

QUEENSTOWN AND WANAKA TRAFFIC SURVEYS

Prepared for Queenstown Lakes District Council

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Queenstown Lakes District Council

Queenstown and Wanaka Traffic Surveys

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1 Introduction

The purpose of this report is to provide the results of the 2016 Queenstown and Wanaka traffic surveys. The following traffic surveys and parking surveys were undertaken on Wednesday 06 April 2016:

- Modal Splits
- Vehicle Occupancy
- Travel Time Surveys
- Parking

2 Queenstown Traffic Surveys

Modal split, vehicle occupancy and travel time surveys were undertaken in Queenstown over a four hour survey period between 7am and 11am on the morning of Wednesday 6th April 2016. The survey is a continuation of the annual series that has now been running for the past eight years (since 2009).

The methodology adopted for the surveys is a repetition of the same methodology established for the previous surveys; this allows a means of direct comparison of the results of previous surveys and of any exhibiting trends. The results of the survey are presented below.

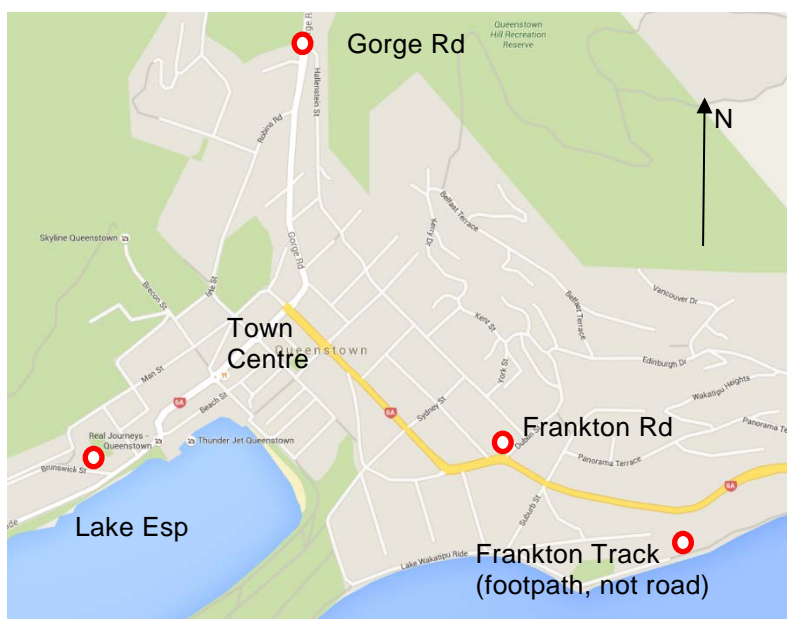
2.1 Queenstown Modal Split Survey

Modal split surveys were taken to count differing means of travel, namely; car, bus, bicycle, pedestrian and the number of travellers using each mode of travel. The locations for the modal split counts in Queenstown, are shown below, and results from the survey can be found in Appendix 1 – Queenstown Traffic Survey Results:

- **Gorge Road** - intersection with Bowen Street
- **Frankton Road** – intersection with Dublin Street
- **Lake Esplanade** – intersection with Brunswick Street

In addition to the above sites a survey was taken to record the number of pedestrians and cyclists heading towards Queenstown, coming off of the Frankton Track onto Park Street. The volume of travellers was higher than previous years, as shown in Appendix 1 – Queenstown Traffic Survey Results.

Figure 2-1 : Queenstown Traffic Survey – Map of Modal Split Survey Locations



2.1.1 Summary of Results

It is evident from the counts that the overall proportions of the differing modes of travel remains consistent, with only minor variations from previous years.

There has been an increase in travellers across all modes, but the most significant increase in volumes are for cars and pedestrians with an increase of 18% and 27% respectively when compared with the three previous years.

The surveyors have marked that many of these have been school buses or coaches, possibly related to a school trip therefore could be considered an outlier. Seven school buses were recorded at the intersection of Frankton Road and Dublin Street between 8:16am and 8:45am, travelling along Frankton Road, with at least 40 passengers each.

Cyclist numbers remain fairly consistent with previous years, with an increase in 6% over the previous three years. It is clear that the peak travel time is between 08:00 and 09:00, as this contains 34% of the traffic over the four hour period, and includes 50% of the cyclists travelling over the survey period. It was noted that pedestrian volumes have increased since last year, which has been consistent with previous year's data.

Lake Esplanade also shows the greatest fluctuation in the number of cars and pedestrians over the years, where the increase in one is directly related to a decrease in the other. This may be due to variations in the weather and the uptake of rental vehicles, if it is being driven by the number of tourists in residence at the time.

Previous reports suggest a spike in vehicle traffic in 2014, however there are still more cars over the 2016 survey period than any other year. This being the case, we suggest that 2015 was a negative spike, and that there has been an exponential increase in traffic since 2011, with car volumes at 4140, 4840, 4910, 5790, 5090, 5880 between 2011 and 2016 respectively. If this increase continues over the next few years, Levels of Service within the city centre may cause significant delays to the road network.

The count recorded for Frankton Track/Park Street exit appears very high compared with previous years. An observation made by the surveyor was that all of the pedestrians and cyclists using this route appeared to be for recreational use, as opposed to commuting for professional reasons. The track appears to be suitable for trail bikes only and not road bikes.

The data collected in 2016 includes a count of the total number of people using each type of transport mode. The information is shown in pie charts in **Figure 6** in Appendix 1 – Queenstown Traffic Survey Results.

As per the 2015 survey, and the charts appended to this year's survey there are significantly fewer travellers coming into Queenstown along Gorge Road by bus, foot or bicycle. This may be attributed to the fact that there are fewer residential dwellings to the north of Queenstown with increased travel distances and less frequent buses. Further to this, it is colder in the valley where Gorge Road is located, therefore it may be a less desirable location to travel outside or wait for a bus. There are also fewer recreational activities for both tourists and locals in this direction.

Refer to Appendix 1 – Queenstown Traffic Survey Results for the details.

2.2 Queenstown Vehicle Occupancy Survey

The number of passengers in each vehicle was counted, and using a base rate of four seats per vehicle, the rate of vehicle occupancy was calculated. The results can be found in Appendix 1 – Queenstown Traffic Survey Results.

2.2.1 Summary of results

There is a 4% increase in average passengers per vehicle between 2015 and 2016. This has resulted in 231 fewer cars on the road over the 4 hour survey period, based on a total of 5,877 vehicles. Despite this increase in vehicle occupancy there has still been a significant increase in total vehicles of 789

since last year. Except for 2014 when vehicle occupancy was observed to be 1.53 people per vehicle, which is the highest since surveys began in 2009.

It was noted during the occupancy surveys that there were some difficulties obtaining an accurate count in some instances due to the lack of early morning light and tinted windows. This was particularly the case with buses, as some windows were heavily tinted.

2.3 Queenstown Travel Time Survey

Travel time surveys were undertaken in Queenstown to determine current journey times for traffic travelling towards the Queenstown CBD between the points that have been established during the previous surveys from 2009 through to 2015.

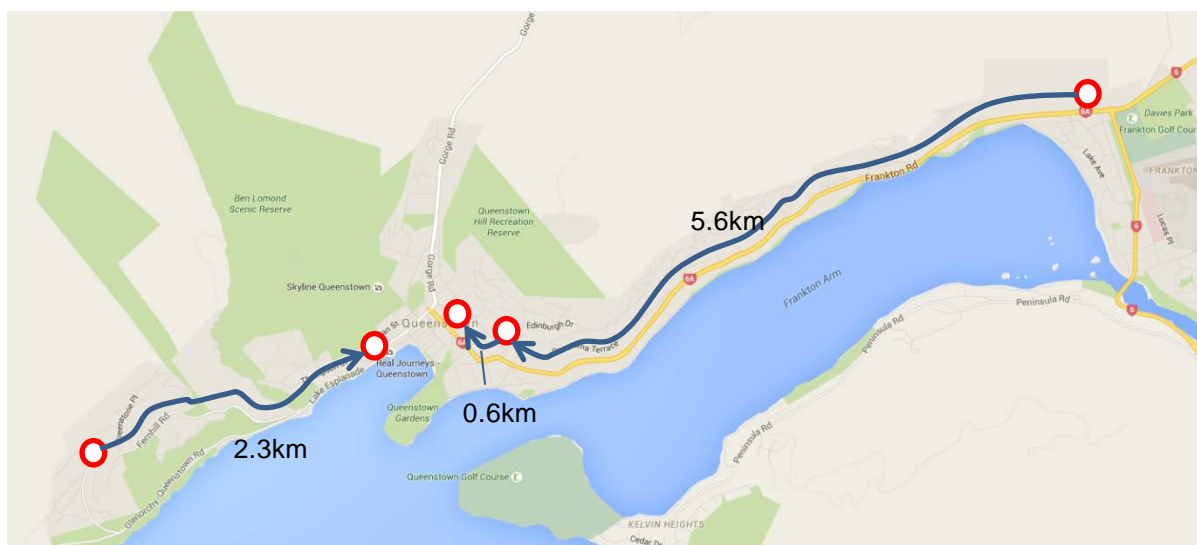
As in earlier surveys the passing times of all white cars and Connectabus were recorded at the survey points together with the first three characters of their licence plates. Once all the data had been collected it was collated and matching plates were identified and the times passing differing survey points used to calculate the journey times between.

