AGENDA

Infrastructure Committee Meeting

Tuesday, 15 November 2022

Date	**Tuesday, 15 November 2022**
Time	**following the Environmental Services Committee**
Location	**Council Chamber** **Timaru District Council Building** **2 King George Place** **Timaru**
File Reference	**1539054**

Timaru District Council

Notice is hereby given that a meeting of the Infrastructure Committee will be held in the Council Chamber, Timaru District Council Building, 2 King George Place, Timaru, on Tuesday 15 November 2022, at the conclusion of the Environmental Services Committee meeting.

Infrastructure Committee Members

Sally Parker (Chairperson), Gavin Oliver (Deputy Chairperson), Mayor Nigel Bowen, Allan Booth, Peter Burt, Owen Jackson, Stu Piddington, Michelle Pye, Stacey Scott and Scott Shannon.

Quorum – no less than 2 members

Local Authorities (Members' Interests) Act 1968

Committee members are reminded that if you have a pecuniary interest in any item on the agenda, then you must declare this interest and refrain from discussing or voting on this item, and are advised to withdraw from the meeting table.

Andrew Dixon
Group Manager Infrastructure

Order Of Business

1 Apologies

2 Identification of Items of Urgent Business

3 Identification of Matters of a Minor Nature

4 Declaration of Conflicts of Interest

5 Chairperson's Report

6 Reports

6.1 Road Safety Update

Author: **Daniel Naude, Road Safety Coordinator**

Authoriser: **Andrew Dixon, Group Manager Infrastructure**

Recommendation

That the Infrastructure Committee receive and note the Road Safety update.

Purpose of Report

1 To provide the Infrastructure Committee with information on road crash trends, road safety strategy and road safety promotion activities.

Assessment of Significance

2 In terms of our Significance and Engagement Policy, this matter rates as low significance as there are no proposed changes to Level of Service or funding implications. This report is also consistent with the Long Term Plan (LTP).

3 Road safety affects the community on various social, physical and financial levels.

Discussion

4 Road safety has been improving over the last 30 years with Deaths and Serious Injury (DSI) crashes trending down. This is shown in the chart below.

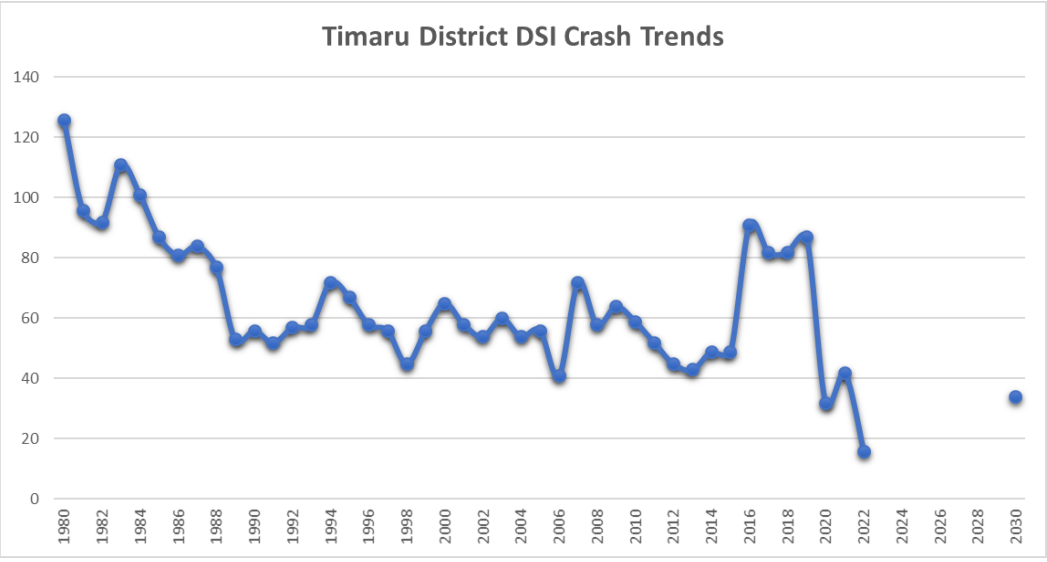


Figure 1: Timaru District crash trend by calendar year, including the 2030 target

5 The road safety model Timaru District Council follows is the internationally proven *3E's* model; Education, Engineering and Enforcement based on three transportation components, road users, road infrastructure and vehicles.

Key issues

6 Like most provincial towns, crashes happen randomly. Since there are no *black spots,* there is no particular location we can fix with engineering.

7 Crashes on open roads with higher travel speeds have more severe outcomes.

8 Police resources are inconsistent, with constant job rotations and other demands for enforcement.

9 Public opinions may not always reflect actual risk. The picture below shows an excellent example of this. In a 2018 Canterbury-wide survey by Key Research, they interviewed people about their opinions on physical and behaviour risks on the roads.

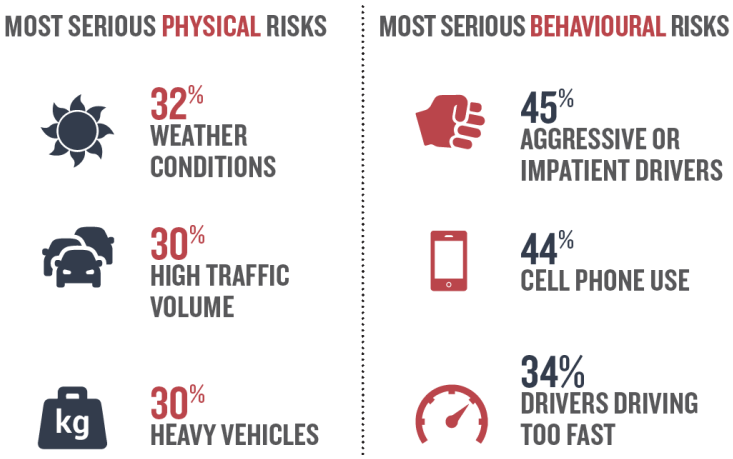


Figure 2: Extract from the research First - Road User Attitudes Research - Road Safety in Canterbury FINAL report page 61

Crash dynamics

10 The table below shows a summary of crash types for Timaru District. The filter applied was all roads, not on state highways, from 2017 to 2021.

11 The data shows percentages rather than actual crash numbers. That is to demonstrate the contribution of each age group and crash type.

12 Only values, which are above average, were highlighted in the total row. It aims to show the relationship between crash types and road user age groups to target road safety promotion.

Contribution by age group	Age group															
Crash Type	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	Grand Total
Lost Cntl/Str Rd	0.00%	0.74%	0.00%	1.48%	5.93%	2.96%	2.22%	5.93%	2.96%	1.48%	0.00%	0.74%	0.00%	0.00%	0.00%	24.44%
Lost Cntl Bend	5.19%	4.44%	0.00%	0.00%	3.70%	0.00%	0.74%	2.96%	1.48%	0.00%	0.00%	0.00%	0.00%	0.00%	0.74%	19.26%
Xing Not Turning	0.00%	0.00%	2.96%	0.00%	0.00%	3.70%	0.00%	0.00%	2.96%	0.00%	2.96%	0.74%	1.48%	0.00%	0.00%	14.81%
Xing One Turning	0.00%	0.00%	0.00%	1.48%	3.70%	0.00%	0.00%	0.00%	3.70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	8.89%
Overtaking	2.96%	0.00%	2.96%	0.00%	0.00%	0.74%	0.00%	0.00%	0.00%	0.00%	0.74%	0.00%	0.00%	0.00%	0.00%	7.41%
Head On Crash	2.96%	0.00%	0.00%	0.74%	0.00%	1.48%	2.22%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.41%
Other Ped	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.74%	0.74%	2.96%	4.44%
Merging	1.48%	0.74%	0.00%	0.00%	0.00%	0.00%	0.00%	0.74%	0.00%	0.00%	0.00%	0.00%	1.48%	0.00%	0.00%	4.44%
Obstruction	0.00%	0.74%	0.00%	0.74%	0.00%	0.00%	0.00%	0.74%	0.00%	0.00%	0.00%	0.74%	0.00%	0.00%	0.00%	2.96%
Rear End Crash	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.74%	0.00%	0.00%	0.74%	0.00%	0.00%	0.00%	0.00%	1.48%
Manoeuvring	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.48%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.48%
Same Drn Turning	0.00%	0.00%	0.74%	0.00%	0.74%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.48%
One Turns Right	0.00%	0.00%	0.00%	0.74%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.74%	0.00%	0.00%	1.48%
Grand Total	**12.59%**	**6.67%**	**6.67%**	**5.19%**	**14.07%**	**8.89%**	**6.67%**	**11.11%**	**11.11%**	**1.48%**	**4.44%**	**2.22%**	**4.44%**	**0.74%**	**3.70%**	**100.00%**

Research on driver behaviour and crashes

13 The AA Foundation NZ funded research on driver behaviour and crashes that was undertaken by Mackie Research & Consulting in 2016. Norway did the first study on this in the late 1990s.

14 This study shows that extreme driver behaviour is not the primary cause of severe crashes. This study looked at high-risk driver actions like excessive speeding, driving while intoxicated, unsafe passing, etc.

15 The outcome was that even if every road user obeyed all the road rules, we would only halve the fatality rate to 49 per cent. *System failure,* where drivers went about their typical day without the intention to behave unsafely, resulted in fifty-one per cent of road deaths.

16 Serious injury crashes have an even lower rate. At seventy-one per cent for system failure and twenty-nine per cent for high-risk behaviour, it indicates that enforcement is not the only tool to reduce DSI crashes.

17 Like any unnatural event, serious crashes contribute to trauma to the people directly involved, whanau, friends, colleagues, and in many cases, emergency staff. It puts pressure on the already constrained medical resources and support services. The social cost based on the *value of statistical life is already at nearly 300 million dollars for the past five years alone.*

18 Past or other Council's experience/approaches include:

- Coordination of road safety activities with our road safety partners, Waimate and Mackenzie Districts. Over the past few years, we also aimed at working collaboratively with our neighbouring district councils, Ashburton and Waitaki Districts.
- All three road safety coordinators now use the same road safety messages in the broader region. That includes radio, cinema, print media, billboards, social media and online advertising.The international best practice supports this approach.

19 A recent initiative has been driving simulators in local high schools. Timaru leads in using technology to promote better driving choices for younger drivers. The aim is to have simulators in all high schools in NZ. It is a joint project that started with Fulton Hogan donating a trailer with a simulator to the South Canterbury Community. From the start, we realised the simulator needed updating. A partnership between Venture Timaru, Fulton Hogan, Gfactor (developers of the new software) and Timaru and Ashburton District Councils started.

Attachments

1. **Research First - Road User Attitudes Research - Road Safety in Canterbury Report** ⇩
2. **Timaru District Deaths and Serious Injuries Crashes 2017 to 2022** ⇩

RESEARCH FIRST

ROAD SAFETY IN CANTERBURY

RESEARCH REPORT
November 2018

Contents

Road Safety in Canterbury

Disclaimer

1

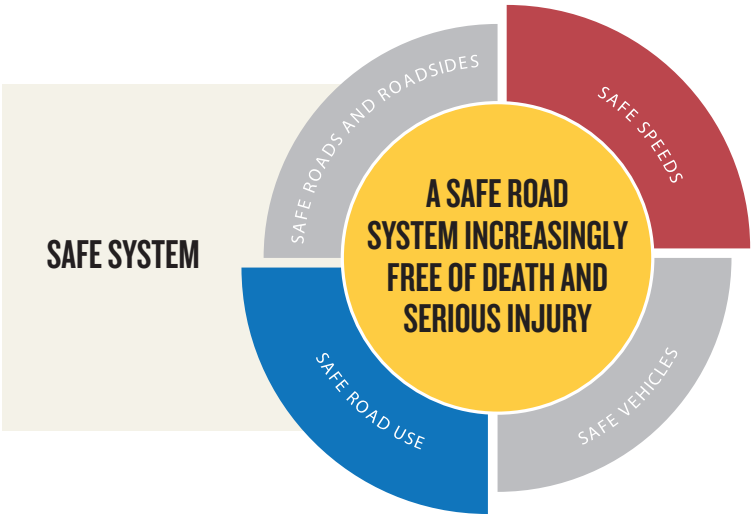
Context

1.1 Research Objectives

This research project is designed with a simple goal in mind: to inform future educational and promotional activities undertaken by councils across Canterbury. These activities have a long-term goal of influencing and motivating safer road use in the Canterbury region, leading to a reduction in serious road accidents and fatalities.

In the overall context of harm reduction, summarised in the Safe System framework adopted by NZTA, the focus of this project is therefore on indirectly influencing "safe speeds" and "safe road use".

Figure 1.1 The Safe System[1]



The research seeks to build on the broad base of accumulated knowledge, and strategy, by providing a Canterbury-specific viewpoint on road safety; understanding what kind of 'local evidence' and information should be communicated; and how, to increase the prevalence of safe road use.

To achieve this goal, it is necessary to understand the local character of Cantabrians, and how that differs by district (with a special emphasis on the differences between urban and rural residents[2]). Other meaningful demographic and psychographic factors that may influence communication strategies are also to be investigated.

1 Taken from http://www.saferjourneys.govt.nz
2 Past research has shown these to be significant factors informing attitudes and behaviours e.g. NZTA, "Better Conversations on Road Risk" (2017)

1.2 Our approach to the problem

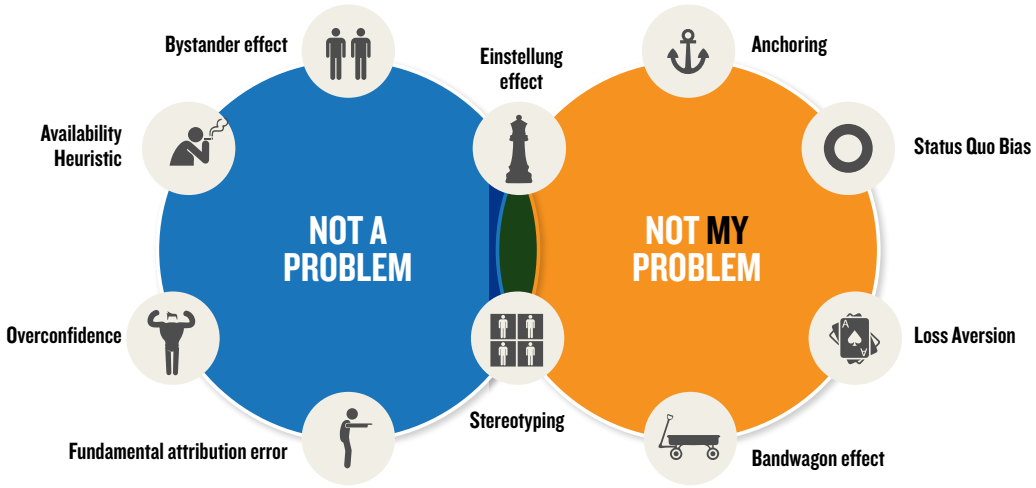
The issue of road safety is not a new one. This research needs to add to the existing literature by applying a local lens to the problem. This includes understanding what communications have been put out to the public by councils across Canterbury, how they have been evaluated, and what the findings have been.

Evaluating the effect of road safety initiatives, like any measurement of behaviour change, has two major challenges:

1. Road usage behaviour is hard to change, and
2. That change is hard to measure.

Most changes are incremental, over a long period of time, with a litany of contributing or confounding factors. People are not always aware of their own behaviour and, even when they are, they are often unable to adequately explain why they do the things that they do, because the cognitive biases at work behind the scenes, driving their behaviour, are unconscious. Figure 1.2 highlights some of the key unconscious biases that make behaviour change so complex.

Figure 1.2 Selected cognitive biases affecting attitudes to road safety



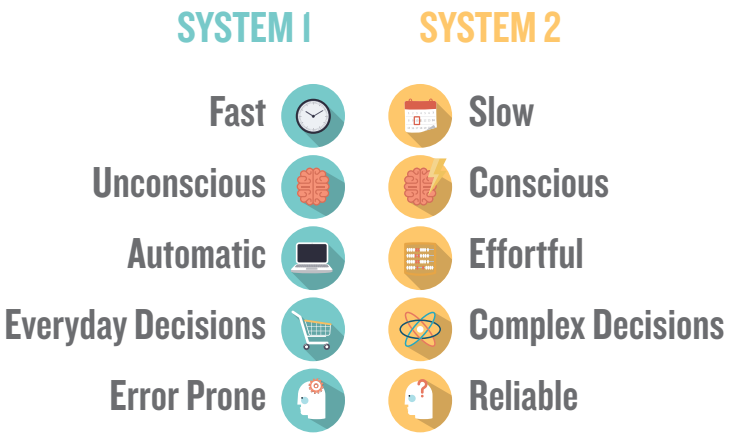
People are also by nature resistant to change (itself a bias), especially when driving and other road use are such a large part of everyday life. Every road user has a comprehensive, discrete history of personal experience and 'knowledge' that informs their actions. The barrier to safer road use is not typically a lack of information – it's that, in most cases, the information they receive that reinforces risky behaviours (through, for example, social normative feedback and the availability heuristic) overwhelms the information they receive that counters it (from media, education and other initiatives)[3].

3 This is an important point because it shows that marketing campaigns that treat the root cause as an lack of information are unlikely to result in a sustained change in behaviour.

This problem of 'motivated reasoning' is compounded because messages about road safety (and about risk in general) are often dismissed due to a sense of 'illusory superiority' (yet another cognitive bias, where people overestimate their own abilities relative to those around them). As a result, it is possible for people to be aware of road safety messages but still believe they don't really apply to them.

This perspective on bias is relevant because it draws attention the fact that much of what we think of as 'thinking' actually involves a level of automaticity that is difficult to interrupt. This occurs because our automatic "System 1" thinking is hardwired to react this way.

Figure 1.3 System 1 and System 2 thinking



Rounding out the suite of biases, of concern is the fact that the randomness and omnipresence of road deaths and serious accidents tends to make people feel powerless, and thus fatalistic. A key statistic to emerge from the 2017 *Better Conversations on Road Risk* research is that only 41% of people believe that road deaths are avoidable, implying that 59% believe they aren't, or are unsure. Our own experience leads us to build up a belief system which approves of our own behaviour; we have little choice in the matter, and the alternative is unpalatable. Getting people to think critically about road safety, and risk, requires getting them to think critically about their own behaviour.

With all those biases at play, how do we start having effective conversations about changing behaviour? One piece of the puzzle is getting people to believe that their own behaviour *does* have an effect – that while they use the road as an individual, we all have a shared responsibility, and the actions they take can have positive consequences.

2

Towards Behaviour Change

2.1 Our key hypothesis

We believe that the major impediment to improving road safety at a local level is that conversations about road safety are generally impersonal, seem distant, and are overwhelmingly negative. This makes them easy to block out or avoid.

When we conceived this research project, we set out to test the hypothesis that this natural blockout mechanism can be circumvented, at least in part, by making road safety a local issue. Practically, that means providing both local evidence (appealing to the rational mind) and local stories (personal and emotive in nature).

This matches the central hypothesis of the *Better Conversations on Road Risk* research: that the key success factor when it comes to road safety is getting people talking, and listening, to each other. Interestingly, this itself may be the result of another bias – 'narrative bias', which refers to the way our brains tend to make sense of the world through stories. These narratives are used to make sense of the information our brains process by providing a coherent way to frame that information. The more we can influence these narratives, the better chance we have of influencing how information is processed and framed.

2.2 Setting expectations[4]

The Centers for Disease Control and Prevention (CDC) calls road traffic injuries and deaths "a global problem"[5]. Road injuries are the leading cause of death among people aged 15-29 worldwide, claiming approximately one million lives a year. In response to this, the United Nations nominated the decade 2010-2020 as The Decade of Action for Road Safety. One thing this attention has demonstrated is that, while road safety initiatives can be successful, many fail (many more are not evaluated at all). However, much can be learned by understanding *why* they fail.

Key reasons for the failure of road safety campaigns traditionally include:

- Setting unrealistic expectations; some risky behaviours (e.g. speeding) have proved harder to change than others (e.g. seatbelt use)
- Being overly focused on providing rational information
- Normalising unsafe behaviour through the portrayal of this behaviour (i.e. the direct opposite of the intended effect)
- Being primarily fear-based: Hoekstra & Wegman identify that "Only if people feel that the portrayed consequences are relevant to themselves and feel they are able to take the preventive measures the campaign proposes, does the fear-appeal have a chance to work[6]"
- Being overly focused on perfecting the message, not on the way the audience will process it: – what matters is "not what our message will do to the audience, but what our audience will do with our message[7]"
- Lack of follow-through after the set campaign duration, allowing the audience to 'forget'
- Asking the public to accept too much change in too short a period
- A lack of evaluation and consequent learning and application of findings
- Not combining advertising campaigns with a simultaneous strategy of what the UK Department for Transportation (DfT) has dubbed the '3Es': Enforcement, Education and Engineering[8]

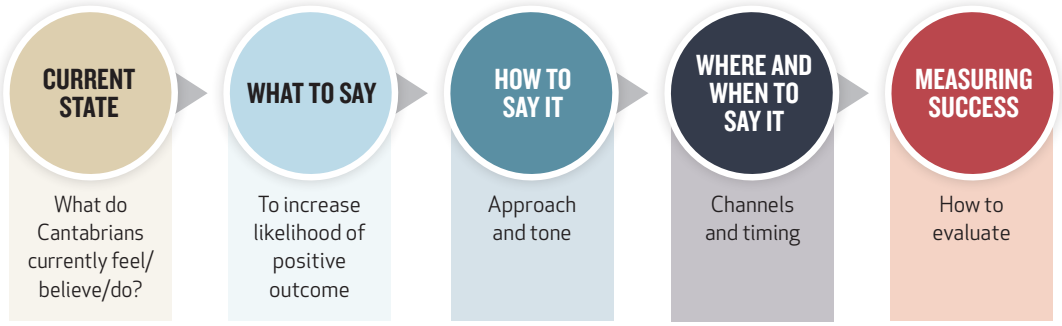
This last point is very important because, as regional Road Safety Coordinators, the main tool for achieving change is information and education, with enforcement (policing) and engineering (design) often falling out of scope. Information is well known to be a weak force for behaviour change, and the list of pitfalls above are applicable. However, in this report, we will focus on what can be achieved, not what can't.

