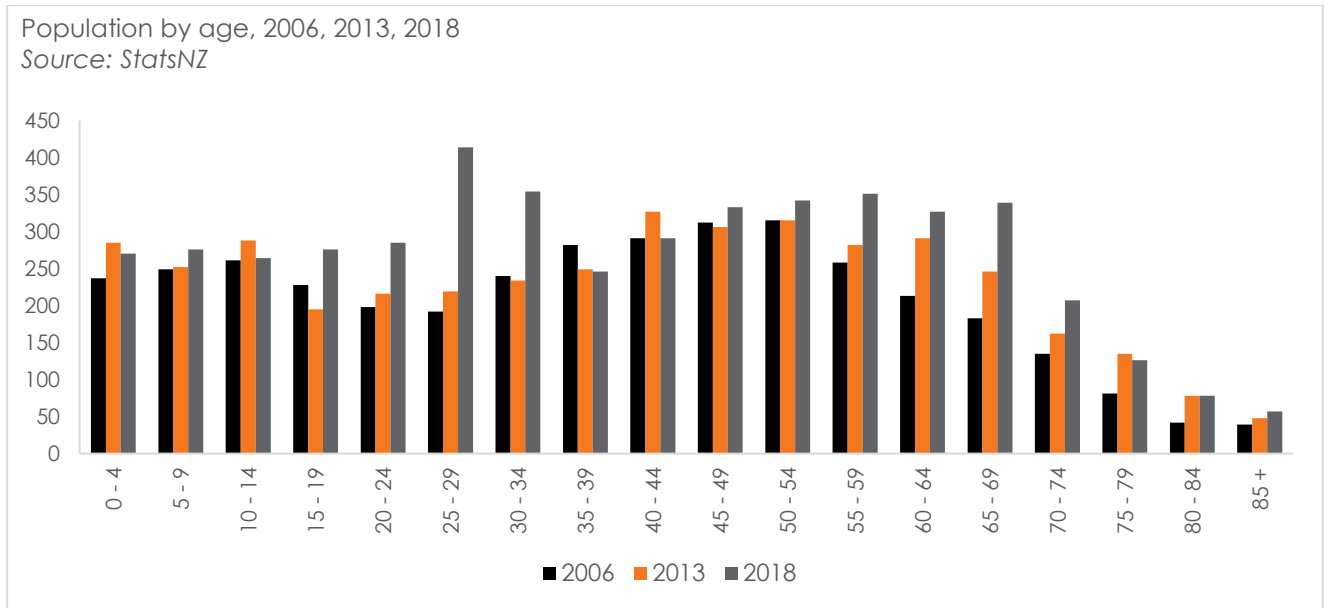


Figure 14. Mackenzie's population by Age – 2006, 2013, 2018. Source: StatsNZ.

The below graph has been produced to calibrate the migration modelling used in these projections against the observed migration that is occurring. This provides an indication of model reliability.

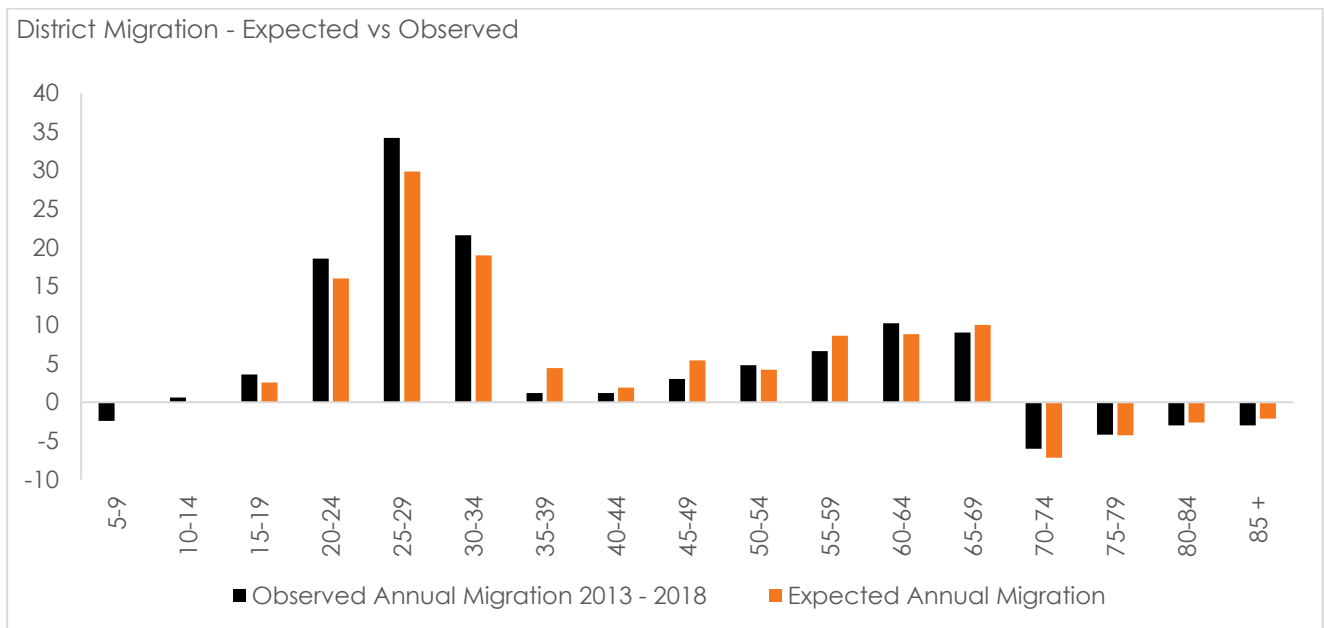


Figure 15. Net migration check

7.3.2 OUTPUT

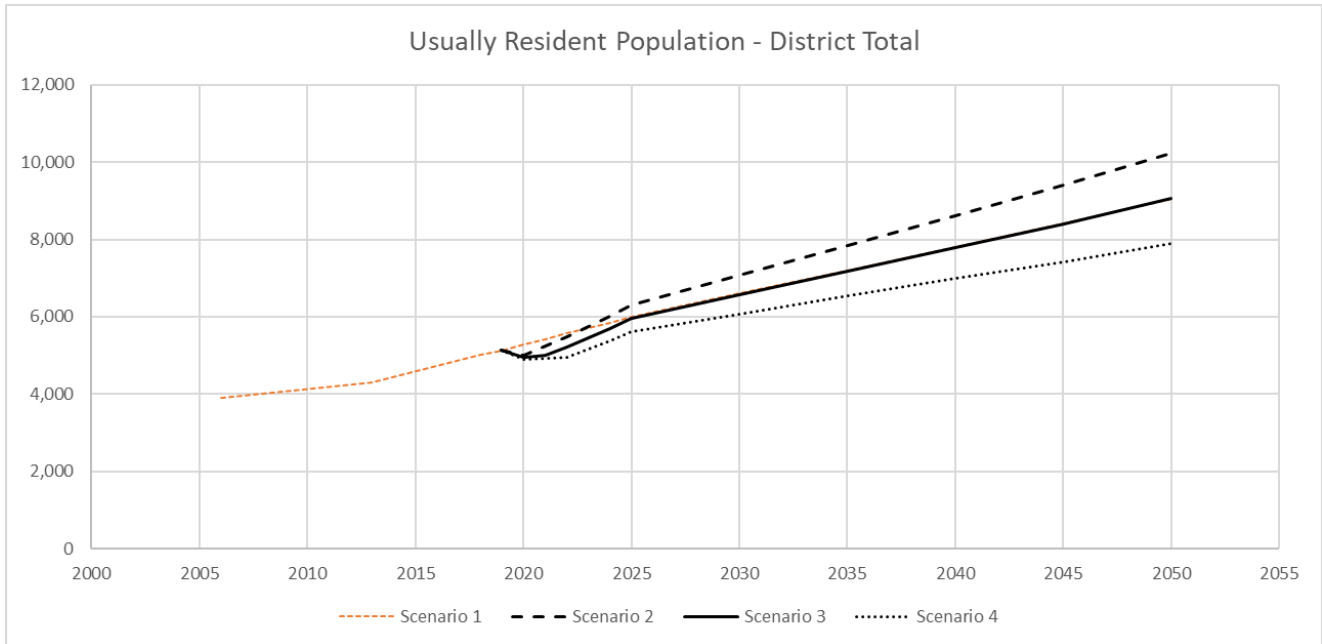


Figure 16. Usually resident population in Mackenzie District

7.4 Dwelling Projections

7.4.1 CAPACITY ASSESSMENT FOR TEKAPO AND TWIZEL

A capacity assessment has been undertaken for Tekapo and Twizel to understand the physical restraints on the number of dwellings able to be built in each town. These assessments have been based on the current District Plan zones and lot size allowances.

Once the number of dwellings reaches capacity, the model allows the percentage of occupied dwellings to increase by 5% and the household size to increase by 0.5 people per dwelling.

Table 11. Capacity assessment parameters.

	Tekapo	Twizel
Observed 2018 % Occupied	48%	48%
Maximum modelled % Occupied	53%	53%
Observed 2018 Household Size	2.33	2.07
Maximum modelled Household Size	2.83	2.57

After Tekapo and Twizel reach capacity the excess demand of the usually resident population, and the dwellings required to house this demand are added to a 'District Overflow' category.

It is assumed that the 'District Overflow' will remain in the district if more dwellings are made available.

7.4.2 ASSUMPTIONS

It has been assumed that the currently allowed densities, based on the Operative District Plan, are continued until capacity has been reached in Tekapo and Twizel. An allowance has been made for higher and lower densities for scenarios 2 and 4.

Table 12. Dwelling projections assumptions.

Scenario	Description	Tekapo Maximum Dwellings	Twizel Maximum Dwellings
Scenario 1	BAU (Pre-COVID-19)	820	2,500
Scenario 2	High	920	2,700
Scenario 3	Medium	820	2,500
Scenario 4	Low	720	2,300

7.4.3 OUTPUT

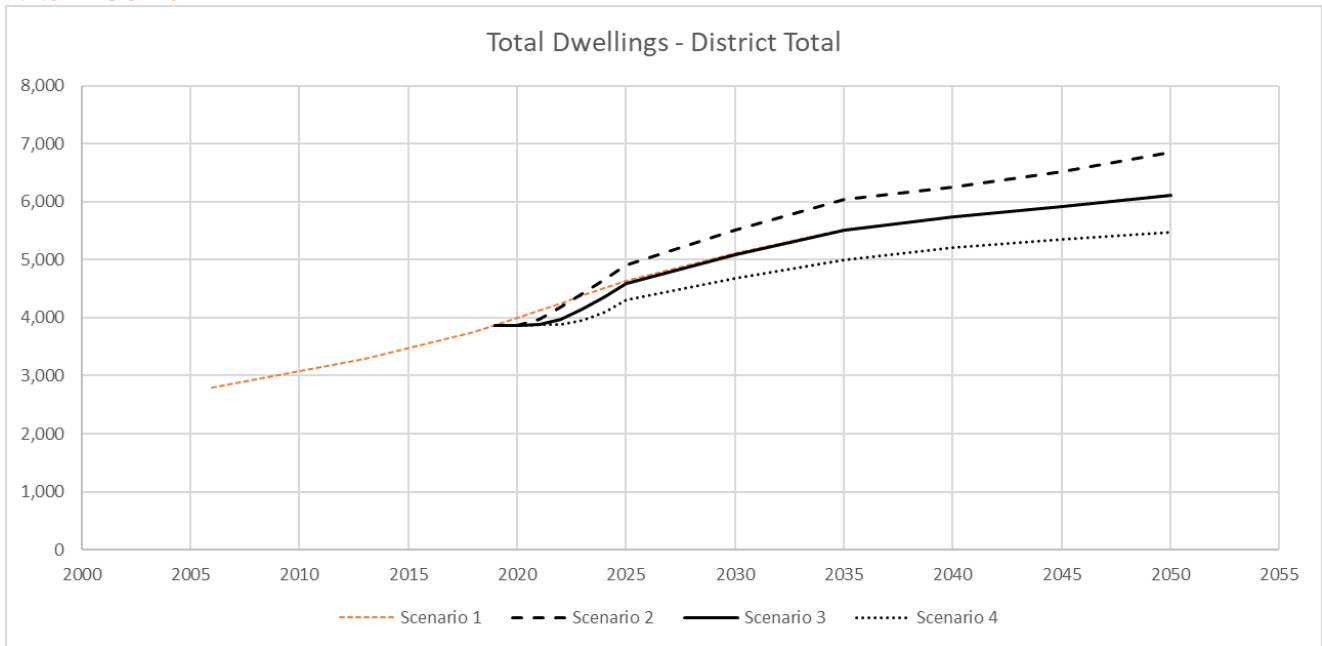


Figure 17. Total dwellings in Mackenzie District.

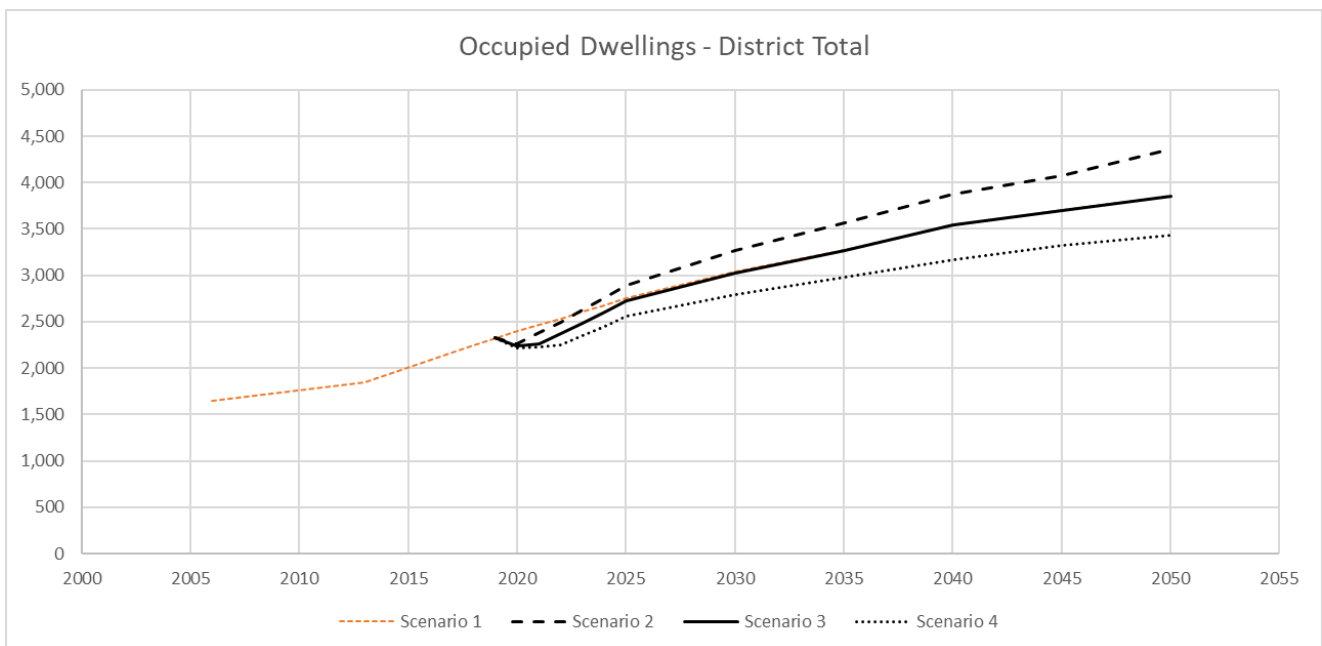


Figure 18. Occupied dwellings in Mackenzie District.

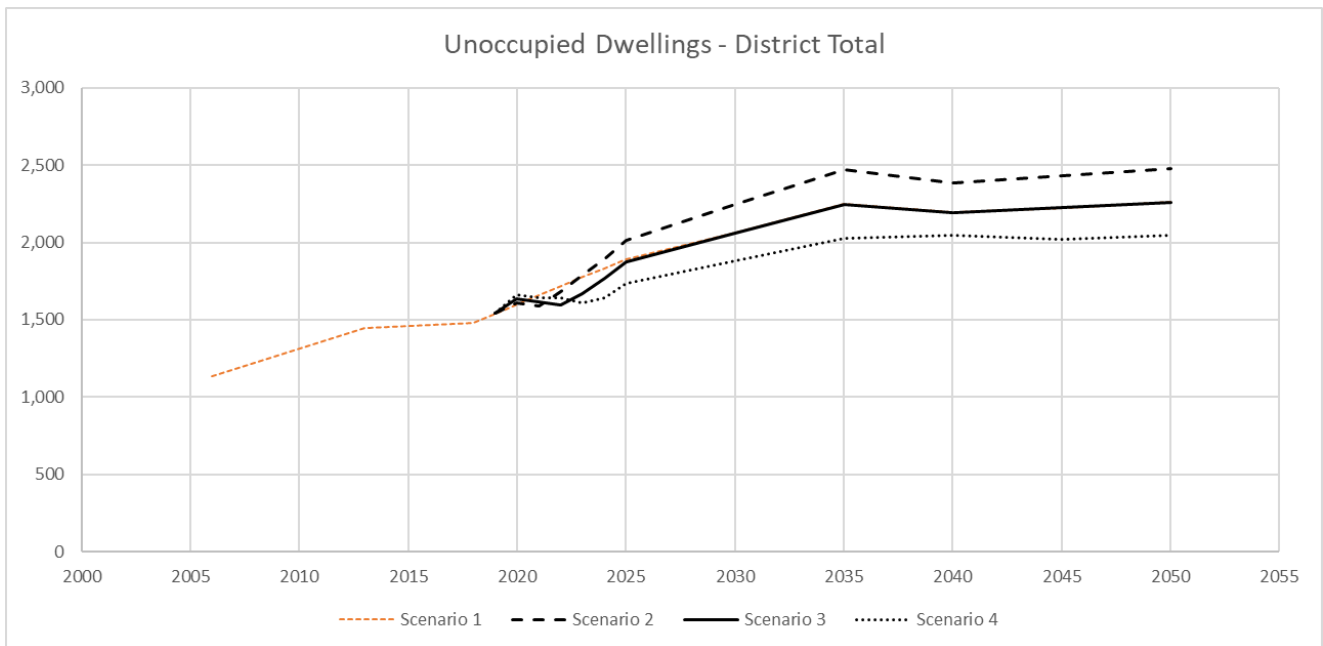


Figure 19. Unoccupied dwellings in MDC.

7.5 Visitor Projections

7.5.1 ASSUMPTIONS

In the wake of COVID-19, New Zealand went into a domestic lockdown for six weeks and at the time of writing our international borders have been closed indefinitely. This has had a significant effect on tourism.

Since the lockdown lifted in May/June 2020, New Zealanders have reinvigorated the domestic tourism market. As shown in the figure below, there was almost as many domestic visitors to the area in Mackenzie at midday on the Saturday of Queens Birthday as there was on the Saturday of Waitangi weekend.

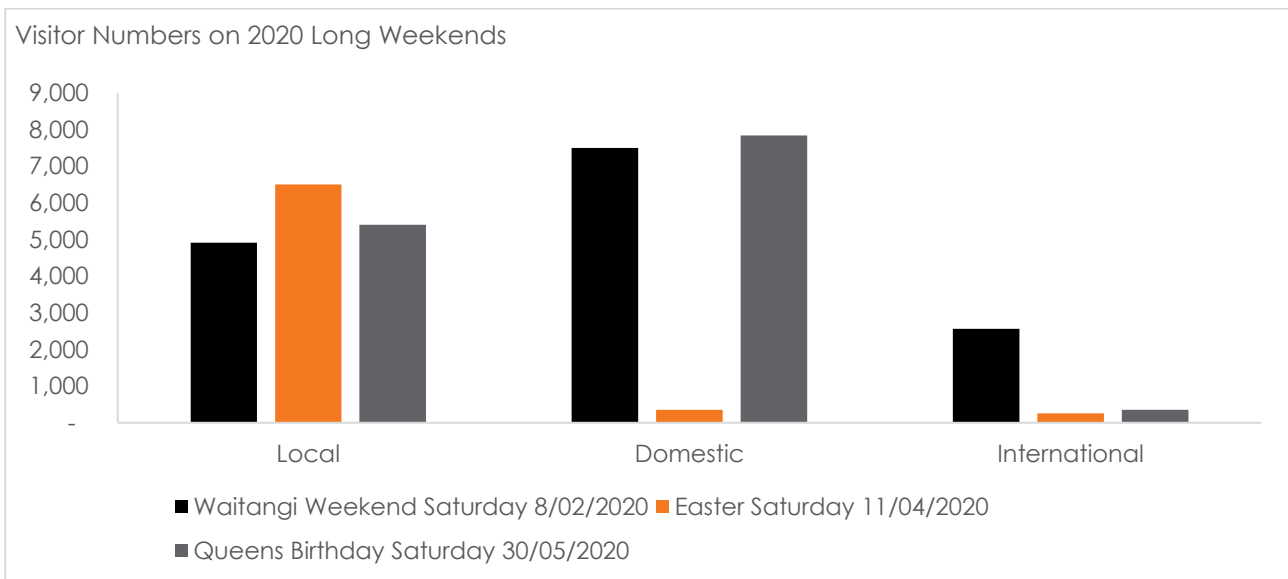


Figure 20. Visitor Numbers on Saturday at midday of the long weekends in 2020.

The following assumptions have been applied to understand how many people will visit the Mackenzie District in the future. These have been developed from Tourism New Zealand Scenario Models, April-May 2020⁷ and have been updated to reflect the latest COVID-19 alert level restrictions.

⁷ Tourism New Zealand, TNZ Scenario Models, April-May 2020. <https://www.tourismnewzealand.com/media/4119/tnz-scenario-model-may-2020.pdf>

However, at the time of finalising these projections (August 2020) the Australia/NZ bubble is looking less likely to become reality in 2020 due to the second wave of lockdowns occurring in Australia.

Table 13. Visitor projection assumptions as at May 2020

Scenario	Description	2025	2050
Scenario 1 - BAU (Pre COVID-19)	1. Assume that growth continues at that of 2020 – 2025	100%	100%
Scenario 2 - High	1. Level 1 in June 2020, domestic travel is allowed 2. Australia/NZ bubble opens in Sept 2020 3. NZ to rest of world opens in April 2021	102.5%	115%
Scenario 3 - Medium	1. Level 1 in June 2020, domestic travel is allowed 2. Australia/NZ bubble opens in Feb 2021 3. NZ to rest of world opens in April 2021	100%	100%
Scenario 4 - Low	1. Level 1 in June 2020, domestic travel is allowed 2. Australia/NZ bubble opens in April 2021 3. NZ to rest of world opens in Jan 2022	97.5%	85%

The percentages describe the amount of growth, or lack thereof, compared to Scenario 1 i.e. for Scenario 2 there is 2.5% more visitors in 2025 and 15% more visitors in 2050 than in Scenario 2.