The survey was carried out over a period of four hours between 7am and 11am.

The travel time survey locations were as follows:

- **Frankton Road**
 - o Frankton Road junction with Kawarau Road, exiting roundabout onto Frankton Road towards Queenstown.
 - o Frankton Road junction with Dublin Street, passing intersection on Frankton Road heading towards Queenstown.
 - o Stanley Street junction with Ballarat Street, exiting roundabout onto Stanley Street towards Shotover Street.
- **Fernhill Road – Lake Esplanade**
 - o Fernhill Road, Shops at junction with Richards Park Lane, passing intersection heading towards Queenstown.
 - o Lake Esplanade junction with Brunswick Street, approaching intersection along Lake Esplanade heading towards Queenstown.

Figure 2-2 : Queenstown Traffic Survey - Travel Time, Map of Survey Locations and Distances



A summary of the results of the 2016 travel time surveys are shown in Appendix 1 – Queenstown Traffic Survey Results with the average times recorded in previous years for comparison.

2.3.1 Summary of results

The results show no obvious trend in travel time travelling into Queenstown. Although the average time between Dublin Street and Ballarat Street has increased by 28 seconds since 2015, and a further 36 seconds since 2014, the surveys carried out between 2009 and 2012 are mixed and don't support a trend.

The results show that the average travel time recorded for Connectabuses in 2016 has remained comparable with travel times from previous surveys along Frankton Road, but have decreased by a significant margin between Fernhill and Lake Esplanade.

The year on year average travel times appear to vary in such a way that there is a trend for decreased travel time from Fernhill to Lake Esplanade and a possible decreasing trend along Frankton Road. Reasons for these improvements could be due to improvements in technology or systems used by Connectabus. The survey suggests that there has been a slight increase in number of buses in 2016, although this result includes tourist coaches and should be considered accordingly.

It was identified during the travel time survey that due to a lack of early morning light it is sometimes difficult to distinguish between white and silver vehicles, poor licence plate lighting, dirty licence plates and cycle racks also obscured licence plates on some vehicles.

3 Queenstown Parking Survey

The objective of the parking survey is to allow Council to report on the availability of short stay parking in the town centre. This year the survey was carried out on Wednesday 6th April, although there is a desire by Council to undertake the survey in March every year for consistency.

The survey methodology for determining parking availability involved counting the number of available and occupied parking spaces in sections as detailed in Appendix 2, Table 9. This process was carried out at 10am, 1pm and 4pm. Weekends, public holidays and Mondays and Fridays are avoided because it has been suggested that these might not provide typical results. This methodology again follows the same methodology that has been undertaken in previous years.

Refer to Appendix 2 – Queenstown Parking Survey for graphs summarising the results.

3.1.1 Summary of results

Overall, parking spaces were 91% occupied for the duration of the day with an increase in availability of 4% between 10am and 1pm and 12% between 1pm and 4pm.

The data in Figure 7 shows that other than the Man Street off-street parking building, few other sections have parking spaces available. Without the Man Street car park, many commuters may have to use alternative methods of transportation or find parks in residential locations.

The spaces with the highest availability were Man Street off-street parking lot (225 spaces available), Church Street Carpark (18+ spaces available), Ballarat Street Carpark (10+ spaces available) and Ballarat off-street carparks (9+ spaces available).

10:00am was the time of day with the fewest number of available spaces with 325 free out a total of 1,698 parking spaces. 338 were available at 1:00pm and 568 were available at 4:00pm.

At 10am, 14 of the 38 parking locations had no parking spaces available, and nine locations had one space available.

No differences were observed when comparing the parking spaces in the town centre with the periphery spaces.

It is noted that there were some parking spaces made unavailable on the day of the survey, due to a market being held within the parking area, and construction taking place in another parking lot. The

affected parking spaces were Marine Parade (between the Mall and Church Street), and Beach Street (between Rees Street and Camp Street).

4 Wanaka Traffic Surveys

The same methodology for the Queenstown survey was applied to Wanaka. Modal split, vehicle occupancy and travel time surveys were undertaken over a four hour survey period between 7am and 11am on the morning of Wednesday 6th April 2016. The survey is a continuation of the annual series that has now been running for the past eight years (since 2009).

- Modal Splits
- Vehicle Occupancy
- Travel Time Surveys

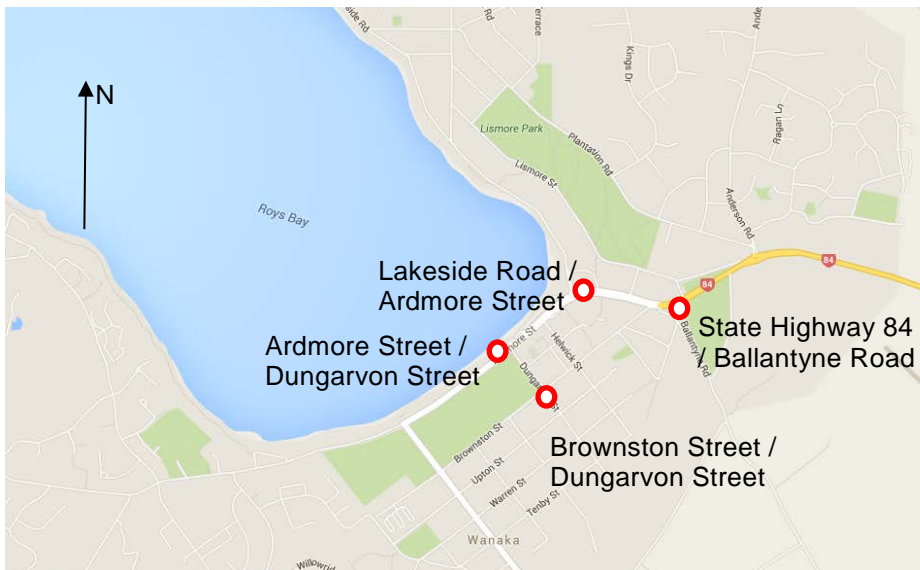
4.1 Wanaka Modal Split Survey

Modal split surveys were taken to count differing means of travel, namely; car, bus, bicycle, pedestrian and in addition to identify the number of travellers using each mode of travel:

- Ardmore Street intersection with Lakeside Road
- Ardmore Street intersection with Dungarvon Street
- Brownston Street intersection with Dungarvon Street
- State Highway 84 intersection with Ballantyne Road

The results of the modal split counts in Wanaka for the following four locations are shown in Appendix 3 – Wanaka Traffic Survey.

Figure 4-1 : Wanaka Traffic Surveys - Map of Modal Split Survey Locations



4.1.1 Summary of Results

A significantly lower volume of vehicles were observed during the 2016 survey period when compared to previous years. There are no obvious trends between the different surveys over the past seven years, as the results fluctuate heavily up and down.

Cycling is popular along Lakeside Road, while walking is more popular on Lakeside Road and State Highway 84 (SH84). The surveyors might not have recorded as many pedestrians in other locations due to alternative walking routes available in the other locations, whereas the layout of northern Wanaka has arterials that concentrate the walking routes more than southern Wanaka.