4 In this section, as well as other parts of the report, we are indebted to two publications, both meta-analyses of road safety campaigns and their evaluations, as per below footnotes
5 https://www.cdc.gov/features/globalroadsafety/index.html
6 Hoekstra, T & Wegman, F "Improving the effectiveness of road safety campaigns: Current and new practices", published in *International Association of Traffic and Safety Sciences* (2011)
7 Effective road safety campaigns: A practical handbook", Australian *Department of Infrastructure & Regional Development* (1989)
8 See http://www.thensmc.com/resources/showcase/think

3

Key Findings on a page

With the primary research objective being to **inform future communications about road safety**, in order to facilitate behaviour change, we present our key findings using the below framework:



CURRENT STATE

- Cantabrians care about road safety, but are mostly happy with the status quo regarding enforcement; a significant minority actively reject it
- They are cognizant of physical risks and hazards, and see it as the council's role to fix them
- The majority overestimate their ability, and feel that other road users are the problem
- Many assume that road crashes and fatalities are inevitable and are sceptical about measures seeking to change behaviour
- Most don't recognise their role in promoting road safety, and don't have meaningful conversations about it
- Residents across Canterbury are consistent in their behaviours and attitudes, with only small regional differences related to local conditions

WHAT TO SAY

- Road crashes are preventable
- Give local evidence and examples, emphasising causes
- Focus on the individual and how their actions can benefit them and their inner circle
- Show other residents doing the right thing
- Accentuate the positive role the council plays in road safety
- Give people a message they can share in conversations

HOW TO SAY IT

- Appeal to emotions – mostly positive ones
- Keep it simple
- Make it relevant to the audience
- Adopt the voice of an influencer, not an authoritarian
- Be consistent—over time and across districts

WHERE AND WHEN TO SAY IT

- Three main roles for communication: Educate, Prompt, and Remind
- All channels can play a part; each should have a clear role
- Channels should work together

MEASURING SUCCESS

- Break down 'job to be done' into manageable parts
- Clearly define role for communications and channels
- Set measurable, realistic objectives
- Share best practice
- Foster culture of continuous improvement

4

Detailed findings

4.1 Current state

The 2017 NZTA research project, *Better Conversations on Road Risk*, introduced a useful framework for thinking about the current state of road safety attitudes and behaviours.

Figure 1.3 Framework for understanding community conditions that lead to safe choices [9]

The NZTA research asked four key questions of respondents across New Zealand, and amongst the key findings, two things were made abundantly clear:

1. The population is split across all four areas, with divergent results depending on factors like gender, age, location, and attitudinal segments
2. While there are encouraging signs, there is a great deal of room for improvement in all areas to make New Zealand's roads safer for travel

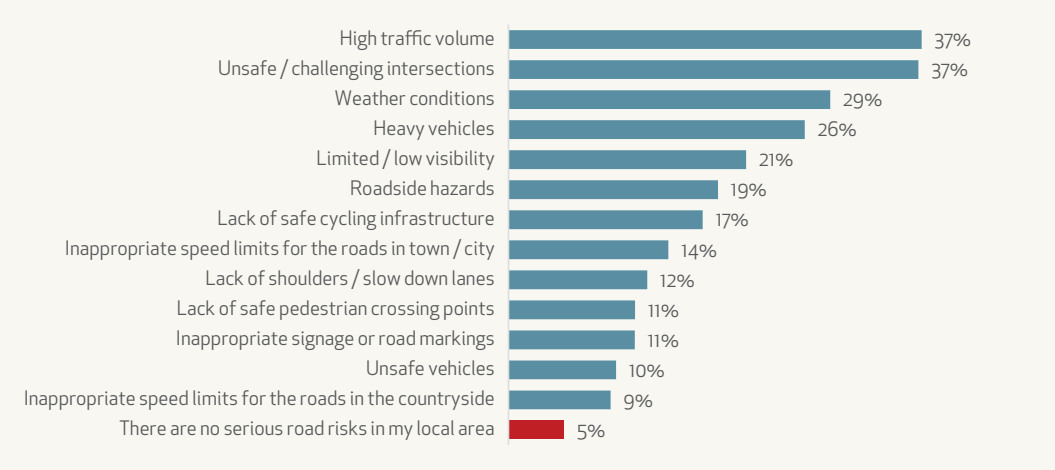
Our research has confirmed that these divisions and barriers continue to be evident in Canterbury. This is unfortunate, but unsurprising, and by investigating the reasons and motivations behind them, we can start to conceptualise how they can be addressed at a local level.

9 NZTA, "Better Conversations on Road Risk" (2017)

4.1.1 Confidence – How well are road risks and solutions understood?

Cantabrians have a strong understanding of the physical risks on our roads: only 5% believe there are no serious risks in their local area.

Figure 4.1.1.1 Most serious physical road risks in your local area

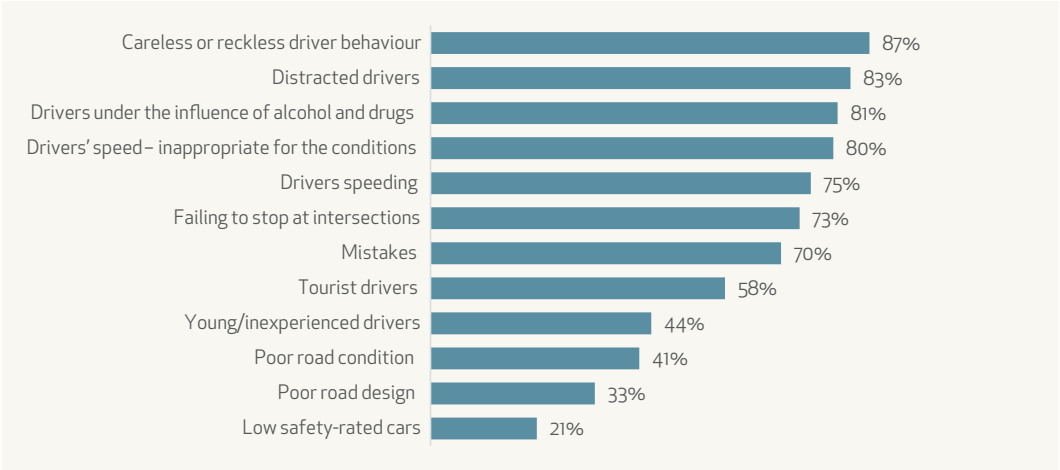


Source: Quantitative survey (weighted data). N=1460 (full sample). Respondents were asked to nominate their top three; figures shown are net. Results with less than 5% endorsement have been removed.

Residents are most concerned about colliding with each other, particularly at intersections, as opposed to fixed hazards.

Although the 2017 NZTA research highlighted a frustration with perceived poor road conditions, particularly in Canterbury, our research shows that residents do not see this as a major factor affecting serious crashes, compared to (other) drivers.

Figure 4.1.1.2 Most influential factors on road fatalities and serious crashes

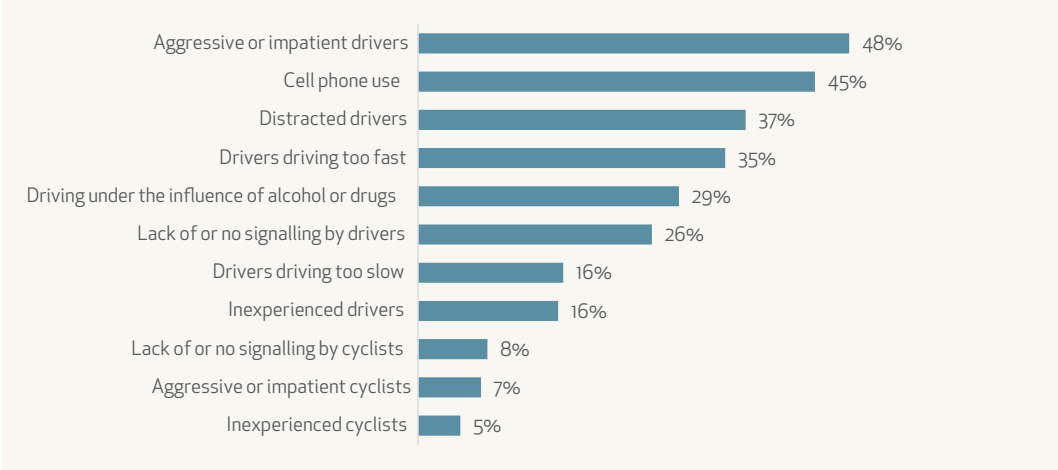


Source: Quantitative survey (weighted data). N=1460 (full sample). Figures shown are those who selected each option as very or extremely influential.

Careless or reckless driving was also the major risk identified in the Canterbury region in the 2017 NZTA research

Of note here is that residents' main perceived risk factors do not completely line up with those factors often targeted in road safety campaigns; for example, intoxication and speed are seen as secondary to reckless driving – likely the result of aggression or impatience – and distracted driving – likely tied to cell phone use.

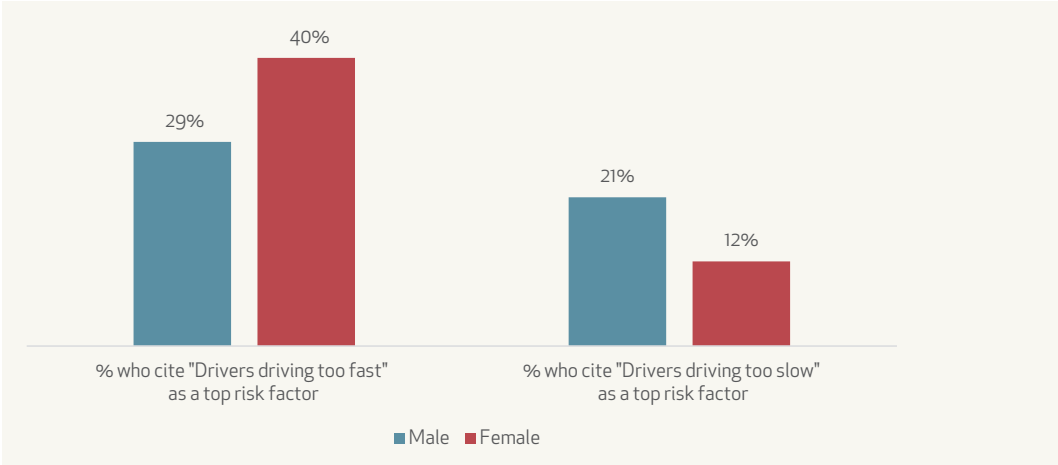
Figure 4.1.1.3 Most risky road user behaviours in your local area



Source: Quantitative survey (weighted data). N=1460 (full sample); Respondents were asked to nominate their top three; figures shown are net. Results with less than 5% endorsement have been removed.

There is a notable gender divide regarding drivers' aggression and impatience. All agree that this is the top type of risky behaviour, but females are significantly more likely to cite high speed as a factor, while males are significantly more likely to cite low speed as a risk factor.

Figure 4.1.1.4 The gender divide on the risk of speeding



Source: Quantitative survey (weighted data). N=1456 (all who answered) ; Males n= 543, Females n=913.). Respondents were asked to nominate their top three; figures shown are net.

Males are also more concerned with inexperienced drivers and cyclists: indicating that males are more likely to be the impatient or aggressive drivers they cite as a risk.

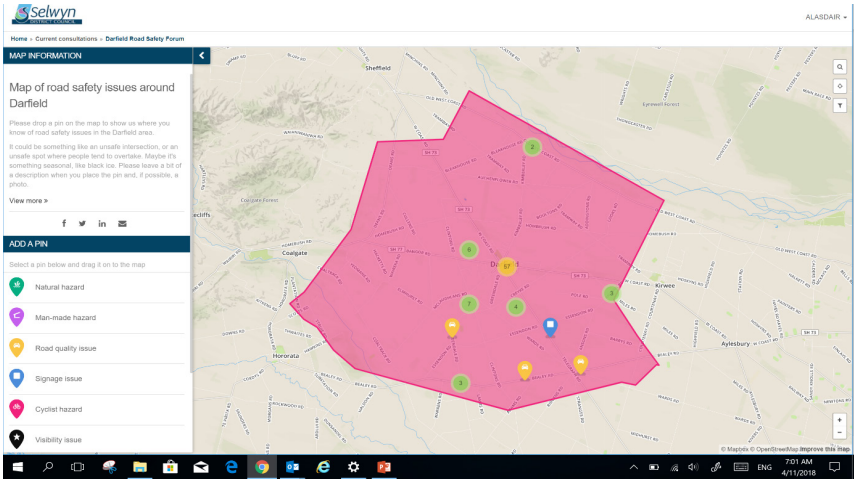
While driver behaviour is correctly identified as the main road risk, the conditions of the roads and surrounds in Canterbury do not escape the notice of residents.

33% of respondents – and 46% of rural road users[10] - claim that the roads they use are unsealed at least some of the time. When asked for any further suggestions to improve road safety, many respondents expressed dissatisfaction with current conditions:

- *"Road condition to be maintained with proper road signs, road markings and shoulders for right or left turns."*
- *"Better roads would help, particularly in Christchurch, where many of the roads have been in poor condition since the 2010/2011 earthquakes."*
- *"Condition of the surface of the road - remove potholes, smoother patch-up jobs on the tar seal or chip seal roads."*

When asked to think specifically about their immediate local area, deficiencies in roading and signage systems appear to be the most salient risks. Of the 86 road safety issues flagged in the Darfield Road Safety forum, 20 responses mentioned an impediment to visibility, 16 mentioned roads in poor condition or inadequate for conditions, and 14 mentioned inadequate signage, while only 24 made any mention of road user behaviour.

Figure 4.1.1.5 Local resident-generated map of perceived road safety issues in and around Darfield



Source: Darfield Road Safety Forum online (Research First/Bang the Table/Selwyn District Council)

10 Here, "rural road users" refers to those who say they only/usually use roads with a speed limit of 70 km/h or above – 27% of respondents.

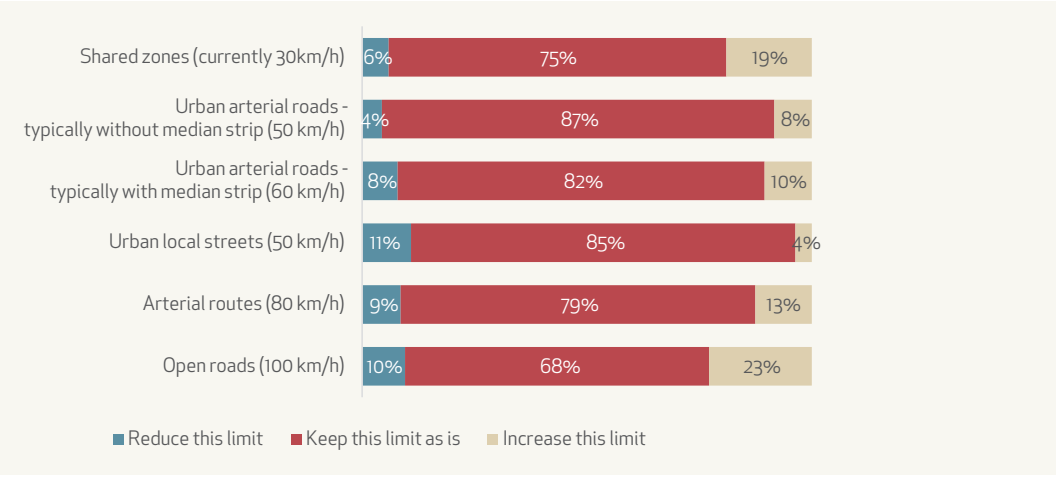
We view this tendency (amongst some) to blame road conditions not as an abdication of responsibility per se, but as a general view that resolving safety issues should start with the authorities i.e. that a decline in risky behaviour is unlikely to occur without some kind of 'engineering'. Physical risks were highlighted more often because residents see these as the 'low-hanging fruit' for the council to address as a first priority.

So, Cantabrians seem to have good knowledge of the risks posed by local conditions, and the risks posed by other road users and the choices they make. But how aware are they of the risks they themselves pose for others, and their own level of responsibility in reducing road risk?

4.1.2 Choices – Are safer choices being made or supported?

Residents certainly say all the right things when it comes to personal responsibility, and the need for education and enforcement. When asked at what speed they would take a curve signposted with a recommended 35km/h, the median response was a relatively sedate 40 km/h. The overwhelming majority are in favour of keeping all speed limits as they are, or reducing them.

Figure 4.1.2.1 Desired changes to speed limits

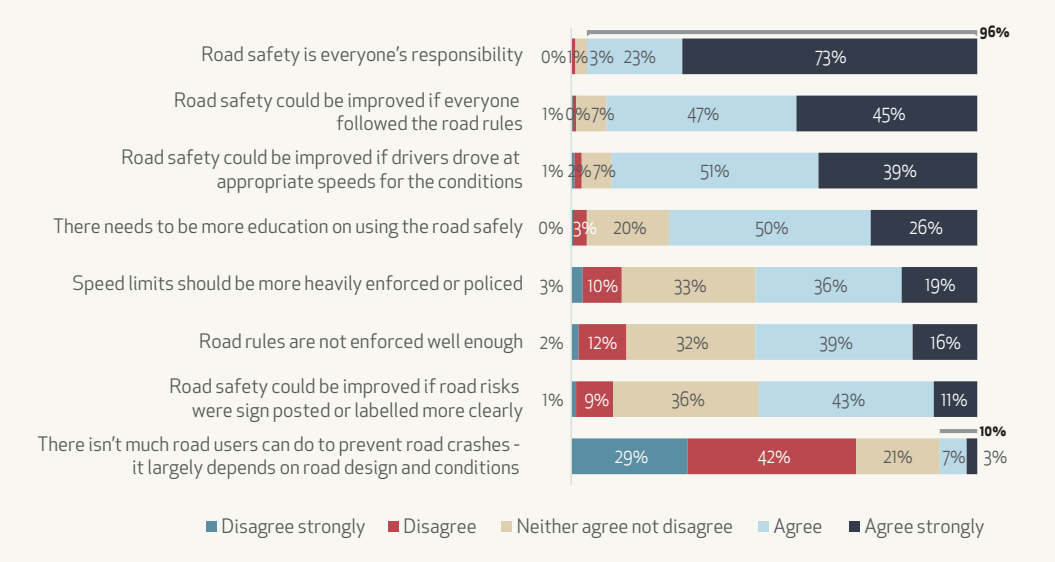


Source: Quantitative survey (weighted data). N=1460 (full sample).

> *"Everyone! Council needs to make sure our roading infrastructure is up to standard and fixed quickly. Police are responsible for assisting with the safety of the people on the road but ultimately it comes down to every single person who is driving or is a passenger in a car to make sure they and other road users are safe!"*
>
> **FIRECHICK, VIA DARFIELD ROAD SAFETY FORUM**

96% agree that road safety is "everyone's responsibility", and only 10% think crashes "largely depend on road design and conditions".

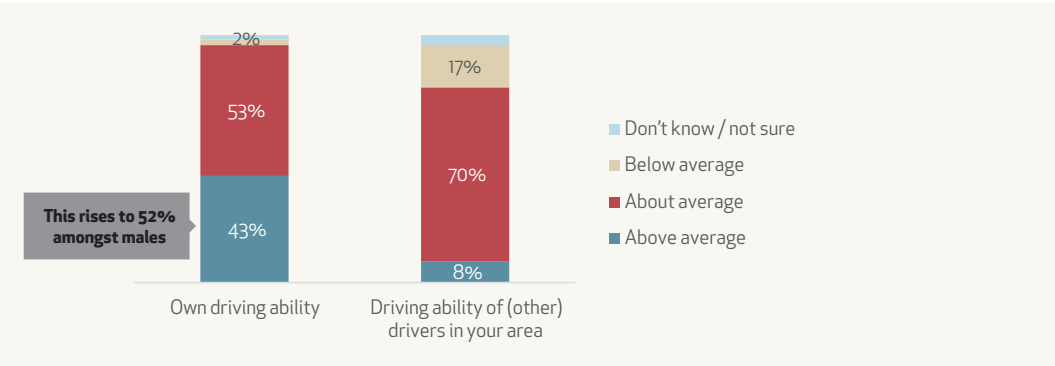
Figure 4.1.2.2 Levels of agreement with selected statements regarding road safety



Source: Quantitative survey (weighted data). N=1460 (full sample).

Most agree that road rules could and should be enforced, combined with educational initiatives, and this is consistent across regions and age groups. However, many people doubtless believe that these conditions only apply to other road users, not them.

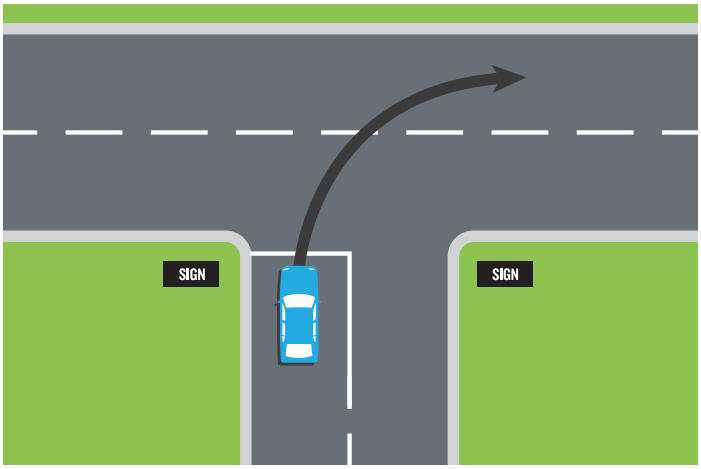
Figure 4.1.2.3 Rating of driving ability – self and others



Source: Quantitative survey (weighted data). Self: n=1376 (drivers only); Others: n=1460 (full sample).

Many (but not all) male respondents display the hallmarks of overconfidence and illusory superiority that are characteristics of greater risk-takers. This is a common theme that emerges in the 'thought experiments' that formed part of our survey.

Figure 4.1.2.4. Actions would take at an intersection – by gender

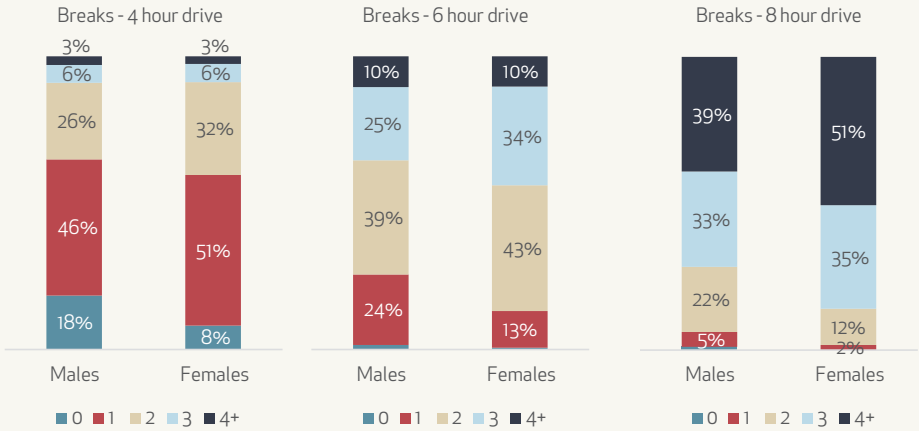


Source: Quantitative survey (weighted data). Males: n=485; Females n= 834 (drivers who do not count cycling as their main mode of transport only).

If this was a **STOP** sign, only 70% of males (84% of females) would come to a complete stop for 3 seconds

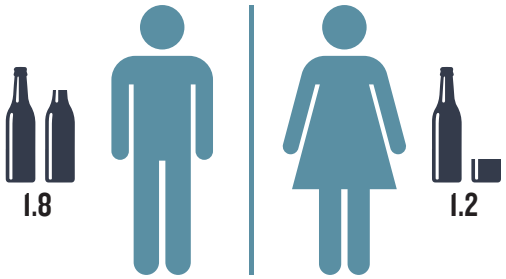
If it was a **GIVE WAY** sign, only 55% of males would stop at all (64% of females) – the rest would simply slow to a crawl

Figure 4.1.2.5 Breaks would take on a long drive – by gender



Source: Quantitative survey (weighted data). Males: n=485; Females n= 834 (drivers who do not count cycling as their main mode of transport only).