7.5.2 OUTPUT

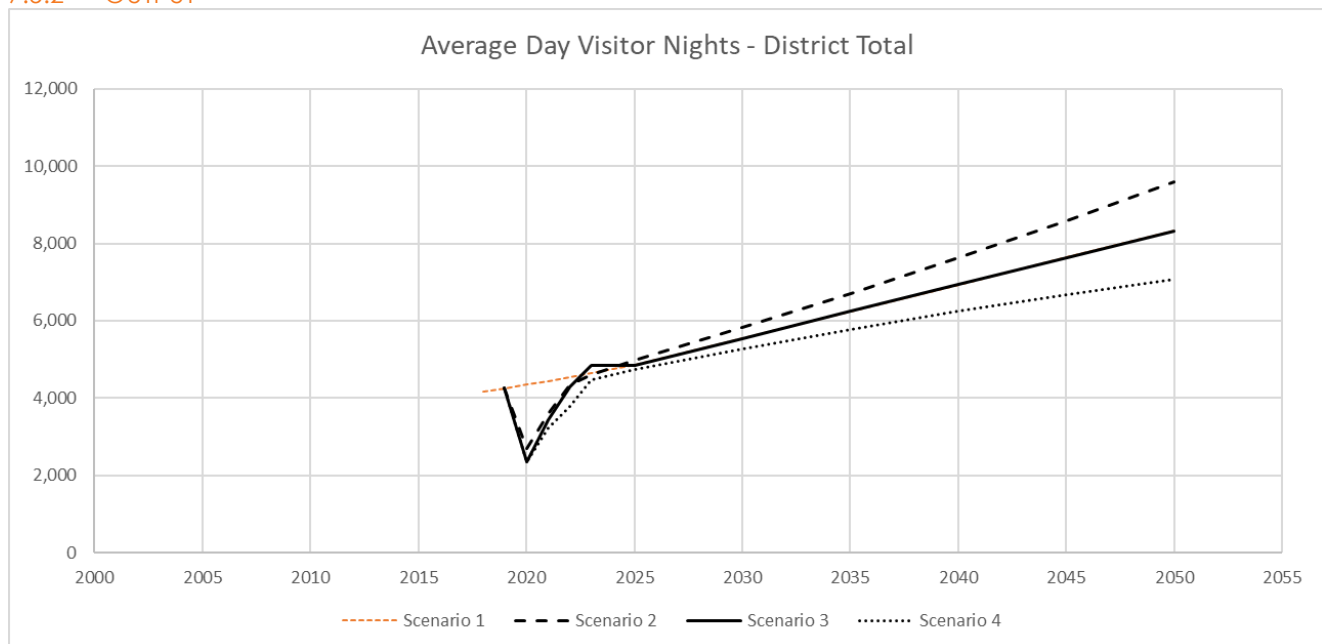


Figure 21. Average day visitor nights in Mackenzie District.

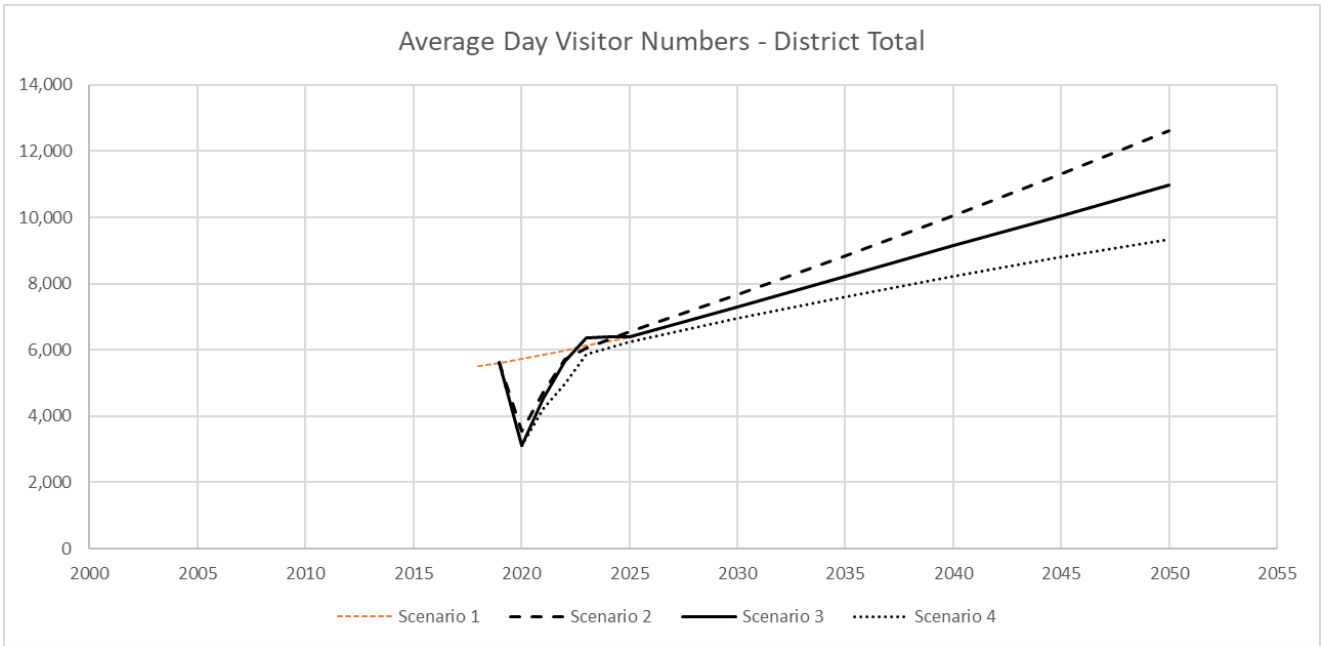


Figure 22. Average day visitor numbers in the Mackenzie District.

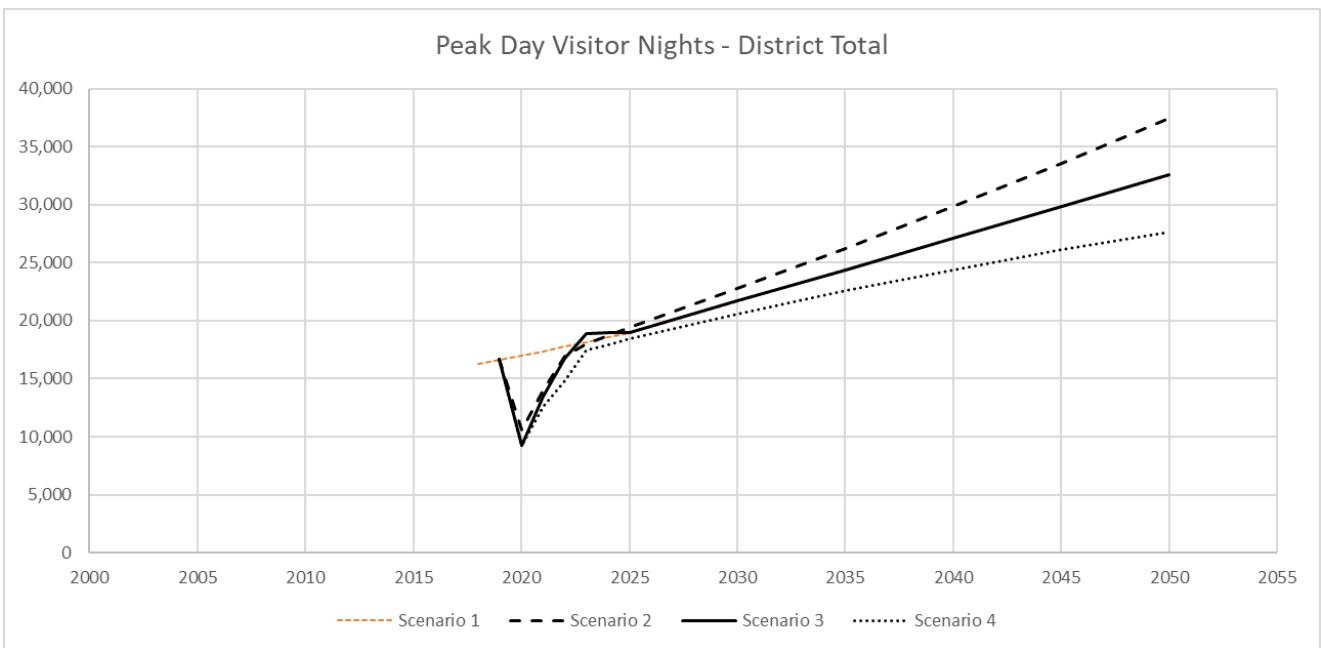


Figure 23. Peak day visitor nights in the Mackenzie District.

The peak day event is typically New Years for Twizel and Mackenzie Lakes, and Easter for Fairlie and Opuā. On an average day there are 32% more day trippers than those staying the night, on the peak day there are 88% more day trippers. This begs the question why are more people day tripping in peak periods? Is it due to accommodation constraints or a behavioural choice?

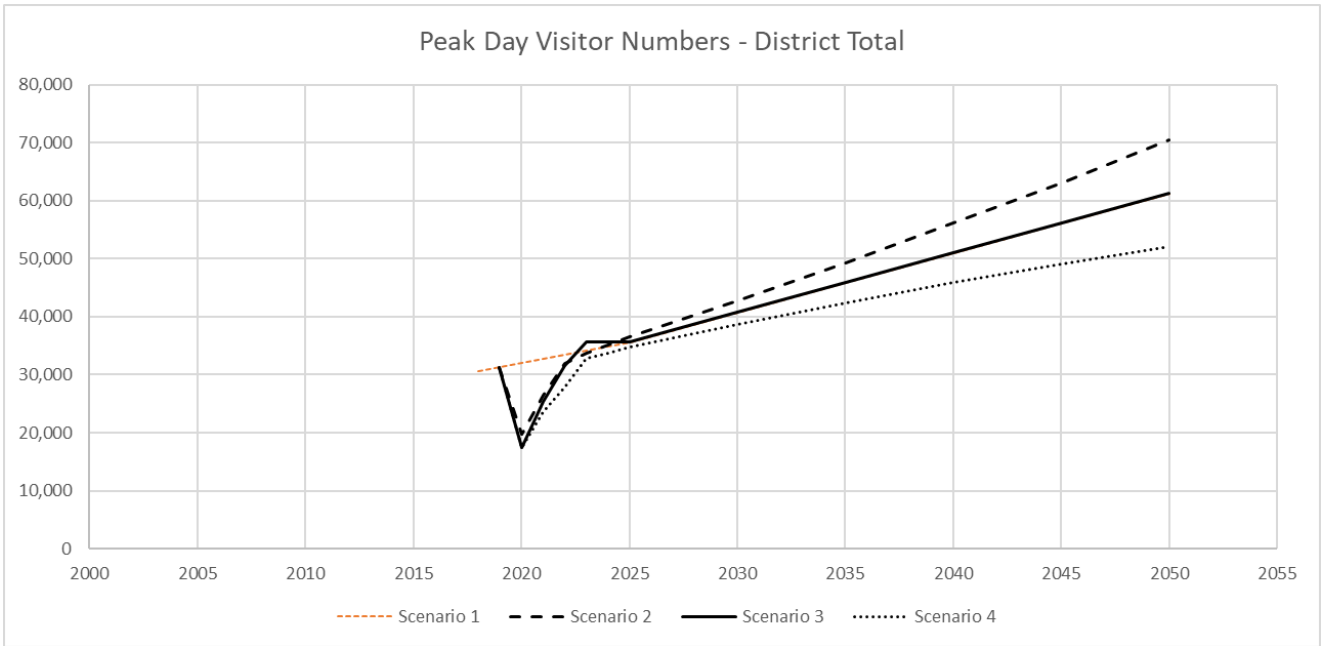


Figure 24. Peak day visitor numbers in the Mackenzie District.

7.6 Rating Units

7.6.1 ASSUMPTIONS

No assumptions have been applied regarding projecting the rating units.

7.6.2 OUTPUT

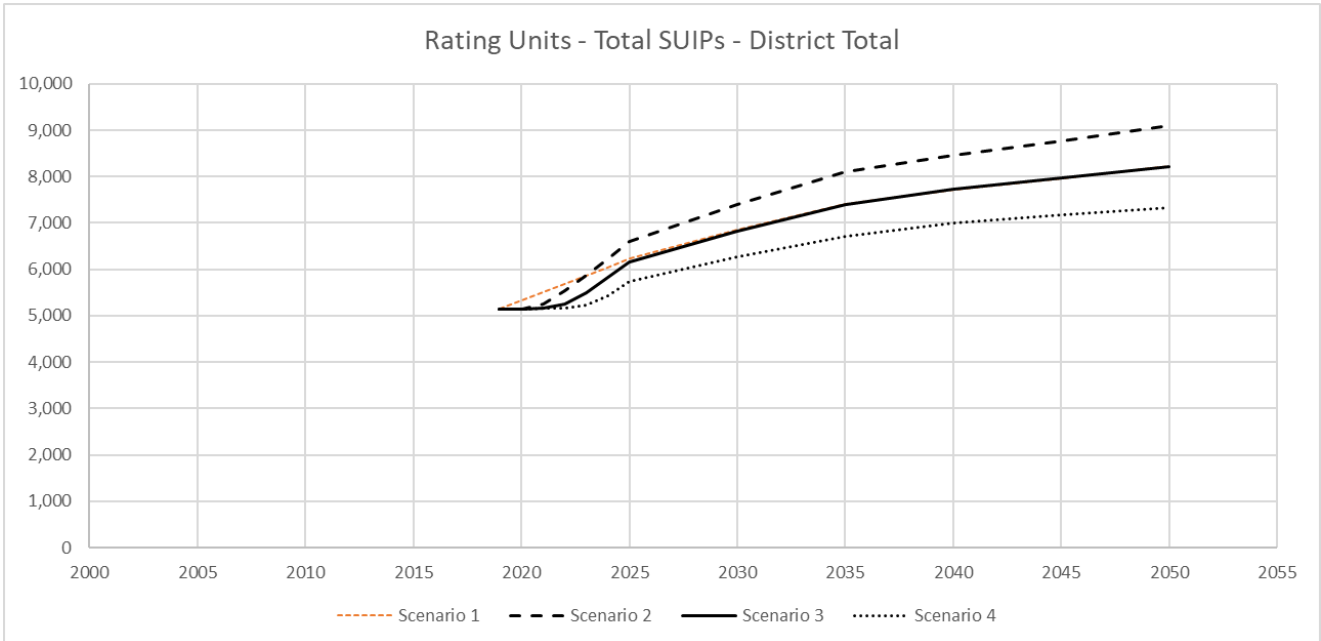


Figure 25. Rating units for Mackenzie District.