Travellers commuting by car along SH84 have a much lower rate of occupancy than the other travelling routes – Lakeside Road has twice as many passengers per vehicle than SH84 between 8am and 9am.

The peak travel time changes with the different survey points; Lakeside Road and Brownston Street has half of the commuters over the four hour survey travelling between 8am and 9am, whereas at the intersection of Ardmore/Dungarvon Street 61% of the travellers were measured between 7am and 8am.

The different peak travel time could be weighted by those who travel for recreation before the business day. It is noted that the surveyors undertaking the modal split did not count the white cars, however, the white cars were recorded by the surveyors monitoring the travel time. The number of white cars recorded during the travel time survey has been added to the total quantity of cars and the occupancy and has been calculated using the average rate per section. This error has minimal effect on the results as the rate of occupancy per vehicle will have the same number of people per vehicle regardless of its colour.

4.2 Wanaka Vehicle Occupancy Survey

The number of passengers in each vehicle has been counted, and using a base rate of four seats per vehicle, the rate of vehicle occupancy was calculated. The results can be found in Appendix 3 – Wanaka Traffic Survey.

4.2.1 Summary of results

There is an 18% increase in average passengers per vehicle between 2015 and 2016. However, the 2015 results appear to represent a dip in the trend, which is generally increasing at a rate of 2% each year. This increase is equivalent to 60 fewer cars each year using a constant volume of 3,000 travellers.

It was noted during the occupancy surveys that there were some difficulties obtaining an accurate count in some instances due to a lack of early morning light and tinted windows. This was particularly the case with buses, as some windows were heavily tinted.

4.3 Wanaka Travel Time Survey

Travel time surveys were undertaken in Wanaka to determine current journey times for traffic travelling towards the Wanaka CBD between the points that have been established during the previous survey years from 2010 through to 2015.

As in earlier surveys the passing times of all white cars and Connectabus were recorded at the survey points together with the first three characters of their licence plates. Once all the data had been collected it was collated and matching plates were identified and the times passing differing survey points used to calculate the journey times between.

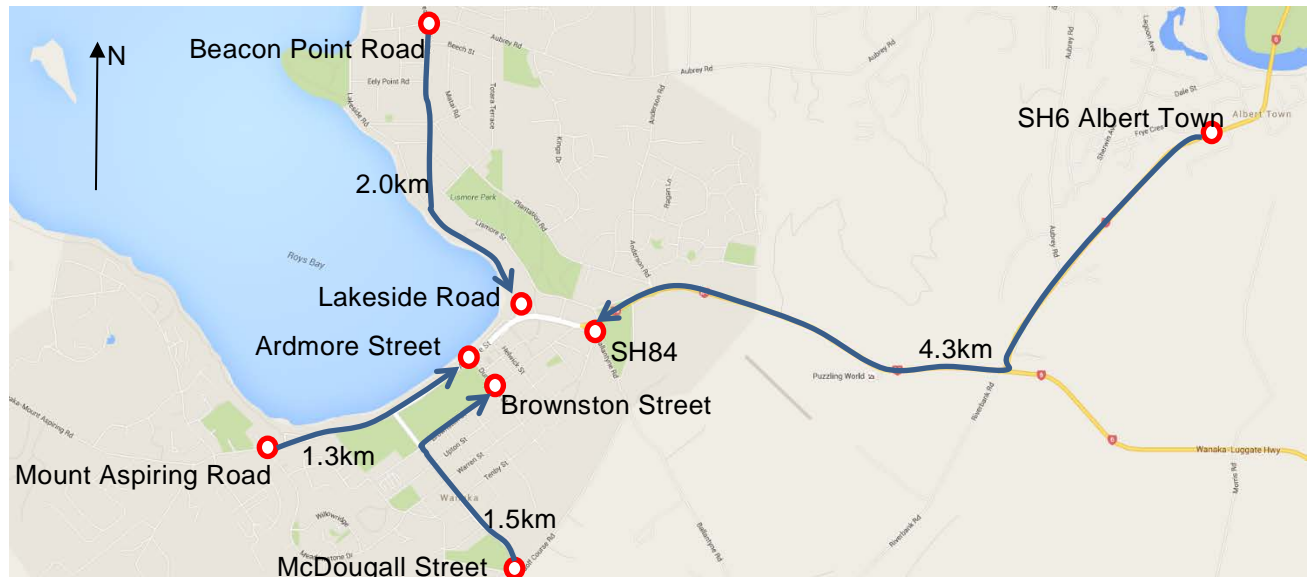
The survey was carried out over a period of four hours between 7am and 11am.

Travel time survey points were as follows:

- **McDougall Street:** McDougall Street junction with Golf Course Road, vehicles passing intersection on McDougall Street heading towards Wanaka.
- **Brownston Street:** Brownston Street Junction with Dungarvon Street, vehicles entering junction on Brownston Street heading towards Wanaka.
- **Mount Aspiring Road:** Mount Aspiring Road junction with Meadowstone Drive, vehicles passing intersection on Mount Aspiring Road heading towards Wanaka.
- **Ardmore Street:** Ardmore Street Junction with Dungarvon Street, vehicles passing intersection on Ardmore Street heading towards Wanaka.
- **Beacon Point Road:** Beacon Point Road junction with Aubrey Road, vehicles passing intersection on Beacon Point Road heading towards Wanaka.
- **Lakeside Road:** Lakeside Road junction with Ardmore Street, vehicles entering roundabout from Lakeside Road heading towards Wanaka.

- **SH6 Albert Town:** SH6 Albert Town junction with Ash Avenue, vehicles passing intersection on SH6 heading towards Wanaka.
- **SH84:** SH84 junction with Ballantyne Road, vehicles passing intersection on SH84 heading towards Wanaka.

Figure 4-2 : Wanaka Traffic Survey - Travel Time, Map of Survey Locations and Distances



4.3.1 Summary of results

The results as shown in Appendix 3 – Wanaka Traffic Survey show that there is a slightly increasing trend for travel time surveys over the last seven years although there are minor fluctuations each year. This is somewhat surprising as the volume of vehicles recorded has reduced.

There are minor increases in travel time for the following routes:

- State Highway 6 Albert Town to State Highway 84 (average increase in travel time of 7 seconds per year in the previous three years).
- McDougall Street to Brownston St (average increase in travel time of 14 seconds per year in the previous three years).

It was identified during the travel time survey that a lack of early morning light sometimes made it difficult to distinguish between white and silver vehicles; poor licence plate lighting, dirty licence plates and cycle racks also obscured licence plates on some vehicles.

5 Wanaka Parking Survey

This is the first year that the Wanaka parking survey have been undertaken under MWH's supervision since 2010. It was decided to use the same parking survey methodology as 2010 for Wanaka, as this would provide more data analysis.

The survey was aimed at being repeated every 15 minutes between 8:30am and 3pm, but due to the high volume of parked vehicles, the surveyors were only able complete a circuit of the survey route every 30-60 minutes. Each surveyor recorded the first three letters or numbers on the license plate for each parked car, or otherwise marked that a parking space was vacant.

The method for surveying the parking in Wanaka has been done differently than the parking survey methodology in Queenstown in order to be consistent with the last Wanaka parking survey, which was carried out in 2010.

Limitations of current methodology:

- Discrepancies in the filling out of the data in the rows between morning and afternoon survey sheets. Some sheets had reversed or scrambled the order of the parking spaces between am and pm sheets. This error resulted in errors for the parking duration between survey sheets, and some sheets could be made redundant. The percentage of occupied and available parking spaces were not affected by this error. For future surveys we recommend using a reference ID for each of the parking spaces and strict surveying routes to minimise the risk of inaccurate data capture.
- As per the methodology set out in previous surveys, the surveyors were not able to complete each survey every 15 minutes. This was not possible, as the surveyors were required to record licence plates for approximately 220 cars across a distance of 1.5km for seven hours, this survey was estimated and planned to be completed every 15 minutes, but in reality took between 30 minutes to one hour. This resulted in data being inaccurate for cars parked for short durations, however is still as accurate as the surveys carried out in Queenstown which were repeated in 2-hourly intervals. For future surveys, we recommend revising the methodology of this survey and either increasing the number of surveyors from 3 to 6 or revising the methodology.