Figure 4.1.2.6 Maximum number of alcoholic drinks while still considering self capable of driving home



Source: Quantitative survey (weighted data). Males: n=408; Females n= 700 (drivers who do not count cycling as their main mode of transport only, non-drinkers removed).

Overconfidence doesn't just mean you see yourself as a better driver than others: it means you are likely to forgive your own mistakes as being results of circumstance, while attributing other's mistakes defects in their characters: a phenomenon known in social psychology as the **fundamental attribution error**. Below are some examples given when respondents were asked to describe the last time they made an error when using the road:

- *"Didn't come to a complete stop at a stop sign while turning left. I could see clearly that no traffic was coming. Got a ticket because a cop was staking the stop sign out."*
- *"Driving through Lindis Pass and came around a blind corner, and came across Asian tourists, stopped in the middle of the road taking a photo!"*
- *"When passing a truck, did not factor in that an approaching motorcycle was way above speed limit, about 140 km/h. I could not get past in time, so motorcycle had to slow down. He was not happy but it was his fault."*
- *"Exceeded 100km/h in overtaking lane, because driver in left lane increased his speed from the 80km/h he had been travelling at, for several kilometres, to 100km/h as the traffic he had been holding up endeavoured to get past him."*
- *"Failed to notice a driver who stopped after starting to enter a left-hand entry road. She stopped suddenly to attend to a crying child and I had looked right to check road safe to enter and I hit her tail failing to see she had stopped."*
- *"Would rather not talk about this."*

Many respondents also cited fatigue, stress or distraction as a causative agent in their errors, as well as weather. A minority were able to admit an error in judgement without extenuating circumstances.

Confidence and optimism are vital attributes for living, correlated with favourable outcomes in many areas. When learning to use the road it is optimism, alongside acquired skills, that allows us to migrate from conscious competence to the unconscious competence all experienced drivers employ[11]. However, overconfidence (or optimism bias) is dangerous in the context of everyday road safety, as it affects decision-making and perceptions of risk.

Overconfident drivers (those who identify themselves as above average) are more likely to be male. Males[12] are significantly:

- More resistant to the idea of limiting speed – both by authorities, and self-limiting behaviour
- Less in favour of increasing police presence, penalties for traffic infringements, and reducing the permissible blood alcohol limit
- More in favour of increasing speed limits – especially on open roads
- More pessimistic about the potential impact of advertising and community discussions on safe road use

11 We did not note a correlation between the length of time a respondent had held a license and any measure of overconfidence, indicating it is a state of mind, not a direct result of increased experience.
12 Aside from gender differences, there are a number of other factors that impact individuals' perceptions of road risk and enforcements, covered in section 4.1.5.

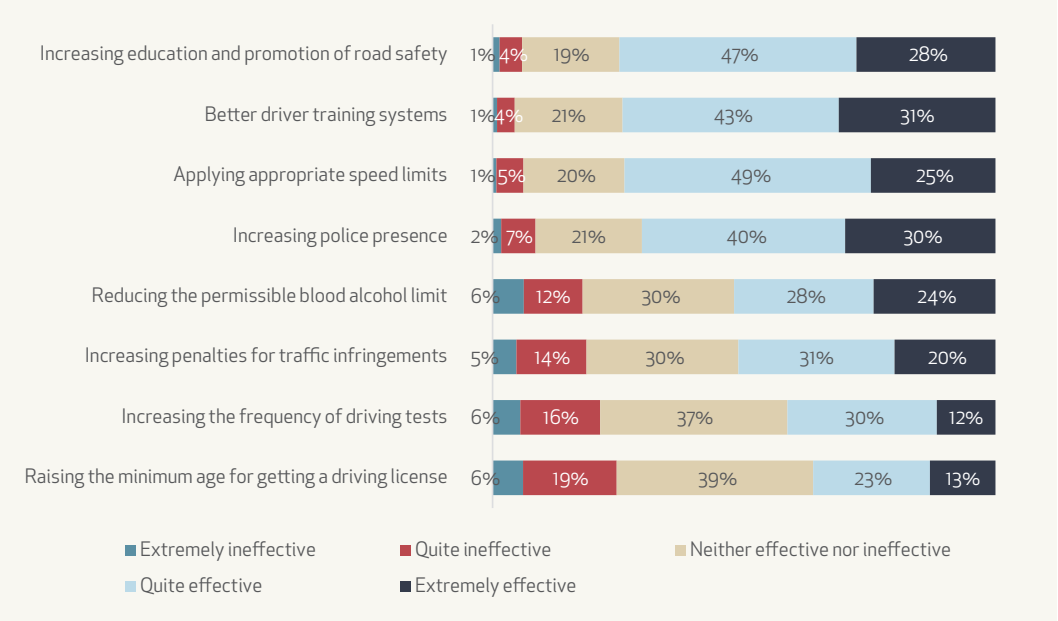
The 2017 NZTA research highlighted that safer choices are not always supported by the public when it comes to road safety, with a significant minority debating the effectiveness of increased enforcement of laws and speed limits, and large numbers unsure.

Figure 4.1.2.7 Perceived effectiveness of road safety solutions – NZTA 2017[13]

Our results are similar, but the added measures of driver education and training are considered to be more effective than any enforcement strategies. Large numbers remain unconvinced, and a minority believe that raising the minimum age for a driver's license, or increasing the frequency of driving tests, would be effective.[14]

13 NZTA "Better Conversations on Road Risk (2017) These are results for Canterbury; national results were similar.
14 Younger drivers (under 24) are predictably even less in favour of the former – but more in favour of the latter.

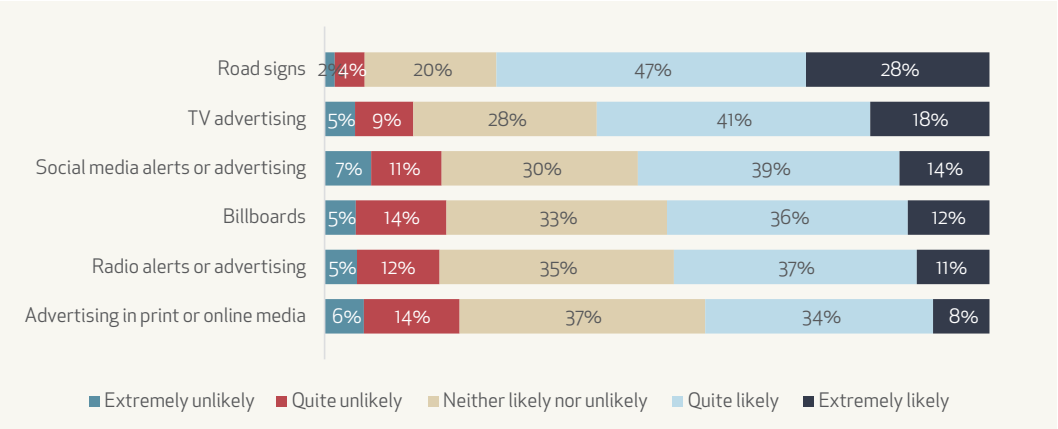
Figure 4.1.2.8 Perceived effectiveness of road safety methods



Source: Quantitative survey (weighted data) with Don't Know responses removed. N= from 1396 to 1442.

The public is equally ambivalent regarding the effectiveness of road safety advertising, with TV seen as the most effective, but around half of all respondents unconvinced of the power of advertising to effect change.

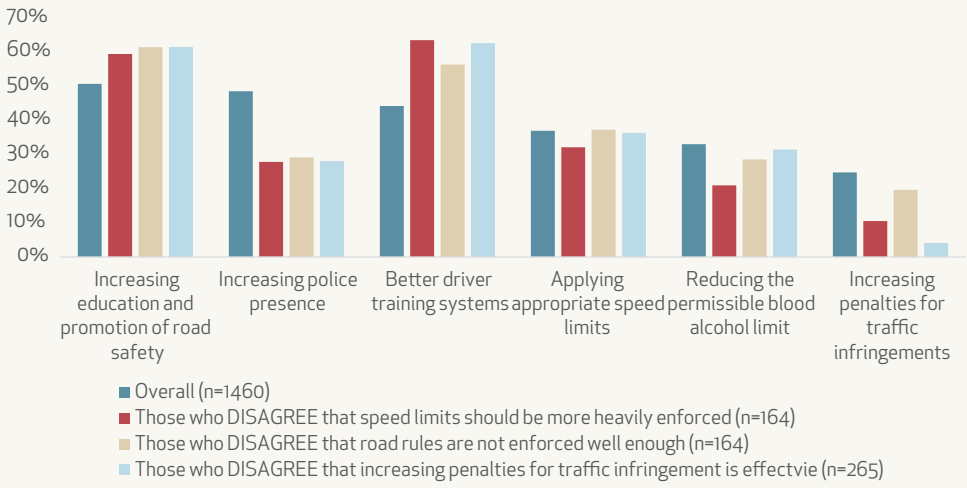
Figure 4.1.2.9 Perceived effectiveness of road safety advertising channels



Source: Quantitative survey (weighted data) with Not Applicable responses removed. N= from 1413 to 1451.

Investigation of this ambivalence – comparing groups who agree and disagree with particularly divisive statements – makes it clear that there is a particular group, a significant minority (around 15-25%), who are active rejectors of any attempts to control their road usage behaviour. This group skews male (but is by no means exclusively male), from a European background, and the 16-24 age group is over-represented. They dismiss excessive speed as a major risk, don't support greater enforcement of road rules, and are also more tolerant of drink/drug-affected driving.[15]

Figure 4.1.2.10 Top choice for methods of increasing road safety



Source: Quantitative survey (weighted data). Respondents were asked to choose the top three methods of increasing road safety they would keep, if they could only keep three.

This group is not in favour of an increased police presence, or increased penalties, but is more in favour of increasing driver education.

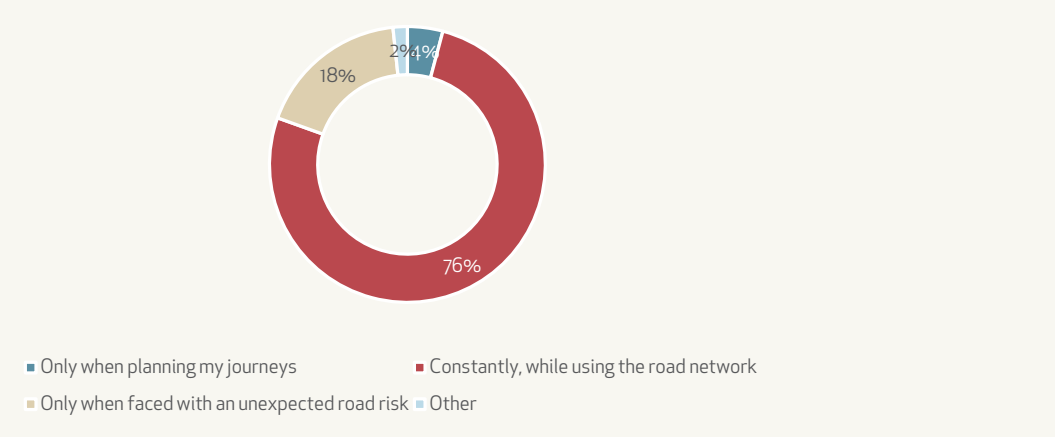
In summary, Cantabrians are typically accepting of the status quo when it comes to road safety regulations and their enforcement. While most aren't actively resistant to attempts to improve road safety through regulation and increased enforcement, a significant minority are. A summary of the prevailing attitude might read "The road rules exist for a reason. I obey them, when they make sense; they don't need to change, and we don't need more of them. The problem is other drivers, so there should be a focus on educating them for the greater good."

15 While we were unable in the timeframe to secure the necessary materials from NZTA to reproduce the attitudinal segments generated in the 2017 BCORR research, this group can be considered congruent with the "Life in the fast lane" segment described in that research.

4.1.3 Care – is road safety an important community issue?

Communities in Canterbury clearly care about road safety. 76% of residents say they think about their safety, and the safety of others , constantly when using the road network. This figure is consistent across genders and attitudinal groups – although it does increase with age.

Figure 4.1.3.1 Top choice for methods of increasing road safety

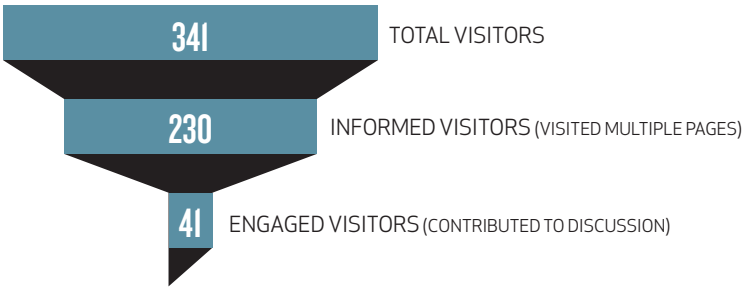


Source: Quantitative survey (weighted data). N=1460 (full sample)

When asked for a specific suggestion on how to improve local road safety, 50% of respondents could name something on the spot.

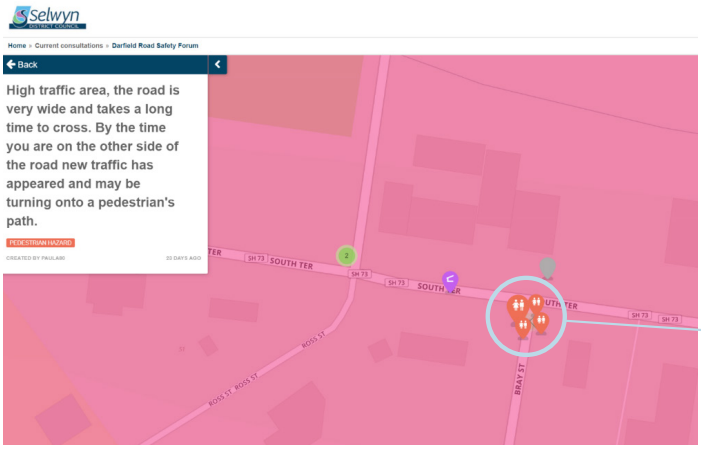
When bringing road safety to a hyper-local level with the Darfield Road Safety forum, there was great enthusiasm shown during the recruitment drive: without offering any incentives, and primarily using a simple telephone script, a total of 341 people visited the forum, out of a local population of around 2,200 – although this initial enthusiasm did not necessarily translate into high engagement.

Figure 4.1.3.2 Darfield Road Safety Forum Participation Statistics – 27th September to 5th November 2018



The most engaging area of the forum was the interactive map where users could 'pin' local road issues they knew about: 34 visitors dropped a total of 86 pins, often on top of other users' suggestions.

Figure 4.1.3.3 Darfield Road Safety Forum – example engagement on map

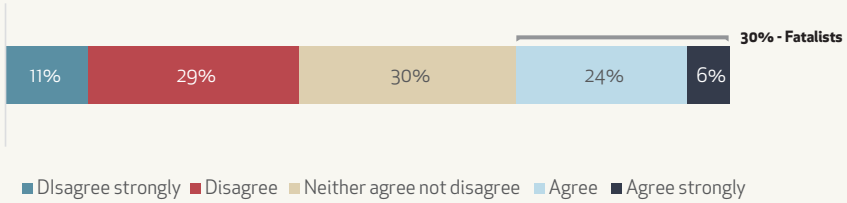


In this example, five different users highlighted the same pedestrian hazard area

The mapping experiment showed that a small but significant proportion of residents would like to be actively involved in solving road safety issues in their community. They participate because they have an agenda, and are strongly motivated by the idea of a consultation with the council that produces tangible results – and they clearly believe that accidents can be avoided.

Unfortunately, for a large proportion the population, feelings of fatalism and powerlessness are the norm. Only 41% believe that road crashes resulting in death or serious injury are avoidable – the same number NZTA identified in 2017[16].

Figure 4.1.3.4 Agreement with inevitably of fatal and serious crashes

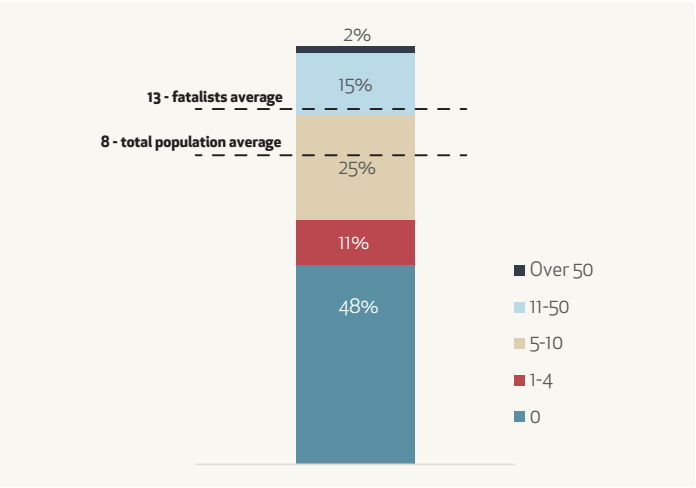


Source: Quantitative survey (weighted data). N=1460 (full sample)

16 NZTA "Better Conversations on Road Risk (2017) These are results for Canterbury; national results were similar.

While 48% of people agree that the acceptable number of serious crashes in their local area is 0, the average number suggested was 8. Amongst the group of active rejectors of road safety enforcement identified in the previous section, the figure is closer to 11. Fatalists are prepared to accept up to 13.

Figure 4.1.3.5 – Stated acceptable number of serious road crashes in respondents' local district



Source: Quantitative survey (weighted data). N=1460 (full sample). Note this sample includes residents from across Canterbury, in districts of varying population size. Consult individual district's figures for details.

These Fatalists are more likely to ride a bicycle or e-bike (26% vs 21% of the total population), and significantly more likely to ride it to commute, and as a main mode of transport; this group has likely chosen cycling as an active measure to avoid the inherent danger they see in driving, and as such are supporters of bicycle lanes and co-sharing pedestrian areas.

Fatalists are also generally less confident about the efficacy of road safety initiatives, including advertising and education.

Canterbury residents do care about road safety, and being road users, most have some ideas about how to improve it in their local area. These may or may not agree with the council's ideas, or their fellow citizens', but any discussion is likely to attract a sizable and motivated audience. However, 41% of people think serious road accidents are simply inevitable. Rather than rely on authorities' safety initiatives that they are more likely to see as fruitless, this group are inclined to take measures to increase their own personal safety.

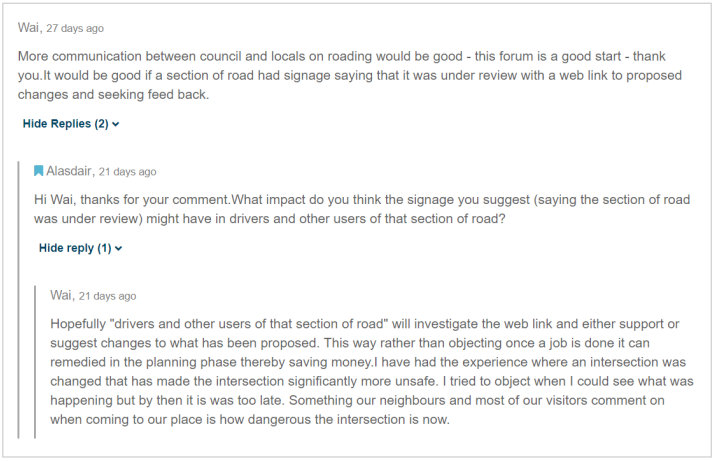
4.1.4 Conversation – are people talking about road risk?

The 2017 *Better Conversations on Road Risk* research Forum stats and survey results suggested that most Cantabrians (60%)[17] do talk about road safety, but that these conversations tend to be unproductive "due to bias/ incomplete information sources and few solutions".

In the Darfield Road Safety Forum, we found that, while participants were happy to make specific suggestions about improving road safety, few were interested in a conversation about it. Attempts to get participants to debate issues, or share personal stories, were largely unsuccessful and swiftly redirected back to that participant's own agenda. This is related to the context of the conversation – while the forum was set up as an arena for discourse and insight generation, participants likely thought of it as a means to problem-solve. Potentially, the power dynamics of the council/resident relationship leads residents to see it as a transactional relationship, not a discursive one.

Nevertheless, reactions to the forum were generally positive:

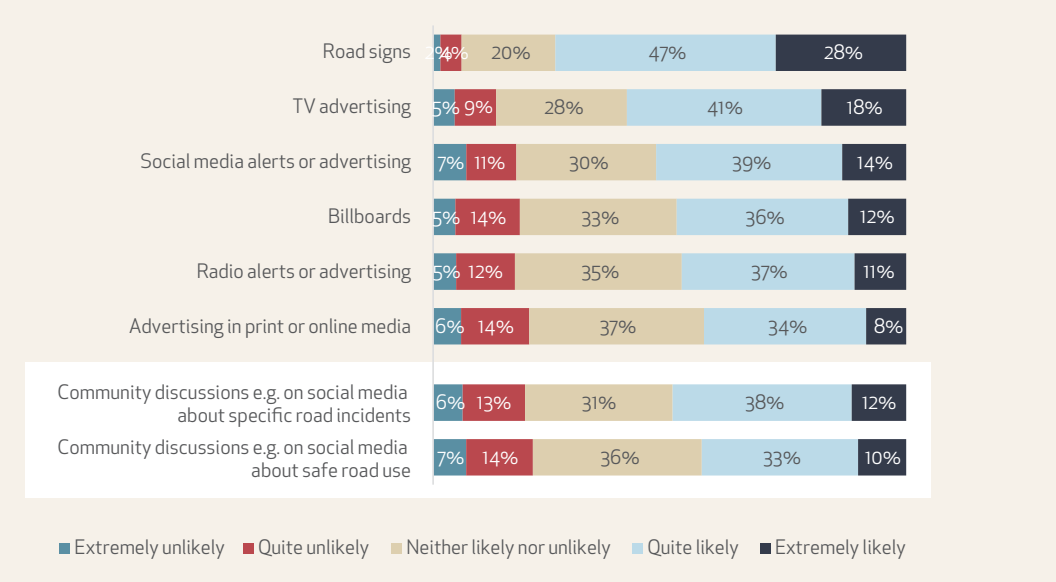
Figure 4.1.4.1 – Example of participant/moderator interaction on the Darfield Road Safety Forum



In the wider population, confidence in the effectiveness of community discussions is muted, compared to other communications channels.

17 NZTA "Better Conversations on Road Risk (2017) These are results for Canterbury; national results were similar.

Figure 4.1.4.2 Perceived effectiveness of road safety communications channels



Source: Quantitative survey (weighted data) with Not Applicable responses removed. N= from 1413 to 1451.

People do have conversations about road safety, but may not be actively looking for a conversation with their council about it. While there is potential for an active council role in conversations, this may lead to a one-sided conversation about what residents feel the council should be doing, not what residents should be doing themselves. The main focus should therefore be on influencing, and facilitating the conversations that take place between residents.