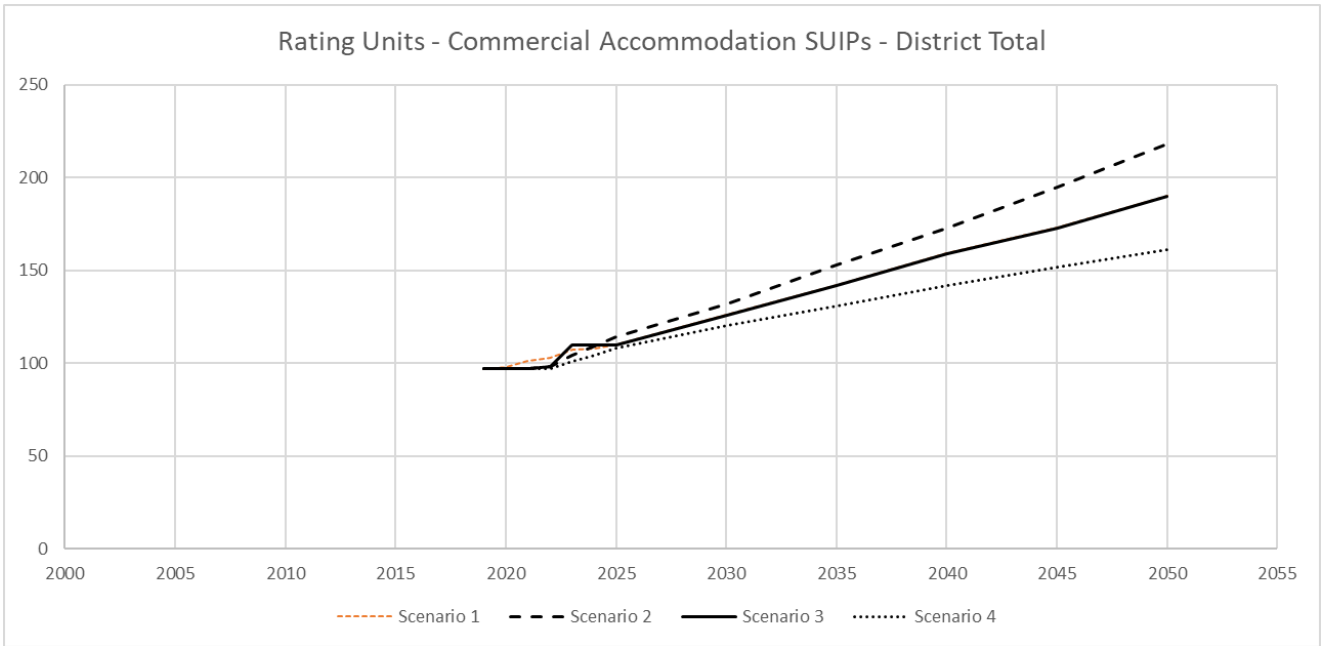


Figure 26. MDC Rating Units – Commercial Accommodation SUIPs

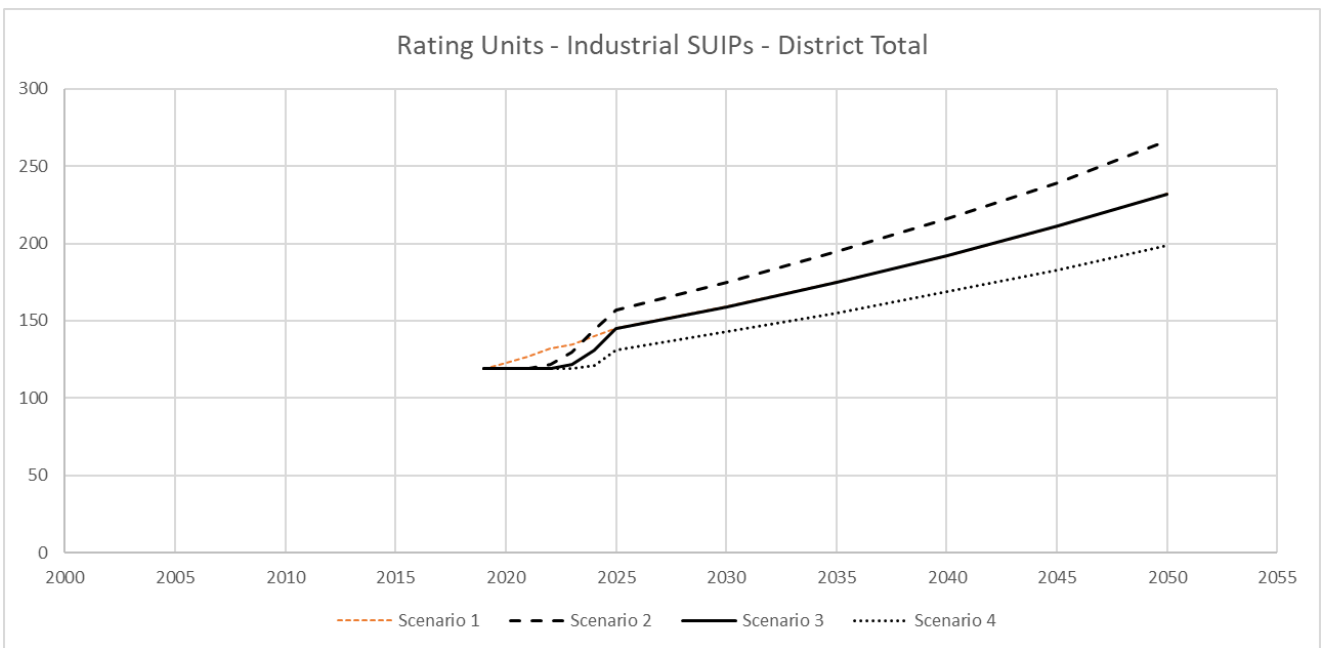


Figure 27. MDC – Rating Units – Industrial SUIPs

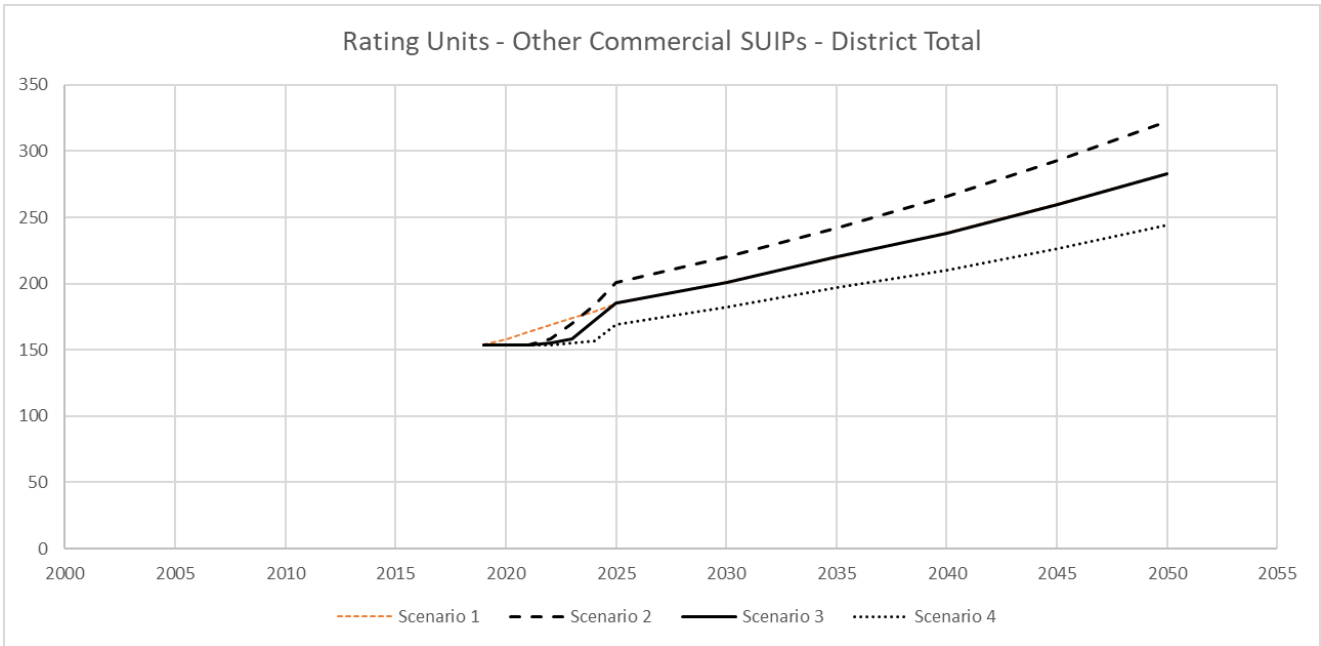


Figure 28. MDC – Rating Units – Other Commercial SUIPs

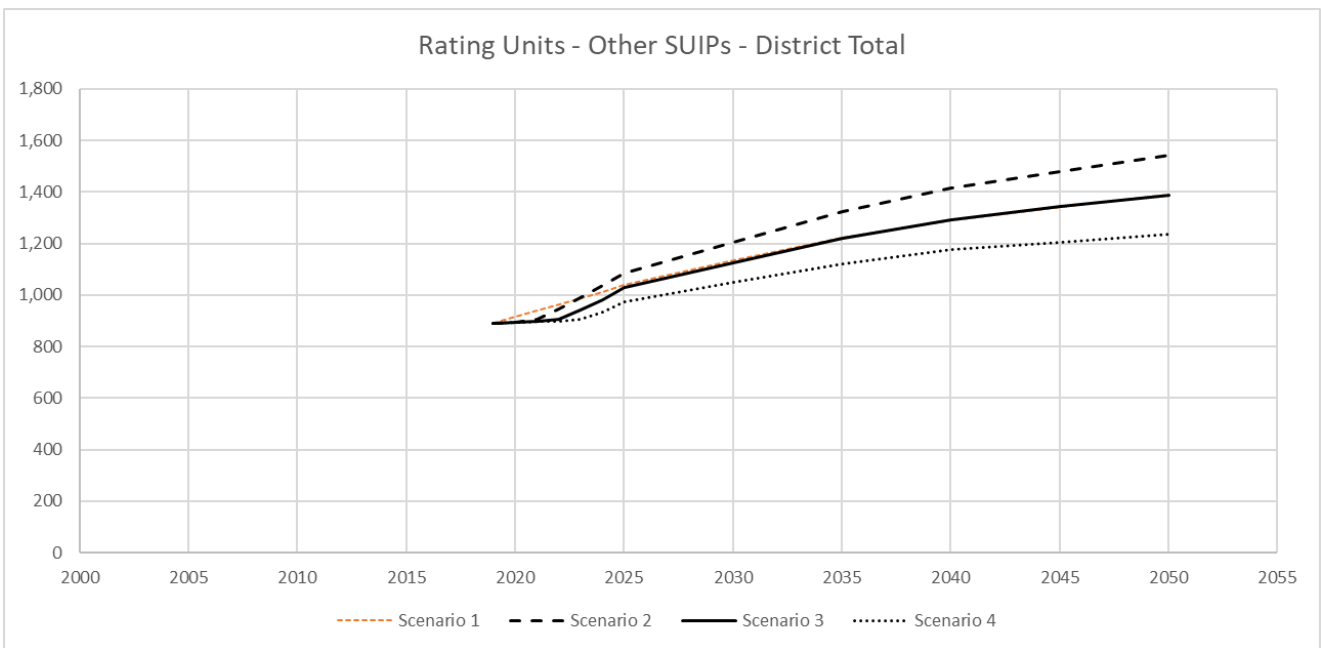


Figure 29. MDC – Rating Units – Other SUIPs

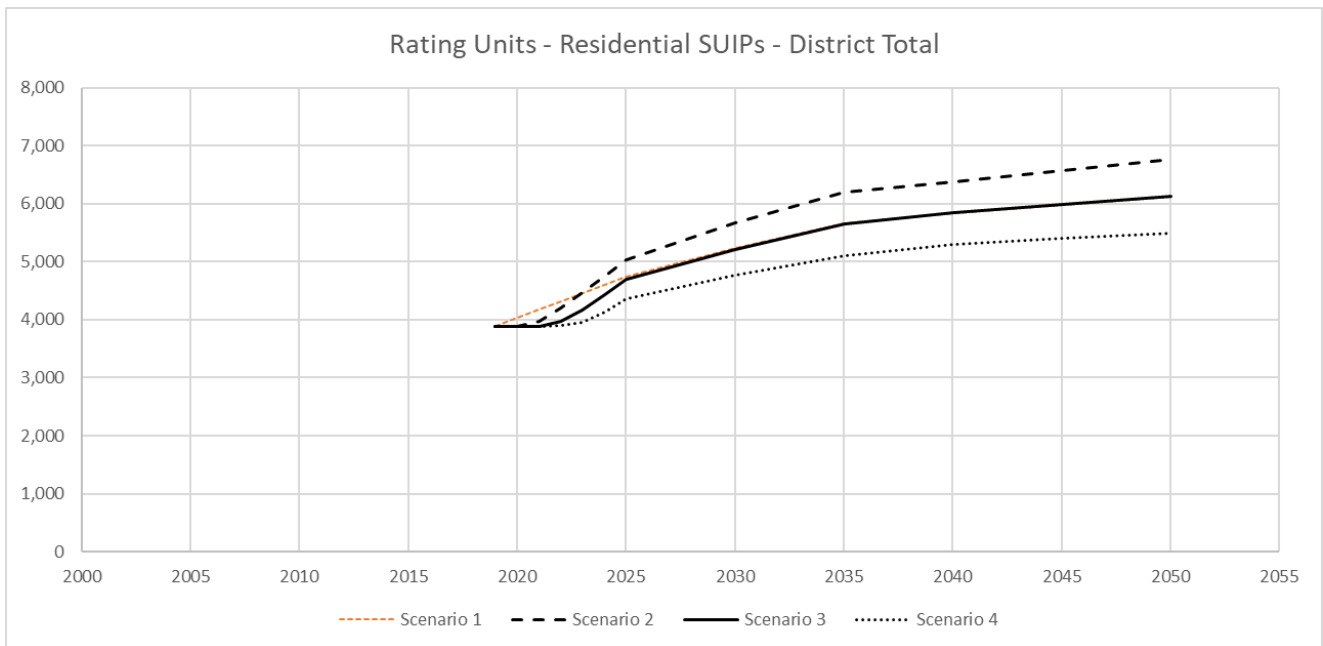


Figure 30. MDC – Rating Units – Residential SUIPs

8 Recommendation

It is recommended that MDC adopt Scenario 3 as the expected level of growth for the next thirty years and use this information to inform key projects, plans and strategies.

Scenario 3 has been recommended as there will clearly be short term effects due to COVID-19. However, it is not yet known what the long-term effects will be.

Due to this uncertainty it is recommend that annual "check-ins" are completed with the most up-to-date data to monitor the impact of COVID-19 and the progress of recovery, in particular the border reopening and international tourism resuming. At this time growth can be re-projected.

9 Appendix A: Fairlie

The population in Fairlie is expected grow slowly over the next 30 years, from a current day population of 895 to a total of 935 in 2050 – a rate of 0.1% per annum. The number of jobs in the township is expected to increase at a higher rate of 0.8% per annum on average, from 383 in 2020 to a total of 520 jobs in 2050. Dwelling growth is also expected to exceed the rate of population increase, moving from 492 to 583, at a rate of 0.5% per annum.



Figure 31. SA2 boundary of Fairlie township.

9.1 Fairlie Growth Projections Summary

Table 14. Fairlie growth projections summary.

	2006	2013	2018	2020	2025	2030	2035	2040	2045	2050
Usually Resident Population	890	890	910	895	913	906	905	910	921	935
Total Dwellings	444	480	492	492	509	516	527	542	561	583
Occupied Dwellings	369	384	393	397	413	419	428	440	455	473
Unoccupied Dwellings	72	96	93	95	96	98	100	102	106	110
Number of Jobs	360	350	390	383	478	487	495	503	511	520
Number of Businesses	159	165	147	137	172	174	177	180	183	186
Visitor Accommodation				2	5	5	6	7	7	8
Rating Units - Total SUIPs				564	591	600	613	629	650	673
Rating Units - Commercial Accommodation SUIPs				6	7	8	9	10	11	12
Rating Units - Residential SUIPs				471	487	494	505	519	537	558

	2006	2013	2018	2020	2025	2030	2035	2040	2045	2050
Rating Units - Industrial SUIPs				9	11	11	11	11	11	11
Rating Units - Other Commercial SUIPs				47	55	56	57	58	59	60
Rating Units - Other SUIPs				31	31	31	31	31	32	32
Peak Day Visitor Nights			1201	680	1395	1595	1796	1996	2197	2397
Average Day Visitor Nights			180	102	209	239	269	300	330	360
Peak Day Visitor Numbers			6097	3453	7082	8100	9118	10136	11154	12172
Average Day Visitor Numbers			228	129	265	303	342	380	418	456

Table 15. Fairlie short- and long- term forecast.

	Historic Growth (2006 - 2019)			Short Term Forecast (2019 - 2025)			Long Term Forecast (2019 - 2050)		
	Total Growth	Av. Annual Growth	Av. Annual Growth Rate	Total Growth	Av. Annual Growth	Av. Annual Growth Rate	Total Growth	Av. Annual Growth	Av. Annual Growth Rate
Usually Resident Population	10	1	0.1%	13	2	0.2%	35	1	0.1%
Total Dwellings	48	4	0.8%	17	3	0.6%	91	3	0.5%
Occupied Dwellings	28	2	0.6%	16	3	0.7%	76	2	0.6%
Unoccupied Dwellings	23	2	2.2%	1	0	0.2%	15	0	0.5%
Number of Jobs	50	4	1.0%	68	11	2.6%	110	4	0.8%
Number of Businesses	-12	-1	-0.6%	25	4	2.6%	39	1	0.8%
Visitor Accommodation				1	0	3.8%	4	0	2.3%
Rating Units - Total SUIPs				27	5	0.8%	109	4	0.6%
Rating Units - Commercial Accommodation SUIPs				1	0	2.6%	6	0	2.3%
Rating Units - Residential SUIPs				16	3	0.6%	87	3	0.5%
Rating Units - Industrial SUIPs				2	0	3.4%	2	0	0.6%
Rating Units - Other Commercial SUIPs				8	1	2.7%	13	0	0.8%
Rating Units - Other SUIPs				0	0	0.0%	1	0	0.1%
Peak Day Visitor Nights				169	28	2.2%	1,172	38	2.2%
Average Day Visitor Nights				25	4	2.2%	176	6	2.2%
Peak Day Visitor Numbers				860	143	2.2%	5,950	192	2.2%
Average Day Visitor Numbers				32	5	2.2%	223	7	2.2%

9.2 Employment Projections

9.2.1 KEY INDUSTRIES AND TRENDS

Fairlie has been a service hub for the Mackenzie District for generations, providing education, medical facilities, retail, and the main MDC offices.

Compared to the rest of the district there has been minimal growth in the area.

- Historically there has been very little growth in jobs and the population. The population has remained relatively constant since 2001 with only small variations.
- Contrary to this, the number of dwellings has continually increased. This has been caused by a decreasing average household occupancy i.e. less people are living in each house so more houses are required to house the same population. This is a result of changing demographics.
- In the last few years, there has been anecdotal evidence to suggest that people are moving to Fairlie and working in Tekapo, as house prices and rents are more affordable.

Table 16. Top five industries in Fairlie.

Industry	Number of Employees in 2019	Percent of workforce in 2019	Average Annual Growth Rate - last 3 years	Average Annual Growth Rate - last 10 years
Education and Training	70	17%	2.6%	3.8%
Construction	70	17%	9.1%	4.4%
Retail Trade	65	16%	6.3%	-1.3%
Public Administration and Safety	30	7%	-4.8%	2.9%
Accommodation and Food Services	25	6%	13.0%	-2.1%

9.2.2 OUPUT

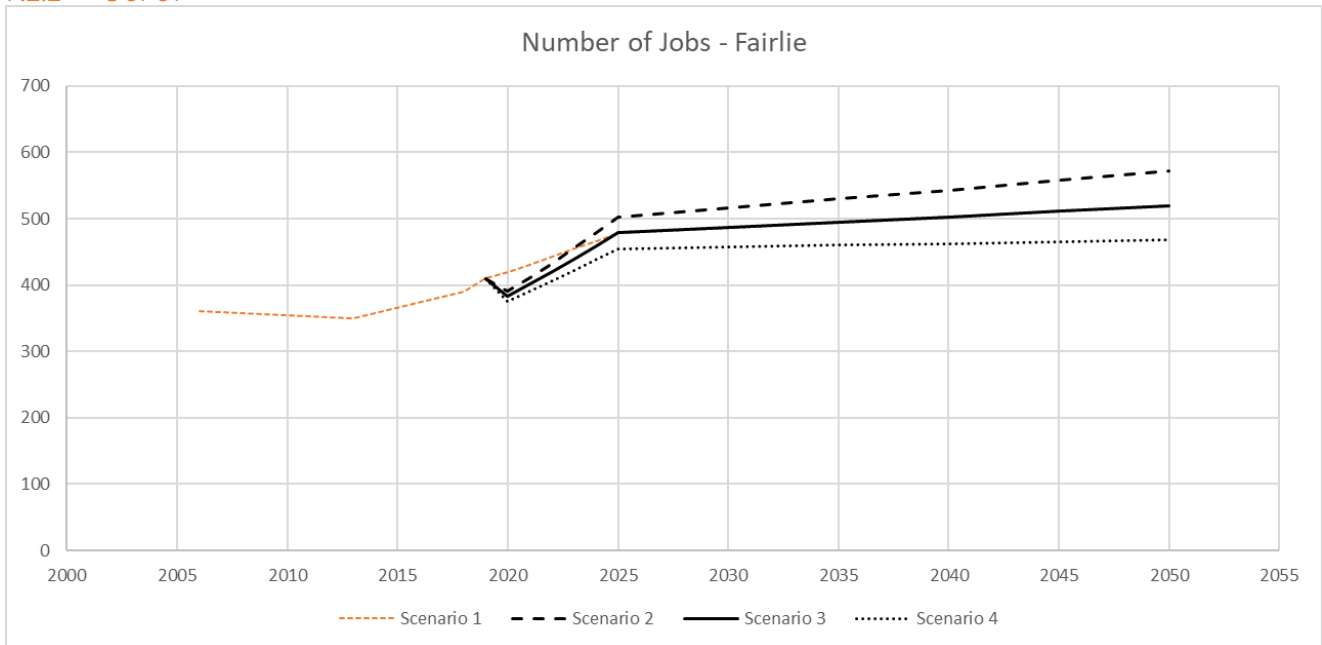


Figure 32. Number of jobs in Fairlie.

9.3 Population Projections

9.3.1 KEY MIGRATION DRIVERS

- Employment opportunities are bringing increasing numbers of people aged 25 – 35 to the area
- People are migrating to Fairlie for employment in Tekapo as housing is more affordable.
- Unlike other areas, elderly residents tend to stay in Fairlie rather than move away in their later years in search more appropriate housing stock and healthcare.
- Due to capacity constraints, housing quality and the availability of bare land, many people are choosing to live and build in the rural areas surrounding Fairlie.

These trends are reflected below through the population by age and net migration figures.

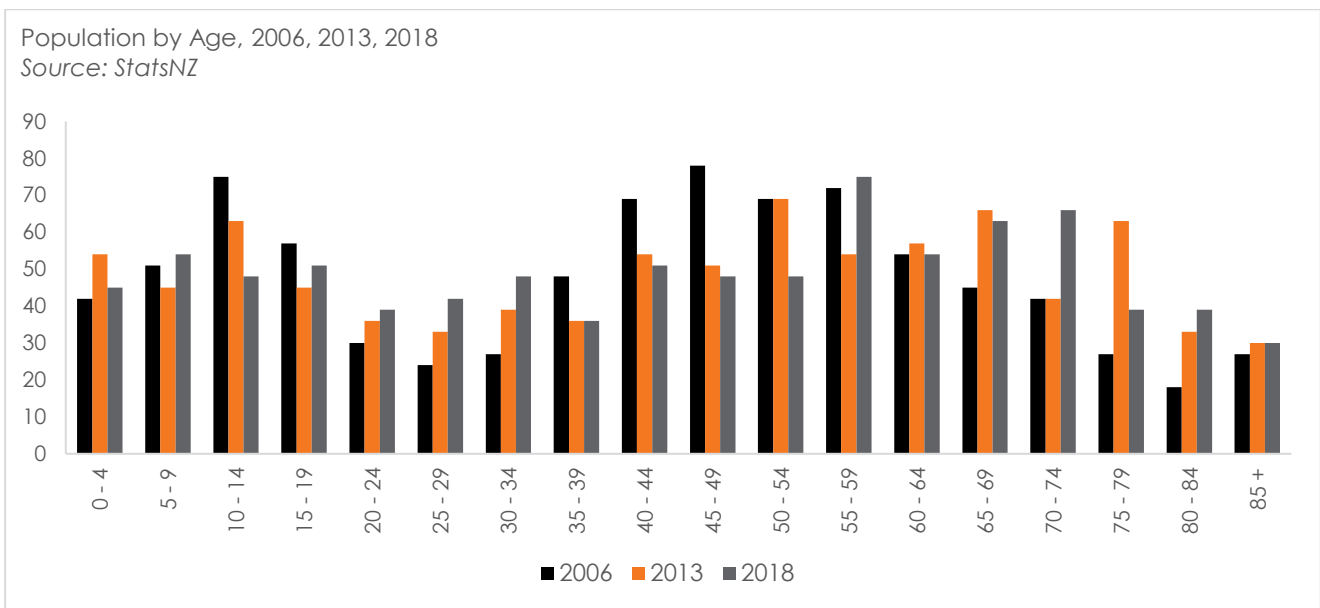


Figure 33. Fairlie population by age, 2006, 2013, 2018. Source: StatsNZ.

The below graph has been produced to calibrate the migration modelling used in these projections against the observed migration that is occurring. This provides an indication of model reliability.

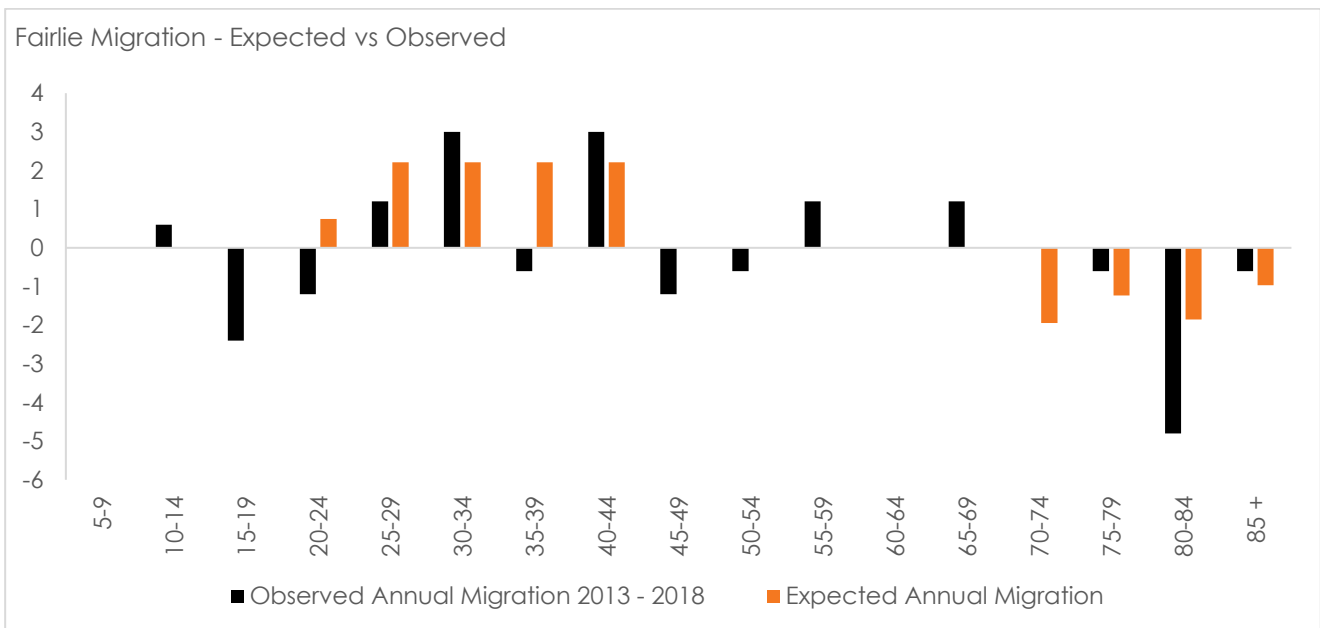


Figure 34. Net migration check

9.3.2 COVID-19

It is unlikely that the population of Fairlie will be significantly impacted due to COVID-19, due to the older age profile of the township and the nature of employment. It has been assumed that if residents lose a job they will stay in the area and commute away for work, remain unemployed, or commence an earlier retirement.

9.3.3 OUTPUT

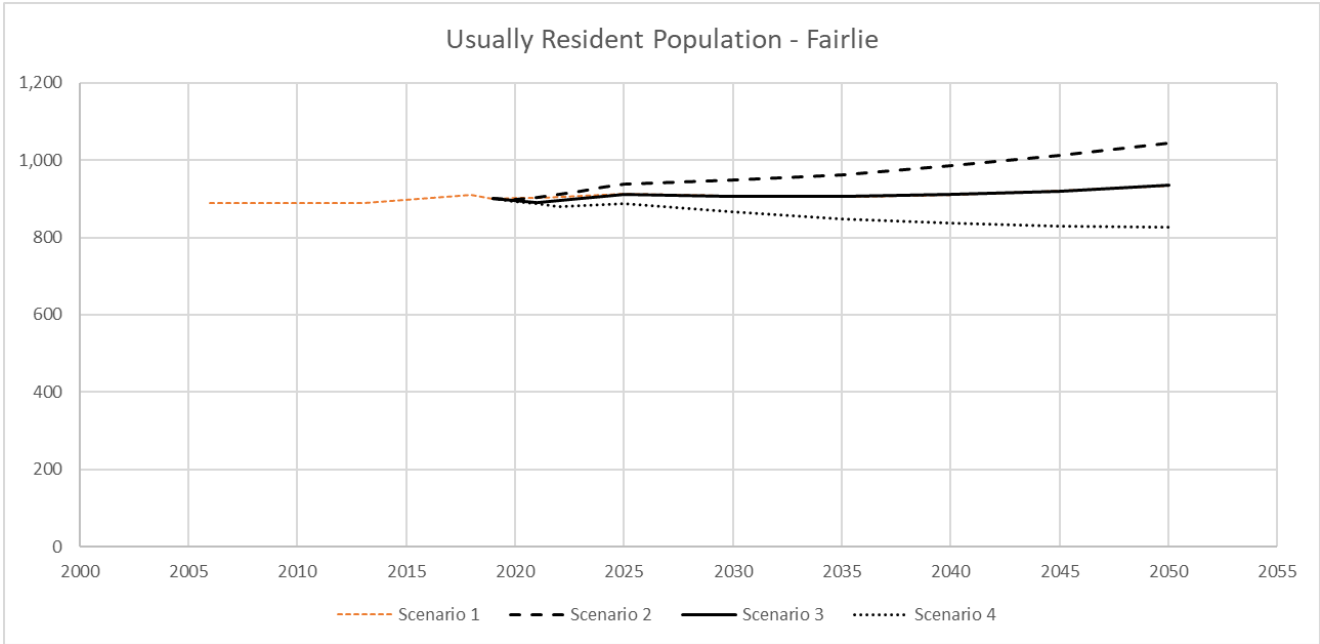


Figure 35. Fairlie's usually resident population.

