

Canterbury Road Safety Implementation Plan

A working
document and
technical
implementation
plan

Prepared by The Canterbury
Regional Road Safety Working
Group

10 November 2014



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Document Information

Prepared for	The Canterbury Regional Road Safety Working Group
Project Name	A working document and technical implementation plan
File Reference	H:_2013\NZ0313104 - Transport Planning for ECan\RRSWG\140618 DRAFT Canterbury Road Safety Action Plan.docx
Job Reference	NZ0313104
Date	10 November 2014

Document Control

Version	Date	Description of Revision	Prepared By	Prepared (Signature)	Reviewed By	Reviewed (Signature)
1.4	11.07.2014	Final comments from RRSWG	Kate Mackenzie			
2	1.08.2014	Including comments from RTC	Kate Mackenzie			
3	10.11.2014	Final including discussion at RRSWG 14 August	Kate Mackenzie			

Version	Reason for Issue	Approved for Release By	Approved (Signature)	Approved Release Date
1.4	For approval by Regional Transport Committee	KEM		11.7.2014
2	For discussion with working group	KEM		1.08.2014
3	For approval by RRSWG	KEM		10.11.2014

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Executive Summary

In 2013 the Canterbury Regional Road Safety Working Group (RRSWG) was established under the auspices of the Canterbury Regional Transport Committee.

Changes to funding meant that the role of Regional Road Safety Coordinator was disestablished and in order to ensure the region could achieve the agreed direction in the 2012 Regional Land Transport Strategy, the RRSWG was established.

The key purpose of the RRSWG is to provide a forum for Canterbury Councils and key partners to develop a coordinated regional road safety direction. This will enable the adoption of a collaborative, co-ordinated Safe System approach to deliver a Canterbury road system increasingly free of death and injury.

While the regions road safety direction is clearly outlined in the Canterbury Regional Land Transport Strategy, this Action Plan outlines how national road safety policies filter down to identify regional priorities, and how regional actions can reinforce local road safety initiatives.

The Action Plan and all road safety activities in Canterbury are firmly based on road crash statistics and inferred trends. This allows us to identify where risk lies, but also to monitor the impact of safety initiatives and investment.

Cardno was contracted to Environment Canterbury to administer the Regional Road Safety Working Group, and as such has coordinated the preparation of this Action Plan alongside the RRSWG. The plan has been developed in collaboration with the RRSWG. Environment Canterbury would like to thank the following organisations and their representatives who have been part of this group.

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NZ Police	Al Stewart
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1 Context

Canterbury roads carry 13 percent of New Zealand's vehicle kilometres travelled each year and we have around 13 percent of NZ's population living in Canterbury, but sadly in 2013 50 people were killed on Canterbury roads – 20 percent of all road deaths in New Zealand that year.

The Canterbury Regional Land Transport Strategy 2012-2042 has an objective to:

increase transport safety for all users.

The Canterbury Regional Transport Committee has established a Regional Road Safety Working Group to achieve this objective, and the following document sets out how these regional stakeholders will work together to develop a Canterbury Safe Road System increasingly free of death and serious injury.

1.1 The safe system approach

In 2010 the government launched Safer Journeys, New Zealand's road safety strategy to 2020. Safer Journeys established a vision for New Zealand of "a safe road system increasingly free of death and serious injury" and adopted the Safe System approach.

The Safer Journeys strategy is based on applying the Safe System approach.

The Safe System objectives are to:

- > make the road transport system more accommodating of human error;
- > manage the forces that injure people in a crash to a level the human body can tolerate without serious injury;
- > reduce the incidence of error.



Figure 1 The Safe System approach

This approach is a fundamental change to how people think and act in relation to road safety. It moves away from a blame approach to a genuine shared responsibility between users (such as drivers, riders, passengers, cyclists and pedestrians), and transport system designers and influencers (such as engineers, employers, policy makers and the media).

The approach aims to reduce deaths and serious injuries, and success is measured in these terms. This is because the causes of deaths and serious injuries are very similar, and the broader focus means a better evidence base is possible. It also recognises that many serious injuries cause lifelong debilitating effects, both physical and mental, with an ongoing cost to families and society.

The Safe System approach recognises that:

- > People make mistakes — We need to recognise that people make mistakes and it is inevitable there will be some crashes.
- > People are vulnerable — Our bodies have a limited ability to withstand crash forces without being seriously injured or killed.
- > We need to share responsibility — System designers and people who use the roads must all share responsibility for creating a road system where crash forces do not result in death or serious injury.
- > We need to improve the safety of all parts of the system — Roads and roadsides, speeds, vehicles, and road use all need to be strengthened so that if one part fails, other parts will still protect the people involved in a crash.

To create a Safe System, we need to achieve:

- > Safe roads and roadsides that are predictable, forgiving of mistakes, and encourage safe user behaviour.
- > Safe speeds that suit the function and level of safety of the road, with road users understanding and complying with speed limits and driving to the conditions.
- > Safe vehicles that help prevent crashes and protect road users from crash forces that cause death or serious injury.
- > Safe road use, ensuring road users are competent, alert, unimpaired, comply with road rules, choose safer vehicles, take steps to improve safety and demand safety improvements.

Road safety is everyone's responsibility; we all need to play our part. As we encourage modal changes some thought may be required on measuring the safety of various modes of transport. The Canterbury Regional Road Safety Working Group has a role in leadership, collaboration and accountability so that all members of the working group can see how they are contributing to a safer road system in Canterbury.

1.2 Key Challenges

1.2.1 State Highways and Key Strategic routes

State highways make up 8 percent of the road network in Canterbury, and over the past 5 years 30 percent of fatal and serious crashes in Canterbury occurred on a state highway. There are also a number of local roads, and State highways that make up the Strategic Transport Networks for freight and economic development in NZ. There has been more investment in the strategic road network over the past few years, and these roads are engineered to a higher standard compared to other local roads.

From November 2012 to November 2013 there were 5.7 percent more vehicles on Canterbury and West Coast roads, and an 8.7 percent increase in the number of heavy vehicles in our region compared to the previous 12 month period. 70 percent of freight in Canterbury is carried on our roads, keeping industries such as dairy and fresh produce moving. Often crashes involving heavy vehicles result in serious injuries or death.

1.2.2 Communities using the road environment

Many of our rural communities have schools or homes in 'open road' speed zones. This can cause conflict between those people using the road for transport or for moving goods, and those people using the road environment for their daily community life. People perceive a road environment and the appropriate road speed differently depending on what they use that road for. It is important that speed environments are consistent across the region so that the speed zone is obvious to all drivers.

A similar issue is seen with schools or shopping centres on key urban arterials such as Riccarton Road, or Evans Street in Timaru, and demand for local roads to be used for markets or community events. 57 percent of crashes in Canterbury occur on urban roads. It is important that planning takes into account the issues produced by locating schools and other traffic generating activities on State highways and strategic transport networks, and that District Plans include mechanisms to consider this matter.

1.2.3 Funding and prioritising

Road improvements and maintenance are partially funded by national funding, and partially funded by local council rates and other income. Each of the 9 territorial authorities currently have different funding methods and Financial Assistance Rates (FAR) which means that investment in road safety improvements differs across the region, although steps are being taken to achieve a standardised FAR. There also needs to be more clarity in NZTA Highway and Network team investment in State Highway improvements and Safety retrofitting, and more information about what funding can be spent on road safety improvements.