Parking locations in the survey include:

- Brownston Street and Brownston Street car park,
- Dunmore Street and Dunmore Street car park,
- Brownston Street and Brownston Street car park,
- Ardmore Street and Ardmore Street car park,
- New World car park.

Figure 5-1. Wanaka Parking Survey - Map of Parking Spaces Surveyed



5.1.1 Summary of results

As shown in Appendix 4 – Wanaka Parking Survey, between 10:30am and 1pm most car parks were likely to be full or had fewer than 1 in 20 spaces free.

The average rate of occupancy in the parking spaces was 73% occupied.

Overall, 12.5% of cars are parked for a duration longer than the posted time restriction.

6 APPENDICES

6.1 Appendix 1 – Queenstown Traffic Survey Results

Table 1 Queenstown Traffic Survey – Modal Split Results Summary

Location	Time Period	Car	Pax	Occ%	Bus	Pax	Pedestrian	Cyclist
Gorge Road	07:00-08:00	203	222	27%	16	16	3	3
	08:00-09:00	531	703	33%	12	68	6	7
	09:00-10:00	340	431	32%	13	39	6	1
	10:00-11:00	203	302	37%	4	41	18	0
	Total	1,277	1,658	32%	45	164	33	11
Frankton Road	07:00-08:00	522	668	32%	13	28	44	5
	08:00-09:00	696	1185	43%	14	344	49	13
	09:00-10:00	606	984	41%	17	193	40	6
	10:00-11:00	803	1029	32%	15	69	67	5
	Total	2,627	3,866	37%	59	634	200	29
Lake Esplanade	07:00-08:00	552	697	32%	20	309	80	4
	08:00-09:00	605	930	38%	13	200	202	13
	09:00-10:00	362	611	42%	5	52	188	6
	10:00-11:00	363	602	41%	5	51	262	3
	Total	1,882	2,840	38%	43	612	732	26
2016 Overall Total		5,786	8,364	36%	147	1,410	965	66
2015 Overall Total		5,088	7,130	35%	123	1,067	814	60
2014 Overall Total		5,786			137		718	62
2013 Overall Total		4,914			145		746	64
2012 Overall Total		4,835			105		628	73
2011 Overall Total		4,143			76		358	51
2010 Overall Total		4,609			118		684	47
2009 Overall Total		4,925			152		679	101

Table 2. Queenstown Traffic Survey - Modal Split, Proportion of Vehicles 2016

Location	Time Period	Car	Bus	Cyclist	Pedestrian
Gorge Road	07:00-08:00	91%	7%	1%	1%
	08:00-09:00	90%	9%	1%	1%
	09:00-10:00	90%	8%	1%	0%
	10:00-11:00	84%	11%	5%	0%
	Average	89%	9%	2%	1%
Frankton Road	07:00-08:00	90%	4%	6%	1%
	08:00-09:00	74%	22%	3%	1%
	09:00-10:00	80%	16%	3%	0%
	10:00-11:00	88%	6%	6%	0%
	Average	83%	12%	4%	1%
Lake Esplanade	07:00-08:00	64%	28%	7%	1%
	08:00-09:00	69%	15%	15%	1%
	09:00-10:00	71%	6%	22%	1%
	10:00-11:00	66%	6%	29%	0%
	Average	67%	14%	18%	1%
Overall Average		80%	11%	8%	1%

Table 3. Queenstown Traffic Survey - Modal Split, Overall Proportion of Vehicles Year on Year

Location	Time Period	Car	Bus	Pedestrian	Cyclist
Gorge Road	2016	94%	3%	2%	1%
	2015	94%	2%	3%	1%
	2014	95%	2%	2%	1%
	2013	94%	4%	2%	1%
	2012	94%	2%	3%	1%
	2011	94%	2%	3%	1%
	2010	92%	4%	3%	1%
	2009	92%	3%	2%	1%
Frankton Road	2016	93%	2%	4%	1%
	2015	93%	2%	5%	1%
	2014	90%	2%	8%	1%
	2013	91%	2%	6%	1%
	2012	92%	1%	6%	1%
	2011	93%	2%	5%	1%
	2010	94%	1%	5%	0%
	2009	90%	2%	5%	2%
Lake Esplanade	2016	80%	2%	18%	1%
	2015	82%	3%	13%	2%
	2014	76%	2%	21%	1%
	2013	70%	2%	27%	1%
	2012	74%	2%	22%	2%
	2011	81%	1%	17%	2%
	2010	70%	2%	27%	1%
	2009	84%	3%	12%	2%
Overall Average(year on year)		88%	2%	9%	1%

Table 4. Queenstown Traffic Survey - Modal Split, Proportion of Travellers 2016

Location	Time Period	Car	Bus	Pedestrian	Cyclist	Hourly Total
Gorge Road	07:00-08:00	222	16	3	3	244
	08:00-09:00	703	68	6	7	784
	09:00-10:00	431	39	6	1	477
	10:00-11:00	302	41	18	0	361
	Total Travellers	1,658	164	33	11	1,866
	Modal Proportion	89%	9%	2%	1%	100%
Frankton Road	07:00-08:00	668	28	44	5	745
	08:00-09:00	1,185	344	49	13	1591
	09:00-10:00	984	193	40	6	1223
	10:00-11:00	1,029	69	67	5	1170
	Total Travellers	3,866	634	200	29	4729
	Modal Proportion	82%	13%	4%	1%	100%
Lake Esplanade	07:00-08:00	697	309	80	4	1,090
	08:00-09:00	930	200	202	13	1,345
	09:00-10:00	611	52	188	6	857
	10:00-11:00	602	51	262	3	918
	Total Travellers	2,840	612	732	26	4,210
	Modal Proportion	67%	15%	17%	1%	100%
Overall Total Travellers		8,364	1410	965	66	10,805
Overall Modal Proportion		77%	13%	9%	1%	100%

Table 5. Queenstown Traffic Survey - Modal Split, Frankton Track

Pedestrians and Cyclists counted exiting from the Frankton Track onto Park Street, Wednesday 6th April 2016		
Time	Pedestrian	Cyclist
07:00-08:00	34	5
08:00-09:00	15	22
09:00-10:00	19	8
10:00-11:00	22	5
2016 Total	90	40
2015 Total	9	0
2014 Total	55	33
2013 Total	36	27
2012 Total	27	17
2011 Total	40	25
2010 Total	42	27
2009 Total	44	28