9.4 Dwelling Projections

The total number of dwellings in Fairlie is expected to increase by 91 over the next 30 years. While there are capacity constraints at present, there are a number of large sections with small, older homes, which are expected to be subdivided as demand grows within Fairlie. Demand is expected as the number of jobs increases, and people look to move to the area for employment. The ratio of occupied to unoccupied dwellings is expected to remain the same.

9.4.1 ASSUMPTIONS

It has been assumed that dwellings will not be demolished if there is negative population growth, but instead remain unoccupied. The number of residents per dwelling is predicted to decrease from 2.28 occupants per dwelling in 2018 to 1.98 occupants per dwelling in 2050. This aligns with past trends.

9.4.2 OUTPUT

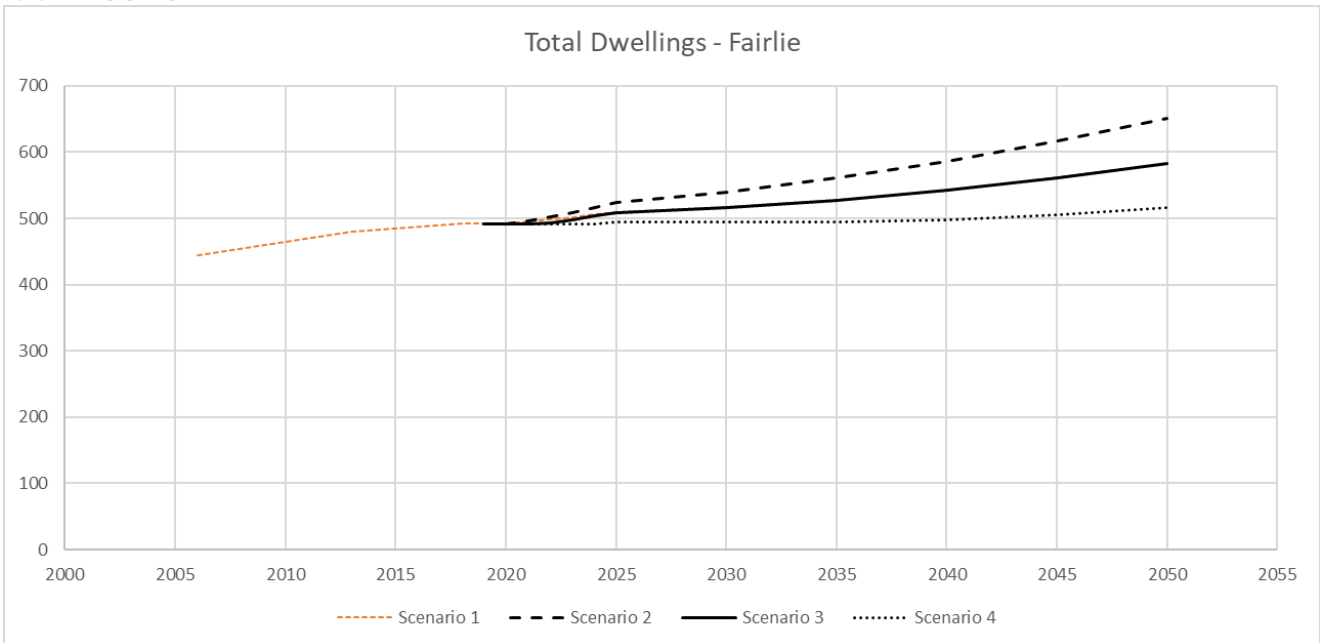


Figure 36. Total dwellings.

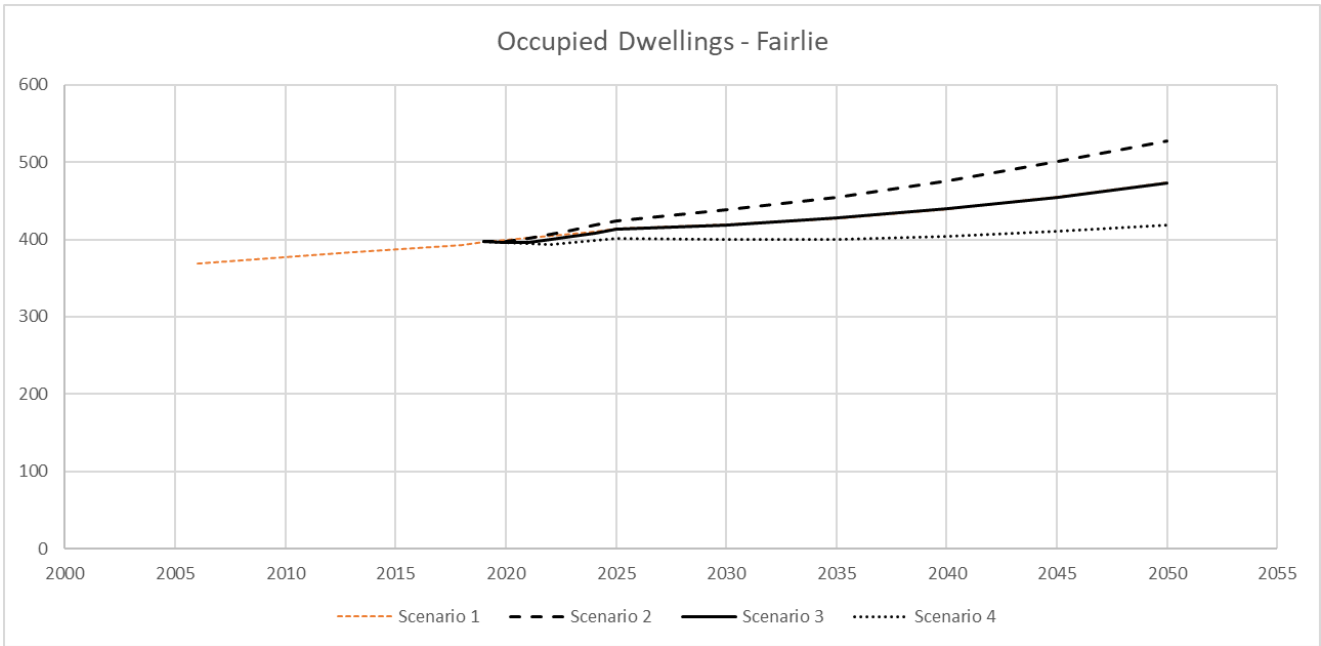


Figure 37. Occupied dwellings.

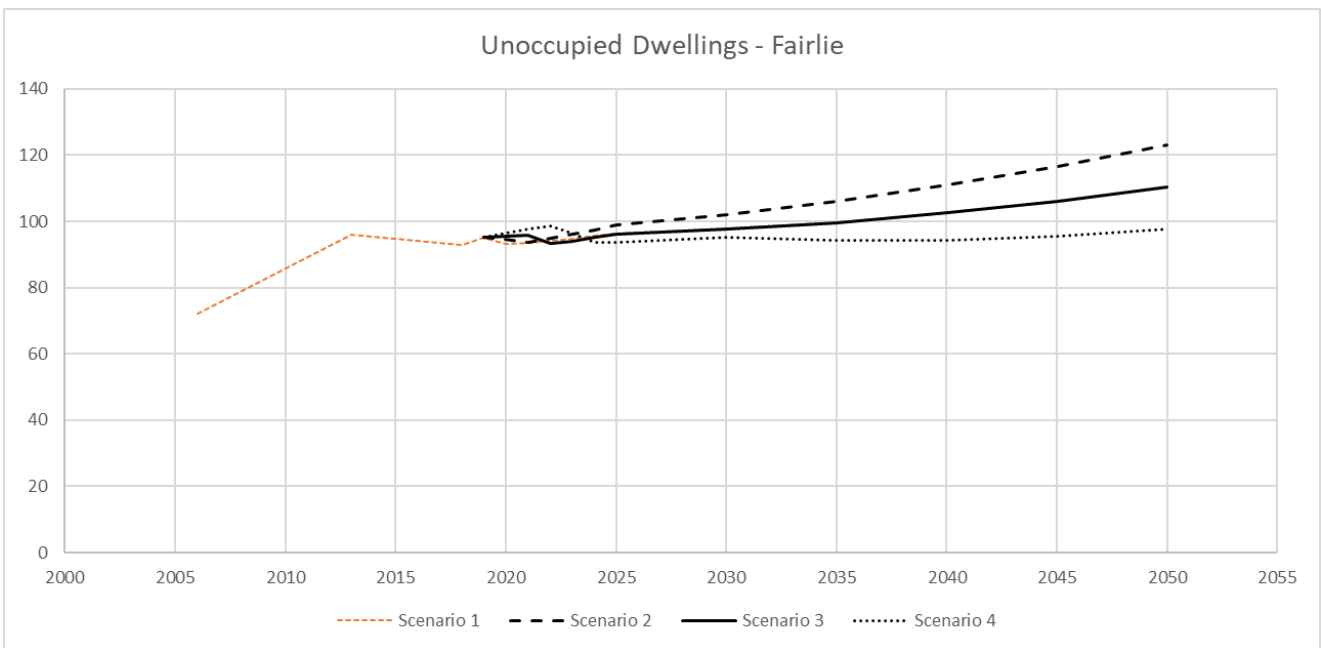


Figure 38. Unoccupied dwellings.

9.5 Visitor Projections

After a reduction due to COVID19, the number of visitors to Fairlie is expected to continue to increase as the borders open back up to international visitors. This is due to its proximity to the tourist hot spots in the Mackenzie Basin and the likelihood that Tekapo and Twizel reach capacity for visitor accommodation.

9.5.1 ASSUMPTIONS

No further assumptions to those outlined earlier in the report have been made. These assumptions are available in Section 7.

9.5.2 OUTPUT

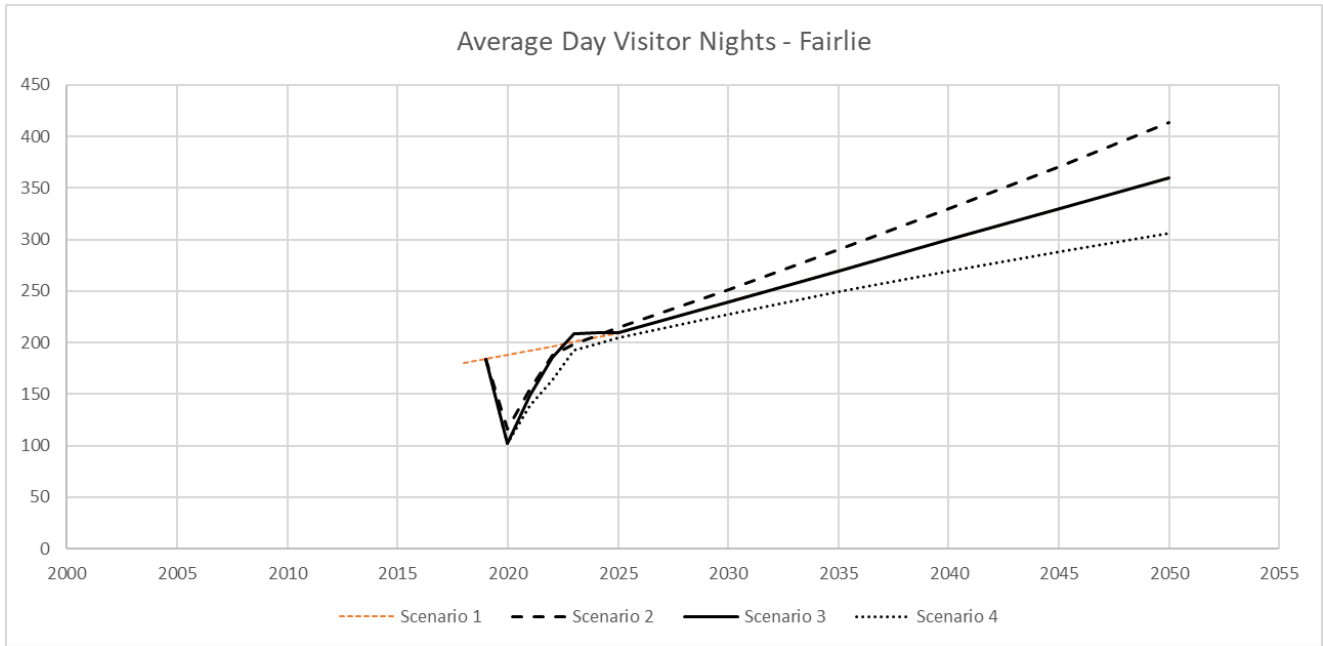


Figure 39. Fairlie's average day visitor nights.

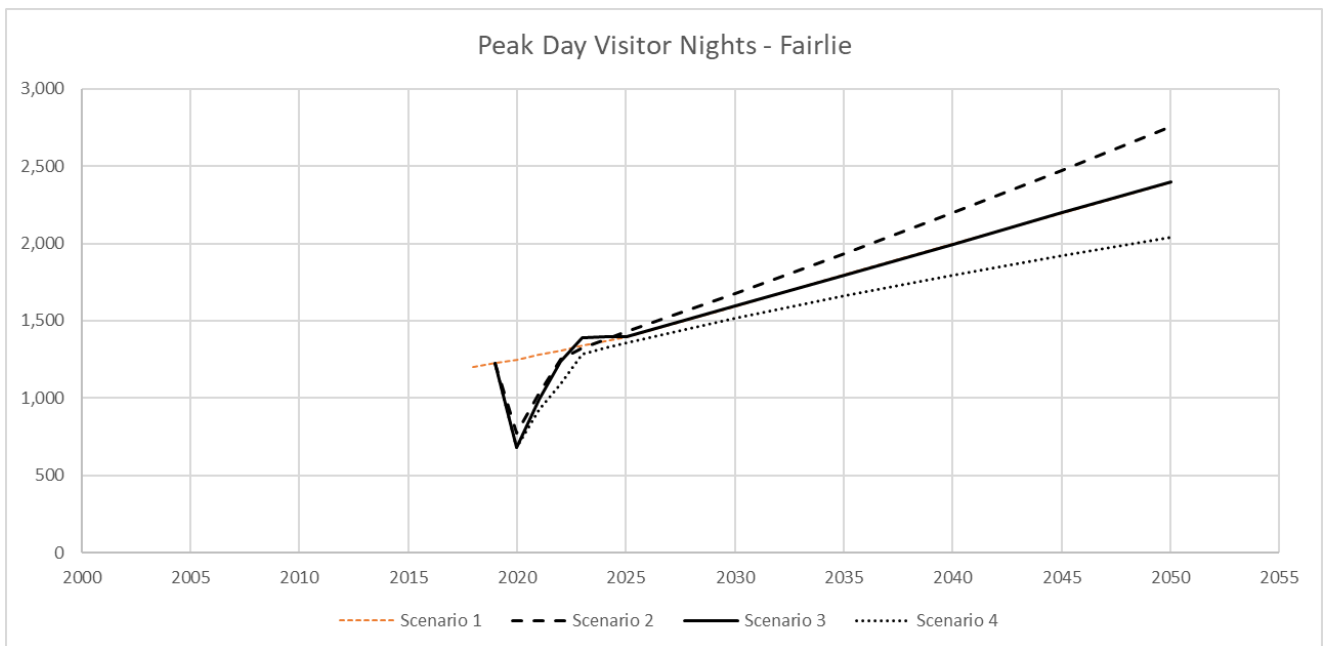


Figure 40. Fairlie's peak day visitor nights.

9.6 Rating Units

9.6.1 ASSUMPTIONS

No assumptions have been made regarding ratings units.

9.6.2 OUTPUTS

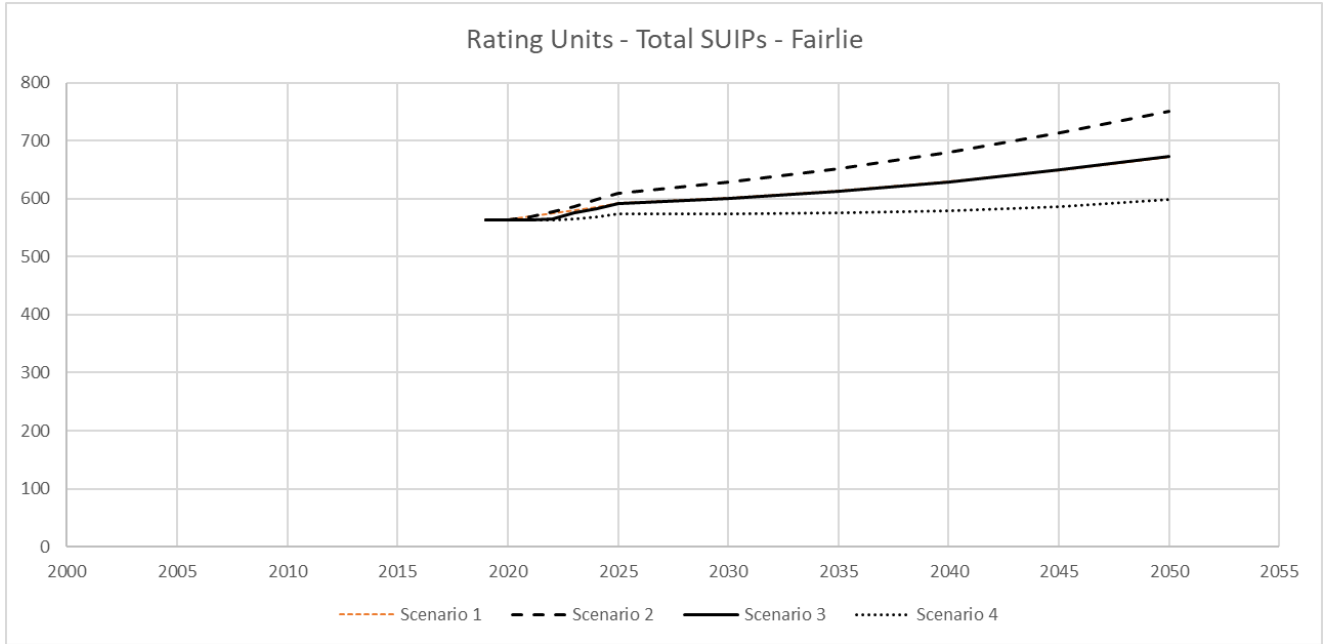


Figure 41. Fairlie – Rating Units – Total SUIPs

10 Appendix B: Mackenzie Lakes (includes Tekapo)

The population in Mackenzie Lakes, which includes Tekapo township and Mt Cook Village, is expected to increase significantly. Over the next 30 years it will move from a current day population of 1142 to 2550 in 2050 – a rate of 2.2% per annum. This growth is largely due to an increase in jobs, which are expected to grow from 669 to 2096, and the inherent desirability of the area due to lifestyle reasons.

Current zoning rules and the limited availability of land in Tekapo mean population growth is expected to become somewhat constrained over the next 30 years, due to the number of dwellings reaching capacity. This is particularly pronounced in Tekapo township.



Figure 42. Mackenzie Lakes SA2 boundary, including Tekapo.

10.1 Mackenzie Lakes Growth Projections Summary

Table 17. Mackenzie Lakes growth projections summary.

	2006	2013	2018	2020	2025	2030	2035	2040	2045	2050
Usually Resident Population	800	920	1220	1142	1687	1953	2209	2374	2461	2550
Total Dwellings	744	933	1098	1179	1519	1686	1776	1859	1939	2021
Occupied Dwellings	363	456	603	565	834	965	1030	1084	1136	1189
Unoccupied Dwellings	381	477	495	614	685	721	746	775	803	832
Number of Jobs	680	870	980	669	1312	1446	1591	1747	1915	2096
Number of Businesses	177	192	225	157	307	339	373	409	449	491
Visitor Accommodation				12	24	27	31	34	38	41
Rating Units - Total SUIPs				2090	2677	2992	3204	3383	3539	3704

	2006	2013	2018	2020	2025	2030	2035	2040	2045	2050
Rating Units - Commercial Accommodation SUIPs				71	81	92	104	116	127	139
Rating Units - Residential SUIPs				1593	2052	2278	2400	2512	2619	2731
Rating Units - Industrial SUIPs				56	70	77	85	93	102	112
Rating Units - Other Commercial SUIPs				50	62	69	76	83	91	100
Rating Units - Other SUIPs				320	412	476	539	579	600	622
Peak Day Visitor Nights			7819	4429	9083	10388	11694	12999	14305	15610
Average Day Visitor Nights			2372	1344	2756	3152	3548	3944	4340	4736
Peak Day Visitor Numbers			12145	6879	14108	16136	18163	20191	22219	24246
Average Day Visitor Numbers			3377	1913	3923	4486	5050	5614	6178	6741

Table 18. Mackenzie Lakes short and long-term forecast.

	Historic Growth (2006 - 2019)			Short Term Forecast (2019 - 2025)			Long Term Forecast (2019 - 2050)		
	Total Growth	Av. Annual Growth	Av. Annual Growth Rate	Total Growth	Av. Annual Growth	Av. Annual Growth Rate	Total Growth	Av. Annual Growth	Av. Annual Growth Rate
Usually Resident Population	510	39	3.9%	377	63	4.3%	1,240	40	2.2%
Total Dwellings	435	33	3.6%	340	57	4.3%	842	27	1.8%
Occupied Dwellings	284	22	4.6%	187	31	4.3%	542	17	2.0%
Unoccupied Dwellings	151	12	2.6%	153	26	4.3%	300	10	1.5%
Number of Jobs	370	28	3.4%	262	44	3.8%	1,046	34	2.3%
Number of Businesses	69	5	2.6%	61	10	3.8%	245	8	2.3%
Visitor Accommodation				3	1	2.3%	20	1	2.2%
Rating Units - Total SUIPs				588	98	4.2%	1,615	52	1.9%
Rating Units - Commercial Accommodation SUIPs				10	2	2.2%	68	2	2.2%
Rating Units - Residential SUIPs				459	77	4.3%	1,138	37	1.8%
Rating Units - Industrial SUIPs				14	2	3.8%	56	2	2.3%
Rating Units - Other Commercial SUIPs				12	2	3.7%	50	2	2.3%
Rating Units - Other SUIPs				93	15	4.3%	303	10	2.2%
Peak Day Visitor Nights				1103	184	2.2%	7,630	246	2.2%
Average Day Visitor Nights				335	56	2.2%	2,315	75	2.2%
Peak Day Visitor Numbers				1714	286	2.2%	11,852	382	2.2%
Average Day Visitor Numbers				476	79	2.2%	3,295	106	2.2%

10.2 Employment Projections

10.2.1 KEY INDUSTRIES AND TRENDS

Mackenzie Lakes has grown significantly in recent years in population, employment, and the number of dwellings. This growth has been driven by the tourism industry, which is the largest employer in the area, accounting for 49% of total jobs in 2019.