Local roads have historically not been constructed to the same standards as State Highways due to unavailable funds and lower vehicle numbers travelling on local roads. However the speed zones in these very different road environments are the same, and people believe they can travel safely at the posted speed limit. FAR rates impact on the level of service that is able to be delivered, and investment could be better aligned with VKT and types of vehicles and users travelling on specific roads.

An important component of safe road use is driver education and behaviour change campaigns. Funding for this through the Road Safety Promotion Activity Class needs to be allocated to areas of risk and emerging risk and Road Safety Coordinators need to be appropriately resourced to deliver campaigns and analyse the impact of those campaigns.

1.2.4 Social cost of road crashes

The Social cost of road safety increases with the number of serious crashes in the region. As safety features in vehicles improve, crashes are less likely to result in fatalities or serious injuries. Over the past 5 years, the number of serious casualties has reduced slightly, and the number of minor injury casualties has remained steady. In Canterbury we are currently the second highest region in NZ with a total social cost of road injury crashes in urban road of around \$220m and similar numbers for open roads. Although this could be considered to be a result of higher vehicle movements in Canterbury, the average social cost per reported injury in Canterbury is higher than the NZ average. We are slowly reducing the social cost of road crashes.

Motorcycle crashes often result in high social costs, and Canterbury has 11 percent of motorcycle crashes in NZ.

1.2.5 Active modes of transport

People choosing to use active modes of transport benefit in myriad ways, whilst also reducing congestion and vehicle emissions. However there are risks associated with walking and cycling in NZ. Pedestrians and cyclists are considered to be 'vulnerable road users' because they have a much lower level of protection than that provided by a car. In addition, a cyclist is less visible to other road users than a car or a truck. These factors combined, give cyclists a high level of risk per time unit travelled (about 25 deaths and injuries per million hours spent travelling in NZ).

The number of people using active modes for journey to work in Christchurch in the 2013 census has increased since 2006. 17 percent of cycling fatalities in NZ occur in Canterbury, yet only 13 percent of the population resides here.

1.2.6 Ageing Population and changing demographics

NZ is facing an ageing population, and Canterbury is facing changing demographics with a much more urban population. Around 25 percent of the population in Canterbury will be over 65 by 2031. The changing demographic structure will see an increasing percentage of the population in the older age groups, which will result in a changing pattern of demand for housing and transport modes. People are choosing to drive to an older age which can result in fragile drivers being on the road. This means that a crash that would usually result in a minor injury could result in a serious injury or fatality.

There are also trends internationally for younger people choosing not to learn to drive, and the implication for car ownership and government income from vehicle registrations may impact on investment capacity and the type of investment required.

As the rebuild in Christchurch continues, residential subdivisions are extending further into traditional rural areas, and more 10 acre lifestyle blocks are being developed. This means that roads that were designed for low traffic volumes as part of a rural environment are carrying more vehicles, and drivers who are not experienced at driving in rural environments. There are also significant changes to immigration trends for dairy farming and rebuilding Canterbury.

2 Overview

Challenges

State Highways and Strategic transport networks

Communities using the road environment

Funding and prioritising

Social cost of road crashes

Active modes of transport

Aging population and changing demographics

The Vision

Our vision is an aspirational goal of zero deaths and serious injuries in Canterbury:

To achieve the vision we will work together towards a Safe Road System increasingly free of death and serious injury.

Objectives

Leadership, collaboration and accountability; Safe Speeds; Safe Roads and Roadsides; Safe Road Use; Safe Vehicles

Work together to identify priorities and then obtain funding and infrastructure to improve road safety

Provide mechanisms to reduce speed

To develop and manage a road network that can be safely used by all users

Provide information so that road users know the rules and choose safe driving behaviours

Encourage safer vehicles on Canterbury roads

Actions

Leadership, collaboration and accountability:
• Policy Actions
• Implementation

Safe speeds
• Policy Actions
• Implementation

Safe roads and roadsides
• Policy Actions
• Implementation

Safe road use
• Policy Actions
• Implementation

Safe vehicles
• Policy Actions
• Implementation

Outcomes

Canterbury is seen to work together to develop a safer road system.

Vehicles travel at a speed that is safe for the road environment and safe for the conditions.

High risk road environments are improved to be more forgiving.

Road Users choose safe behaviours to reduce the risk to themselves and others.

Individuals and companies invest in safe vehicles.

3 Regional Issues, Policy and Actions

The Canterbury region is made up of a State highway spine network with many local roads servicing the hinterland of the Canterbury Plains. Canterbury is the largest region in New Zealand by area. It has a diverse geographical environment from the Eastern coast of the South Island to the main divide in the Southern Alps and from the Kaikoura coast in the North to the Waitaki in the South.

In addition to the local road networks spanning nine different local Road Controlling Authorities, the region also holds the second highest length of State highways (2,799 lane kilometres) of any region in New Zealand, representing 12 percent of the national network.

The regions State highways form an important link running north - south and east – west through the region connecting to Marlborough, West Coast, and Otago. State highways connect the Ports of Lyttleton and Timaru to large exporters including dairy, frozen meat and vegetables, logs, and containerised freight. Imports are also rising, and are tipped to continue their upwards path over the long term as Christchurch rebuilds after the 2010-2011 earthquakes.

In accordance with the strategic direction set out in the RLTS, specific routes known as the Strategic Transport Network have been designated for development to carry heavy traffic volumes on roads with in-built safety infrastructure. Other roads however have evolved over time into principle transport routes in response to congestion on other routes despite never being intended for this purpose.

The Canterbury region whilst generally not over-represented in the number of fatal crashes in the region, contributes around 13 percent of fatalities on New Zealand roads, carrying an annual social cost well in excess of 400 million dollars. In 2013 NZ achieved our lowest road toll in 60 years, while in Canterbury our road toll was the highest seen since 2007.

The real cost of injuries, in ongoing loss of earnings and long term physical and psychological rehabilitation is estimated to be much higher. Road safety is ACC's second highest cost nationally, but Canterbury is not over-represented in this area compared to other regions in NZ.

Fatal crashes per vehicle kilometre travelled in Canterbury are not declining. The region had achieved a reduction over the past but many 'random' crashes in 2013 have disturbed this trend.

The following section of this Action Plan examines the regional issues and identifies policy and actions to address them over the next five years. An explanation of the crash analysis methodology used to identify crash issues can be found in [Appendix A](#) of this document. Detailed crash maps for the region can be found in [Appendix B](#). A combined crash list detail report from the Crash Analysis System showing fatal and serious crashes from 2009 to 2013 in Canterbury is attached at [Appendix C](#).

Risk areas for the Canterbury region as identified from 2008-2013 crash reports looking at CAS serious and fatal crashes, and ACC real cost (excluding fatalities) for the same time period in no particular order are as follows:

- > Motorcycles;
- > Speed
- > Alcohol
- > Young drivers and passengers;
- > Rural local roads;
- > Intersections;
- > Cyclists and other vulnerable road users;
- > Commercial fleet

3.1 Leadership, Collaboration and Accountability

3.1.1 Issues and future focus in the Canterbury region

Safety of the transport system is a shared responsibility. The recently established regional model allows safety stakeholders in the sector to come together at all levels of planning and operations.