4.2 Message crafting

In 2010, the UK's Institute for Government released a guide for public policy-makers called MINDSPACE[18], describing nine "non-coercive behaviour change tools with proven robustness"[19] to be added into the "traditional mix of education, regulation and incentives". At the time, it was an up-to-date summary of recent social psychology research thinking, and it remains a useful framework for conceptualising how behaviour change messages should be crafted, and delivered.

MINDSPACE is an acronym of the nine influences, summarised in the below table:

Figure 4.2.1 MINDSPACE in action for road safety

Influence	Description	Application to road safety
Messenger	We are heavily influenced by who communicates information	Don't speak with the voice of the government, but of someone who is trusted and respected
Incentives	Our responses to incentives are shaped by predictable mental shortcuts such as strongly avoiding losses	Emphasise the benefits of safer road use to personal safety, and that of close family, friends and community
Norms	We are strongly influenced by what others do	Show that the majority are already doing the right thing
Defaults	We 'go with the flow' of preset options	Behaviour change will take time, but longer term safe behaviours reinforce themselves
Salience	Our attention is drawn to what is novel and seems relevant to us	Be unpredictable, simple, and give relevant information
Priming	Our acts are often influenced by sub-conscious cues	Avoid displaying unsafe behaviours as they risk reinforcing them
Affect	Our emotional associations can powerfully shape our actions	Use emotion, not just facts
Commitments	We seek to be consistent with our public promises, and reciprocate acts	Accentuate positive acts that the council is undertaking
Ego	We act in ways that make us feel better about ourselves	Maintain a positive, encouraging tone

Expanding on this further, we can then determine concrete recommendations for Canterbury road councils when considering communications directed at improving road safety: what to say, how to say it, and when and where to say it.

18 "MINDSPACE: Influencing behaviour through public policy" (2010). Available for download at https://www.instituteforgovernment.org.uk/our-work/policy-making/mindspace-behavioural-economics

19 https://changeologyblog.wordpress.com/2011/02/02/changing-behaviour-without-changing-minds-the/

4.3 What to say

4.3.1 Local evidence

People are notoriously poor at estimating risk to themselves in specific situations, for reasons we've already explored. They're also poor at estimating the total risk on roads in their area: when asked to estimate the average number of serious road crashes that happen in their district each year, the majority of people were unable to accurately estimate the number:

Figure 4.3.1.1 Fatal and serious road crashes by district – estimated versus actual

	Kaikoura/ Hurunui District*	Waimakariri District	Christchurch City	Selwyn District	Ashburton District	Timaru/ Mackenzie/ Waimate District*	Waitaki District
Fewer than 5 serious crashes each year	2%	15%	3%	6%	3%	1%	6%
5-10 serious crashes each year	16%	25%	9%	17%	21%	31%	19%
11-50 serious crashes each year	34%	37%	36%	53%	39%	31%	34%
Over 50 serious crashes each year	23%	9%	38%	18%	9%	23%	22%
Don't know / unsure	25%	13%	14%	6%	28%	14%	19%
ACTUAL NUMBER OF FATAL OR SERIOUS ROAD ACCIDENTS**	**26**	**42**	**177**	**63**	**20**	**66**	**8**

Figures are from 2017 (CAS). *Note that residents were asked to estimate based on their own district, but these district were combined for analytical reasons due to sample size. Actual 2017 figures by district: Kaikoura 2, Hurunui 24, Timaru 33, Mackenzie 14, Waimate 9

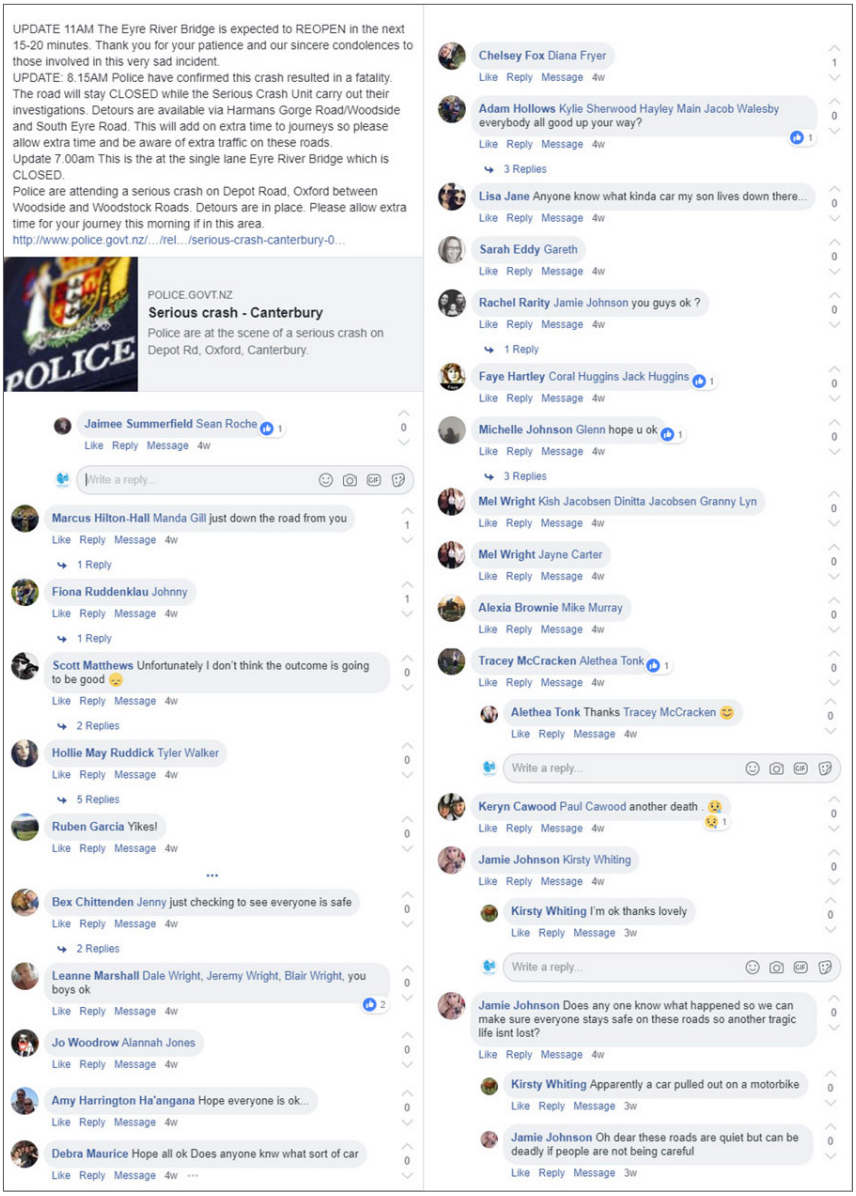
**Source: Ministry of Transport Crash Analysis System (CAS) (2017)

CORRECT ESTIMATE

Serious and fatal crashes are, of course, only around 30% of total accidents causing injury. At the very least, the public should be made more aware of the actual dangers they face on the roads**. Facts themselves are unlikely to change behaviour, but they can be used to grab attention and set the agenda.**

Another type of message to consider is informative posts about *road accidents in the local area,* for example on social media or other instant bulletin services. Figure 4.2.1.2 is an example of an actual social media post made by Waimakariri District Council, and a sample of the subsequent comments and shares made by members of the public.

Figure 4.3.1.2 Example local road accident announcement – Waimakariri District Council



This post was clearly engaging, but care needs to be taken to avoid causing undue distress. When participants in the online forum where shown the post, reactions were mixed, and not everyone interpreted it as a message about road safety.

- *"It gives you up-dated information, you relate to the area/ people that are effected. You feel you can help prevent further accidents." - Britta, via Darfield Road Safety Forum*
- *"Comments should be left off. Creates speculation as to what happened and who might be involved, often with poor or inaccurate information. Can be very concerning to any one with family or friends traveling on that road at the time of post." - PMD, via Darfield Road Safety Forum*
- *"I like the fact for people that may be travelling in that area it gives clear information about the situation, alternative travel route and to make sure you allow extra time on your journey. Very informative." – Lee H, via Darfield Road Safety Forum*

When asked how hearing about a serious road crash affects their own behaviour, survey respondents were similarly split, with some indicating that such a message would only reaffirm the dangers posed to them by other drivers:

- *"It further reinforces how dangerous driving is and once again reminds me to be constantly vigilant."*
- *"I probably slow up at points where I know there has been a crash. There's a local spot which always has fresh flowers placed by the family of a person who died there. I am always extra aware of what other drivers are doing at this spot as it is a place that encourages rash overtaking. The flowers always remind me to keep a careful eye out"*
- *"No, because I use the road carefully and obey all the rules especially with speed, but it does make me more aware of others on the road."*
- *"A lot of crashes in Selwyn are usually tourists and people who are new to the district, who don't know how to drive to the roads and conditions."*

As we've seen, residents are quite well informed about specific physical risks in their local area, such as poor visibility, weather-related issues, or inadequate signage and road design. Unless there are new risks that people need to be made aware of, communications about physical risks should focus on **actions the council has taken to ameliorate these risks.**

Residents are most concerned with physical risks where they interact with risky behaviours, such as overly aggressive or impatient drivers (e.g. not waiting at intersections).

Figure 4.3.1.3 Highest rated advertisement tested in the Darfield Road Safety Forum survey

In testing, this newspaper/poster ad was the one respondents said they were most likely to read in detail

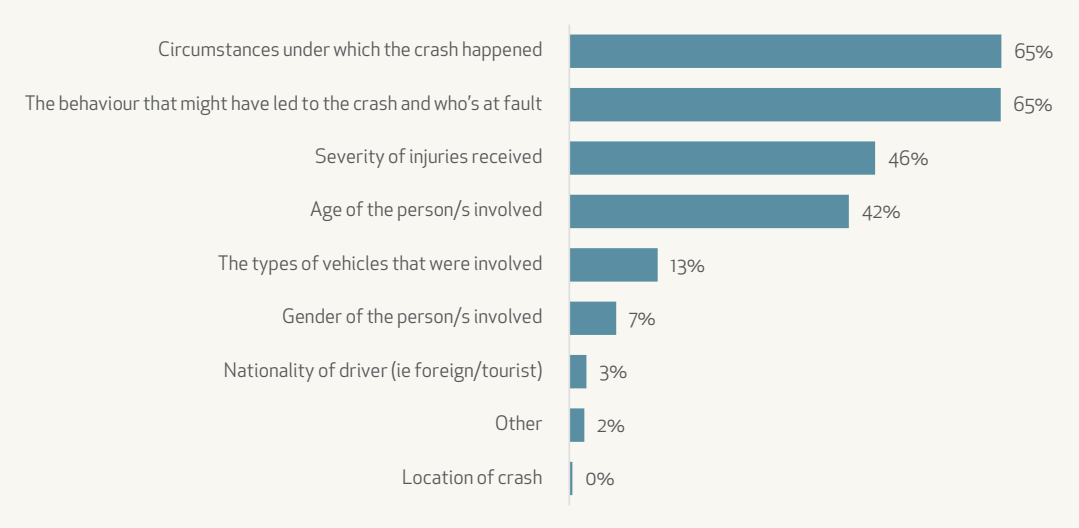
While people may not acknowledge their own risky behaviours, they are well aware of the infractions of others, and should be reminded that **everyone makes mistakes** and to have patience with their fellow road users.

One way to convey this is by showing **local residents exhibiting the correct behaviour**, reinforcing positive actions rather than potentially legitimising negative ones. This is likely the insight behind campaigns such as NZTA's "Less speed, less harm", which shows a survivor of an accident thanking the other party in the crash for not going faster.

Figure 4.3.1.4 NZTA billboard – "Less speed, less harm" campaign

The location of the crash may be important at the time (so people can avoid it), but it's not what they tend to remember, so focus on the **circumstances and cause of the accident.**

Figure 4.3.1.5 Details of serious road crashes that stick in the memory



Source: Quantitative survey (weighted data, coded). N= 1460

It's important to give people something to take away to avoid the potential onset of fatalism, so make sure to give them a **message they can share**, ideally using the 'voice' of the target audience.

Figure 4.3.1.6 – Examples of shareable messages in behavioural change campaigns – NSW Government

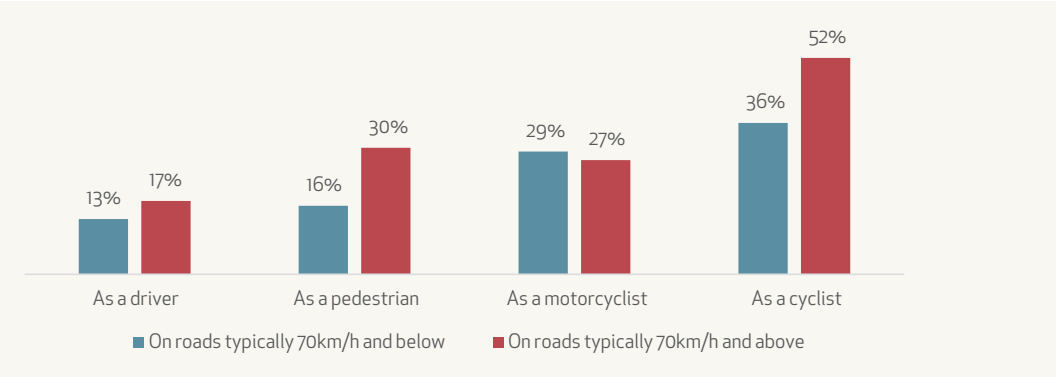
While adopting the right voice for the target audience is key, **messages should typically be planned to reach as large and as broad an audience as possible,** outside even those whose behaviours you are trying to change. This is to encourage conversation between the target group and their influencer networks.

However, sometimes it is relevant to target a particular sub-group of people (for example, cyclists, or elderly drivers taking an educational course). On these occasions, the message should be tailored to particular audiences **based on issues that resonate with or apply especially to them.**

For example, rural road users are much more likely than urban road users[20] to drive every day (68% vs 51%), and more often on unsealed roads. Consequently, their safety concerns are different: rural road users are more concerned with vehicle speed (both too fast and too slow), and inexperienced or tourist drivers. They are more also more likely to cite road design as a risk factor, for example a lack of road shoulders and cycle lanes.[21]

Mode of transport also greatly affects not just behaviour, but perceptions of risk:

Figure 4.3.1.7 – Percentage of users of specific modes of transport who feel extremely/somewhat unsafe



Source: Quantitative survey (weighted data). Only users of each mode of transport were asked about perceptions of safety. N=1392 pedestrians; N=1373 drivers; N=568 cyclists; N=163 motorcyclists

Cyclists are, understandably, more concerned with a lack of safe cycling infrastructure: 26% of those who cycle at least monthly name this as a serious physical road risk, compared to 14% of others. Meanwhile, frequent drivers (those who drive at least weekly) are more likely to cite "drivers driving too slow" as a road risk (18% to 4%). **People are naturally more concerned with things they perceive as a personal threat to themselves.**

20 Here, "rural road users" refers to those who say they only/usually use roads with a speed limit of 70 km/h or above, while "urban road users" refers to those who say they only/usually use roads with a speed limit of 70 km/h or below

21 Overall, few significant differences are present when comparing between districts within Canterbury: residents tend to behave and perceive risks similarly, indicating differences in attitudes and behaviour are more due to experience and demographic factors than location. The major differences observed relate to localised conditions e.g. weather and tourist drivers. Please consult individual district fact sheets for more information.

Different attitudinal groups may also require different messages: for Fatalists, and those resistant to efforts to police behaviour, **focus on actions that they can take to protect their own safety** on the road – that will have the side-effect of increasing the safety of everyone.

Finally, where possible, all information-based initiatives should be **simultaneous and consistent with local enforcement and engineering initiatives.**

> *"Real stories from some of our local people. Tips from our emergency service people. Brief and eye catching road safety messages." – Firechick, via Darfield Road Safety Forum*

4.4 How to say it

Equally as important as what to say is how to say it; people have naturally raised defences against messages that contradict their beliefs, and couching a message in the right tone and voice can help to overcome these defences.

All marketers know that a campaign based purely on factual information is likely to fail: one needs to **appeal to the emotions** of the reader/viewer to increase the chance of success. Facts are an important basis for credibility, and an unknown fact can elicit surprise and consideration, but a fact should be linked to a benefit of some kind for the audience: **something that they can gain (a benefit), or something that they can avoid losing.** In this regard, referring to children, other family members, and other members of a person's inner circle can be very powerful.

- *"As a driver I have always been aware but I think once you have a family you realise the responsibility you have as a parent to drive safely."*
- *"I have always been vigilant since I started driving at the age of 17, but my road safety concern increased at the age of 20 when two of my friends were killed in separate car accidents."*

We have discussed above the benefit of reinforcing positive, safe behaviours (as opposed to highlighting negative ones), and this should be linked to a **generally positive, hopeful tone of voice**. There is a place for using fear, shock, and authoritarian statements, but we have shown that this approach will immediately alienate a large proportion of the audience. Focus instead on emphasising **the effect an individuals' actions can have on the community.**

Aside from tone of voice, below are some simple guidelines to follow when designing advertising, specifically, illustrated by examples from the ad testing survey on the Darfield Road Safety Forum

Keep it simple – don't try to do too much in one ad, focus on landing one key message, and don't make visuals too 'busy'.

"Too busy, the message is there, but you have to more than glance at it to get the gist. The 'been drinking?' Question only comes out when you go back and re read it as it is lost in the initial glance."

KS138, VIA FORUM

Don't try to be too clever – humour and puns can be effective, but they can confuse people and dilute the message. Also consider audiences who don't speak English natively.

"Uses humour to catch your attention. People with English as a second language might not get the ad."

DARFIELD1, VIA FORUM

Match the message and style to the medium – think about the audience: when and where will they likely consume this message, and what do you want them to do afterwards?

> *"Good info, great for a big poster somewhere where you would have the time to stop and read it."*
>
> ***FIRECHICK, VIA FORUM***

> *"Would be a good hand out flyer at service stations, super market check outs and the like."*
>
> ***PMD, VIA FORUM***

Stand out – use professional design if possible to make sure the message is easily understood

"I like the contrast of dark and bright colours. It is visually appealing and gives a sense of danger. I dislike the small size of the expository text (everything other than "too fast, too late"). It's difficult to read at this size."

MATTHEW, VIA FORUM

Be consistent – all parts of a campaign should be obviously related to each other, and if possible to previous campaigns, using visual and audio cues.

Winter has made its presence felt this morning and will affect driving conditions! A simple way to stay safe on the road is to reduce your speed and watch your following distance. Remember it might not be you who makes the mistake, but travelling at a slower speed will allow more time to react and take whatever action is needed.

"The colour and appearance is associated with a warning sign. Since it appears on facebook it comes across as an up-dated immediate message/warning and hence I think it might be effective for that reason."

BRITTA, VIA FORUM

Finally, although often impractical at large scale, any opportunity for **person to person delivery** of messages is strongly encouraged. Attendees of community forums routinely point to individual stories, and storytellers, as having the most effect on them[22].

22 Source: Waimakariri District Council "Report on Road Safety Initiatives under RSAP 2015-16" (2016)

4.5 Where and when to say it

We indicated earlier that it is important to match the communication and style to the medium. Just as important is to ensure that the chosen communication channel is well suited for delivery of desired content.

There is a clear need for channels to achieve at least one of three key tasks:

1. Educate road users about the dangers of driving and the actions they can take to improve road safety and
2. Prompt road users to remember to take the right actions when it matters, i.e. when they are operating a vehicle
3. Remind people of the core campaign idea at a high frequency, to keep the topic salient

Each of these goals will need to utilise the right media to achieve the appropriate level of impact.

Educational and factual information about dangers on the road needs to be delivered in a channel that offers them the opportunity to internalise the facts, think about them and inspire discussion. Suitable 'lean-forward' media for this purpose include TV advertisements, print and online long-form media, and social media posts.

Communications aimed at influencing behaviours of road users while on the road should capture their attention and remind them why being safe on the road is important, i.e. make it personal. Our research has identified that key triggers that individuals associate with road safety are personal experiences with road crashes, or near misses and concerns about safety of their family (in particular) on the road. Road safety communications that drivers are exposed to on the road should capitalise on these triggers to make the messages relatable. Suitable channels for this task include radio, and various out of home executions. Other tactical media may suit individual campaigns e.g. posters or coasters in pubs and venues.

Finally, there is a role for a third type of channel that allows for delivery of high-frequency, brief 'reminders' of the core campaign idea, complementing the other channels by reinforcing memory structures. This role is often filled by activations like sponsorships, and works best when there is a short, memorable message that can be conveyed simply visually, as a logo would do for a corporate advertiser. Smartphones are ubiquitous content devices that most people refer to many times per day, so an online media strategy should put mobile first.

Another thing to consider when choosing the media and content of a specific campaign is the timing, both duration and intensity. To achieve a sustained impact, the message should be reinforced through different media (omnichannel) and over time. Most importantly, all the different parts of the campaign must work together to achieve a cumulative exposure effect and avoid dissonance. A more complex message may require a series of sequential campaigns, each building on the last.

Outside of advertising and news mass media, opportunities exist for lower-scale, but more personal interactions such as training courses, events, and PR activations. These initiatives are typically expensive on a cost-per-reach basis, but can be very impactful. Care should be taken to avoid coming across overly authoritative (i.e. the Messenger influence from MINDSPACE is key here).

In summary, there is no channel that is poorly suited to the job of promoting road safety; what's important is to match the medium to the message, and to set channel-specific objectives as part of a campaign evaluation plan.

4.6 Measuring success

As part of the research project, a 'knowledge audit' was conducted to establish what recent road safety initiatives had been undertaken across Canterbury, and how these initiatives had been evaluated.

From the submissions received[23], three things became clear:

1. While a number of recent road safety campaigns have been conducted, there have been few attempts to evaluate their effectiveness, with a lack of resources cited as the major reason
2. There was no evidence of campaign objectives being set prior to commencement
3. The campaigns appeared largely independent of each other[24], with the only unifying factor being the name of the council

The most common form of evaluation used was course evaluation sheets, collected from self-reporting participants in specific forums or educational opportunities. For advertising campaigns, if information as collected, it was typically limited to counts of exposures (e.g. newspaper articles or billboards paid for), estimates of reach, and in the case of social media, page followers and post engagement (i.e. comments and shares).

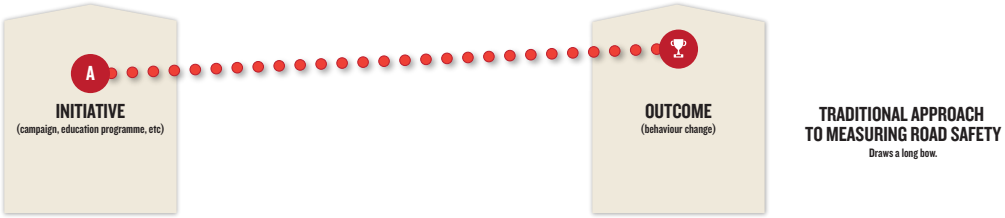
Our study of road safety campaigns around the world yielded similar findings: meaningful evaluation of road safety initiatives is the exception, not the norm; or at least such evaluations are typically not publicised. According to Fred Wegman, Professor of Traffic Safety at TU Delft "only a fraction of [road safety] campaigns are formally and thoroughly evaluated"[25]. Raphael Grzebieta, Emeritus Professor at TARS (Transport and Safety Research Centre) at the University of NSW agrees, saying it is essential that road safety campaigns were evaluated and assessed by highly skilled independent researchers, and that "Tragically, this is currently not being addressed adequately"[26].