Although COVID19 is expected to have a marked impact on the employment numbers in the area, these are projected to bounce back and regain current levels of growth by 2025.

Table 19. Top five key industries in Mackenzie Lakes.

Industry	Number of Employees in 2019	Percent of workforce in 2019	Average Annual Growth Rate - last 3 years	Average Annual Growth Rate - last 10 years
Accommodation and Food Services	520	49%	5.8%	3.6%
Agriculture, Forestry and Fishing	200	19%	4.0%	8.2%
Administrative and Support Services	95	9%	6.4%	10.2%
Arts and Recreation Services	80	8%	1.3%	3.7%
Transport, Postal and Warehousing	65	6%	19.0%	4.9%

At time of writing the economic recovery remains unknown. The forecasts have an accuracy of +/- 10% for jobs by 2025 and +/- 15% for jobs for 2050 in scenarios 2 and 3.

10.2.2 OUPUT

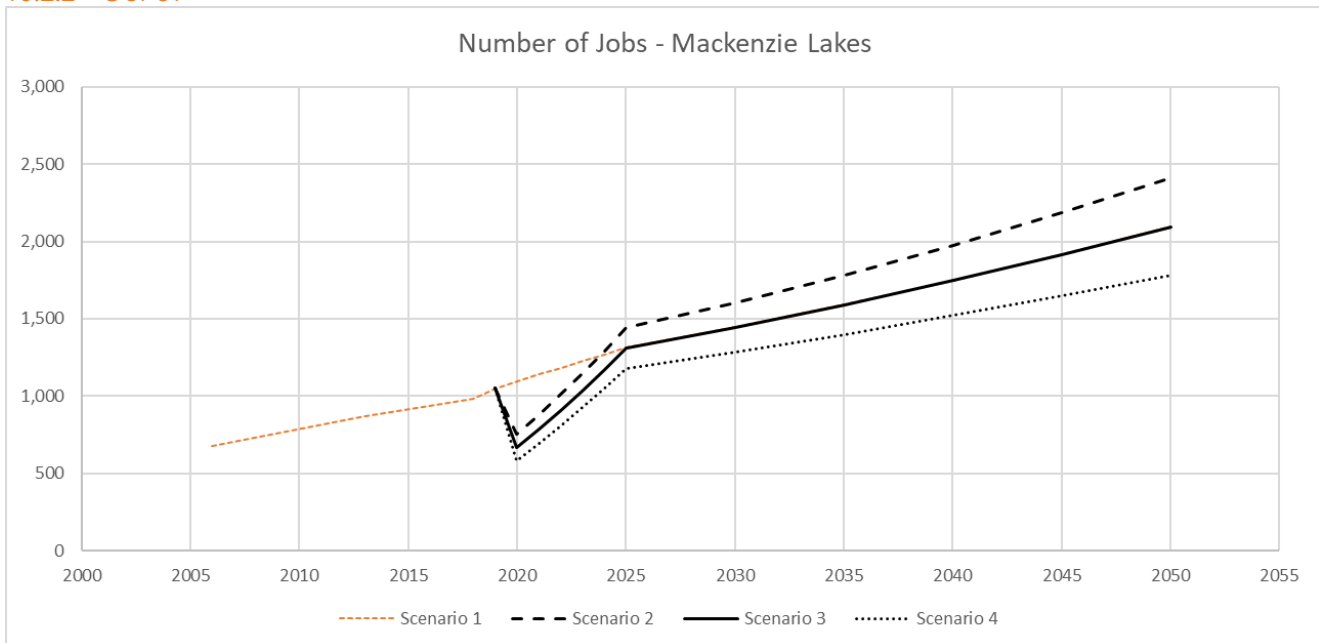


Figure 43. Number of jobs in Mackenzie Lakes.

10.3 Population Projections

10.3.1 KEY MIGRATION DRIVERS

The population in Mackenzie Lakes, particularly Tekapo, is growing rapidly.

- Migration of those in their younger working years has been driven by employment opportunities, particularly in tourism and related industries. This can be seen in the chart below by the spike in those aged 20 – 34.
- There is a small amount of migration of those in their later working years/early retirement, this is likely for lifestyle reasons.
- Elderly tend to move away from the area in their later years, likely in search of better healthcare and housing. A significant increase in house prices in the past ten years further enables this elderly outwards migration as they can sell and move elsewhere.

These trends are reflected below through the population by age and net migration figures.

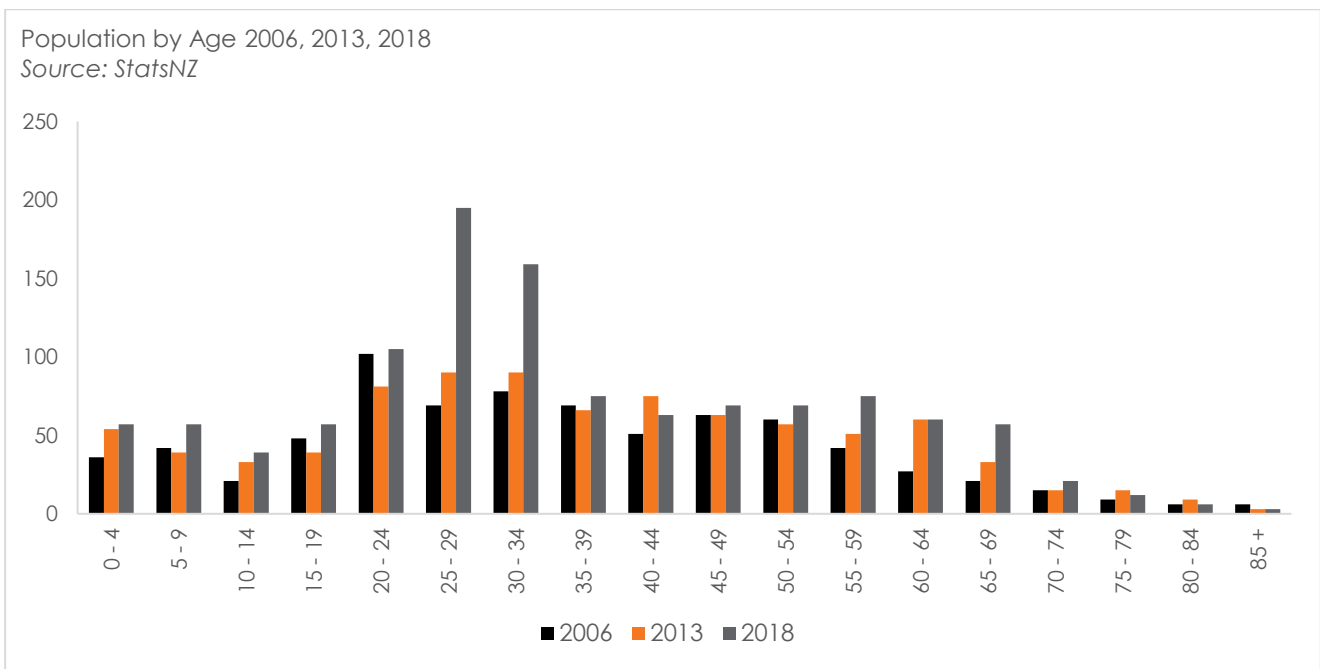


Figure 44. Mackenzie Lakes population by age, 2006, 2013, 2018. Source: StatsNZ.

The below graph has been produced to calibrate the migration modelling used in these projections against the observed migration that is occurring. This provides an indication of model reliability.

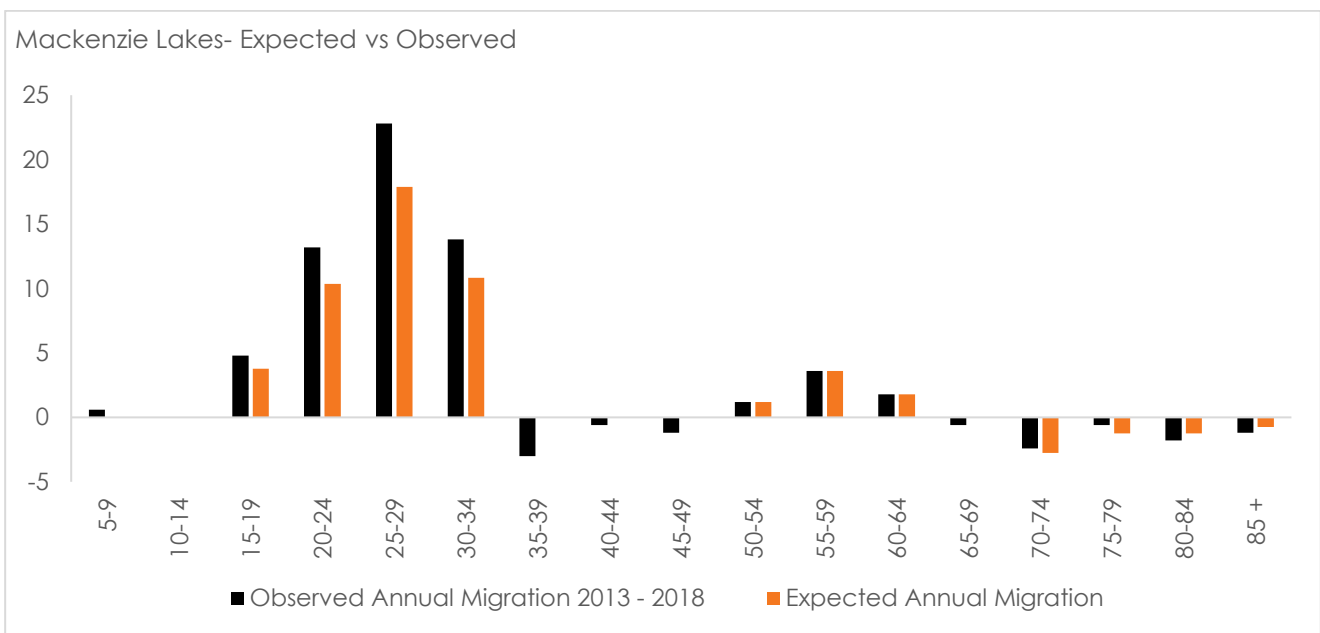


Figure 45. Mackenzie Lakes net migration check

10.3.2 COVID-19

Mackenzie Lakes, and in particular Tekapo and Mt Cook, are likely to be significantly affected by COVID-19. There are many young international workers who live and work in this area, they are mostly employed in tourism related jobs. It is likely that they will not be able to afford to remain in the area if they lose their jobs and may leave.

This modelling assumes that 50% of the job losses will result in young workers leaving the district. This equates to migration out of approximately:

- Scenario 2 – 150 people
- Scenario 3 – 190 people (Preferred)

- Scenario 4 – 240 people

These losses are expected to have recovered by 2025, given the current Tourism New Zealand modelling⁸ of the border opening and return on international tourism.

10.3.3 OUPUT

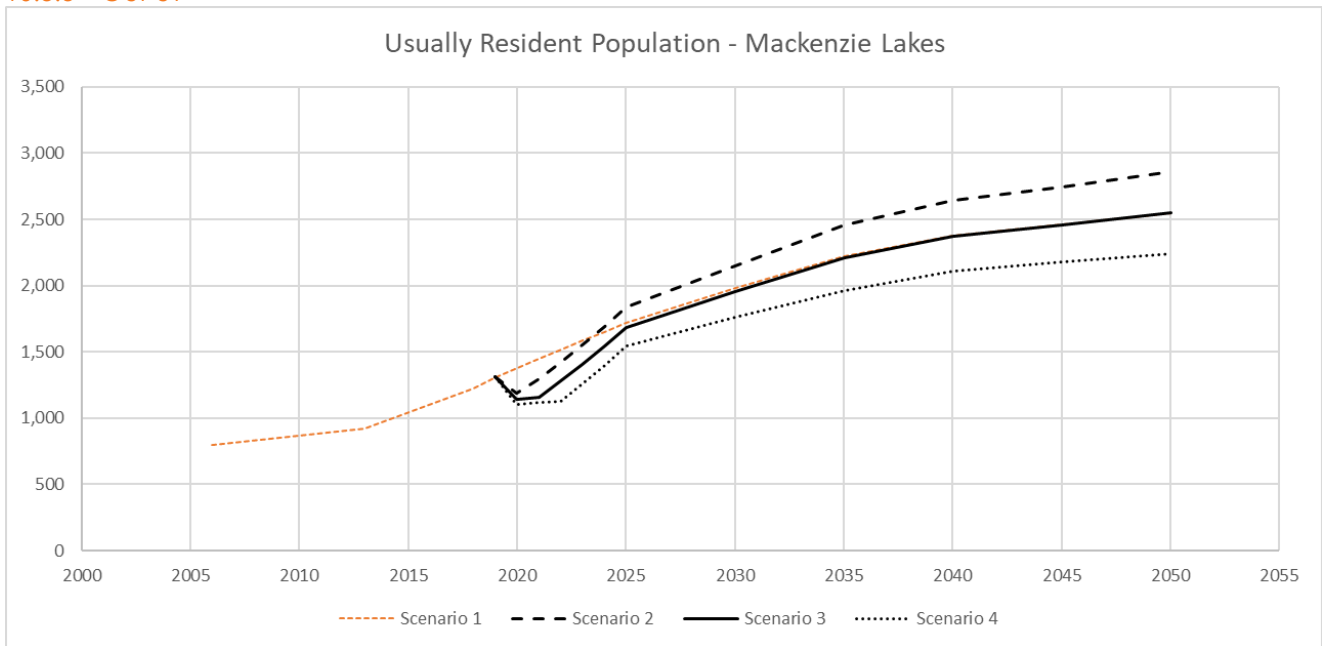


Figure 46. Mackenzie Lakes usually resident population.

10.4 Dwelling Projections

10.4.1 ASSUMPTIONS

As outlined earlier in the report, Tekapo is expected to reach dwelling capacity approximately around 2030, based on expected population growth, growth in dwellings and the currently zoned land as per the District Plan.

No further assumptions to those outlined earlier in the report have been made. These assumptions are available in Section 7.

⁸ Tourism New Zealand, TNZ Scenario Models, April-May 2020. <https://www.tourismnewzealand.com/media/4119/tnz-scenario-model-may-2020.pdf>

10.4.2 OUPUT

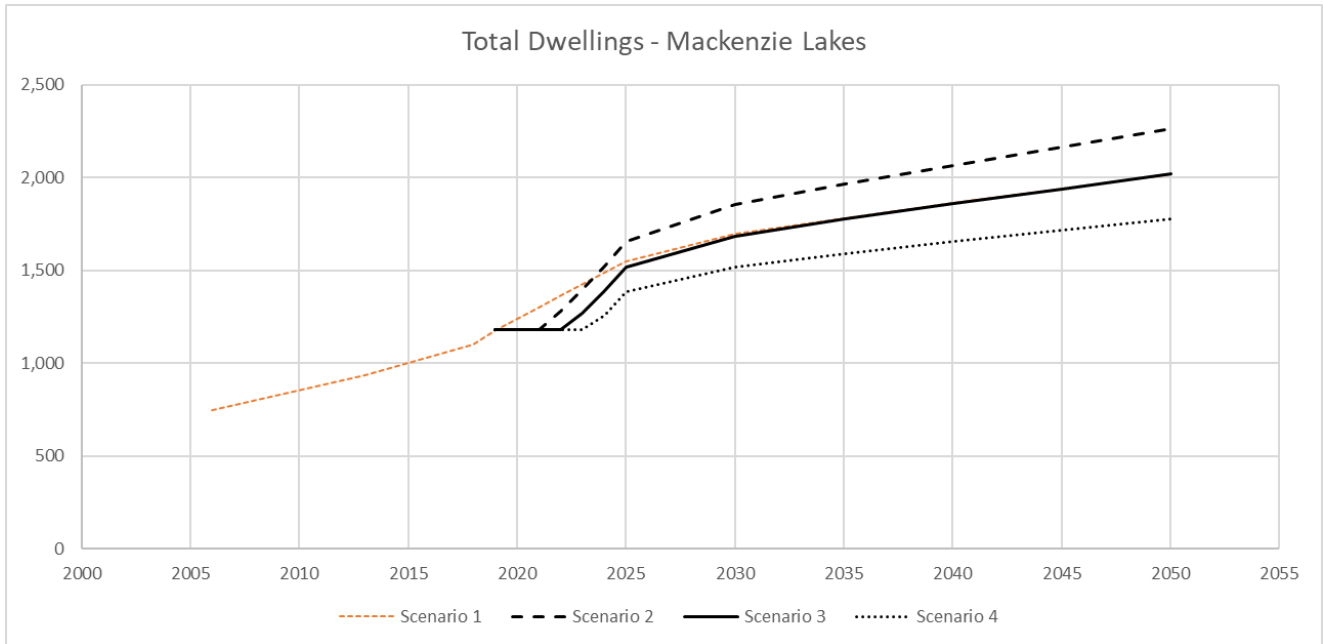


Figure 47. Total number of dwellings in Mackenzie Lakes.

10.5 Visitor Projections

After a reduction due to COVID19, the number of visitors to Tekapo is expected to continue to increase as the borders open back up and international travel begins to increase to previous levels.

10.5.1 ASSUMPTIONS

No further assumptions to those outlined earlier in the report have been made. These assumptions are available in Section 7.

10.5.2 OUPUT

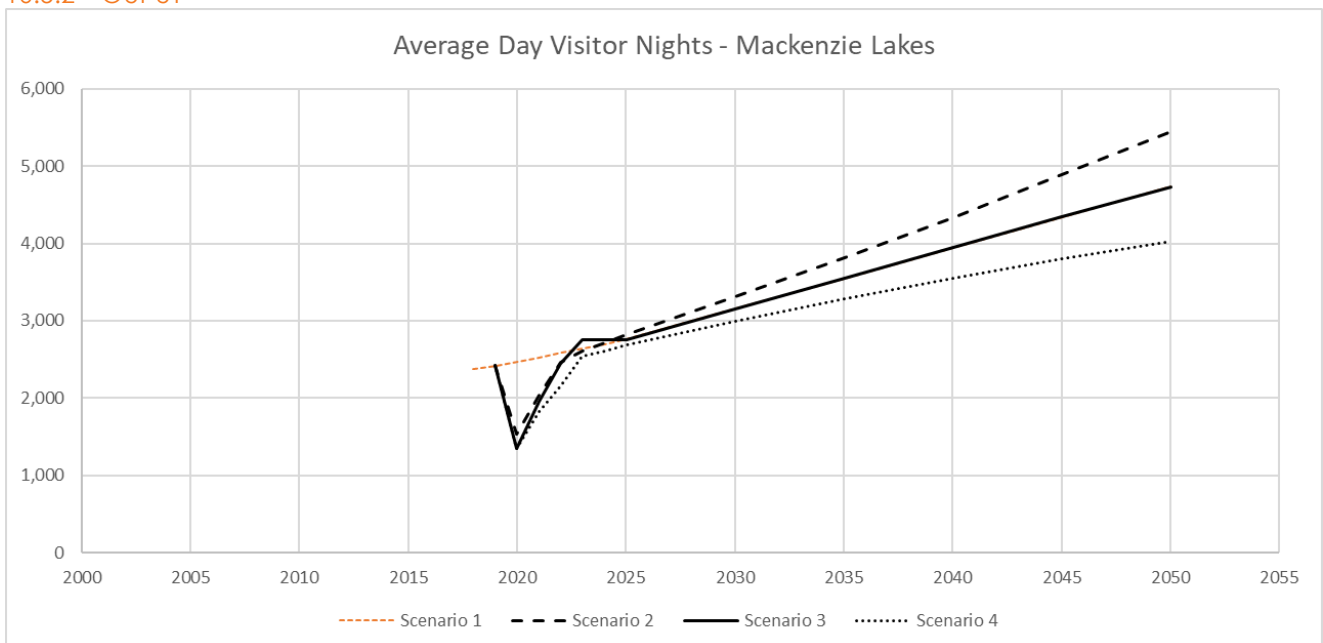


Figure 48. Average day Visitor nights in Mackenzie Lakes.

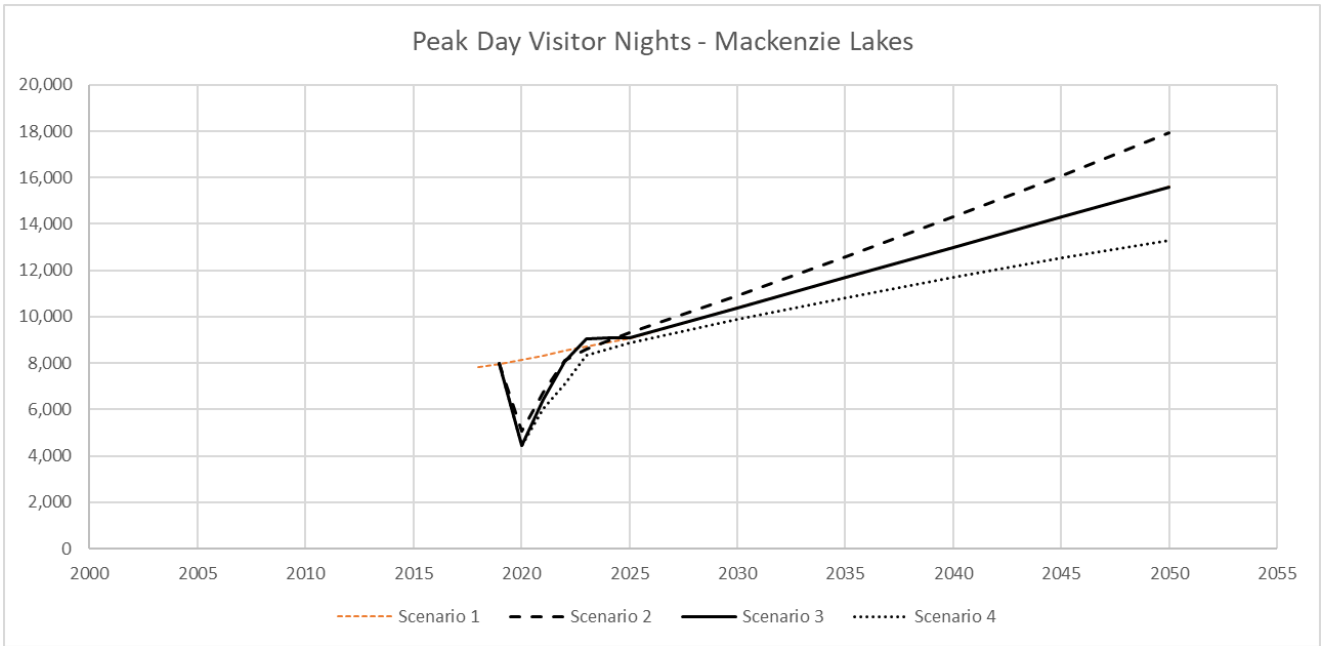


Figure 49. Peak day visitor nights in Mackenzie Lakes.