However whilst the appropriate regional structure is in place, it can only continue to be successful with strong governance, and the ongoing buy-in of all parties.

In an ever changing environment, in the face of local government reform and funding pressures, there has never been a more critical time to ensure that the delivery of regional road safety is strategic, coordinated and effective. This is also the right time to look beyond the traditional sector to identify opportunities to partner with wider stakeholder groups.

The Regional Transport Committee has taken a lead role by recognising road safety and setting up a Regional Road Safety Working Group. Going forward this Action Plan aims to further engage politicians, community leaders and key decision makers in the safety conversation. The support of high profile road safety champions is a vital component to the success of this strategy, particularly when seeking community buy-in for new safety initiatives, maintaining a regional profile and when advocating to central government for legislation change.

Some excellent work has already been initiated across agencies and between regions. This Action Plan will focus on exploring and developing new partnerships with the private sector, between regions and between national and regional stakeholders. This will include a possible 'signature project'; an initiative signalled in the latest Safer Journeys action plan.

At the district level, stakeholders work together on operational Road Safety Action Plans. Some districts in the region are working well independently, others have formed clusters to more efficiently deliver road safety initiatives, and others lack resources and the full buy-in of the local road controlling authorities. Building knowledge, capacity and ownership in RSAP groups and supporting Road Safety Coordinators will continue to be a high priority focus.

Stakeholders will work together to prioritise and submit funding proposals through the next Regional Land Transport Plan (RLTP) whilst also investigating alternative funding sources and potential private sector funding partnerships. If required the working group will look at how investment is allocated through the Government Policy Statement on Land Transport Funding (GPS).

Road safety is still largely treated as a stand-alone activity. Given that road safety is a direct outcome of transport and land-use planning and is further impacted by many other planning processes, it is important that consideration is given to integrating safety policy wherever possible. During the lifetime of this strategy sector stakeholders will work with those in other related fields to ensure that this holistic approach is understood and incorporated into local and regional policy, plans and documents.

3.1.2 Leadership, Collaboration & Accountability Policy Actions

- > Identify regional crash risks and focus resources on these areas
- > Maintain a national and regional profile on Canterbury road safety issues to ensure that the sector continues to secure resources and support.
- > Build knowledge, capacity and ownership in RSAP groups.
- > Build cross-sector capability by ensuring that all stakeholders are engaged, actively involved and collaborating on road safety planning and delivery.
- > Lead out with effective regional strategy and performance measured against targets.
- > Strengthen the integration of regional road safety with national, regional and local transport policies, strategies and plans and ensure a balanced approach with other strategic transport priorities.
- > Progress the inclusion of road safety measures in district plan provisions.

Table 2 Leadership Actions

#	Action	Lead Agency and support agencies	Timing
1.1	Regularly provide crash statistics to the Regional Transport Committee	NZTA	Quarterly
1.2	Support initiatives that reduce the incidence and severity of personal injury on Canterbury roads.	ACC	Ongoing
1.3	Develop a regional speed reference group.	NZTA	2014
1.4	Coordinate sub-regional road safety campaigns.	TA's	Ongoing
1.5	Support workplace initiatives for road safety education.	DHB/ TA's/ ACC	Ongoing
1.6	Contribute to the development of the RLTP.	ECan	2014/15
1.7	Contribute to the development/ review of district plans and other policy documents developed by road safety partners.	TA's	Ongoing
1.8	To disseminate information about road safety initiatives to road safety partners	ECan/ All	Ongoing

3.2 Safe Speeds

Speed is perhaps the most complex and least understood component of the safe system. In a road system, speed can be defined in the following ways:

Excessive speed – driving above the speed limit for the road. This may be a deliberate violation or as a result of a slip in attention.

Inappropriate speed – driving at a speed that is inappropriate for the conditions of the road, even if the speed is within the legal limit. ‘Conditions’ may be fixed or variable and include the physical condition of the road such as surface, width, camber, bends and sight lines. Conditions also include traffic and weather. Whilst inappropriate speed generally involves travelling too fast, it also can include driving too slowly for the environment in a manner that disrupts traffic flow or creates a hazard.

Impact speed – The level of trauma that a crash has on a human body is significantly influenced by the impact speed. As impact speed increases, the forces that vehicle occupants must absorb in a crash increase dramatically. Occupant protection systems in vehicles are very effective at low and moderate speeds; however they cannot adequately protect vehicle occupants from these kinetic forces at high impact speeds. Vulnerable road users are particularly exposed to vehicle impacts at speed which are above the limits of human tolerance.

3.2.1 Speed issues and future focus in the Canterbury region

In Canterbury, the percent of vehicles exceeding the 100km/hr speed limit is on average 45 percent over the past 5 years, which is consistently greater than the NZ average (which sits at around 29 percent). Despite this, there are on average fewer speed related crashes per 100 million vehicle kilometres travelled (MVKT) in Canterbury than in NZ as a whole.

Too fast was a direct contributing factor in approximately 15 percent of fatal and serious injury crashes on Canterbury roads over the period 2009-2012. Each year in Canterbury approximately 60 people are killed or seriously injured in speed related crashes. Speeding involves all types of vehicles and road users however speed related crashes still primarily involve male drivers. Inexperienced drivers also feature disproportionately in speed related crash statistics.

Part of the confusion relates to the different interpretation of ‘safe speeds’ that exists between Road Controlling Authorities in the region. Over many years the regional network has been developed by 11 different authorities, each determining their own road hierarchies and speed limits. This has resulted in different speed limits occurring on what appear to be very similar roads in different districts.

Police speed enforcement is also poorly understood and is not assisted by often negative media portrayal as ‘revenue gathering’ rather than as protection of road users from speed related harm. There is clearly much work to do to change the conversation about speed and this will be a focus nationally and regionally over the next 3 years.

A national speed management review is now currently underway and initiatives such as a 4km over the limit tolerance was applied over the whole summer holiday period in 2013/14. It is important to continue to encourage ‘driving to the conditions’ of the road environment.

NZTA are reviewing how speed zones are set across NZ. Regionally, this will require the extensive coordination of infrastructure safety measures, speed limits and enforcement and may take some years to fully plan, fund and implement. It is envisaged that this work will tie in closely with the work of the local road maintenance taskforce, and in due course will need to be integrated into district and regional planning documents.

This work will also build on learning from the speed demonstration projects that have already been carried out in the region. In many urban areas, the introduction of Safer Speed areas around schools aims to protect the most vulnerable of road users by implementing reduced speeds in residential and highly populated urban areas, and integrated delivery alongside school travel plans teaches students safe road use.

On high risk local roads around Christchurch City and Selwyn District, the operative speed limit on various rural sections has been reduced to 80km/h. This speed restriction follows a spike in the number of serious injury and fatal crashes.

Speed awareness campaigns and enforcement are two of the principle activities to be included in regional speed management planning going forward.

3.2.2 Safe Speeds Policy Actions

- > Develop regionally consistent speed environments which suit the form and function of the road.
- > Build public understanding so that people will increasingly understand what travelling at a safe speed means.
- > Enforce speed limits which match the speed environment in areas of risk.

