Research First

WAIMAKARIRI DISTRICT COUNCIL
NEW ZEALAND TRANSPORT AGENCY

NORTHERN CORRIDOR
COMMUTER'S PANEL 2016

WAIMAKARIRI DISTRICT COUNCIL

NZ TRANSPORT AGENCY WAKA KOTAHI

RESEARCH REPORT
February 2017

Contents

Northern Corridor Commuter's Panel 2016

Disclaimer

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Key Messages

In late 2015, Research Fist was contracted to survey commuters using the Northern Corridor (routes from Waimakariri to Christchurch) to understand their attitudes and behaviours. One year later, Research First was asked to repeat the survey to determine whether there have been any changes in commuter satisfaction and behaviour, and whether newly instigated traffic initiatives have been supported and used by commuters. The 2016 research tracked a total of 488 commuters over one month. The key findings are:

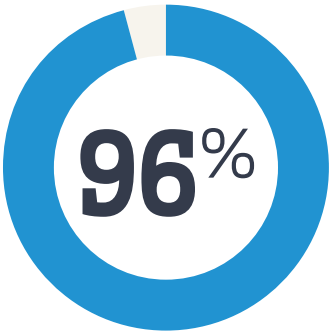
- Commuters are significantly more satisfied with their morning commute in 2016 compared to the same time period in 2015.
- There were more usual drivers of vehicles, fewer passengers, and fewer infrequent drivers of vehicles in 2016 compared to 2015. There were no changes in the proportion of bus users, cyclists or motorcyclists.
- The variable speed limits received divided support, but were supported by 60% of the respondents.
- The new bus initiatives were overwhelmingly supported by the 96% respondents but three quarters would not use them.
- The Park and Ride initiatives were supported by nearly all of the respondents but had only been used by two respondents. This may have been an indication of a lack of awareness of that the sites are operational, and a requirement for publicity.
- The use of motorway incident response vehicles was widely supported.
- The proportion of vehicles with two passengers in addition to the driver has tripled compared to 2015 (from 3% to 9%). The proportion of passengers not related to the drivers has doubled from 4% in 2015 to 8% in 2016, which could indicate an increase of carpooling.
- Nearly two-thirds of respondents thought the distance to cycle to Christchurch was too far and one third did not feel safe cycling along the Northern Corridor.
- Carpooling would be a more attractive option if the passengers were known to the driver, however carpooling was not seen as a practical option by just over half of the respondents.
- Although most respondents were glad the bus is available as a commuting option, they also felt it was not a practical option.

> *Traffic flows have been significantly lighter over the last few months. I believe this is largely due to drivers altering their behaviours in relation to the variable speed limits of the northern motorway, and possibly because incidents are cleared faster by the contractors on standby.*

> *Generally, the commute time is acceptable now… The development of the new arterial roads is a good long term plan as the Waimak District is bound to grow over time.*

> *Great to see you trying to do something about it.*

Commuters are **significantly more satisfied** with their morning commute in 2016 compared to the same time period in 2015.



Support of **new bus initiatives.**

Support of **the variable speed limits.**

2

Research Design

2.1 Research Context

The Waimakariri District is located north of Christchurch, and is home to the major and fast growing towns of Rangiora, Kaiapoi, Pegasus, Woodend, and Oxford. Since the 2010/11 Christchurch Earthquakes, the district has experienced significant growth from Christchurch City residents relocating. Currently, more than 10,700 Waimakariri residents travel along the Northern Motorway to Christchurch City on a daily basis.

Due to the increased population growth, the Northern Corridor is under considerable pressure from commuters during peak periods. The Waimakariri District Council (WDC) and New Zealand Transport Authority (NZTA) are developing long- and mid-term solutions to address the problem, but these are expected to take three to five years to take effect. In the meantime, WDC and NZTA are developing initiatives to assist the traffic flow in the short-term.

In 2015, WDC and NZTA commissioned research from Research First to gain an understanding of the behaviours and perceptions of commuters using the Northern Corridor. The objectives were to: firstly, understand who the commuters are; secondly, identify how to best motivate behavioural and attitudinal changes; and finally, obtain a baseline of behaviour and satisfaction levels to enable measurement of the impact of future changes. The research tracked respondents over one month.

The key insight from the 2015 research was that while commuters find travelling along the Northern Corridor frustrating and unsatisfactory, few see public transport as a solution because of the slower commuting times. Therefore, the most successful approach to reducing congestion in the short-term should be based on better use of private motorcars. The research clearly demonstrated the promotion of carpooling would be the best option.

As a result of the 2015 survey, the WDC and NZTA instigated short and medium-term initiatives designed to improve traffic flow and help reduce congestion on the Northern Corridor. Since November 2015, these changes have included:

- Variable speed limits on the Northern Motorway (70km during peak times);
- New bus route (960 Rangiora to Hornby), via Christchurch Airport;
- More frequent buses, with more frequent Blueline buses planned for 2017;
- Extended or new bus lanes (Main North Road, Belfast (complete) and Chaney's Road (planned);
- 'Park and Ride'[1] in Rangiora;
- 'Park and Ride' in Kaiapoi; and
- Motorway incident response vehicles (Fulton Hogan contracting crew and towing vehicles).

1. Park and Ride areas are where bus users can drive and or cycle to, knowing there will be parking space for their car or cycle, and they can catch a bus for their rest of their journey into Christchurch.

In 2016, WDC and NZTA recommissioned the research to assess whether the changes supported and used by commuters. The research was also designed to ascertain whether commuter levels of satisfaction and commuting behaviours had changed over the last 12 months.

2.2 Research Design

This research repeated the online panel approach to gather information from Northern Corridor commuters from 2015. This approach was chosen because empanelling the respondents made it easier to complete the survey by spreading out the response burden into four short surveys as opposed to one long survey. Key questions such as satisfaction and journey characteristics were included each week to give more precise data over time. Other key information such as description of respondent's usual commuting trip (starting point and destination), regular stops made, how long they have been commuting, their usual way of travelling, and the main reason for their choice of travel were asked from all respondents, regardless of whether they completed all four surveys or only one. This year, there were a series of new questions designed to determine the level of support and usage of new traffic initiatives introduced since November 2015. Other new questions areas explored traffic safety, business/ workplace moving into central Christchurch, and surveying what factors would make respondents consider using alternative modes of transport for their daily commute.

The sample consisted of 481 respondents who completed at least one week of the Northern Corridor survey. Respondents were sent the survey invitations on Fridays at 9am and asked to comment on their past week's morning commuting experiences. Reminders for each survey were sent on the following Saturday and Monday, prior data collection being closed on the Monday evening.
All respondents from the 2015 survey were invited to participate, and new respondents were recruited via advertising by WDC.

2.3 Caveats and Limitations

As the data collection represents a self-selected population (i.e. only those who sought out the research took part), the resulting data set is not random. However, the sample demographics for 2015 and 2016 were compared for age and gender and were statistically similar. The survey was also completed on the same corresponding weeks of the year as 2015. This meant some statistical inferences were possible to identify changes over the last year in driving behaviour and level of respondent satisfaction with their morning commute.

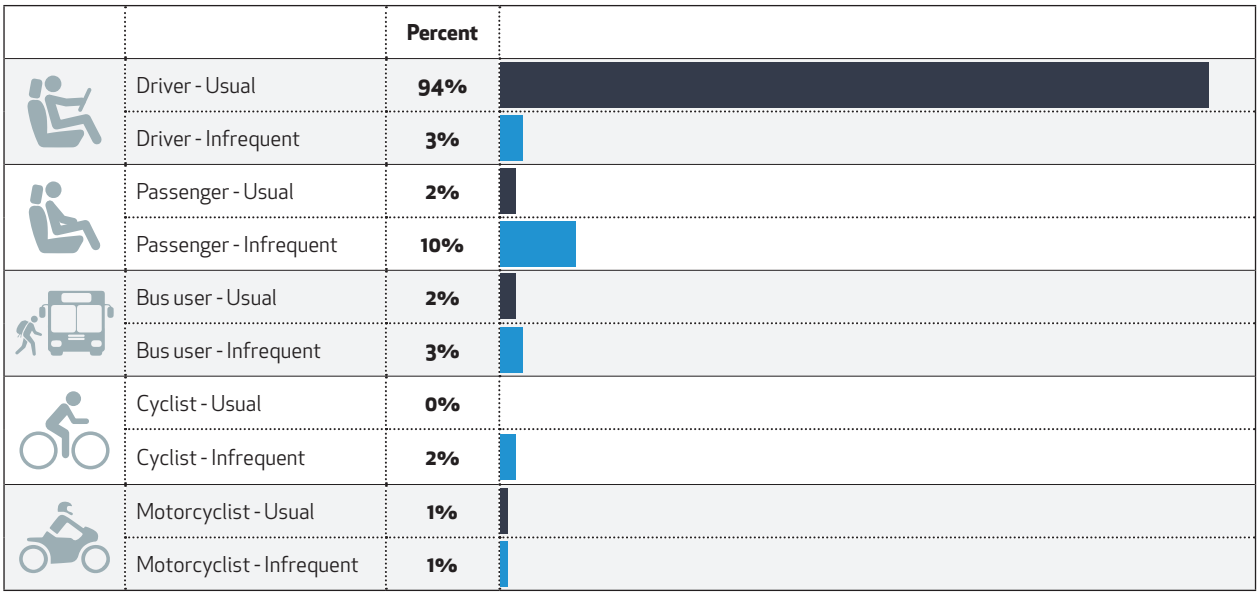
3

Commuter Behaviour

3.1 Methods of Travel

The respondents were asked to identify their main methods of commuting (Figure 1). Most commuters drive a vehicle (car/van/ute) each day along the Northern Corridor to Christchurch.

Figure 1: Main Method of Morning Commute



A comparison of main travel methods between 2015 and 2016 shows the percent of daily drivers has increased, and this is statistically significant ($p<0.05$). The percent of infrequent drivers has decreased significantly, as has the number of usual passengers (Table 1).