10.6 Rating Units

10.6.1 ASSUMPTIONS

There were no assumptions made about rating units in Mackenzie Lakes.

10.6.2 OUPUT

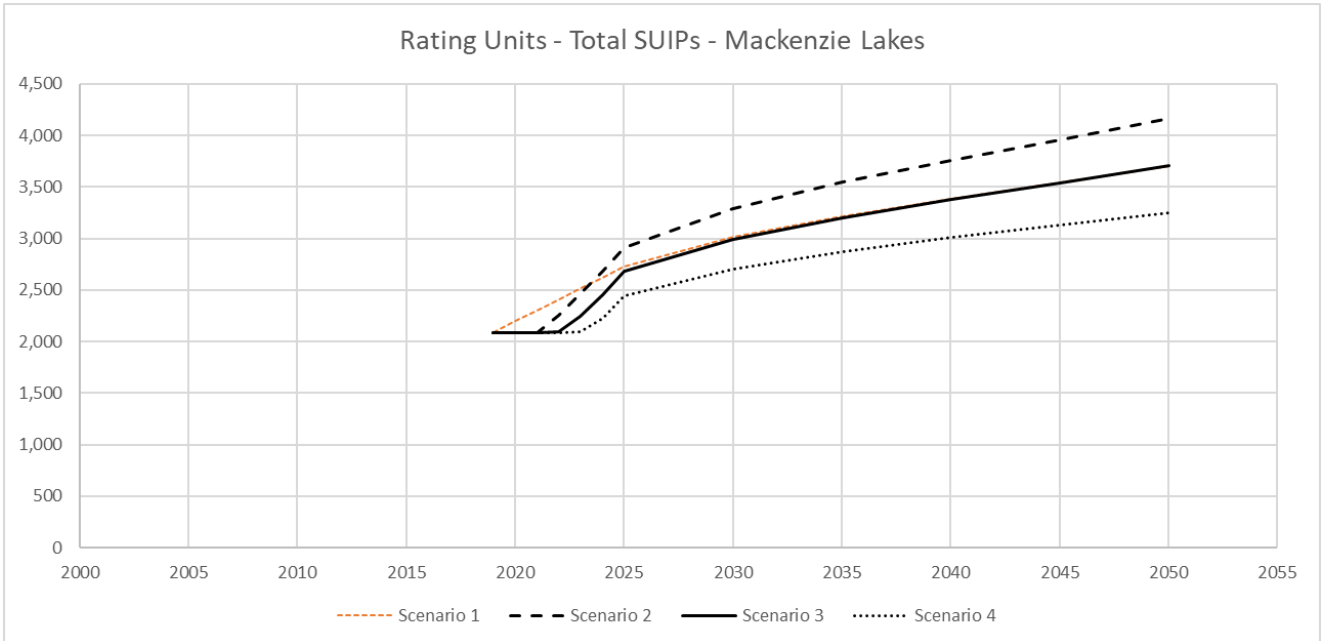


Figure 50. Total Rating Units in Mackenzie Lakes

10.7 Tekapo

In recent years Tekapo has experienced unprecedented growth due to an increase of domestic and international tourism. This has led to an increase in dwellings (both occupied and unoccupied) and significant growth in the usually resident population.

Population growth in Tekapo is expected to continue to increase from 504 today to 1240 in 2050, growing at an annual average rate of 2.3%. This growth would likely be higher, but capacity constraints based on the current zoning in the District Plan will see Tekapo reach dwelling capacity by 2030, at 840 dwellings.

Following 2030, it is expected that the household size and percentage of occupied dwellings will continue to increase until approximately 2040 – 2045 when the population capacity is reached. From there excess is distributed elsewhere in the district.



Figure 51. Tekapo Boundary (Two SA1 Units)

10.7.1 TEKAPO GROWTH PROJECTIONS SUMMARY

Table 20. Tekapo growth projections summary.

	2006	2013	2018	2020	2025	2030	2035	2040	2045	2050
Usually Resident Population	315	366	552	504	842	1006	1165	1240	1240	1240
Total Dwellings	309	417	489	538	746	820	820	820	820	820
Occupied Dwellings	132	165	237	216	361	432	438	438	438	438
Unoccupied Dwellings	177	252	252	322	384	388	382	382	382	382

Table 21. Tekapo short- and long-term forecast.

	Historic Growth (2006 - 2019)			Short Term Forecast (2019 - 2025)			Long Term Forecast (2019 - 2050)		
	Total Growth	Av. Annual Growth	Av. Annual Growth Rate	Total Growth	Av. Annual Growth	Av. Annual Growth Rate	Total Growth	Av. Annual Growth	Av. Annual Growth Rate
Usually Resident Population	293	23	5.2%	234	39	5.6%	633	20	2.3%
Total Dwellings	229	18	4.4%	207	35	5.6%	282	9	1.4%
Occupied Dwellings	129	10	5.4%	100	17	5.6%	177	6	1.7%
Unoccupied Dwellings	100	8	3.5%	107	18	5.6%	104	3	1.0%

10.7.2 METHODOLOGY

The usually resident population in Tekapo was derived by taking the portion of historic growth of Mackenzie Lakes that has occurred in Tekapo and applying this portion to the future expected growth.

Capacity analysis was also completed as previously outlined in the body of this report.

10.7.3 POPULATION PROJECTIONS

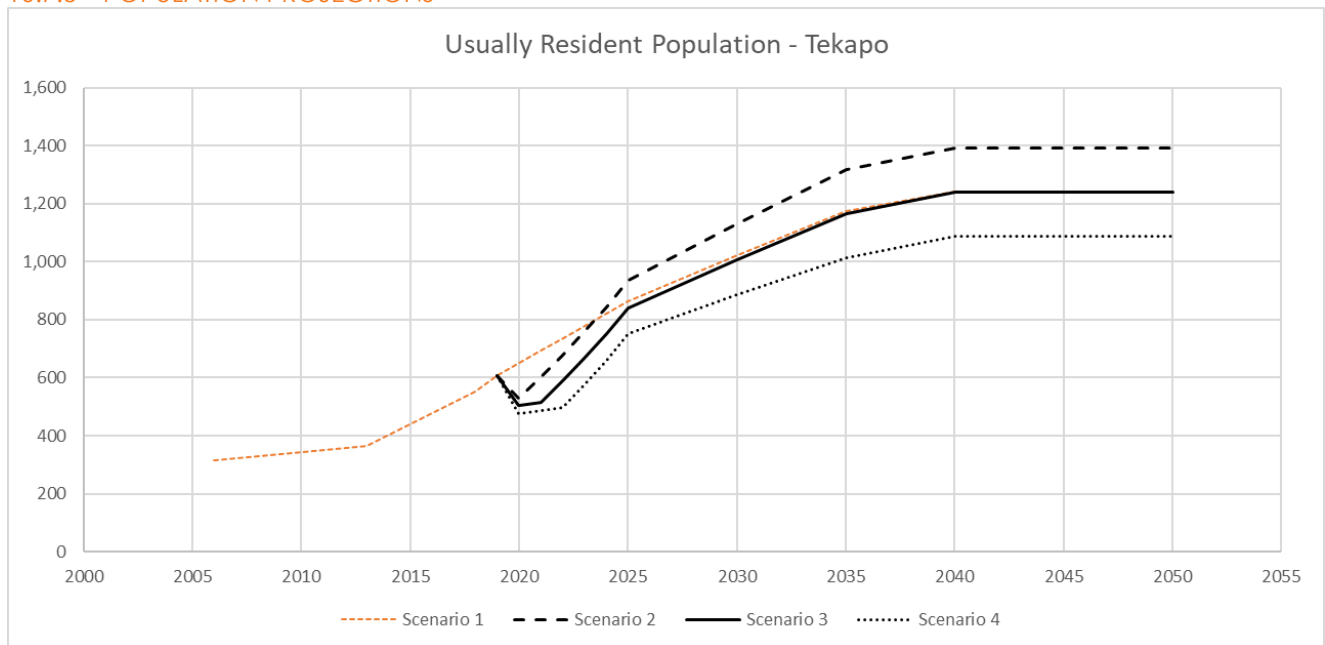


Figure 52. Usually resident population of Tekapo.

10.7.4 DWELLING PROJECTIONS

Tekapo is expected to reach capacity approximately around 2030, based on the expected population growth, growth in dwellings and the currently zoned land as per the District Plan.

Following 2030, it is expected that the household size and percentage of occupied dwellings will continue to increase until approximately 2040 – 2045 when the population capacity is reached. From there excess is distributed to either Fairlie or into the District Overflow, as described in the body of the report.

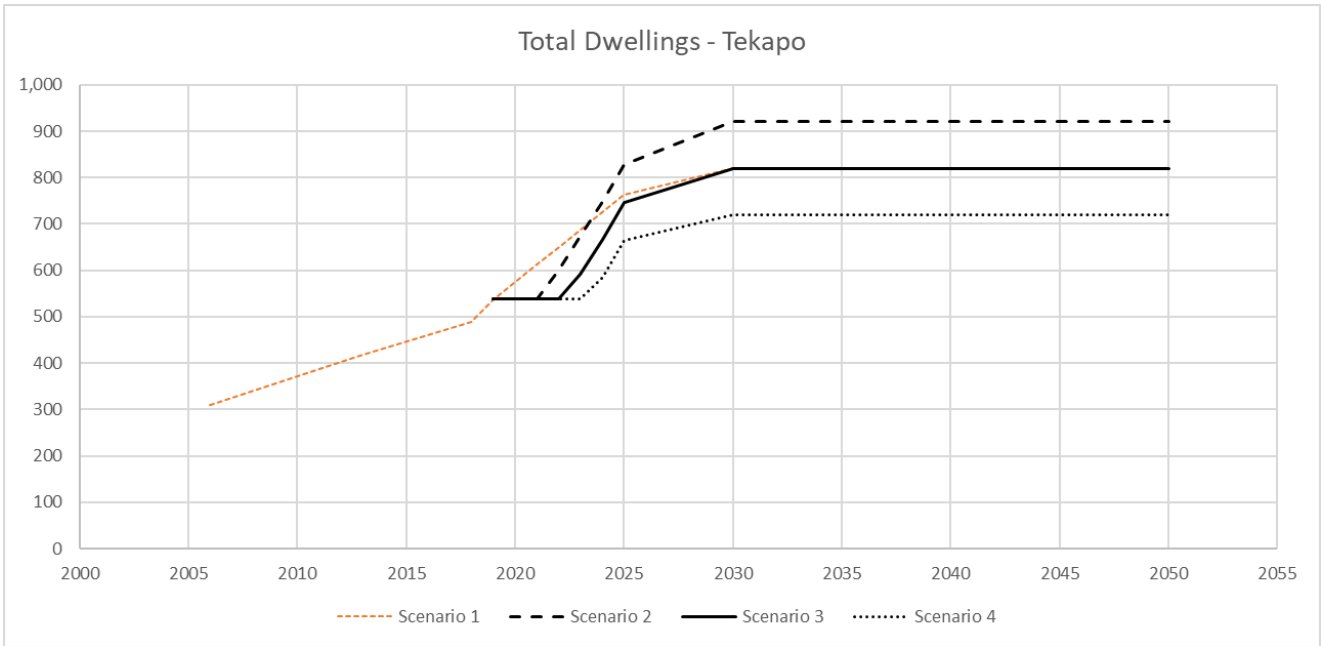


Figure 53. Total dwelling projections in Tekapo.

11 Appendix C: Opua

Opua is a large rural area in Eastern Mackenzie which encapsulates a significant amount of productive farmland and includes the rural settlements of Burkes Pass, Kimbell and Albury. The Opua SA2 area excludes the Fairlie SA2.

The population in Opua is expected to continue to increase over the next 30 years, growing from 1388 to 1812 over the next 30 years, an average annual increase of 0.9%. This is largely due to the increasing attractiveness of rural lifestyle type living, particularly in the areas around Fairlie and increasing employment opportunities. Jobs are also expected to increase at a slightly higher rate than the population, growing from 274 today to 402 in 2050.



Figure 54. Opua (Mackenzie Lakes) SA2 boundary.

11.1 Opua Growth Projections Summary

Table 22. Opua growth projections

	2006	2013	2018	2020	2025	2030	2035	2040	2045	2050
Usually Resident Population	1130	1310	1380	1388	1483	1559	1632	1699	1759	1812
Total Dwellings	495	582	651	655	700	735	770	802	830	855
Occupied Dwellings	408	465	522	540	577	607	635	661	685	705
Unoccupied Dwellings	81	108	114	115	123	129	135	140	145	150
Number of Jobs	290	250	280	274	323	338	353	369	385	402
Number of Businesses	345	381	384	358	422	441	460	481	502	524
Visitor Accommodation				1	2	3	3	3	4	4
Rating Units - Total SUIPs				892	955	1004	1050	1095	1134	1169

	2006	2013	2018	2020	2025	2030	2035	2040	2045	2050
Rating Units - Commercial Accommodation SUIPs				3	3	4	4	5	5	6
Rating Units - Residential SUIPs				350	375	394	412	429	444	458
Rating Units - Industrial SUIPs				16	18	19	19	20	21	22
Rating Units - Other Commercial SUIPs				8	9	9	10	10	11	11
Rating Units - Other SUIPs				515	550	578	605	631	653	672
Peak Day Visitor Nights			1059	600	1230	1407	1584	1761	1938	2115
Average Day Visitor Nights			402	228	467	535	602	669	736	803
Peak Day Visitor Numbers			5850	3313	6796	7773	8749	9726	10703	11679
Average Day Visitor Numbers			648	367	752	860	968	1077	1185	1293

Table 23. Opua short- and long-term forecast.

	Historic Growth (2006 - 2019)			Short Term Forecast (2019 - 2025)			Long Term Forecast (2019 - 2050)		
	Total Growth	Av. Annual Growth	Av. Annual Growth Rate	Total Growth	Av. Annual Growth	Av. Annual Growth Rate	Total Growth	Av. Annual Growth	Av. Annual Growth Rate
Usually Resident Population	250	19	1.5%	103	17	1.2%	432	14	0.9%
Total Dwellings	156	12	2.1%	49	8	1.2%	204	7	0.9%
Occupied Dwellings	129	10	2.1%	40	7	1.2%	168	5	0.9%
Unoccupied Dwellings	33	3	2.7%	9	1	1.2%	36	1	0.9%
Number of Jobs	0	0	0.0%	33	6	1.8%	112	4	1.1%
Number of Businesses	33	3	0.7%	44	7	1.8%	146	5	1.1%
Visitor Accommodation				0	0	0.0%	2	0	2.3%
Rating Units - Total SUIPs				68	11	1.2%	282	9	0.9%
Peak Day Visitor Nights				0	0	0.0%	3	0	2.3%
Average Day Visitor Nights				27	4	1.2%	110	4	0.9%
Peak Day Visitor Numbers				2	0	2.0%	6	0	1.0%
Average Day Visitor Numbers				1	0	2.0%	3	0	1.0%

11.2 Employment Projections

11.2.1 KEY INDUSTRIES AND TRENDS

Opua is a large rural area in Eastern Mackenzie. The area is sparsely populated, and many residents travel away for work and schooling during the day. While traditional agricultural jobs are declining, Jobs are expected to increase over the next thirty years, growing at an average of four per year, or 1.1% per annum. This is due to changing demographics and wider workforce changes.

Due to various instabilities in the Agricultural sector, growth projections have been based on the MBIE forecast NZ Wide Annual Growth to 2028 of 0.3% growth.

Table 24. Top five industries in Opuā.

Industries	Number of Employees in 2019	Percent of workforce in 2019	Average Annual Growth Rate - last 3 years	Average Annual Growth Rate - last 10 years
Agriculture, Forestry and Fishing	200	69%	-3.1%	-1.3%
Accommodation and Food Services	25	9%	1.0%	19.8%
Wholesale Trade	12	4%	11.1%	8.3%
Education and Training	9	3%	6.1%	8.2%

11.2.2 OUPUT

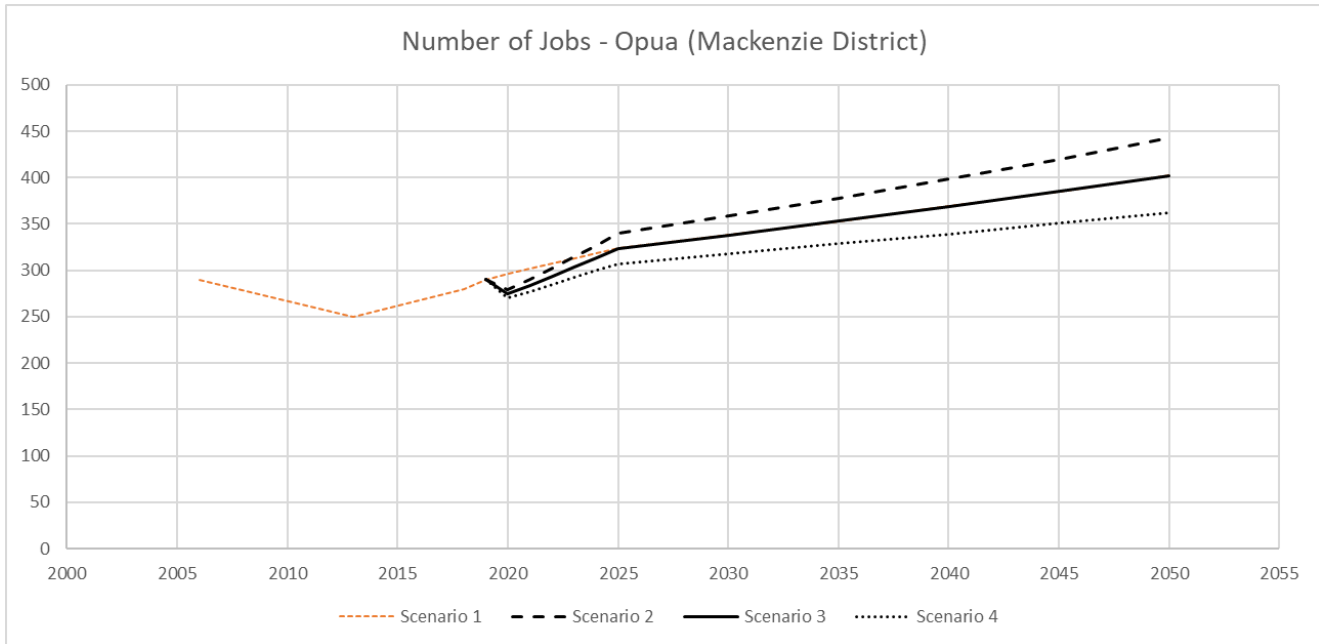


Figure 55. Number of jobs in Opuā.

11.3 Population Projections

11.3.1 KEY MIGRATION DRIVERS

There is only a small amount of migration occurring in Opuā. The driver behind this growth are:

- Employment is increasingly bringing people in their working years (25 – 44) and their families to the area. While the majority of these positions are in the agricultural sector, the number of jobs in this sector is slowly decreasing and being replaced by other sectors.
- A key driver for people moving to the area are rural lifestyle opportunities, this is most prevalent around Fairlie.
- Young people (15-19 years) leave the area for opportunities such as education and employment.
- Elderly tend to move away from the area in their later years, likely in search of better healthcare and facilities.

These trends are reflected below through the population by age and net migration figures.

Population by Age, 2006, 2013, 2018
Source: StatsNZ

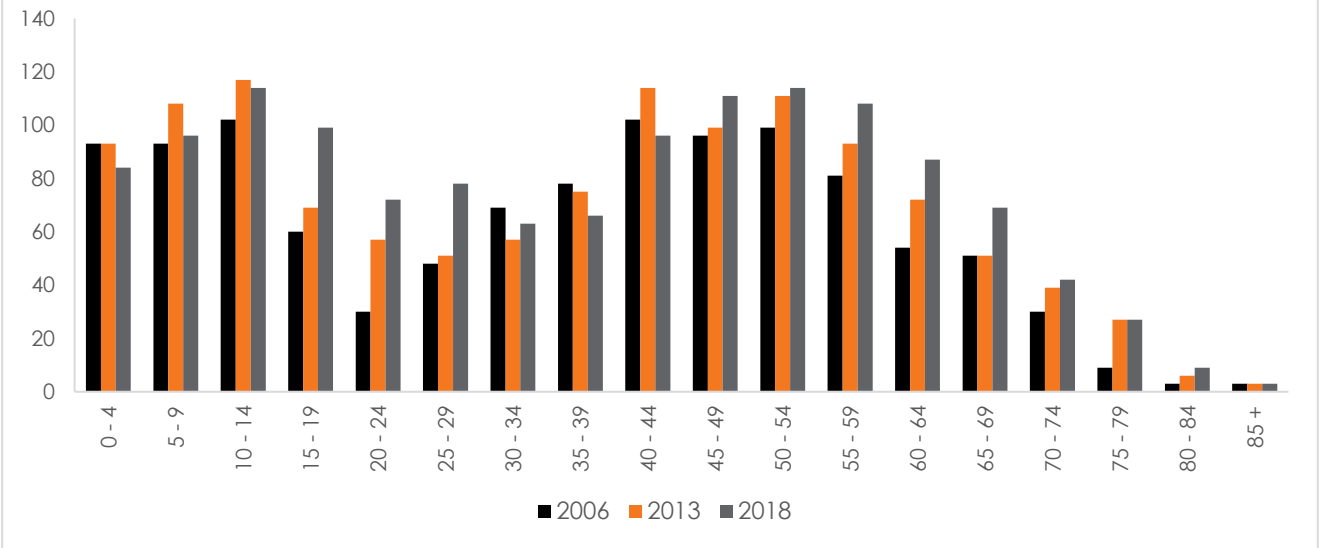


Figure 56. Opua's population by age, 2006, 2013, 2018. Source: StatsNZ.

The below graph has been produced to calibrate the migration modelling used in these projections against the observed migration that is occurring. This provides an indication of model reliability.