Table 3 Safe Speed Actions

#	Action	Lead Agency and support agencies	Timing
2.1	Enforce compliance with posted speed limits and vehicle specifications – support with education.	Police and RSC's	Ongoing
2.2	Ensure that speed enforcement is well resourced and risk-targeted.	Police	Ongoing
2.3	Determine speeds that are suitable for particular roads, and ensure that people understand and comply with them.	NZTA, local road engineers and RSC's	Ongoing
2.4	Work with the national speed reference group through the safe speeds workshop. Using a 'one network' approach develop a regional speed plan which considers speed limits, public education campaigns, risk targeted enforcement and engineering recommendations.	NZTA, local road engineers, Police and RSC's	Ongoing
2.5	Apply agreed speed limits to road types and develop road environments so that the road environment reinforces the speed environment.	NZTA, and local road engineers	Ongoing
2.6	Deliver safe speed education campaigns through road safety action plans.	RSC's	Ongoing
2.7	Reduce speed tolerance to 4km above the speed limit at all times.	Police	Ongoing
2.8	Focus on excess and inappropriate speed.	Police and local road engineers	Ongoing
2.9	Support police initiatives in rural areas (Mackenzie District).	Police and RSC's	Ongoing

3.3 Safe Roads and Roadsides

The road environment plays a central role in the safety of the transport system and resulting injury in the event of a crash occurring. In the ideal system, all roads and roadsides would be designed to mitigate potential risk, minimising the possibility of severe impact and the severity of injury in the result of a crash occurring.

In the current environment in New Zealand, many roads fall short of best practice standards. In Canterbury this issue is exacerbated by the sheer scale of the network, smaller population (and rating) base, and the rural amenity of narrower country roads.

Canterbury has the second longest length of State highways in NZ, and approximately the same number of intersections per kilometre on state highways to most other regions in NZ. Compared to NZ generally we have good horizontal alignment, safe roadsides, and wide lanes. But there is room for improvement for sealed shoulder widths and median dividers.

Figure 2 below shows a snapshot of the key safety features on State highways for each region. The reported attribute statistics are based on 100metre road section data. The sum of the individual region's values may not add up to the total due to rounding to the nearest whole number.

Figure 2 Snapshot of key safety features, by region – KiwiRAP data.

Region	Length (km)	Median divided	Good horizontal alignment	Safe roadside	Wide lanes (>3.4m)	Sealed shoulder (1.2m +)	Good/ excellent delineation	Intersections
Northland	683	0.1%	63.1%	15.5%	89.5%	10.4%	94.6%	1 every 2km
Auckland	429	65.1%	80.6%	52.4%	97.6%	42.8%	99.3%	1 every 1km
Waikato	1,585	2.6%	57.3%	15.5%	80.5%	14.1%	83.7%	1 every 2km
Bay of Plenty	680	3.0%	65.8%	19.4%	96.7%	19.9%	98.1%	1 every 2km
Gisborne	313	0.0%	55.2%	16.0%	100.0%	0.8%	99.6%	1 every 2km
Hawkes Bay	475	2.1%	69.0%	20.5%	100.0%	6.9%	94.6%	1 every 2km
Taranaki	766	0.0%	67.4%	14.0%	98.9%	8.3%	79.2%	1 every 2km
Manawatu Wanganui	450	0.0%	82.4%	24.5%	99.9%	23.6%	97.3%	1 every 1km
Wellington	246	43.5%	78.5%	43.3%	99.8%	42.3%	99.5%	1 every 1km
Nelson/ Tasman	356	1.6%	61.5%	18.7%	100.0%	11.5%	97.2%	1 every 2km
Marlborough	241	0.0%	75.8%	19.8%	100.0%	13.8%	98.8%	1 every 2km
Canterbury	1,202	1.7%	80.8%	31.8%	100.0%	12.9%	99.3%	1 every 2km
West Coast	826	0.0%	65.8%	7.8%	100.0%	1.5%	99.4%	1 every 4km
Otago	1,220	1.4%	77.6%	15.4%	100.0%	5.4%	98.0%	1 every 2km
Southland	713	0.0%	81.8%	10.8%	100.0%	5.5%	93.6%	1 every 2km
NZ	10,187	5.0%	72.1%	20.3%	98.2%	13.1%	95.9%	1 every 2km

3.3.1 Roads and roadside issues and future focus in the Canterbury region

In 2008, the national KiwiRAP programme was developed to assess the State highway network for crash risk. A star rating system was brought out, ranking state highways for safety on a 1-5 star basis. The 2010 star rating results help to illustrate why there is a high incidence of serious and fatal crashes in the Canterbury region.

Figure 2 shows that the Canterbury region has the third highest vehicle kilometres travelled (VKT) in the country (after Auckland and Waikato). It also demonstrates that the Canterbury region has most of its traffic travelling on 2 star (34%) and 3 star (62%) highways. While some roads in Canterbury show high collective risk and low personal risk (SH1 Christchurch to Timaru), there are a number of roads with disproportionately high personal risk (Kaikoura, and Akaroa roads, SH77 inland Canterbury route, and the Lewis pass).

Figure 3 KiwiRAP Star Ratings of the New Zealand state highway network by VKT 2010

Region	Vehicle km travelled	Proportion in each Star Rating				
	x10 ⁸ VKT/year	1-star	2-stars	3-stars	4-stars	5-stars
Northland	7.73	0%	35%	65%	0%	0%
Auckland	35.59	0%	9%	3%	88%	0%
Waikato	25.19	0%	38%	55%	7%	0%
Bay of Plenty	10.91	0%	51%	45%	5%	0%
Gisborne	1.42	0%	57%	43%	0%	0%
Hawkes Bay	5.62	0%	33%	67%	0%	0%
Taranaki	6.75	0%	62%	37%	1%	0%
Manawatu-Wanganui	8.77	0%	50%	50%	0%	0%
Wellington	13.24	0%	16%	31%	53%	0%
Nelson-Tasman	3.49	0%	58%	28%	14%	0%
Marlborough	2.56	0%	63%	37%	0%	0%
Canterbury	15.61	0%	34%	61%	6%	0%
West Coast	3.48	0%	54%	46%	0%	0%
Otago	9.92	0%	38%	56%	6%	0%
Southland	4.48	0%	44%	56%	0%	0%
New Zealand	154.76	0%	33%	40%	28%	0%

3.3.1.1 Open (rural) road crashes

Open roads include all roads where the speed limit is greater than 80km (local roads and State highways). A high percentage of serious and fatal crashes in the region on open roads involve poor handling or poor observation resulting in loss of control. The majority of these open road crashes occur on bends and often result in a head-on collision.

Crashes on local roads result in a higher cost to ACC than crashes on State highways.

The road environment can only be engineered to a certain level, due to funding and agreed levels of service. So there is often an aspect of safe road use associated with these crashes too.

3.3.1.2 Level crossings

Canterbury has more level crossings than any other region in NZ. Nearly half (48 percent) of the crossings in Canterbury only have signs warning drivers of the crossing (no barriers, lights or bells). The ALCAM Level

Crossing Statistical Report (Dec 2013) indicates that the likelihood of a collision occurring at a level crossing in Canterbury is around 12 percent (consistent with NZ total risk). Near miss reporting by KiwiRail drivers indicates that the risk may be higher than this.