Table 1: Comparison of Main Methods of Travel (2015 versus 2016)

	2015 %	2016 %
Driver - Usual	**89.7**	**94.2 ↑**
Driver - Infrequent	**7.2**	**2.9 ↓**
Passenger - Usual	**5.2**	**2.1 ↓**
Passenger - Infrequent	15.2	10.2
Bus user - Usual	3.1	2.3
Bus user - Infrequent	2.1	3.1
Cyclist - Usual	0.5	0.4
Cyclist - Infrequent	1.0	2.3
Motorcyclist - Usual	1.3	1.0
Motorcyclist - Infrequent	0.3	1.0

SIGNIFICANT CHANGE

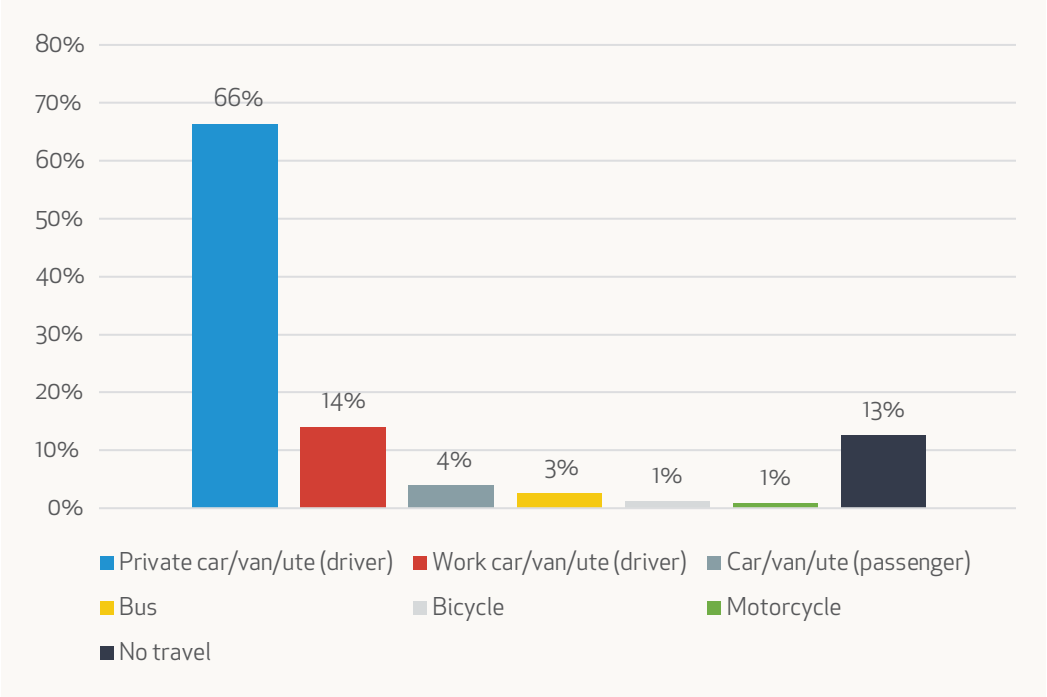
When asked why they had chosen their usual method of travel, the most common response was it was 'the most convenient way to travel', followed by the 'flexibility offered by way of a personal vehicle', and it's the 'fastest way to travel' (Table 2). Thus, convenience and minimising travel times are the most important considerations when respondents were choosing travel methods. The cost of transport and the availability of public transport were not important factors.

Table 2: Main Reason for Usual Method

	Percent	Number of Respondents
It's the most convenient way for me to travel	28%	136
I need the flexibility of a personal vehicle	20%	94
It's the fastest way for me to travel	19%	91
I use my vehicle for work purposes	17%	82
I can't use any other kind of transport	10%	47
It's the most cost effective way for me to travel	3%	16
Public transport not available/effective	2%	12
Other:	1%	3
Total	**100%**	**481**

Examining the weekly data over the four-weeks of the commuter survey, two-thirds of the respondents drove a private car/van/ute to commute; 14% drove a work vehicle; 4% were passengers; 3% bus passengers, 1% were cyclists and motorcyclists respectively; and on any one day, an average of 13% of respondents did not travel along the route (Figure 2).

Figure 2: Overall Method of Transport, Averaged over 4 Weeks



The travel method data over time shows some weekly variation; noticeably less travel on Fridays and somewhat less travel on Wednesdays. There was a dramatic drop off in private vehicle drivers (but not work vehicles) on the final Friday of the survey (14 December 2016) that may have reflected the end of the school year (Figure 3 and Tables 3 to 6).

Figure 3: Overall Methods of Travel, Day by Day

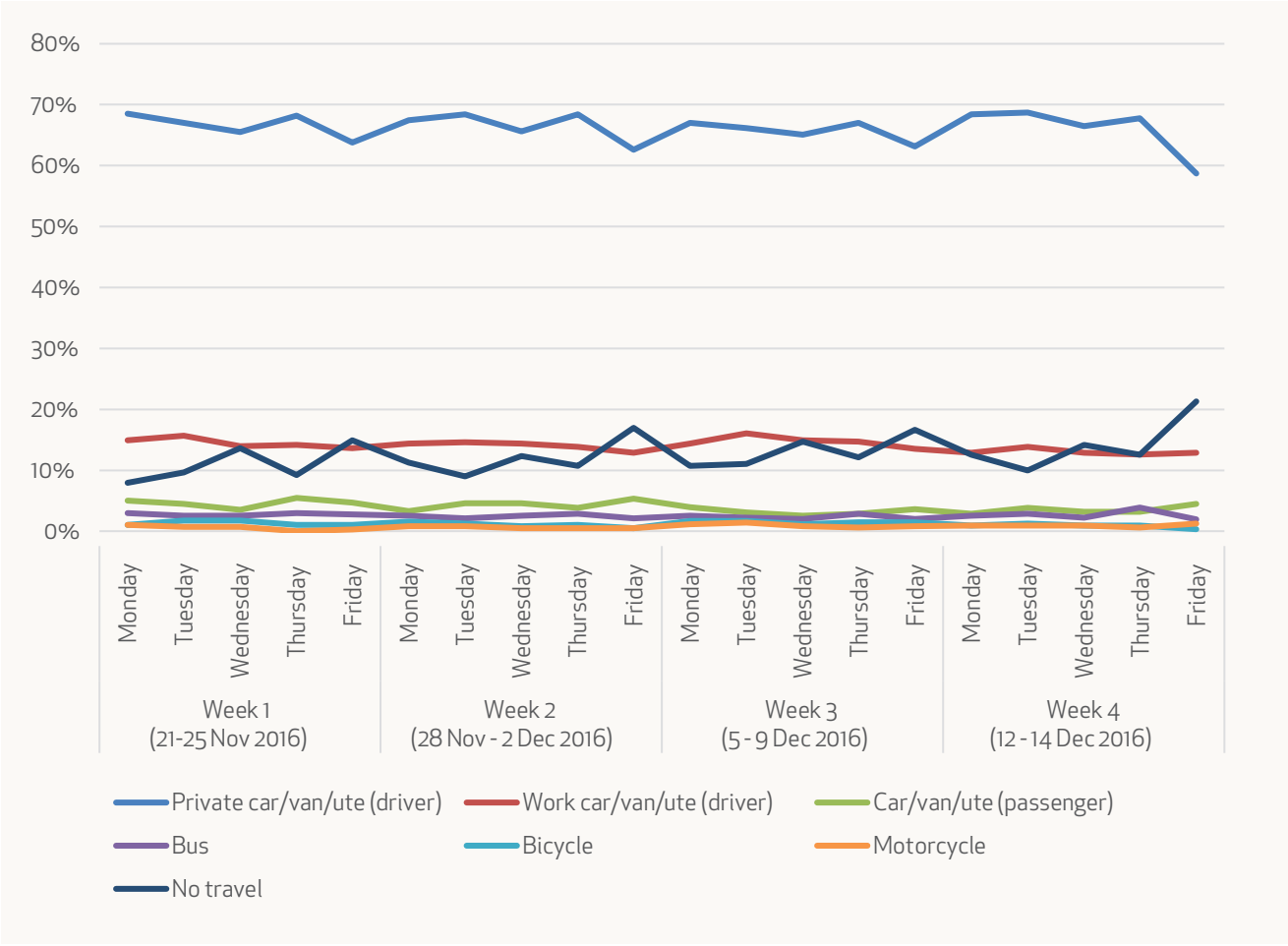


Table 3: Week 1 Methods of Travel

	N=403	Private car/ van/ute (driver)	Work car/van/ ute (driver)	Car/van/ute (passenger)	Bus	Cycle	Motorcycle	No travel
WEEK 1 (21-25 Nov 2016)	Monday	68%	15%	5%	3%	1%	1%	8%
	Tuesday	67%	16%	4%	2%	2%	1%	10%
	Wednesday	66%	14%	3%	2%	2%	1%	14%
	Thursday	68%	14%	5%	3%	1%	0%	9%
	Friday	64%	14%	5%	3%	1%	0%	15%

Table 4: Week 2 Methods of Travel

	N=390	Private car/ van/ute (driver)	Work car/van/ ute (driver)	Car/van/ute (passenger)	Bus	Cycle	Motorcycle	No travel
WEEK 2 (28 Nov - 2 Dec 2016)	Monday	67%	14%	3%	3%	2%	1%	11%
	Tuesday	68%	15%	5%	2%	1%	1%	9%
	Wednesday	66%	14%	5%	3%	1%	1%	12%
	Thursday	68%	14%	4%	3%	1%	1%	11%
	Friday	63%	13%	5%	2%	1%	1%	17%

Table 5: Week 3 Methods of Travel

	N=355	Private car/ van/ute (driver)	Work car/van/ ute (driver)	Car/van/ute (passenger)	Bus	Cycle	Motorcycle	No travel
WEEK 3 (5 - 9 Dec 2016)	Monday	67%	14%	4%	3%	2%	1%	11%
	Tuesday	66%	16%	3%	2%	2%	1%	11%
	Wednesday	65%	15%	3%	2%	1%	1%	15%
	Thursday	67%	15%	3%	3%	1%	1%	12%
	Friday	63%	14%	4%	2%	1%	1%	17%