Our view is that the main barrier for evaluation of road safety campaigns is not a lack of will, but a lack of tools that are capable of navigating the complexity of this type of measurement. With a goal of long-term behaviour change, road safety initiatives tend to play out over a long period of time. The longer the time period, the harder it is to attribute any observed shifts in behaviour to that initiative, as confounding factors like population growth, population change, social change and technological development come into play. Truly scientific measurement techniques (for example, control/exposed testing or multiple regression modelling) are often out of reach for individual campaigns or smaller governments, and/or impractical to implement.

23 Four out of ten councils responded
24 i.e. they did not look similar or appear to be part of an overall strategic framework; there was evidence of councils working together in some instances
25 Hoekstra, T & Wegman, F "Improving the effectiveness of road safety campaigns: Current and new practices", published in *International Association of Traffic and Safety Sciences* (2011)
26 https://www.smh.com.au/national/nsw/it-will-never-happen-to-me-the-problem-with-road-safety-campaigns-20170927-gypwgb.html

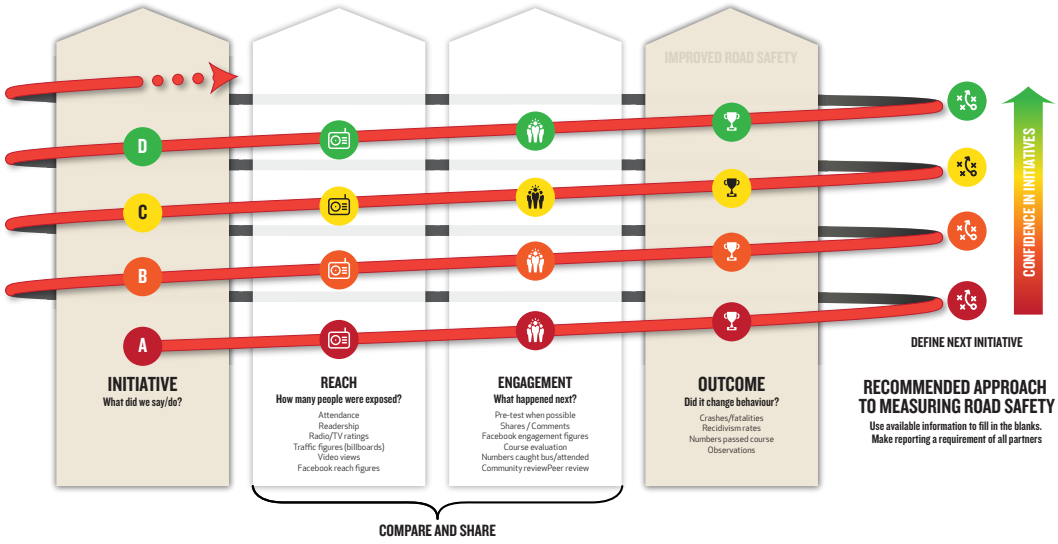
There is also the matter of the measures themselves: while excellent data on road crashes exist, and causality established for serious incidents, there is a paucity of data for the true measure of road safety: road crashes that were avoided thanks to safer behaviour from users. Furthermore, for some districts, total crash numbers tend to be quite low, making it harder to determine statistically significant movements.

Figure 4.6.1 – The traditional approach to evaluating road safety campaigns



These are significant challenges, and while we do not pretend to be able to solve all of them, we have developed the below evaluation model as one that can be readily adopted by Canterbury councils without requiring great investment.

Figure 4.6.2 – Recommended approach to evaluating road safety campaigns



The model adds two intermediate measures prior to the (behavioural) Outcome: **Reach** (a measure of exposure to the message) and **Engagement** (a measure of interaction with the message). As per the examples given, most of these subordinate measures can be recorded (or at least estimated) using readily available information at a channel level.

There are also areas where additional research is advisable, for example pre-testing concepts, measuring attitudes and behaviours pre and post campaign, and estimating total unduplicated reach of all channels.[27]

While Reach and Engagement are poor proxies indeed for behavioural change, it undoubtedly cannot occur without them. A key advantage of collecting this information is that, as the number of initiatives builds, these numbers can be compared to each other (regardless of the message or the behaviour each is attempting to change), and benchmarks can be set.

A key feature of the model, therefore is that it is recursive, setting up structures for continual improvement. Each initiative should have clearly defined objectives for each channel, and at each stage, with an agreed timeframe and method for measurement. If realistic, measurable objectives are set upfront, evaluation of success should be a formality.

Finally, it is our recommendation that learnings be collated and shared between all participating councils to allow for development of Canterbury-wide best practice in road safety.

27 For a best practice case study of evaluation of a road safety campaign, see Clemenger BBDO Australia's entry of their well-known campaign "Pinkie" (also known as "Nobody thinks big of you") into the Effie awards, available at https://www.effies.com.au/attachments/cd29d4db-44e2-4c50-b86d-fca3acbd7c2b.pdf

5 Appendix

5.1 Supplemental charts

HURUNUI District Council

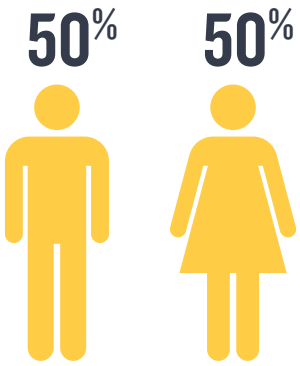
KAIKOURA DISTRICT COUNCIL

Kaikoura and Hurunui Districts

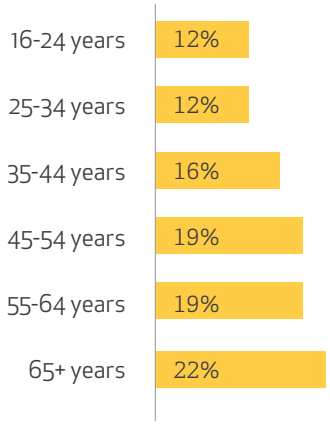
RESEARCH FIRST

DEMOGRAPHIC PROFILE

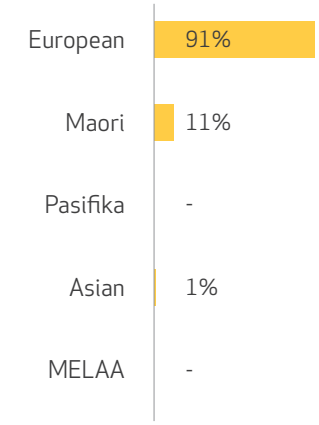
GENDER



AGE



ETHNICITY



TRANSPORT AND ROAD USAGE

REGULAR USAGE OF TRANSPORT
(at least once a week)

98% DRIVERS

83% PEDESTRIANS

63% PASSENGERS IN A CAR/VAN

14% CYCLISTS

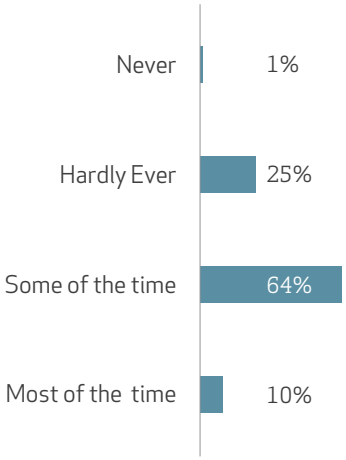
ROAD USAGE

70↑ 52% Mainly use roads with speed limit of 70 km/h or higher

70↓ 9% mainly use roads with speed limit of 70 km/h or below

70↕ 35% use with speed limits above or below 70 km/h equally

TRAVEL ON UNSEALED ROADS
(drivers only)



Kaikoura and Hurunui Districts

RESEARCH FIRST

LOCAL CONCERNS

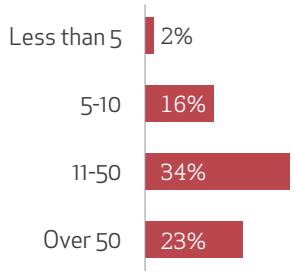
MOST SERIOUS PHYSICAL RISKS

- **52%** HEAVY VEHICLES
- **39%** HIGH TRAFFIC VOLUME
- **35%** UNSAFE OR CHALLENGING INTERSECTIONS

MOST SERIOUS BEHAVIOURAL RISKS

- **56%** AGGRESSIVE OR IMPATIENT DRIVERS
- **44%** CELL PHONE USE
- **38%** DRIVERS DRIVING TOO FAST

ESTIMATED ANNUAL NUMBER OF SERIOUS CRASHES



ACTUAL NUMBER OF FATAL OR INJURY CRASHES IN THE AREA (CAS, 2017) **26**

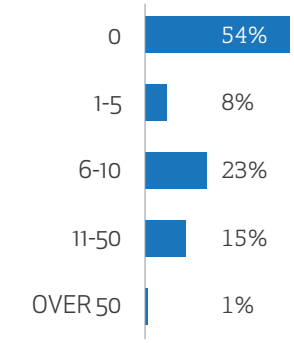
ATTITUDES TO ROAD SAFETY

- **99%** AGREE THAT ROAD SAFETY IS EVERYONE'S RESPONSIBILITY
- **81%** AGREE THAT ROAD USERS CAN HELP PREVENT ROAD CRASHES
- **94%** AGREE THAT DRIVING AT SAFER SPEEDS WOULD IMPROVE ROAD SAFETY
- **45%** AGREE THAT SERIOUS ROAD CRASHES ARE AVOIDABLE

PREFERRED METHODS TO INCREASE ROAD SAFETY

- **61%** Better driver training systems
- **57%** Applying appropriate speed limits
- **51%** Increasing education and promotion of road safety

ACCEPTABLE NUMBER OF SERIOUS CRASHES PER YEAR



AVERAGE NUMBER OF "ACCEPTABLE SERIOUS CRASHES EACH YEAR": **8**

Kaikoura and Hurunui Districts

RESEARCH FIRST

CONCERNS ABOUT ROAD SAFETY – KEY TRIGGERS

Over your adult lifetime, when do you recall first being concerned about road safety, and why?

WHEN I STARTED DRIVING

- *"When I first started driving - I found out how easy it was to make a mistake"*
- *"Learning to drive. Driving is a privilege, not a right. You have to be aware and drive defensively."*
- *"I was first concerned about safety when taking driving lessons from an instructor"*

PERSONAL EXPERIENCE WITH ROAD CRASHES / NEAR MISSES OR BECOMING AWARE OF SERIOUS CRASHES IN THE AREA

- *"When my husband and two daughters were involved in an accident caused by an unlicensed driver at an intersection on a dark, wet evening."*
- *"As a teenager, I was knocked off my bicycle by a taxi driver."*
- *"Hearing of accidents in our area - especially those in which someone has died."*
- *"When I was given a bicycle. Car drivers passed with insufficient regard to my safety"*

OTHER DRIVERS ON THE ROAD

- *"When you are driving at the correct speed and everyone else overtakes you."*
- *"Mostly concerned with aggressive drivers who "tailgate" even though I am driving at a reasonable speed."*
- *"There have been many times but mostly it's about impatient drivers and slower vehicles not pulling over to let others pass, where they can"*

CHILDREN

- *"When I had kids"*
- *"Once my children became drivers, it heightened my awareness of road safety"*
- *"More so after having children , risks to them crossing roads and also just having them in the car you are more concerned about them and other drivers, etc."*
- *"As a driver I have always been aware but I think once you have a family you realise the responsibility you have as a parent to drive safely. "*

FOREIGN DRIVERS

- *"Early 90's with the increase of overseas tourist driving rental cars and campervans. Often larger vehicles than they would normally drive."*
- *"Tourists not aware of our roads or rules"*

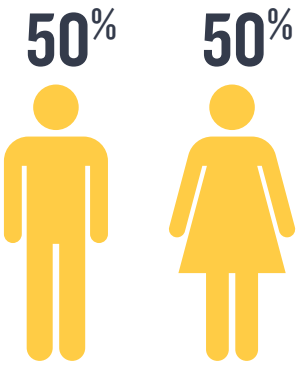
WAIMAKARIRI DISTRICT COUNCIL

Waimakariri District

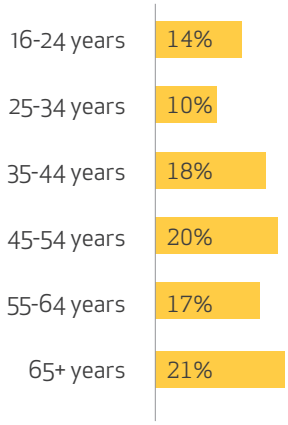
RESEARCH FIRST

DEMOGRAPHIC PROFILE

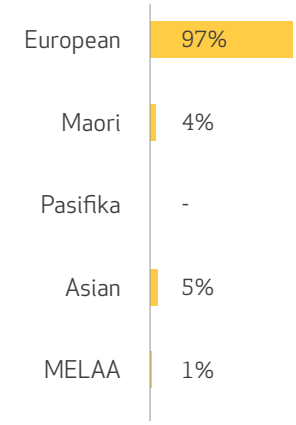
GENDER



AGE



ETHNICITY



TRANSPORT AND ROAD USAGE

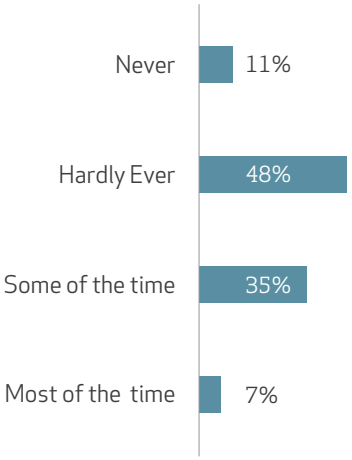
REGULAR USAGE OF TRANSPORT
(at least once a week)

- 96% DRIVERS
- 76% PEDESTRIANS
- 56% PASSENGERS IN A CAR/VAN
- 14% CYCLISTS

ROAD USAGE

- 30% Mainly use roads with speed limit of 70 km/h or higher
- 29% mainly use roads with speed limit of 70 km/h or below
- 37% use with speed limits above or below 70 km/h equally

TRAVEL ON UNSEALED ROADS
(drivers only)



WAIMAKARIRI DISTRICT COUNCIL

Waimakariri District

RESEARCH FIRST

LOCAL CONCERNS

MOST SERIOUS PHYSICAL RISKS

37% HIGH TRAFFIC VOLUME

35% UNSAFE OR CHALLENGING INTERSECTIONS

29% HEAVY VEHICLES

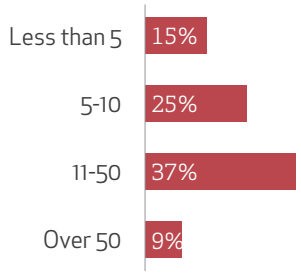
MOST SERIOUS BEHAVIOURAL RISKS

48% AGGRESSIVE OR IMPATIENT DRIVERS

47% CELL PHONE USE

39% DISTRACTED DRIVERS

ESTIMATED ANNUAL NUMBER OF SERIOUS CRASHES



ACTUAL NUMBER OF FATAL OR INJURY CRASHES IN THE AREA (CAS, 2017) **42**

ATTITUDES TO ROAD SAFETY

98% AGREE THAT ROAD SAFETY IS EVERYONE'S RESPONSIBILITY

71% AGREE THAT ROAD USERS CAN HELP PREVENT ROAD CRASHES

90% AGREE THAT DRIVING AT SAFER SPEEDS WOULD IMPROVE ROAD SAFETY

42% AGREE THAT SERIOUS ROAD CRASHES ARE AVOIDABLE

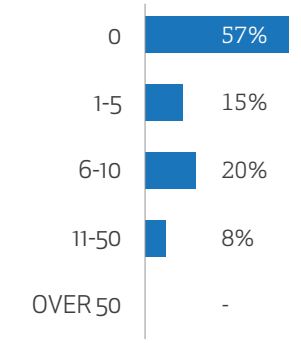
PREFERRED METHODS TO INCREASE ROAD SAFETY

57% Increasing education and promotion of road safety

51% Increasing police presence

47% Better driver training systems

ACCEPTABLE NUMBER OF SERIOUS CRASHES PER YEAR



AVERAGE NUMBER OF "ACCEPTABLE SERIOUS CRASHES EACH YEAR": **4**

WAIMAKARIRI DISTRICT COUNCIL

Waimakariri District

RESEARCH FIRST

CONCERNS ABOUT ROAD SAFETY – KEY TRIGGERS

Over your adult lifetime, when do you recall first being concerned about road safety, and why?

WHEN I STARTED DRIVING

- *"I have always been concerned about road safety since I first learnt to drive over 50 years ago"*
- *"I am now 75 yrs old, gained my drivers license at 17 and have always been very conscious of road safety and the fact I am driving a lethal weapon."*
- *"From when I first started driving, the realization that other people just want one up on others while driving and will be incredibly dangerous to do so. "*
- *"Always been concerned about road safety, everyone should be perhaps if more people were concerned there may not be as many crashes"*

CHILDREN

- *"When my daughter was born 15 months ago, never thought about it too much before then and now I am responsible for her wellbeing I think about it all the time"*
- *"When you have children"*
- *"When I had my children, because then it wasn't just me that could get hurt"*
- *"After having my 1st baby"*

PERSONAL EXPERIENCE WITH ROAD CRASHES / NEAR MISSES OR BECOMING AWARE OF SERIOUS CRASHES IN THE AREA

- *"A friend being killed in the 70's due to not wearing a seatbelt. I was 4."*
- *"Had a serious accident when I was 17 and be wary ever since"*
- *"When I came in close contact with a volunteer Fire Brigade and saw what happens in accidents and how easily bad damage occurs to people, even at low speeds."*
- *"When I heard car brakes squealing immediately behind me while I was on my bike and stationary at traffic lights."*

OTHER DRIVERS ON THE ROAD

- *"I am afraid of other drivers"*
- *"Each morning when I travel to work in peak hour traffic, everyone is doing 100km and people follow too closely and I see accidents most mornings"*
- *"Inexperienced drivers, generally they are un compliant with road rules and careless about the safety of themselves and other road users."*
- *"The number of distracted drivers I have experienced is insane, let alone the ones who just don't care. Then there is the older side to the community, who drive too slow and poorly manoeuvre their cars, without looking!?*

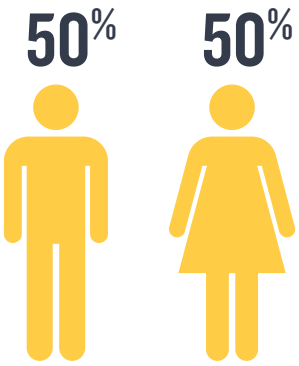
Christchurch City Council

Christchurch City

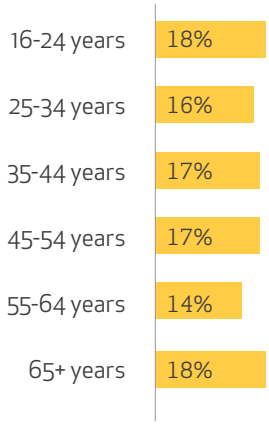
RESEARCH FIRST

DEMOGRAPHIC PROFILE

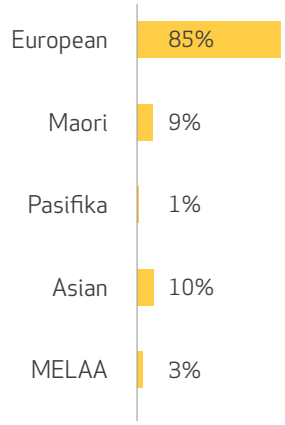
GENDER



AGE



ETHNICITY



TRANSPORT AND ROAD USAGE

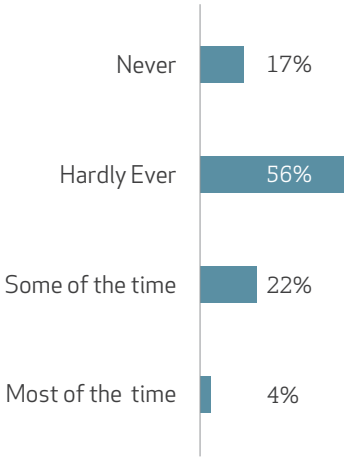
REGULAR USAGE OF TRANSPORT
(at least once a week)

- 83% DRIVERS
- 87% PEDESTRIANS
- 55% PASSENGERS IN A CAR/VAN
- 22% CYCLISTS
- 23% PUBLIC TRANSPORT

ROAD USAGE

- 8% Mainly use roads with speed limit of 70 km/h or higher
- 62% mainly use roads with speed limit of 70 km/h or below
- 19% use with speed limits above or below 70 km/h equally

TRAVEL ON UNSEALED ROADS
(drivers only)



Christchurch City Council

Christchurch City

RESEARCH FIRST

LOCAL CONCERNS

MOST SERIOUS PHYSICAL RISKS

38% HIGH TRAFFIC VOLUME

38% UNSAFE OR CHALLENGING INTERSECTIONS

29% WEATHER CONDITIONS

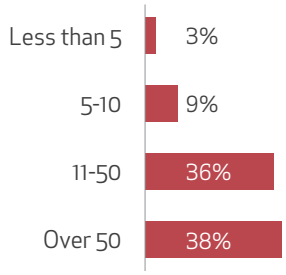
MOST SERIOUS BEHAVIOURAL RISKS

48% AGGRESSIVE OR IMPATIENT DRIVERS

45% CELL PHONE USE

38% DISTRACTED DRIVERS

ESTIMATED ANNUAL NUMBER OF SERIOUS CRASHES



ACTUAL NUMBER OF FATAL OR INJURY CRASHES IN THE AREA (CAS, 2017) **177**

ATTITUDES TO ROAD SAFETY

95% AGREE THAT ROAD SAFETY IS EVERYONE'S RESPONSIBILITY

69% AGREE THAT ROAD USERS CAN HELP PREVENT ROAD CRASHES

88% AGREE THAT DRIVING AT SAFER SPEEDS WOULD IMPROVE ROAD SAFETY

39% AGREE THAT SERIOUS ROAD CRASHES ARE AVOIDABLE

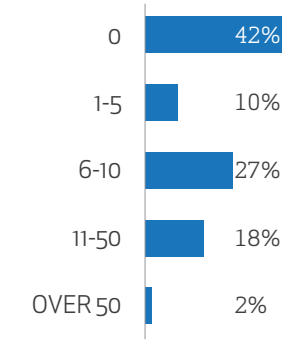
PREFERRED METHODS TO INCREASE ROAD SAFETY

61% Better driver training systems

50% Increasing education and promotion of road safety

47% Increasing police presence

ACCEPTABLE NUMBER OF SERIOUS CRASHES PER YEAR



AVERAGE NUMBER OF "ACCEPTABLE SERIOUS CRASHES EACH YEAR": **10**

Christchurch City Council
Christchurch City

RESEARCH FIRST

CONCERNS ABOUT ROAD SAFETY – KEY TRIGGERS

Over your adult lifetime, when do you recall first being concerned about road safety, and why?