3.3.1.3 Intersection crashes

Failure to give way or stop at intersections is a factor in up to 27 percent of all regional serious injury and fatal crashes over the 2008-2012 period. Most serious intersection crashes occur at give-way controls and at 'T' intersections. Many of these crashes are occurring on the urban periphery where land use changes from rural to lifestyle and urban properties are introducing more people to rural road environments.

For ACC, the highest cost of claims (in the first year of the injury) for road crashes are from the injuries gained when people are involved in accidents where they are crossing or turning at an intersection or involved in a bend, lost control or head on crash. This is especially so in the serious injuries group.

Figure 4 Crashes at intersections in Canterbury compared to NZ by population

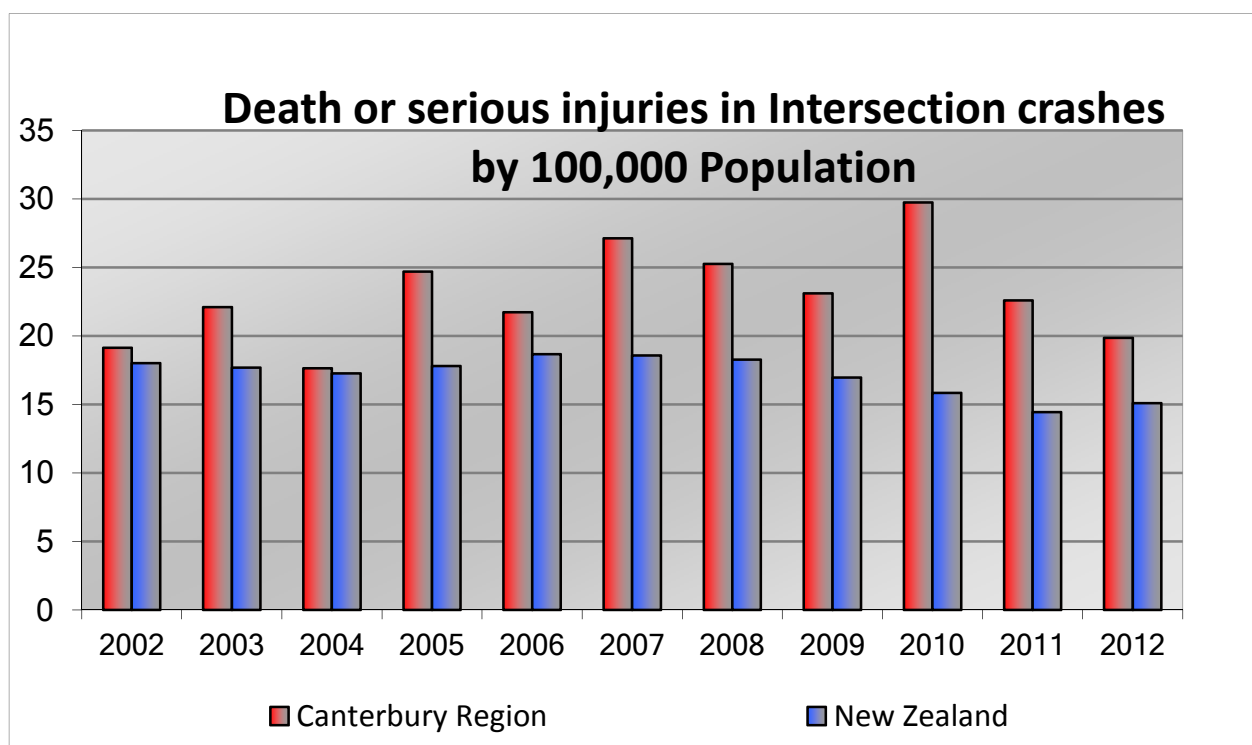


Figure 4 above is taken from data in the Road Safety Action Planning Tool accessed from <http://nzta.govt.nz/planning/data/safety.html>.

NZTA has been focussing on improving the safety of State highways that rated poorly on the KiwiRAP assessment, and this risk assessment methodology has now been used to identify and treat high risk local roads. The worst 100 intersections in New Zealand have been identified, and local funding will be allocated to Canterbury intersections on this list (20 intersections at April 2014). Fortunately, since 2009 a number of risk assessment tools have been developed by the NZ Transport Agency, designed to assist local RCA's with the development of proactive risk based strategies for prioritising network treatments. Guides have been developed for safety interventions on high risk rural roads and high risk intersections.

3.3.1.4 A One Network approach

The division of control of different parts of the regional network does not always assist road safety investment and in the past it has been common for parts of the network to be assessed and treated for crash risk whilst adjoining roads with equal or higher safety risk go untreated because they belong to a different authority. In response to this NZTA are working on a 'one network' approach.

The One Network Road Classification (ONRC) involves categorising roads based on the functions they perform as part of an integrated national network. The classification will help local government and the

Transport Agency to plan, invest in, maintain and operate the road network in a more strategic, consistent and affordable way throughout the country. Going forward stakeholders will come together to form a unified regional plan with the purpose of identifying and treating routes and intersections of highest risk across the regional network. This work will tie in closely with the work on regional speed management and high-risk intersections.

This 'one-network' approach should assist authorities to take a more holistic view of the network and identify the potential migration of safety issues from one part of the network to the next. It will also help stakeholders to identify resource gaps and future funding requirements for the network. The sharing of regional expertise will help to build sector knowledge and ultimately assist all regional partners to strengthen this part of the safety system.

Finally, it will be important to keep the travelling public aware of the safety variability on different parts of the network so that they can adjust their driving behaviour and travel speed accordingly.

3.3.2 Safe Roads and Roadsides Policy Actions

- > Pro-actively assess crash risk based on known crash trends and safety features of the road.
- > Work together utilising a coordinated approach to address corridor and intersection crash risk.
- > Prioritise safety treatments to reduce fatalities and serious injuries on the roads and roadsides of highest risk in accordance with best practice for the road form and function.
- > Build public awareness about safe roads and roadsides and promote route choice based on safety.

Table 4 Safe Roads and Roadsides Actions

#	Action	Lead Agency and support agencies	Timing
3.1	Make improvements to the region's worst performing intersections.	NZTA and local road engineers	3 years
3.2	Work together to engineer the existing and new road environments as the opportunity arises to encourage appropriate speeds in line with best practice.	NZTA and local road engineers	Ongoing
3.3	Identify cost effective methods for improving safety at rural intersections.	NZTA and local road engineers	Ongoing
3.4	Install best practice road improvements as part of State highway renewal projects.	NZTA	Ongoing
3.5	Implement safety works in conjunction with programmed maintenance and renewal works where possible.	Local road engineers	Ongoing
3.6	Ensure that engineering improvements to unsafe roads and roadsides is well resourced and risk-targeted and that funding allocation addresses risk.	NZTA/ Environment Canterbury	Ongoing through the RLTP.
3.7	Maintain existing truck stops across the region and identify where new stops are required.	TA's and Environment Canterbury	Ongoing
3.8	Develop targeted safety barrier programmes to mitigate head-on and run-off road crashes.	NZTA and local road engineers	Ongoing
3.9	Advocate for the integration of safe speed policy in local and regional planning documents associated with land use change.	Environment Canterbury and TA's	5 years aligning with District Plan reviews
3.10	Promote safe route selection.	Environment Canterbury and RSC's	Ongoing
3.11	Provide road safety education initiatives to increase the awareness of the risk at rural and urban intersections.	RSC's	Ongoing
3.12	Quantify the risk at intersections in Canterbury compared to other regions in NZ.	NZTA and TA's	2 years
3.13	Make improvements to road environments with motorcycle safety in mind.	NZTA and TA's	Ongoing

3.4 Safe Road Use

Human factors are always at play in road crashes and must be factored into crash prevention systems. It is well understood that all humans at some point are prone to mistakes, lapses and slips in judgement. It is also recognised that some people deliberately choose to behave antisocially and to violate rules.