Table 6: Week 4 Methods of Travel

	N=310	Private car/ van/ute (driver)	Work car/van/ ute (driver)	Car/van/ute (passenger)	Bus	Cycle	Motorcycle	No travel
WEEK 4 (12 - 14 Dec 2016)	Monday	68%	13%	3%	3%	1%	1%	13%
	Tuesday	69%	14%	4%	3%	1%	1%	10%
	Wednesday	66%	13%	3%	2%	1%	1%	14%
	Thursday	68%	13%	3%	4%	1%	1%	13%
	Friday	59%	13%	5%	2%	0%	1%	21%

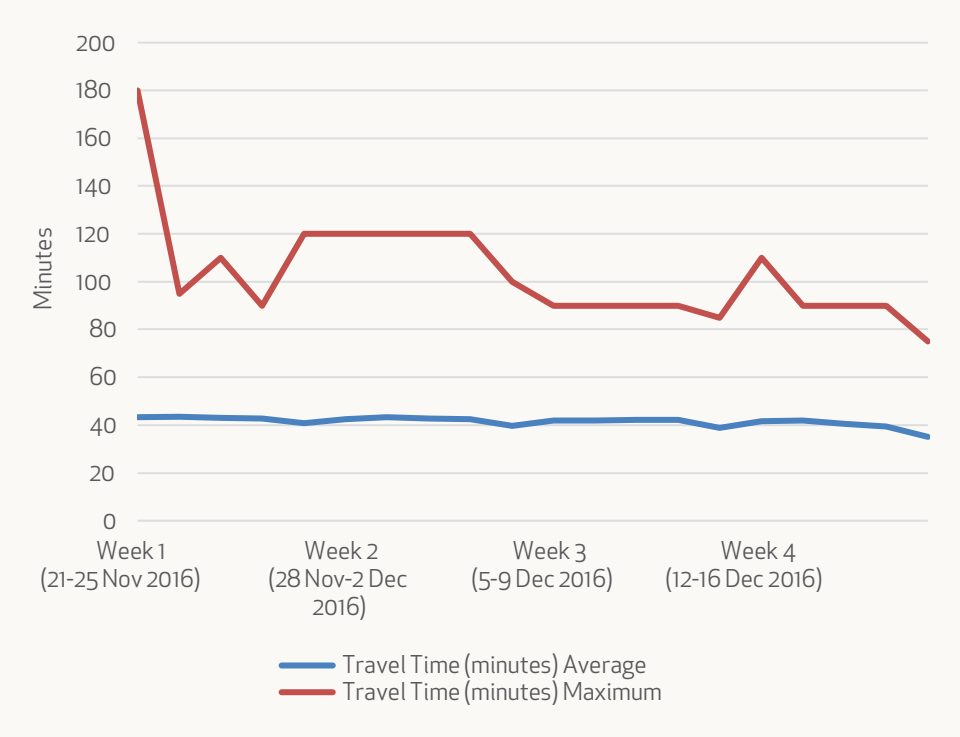
3.2 Travel Duration

Each morning (Monday to Friday) for each of the four survey weeks, the respondents were asked to record their journey duration (in minutes). In total, 6,376 journeys along the Northern Corridor were recorded and analysed, with an average travel time of 41 minutes (range 35 to 43 minutes) and a maximum average time of 104 minutes (range 75 to 180 minutes). Table 7 illustrates the recorded their journey durations. Figure 4 displays the average and maximum daily journey durations graphically, clearly demonstrating the average journey durations over the four-week survey was relatively stable. However, the maximum journey durations ranged considerably.

Table 7: Travel Duration (Average and Maximum) in Minutes, Day by Day

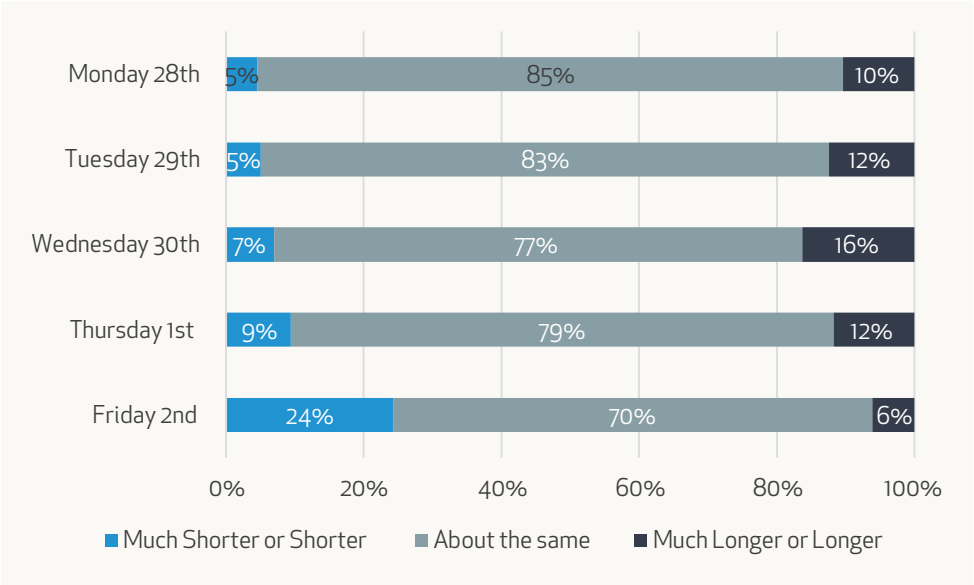
			Travel Time (minutes)	
		Number of Respondents	Average	Maximum
WEEK 1 (21 to 25 Nov 2016)	Monday	370	43	180
	Tuesday	363	43	95
	Wednesday	347	43	110
	Thursday	365	43	90
	Friday	342	41	120
WEEK 2 (28 Nov - 2 Dec 2016)	Monday	346	43	120
	Tuesday	355	43	120
	Wednesday	342	43	120
	Thursday	348	42	120
	Friday	324	40	100
WEEK 3 (5 - 9 Dec 2016)	Monday	317	42	90
	Tuesday	316	42	90
	Wednesday	303	42	90
	Thursday	312	42	90
	Friday	295	39	85
WEEK 4 (12 - 16 Dec 2016)	Monday	271	42	110
	Tuesday	279	42	90
	Wednesday	266	41	90
	Thursday	271	40	90
	Friday	244	35	75
	Total or Average*	**6376**	**41***	**104***

Figure 4: Journey Duration (minutes)



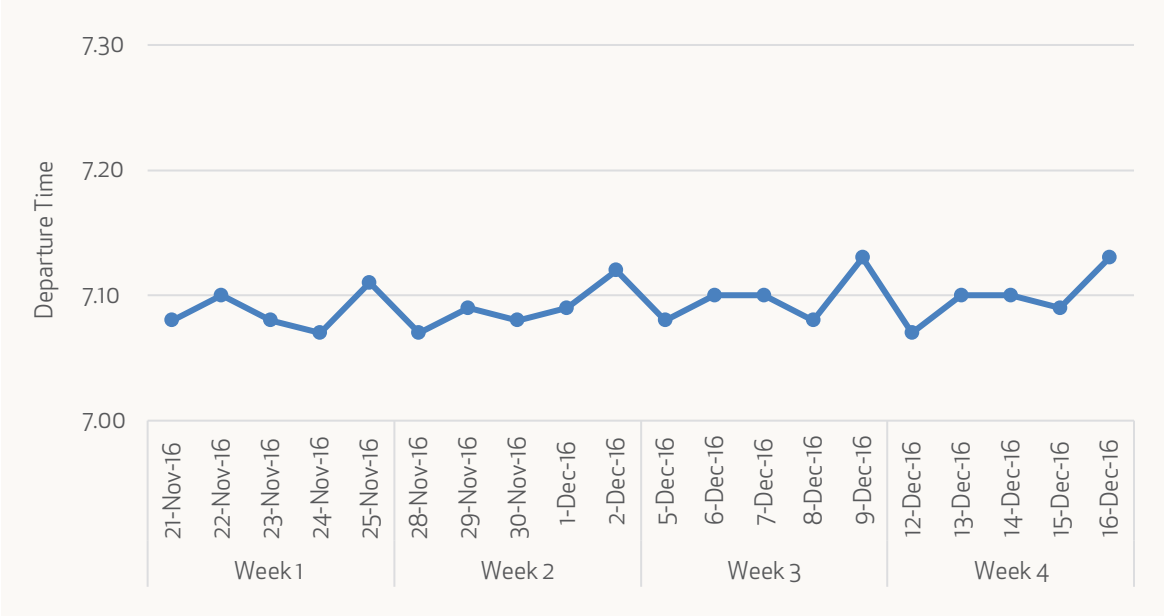
During the second week of the survey (28th Nov to 2nd Dec 2016), the respondents were asked whether their peak-time commute journey duration was what they expected (Figure 5). Generally, most thought their trip was taking about the same time as expected. However, as the week progressed, more respondents thought the trip was taking a shorter time than expected, particularly on the Friday, which corresponds with fewer respondents travelling on Fridays as seen in Table 7.

Figure 5: Trip Duration Expectation versus Reality



The average departure time varied little over the 4-week survey. There was a tendency for commuters to depart at a later time on a Friday each week, likely reflecting the reduced traffic flow (Figure 5A).

Figure 5A: Daily Departure Times



3.3 Changing Travel Patterns

In week 2, respondents were asked if they had changed their travel patterns for their morning commute that week (Table 8). Just over one quarter (28%) of respondents had changed their morning commute that particular week: either using a different route, or leaving later or earlier as shown in Table 9. Changing their method of travel was not common.

Table 8: How Were Travel Patterns Changed?

	Percent	Number of Respondents
I used a different route	45%	49
I left later than usual	40%	43
I left earlier than usual	31%	34
I had a different destination	6%	7
I only travelled on some days	5%	5
I used an alternate method of travel	5%	5
Other	2%	2
Total		**108**

When asked to comment on why they had changed their travel pattern, the most common responses were: for work commitments, or to avoid traffic congestion, or to avoid bottlenecks (Table 9).