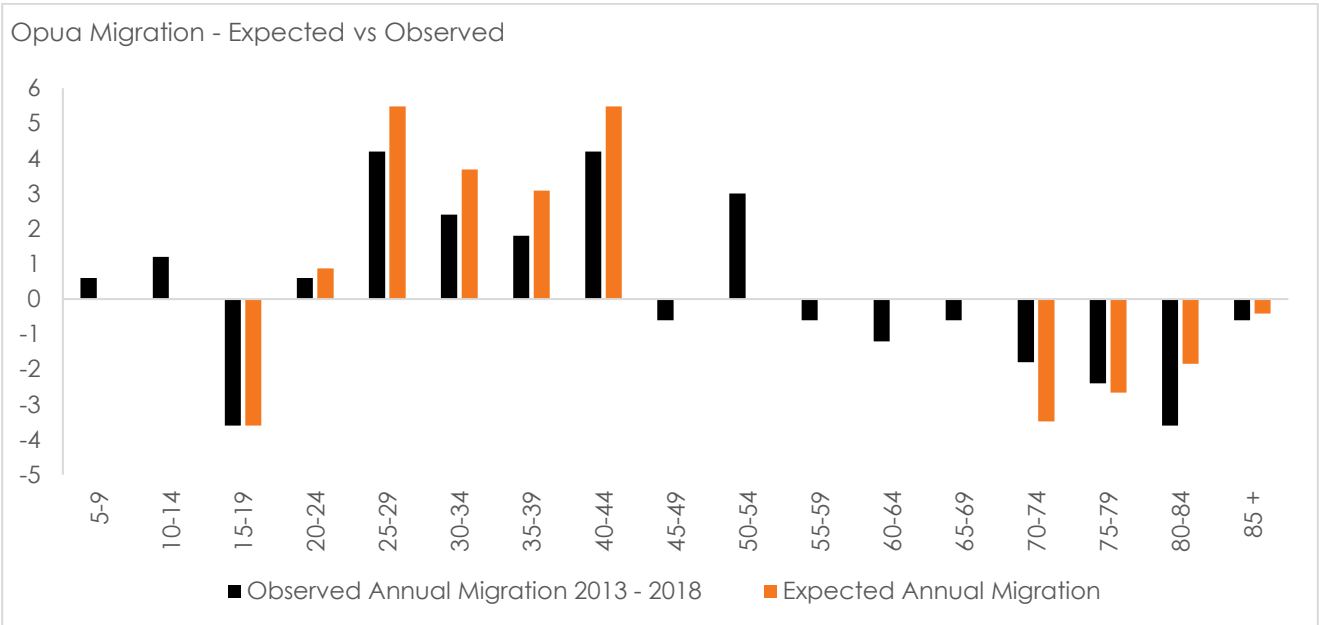


Figure 57. Opua Net migration check

11.3.2 COVID-19

The population in Opua is unlikely to be significantly impacted by COVID-19.

11.3.3 OUPUT

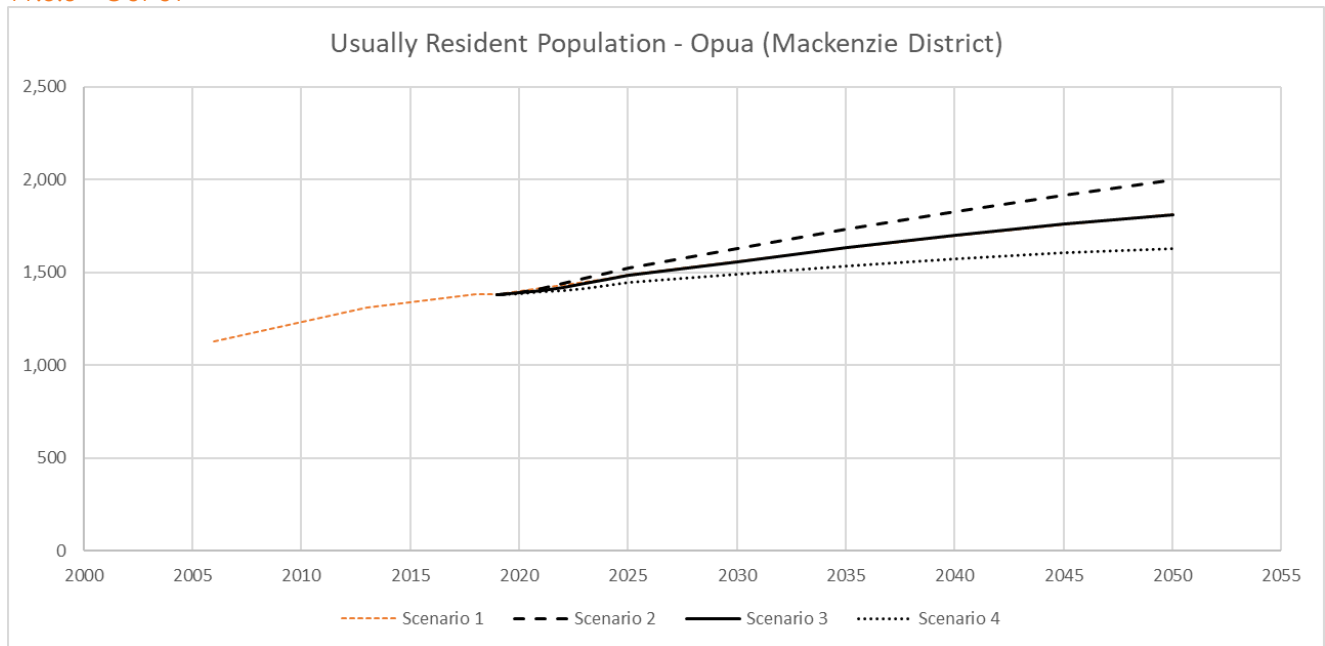


Figure 58. Opuia's usually resident population.

11.4 Dwelling Projections

11.4.1 ASSUMPTIONS

No further assumptions to those outlined earlier in the report have been made. These assumptions are available in Section 7.

11.4.2 OUPUT

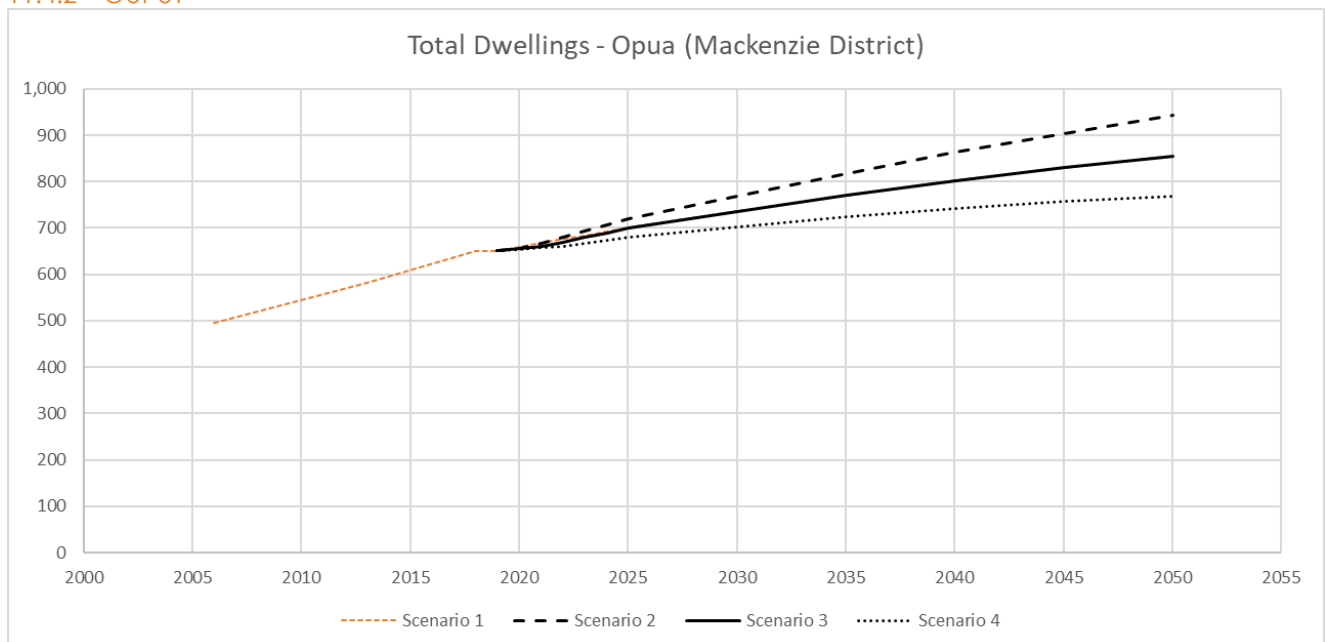


Figure 59. Opuia's total number of dwellings.

11.5 Visitor Projections

11.5.1 ASSUMPTIONS

No further assumptions to those outlined earlier in the report have been made. These assumptions are available in Section 7.

11.5.2 OUPUT

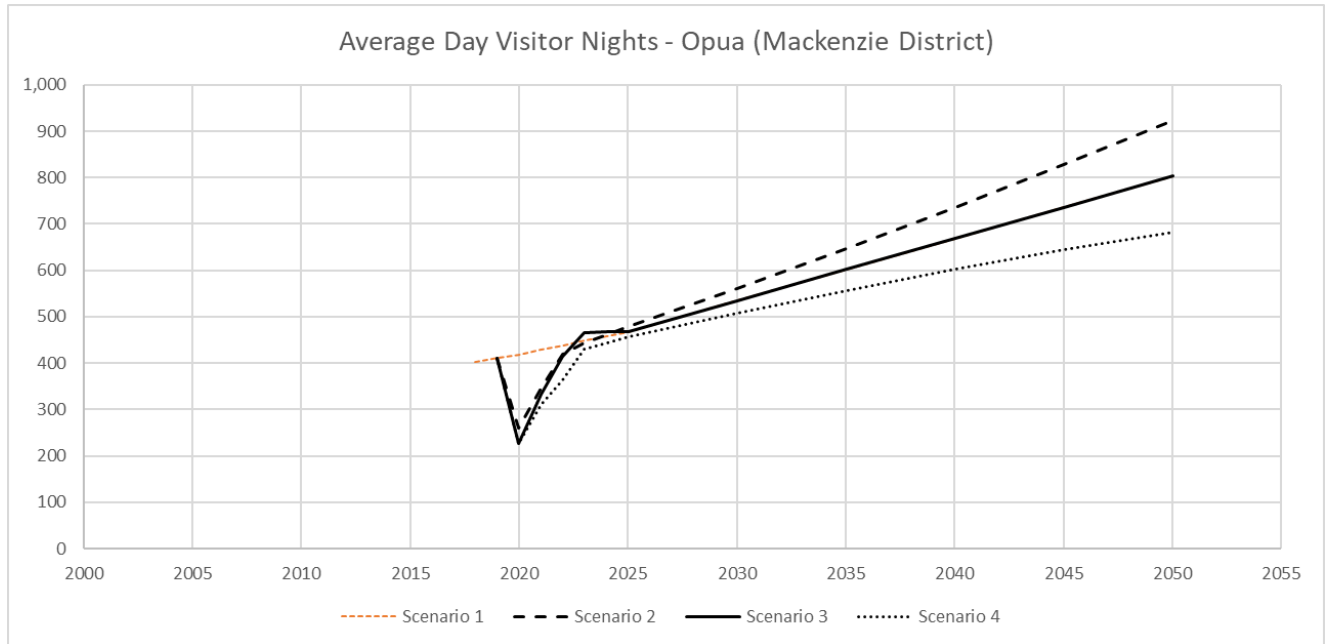


Figure 60. Average day visitor nights in Opua.

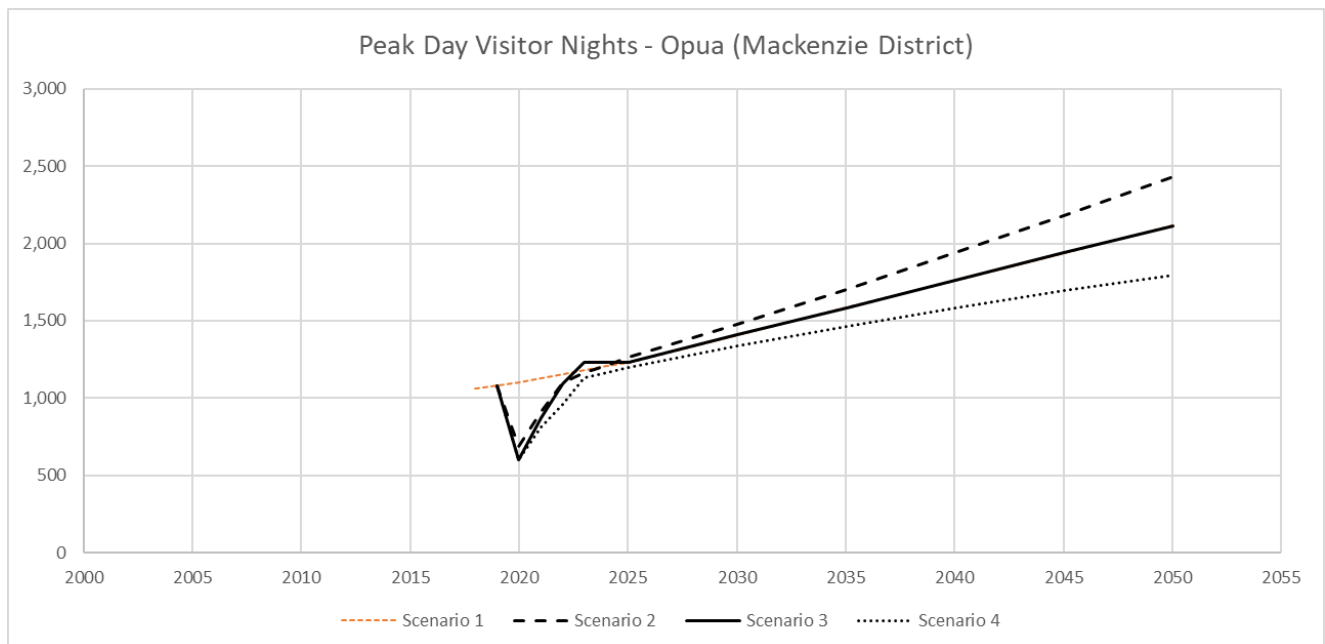


Figure 61. Peak day visitor nights in Opua.

11.6 Rating Units

11.6.1 ASSUMPTIONS

No assumptions were applied regarding the Rating Units in Opua.

11.6.2 OUPUT

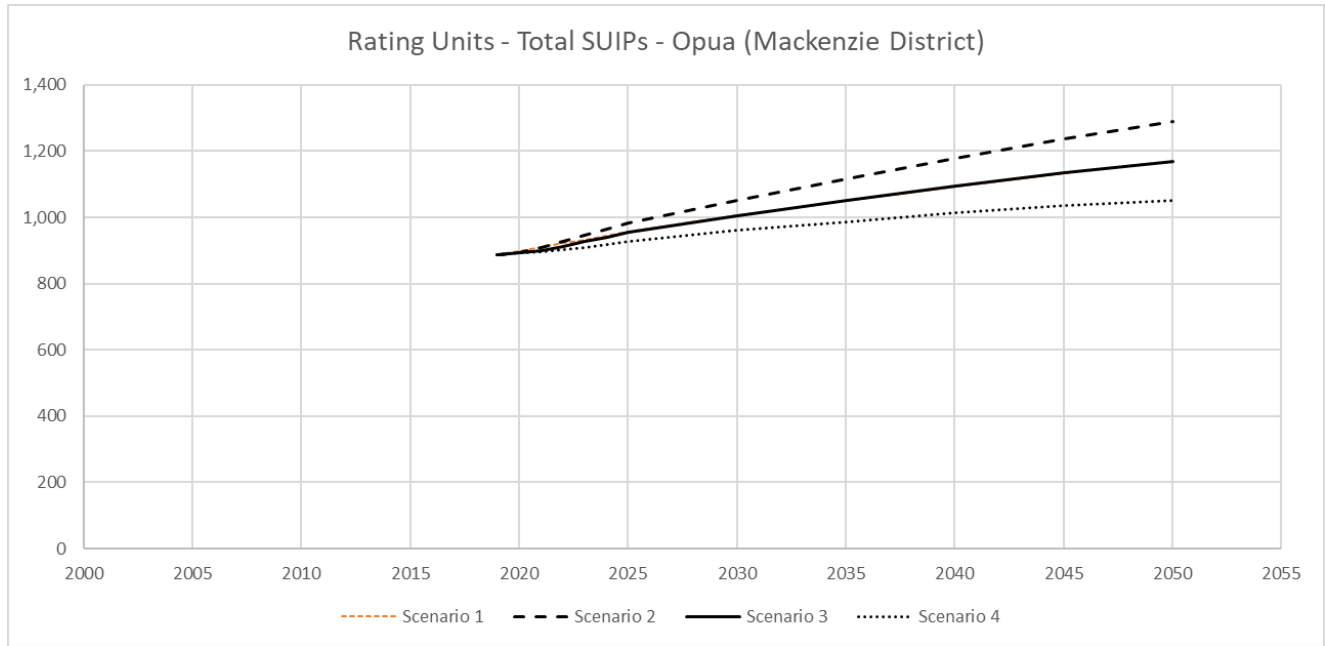


Figure 62. Opua – Rating Units – Total SUIPs

12 Appendix D: Twizel

The population in Twizel is expected to increase significantly over the next 30 years. Much the same as Tekapo, this is due to an increase in jobs and the desirability of the place due to lifestyle reasons. Twizel already has the largest population in the Mackenzie District at 1524, and this is expected to continue to increase to 3395, at a rate of 2.6% per annum. Employment is expected to increase from 550 today to 1600 in 2050, increasing at a rate of 2.7% a year.

Twizel is expected to reach dwelling capacity in 2040 at a total of 2500 dwellings, a total increase of 61.7%. This is based on the current zoning of the District Plan and the assumption that development continues in the same manner as today). Unlike Tekapo, this is not expected to constrain population growth in the same manner as it is assumed that household size will increase and unoccupied dwellings will become occupied.



Figure 63. Twizel SA2 Boundary.

12.1 Twizel Growth Projections Summary

Table 25. Twizel growth projections summary.

	2006	2013	2018	2020	2025	2030	2035	2040	2045	2050
Usually Resident Population	1070	1190	1500	1524	1865	2143	2434	2736	3053	3395
Total Dwellings	1110	1305	1506	1546	1872	2152	2444	2500	2500	2500
Occupied Dwellings	507	537	726	738	902	1037	1178	1324	1330	1330
Unoccupied Dwellings	603	768	780	808	970	1114	1266	1176	1170	1170
Number of Jobs	410	440	680	550	839	961	1097	1248	1416	1600
Number of Businesses	129	153	189	139	212	243	277	316	358	405
Visitor Accommodation				5	10	12	13	15	16	18
Rating Units - Total SUIPs				1606	1943	2231	2535	2616	2645	2677

	2006	2013	2018	2020	2025	2030	2035	2040	2045	2050
Rating Units - Commercial Accommodation SUIPs				17	19	22	25	28	30	33
Rating Units - Residential SUIPs				1473	1784	2050	2328	2382	2382	2382
Rating Units - Industrial SUIPs				38	46	52	60	68	77	87
Rating Units - Other Commercial SUIPs				49	59	67	77	87	99	112
Rating Units - Other SUIPs				29	35	40	45	51	57	63
Peak Day Visitor Nights			6234	3531	7242	8283	9324	10364	11405	12446
Average Day Visitor Nights			1218	690	1415	1618	1821	2024	2228	2431
Peak Day Visitor Numbers			6590	3732	7655	8755	9856	10956	12056	13156
Average Day Visitor Numbers			1244	705	1445	1653	1861	2069	2276	2484

Table 26. Twizel short- and long-term forecast.

	Historic Growth (2006 - 2019)			Short Term Forecast (2019 - 2025)			Long Term Forecast (2019 - 2050)		
	Total Growth	Av. Annual Growth	Av. Annual Growth Rate	Total Growth	Av. Annual Growth	Av. Annual Growth Rate	Total Growth	Av. Annual Growth	Av. Annual Growth Rate
Usually Resident Population	470	36	2.8%	325	54	3.2%	1,855	60	2.6%
Total Dwellings	436	34	2.6%	326	54	3.2%	954	31	1.6%
Occupied Dwellings	238	18	3.0%	157	26	3.2%	585	19	1.9%
Unoccupied Dwellings	198	15	2.2%	169	28	3.2%	369	12	1.2%
Number of Jobs	290	22	4.2%	139	23	3.1%	900	29	2.7%
Number of Businesses	48	4	2.5%	35	6	3.1%	228	7	2.7%
Visitor Accommodation				1	0	1.8%	9	0	2.3%
Rating Units - Total SUIPs				338	56	3.2%	1,072	35	1.7%
Peak Day Visitor Nights				2	0	1.9%	16	1	2.2%
Average Day Visitor Nights				311	52	3.2%	909	29	1.6%
Peak Day Visitor Numbers				8	1	3.2%	49	2	2.7%
Average Day Visitor Numbers				10	2	3.1%	63	2	2.7%

12.2 Employment Projections

12.2.1 KEY INDUSTRIES AND TRENDS

Twizel was built as a Ministry of Works town in the 1960s, however today tourism makes up the largest industry in the town. Growth in construction and retail reflect the boom in housing over the last ten years.

Table 27. Top five industries in Twizel.

Industries	Number of Employees in 2019	Percent of workforce in 2019	Average Annual Growth Rate - last 3 years	Average Annual Growth Rate - last 10 years
Accommodation and Food Services	240	35%	3.0%	4.7%
Retail Trade	100	14%	10.3%	10.6%
Construction	70	10%	5.3%	8.0%

Industries	Number of Employees in 2019	Percent of workforce in 2019	Average Annual Growth Rate - last 3 years	Average Annual Growth Rate - last 10 years
Education and Training	50	7%	0.0%	4.0%
Arts and Recreation Services	40	6%	-3.0%	2.1%

12.2.2 OUPUT

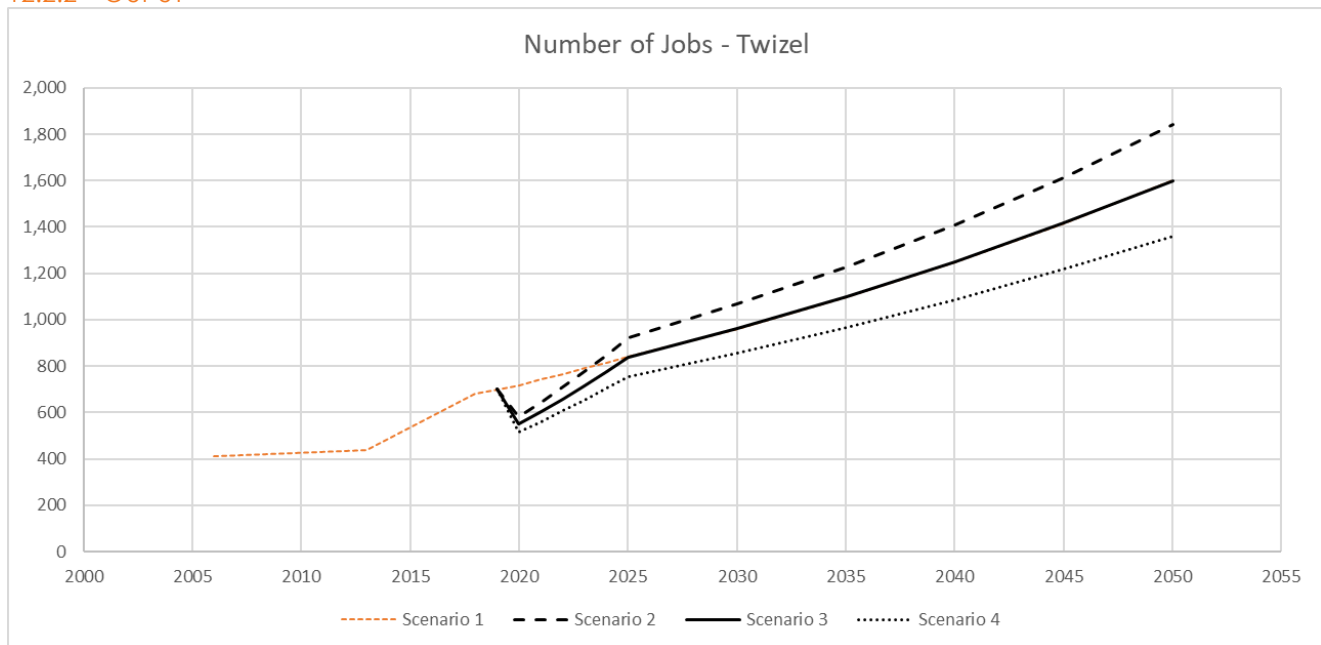


Figure 64. Number of jobs in Twizel.