3.4.1 Road user issue and future focus in the Canterbury region

As outlined previously, when people make mistakes on the roads in Canterbury it often leads to serious injury or death. Many regional crashes can be partially attributed to errors and lapses. Data outlined in [Appendix B](#) shows that poor handling; poor observation and failure to give way/ stop are three leading causes of human error contributing to regional crashes. A high proportion of crashes and injuries in the region are also however the result of deliberate high risk behaviour. The key road user issues contributing to crashes in the region are examined in the following section. Endeavours to change road user behaviour are usually delivered as part of a marketing or educational campaign at a local level by Road Safety Coordinators, but often national campaigns support these local messages and activities.

3.4.1.1 Motorcycle Safety

The Canterbury region has a number of popular motorcycle routes. The New Zealand Travel Survey indicates that, on average, the risk of being involved in a fatal or injury crash is more than 18 times higher for a motorcyclist than for a car driver over the same distance travelled. Motorcycle crashes account for a disproportionate number of road deaths and serious injuries on Canterbury roads; 17.5 percent in all. Less than half of all regional motorcycle crashes occur on open roads (state highways, motorways and local roads) – with 53 percent of motorcycle crashes occurring on urban roads.

Figure 5 Motorcycle crashes in Canterbury compared to NZ by population

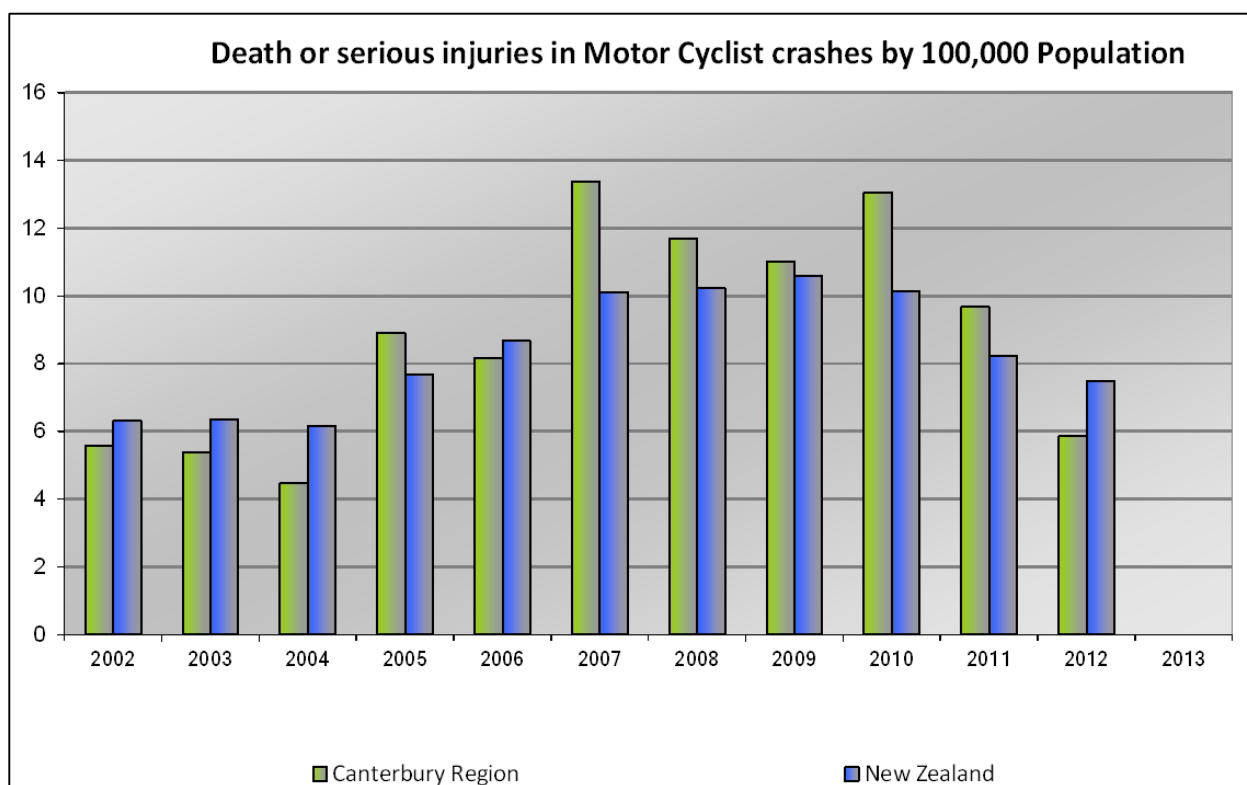


Figure 5 above is taken from data in the Road Safety Action Planning Tool accessed from <http://nzta.govt.nz/planning/data/safety.html>.

Motorcyclists also favour a number of regional routes. The challenging nature of these routes requires skilled riding and safe vehicles, particularly brakes and tyres. Unfortunately motorcycle crashes contribute disproportionately to regional crash statistics and the cost to ACC, as shown in the 2014 Communities at Risk register.

3.4.1.2 Truck Safety

Around two thirds of current freight volumes in Canterbury are moved within the region – a mixture of bulk primary produce moving to/from ports and agricultural production areas and distribution of finished goods within the region. Inter-regional flows, i.e. goods transported between Canterbury and other regions account for most of the remaining third of freight volumes

There are an increasing number of heavy vehicles on urban roads around Christchurch City due to activity associated with the rebuild. While it is necessary for these vehicles to be in residential and urban areas, it does pose an increased risk to other road users who may be less familiar with sharing the road with large vehicles. Conversely, truck drivers using unfamiliar residential roads may be less familiar with sharing the road with cyclists, pedestrians and children.

While Heavy Vehicles made up only 3.4 percent of the vehicles registered in Canterbury in 2013, heavy motor vehicles feature in a disproportionately high number of crashes in the region with over 9 percent of regional crashes involving a HGV. It is important to note that in less than half (around 40 percent) of these crashes, the heavy motor vehicle operator is at fault or partially at fault. Unfortunately however, crashes involving heavy motor vehicles nearly always result in serious injury or death.

Heavy motor vehicles crashes are particularly prominent in Christchurch City and on the regions state highways servicing key freight routes. Increasingly HGV crashes feature on the local road network where much of the regions dairy industry is based. Escalating costs and commercial pressures have led to a notable decline in the maintenance regimes of some operators in recent years.