Table 9: Reasons for Changing Travel Patterns

	Percent	Number of Respondents
Work commitments	29%	31
Avoid traffic congestion/ bottlenecks	23%	25
Trying different routes/ departure times	13%	14
Stops on way to destination	10%	11
Different destination	9%	10
Family commitments	8%	9
Personal reasons	6%	7
Had different method of travel	6%	6
Other	3%	3
Don't know	1%	1
Total		**108**

All respondents were asked to comment on whether they had changed their travel patterns over the last month to avoid congestion (Table 10). Similar to Table 9 above, travelling at different times (either later or earlier) and using different routes were prevalent changes. However, there were substantial numbers of respondents who hadn't changed their travel patterns, or could not change their patterns due to work or other schedules. Again, using different travel methods to avoid congestion was not common.

Table 10: Changing Travel Patterns Over the Last Month

	Percent	Number of Respondents
I left home earlier than usual	26%	100
I used different routes	26%	100
None - I haven't considered changing my travel pattern	23%	87
I left home both earlier and later	20%	78
None - I can't change because my work/other schedules are fixed	20%	77
I left home later than usual	10%	40
None - I can't change because I need to drop off/pick up others	7%	28
I used different modes	2%	7
Total		**381**

3.4 Drivers with Passengers

Nearly three quarters of drivers who commute in the morning do not carry any passengers in their vehicles (Table 11). Compared to last year, the proportion of driver-only occupied vehicles has decreased slightly from 76% in 2015, down to 72% in 2016. The proportion of vehicles with one passenger has decreased in this year's survey (21% in 2015, down to 16%), but the proportion who carry two passengers has tripled (from 3% in 2015, up to 9% in 2016).

Table 11: Number of Passengers

Number of Passengers	Monday	Tuesday	Wednesday	Thursday	Friday	Average
0	74%	72%	72%	71%	72%	72%
1	15%	17%	16%	17%	16%	16%
2	9%	9%	9%	9%	10%	9%
3	1%	1%	2%	1%	2%	1%
4	1%	1%	1%	1%	1%	1%
Number of Respondents	**356**	**351**	**333**	**353**	**331**	

Similar to the 2015 survey, the passengers were most likely to be related to the driver and to a lesser extent, work colleagues (Table 12). However, the proportion of passengers not related to the drivers has doubled from 4% in 2015 to 8% in 2016. This could be an indication of increased carpooling by the respondents.

Table 12: Relationship of Passengers to Drivers

	Monday	Tuesday	Wednesday	Thursday	Friday	Total
People related to me	74%	73%	76%	74%	76%	75%
Work colleagues	16%	19%	16%	20%	17%	18%
Other people not related to me	10%	8%	8%	7%	6%	8%
Number of Respondents	**91**	**100**	**92**	**102**	**93**	**478**

3.5 Additional Regular Stops on Commuting Journey

In 2016, one quarter of the surveyed commuters made additional regular stops on their morning commute. Of the respondents (N=109) who make additional regular stops, two-thirds are dropping off children at school or childcare and one-fifth are dropping off partner/family member at workplace/education. Regular additional stops for dropping off carpool passengers accounted for 4% of the total (Table 13).

Table 13: Regular Additional Stop Locations

	Percentage	Number of Respondents
Dropping off children at school/childcare	62%	68
Dropping off partner/family member at workplace/education	20%	22
Picking up coffee/groceries/mail	8%	9
Dropping off family member at other location	6%	6
Picking up passengers	5%	5
Visiting gym/pool	5%	5
Dropping off carpool or other passengers at workplace/education	4%	4
Work-related stops	3%	3
Other	3%	3
Total		**109**

3.6 Length of Time Commuting on Northern Corridor

The majority of respondents have been commuting along the Northern Corridor for many years. Just over half of the respondents have been commuting more than five years, and a further 41% have been travelling between one and five years (Table 14).

Table 14: Number of Years of Commuting Along the Northern Corridor

	Percentage	Number of Respondents
Less than 1 year	7%	36
Between 1 and 3 years	21%	103
Between 3 and 5 years	20%	94
Over 5 years	51%	245
Other	1%	3
Total	**100%**	**481**

3.7 Parking at Destination

Similar to last year, the majority of drivers (85%) do not pay for their parking at destination (Table 15). Of those who did pay for parking, most used off-street parking such as parking buildings. Very few respondents relied on metred on-street parking.

Table 15: Who Pays for Parking?

	Percent	Number of Respondents
Off street - free (e.g. workplace)	64%	231
On street - free	21%	77
Off street - paid (e.g. Wilson's, CCC carparks)	12%	45
On street - paid (e.g. metered)	1%	5
Don't park - drop-off only	1%	2
Other	1%	2
Total	**100%**	**362**

About half of the respondents (54%) who pay for parking at destination pay a daily amount. The remaining respondents lease a carpark (46%). Analysing the daily parking payments in further detail, just over one third pay a daily fee of less than $2.00. The most common daily fee is between $2.00 to $5.99 per day. Just over one-fifth pay over $6.00 per day (Table 16). The average monthly payment for leased carparks was $100 and the maximum monthly lease was $280.00.

Table 16: Parking Costs per Day

	Percent	Number of Respondents
Less than $2.00	36%	12
$2.00 - $5.99	42%	14
$6.00 - $9.99	21%	7
More than $10.00	0%	0
Total	**100%**	**33**

3.8 Passenger Access to Alternative Transport Methods

Nearly all (17 of 19) respondents who identified as usual passengers (bus or vehicle), cyclists, or motorcyclists had access to another vehicle.

3.9 Unsafe Commuter Behaviours

Respondents were asked if they ever felt unsafe or noticed unsafe behaviour by other commuters. Just under half of the respondents (45%) reported they had. When asked to identify the unsafe behaviour, the most common behaviours were: other commuters changing lanes without indicating, commuters travelling too close to other vehicles, and commuters either driving too fast or too slow (Table 17).

Table 17: Unsafe Commuter Behaviours

	Percent	Number of Respondents
I noticed people changing lanes without indicating	73%	114
I noticed people following too close	71%	110
I noticed people driving too fast	55%	86
I noticed people driving too slow	42%	66
Dangerous driving: not using lanes correctly/ safely	24%	38
Dangerous driving: poor merging/ turning	17%	26
Dangerous driving: driver doing other things while driving	10%	15
Dangerous driving: not obeying road rules/signage	10%	15
I noticed a crash	4%	7
Dangerous driving: road rage/ aggressive behaviour	3%	5
Dangerous driving: motorcycles weaving through traffic	3%	4
Dangerous driving: losing control of vehicle	1%	2
Other	6%	9
Total		**156**

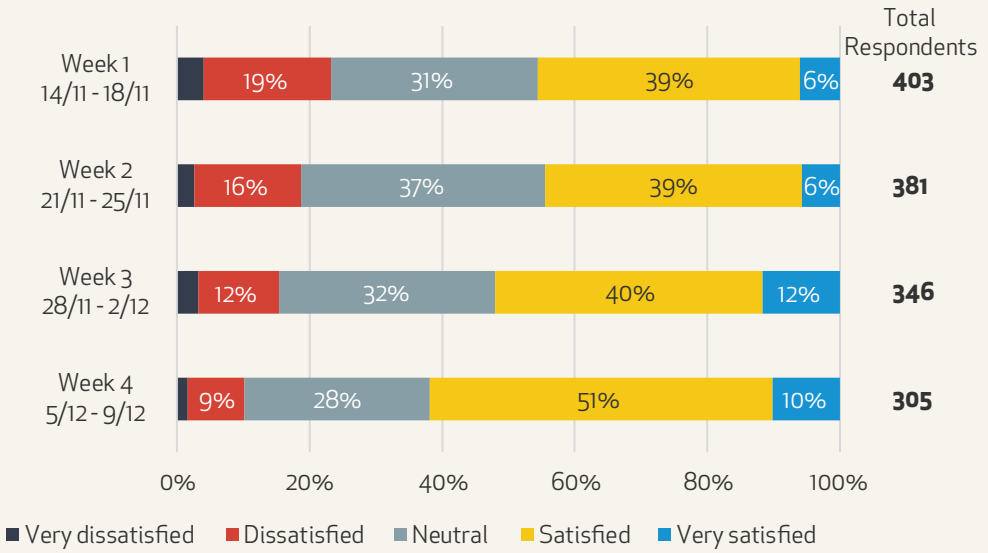
4

Satisfaction with the Northern Corridor Commute in 2016

4.1 Overall Satisfaction with Morning Commute

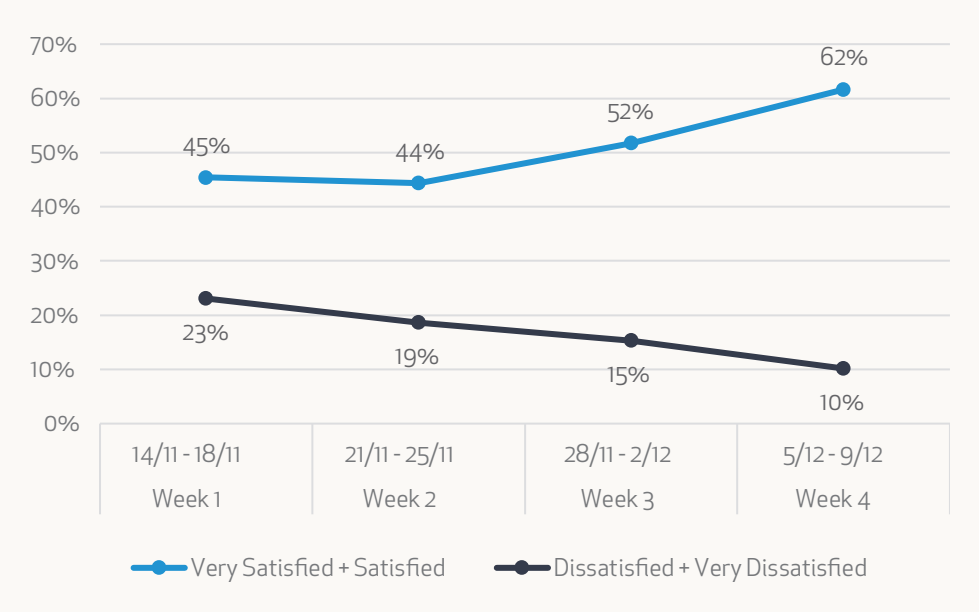
Each week the respondents were asked to assess their level of satisfaction with their commute. The results demonstrate that on average, over the four weeks of data collection (Monday 14 November to Friday 9 December 2016), 50% (range: 45% - 61%) of commuters were satisfied with the Northern Corridor commute each week compared to 17% who were dissatisfied (range: 11% - 23%) as shown in Figure 6.