12.3 Population Projections

12.3.1 KEY MIGRATION DRIVERS

Twizel has the largest population in the Mackenzie District and has been experiencing significant growth. The following drivers bring people to the town:

- Migration of those in their younger working years has been driven by employment opportunities, particularly in the tourism industry.
- People in their later working years and early retirement move to the area for the lifestyle reasons.
- Elderly tend to move away from the area in their later years, likely in search of better healthcare and facilities, does seem to be changing to a small degree.

These trends are reflected below through the population by age and net migration figures.

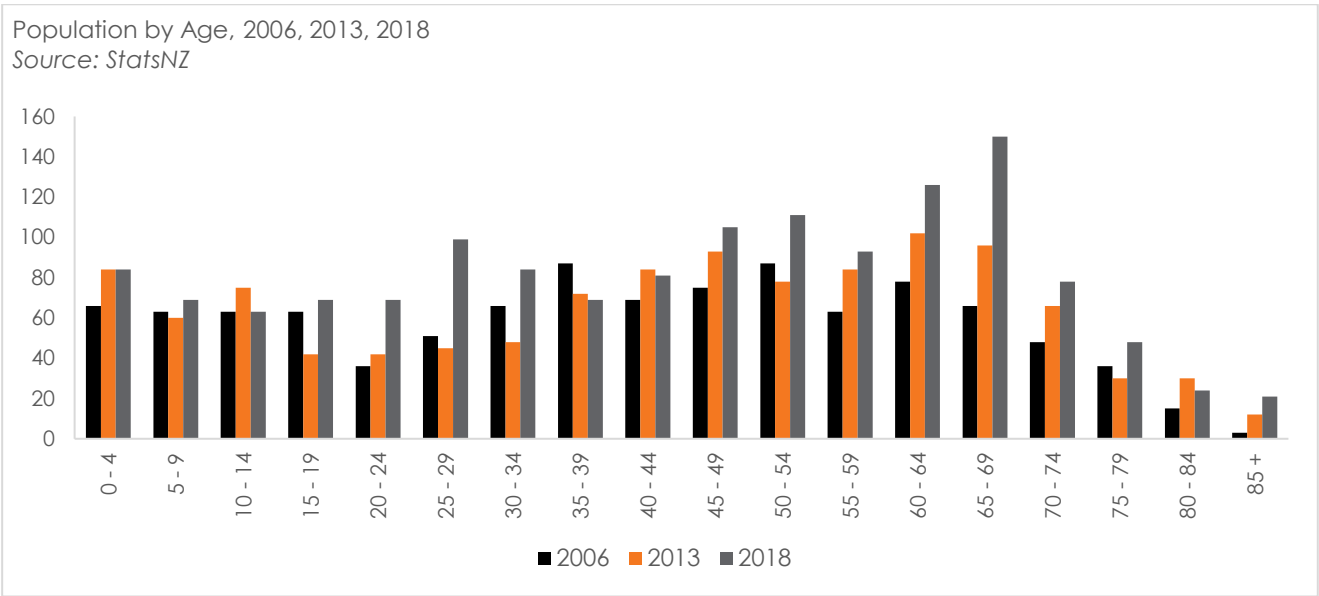


Figure 65. Twizel's population by age, 2006, 2013, 2018. Source: StatsNZ.

The below graph has been produced to calibrate the migration modelling used in these projections against the observed migration that is occurring. This provides an indication of model reliability.

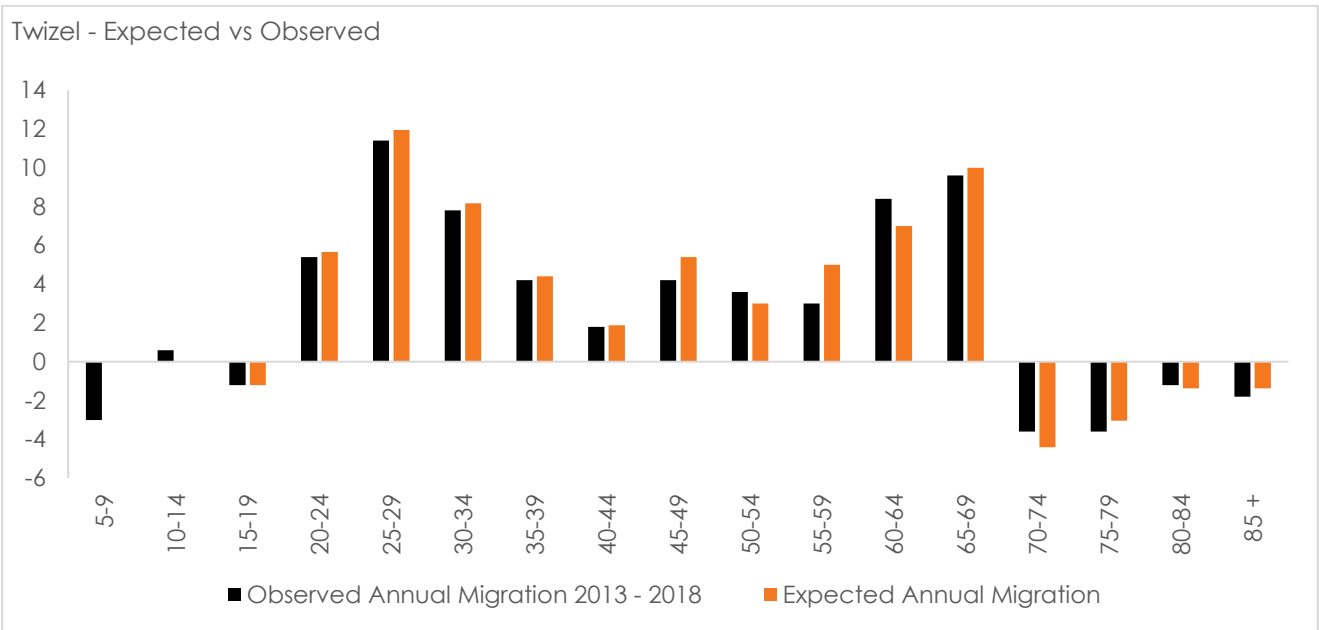


Figure 66. Twizel net migration check

12.3.2 COVID-19

Twizel will experience some level of impact due to COVID-19, however, this is unlikely be to the same extent as Mackenzie Lakes. This is due to less of a dependence on international tourism and the older age profile of the area.

It has been assumed that 25% of job losses will result in migration out of Twizel. Those leaving the area have been assumed to typically be in the younger working age people who are likely employed in accommodation and food services jobs. There has been no further adjustment to other migration drivers.

12.3.3 OUPUT

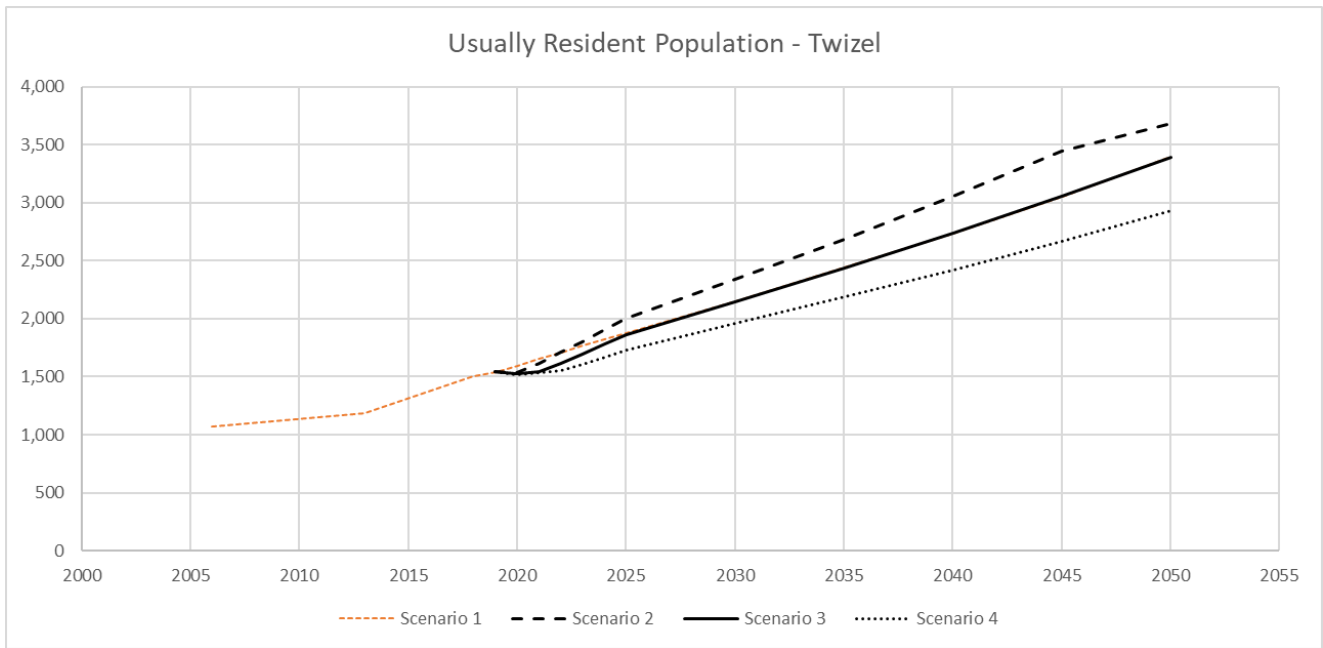


Figure 67. Twizel's usually resident population.

12.4 Dwelling Projections

12.4.1 ASSUMPTIONS

Twizel likely to reach dwelling capacity (if development continues in the same manner as it is today) by approximately 2040. Following Twizel reaching capacity it is assumed that household size will increase and unoccupied dwellings will become occupied (as per methodology in main section).

12.4.2 OUPUT

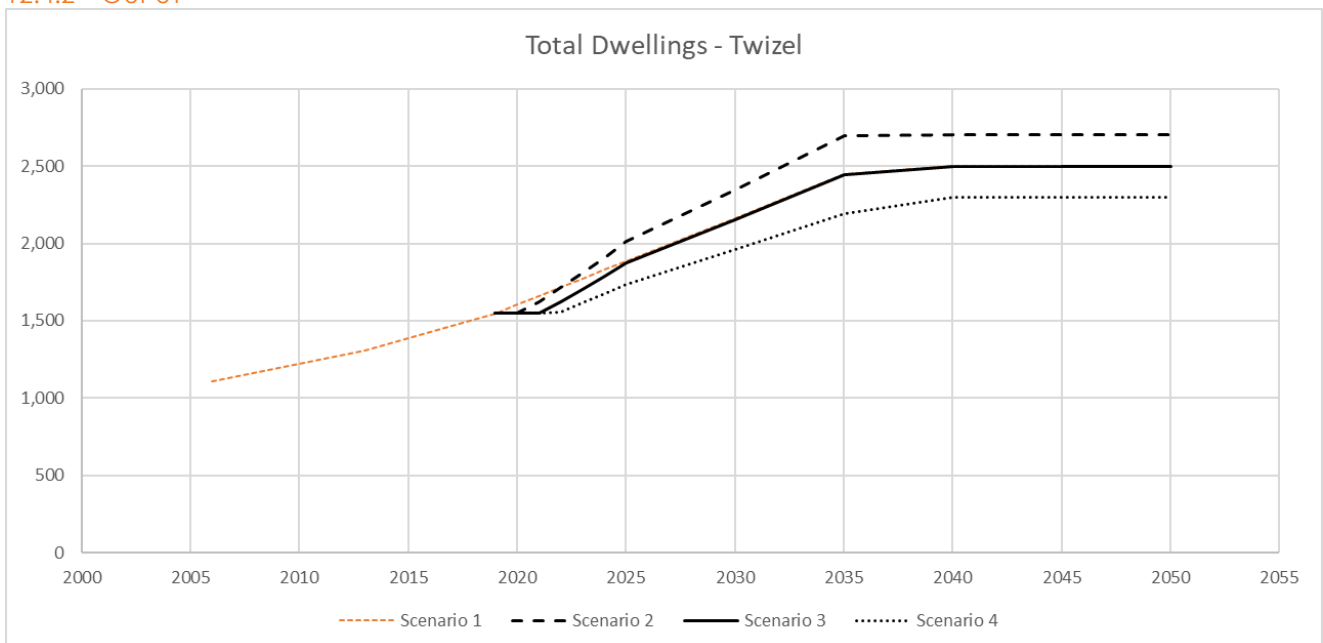


Figure 68. Total dwelling projections in Twizel.

12.5 Visitor Projections

After a reduction due to COVID19, the number of visitors to Twizel are expected to continue to increase as the borders open back up and international travel resumes previous levels.

12.5.1 ASSUMPTIONS

No further assumptions to those outlined earlier in the report have been made. These assumptions are available in Section 7.

12.5.2 OUPUT

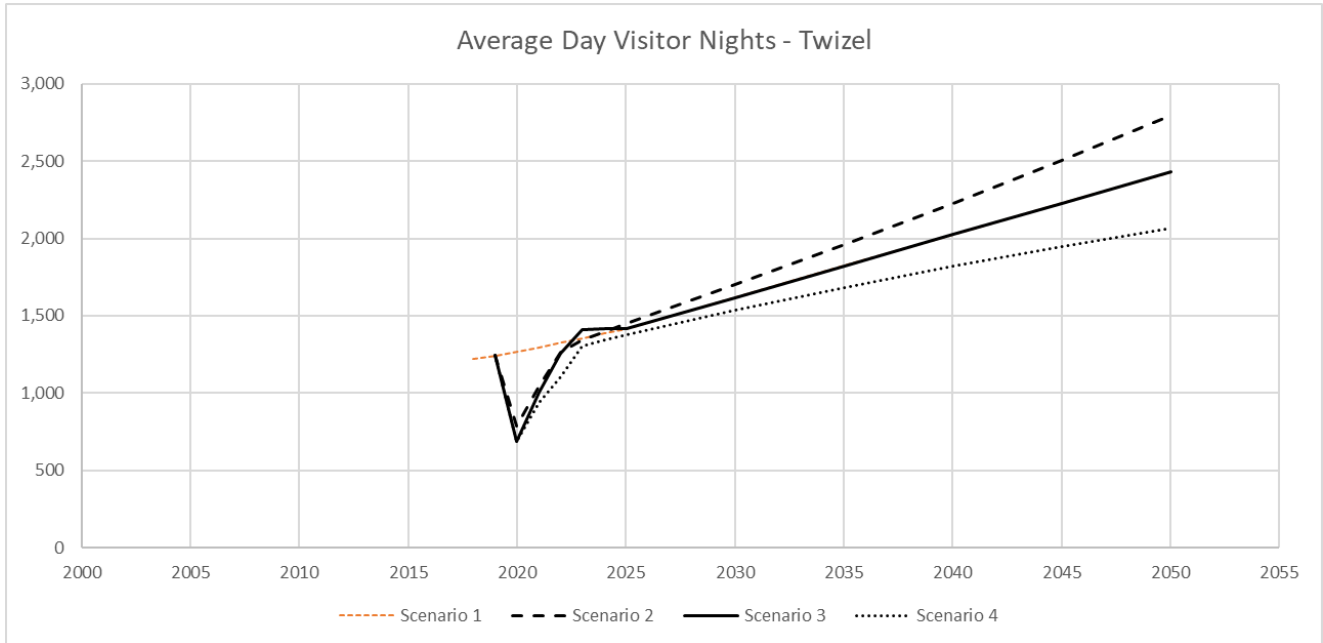


Figure 69. Average day visitor nights.

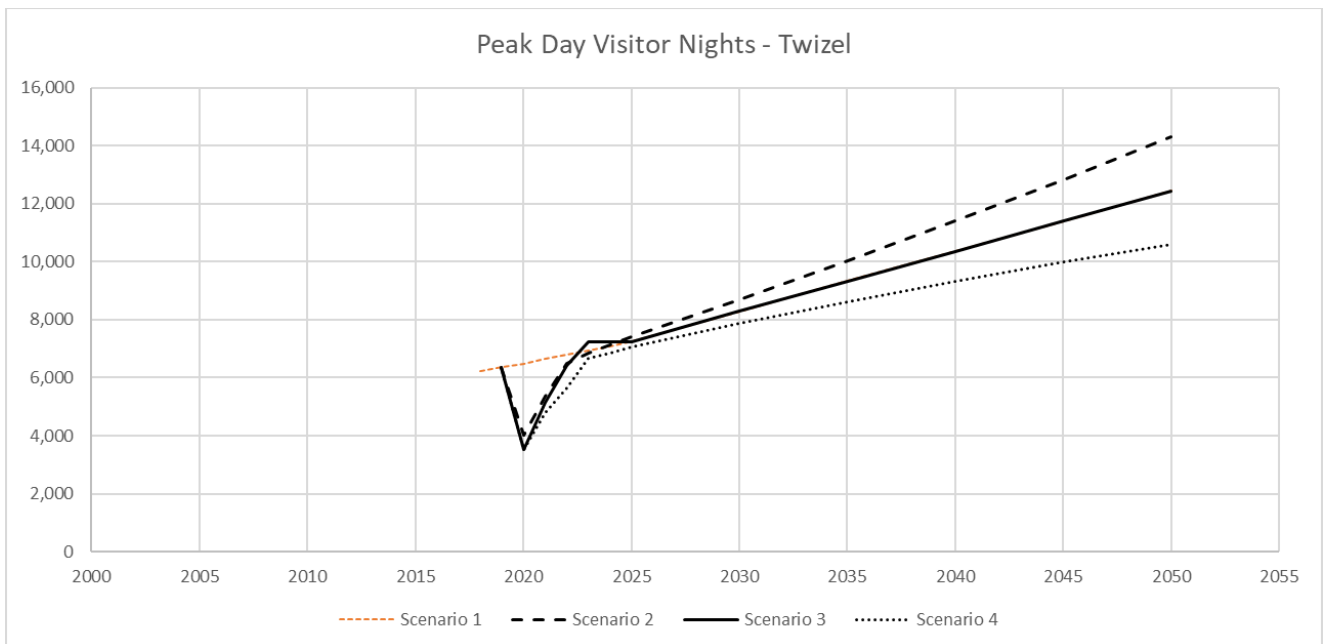


Figure 70. Peak day visitor numbers.

12.6 Rating Units

12.6.1 ASSUMPTIONS

No assumptions have been made regarding Rating Units in Twizel.

12.6.2 OUPUT

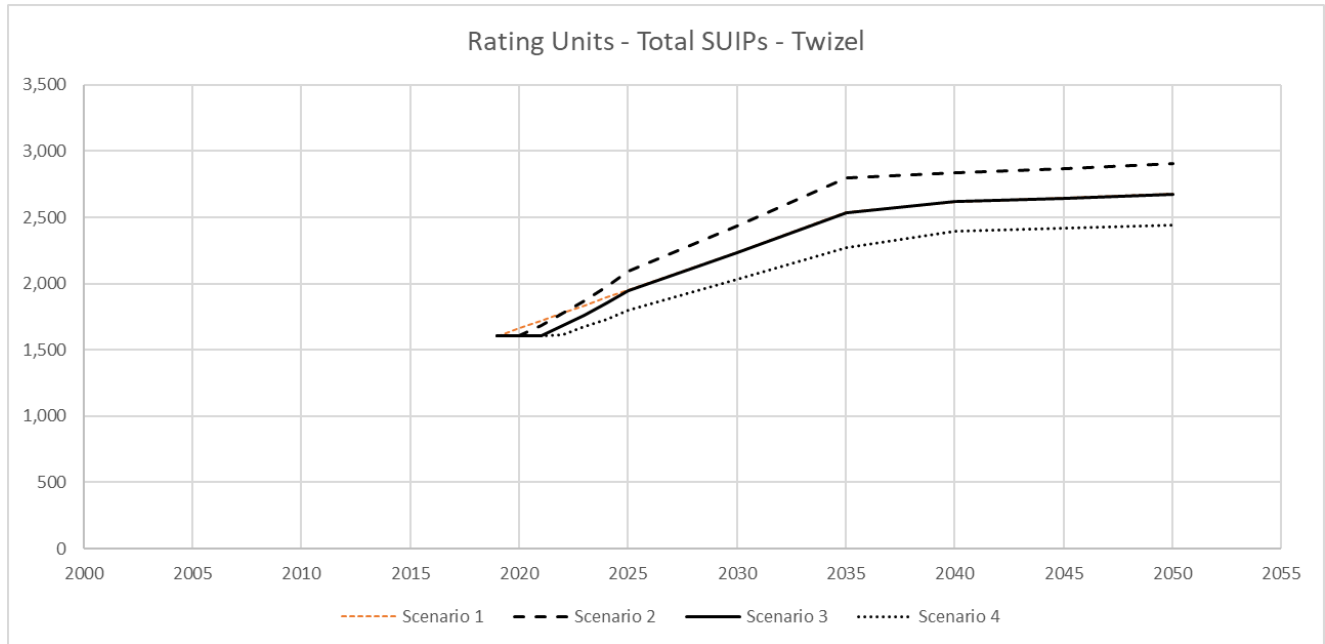


Figure 71. Total Rating Units in Twizel.

13 Appendix E: Growth Projections Methodology Summary