3.4.1.3 Alcohol and drug impairment

Alcohol is the root of many known social harm issues and road crashes are no exception. Alcohol impairment is a factor in approximately 16 percent of all serious and fatal regional crashes.

Whilst some drivers are intoxicated and violating the law, many others are choosing to drink alcohol in quantities up to the legal limit and then drive, unaware of the crash risk it poses.

Research shows that an adult who chooses to drink alcohol up to the legal driving limit of BAC of 80mg/100ml is around 16 times more likely to be involved in a fatal crash than a driver with a zero blood alcohol level. A recent Bill read in parliament seeks to lower the adults legal alcohol limits from 400 micrograms (mcg) of alcohol per litre of breath to 250mcg.

District alcohol policies are an important factor in helping to control drink driving issues in regional communities. Where these do not exist or are inconsistent the risk of drink driving rises. Currently in the region neighbouring districts allow different closing hours for licensed premises, which may in turn contribute to more people driving whilst under the influence in search of another drink. Many sports clubs and community facilities provide bar facilities but no means of safe transport home. Alcohol policies and plans will be a critical tool for managing alcohol related harm in communities going forward.

Drug driving impairment statistics are not well known however what is known is that the use of cannabis, methamphetamine and other recreational drugs is growing, and that drug related harm is an issue in regional communities. Previous surveys of known drug users indicate that a majority of them continue to operate their vehicles whilst under the influence of drugs.

While this is not a regional risk, it is a national priority and Canterbury has the second highest collective risk for alcohol over the 5 year average.

3.4.1.4 Restraints

Despite the fact that the majority of vehicle occupants in New Zealand use restraints, on average 27 deaths and serious injuries occur each year in Canterbury with restraints not worn or not fitted. Wearing a safety belt reduces the chance of death or serious injury in a crash by 40 percent. For a passenger, the risk of serious or fatal injury is virtually the same whether they sit unrestrained in the front or the back seat.

3.4.1.5 Cyclists and Pedestrians

While active modes of transport reduce demand on our regions roads and promote physical health, anyone who is not protected by a motor vehicle is at highest risk of injury or death on crash impact. This group

includes pedestrians, cyclists, those in wheelchairs, mobility scooters and on scooters. Canterbury has consistently had more deaths and serious injuries of cyclists per 100,000 population than the NZ average for the past decade. However, Cantabrians cycle nearly twice as far per person average than Aucklanders, so while we have around the same number of cycle trips per day as Auckland, and around the same number of crashes, it is safer per kilometre travelled in Canterbury than in other parts of NZ.

Based on raw number of crashes however, Christchurch City is ranked highest risk for pedestrian fatalities and serious injuries in the 2014 Communities at Risk register, and second highest for Cyclist crashes.

Figure 6 Cyclist crashes in Canterbury compared to NZ by population.

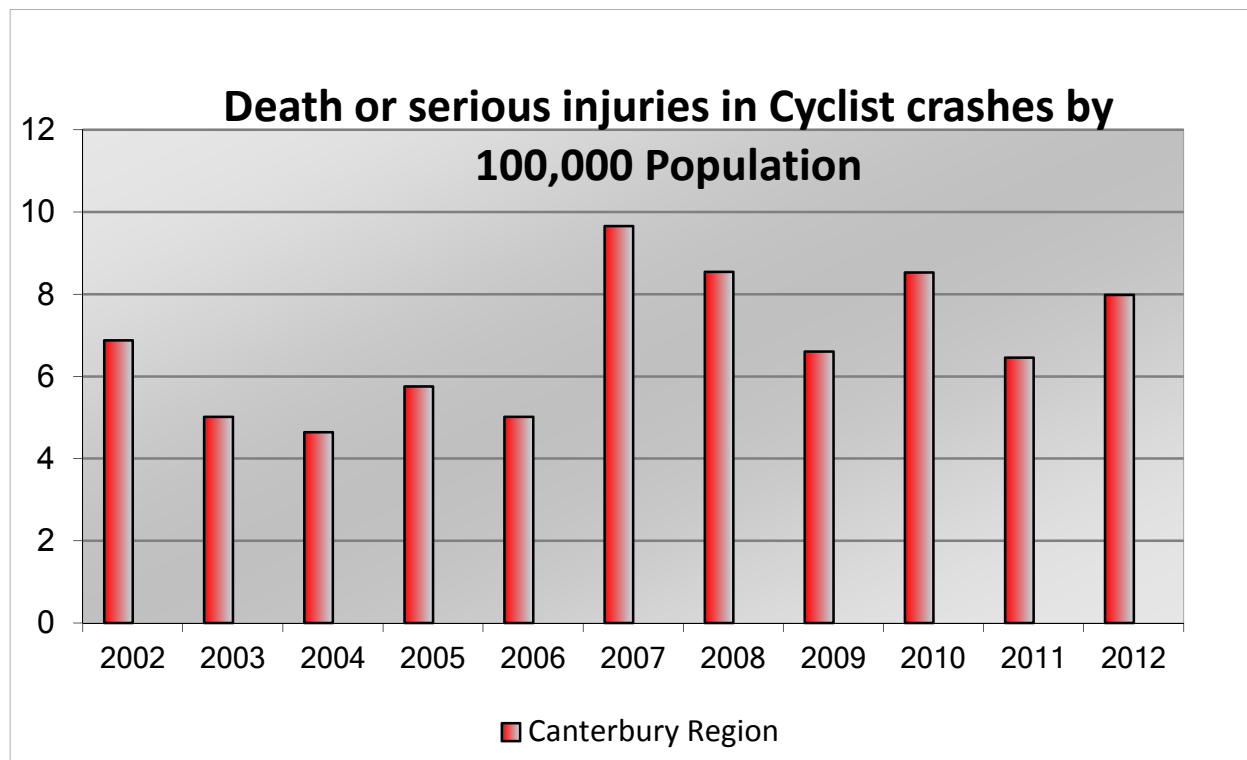


Figure 6 above is taken from data in the Road Safety Action Planning Tool accessed from <http://nzta.govt.nz/planning/data/safety.html>.

3.4.1.6 Young drivers

Inexperienced drivers are considered to include those aged 15-24. The crash risk for this group increases threefold in the first 6 months that they drive solo on their restricted licence. Drivers in this age group accounted for nearly 30 percent of all injury and fatal crashes in the region from 2009-2013. Sadly at this age group often passengers are also injured when a car full of young people crashes due to driver inexperience and peer pressure. The total cost of these injuries can be high due to on-going rehabilitation costs. In Canterbury, the highest risk for young drivers lies in the Waimakariri District.

3.4.1.7 The very old and the very young

The young and the elderly are particularly vulnerable. A crash that may result in a minor injury for a younger person can be fatal for frail or elderly people. Elderly people also move slower so can misjudge crossing roads or getting out of the way of other road users. While this is an emerging area of risk correlating to an ageing population in NZ generally, older people are not over-represented in fatal or serious crashes in Canterbury. Selwyn, Waimakariri and Mackenzie Districts all perform poorly for personal risk, and for this reason, Canterbury is listed as a medium risk area for older road users in the 2014 Communities at Risk register.

Vehicle related injuries account for over one quarter of all hospitalisations of children under the age of ten.