Figure 2. Queenstown Traffic Survey - Modal Split, Mode of Travel

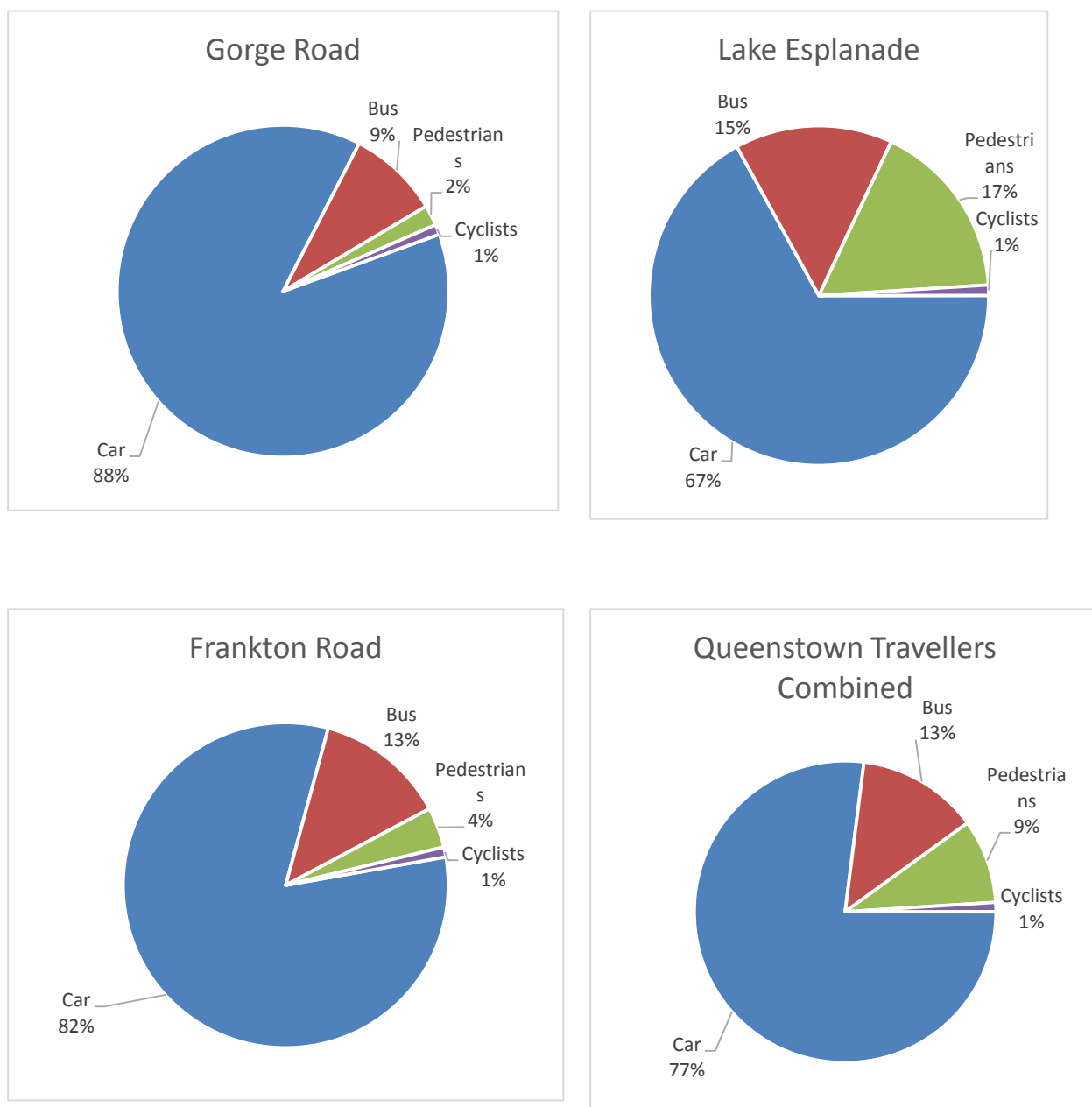


Table 6. Queenstown Traffic Survey - Vehicle Occupancy, Average Number of Occupants per Vehicle

Location	Average passengers per vehicle							
	2016	2015	2014	2013	2012	2011	2010	2009
Gorge Road	1.35	1.32	1.47	1.34	1.30	1.31	1.31	1.38
Frankton Road	1.47	1.42	1.48	1.34	1.38	1.44	1.41	1.40
Lake Esplanade	1.54	1.45	1.65	1.56	1.57	1.41	1.45	1.47
Overall	1.45	1.39	1.53	1.41	1.42	1.40	1.40	1.42

Table 7. Queenstown Traffic Survey - Travel Time, White Vehicles Year on Year

Origin	Destination	2009 Average Travel Time	2010 Average Travel Time	2011 Average Travel Time	2012 Average Travel Time	2013 Average Travel Time	2014 Average Travel Time	2015 Average Travel Time	2016 Average Travel Time
Frankton Road Kawerau Road	Frankton Road / Dublin Street	5mins48s	5mins50s	6mins48s	4mins58s	5mins52s	5mins46s	6mins1s	6mins17s
Frankton Road Dublin Street	Stanley Street / Ballarat Street	1mins42s	1mins39s	1mins0s	2mins34s	*	0mins54s	1mins30s	1mins58s
Frankton Road Dublin Street	Stanley Street / Ballarat Street	7mins27s	7mins52s	8mins29s	7mins51s	*	6mins38s	7mins7s	7mins52s
Fernhill Road Richards Park Lane	Lake Esplanade / Brunswick Street	3mins34s	2mins52s	4mins27s	3mins26s	2mins48s	2mins54s	2mins57s	2mins40s

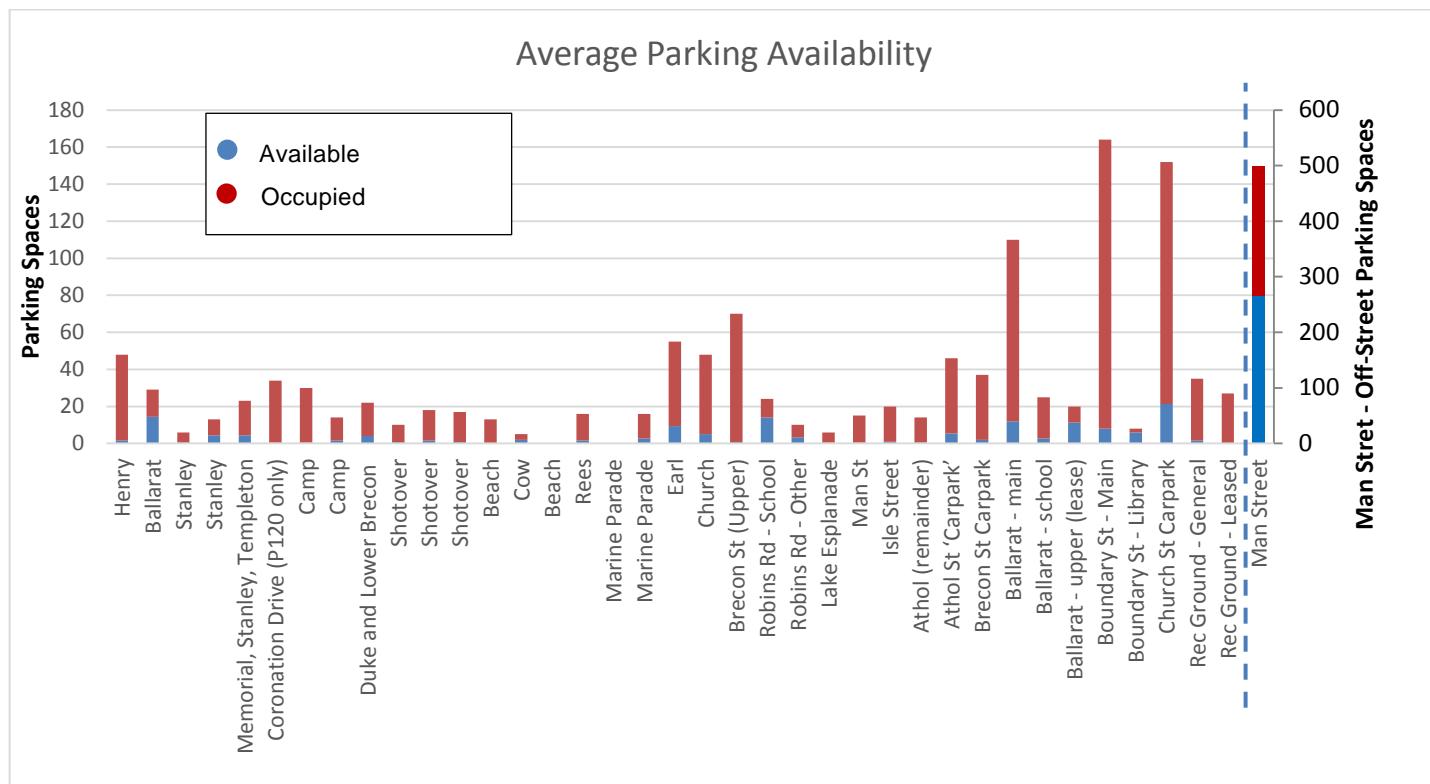
Table 8. Queenstown Traffic Survey - Travel Time, Connectabus Year on Year

Origin	Destination	2013 Average Travel Time	2014 Average Travel Time	2015 Average Travel Time	2016 Average Travel Time
Frankton Road / Kawerau Road	Frankton Road / Dublin Street	7mins55s	7mins20s	7mins0s	7mins8s
Fernhill Road / Richards Park Lane	Lake Esplanade / Brunswick Street	8mins50s	7mins46s	7mins36s	6mins17s