PERSONAL EXPERIENCE WITH ROAD CRASHES / NEAR MISSES OR BECOMING AWARE OF SERIOUS CRASHES IN THE AREA

- *"When on my bike on the open road a car coming the other way was overtaking another car going over 100 km. I was climbing up a hill on my side of the road and the car narrowly missed me. It was very scary."*
- *"Almost hitting a cyclist in dark clothing who appeared from a shadow unexpectedly"*
- *"When someone crashed into the car I was in when my Dad was driving as I saw how much damage could be done by a mistake someone else makes"*
- *"When I saw an accident, people got killed by irresponsible speeding and drunk driver in my area."*

WHEN I STARTED DRIVING

- *"When I first learned to drive I was made aware of how important road safety was but even before that I have a father who works in the serious crash department at my local police station so I was brought up around the discussion of how important road safety is"*
- *"Once I started driving on a daily basis. Cars often go much faster than the speed limit outside my house and it makes it scary to leave"*

CHILDREN

- *"When I started driving with my child in the car."*
- *"Having a baby in the car"*
- *"I believe I have been very cautious on the roads and aware of safety, but when my son was hit by a car, I really paid attention to safety."*

OTHER DRIVERS ON THE ROAD

- *"I spent ten Years as a taxi driver and witnessed all sorts of bad driving one of the worst was a woman driving out of a MacDonalds turning right into busy oncoming traffic on the phone eating an ice cream cone."*
- *"Travelling in rural areas with motorists making risky overtaking on single carriageway roads to get 50m further up the road, rather than waiting for a better overtaking spot a few kms later. Usually it is the innocent motorist coming the other way that has to take evasive action or comes off worst"*

ROADWORKS AFTER THE EARTHQUAKES

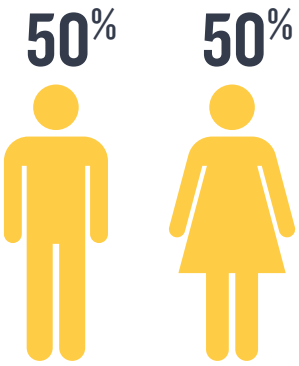
- *"I am concerned at the moment with the number of roadworks since 2011"*
- *"Christchurch roads after the earthquake are not exactly safe. The roads are rough and uneven causing vehicle damage and headaches for passengers."*
- *"Since the earthquake everything has got worse"*

Selwyn District

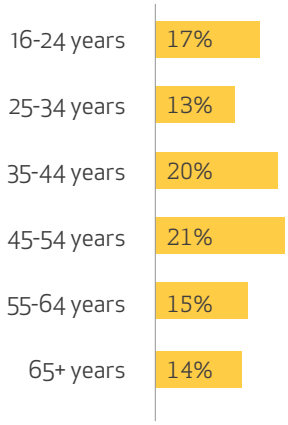
RESEARCH FIRST

DEMOGRAPHIC PROFILE

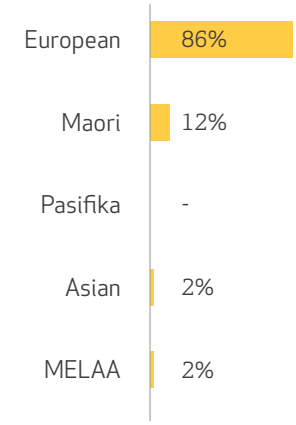
GENDER



AGE



ETHNICITY



TRANSPORT AND ROAD USAGE

REGULAR USAGE OF TRANSPORT
(at least once a week)

97% DRIVERS

73% PEDESTRIANS

57% PASSENGERS IN A CAR/VAN

12% CYCLISTS

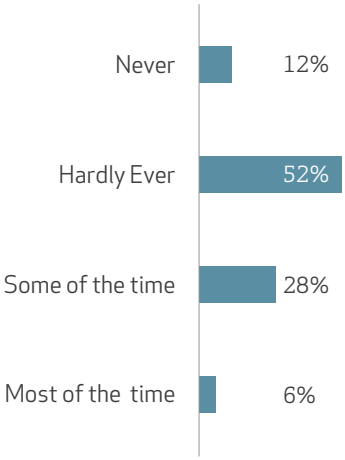
ROAD USAGE

48% Mainly use roads with speed limit of 70 km/h or higher

12% mainly use roads with speed limit of 70 km/h or below

37% use with speed limits above or below 70 km/h equally

TRAVEL ON UNSEALED ROADS
(drivers only)



Selwyn District

RESEARCH FIRST

LOCAL CONCERNS

MOST SERIOUS PHYSICAL RISKS

43% UNSAFE OR CHALLENGING INTERSECTIONS

41% HIGH TRAFFIC VOLUME

52% HEAVY VEHICLES

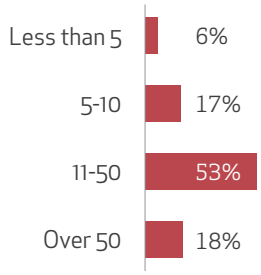
MOST SERIOUS BEHAVIOURAL RISKS

52% AGGRESSIVE OR IMPATIENT DRIVERS

43% DISTRACTED DRIVERS

42% DRIVERS DRIVING TOO FAST

ESTIMATED ANNUAL NUMBER OF SERIOUS CRASHES



ACTUAL NUMBER OF FATAL OR INJURY CRASHES IN THE AREA (CAS, 2017) **63**

ATTITUDES TO ROAD SAFETY

96% AGREE THAT ROAD SAFETY IS EVERYONE'S RESPONSIBILITY

69% AGREE THAT ROAD USERS CAN HELP PREVENT ROAD CRASHES

89% AGREE THAT DRIVING AT SAFER SPEEDS WOULD IMPROVE ROAD SAFETY

44% AGREE THAT SERIOUS ROAD CRASHES ARE AVOIDABLE

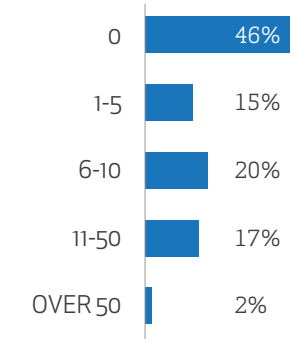
PREFERRED METHODS TO INCREASE ROAD SAFETY

50% Increasing police presence

47% Better driver training systems

45% Increasing education and promotion of road safety

ACCEPTABLE NUMBER OF SERIOUS CRASHES PER YEAR



AVERAGE NUMBER OF "ACCEPTABLE SERIOUS CRASHES EACH YEAR": **7**

Selwyn District

RESEARCH FIRST

CONCERNS ABOUT ROAD SAFETY – KEY TRIGGERS

Over your adult lifetime, when do you recall first being concerned about road safety, and why?

OTHER DRIVERS ON THE ROAD

- *"Drivers not stopping at stop signs very prevalent in the Selwyn district"*
- *"Slow cars driving in right hand side lane of 4 lane highway aggravating drivers unable to pass"*
- *"The general realisation that drivers frequently only care about themselves"*
- *"Bad drivers, other people on the road. No indication and cutting me off. People are really harsh toward driver's with L plates"*
- *"Vehicles not stopping at stop signs, overtaking when not enough road space ahead."*

CHILDREN

- *"When my children reached driving age."*
- *"When I was pregnant with my daughter"*
- *"When I had my young children in the car"*
- *"When I had a family and drove them around"*
- *"I think I probably became more aware of road safety and my own mortality once I became a mother and needed to worry about my children's safety and my safety as their parent."*

PERSONAL EXPERIENCE WITH ROAD CRASHES / NEAR MISSES OR BECOMING AWARE OF SERIOUS CRASHES IN THE AREA

- *"Not particularly concerned for myself. But hearing the road toll get high is never good."*
- *"After I had an accident. A truck pulled out of a road and crashed into the side of my car."*
- *"Taking a corner too fast as a teenager was a wake up call and made me slow down. Having kids has made me more aware and safer."*
- *"When I had my first near miss with an oncoming vehicle that was on my side of the road - about 16"*
- *"When I was 19-22 after incidents such as an overtaking manoeuvre that could have ended badly and being a passenger in a car that spun out and almost hit a pole"*

WHEN I STARTED DRIVING

- *"I have tried to be aware of road safety since I began driving. No doubt when I was younger I did do things I should not have."*

ROAD SAFETY DECLINED OVER TIME

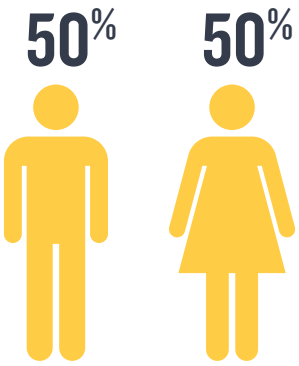
- *"The last ten years people have become more impatient, aggressive, speed and cellphone usage. Too many trucks on the roads and they follow too closely. I wonder if some know the road rules"*

Ashburton District

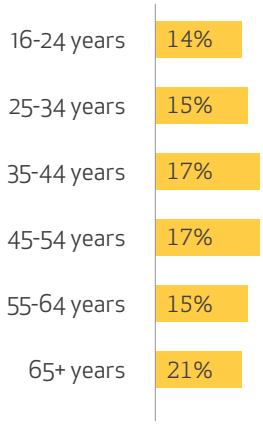
RESEARCH FIRST

DEMOGRAPHIC PROFILE

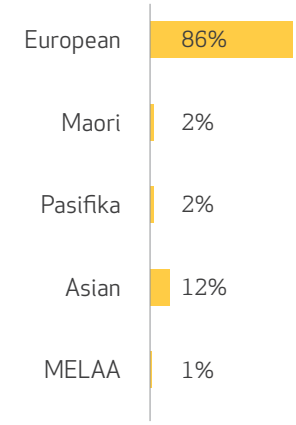
GENDER



AGE



ETHNICITY



TRANSPORT AND ROAD USAGE

REGULAR USAGE OF TRANSPORT
(at least once a week)

97% DRIVERS

79% PEDESTRIANS

64% PASSENGERS IN A CAR/VAN

25% CYCLISTS

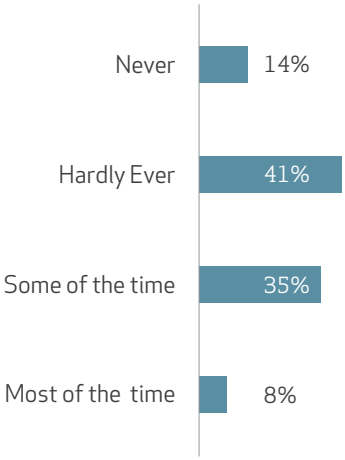
ROAD USAGE

30% Mainly use roads with speed limit of 70 km/h or higher

37% mainly use roads with speed limit of 70 km/h or below

26% use with speed limits above or below 70 km/h equally

TRAVEL ON UNSEALED ROADS
(drivers only)



Ashburton District

RESEARCH FIRST

LOCAL CONCERNS

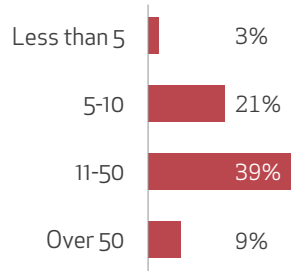
MOST SERIOUS PHYSICAL RISKS

- **43%** HIGH TRAFFIC VOLUME
- **43%** UNSAFE OR CHALLENGING INTERSECTIONS
- **34%** HEAVY VEHICLES

MOST SERIOUS BEHAVIOURAL RISKS

- **47%** AGGRESSIVE OR IMPATIENT DRIVERS
- **42%** CELL PHONE USE
- **30%** DRIVERS DRIVING TOO FAST

ESTIMATED ANNUAL NUMBER OF SERIOUS CRASHES



ACTUAL NUMBER OF FATAL OR INJURY CRASHES IN THE AREA (CAS, 2017) **20**

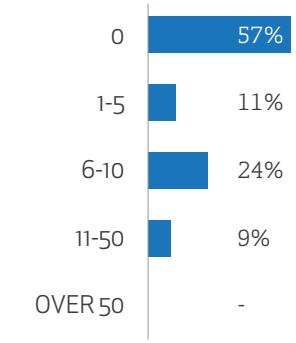
ATTITUDES TO ROAD SAFETY

- **97%** AGREE THAT ROAD SAFETY IS EVERYONE'S RESPONSIBILITY
- **63%** AGREE THAT ROAD USERS CAN HELP PREVENT ROAD CRASHES
- **95%** AGREE THAT DRIVING AT SAFER SPEEDS WOULD IMPROVE ROAD SAFETY
- **46%** AGREE THAT SERIOUS ROAD CRASHES ARE AVOIDABLE

PREFERRED METHODS TO INCREASE ROAD SAFETY

- **57%** Increasing police presence
- **51%** Increasing education and promotion of road safety
- **47%** Better driver training systems

ACCEPTABLE NUMBER OF SERIOUS CRASHES PER YEAR



AVERAGE NUMBER OF "ACCEPTABLE SERIOUS CRASHES EACH YEAR": **5**

Ashburton District

RESEARCH FIRST

CONCERNS ABOUT ROAD SAFETY – KEY TRIGGERS

Over your adult lifetime, when do you recall first being concerned about road safety, and why?

OTHER DRIVERS ON THE ROAD

- *"When out running, walking, and cycling. People are all too easily distracted and don't/won't obey the most basic of road rules. People don't stop for you when walking or running on the footpath"*
- *"Many times people driving to close, because it only takes one person to hit the breaks and there will be an accident as following cars won't be able to stop in time"*
- *"There's a lot of dangerous stupid driving, people overtake with cars coming towards them but they don't seem to care. There have been so many crashes. The thing that gets me is the fact kiwis are quick to blame overseas drivers but kiwis are just as stupid on the roads too!"*

ROAD CONDITIONS

- *"Our main road is hard to get out on so dangerous"*
- *"Deterioting condition of the roads especially over the last 10 years, regular maintenance not being carried out or carried out poorly especially by contracted contractors, was better when the local council owned the road maintenance crews or the nationally operated Ministry of Works."*

PERSONAL EXPERIENCE WITH ROAD CRASHES / NEAR MISSES OR BECOMING AWARE OF SERIOUS CRASHES IN THE AREA

- *"The last ten years people have become more impatient, aggressive, speed and cellphone usage. Too many trucks on the roads and they follow too closely. I wonder if some know the road rules"*
- *"At the age of 7 when my brother was a pedestrian and was hit by a car that failed to stop completely at a stop sign and was still over the alcohol limit from the night before and speeding"*
- *"I have always been vigilant since I started driving at the age of 17, but my road safety concern increased at the age of 20 when two of my friends were killed in separate car accidents."*
- *"About a year ago when I caused a car accident"*

CHILDREN

- *"When my children were born and we would be out with pram or later when kids were walking"*

FOREIGN DRIVERS

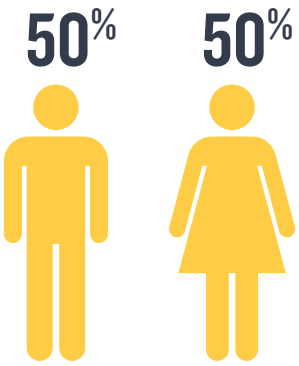
- *"Tourists on main highways, crossing white lines at corners, on straights, doing illegal u-turns just before corner."*

Timaru, Mackenzie and Waimate Districts

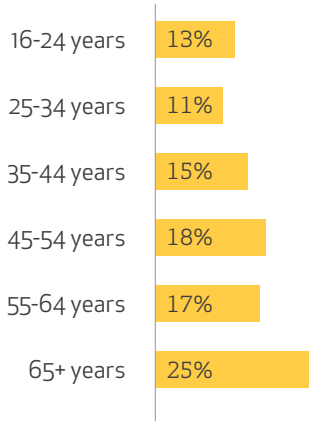
RESEARCH FIRST

DEMOGRAPHIC PROFILE

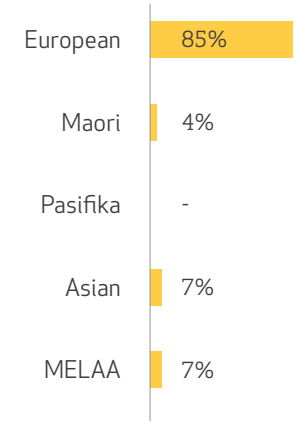
GENDER



AGE



ETHNICITY



TRANSPORT AND ROAD USAGE

REGULAR USAGE OF TRANSPORT
(at least once a week)

95% DRIVERS

80% PEDESTRIANS

57% PASSENGERS IN A CAR/VAN

18% CYCLISTS

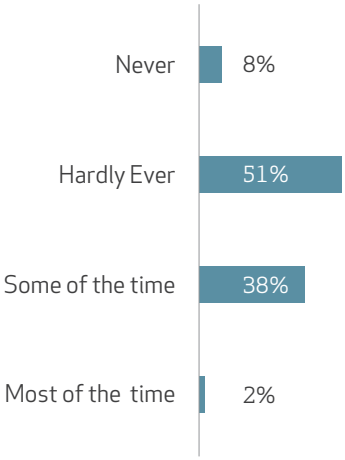
ROAD USAGE

20% Mainly use roads with speed limit of 70 km/h or higher

46% mainly use roads with speed limit of 70 km/h or below

28% use with speed limits above or below 70 km/h equally

TRAVEL ON UNSEALED ROADS
(drivers only)



Timaru, Mackenzie and Waimate Districts

RESEARCH FIRST

LOCAL CONCERNS

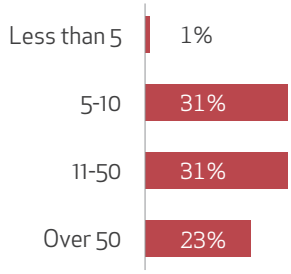
MOST SERIOUS PHYSICAL RISKS

- **32%** WEATHER CONDITIONS
- **30%** HIGH TRAFFIC VOLUME
- **30%** HEAVY VEHICLES

MOST SERIOUS BEHAVIOURAL RISKS

- **45%** AGGRESSIVE OR IMPATIENT DRIVERS
- **44%** CELL PHONE USE
- **34%** DRIVERS DRIVING TOO FAST

ESTIMATED ANNUAL NUMBER OF SERIOUS CRASHES



ACTUAL NUMBER OF FATAL OR INJURY CRASHES IN THE AREA (CAS, 2017): **66**

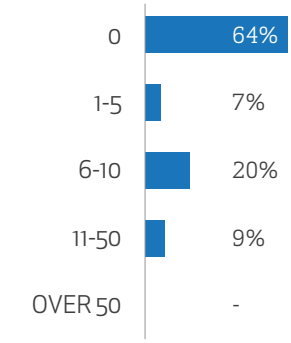
ATTITUDES TO ROAD SAFETY

- **98%** AGREE THAT ROAD SAFETY IS EVERYONE'S RESPONSIBILITY
- **82%** AGREE THAT ROAD USERS CAN HELP PREVENT ROAD CRASHES
- **97%** AGREE THAT DRIVING AT SAFER SPEEDS WOULD IMPROVE ROAD SAFETY
- **40%** AGREE THAT SERIOUS ROAD CRASHES ARE AVOIDABLE

PREFERRED METHODS TO INCREASE ROAD SAFETY

- **50%** Increasing police presence
- **48%** Increasing education and promotion of road safety
- **41%** Better driver training systems

ACCEPTABLE NUMBER OF SERIOUS CRASHES PER YEAR



AVERAGE NUMBER OF "ACCEPTABLE SERIOUS CRASHES EACH YEAR": **4**

Timaru, Mackenzie and Waimate Districts

RESEARCH FIRST

CONCERNS ABOUT ROAD SAFETY – KEY TRIGGERS

Over your adult lifetime, when do you recall first being concerned about road safety, and why?

OTHER DRIVERS ON THE ROAD

- *"It has always been of concern to me people dying on our roads, it shouldn't be happening but you get bad drivers everywhere."*
- *"Trying to pass on a passing lane and the other driver sped up"*
- *"During the last decade, larger, faster vehicles have become the norm, and more people have cars than before, and seem to drive faster and have less patience. "*
- *"The first time I drove on the open road, there were then and still are a lot of impatient drivers on the roads"*

WHEN I STARTED DRIVING

- *"When first learning to drive, because you are about to become part of the road user group and unless you know the risks and your ability to handle them, you will not be a confident driver."*
- *"From the beginning of driving. I was always taught to watch out for everything."*
- *"As soon as I learned to drive and realised just a small error could kill"*

PERSONAL EXPERIENCE WITH ROAD CRASHES / NEAR MISSES OR BECOMING AWARE OF SERIOUS CRASHES IN THE AREA

- *"When young and living in the country along way from towns, and coming across an accident thinking why did this happen? We drove on shingle roads and no one in our family or extended, ever had an accident. People are stupid, inconsiderate and not thinking about safety when they are in a vehicle - they are invincible!"*
- *"Probably when social media and news become more easy to access and your saw all the crashes that were happening around the country more"*
- *"In last couple of years there are more serious accidents resulting in fatalities"*
- *"The last few years there have been far too many fatalities in the South Canterbury area."*
- *"After hearing about one of New Zealand's most serious road crashes that happened in a road I regularly drove on. Multiple fatalities. I don't live I that area any more now."*

CHILDREN

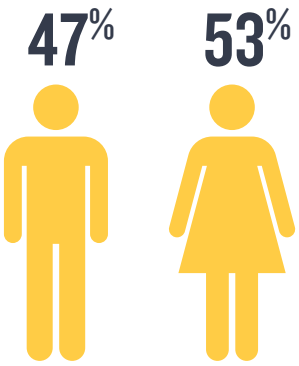
- *"Probably when my sons were beginning to learn to drive. It makes you realise that you can't protect them anymore"*
- *"When I had my child as it just wasn't about me anymore"*
- *"When my children started driving. I wasn't worried about their driving but about idiots hitting them"*

Waitaki District

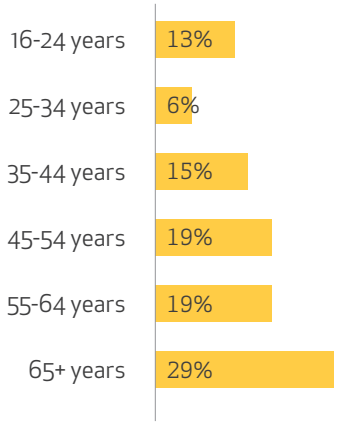
RESEARCH FIRST

DEMOGRAPHIC PROFILE

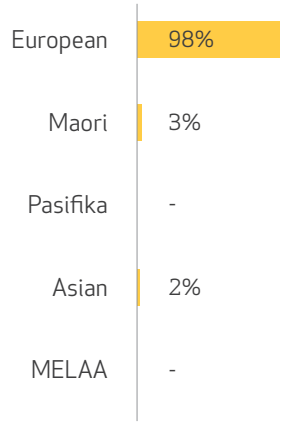
GENDER



AGE



ETHNICITY



TRANSPORT AND ROAD USAGE

REGULAR USAGE OF TRANSPORT
(at least once a week)

91% DRIVERS

76% PEDESTRIANS

53% PASSENGERS IN A CAR/VAN

12% CYCLISTS

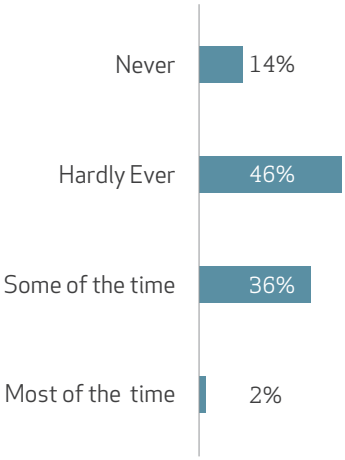
ROAD USAGE

21% Mainly use roads with speed limit of 70 km/h or higher

30% mainly use roads with speed limit of 70 km/h or below

43% use with speed limits above or below 70 km/h equally

TRAVEL ON UNSEALED ROADS
(drivers only)



Waitaki District

RESEARCH FIRST

LOCAL CONCERNS

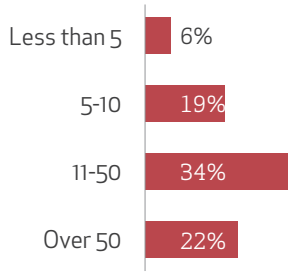
MOST SERIOUS PHYSICAL RISKS

- **40%** HEAVY VEHICLES
- **29%** WEATHER CONDITIONS
- **26%** ROADSIDE HAZARDS

MOST SERIOUS BEHAVIOURAL RISKS

- **55%** AGGRESSIVE OR IMPATIENT DRIVERS
- **43%** CELL PHONE USE
- **36%** DRIVERS DRIVING TOO FAST

ESTIMATED ANNUAL NUMBER OF SERIOUS CRASHES



ACTUAL NUMBER OF FATAL OR INJURY CRASHES IN THE AREA (CAS, 2017) **8**

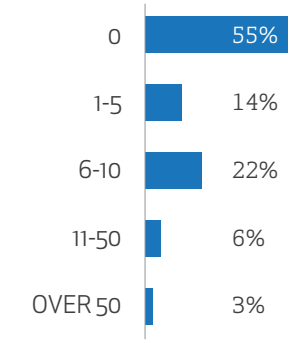
ATTITUDES TO ROAD SAFETY

- **99%** AGREE THAT ROAD SAFETY IS EVERYONE'S RESPONSIBILITY
- **67%** AGREE THAT ROAD USERS CAN HELP PREVENT ROAD CRASHES
- **99%** AGREE THAT DRIVING AT SAFER SPEEDS WOULD IMPROVE ROAD SAFETY
- **45%** AGREE THAT SERIOUS ROAD CRASHES ARE AVOIDABLE

PREFERRED METHODS TO INCREASE ROAD SAFETY

- **57%** Increasing education and promotion of road safety
- **49%** Increasing police presence
- **45%** Better driver training systems

ACCEPTABLE NUMBER OF SERIOUS CRASHES PER YEAR



AVERAGE NUMBER OF "ACCEPTABLE SERIOUS CRASHES EACH YEAR": **7**

Waitaki District

RESEARCH FIRST

CONCERNS ABOUT ROAD SAFETY – KEY TRIGGERS

Over your adult lifetime, when do you recall first being concerned about road safety, and why?