Figure 6: Overall Satisfaction with Morning Commute



When the levels of satisfaction were further analysed over the four-week period of research, the commuters tended to become more satisfied with their journey as the weeks progressed (Figure 7).

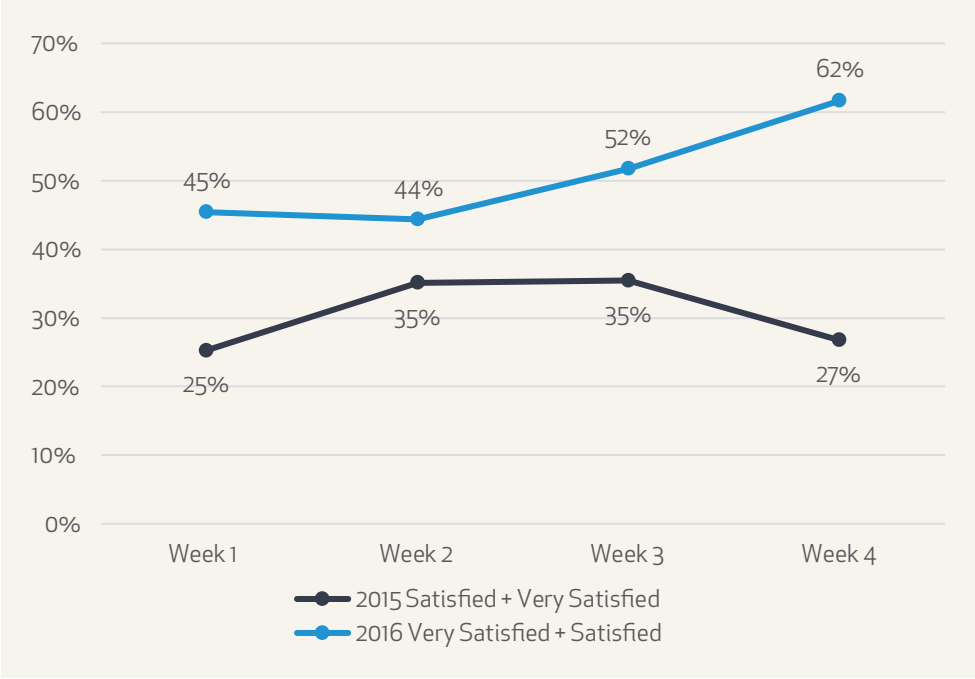
Figure 7: Satisfaction and Dissatisfaction Over Time



4.2 Comparative Levels of Satisfaction (2015 versus 2016)

As the 2016 survey was undertaken on the same calendar weeks as the previous year (2015) and the sample is statistically similar (see Section 9.3), the results from each survey iteration can be compared. Figure 8 shows the Northern Corridor commuters are more satisfied with their morning journey in 2016 compared to 2015 ($p<0.05$).

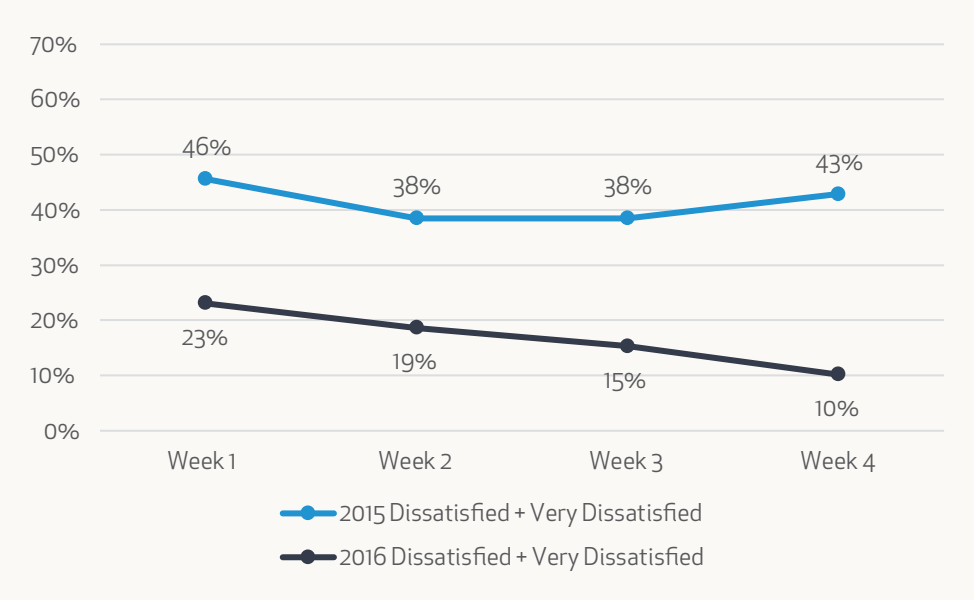
Figure 8: Comparison of Satisfaction Between 2015 and 2016



4.3 Dissatisfaction (2015 versus 2016)

The percentage of commuters who were dissatisfied (Figure 9) has roughly halved over the past year and this result was also statistically significant ($p<0.05$).

Figure 9: Comparison of Dissatisfaction between 2015 and 2016



When asked to identify the reasons for their increased level of satisfaction with their morning commute, the respondents thought their journey was either similar to the previous week, or it flowed well and was not too heavy. The most obvious change over the survey timeframe was traffic was getting faster than the commuters expected, which increased as the weeks progressed. The commuters thought this was due to the time of year when less traffic is expected to be on the road (Table 18).

Table 18: Reasons for Satisfaction, Week on Week

	Week 1	Week 2	Week 3	Week 4
No change/same as last week	52%	55%	47%	44%
Traffic flowed well/wasn't too heavy	34%	30%	30%	35%
Left earlier/later to avoid congestion	18%	15%	13%	11%
Commute slower than expected	10%	11%	13%	10%
Commute faster than expected	5%	7%	14%	21%
Roadworks/crashes caused delays	7%	10%	9%	5%
Shorter commute due to time of year	0%	1%	3%	6%
Total Respondents	**403**	**381**	**346**	**305**

Overall, the reasons for the respondent's level of satisfaction have changed since 2015, when nearly half of the respondents (42%) were dissatisfied with congested and slow traffic.

5

Commuter Perceptions of Changes

5.1 Changes to Northern Corridor over the Last Year

As a result of the 2015 survey, the WDC and NZTA instigated short and medium-term initiatives designed to improve traffic flow and help reduce congestion on the Northern Corridor. Since November 2015, these changes have included:

	Variable speed limits on the Northern Motorway (70km during peak times);
	New bus route (960 Rangiora to Hornby), via Christchurch Airport;
	More frequent buses, with more frequent Blueline buses planned for 2017;
	Extended or new bus lanes (Main North Road, Belfast (complete) and Chaney's Road (planned);
	'Park and Ride[3]' in Rangiora;
	'Park and Ride' in Kaiapoi; and
	Motorway incident response vehicles (Fulton Hogan contracting crew and towing vehicles).

This section of the report examines whether the changes have been supported and used by respondents who have been travelling last year on the Northern Corridor (322 respondents or 93%). Those respondents who had not being travelling along this route over the last year were not surveyed. Table 19 illustrates the level of support for each new initiative.

Table 19: Level of Support and Use of New Traffic Initiatives Since November 2015

New Initiative (N=322)	Support	Support and would use	Support but would not use	Do not support
Variable speed limits on Northern Motorway	30%	25%	4%	40%
New bus route (960)	17%	2%	76%	4%
More frequent buses	24%	9%	64%	4%
Extended or new bus lanes	39%	9%	43%	9%
'Park and Ride' in Rangiora	18%	5%	70%	6%
'Park and Ride' in Silverstream	17%	4%	72%	6%
Motorway incident response vehicles	57%	20%	15%	8%

3. Park and Ride areas are where bus users can drive and or cycle to, knowing there will be parking space for their car or cycle, and they can catch a bus for their rest of their journey into Christchurch.

5.1.1 Variable Speed Limits

The variable speed limits on the Northern Motorway received divided support. However, the majority of respondents do support their use: 60% support compared to 40% who do not support their use (Table 19). When asked to comment, the most common reason the respondents offered was 'people do not adhere to the speed limit', followed by 'the variable speed limit makes no difference' (Table 20).

Table 20: Level of Support for Variable Speed Limits

Reason (N=322)	Percentage	Number of Respondents
People do not adhere to speed limit	30%	96
Doesn't work/ no difference	19%	61
Has a positive impact	17%	56
Frustrating if active when not needed	11%	36
Must be enforced	7%	21
Unnecessary - cannot reach that speed anyway	6%	20
Doesn't reduce chokepoints/congestion	6%	18
Has a negative impact	3%	10
Could improve signage placement/ frequency	2%	6

- *Traffic has flowed better since they started activating the 70 km/h rule at…southern end of the motorway*
- *The variable speed limits are pointless heading towards dangerous. If you stay on 70 then there are cars weaving in and out of the slower traffic and even the big trucks don't slow down any more.*
- *Why were the 70km signs operating on Friday, there was no congestion at all.*
- *…Be good to have Police along the enforced 70km part of the motorway as too many speed.*

5.1.2 New Bus Initiatives

More than 1,000 people travel daily from the north to work near the Airport and Russley, and more than 700 travel to work in Hornby, so a targeted commuter service for this group of people makes sense.