6.2 Appendix 2 – Queenstown Parking Survey

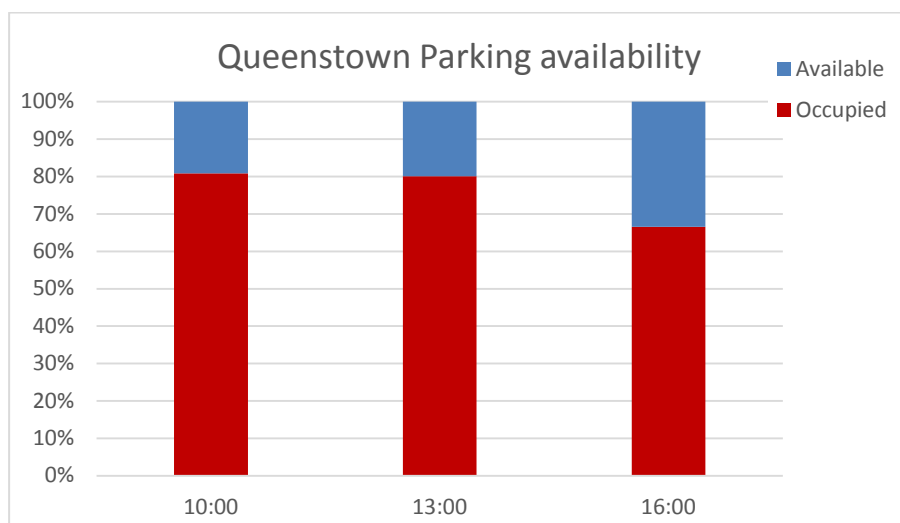
Table 9. Queenstown Parking Survey, Occupied and Available Parking Spaces

Lease / Public	TC/Periphery	Capacity	Street	On/Off Street	End point	End point	Counts of spare carparks			Vehicle counts		
							10:00	13:00	16:00	10:00	13:00	16:00
Public	TC	48	Henry	On	Gorge	Ballarat	2	0	3	46	48	45
Public	TC	29	Ballarat	On	Henry	Stanley	15	10	18	14	19	11
Public	TC	6	Stanley	On	Ballarat	Coronation	1	0	0	5	6	6
Public	TC	13	Stanley	On	Shotover	Ballarat	6	1	6	7	12	7
Public	TC	23	Memorial, Stanley, Templeton	On	Shotover	Camp	2	3	8	21	20	15
Public	TC	34	Coronation Drive (P120 only)	On	Stanley	Sydney	1	0	0	33	34	34
Public	TC	30	Camp	On	Earl	Church	0	0	1	30	30	29
Public	TC	14	Camp	On	Church	Shotover	1	3	1	13	11	13
Public	TC	22	Duke and Lower Brecon	On	Camp	Shotover	4	5	3	18	17	19
Public	TC	10	Shotover	On	Stanley	Camp	1	0	1	9	10	9
Public	TC	18	Shotover	On	Camp	Rees	0	1	4	18	17	14
Public	TC	17	Shotover	On	Rees	Beach	0	2	0	17	15	17
Public	TC	13	Beach	On	Shotover	Rees	0	0	0	13	13	13
Public	TC	5	Cow	On			1	1	4	4	4	1
Public	TC	4	Beach	On	Rees	Camp	Market					
Public	TC	16	Rees	On	Beach	The Mall	0	0	5	16	16	11
Public	TC	14	Marine Parade	On	The Mall	Church	Construction					
Public	TC	16	Marine Parade	On	Church	Earl	1	0	7	15	16	9
Public	TC	55	Earl	On	Camp	Marine Pde	1	4	23	54	51	32
Public	TC	48	Church	On	Camp	Marine Pde	3	8	4	45	40	44
Public	P	70	Brecon St (Upper)	On			0	1	1	70	69	69
Public	P	24	Robins Rd - School	On			8	18	16	16	6	8
Public	P	10	Robins Rd - Other	On			0	3	7	10	7	3
Public	P	6	Lake Esplanade	On	Lake	Brunswick	0	0	1	6	6	5
Public	TC	15	Man St	On			0	0	1	15	15	14
Public	P	20	Isle Street	On			0	1	2	20	19	18
Public	TC	14	Athol (remainder)	On	Shotover	Ballarat	1	0	0	13	14	14
Public	TC	46	Athol St 'Carpark'	Off	Shotover	Ballarat	7	2	7	39	44	39
Public	P	37	Brecon St Carpark	Off			1	1	4	36	36	33
Public	TC	110	Ballarat - main	Off			4	0	32	106	110	78
Public	TC	25	Ballarat - school	Off			3	1	4	22	24	21
Lease	TC	20	Ballarat - upper (lease)	Off			11	9	14	9	11	6
Public	P	164	Boundary St - Main	Off			2	2	20	162	162	144
Public	P	8	Boundary St - Library	Off			6	6	6	2	2	2
Public	TC	152	Church St Carpark	Off			18	19	27	134	133	125
Public	P	35	Rec Ground - General	Off			0	5	0	35	30	35
Lease	P	27	Rec Ground - Leased	Off			0	0	0	27	27	27
Public	TC	498	Man Street	Off			225	232	338	273	266	160

Figure 3. Queenstown Parking Survey - Average Parking Availability by Location


*Note – For easier visual analysis, the Man Street off-street parking uses the secondary vertical axis (on the right) as it has a significantly greater number of parking spaces than the other sections.

Figure 4. Queenstown Parking Survey – Average Parking Availability by Time



6.3 Appendix 3 – Wanaka Traffic Survey

Table 10. Wanaka Traffic Survey – Modal Split Results Summary

Location	Time Period	Car	Pax	Occ%	Bus	Pax	Pedestrian	Cyclist
SH84 / Ballantyne Road	07:00-08:00	155	193	31%	3	45	15	8
	08:00-09:00	204	259	32%	1	20	14	15
	09:00-10:00	169	215	32%	2	39	11	6
	10:00-11:00	180	224	31%	0	0	21	12
	Total	708	890	31%	6	104	61	41
Brownston Street / Dungarvon Road	07:00-08:00	66	99	38%	0	0	5	1
	08:00-09:00	97	170	44%	1	8	9	2
	09:00-10:00	76	113	37%	0	0	10	1
	10:00-11:00	62	91	37%	1	5	11	3
	Total	301	473	39%	2	13	35	7
Lakeside Street / Ardmore Street	07:00-08:00	47	74	40%	0	0	1	0
	08:00-09:00	129	289	56%	8	98	18	8
	09:00-10:00	84	153	46%	2	22	14	2
	10:00-11:00	91	161	44%	3	41	10	4
	Total	351	677	48%	13	161	43	14
Ardmore Street / Dungarvon Street	07:00-08:00	82	177	54%	5	60	11	5
	08:00-09:00	94	135	36%	0	0	2	0
	09:00-10:00	69	93	34%	0	0	4	0
	10:00-11:00	60	82	34%	0	0	3	1
	Total	304	486	40%	5	60	20	6
2016 Overall Total		1,664	2,527	40%	26	159	338	68
2015 Overall Total		2,669	3,505	38%	18	261	195	78
2014 Overall Total		3,484			18		195	97
2013 Overall Total		3,124			16		135	63
2012 Overall Total		3,401			29		147	74
2011 Overall Total		3,410			39		174	65
2010 Overall Total		3,826			47		248	88

Table 11. Wanaka Traffic Survey - Modal Split, Proportion of Vehicles 2016

Location	Time Period	Car	Bus	Pedestrian	Cyclist
SH84 / Ballantyne	07:00-08:00	73%	3%	16%	8%
	08:00-09:00	80%	1%	9%	10%
	09:00-10:00	86%	2%	8%	5%
	10:00-11:00	74%	0%	16%	9%
	Average	78%	1%	12%	8%
Brownston / Dungarvon	07:00-08:00	84%	0%	13%	3%
	08:00-09:00	82%	2%	14%	3%
	09:00-10:00	76%	0%	22%	2%
	10:00-11:00	69%	2%	22%	6%
	Average	78%	1%	18%	4%
Lakeside / Ardmore	07:00-08:00	96%	0%	4%	0%
	08:00-09:00	69%	7%	16%	7%
	09:00-10:00	68%	4%	25%	4%
	10:00-11:00	67%	6%	20%	8%
	Average	75%	4%	16%	5%
Ardmore / Dungarvon	07:00-08:00	71%	7%	15%	7%
	08:00-09:00	95%	0%	5%	0%
	09:00-10:00	87%	0%	13%	0%
	10:00-11:00	80%	0%	15%	5%
	Average	83%	2%	12%	3%
Overall Average		79%	2%	15%	5%