WHEN I STARTED DRIVING

- *"I have always been concerned about road safety even when I passed my license in my early 20s. I've always felt that being in charge of a vehicle means being responsible."*
- *"As soon as I was learning to drive, so I did a Defensive Driving course."*

OTHER DRIVERS ON THE ROAD

- *"I have concerns about young drivers speeding and using cell phones...although older people are guilty of this also."*
- *"Car overtaking me while slowed down for a stopped school bus"*
- *"I became concerned while following a driver who was passing people on blind corners yellow lines, not giving way at one lane bridges and we had no cellphone coverage to alert police"*

CHILDREN

- *"When I started transporting my children and noticed more traffic on the roads"*
- *"On becoming a parent and realizing that my attitude and behaviour when driving could impact on a young innocent life"*

PERSONAL EXPERIENCE WITH ROAD CRASHES / NEAR MISSES OR BECOMING AWARE OF SERIOUS CRASHES IN THE AREA

- *"Hearing of people dying in car accidents"*
- *"When I was waiting for school bus and just about got wiped out by speeding car"*
- *"After my partner died in 2012 due to a drink driving accident which then led to anxiety and a fear of driving on the open road and observing terrible behaviour of drivers through town also"*
- *"When I'm cycling because some drivers don't give you any space on the road when they are passing"*
- *"After I had fallen asleep while driving and clipped the side of a bridge with some damage to my car but not to me I realised the responsibility I have to ensure my driving is as safe as possible and to be aware of other drivers who may be liable to the same event."*

FOREIGN DRIVERS

- *"Going into Moeraki, daily for work, is a hazard with sightseers looking at scenery and not watching where they are driving"*
- *"Bloody foreigners not knowing the road code and driving on the wrong side of the road"*
- *"A tourist that did not use the correct driving with signage"*

Cycling in Canterbury

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CYCLING BY REGION

	Overall	Kaikoura/ Hurunui District	Waimakariri District	Christchurch City	Selwyn District	Ashburton District	Timaru/ Mackenzie/ Waimate District	Waitaki District
Total proportion of cyclists	43%	43%	41%	45%	41%	43%	40%	29%
Regular cyclists (at least once a week)	21%	14%	14%	23%	13%	25%	18%	12%

CYCLING BY AGE

	16-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65+
Total proportion of cyclists	57%	50%	51%	49%	40%	17%
Regular cyclists (at least once a week)	34%	26%	22%	18%	20%	7%

CYCLING BY GENDER

	Male	Female
Total proportion of cyclists	51%	35%
Regula cyclists (at least once a week)	29%	13%

CYCLING HABITS

65%	of Cantabrians cycle recreationally
36%	cycle to keep fit
21%	cycle to work and study
17%	use cycling as their main mode of travel

PERCEIVED SAFETY

79%	feel **safe** on off-road cycle paths
75%	feel **safe** on shared paths
52%	feel **safe** on cycle lanes in towns or cities
45%	feel **safe** on cycles lanes outside towns or cities
43%	feel **unsafe** on roads without cycle lanes in towns or cities
46%	feel **unsafe** on roads without cycles lanes outside towns or cities

E-BIKES

91%	of Cantabrians have heard of e-bikes but never ridden one
43%	of those who heard of e-bikes would be interested in riding one
5%	ride e-bikes at least sometimes
83%	agree that it is appropriate for e-bikes to be ridden on cycle lanes
49%	agree that it is appropriate to be ridden on the road
62%	think the speed for an e-bike should be restricted to 30 km/h or lower

5.2 Demographics

Region

	Proportion of respondents	Number of respondents
Kaikoura/Hurunui District	9%	128
Waimakariri District	16%	236
Christchurch City	34%	497
Selwyn District	14%	201
Ashburton District	7%	108
Timaru/Mackenzie/Waimate District	11%	159
Waitaki District	9%	131
Total respondents	**1460**	

Gender

	Proportion of respondents	Number of respondents
Male	37%	543
Female	63%	913
Gender diverse	0%	4
Total respondents	**1460**	

Age

	Proportion of respondents	Number of respondents
16-24 years	10%	149
25-34 years	14%	209
35-44 years	17%	244
45-54 years	18%	269
55-64 years	18%	258
65+	23%	331
Total respondents	**1460**	

Ethnicity

	Proportion of respondents	Number of respondents
European	92%	1347
Maori	5%	78
Asian	5%	71
Middle Eastern/African/Latin American	2%	22
Pasifika	1%	10
Total respondents	**1460**	

Transport Usage

	Every day	Every few days	A couple of times a week	At least once every week	At least once every month	Less often than once a month	Never
Walk	33%	25%	12%	11%	6%	8%	5%
Drive a car, van or truck	58%	23%	7%	4%	1%	2%	6%
Travel in a car/van as a passenger	8%	19%	14%	17%	15%	15%	12%
Ride a motorcycle	1%	1%	1%	1%	1%	6%	89%
Ride a bicycle / electric bicycle (e-bike)	3%	5%	4%	4%	6%	17%	61%
Take public transport, e.g., a bus or taxi	2%	3%	2%	2%	6%	29%	55%
Ride a mobility scooter	0%	0%	0%	0%	0%	2%	97%
Total respondents	**1460**						

Road Usage

	Proportion of respondents	Number of respondents
I mainly use roads with a 70km/h speed limit or above	24%	354
I mainly use roads with a 70km/h speed limit or below	39%	571
I only use roads with a 70km/h speed limit or above	2%	24
I only use roads with a 70km/h speed limit or below	6%	85
I use roads with a speed limit above 70km/h and below 70 km/h equally	29%	426
Total respondents	**1460**	

Travel on Unsealed Roads (Drivers only)

	Proportion of respondents	Number of respondents
Never	13%	181
Hardly ever	50%	707
Some of the time	30%	425
Most of the time	5%	72
Don't know / unsure	1%	17
Total respondents	**1402**	

Experience with Road Crashes

	Experienced personally	Experience by a close friend or relative	No experience	I'd prefer not to answer this
Road crash that resulted in minor injuries for those involved	30%	30%	38%	2%
Road crash that resulted in serious injuries for those involved	9%	29%	59%	2%
Road crash that resulted in a fatality	5%	19%	74%	2%
A near miss road crash that could have resulted in serious injuries or fatalities	42%	18%	37%	2%
Total respondents	**1460**			

Years with Driver's License (Drivers only)

	Proportion of respondents	Number of respondents
Less than 2 years	3%	47
2-5 years	7%	96
6-10 years	7%	93
Over 10 years	82%	1124
Don't know / unsure	1%	16
Total respondents	**1376**	

Type of Driver's License (Drivers only)

	Proportion of respondents	Number of respondents
NZ full license	88%	1211
NZ restricted license	5%	72
NZ learners license	4%	52
Overseas NZ full license equivalent	2%	25
Other	1%	16
Total respondents	**1376**	

Own Driving Ability (Drivers only)

	Proportion of respondents	Number of respondents
Above average	42%	575
About average	55%	762
Below average	1%	20
Don't know / not sure	1%	19
Total respondents	**1376**	

Driving Ability of (Other) Drivers

	Proportion of respondents	Number of respondents
Above average	8%	114
About average	73%	1059
Below average	16%	232
Don't know / not sure	4%	55
Total respondents	**1460**	

5.3 Research method

5.3.1 Darfield Road Safety Forum

With the co-operation of Selwyn District Council, and using an existing technological platform provided by Bang the Table, Research First built, maintained and moderated an online forum hosted on the Selwyn DC public engagement site, *Your Say Selwyn*. The forum was named the Darfield Road Safety Forum, and residents of Darfield, Canterbury, and surrounding areas were invited to participate over a period of just over one month. Participants were mainly recruited through direct random-dial phone recruitment by Research First, using a prepared script. Other recruitment methods included face-to-face in Darfield, and emailing those who had indicated an interest in road safety when joining *Your Say Selwyn*. In total, 341 visitors to the forum were recorded.

Once there, participants were asked to engage in a variety of activities, staggered over the duration to maintain interest. These activities included:

- Dropping 'pins' on a map of the local area to identify specific road risks
- Commenting on the risks others had identified and taking a poll on what was most important
- Telling personal stories about their own experience with road risk, and how they felt risks should be prioritised
- Answering survey questions about specific road safety advertising, as well their final thoughts at the conclusion of the forum (for these activities only, respondents were incentivised by a grocery voucher prize draw, conducted by Research First)

At the close of the project the forum was deactivated, but remains visible to authorised participants.

5.3.2 Surveying Greater Canterbury

The quantitative insights were collected using an online survey method, with data collection completed between 12 October 2018 and 31 October 2018. To ensure robust and statistically reliable information can be provided on a regional level, the minimum sample targets were defined for each region. This meant that responses from some areas (e.g., Kaikoura and Hurunui) were overrepresented within the overall sample, whereas other areas were underrepresented. To provide reliable results on the overall sample level, the data was weighted to match the Canterbury population distribution in terms of location, gender and age. The weighting procedure also corrected for any imbalances resulting from sampling. The table below summarises the achieved sample sizes by region, weighted sample distribution and maximum margins of error for achieved subsamples (at the confidence interval of 95%).

Region	Achieved sample distribution		Weighted sample distribution (in line with 2013 Census)	Maximum margin of error (at the confidence interval of 95%)
	n=	%	%	%
Kaikoura/Hurunui District (combined)	128	9%	3%	+/-8.7%
Waimakariri District	236	16%	9%	+/-6.4%
Christchurch City	497	34%	62%	+/-4.4%
Selwyn District	201	14%	8%	+/-6.9%
Ashburton District	108	7%	5%	+/-9.4%
Timaru/Mackenzie/Waimate District (combined)	159	11%	10%	+/-7.8%
Waitaki District	131	9%	4%	+/-8.6%
TOTAL	**1460**	**100%**	**100%**	**+/-2.6%**

5.3.3 Knowledge audit

This component involved desk research: reviewing campaign materials, evaluation documents, and other related information about road safety campaigns locally and globally.

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NZ TRANSPORT AGENCY WAKA KOTAHI CAS

Timaru District DSI 2017 to 2022

TLA (Territorial local authority)

Timaru District

Crash year

2017 — 2022

Crash severity

Fatal Crash, Serious Crash

Site details report

Fatal crashes: 23 | **Injury crashes:** 91 | **Non-injury crashes:** 0 | **Total crashes:** 114

Overall crash statistics

Crash severity

Crash severity	Number	%	Social cost $(m)
Fatal	23	20.18	140.23
Serious	91	79.82	111.37
Minor-injury	0	0	0
Non-injury	0	0	0
TOTAL	114	100	251.60

Crash numbers

Year	Fatal	Serious	Minor	Non-injury
2017	3	18	0	0
2018	9	19	0	0
2019	4	21	0	0
2020	1	7	0	0
2021	2	14	0	0
2022	4	12	0	0
TOTAL	23	91	0	0
Percent	20.17	79.83	0	0

Crash type and cause statistics

Overall casualty statistics

Injury severity

Injury severity	Number	% all casualties
Fatal	28	14.66
Serious Injured	121	63.35
Minor Injured	42	21.99
TOTAL	191	100.00

Casualty numbers

Year	Fatal	Serious Injured	Minor Injured
2017	3	30	8
2018	9	30	22
2019	4	24	5
2020	1	8	4
2021	6	16	2
2022	5	13	1
TOTAL	28	121	42
Percent	14.66	63.35	21.99

Note: Last 5 years of crashes shown (unless query includes specific date range).

Crash type

Crash type	Crash numbers	% All crashes
Overtaking crashes	5	4.39
Straight road lost control/head on	28	24.56
Bend - lost control/Head on	36	31.58
Rear end/obstruction	14	12.28
Crossing/turning	20	17.54
Pedestrian crashes	7	6.14
Miscellaneous crashes	4	3.51
TOTAL	114	100

Casualty types

Casualty types	Fatalities	Serious injuries	Minor injuries
Cyclists	2	9	0
Drivers	13	53	19
Motorcycle pillions	0	1	2
Motorcycle riders	4	16	0
Passengers	8	34	21
Pedestrians	1	8	0
Other	0	0	0
TOTAL	28	121	42

Note: Motorcycle stats include Mopeds.

Driver and vehicle statistics

Drivers at fault or part fault in injury crashes - by age

Age	Male	Female	Unknown	Total	Percentage (%)
0-4	0	0	0	0	0.00
5-9	0	0	0	0	0.00
10-14	1	0	0	1	0.82
15-19	11	2	0	13	10.66
20-24	13	4	0	17	13.93
25-29	8	2	0	10	8.20
30-34	11	1	0	12	9.84
35-39	8	2	0	10	8.20
40-44	12	3	0	15	12.30
45-49	6	0	0	6	4.92
50-54	5	3	0	8	6.56
55-59	5	0	0	5	4.10
60-64	3	1	0	4	3.28
65-69	6	1	0	7	5.74
70-74	3	1	0	4	3.28
75-79	0	1	0	1	0.82
80-84	3	1	0	4	3.28
85-89	1	0	0	1	0.82
90-94	2	0	0	2	1.64
95-99	0	0	0	0	0.00
100+	0	0	0	0	0.00
Unknown	0	0	2	2	1.64
TOTAL	98	22	2	122	–
Percent	80.33	18.03	1.64	100.00	–

Note: Driver information is not calculated for non-injury crashes.

Crash factors

Crash factors	Crash numbers	% All crashes
#N/A	50	43.86
Alcohol	50	43.86
Disabled, old age or illness	5	4.39
Failed to give way or stop	15	13.16
Fatigue	7	6.14
Incorrect lanes or position	24	21.05
Miscellaneous factors	14	12.28
Overtaking	1	0.88
Pedestrian factors	3	2.63
Poor handling	24	21.05
Poor judgement	16	14.04
Poor observation	25	21.93
Position on Road	25	21.93
Road factors	11	9.65
Travel Speed	26	22.81
Unknown	0	0.00
Vehicle factors	5	4.39
Weather	5	4.39
TOTAL	306	268.42

Crashes with:

Factor groups	Crash numbers	% All crashes
All road user factors	88	77.19
Driver only factors	107	93.86
Pedestrian factors	3	2.63
Vehicle factors	5	4.39
Road factors	9	7.89
Environment factors	6	5.26
No identifiable factors	0	0.00
Retired codes - no future use	0	0.00
TOTAL	218	191.23

Notes: Factors are counted once against a crash - i.e. two fatigued drivers count as one fatigue crash factor.

Driver/vehicle factors are not available for non-injury crashes for Northland, Auckland, Waikato and Bay of Plenty before 2007. This will influence numbers and percentages.

% represents the % of crashes in which the cause factor appears.

Number of parties in crash

Party type	All crashes	% All crashes
Single party	48	42.11
Multiple party, including pedestrian	9	7.89
Multiple party, excluding pedestrian	57	50.00
TOTAL	114	100

Drivers at fault or part fault in injury crashes - by licence

Licence	Male	Female	Unknown	Total	Percentage (%)
Full	59	16	0	75	61.48
Learner	7	2	0	9	7.38
Restricted	13	2	0	15	12.30
Overseas	3	1	0	4	3.28
Wrong class	2	0	0	2	1.64
Never Licensed	1	0	0	1	0.82
Unknown	13	1	2	16	13.11
Forbidden	0	0	0	0	0.00
TOTAL	98	22	2	122	–
Percent	80.33	18.03	1.64	100.00	–

Note: Driver information is not calculated for non-injury crashes.

Vehicles involved in injury crashes (vehicle count)

Vehicle type	No. of vehicles	% of vehicles in injury crashes
Car/Wagon	86	47.78
SUV	7	3.89
Van	21	11.67
Ute	9	5.00
Truck	13	7.22
Truck HPMV	0	0.00
Bus	2	1.11
Motorcycle	20	11.11
Moped	1	0.56
Train	1	0.56
Cycle	12	6.67
Other	7	3.89
Unknown	0	0.00
50 Max	0	0.00
Left scene	0	0.00
Uncoupled towed vehicle	1	0.56
TOTAL	180	100.00

Vulnerable road users

Crash types	Number	Percentage (%)
Cyclist crashes	12	10.53
Pedestrian crashes	9	7.89
Motorcycle crashes	21	18.42
All other crashes	73	64.04

Note: Some crashes involve more than one vulnerable road user type.

Note: Motorcycle stats include Mopeds.

Road environment statistics

Road type

Road type	State highway	Local road	Unknown	N/A	Total	Percentage (%)
Urban	11	29	0	0	40	35.09
Open	41	33	0	0	74	64.91
Unknown	0	0	0	0	0	0.00
TOTAL	52	62	0	0	114	–
Percent	45.61	54.39	0.00	0.00	100.00	–

Natural light conditions

Conditions	Injury	Non-injury	Total	%
Light/overcast	79	0	79	69.30
Dark/twilight	35	0	35	30.70
Unknown	0	0	0	0.00
TOTAL	114	0	114	100

Conditions

Conditions	Injury	Non-injury	Total	%
Dry	95	0	95	83.33
Ice or Snow	0	0	0	0.00
Wet	19	0	19	16.67
Null	0	0	0	0.00
TOTAL	114	0	114	100

Intersection/midblock

Intersection/mid-block	Total	%
Intersection	46	40.35
Midblock	68	59.65
TOTAL	114	100

Vehicles involved in injury crashes (crash count)

Vehicle type	Injury crashes	% of injury crashes
Car/Wagon	69	60.53
SUV	7	6.14
Van	18	15.79
Ute	9	7.89
Truck	13	11.40
Truck HPMV	0	0.00
Bus	2	1.75
Motorcycle	20	17.54
Moped	1	0.88
Train	1	0.88
Cycle	12	10.53
Other	7	6.14
Unknown	0	0.00
50 Max	0	0.00
Left scene	0	0.00
Uncoupled towed vehicle	1	0.88
TOTAL	160	140.35

Objects struck

Objects struck	Injury crashes	%	Non-injury crashes	%
Crashes w/obj struck	51	44.74	0	0.00

Object struck	Injury crashes	%	Non-injury crashes	%
Animals	1	0.88	0	0.00
Bridges/Tunnels	1	0.88	0	0.00
Cliffs	5	4.39	0	0.00
Debris	0	0.00	0	0.00
Embankments	2	1.75	0	0.00
Fences	20	17.54	0	0.00
Guide/Guard rails	0	0.00	0	0.00
Houses	0	0.00	0	0.00
Traffic Islands	2	1.75	0	0.00
Street Furniture	0	0.00	0	0.00
Kerbing	3	2.63	0	0.00
Landslips	0	0.00	0	0.00
Parked vehicle	8	7.02	0	0.00
Trains	1	0.88	0	0.00
Sight Rails	0	0.00	0	0.00
Poles	10	8.77	0	0.00
Stationary Vehicle	0	0.00	0	0.00
Roadwork	0	0.00	0	0.00
Traffic Sign	1	0.88	0	0.00
Trees	12	10.53	0	0.00
Drainage Structures	1	0.88	0	0.00
Ditches	6	5.26	0	0.00
Other	3	2.63	0	0.00
Thrown or dropped objects	0	0.00	0	0.00
Water	0	0.00	0	0.00
TOTAL	76	–	0	–

Note: % represents the % of crashes in which the object is struck.