The new bus initiatives (as listed above) received overwhelming support. The new bus service (route 960 from Rangiora to Hornby via the airport) was supported by nearly all of the respondents (96%), but most indicated they would not use it (76%). Similar results were received regarding the increased bus services (96% support), but just under two-thirds (64%) indicated they would not use them. Extending bus lanes or putting in new bus lanes were also supported by the respondents (91% support). When the respondents were asked whether they had taken, or considered taking a bus since the new changes, most respondents (80%) had not, although just over one in ten (11%) had considered taking the bus but had not yet done so (Table 21).

Table 21: Use of Buses

	Percent	Number of Respondents
Taken the bus	9%	29
Considered taking the bus but not done it	11%	36
Not considered taking the bus	80%	257
Total	**100%**	**322**

- *Generally, the Old Main North Road is faster than the motorway which fits well with dropping children at the bus.*
- *Bus is more expensive than my second (least economical) car and stops very far away.*
- *I want wi-fi on the bus to stop the boredom*

5.1.3 Park and Rides

The new park and rides initiatives in Rangiora and Silverstream (Kaiapoi) were supported by nearly all of the respondents (94%). Similar to the new bus initiatives, the respondents thought the park and ride concept was good, although nearly three-quarters would not use them.

When asked in a separate question, if they had used the park and rides, only one respondent had used the Rangiora park and ride to catch a bus into Christchurch, and another had used the park and ride in Silverstream to carpool. Again, most respondents (86%) were not considering using the park and ride facilities (Table 22). This low usage rate could be an indication that the respondents are not aware that the sites are now operational.

Table 22: Use of Park and Rides

	Percent	Number of Respondents
Used the 'Park and Ride' in Rangiora to take the bus	0%	1
Used the 'Park and Ride' in Silverstream to take the bus	0%	0
Used the 'Park and Ride' in Rangiora to carpool	0%	0
Used the 'Park and Ride' in Silverstream to carpool	0%	1
Considered using a 'Park and Ride' but have not done it	13%	42
Not considered using a 'Park and Ride'	86%	278
Total	**100%**	**322**

- *…Park and Ride would interest me if it was at the end of Tram Road (by the motorway). I didn't realise about the Park and Ride now operating at Silverstream. I will look on the web to find out more.*
- *…didn't know there was a park and ride or carpool option in the area.*
- *I'm confused by your reference to park and ride in Rangiora and Silverstream. I heard it might be coming but not that it has. Has it? If it has, it is very poorly advertised. I would consider using it on a day I have no one to carpool with, depending also on the cost.*

5.1.4 Motorway Incident Response Vehicles

The use of motorway incident response vehicles (Fulton Hogan) is another new initiative that received overwhelming support by 92% of respondents (Table 19).

- *Rather than Fulton Hogan waiting on the motorway for crashes, maybe a stronger police presence giving out warnings to drivers with unsafe practices as part of a driver awareness program?*

5.1.5 Carpooling

Carpooling was indicated as the best option to alleviate morning commuter congestion in the 2015 Northern Corridor Commuter survey. In the current survey respondents were asked if they currently carpool or take the bus from an informal park and ride area (such as on-street parking or leaving from a friend's place). Both these options were utilised by 18% of respondents (Table 23). This result is similar to 2015 when 18% of respondents already carpooled. This concept could be encouraged further in the future.

Table 23: Respondents who Carpool or Take the Bus from an Informal Park and Ride)

	Percentage	Number of Respondents
Yes	18%	54
No	82%	251
Total	**100%**	**305**

Respondents were also asked if they had ever looked at the www.letscarpool.govt.nz site. Just under one quarter (23%) had visited the site. This is an increase from the 2015 survey when 17% had looked at the site (Table 24).

Table 24: www.letscarpool.co.nz

	Percent	Number of Respondents
Yes	23%	79
No/I can't recall	77%	267
Total	**100%**	**346**

- *I carpooled 3 days out of 5 this week. Usually I carpool 4/5, and next year it is likely to be 5/5.*
- *I car share daily, usually 5 in a vehicle.*

5.2 Consideration of Alternative Transport Options

During the final week of the survey (Monday 12th to Friday 16th December), respondents were asked why they did not use alternative ways of commuting during that week, and what would it take for them to consider different travel methods. Generally, their replies were focused upon convenience and travel times (Table 25).

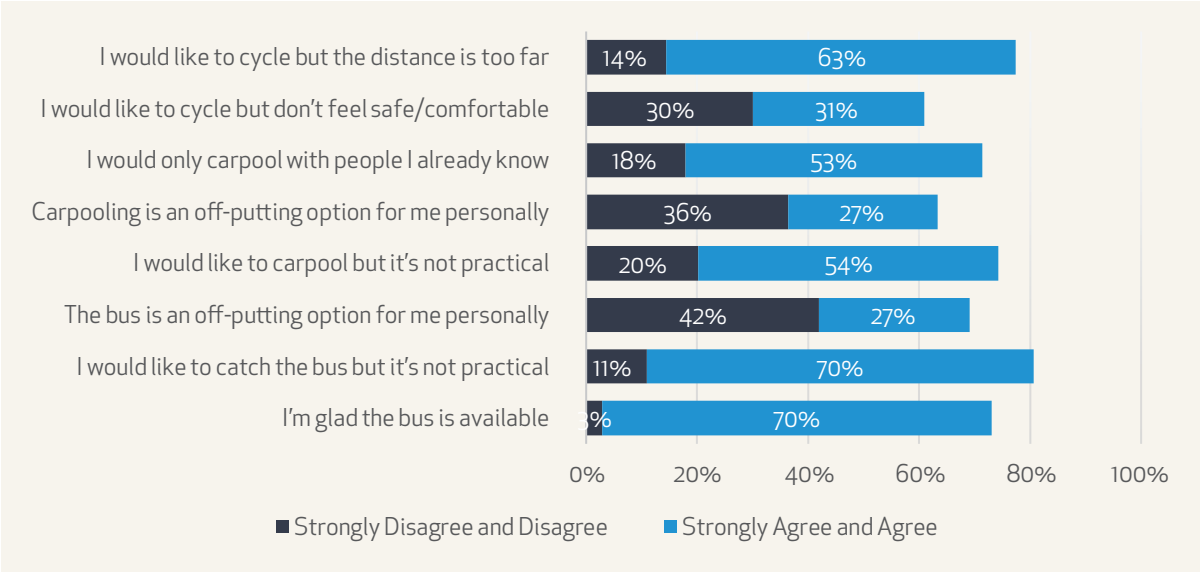
Table 25: Reasons for Not Using Alternative Transport Options

	Percentage	Number of Respondents
I need a vehicle for business/work purposes	42%	119
Bus takes too long	37%	106
Bus times are inconvenient	33%	95
Bus routes are not close enough to my home	32%	91
Bus routes are not close enough to my destination	29%	82
I am not comfortable cycling	15%	42
Public transport is too expensive	9%	25
I need a vehicle for family/personal purposes	8%	23
Bus is too uncomfortable	7%	19
I carpool already	3%	9
My work hours/locations are too variable	2%	7
Too far to cycle	2%	6
Other	5%	14
Total		**285**

The respondents were asked how much they agree or disagree with statements relating to catching buses, using carpooling, or cycling (Figure 10).

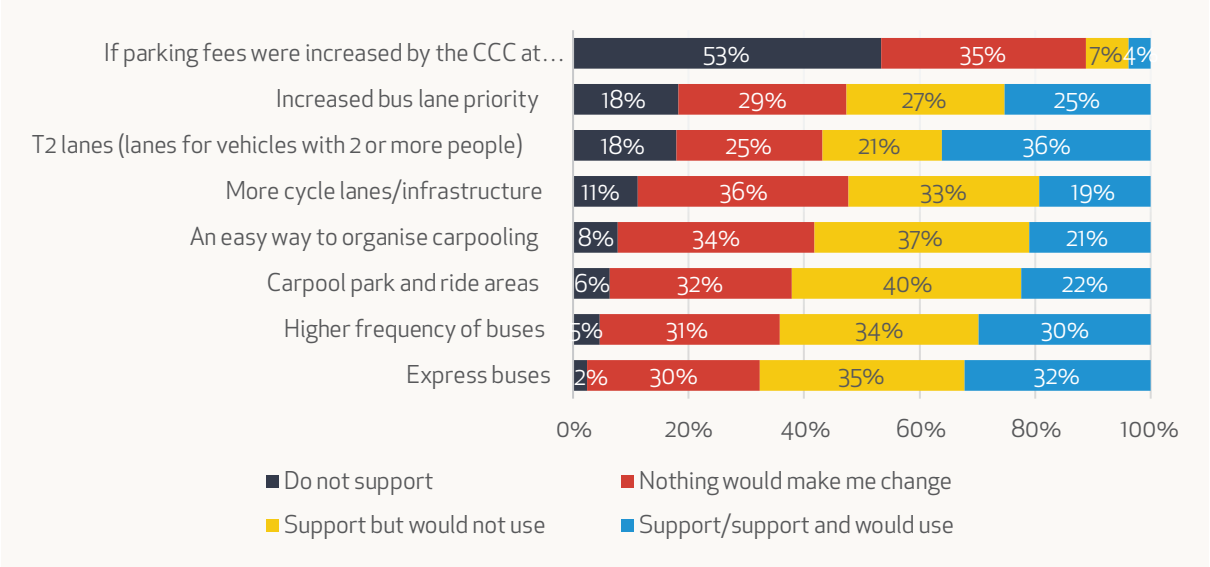
- Nearly two-thirds of respondents thought the distance to cycle to Christchurch was too far and one third did not feel safe cycling along the Northern Corridor.
- Carpooling would be a more attractive option if the passengers were known to the driver, however carpooling was not seen as a practical option by just over half of the respondents.
- Although most respondents were glad the bus is available as a commuting option, they also felt it was not a practical option. It was not seen as an off-putting option.

Figure 10: Level of Agreement with Different Transport Options



When the respondents were asked to identify factors that would facilitate consideration of using alternative modes of transport for their daily commute, nearly one third of respondents stated that 'nothing' would make them change or consider other options (Figure 11). Another quarter to one third of respondents would support new initiatives such as a higher frequency of buses, express buses, increased bus lane priority, more cycle lanes and would use them. Overwhelmingly, any increase in parking fees at destination was not supported by the respondents.