Table 12. Wanaka Traffic Survey - Modal Split, Proportion of Travellers 2016

Location	Time Period	Car	Bus	Pedestrian	Cyclist	Hourly Total
SH84 / Ballantyne	07:00-08:00	179	45	15	8	247
	08:00-09:00	252	20	14	15	301
	09:00-10:00	240	39	11	6	296
	10:00-11:00	201	0	21	12	234
	Total Travellers	871	104	61	41	1077
	Modal Proportion	81%	10%	6%	4%	100%
Brownston / Dungarvon	07:00-08:00	73	0	5	1	79
	08:00-09:00	145	8	9	2	164
	09:00-10:00	81	0	10	1	92
	10:00-11:00	82	5	11	3	101
	Total Travellers	381	13	35	7	436
	Modal Proportion	87%	3%	8%	2%	100%
Lakeside / Ardmore	07:00-08:00	49	0	1	0	50
	08:00-09:00	278	98	18	8	402
	09:00-10:00	117	22	14	2	155
	10:00-11:00	104	41	10	4	159
	Total Travellers	549	161	43	14	767
	Modal Proportion	72%	21%	6%	2%	100%
Ardmore / Dungarvon	07:00-08:00	239	60	11	5	315
	08:00-09:00	101	0	2	0	103
	09:00-10:00	55	0	4	0	59
	10:00-11:00	40	0	3	1	44
	Total Travellers	434	60	20	6	520
	Modal Proportion	83%	12%	4%	1%	100%
Overall Total Travellers		2,235	338	159	68	2,800
Overall Modal Proportion		81%	11%	6%	2%	100%

Table 13. Wanaka Traffic Survey - Modal Split, Number of Vehicles by Year

	Car	Bus	Pedestrian	Cyclist	Total
Overall Total Vehicles 2016	2,235	26	159	68	2,800
Overall Total Vehicles 2015	2,669	18	195	78	4,039
Overall Total Vehicles 2014	3,484	18	195	97	3,794
Overall Total Vehicles 2013	3,124	16	135	63	3,338
Overall Total Vehicles 2012	3,401	29	147	74	3,651
Overall Total Vehicles 2011	3,410	39	174	65	3,688
Overall Total Vehicles 2010	3,826	47	248	88	4,209

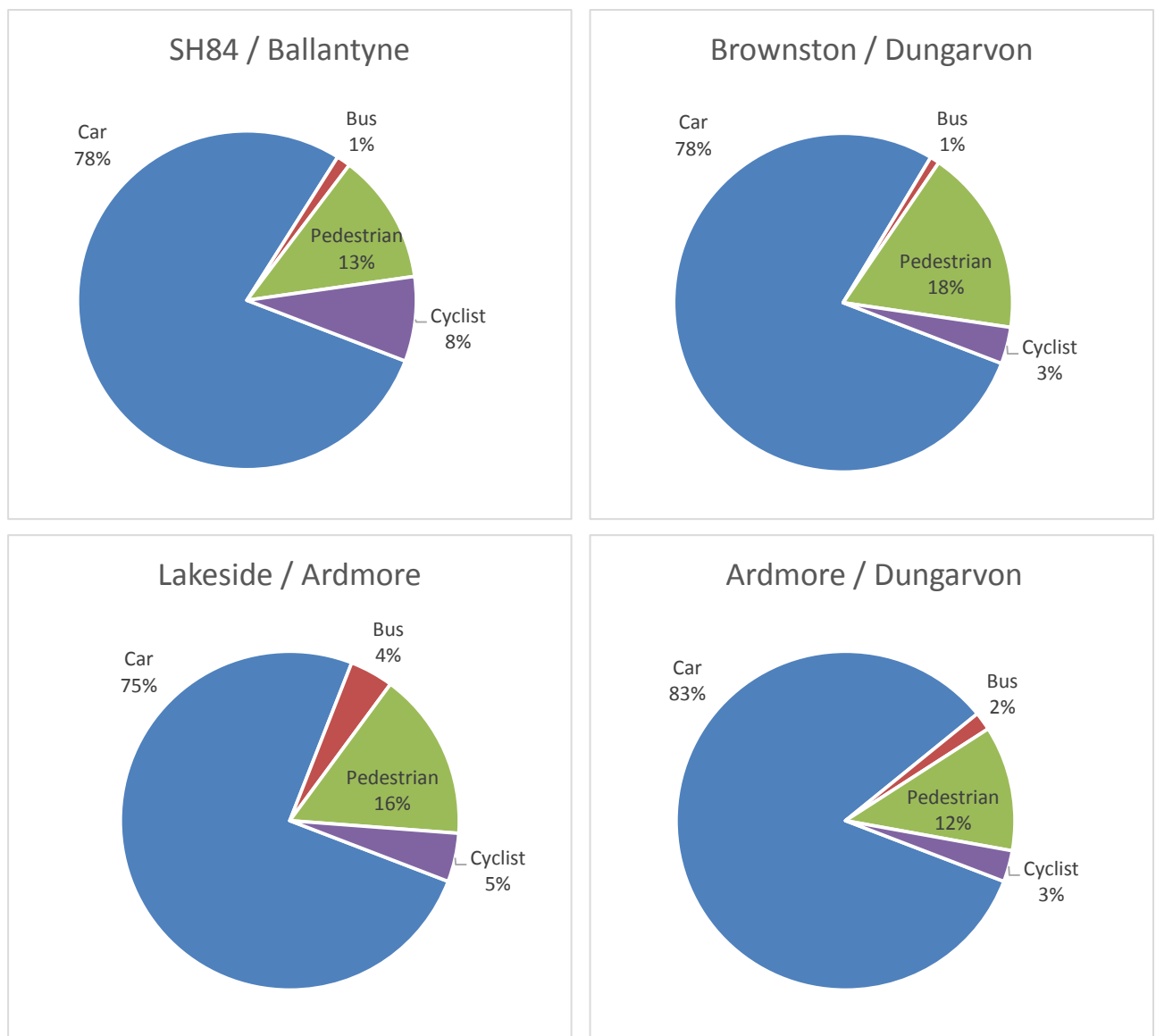
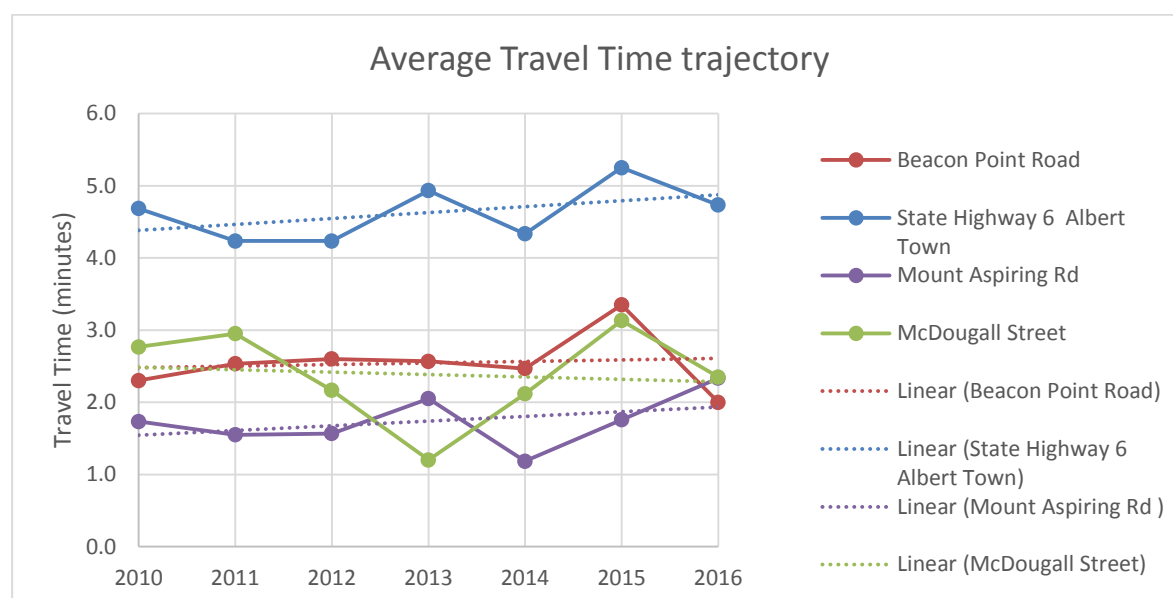
Figure 5. Wanaka Traffic Survey – Modal Split, Mode of Travel