Vehicle usage in injury crashes

Vehicle usage	Fatal Crash	Serious Crash	Minor Crash	Total	Percentage (%)
Private	16	61	0	77	42.78
Attenuator Truck	0	1	0	1	0.56
Agricultural	1	1	0	2	1.11
Ambulance	0	0	0	0	0.00
Campervan	0	0	0	0	0.00
Concrete mixer	0	0	0	0	0.00
Fire	0	0	0	0	0.00
Logging truck	0	1	0	1	0.56
Mobile crane	0	0	0	0	0.00
Police	0	0	0	0	0.00
Rental	0	1	0	1	0.56
Road Working	0	0	0	0	0.00
Scheduled service Bus	0	0	0	0	0.00
School bus	0	0	0	0	0.00
Tanker	0	2	0	2	1.11
Taxi	0	1	0	1	0.56
Tour Bus	0	0	0	0	0.00
Trade person	0	0	0	0	0.00
Work travel	0	1	0	1	0.56
Work vehicle	2	5	0	7	3.89
Other	1	2	0	3	1.67
Null	18	66	0	84	46.67
TOTAL	38	142	0	180	–
Percent	21.11	78.89	0.00	100.00	–

Time period statistics

Month by injury/ non-injury crashes

Month	Injury crashes	%	Non-injury crashes	%	Total	%
Jan	13	11.4	0	0	13	11.4
Feb	12	10.53	0	0	12	10.53
Mar	11	9.65	0	0	11	9.65
Apr	10	8.77	0	0	10	8.77
May	7	6.14	0	0	7	6.14
Jun	11	9.65	0	0	11	9.65
Jul	7	6.14	0	0	7	6.14
Aug	10	8.77	0	0	10	8.77
Sep	11	9.65	0	0	11	9.65
Oct	8	7	0	0	8	7
Nov	6	5.26	0	0	6	5.26
Dec	8	7	0	0	8	7
TOTAL	114	100	0	0	114	100

Day/period

Day/Period	All crashes	% All crashes
Weekday	72	63.16
Weekend	42	36.84
TOTAL	114	100

Day/period by hour

Day/Period	00:00 - 02:59	03:00 - 05:59	06:00 - 08:59	09:00 - 11:59	12:00 - 14:59	15:00 - 17:59	18:00 - 20:59	21:00 - 23:59	Total
Weekday	1	3	7	10	16	20	6	9	72
Weekend	3	1	3	5	7	10	10	3	42
TOTAL	4	4	10	15	23	30	16	12	114

Day/period by hour DOW

Day/Period	00:00 - 02:59	03:00 - 05:59	06:00 - 08:59	09:00 - 11:59	12:00 - 14:59	15:00 - 17:59	18:00 - 20:59	21:00 - 23:59	Total
Mon	1	0	3	6	3	3	1	2	19
Tue	1	0	2	1	2	4	1	0	11
Wed	0	0	0	1	4	2	2	4	13
Thu	0	0	1	1	4	4	2	3	15
Fri	0	3	1	1	3	7	2	1	18
Sat	0	0	1	4	3	4	6	2	20
Sun	2	1	2	1	4	6	2	0	18
TOTAL	4	4	10	15	23	30	16	12	114

6.2 Residual disinfection (chlorine) for Geraldine water supply

Author: **Michelle Bunt, Water Services Community Engagement Officer**
Grant Hall, Drainage & Water Manager

Authoriser: **Andrew Dixon, Group Manager Infrastructure**

Recommendation

That the Infrastructure Committee receives and notes the Residual Disinfection (chlorine) for Geraldine water supply update.

Purpose of Report

1 The purpose of this report is to provide an update and information related to the requirement under the Water Services Act to chlorinate the Geraldine water supply.

Assessment of Significance

2 This matter at this point is considered to be of medium to low significance in terms of the Timaru District Council Significance and Engagement policy. Although there is no change to the level of service, and the requirement to chlorinate the Geraldine water supply is effectively mandatory under existing legislation, community interest may increase requiring further consideration of the significance.

Discussion

The Legislation

3 The Taumata Arowai –Water Services Regulator Act 2020 established the new drinking water regulator in New Zealand, with section 10(b) of that Act brought into force on 15 November 2021 which defines one of Taumata Arowai's objectives as to effectively administer the drinking water regulatory system.

4 The Water Services Act 2021 (WSA) also came into force on 15 November 2021 and details the provisions relating to the supply of drinking water, monitoring, compliance and enforcement, and regulation-making powers.

5 A key provision of the WSA (section 21(1)) is the duty of care of the drinking water supplier, who must ensure that the drinking water supplied is safe.

6 The WSA (section 30) requires the owner of a drinking water supply to prepare, lodge, update, implement and operate a drinking water safety plan. And under section 31, a drinking water safety plan must include a multi barrier approach, which is one that Taumata Arowai considers will prevent hazards from entering the raw water and maintain the quality of the water in the reticulation system.

7 Where a drinking water supply includes reticulation, under section 31(j) the water safety plan must require, and provide for the use of, residual disinfection in the supply.

8 The provision of residual disinfection in the reticulation is to aid in the protection of public health from minor ingress into the water network through pipe leaks or backflow events, which have been shown to be associated with waterborne illness.

9 Section 58 of the WSA does set out the provisions for a residual disinfection exemption, which includes that the Taumata Arowai chief executive may grant an exemption on any conditions that the chief executive thinks fit and that an exemption may continue in force for not more than 5 years after which the exemption must be treated as having been revoked.

Exemptions

10 The Taumata Arowai Compliance, Monitoring and Enforcement Strategy 2022 – 2025 clearly sets out Taumata Arowai priorities and regulatory approach. Within that Strategy (under Exemptions) it states:

Taumata Arowai will carefully use the power to exempt drinking water suppliers from requirements that Parliament has otherwise imposed. We take the approach that exemptions will be used sparingly and to solve exceptional problems or respond to exceptional circumstances, where other options have been discounted, rather than as a business-as-usual tool.

And:

To support Taumata Arowai in deciding residual disinfection exemption applications, independent technical advice is sought from a panel of international experts.

11 Taumata Arowai have published guidance on applying for an exemption and some of the water supply attributes that will be considered with a residual disinfection exemption application are set out in the following table:

Attribute	Consideration
Cross-connection control and backflow prevention	Demonstration of an effective cross-connection control and backflow prevention programme
Pressure management	Demonstration of comprehensive understanding of network pressures and best practice for pressure management
Hygienic practices	Demonstration that hygiene best practices for planned and unplanned repairs are always used
Water storage	Demonstration of best practice for operation, inspection, and maintenance of water storage
System condition	Demonstration of regular assessment of system condition and that overall system is sound
Sanitary sewers	Demonstration of sufficient separation of sanitary and water networks
Seismic design	Demonstration of best practice in system design for seismic resiliency
Operational staff	Demonstration of staffing level adequacy, technical competency, awareness of risk, involvement in quality management and continuous improvement, and continual training
Network cleaning	Demonstration of best practice in regular and effective network cleaning programme
Water loss	Demonstration of best practice in leak detection and loss control programme and minimal non-revenue water

Attribute	Consideration
Online monitoring	Demonstration of effective online monitoring capability for key water quality parameters in the network at key locations
Continuous improvement	Demonstration of best practice in asset management and capital improvements, including repair, rehabilitation, and replacement planning and activities
Electrical power	Demonstration of best practice for reliability of electrical power system, including emergency backup and standby capabilities
Emergency chlorination	Demonstration of provision of emergency chlorination capability for network
Incident and emergency response	Demonstration of effective emergency response capabilities, including communication, contingency supply, response protocols, regular training exercises
Public communications	Demonstration of effective public communications strategy and capability
Customer complaints	Demonstration of effective capability to receive and rapidly respond to customer complaints
Organisational awareness and commitment	Demonstration of organisational awareness of system risks and commitment to water quality protection from all levels of personnel

12 In order for a water supplier to apply for an exemption, evidence is necessary to demonstrate that public health will not be compromised. A key aspect of any application is the integrity of the distribution network, which is an area of contamination risk from mains breaks, leakage and backflow into the system.

13 There are other relevant reference documents on the requirements for a residual disinfection exemption such as a report by Pattle Delamore Partners Ltd (PDP report[1]) for Napier City Council in 2021 on their investigation on moving to a chlorine-free water supply system.

14 The PDP report notes that some attributes that many chlorine-free systems around the world have in common include:

- Low levels of non-revenue water (NRW)
- Proactive mains replacement programme of older pipes
- Active pressure management
- Active NRW management
- Universal household water metering
- Universal backflow prevention
- Source water protection
- Enhanced water quality standards
- Enhanced water quality monitoring programme

15 The PDP report goes on to state that what should not be underestimated is the level of investment required, the time to implement the programme of works, the organisational changes and the willingness to move to a universal water metering system.

[1] https://www.napier.govt.nz/assets/Uploads/Chlorine-Free-Drinking-Water-Final-Report-1.pdf

16 Some applications for residual disinfection exemption have been made to Taumata Arowai by a number of water suppliers, however to date non have been approved.

17 The NRW for the Geraldine water supply is currently estimated at 18% of the total system input volume.

18 Monitoring of the Geraldine water supply systems for e-coli (since 2017) and total coliforms (since 2018) have indicated the presence of bacteria of 1% of samples for e-coli (from 700 samples) and >8% of samples for total coliform (from 557 samples). The reasons for the presence of bacteria in all these cases is unexplained.

19 Based on the water supply attributes that will be considered for a residual disinfection exemption, it has been assessed that an application for an exemption for the Geraldine water supply would not be successful at this time.

20 It must be noted that where a water supply scheme does not have an exemption on 15 November 2022, the water supplier is required by law to either have temporary chlorination in place or have submitted a Water Safety Plan that sets out the planned implementation of chlorination as soon as possible.

21 At the Timaru District Council Long Term Plan meeting on Monday 30 April 2018 and continuing on Tuesday 1 May and Wednesday 2 May, Council resolved "That Council does not carry out routine chlorination of the Geraldine water supply until such time as it becomes mandatory under the NZ Drinking Water Standards DWS, with the exception of allowing chlorination as required in emergency situations."

22 Routine chlorination of the Geraldine water supply will commence in the very near future to ensure we are compliant with the Water Services Act.

Offences under the Water Services Act

23 Section 171 of the Water Services Act states a drinking water supplier commits an offence if the supplier engages in conduct that exposes any individual, and is reckless as to the serious risk to an individual, of death, injury, or illness.

24 And a supplier who commits an offence under section (171) is liable on conviction to a term of imprisonment not exceeding 5 years or a fine not exceeding $600,000, or both, for an individual, and to a fine not exceeding $3 million for a body corporate or an unincorporated body.

25 It is also an offence for a water supplier not to comply with the requirements of a water safety plan, with maximum penalties of $50,000 fine for an individual or a $200,000 fine for a body corporate or unincorporated body.

Water Supply Attribute Upgrade Costs

26 As noted previously, the level of investment and the time to implement a programme of improvements in order to be in a position to make a creditable application for an exemption is significant. Napier City Council are looking at a 20 year programme to becoming chlorine-free.

27 A rough order of costs has been estimated for the Geraldine water supply to meet three main issues of consideration for an exemption, being the installation of universal water metering, universal backflow prevention and to significantly reduce NRW by upgrading the reticulation by replacing approximately 14 kilometres of existing pipes that are not manufactured with PVC or PE. This estimated cost is $23.3 million (excluding gst), or around $19,000 per property.

28 There are other likely costs that would be significant, such as source water protection, and on-going operational costs for enhanced on-line monitoring, condition assessments and network maintenance.

Consumer Communications

29 A brochure has been forwarded to every household in Geraldine, outlining the situation (see Attachment 1), there have been full page advertisements published in local newspapers and information has been posted on Council's social media. There have also been two drop-in sessions programmed at the Geraldine Library on 31 October and 3 November, for Council staff to be available to answer specific queries from consumers.

30 Access to additional resources on Council's website (https://www.timaru.govt.nz/geraldine-chlorine) has also been advertised.

31 A water mains flushing programme is also being planned, to react to any localised complaints from consumers of taste or odour issues that may arise.

Attachments

1. Geraldine Chlorination Leaflet ⇩

TIMARU DISTRICT COUNCIL
Te Kaunihera ā-Rohe o Te Tihi o Maru

Chlorination of the Geraldine Water Supply

New water legislation comes into effect from mid-November.

In line with new legal requirements of the Water Services Act 2021, chlorine will be introduced to the Geraldine water supply by the end of this year. The addition of a small amount of chlorine maintains the safety of treated drinking water as it travels through our reticulation network from our water treatment plant to your household or business. This is a part of a multi-barrier approach to address any unacceptable risks of bacterial contamination.

WHY CHLORINE?

While Geraldine's water is currently treated with UV light, this treatment doesn't persist past the treatment plant, so there is a small but real risk of downstream contamination from pipe breakage repairs or water flowing back into the system (backflow). Chlorination provides residual disinfection from events that could occur after the water has been treated.

To date, there are no alternatives are available to us that are as effective and proven as chlorine.

IS CHLORINATION SAFE?

Chlorine has been used safely around the world for about 120 years to keep millions of people all over the globe – and in New Zealand – safe from waterborne illness arising from undetected contamination. Chlorine is used in all other Timaru District Council drinking water supplies. For more detailed information regarding the safety of chlorine, please refer to our website: https://www.timaru.govt.nz/geraldine-chlorine

HOW DOES CHLORINE WORK?

Chlorine reacts with bacteria to 'inactivate' it, so that it can no longer grow. If the bacteria can't grow and replicate, it can't cause disease or make consumers ill.

We will be using low-dose chlorine and allowing contact time for the chlorine to inactivate bacteria and viruses.

A chlorine residual is left in the water and it makes its way through our network of pipes and reservoirs to the very last house at the end of the pipework. This 'residual' of chlorine in the network is important. It protects customers from the risk of re-contamination which may occur in the network.

OUR RESPONSIBILITY

At the time of adoption of the 2018 Long Term, Council resolved not to carry out routine chlorination of the Geraldine water supply until such time as it becomes mandatory.

Under the Water Services Act 2021, we must provide some form of residual disinfection in the supply reticulation.

The purpose of residual disinfection in the pipe network is to protect public health from minor ingress into the water network. This can occur through pipe leaks or backflow events, which have been shown to be associated with waterborne illness.

The new drinking water regulator (Taumata Arowai) requires new water safety plans to be lodged by 15 November 2022. They have also indicated that residual disinfection should be implemented as soon as possible. We are legally obligated to meet these requirements and there are severe consequences for councils and water suppliers who fail to do so including fines and imprisonment.

WHAT ABOUT EXEMPTIONS?

You may have heard about other towns and cities around the country that are trying to get an exemption. According to Taumata Arowai's Compliance Monitoring and Enforcement Strategy 2022-2025: "exemptions will be used sparingly and to solve exceptional problems or respond to exceptional circumstances". Any exemption applications would be subject to review by an international panel of experts. Since 2017, 1% of our 700 tests of water from the Geraldine water supply reticulation network have detected presence of a bacteria. Based on this factor alone, our assessment is that we would be unable to meet the burden of proof required in order to obtain an exemption.

WHAT ARE MY OPTIONS IF I DON'T WANT CHLORINE?

Some people do not like the taste or smell of chlorine, and for a short period following the introduction of the treatment, you may be more likely to notice it.

There are some solutions to this. For example, you can fill a jug of water and leave it on the bench or in your fridge overnight. The chlorine will dissipate naturally over a few hours. Or you can install a household carbon filter. Small units can be purchased locally from hardware stores for approximately $100.

Pet fish and people with skin conditions can also be sensitive to chlorine. We have more detailed info available on our website to help you with this: https://www.timaru.govt.nz/geraldine-chlorine

PUBLIC DROP IN SESSIONS

We'd like to give you an opportunity to meet with us face to face and ask questions. We've scheduled some drop-in sessions at the Geraldine Library and Service Centre at the following days and times:

- Monday 31 October 2022: 8.30 am – 12 pm
- Thursday 3 November 2022: 1 pm – 6 pm

WHAT ABOUT CHANGES UNDER THREE WATERS?

The requirement to chlorinate the Geraldine Water Supply is not impacted by Central Government's Three Waters Reforms. It is a requirement of the drinking water regulator Taumata Arowai.

If the government proposal goes ahead, from 1 July 2024 the Geraldine Township Water Supply scheme would be run by the South Island Water Service Entity (currently known as Entity D). This new entity would be subject to the same legal requirements as Timaru District Council is. Entity D would also have to provide and operate the water supply using a Water Safety Plan and be accountable to the drinking water regulator, Taumata Arowai, for the safety of all aspects of the water supply including residual disinfection.

MORE INFORMATION

We know this is a complex subject and we've provided additional resources on our website:
https://www.timaru.govt.nz/geraldine-chlorine

TIMARU DISTRICT COUNCIL
Te Kaunihera ā-Rohe o Te Tihi o Maru

6.3 CPlay Playground - Addtional Funding Request

Author: **Tracy Bell, Roading Corridor Technician**

Authoriser: **Andrew Dixon, Group Manager Infrastructure**

Recommendation

That the Infrastructure Committee approve additional funding of $300,000 excluding GST to allow the CPlay playground surfacing to meet the required Council standards.

Purpose of Report

1 This report is to request additional funding to be allocated to the new CPlay playground project to allow completion to the desired Council standards.

Assessment of Significance

2 This decision is deemed of low significance in accordance with the Council's Significance and Engagement policy. This is a key project in the Long Term Plan 2021-31 and there is sufficient funding available within approved budget allocations. However, it is recognised that the CPlay playground is of high interest to the community.

Background

3 The CPlay playground was a community led initiative to construct a unique themed playground at Caroline Bay.

4 Following public consultation on the Long Term Plan 2021-31 Council made the decision to make a contribution of $1.0 million to the CPlay project in 2021/22.

5 This funding assistance and a community fundraising campaign that achieved significant support, raised a total of $2.5 million funding for this project.

6 The new playground will be a council asset and maintained by council. For this reason council Officers are assisting with the implementation of the project with contracts awarded and managed by Council.

7 At the Tenders and Procurement Committee meeting on 15 March 2022 quotes for the playground design, equipment supply and matting under the playground equipment were approved.

8 The playground construction was due to commence late 2022 but due to supply issues and contractor availability on site construction works are now scheduled to start in March 2023, with completion in August 2023.

Discussion

9 Quotations for construction works including ground formation, paths, edging and other surfacing have the total cost of the new CPlay playground at $3.0 million.

10 The extent and cost of the playground has increased and additional safety matting is required. The CPlay project group has made further funding applications to address the funding shortfall for this item.

11 A significant part of the cost increase is driven by a council request to complete the pathways in concrete and to complete the play surface in a Pour and Play product. This has been recommended by Council Officers for the following reasons:

a) The Health and Safety of the children using the playground is paramount. Having concrete pathways instead of asphalt decreases the slip factor and also reduces the heat factor in the summer, eliminating the issue of children receiving burns on their feet. The Pour and Play surfacing over the playground mounds is also considered to have a superior safety over the grass turf alternative.

b) A whole of life cost analysis shows that the use of concrete instead of asphalt on pathways is value for money with lower future maintenance costs associated with concrete.

c) The whole life cost analysis of the playground will also be reduced by using a colourful Pour and Play surfacing over mounds instead of grass turf. The Pour and Play product has significantly lower long term maintenance costs and improved durability over the lower initial cost grass turf alternative.

12 To provide these surfacing products there is a funding shortfall of $300,000 excluding GST. Given that there is a significant benefit to Council long term it is recommended that additional Council funding is considered for these products.

Options and Preferred Option

13 Option 1 is to approve the additional funding of $300,000 (excluding GST) to improve safety and lower whole of life costs. This is the preferred option.

14 Options 2 is to decline the additional funding and the alternative surfacing options are to be used. This would create a potential safety issue for council and higher long term maintenance costs.

Consultation

15 Consultation is not required in this matter as this project was consulted on in our Long Term Plan and received significant community support.

Relevant Legislation, Council Policy and Plans

16 Timaru District Council – Long Term Plan 2021-31

17 Timaru District Council Annual Plan 2022-23

Financial and Funding Implications

18 The additional funding for the CPlay project can be managed from within the current Parks budget.

Other Considerations

19 There are no other considerations.

Attachments

Nil

6.4 Highfield Recreation Area Update

Author: **Bill Steans, Parks & Recreation Manager**

Authoriser: **Andrew Dixon, Group Manager Infrastructure**

Recommendation

That the Highfield recreation area update be received and noted.

Purpose of Report

1 This report is to provide an update on progress towards the development of the Highfield Recreation Area.

Assessment of Significance

2 This matter is of low significance in terms of Council's significance and engagement policy as it is consistent with the Long Term Plan.

Discussion

3 The Highfield recreation area is all the land that was formerly occupied by the Highfield Golf Course and the Orbell Street quarry. It is located north of Douglas and Orbell Streets, west of Athol Place, south of Lindsay Street and east of Morgans Road in Timaru and encompasses 37 hectares of land (Attachment 1).

4 The Highfield Golf Club which is now a section of the Timaru Town and Country Club recently downsized the course to 12 holes so that maintenance costs were lowered and the course utilised the flatter land. As a result some land became available for other purposes with the Timaru Town and Country Club continuing to lease the 12 holes on an annual basis until the future of the course is confirmed.

5 Initial public consultation from key stakeholders, neighbours and the wider community considered a number of options for use of the land. The favoured approach was for recreation and providing native vegetation as a habitat for native birds so that birdsong will be enhanced. Improvements for access to and through the land were also favoured.

6 Boffa Miskell Limited was engaged in stages to consult, design and undertake ecological assessments.

7 Te Runanga o Arowhenua has been represented by an Aoraki Environmental Consultancy cultural advisor. Active engagement has been maintained at every stage of the process, including several site visits.

8 In October 2020 an online and physical engagement survey was conducted which considered three options. These were:

- Park only;
- Park and Subdivision with the subdivision revenue being available to contribute to development costs; and

- Golf and Park.

9 The results were:

- Park only 31%
- Park and Subdivision 17%
- Golf and Park 52%

10 In the Long Term Plan a financial contribution of $15,000 was made towards a golf facilities review study for the Aorangi golf region which encompasses Mid and South Canterbury. This has progressed well with input from clubs, Sport Canterbury and Aorangi Golf in partnership with Golf NZ. Council's Parks and Recreation Manager also contributed to the review. Aorangi Golf is currently presenting the draft findings to clubs for final input ahead of presenting the findings to Council in early 2023.

11 Preliminary landscape designs are being prepared for land not in areas that could be effected by a golf course or a subdivision. The initial designs are focusing on the Waimataitai Creek, Orbell Street quarry and areas to the north of the site. Planting, improving the water course, access, relocating the Lindsay Street playground within the site, walkways and cycling opportunities, picnic areas and revamping the confidence course are all proposed.

12 Council's Drainage and Water Unit has independently engaged a consultant to model and design a stormwater retention dam to reduce future flooding in the Ashbury area. Once the modelling is completed the dam will be integrated into the site landscape.

13 Access from Orbell Street through the quarry area has had to be closed recently because of significant subsidence of the clay subsoil. Geotechnical engineers have assessed the site and are providing input into designs for safe access.

14 It is proposed that a Pou Whenua is installed on high land. The Pou design will be a Tekoteko/carved figure representing Rokohouia, son of Rakaihautu the leader of Uruao waka that brought the Waitaha people to Te Waipounamu/South Island. They are both recognised as the explorers of the South Island for the Waitaha people. Rokohouia will be placed so he overlooks the Waimataitai awa/creek as it flows to the coast.

15 When the Golf Facilities Review is made available, the Council will be in a position to confirm whether golf and a residential subdivision will be accommodated at the site.

Attachments

1. Attachment 1 - Highfield Recreation Area aerial view

Boffa Miskell

www.boffamiskell.co.nz

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PRELIMINARY

LEGEND
Boundary

HIGHFIELD RECREATION AREA

Existing Conditions

Date 13 May 2020 | Revision: 2

Plan prepared for Timaru District Council by Boffa Miskell Limited

Project Manager: gabe.ross@boffamiskell.co.nz | Drawn: RJo | Checked: MBr

7 Consideration of Urgent Business Items

8 Consideration of Minor Nature Matters