Figure 11: Level of Support for Considering Alternative Transport Options



5.2.1 Carpooling Consideration

When asked, what would make them consider carpooling to commute, the most common response was 'they would have to have the same work location' or 'have the same work schedule' as the people they would consider carpooling with. They would also have to know the people. Other respondents stated their work schedule would not allow for carpooling (Table 26).

Table 26: What Would Facilitate Carpooling?

	Percentage	Number of Respondents
Same work location and/or schedule	16%	40
My schedule will not allow this	11%	28
Would have to know the people	10%	24
Nothing	8%	19
An organised car-pooling system	4%	10
I already car-pool	3%	8
High levels of passenger flexibility	3%	7
Other	2%	4
Don't know	52%	130
Total	**100%**	**251**

- *I would not consider carpooling / park and ride as I am a sales rep and need my car for work and work and travel to lots of different places but I think they could be a good option for some people.*
- *My hours are 0730-1600, which is unusual and not many other potential car poolers could ride with me.*

5.2.2 Bus Consideration

Respondents were asked to comment about what would make them consider taking a bus for their morning commute (Table 27). The most common reason was 'more stops and routes', followed by buses 'being reliably fast and punctual', 'having increased frequency' and 'having more direct routes'.

Table 27: What Would Facilitate Respondent Bus Use?

	Percent	Number of Respondents
Expand location coverage (e.g. more stops, more routes)	18%	51
If it was reliably fast/punctual	13%	38
Increase frequency	12%	35
More direct routes/ less transfers	10%	30
More convenient timetables	9%	27
Nothing	7%	20
Affordability	7%	20
Express service	6%	17
Only if can't use current method	3%	10
Improve park and ride options	3%	8
Bus lanes	2%	7
Other	7%	19
Don't know	43%	125
Total	**100%**	**290**

Generally, respondents were concerned about the lack of comfort (hard seats) in the buses for a long trip, the cost, the length of the bus ride, and having to catch more than one bus.

- *…I really think Metro can give us nicer/newer buses to us traveling so far (Waikuku/Pegasus/Woodend). Our buses are always old, noisy with hard seats…*
- *Again, I'm frustrated at the routes the buses take in the central city. There is too much of a walk to get to the western side of the city where most commuters work*
- *…buses aren't practical for most people and they cost far too much and then you have to catch two or three to get where you are going then wait at the end of the day to catch it home…*
- *I do feel that as our bus route is such a long one (on the bus for about 1 hour journey from Pegasus to Bus interchange) they could really look at giving us more modern / newer buses. It is as though the 95 buses are the oldest with the hardest seats ;-)*

5.2.3 Cycling Consideration

Respondents were asked what would make them consider cycling to commute. Being too far away from their destination was the predominant response, followed by issues relating to cycle safety that included wanting dedicated cycleways or a separate cycle lane on the bridges (Table 28). The distance respondents would cycle (as judged by the respondents who would consider cycling) averaged at 14km, which is much shorter than the commuting distances most would be travelling. Cycling over the old Waimak Bridge was identified as a serious concern for cyclists.

Table 28: What Would Facilitate Respondent Cycle Use?

	Percent	Number of Respondents
Nothing - I live too far away	24%	73
Improved safety	10%	29
A dedicated cycleway	10%	29
A separate cycle lane on the bridge(s)	6%	17
If I worked locally	5%	16
Park & bike into city	4%	13
Limited due to transporting children	2%	7
Nothing - other reasons	2%	6
I am not physically up to it	2%	6
Electric assisted cycles	2%	5
I need my car for work	2%	5
Connecting bus/train services	1%	3
Other	2%	6
Don't know	43%	129
Total	**100%**	**300**

- *For a while I was commuting the entire 30km journey by bicycle 3-4 days per week until I was hit by a car on Tram Road. With a wife and two young children to support I can no longer justify the very real risks associated with cycling on what has become a very major commuting route…*
- *Myself, husband and friends would cycle if there was a designated lane and clip-on to the bridge as the old Waimak bridge is not safe/too skinny.*
- *Would love there to be a cycleway option to get into town…*

6

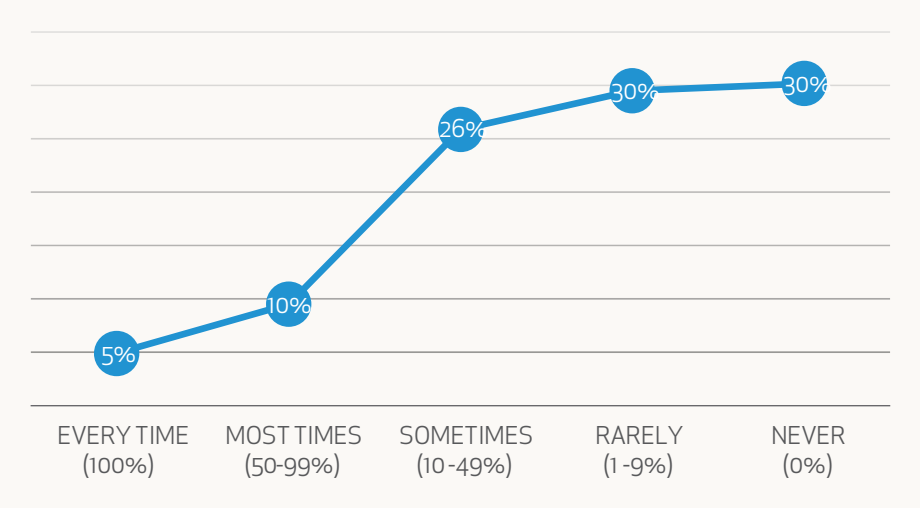
Information Preferences

Travel information can be useful for planning daily commuting routes and timing to avoid congestion. A series of questions were asked regarding travel information preferences to determine if respondents were interested in receiving travel alerts when there are longer than normal traffic delays, for example: a crash causing delays.

6.1 Frequency of Looking for Travel Information

Firstly, the survey respondents were asked how often they look for traffic and travel information. Some of the respondents (15%) always or looked for traffic information for most of their journeys. Just under two-thirds (60%) of the respondents never or rarely looked for travel information (Figure 12).

Figure 12: Frequency of Looking for Travel Information



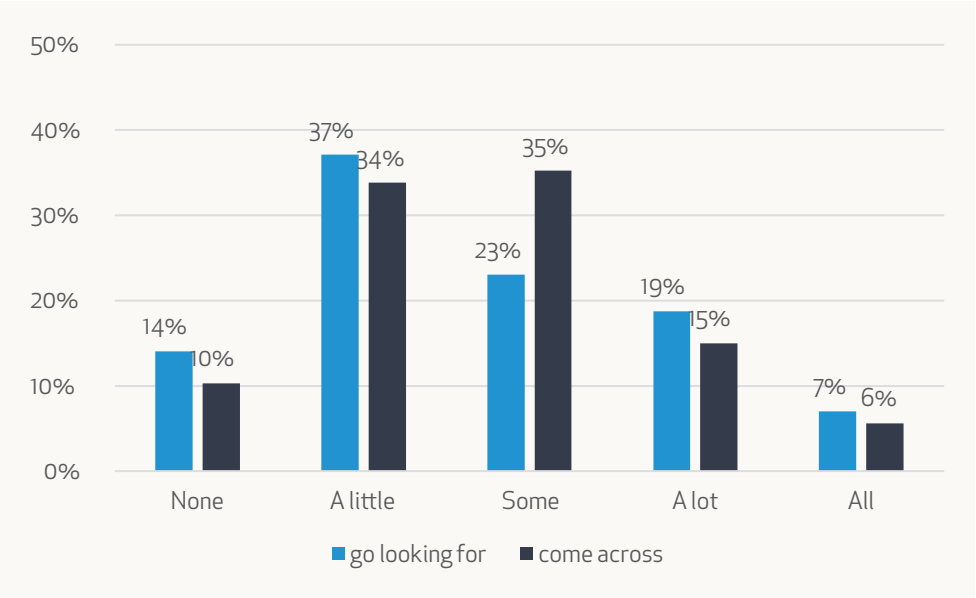
Of the respondents who did use traffic information to plan their commuting (N=213), the tendency was to look for travel information before they started their journey or else a mixture of looking before and during their journey. One third of respondents looked for travel during their journey (Table 29).

Table 29: Timing of Looking for Travel Information

	Percent	Number of Respondents
Before you start your journey	42%	90
During your journey	31%	67
Both before and during your journey	26%	56
Total	**100%**	**213**

The respondents were asked how much travel information do they 'go looking for' and how much 'do they come across'. Of the respondents who did use travel information, about the same proportion of respondents specifically looked for such information as came across it (Figure 13).

Figure 13: How Much Travel Information Do You Go Looking For?



6.2 Social Media Sources of Travel Information

The most common social media source of travel information used by the respondents was Facebook pages. Radio was also an important source of travel information. Google maps, traffic apps and websites were used less often (Table 30). The widespread use of Facebook as a source of travel information was not evident in the 2015 survey, when radio and websites were the most predominate sources. However, this change could be as a result of the nuances of the question, which focused solely on social media this year, and the change of focus may not have been recognised by some respondents.

Table 30: Sources of Travel Information

	Percent	Number of Respondents
Waimakariri District Council Facebook	30%	63
Transport for Christchurch Facebook	28%	59
Radio	18%	38
Christchurch City Council Facebook	10%	22
Google Maps	8%	18
Traffic apps	6%	12
Transport for Christchurch website	4%	8
Traffic notice boards en route	4%	8
Online search (unspecified site)	3%	7
Community/ Resident Facebook pages	2%	5
Waimakariri District Council Twitter	2%	4
NZTA	2%	4
AA	1%	3
Other Facebook pages	1%	3
TV reports	1%	2
Other	2%	5
Don't use social media for this purpose	17%	36
Total		**213**

6.3 Most Favoured Method of Receiving Travel Delay Alerts

The opportunity to receive an alert when there are longer than normal delays on the Northern Corridor was viewed very positively by the respondents (88% in favour). The main way the respondents wanted to receive such an alert was by text message (Table 31).