Table 14. Wanaka Traffic Survey - Vehicle Occupancy, Average Number of Occupants Per Vehicle

Location	Average passengers per vehicle						
	2016	2015	2014	2013	2012	2011	2010
SH84 / Ballantyne	1.26	1.27	1.31	1.26	1.22	1.23	1.52
Brownston / Dungarvon	1.57	1.43	1.31	1.29	1.27	1.29	1.28
Lakeside / Ardmore	1.93	1.34	1.32	1.37	1.26	1.32	1.28
Ardmore / Dungarvon	1.60	1.32	1.66	1.61	1.55	1.55	-
Overall	1.59	1.34	1.53	1.41	1.42	1.40	1.40

Table 15. Wanaka Traffic Survey - Travel Time, White Vehicles Year on Year

Origin	Destination	2010 Average Travel Time	2011 Average Travel Time	2012 Average Travel Time	2013 Average Travel Time	2014 Average Travel Time	2015 Average Travel Time	2016 Average Travel Time
Beacon Point Road	Lakeside Road	2min18s	2min32s	2min36s	2min34s	2min28s	3min21s	2mins0s
State Highway 6 Albert Town	State Highway 84	4min41s	4min14s	4mins14s	4mins56s	4mins20s	5mins15s	4mins44s
Mount Aspiring Rd	Ardmore St	1min44s	1min33s	1mins34s	2mins03s	1mins11s	-	2mins20s
McDougall Street	Brownston St	2min46s	2min57s	2min10s	1min12s	2mins7s	3mins8s	2mins21s

Figure 6. Wanaka Traffic Survey – Travel Time, White Vehicles Year on Year


6.4 Appendix 4 – Wanaka Parking Survey

Figure 7. Wanaka Parking Survey - Average Available vs Occupied Parking Spaces

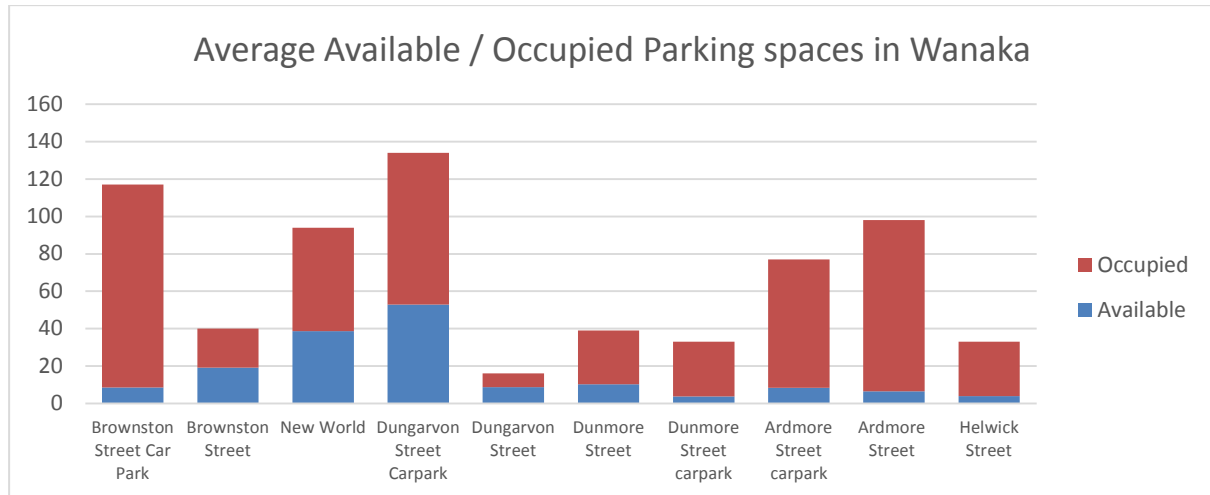


Figure 8. Wanaka Parking Survey - Available Parking Spaces Over the Day

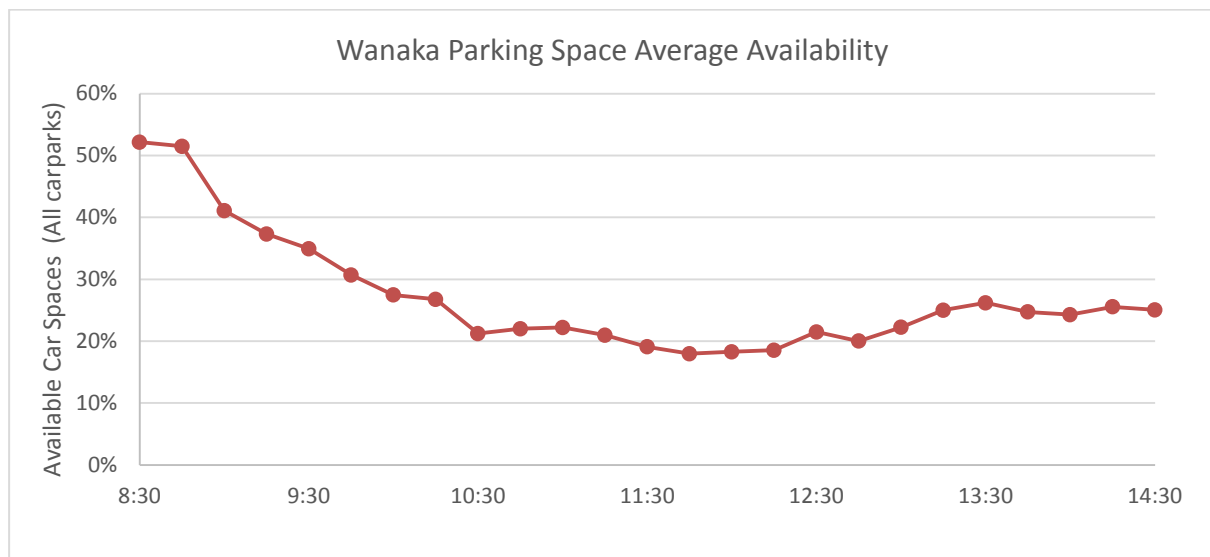


Figure 9. Wanaka Parking Survey - Duration of Stay by Time Restriction as a Percentage

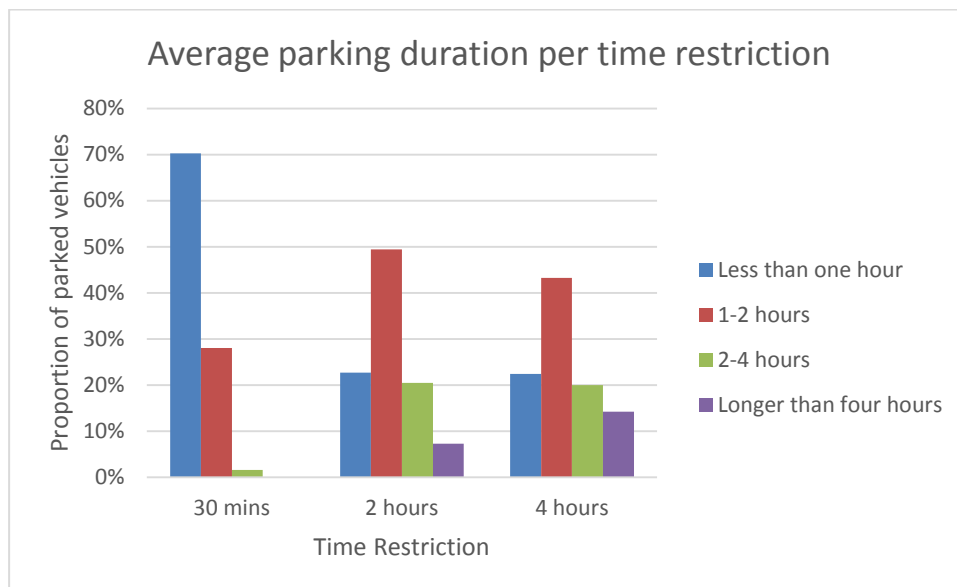


Figure 10. Wanaka Parking Survey - Duration of Stay by Time Restriction by Numbers