Table 31: Method for Receiving Traffic Alerts

	Percent	Number of Respondents
Text message	87%	233
Facebook post	6%	15
Email	3%	9
Mobile application	1%	4
Tweet	1%	3
Radio	1%	2
Other	1%	3
Total	**100%**	**269**

7

Businesses Moving to the Central City

The respondents were asked if their business or place of work was moving into the central city in the next eighteen months. The majority of respondents (93%) either already worked in the central city or their workplace was not moving. Of the 28 respondents who identified their business/workplaces were moving into the central city, most will be moving during 2017, notably during the first half of 2017 (Table 32).

Table 32: Timing of Workplace Moving to Central City

	Percent	Number of Respondents
Before December 2016	7%	2
January – June 2017	50%	14
July – December 2017	21%	6
January – July 2018	7%	2
After July 2018	14%	4
Total	**100%**	**28**

Although the number of respondents was small, most of the 28 respondents who expected their workplace to move, are planning to drive private vehicles. Interestingly, six respondents are planning to cycle (Table 33).

Table 33: Expected Transport Methods to Relocated Workplace

	Percent	Number of Respondents
Private car/van/ute (driver)	82%	23
Work owned car/van/ute (driver)	21%	6
Cycle	21%	6
Bus	14%	4
Car/van/ute/truck (passenger)	11%	3
Motorcycle	4%	1
Total		**28**

Table 34 describes the parking options the relocating respondents expect to utilise. Nearly forty percent expect to use free on-street parking in the central city. Of the respondents who expected to pay for parking, the average price they expected averaged at $6.00 per day.

Table 34: Expected Parking Options

	Percent	Number of Respondents
On street - free	39%	11
Off street - paid (e.g. Wilson's, CCC carparks)	36%	10
Off street - free (e.g. workplace)	21%	6
Don't know work arrangements yet	18%	5
On street - paid (e.g. metered)	4%	1
Total	**100%**	**28**

8

Final Comments

At the end of each week, the respondents were asked for general comments about their travel along the Northern Corridor. Of those who commented, the following table provides the most prevalent ten themes. The quotes provided give an example of respondent attitudes and perceptions about their commuting experiences.

Theme	Percent Respondents	Quotes
Belfast Bottleneck Belfast Bypass	24%	*Looking forward to the Belfast bypass* *Main North Road through Belfast has too many lights that concertina's traffic flow, as well as motorway traffic stopping to allow traffic joining from Coutts's Island Road slows the flow.* *I think that traffic would flow better from the Waimakariri Bridge through Belfast if traffic turning into or out of the Main North Road intersection could be stopped during this time*
70km Variable Speed Limit	21%	*Not many observe the 70km speed limit and I think this is still causing the back log into Belfast.* *I think the 70k signs stay on for too long. Some mornings the traffic is moving freely and everyone ends up speeding. They should be monitored and adjusted accordingly.* *The 70 km signs seem to be working - the flow of traffic isn't at a standstill any more*
Improved Traffic Flow	12%	*It has improved a lot since the last survey…* *Generally, traffic commute times are shorter than they were last year* *I have noticed the congestion on the northern motorway has improved but finding the days I leave later takes me longer than when I leave earlier.* *Traffic is far better than it was this time last year. Not convinced that this is due to a lower speed limit though. Whatever the reason for better traffic flow it is certainly appreciated.*
Neutral perceptions	12%	*Nothing special, it's just a slow drag. Drivers seem courteous regarding merging etc.* *It is what it is. I know it will get better as the new roads are completed.* *Same as it always is. It seems that there are a few bottle-necks that affect the wider part my travel.*

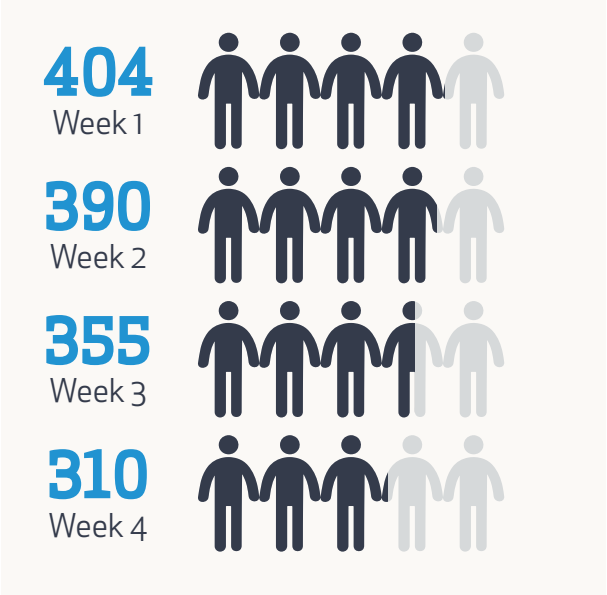
Theme	Percent Respondents	Quotes
General Congestion	11%	*…far too much congestion from Hellers to Belfast usually caused by people stopping on motorway to let people on…* *I dislike spending up to 10 hours per week getting to work and back. The heaviest traffic is always around Waimak/Marshlands area and seems to ease the closer you get into the city.* *Would like to be able to leave later to get things done at home but if I do traffic would make me extremely late for work*
Bad Timing for Survey	9%	*The senior students are finished with school as they are writing their year-end exams, so the traffic is much lighter this time of year.* *This week's traffic wasn't too bad – possibly because exams have started, and not as many drivers doing school runs.* *Why do you do this survey when school holidays are on? this means it's not a true reflection of how bad traffic is…*
Need for More Traffic Lanes / Bridge	8%	*Another bridge over the Waimakariri River all traffic bottle necks too much before Belfast. Seriously considering changing jobs…* *We need and extra lane south bound over the Waimak motorway bridge.* *The addition of at least one passing lane south of Woodend and one passing lane between Woodend and Waikuku would be helpful. Also, the roundabout at Pegasus town on state highway 1 is too narrow and needs to be replaced -- semi-tractor & trailer trucks never stay in within one lane when going through that roundabout.*
Buses	6%	*We need…buses for people to use then there wouldn't be as much of a problem. I never see buses in the morning on the way to work - so bizarre.* *…bus schedules are not flexible, direct or often enough to accommodate most workers.* *[need a] Bus route down Marshland Road.*
Merging Lanes and On-ramps	6%	*Merging traffic is one of the biggest reasons the traffic slows down.* *If folk could merge when getting onto the motorway from the on ramp…the commute would work much better…* *Drivers seem courteous regarding merging etc.*
Trains	6%	*I would very much like to use a train from Sefton to Christchurch for my commute. I would prefer to use this and would use it most days.* *With the train disruption (Christchurch - Picton) now would be an ideal time to trial rail between Amberly Christchurch return.* *Trains in from north Canterbury and Selwyn need to be properly considered - we don't need super expensive trains and facilities, we just need good safe transport that works and is cost effective.*

9

Who Took Part in the Survey?

9.1 Weekly Numbers of Respondents

Figure 14: Who Took Part?



9.2 Age of Respondents

Table 35: Age Grouping of Respondents

	Percent	Number of Respondents
Under 18	1%	3
18-24	2%	10
25-34	17%	80
35-44	30%	141
45-54	30%	145
55-64	17%	81
65+	3%	16
Total	**100%**	**476**

The sample age distributions were similar (p>.05) for the 2015 and 2016 survey iterations, confirming the samples are statistically similar.

Table 36: Comparison of Respondent Age Distribution (2015 versus 2016)

	2015	2016	Average
Under 18	1%	1%	1%
18-24	2%	2%	2%
25-34	15%	17%	16%
35-44	28%	30%	29%
45-54	30%	30%	30%
55-64	19%	17%	18%
65+	5%	3%	4%
Total	**100%**	**100%**	**100%**

9.3 Gender of Respondents

Table 37: Gender of 2016 Respondents

	Percent	Number of Respondents
Male	44%	213
Female	56%	268
Total	**100%**	**481**

The sample gender distributions are similar (p>.05) between 2015 and 2016, confirming the samples are statistically similar.

Table 38: Comparison of Gender Distribution (2015 versus 2016)

	2015	2016	Average
Male	45%	44%	45%
Female	55%	56%	55%
Total	**100%**	**100%**	**100%**

9.4 Usual Starting Point of Respondents

The larger urban centres of Rangiora and Kaiapoi accounted for nearly half of the respondents. Pegasus, Woodend and Ohoka were largest rural commuter sources.

Table 39: Home Location of Respondents

	Percent	Number of Respondents
Rangiora	28%	134
Kaiapoi	19%	92
Pegasus	7%	36
Woodend	6%	29
Ohoka	6%	27
Swannanoa	4%	17
Waikuku	3%	16
Fernside	3%	14
Oxford	3%	14
Sefton	2%	12
Eyrewell Forest	2%	11
Cust	2%	10
Clarkville	2%	8
Loburn	2%	8
Mandeville North	1%	7
West Eyreton	1%	7
Ashley	1%	6
Eyreton	1%	5
Flaxton	1%	5
Amberley	1%	5
Okoku	1%	3
Tuahiwi	1%	3
Total	**100%**	**481**

9.5 Usual Destination of Respondents

The usual destination of respondents is shown in Table 40. Central Christchurch City was the most common destination, similar to respondents in the 2015 survey. Harewood, Addington, Burnside, Riccarton and Hornby were also common destinations.

Table 40: Usual Destination of Respondents

	Percent	Number of Respondents
Central City	26%	124
Harewood	9%	41
Addington	8%	38
Burnside	5%	26
Riccarton	5%	23
Hornby	5%	22
Destination varies each day	4%	20
Sydenham	4%	19
Middleton	3%	13
Sockburn	3%	13
Papanui	2%	12
Merivale	2%	11
Shirley	2%	8
Belfast	1%	7
Phillipstown	1%	7
Russley	1%	7
Ilam	1%	6
Upper Riccarton	1%	6
Woolston	1%	6
Burwood	1%	5
Redwood	1%	5
St Albans	1%	5
Strowan	1%	5
Yaldhurst	1%	5
Selwyn District	1%	5
Bromley	1%	4
Wigram	1%	4
Total	**100%**	**481**

Research First

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