3.4.1.8 Company fleet vehicles

'At work' drivers have crash rates that are 30-40 percent higher than other drivers. This generally correlates to a large number of vehicles being on the road for work purposes and travelling long distances, so a higher exposure risk.

3.4.1.9 Visitors to the region

People from overseas, elsewhere in NZ and throughout Canterbury can be considered visitors to the region. Many visitors to New Zealand travel through the Canterbury region. The road environment and driving rules in this country are quite different to some other countries and Canterbury roads are often long and straight contributing to fatigue. In the past few years there have been a number of high profile crashes involving overseas visitors in this region. Work has commenced in known tourist areas and with rental car companies to alert visitors to the safety issues and this will continue to be a focus across the region. However the actual risk needs to be quantified. Generally speaking Cantabrians die on Canterbury roads.

3.4.1.10 Fatigue

Kaikoura is ranked on the 2014 Communities at Risk register as the highest risk for Fatigue. Mackenzie District also performs badly. For this reason, fatigue is a High risk for Canterbury.

Road user education campaigns and programmes are a core component of the strategic approach going forward. Enforcers and regulators will work closely with educators to target the high risk issues and audiences that have been identified as regional priorities. New relationships in the private sector will be explored and cross-regional partnerships developed to maximise opportunities to promote safe road use and raise awareness of the risks to road users.

The region will continue to advocate strongly for changes to legislation that have the potential to significantly impact on road safety outcomes such as alcohol and drug driving legislation, and will make every opportunity available for central government to trial new technologies such as drug testing. The region will also advocate for more resources to train inexperienced drivers and motorcyclists to ensure that all drivers fully understand the driving environment and rules when they visit the country.

3.4.2 **Safe Road Use Policy Actions**

- > Design and deliver safety programmes to help protect all regional road users and in particular, high risk and vulnerable road user groups.
- > Encourage and enable road users to proactively improve road safety behaviour and manage risk.
- > Advocate for legislation to support road safety best practice.
- > Provide motorcycle rider education to improve road user skills.
- > Promote and deliver safety tools and maintenance tips for motorcyclists.
- > Support workplace road safety initiatives.
- > Provide safe cycle training in schools and workplaces.
- > Identify clear measures for cycle safety risk.

Table 5 Safe Road Use Actions

#	Action	Lead Agency and support agencies	Timing
4.1	Design and deliver road safety action plans for risk targeted education and behavioural campaigns.	RSC's/ TA's	Ongoing
4.2	Encourage and enable all drivers to proactively improve road safety behaviour and manage risk.	RSC's/ TA's and Police	Ongoing
4.3	Follow up on known careless or deliberately unsafe motorcyclists.	Police	Ongoing
4.4	Encourage Cantabrians to become more skilled and competent road users.	Police and CTA's	Ongoing

4.5	Educate Cantabrians about unlawful and unsafe practices.	Police and RSC's	Ongoing
4.6	Actively follow up on high risk drivers, particularly repeat alcohol/drug impaired offenders and repeat speed offenders.	Police	Ongoing
4.7	Target high risk locations and roads to alter driver behaviour.	Local road engineers and Police	Ongoing
4.8	Support supervisors of learner and restricted driver licence holders.	RSC's, ACC and Police	Ongoing
4.9	Work with individuals and groups in our community so they take responsibility for themselves and others on our roads.	RSC's, TA's and Police	Ongoing
4.10	Support existing road skills education providers (i.e. car fit).	RSC's, TA's and Police	Ongoing
4.11	Support ACC's motorcycle training courses.	RSC's, ACC and Police	Ongoing
4.12	Work with existing workplace safety initiatives to educate drivers about fatigue and distraction whilst driving for work.	RSC's, TA's, ACC and Police	Ongoing
4.13	Work with existing school and workplace safety initiatives to educate drivers about sharing the road.	RSC's, TA's, ACC and Police	Ongoing
4.14	Support national legislation to reduce the legal alcohol limits in the Land Transport Act.	TA's and Environment Canterbury	Ongoing
4.15	Provide subsidised motorcycle skills training sessions.	RSC's, ACC and Police	Ongoing
4.16	Deliver safe cycling education messages to drivers and cyclist as part of Road Safety Action Plans.	RSC's and TA's.	Ongoing
4.17	Monitor the emerging risk area of older drivers.	NZTA	Ongoing
4.18	Monitor the emerging risk area of overseas visitors.	NZTA	Ongoing
4.19	Provide assistance to companies who regularly fail commercial vehicle requirements to help them improve systems and procedures.	Police	Ongoing
4.20	Continue to carry out random compulsory breath tests.	Police	Ongoing
4.21	Provide cycle safe education skills to improve cycle safety on the roads	TA's and Bike NZ	Ongoing

3.5 Safe Vehicles

New Zealand has one of the oldest vehicle fleets in the developed world. The average age of the New Zealand light vehicle fleet is over 13 years and still rising. Whilst advances in modern vehicle technologies are significantly improving occupant safety, many of these benefits are not realised in the older New Zealand fleet. Many older vehicles are not up to the safety standards of their modern counterparts and are less forgiving in the event of a crash, leading to occupants sustaining more severe injuries or death.

3.5.1 Vehicle issues and future focus in the Canterbury region

In Canterbury the age of the regional fleet mirrors that of the national fleet, although in 2013 Canterbury light passenger vehicles were slightly older than NZ light passenger vehicles generally. The road network hosts commercial, freight, tourist and commuter traffic and thus by nature is used by many different types of vehicle. About 12 percent of the vehicles registered in Canterbury are light commercial vehicles.

It is in the interest of all road users that all vehicles are maintained to the highest safety standards and that they protect their occupants/riders in the event of a crash occurring. Vehicles first registered in NZ prior to 2008 appear to have significantly higher crash risk than vehicles registered since 2008. Newer cars are more likely to have standard safety features than older cars.

It is recognised that regional stakeholders have little influence over import standards or vehicle legislation however the region does play a role in regulation, enforcement, education, awareness and advocacy.

Moving forward stakeholders will continue to promote safety as a key consideration in the purchase and operation of regional vehicle fleets, to private and commercial vehicle owners. Stakeholders, particularly enforcement and regulatory authorities, will continue to ensure that appropriate safety checks are in place for operators of vehicles with the highest crash risk in the region and will work with operators on their safety programmes.

Regional stakeholders will advocate nationally for the introduction of vehicle import standards, customer information programmes and the promotion of operator rating systems.

3.5.2 Safe Vehicle Policy Actions

- > To promote safety as a key consideration in the purchase and operation of regional vehicle fleets.
- > To ensure that appropriate safety checks and programmes are in place for operators of vehicles with the highest crash risk in the region.
- > To advocate for improvements to national policy on vehicle safety standards, including changes to vehicle registration charges based on the safety rating of the vehicle

Table 6 Safe Road Vehicle Actions

#	Action	Lead Agency and support agencies	Timing
5.1	Promote and deliver safety tools and maintenance tips for motorcyclists.	RSC's, Police and ACC	Ongoing
5.2	Promote safety as a key consideration in the purchase and operation of fleet vehicles.	TA's, NZTA, Police and ACC	Ongoing
5.3	Focus on vehicles meeting minimum safety requirements so that they will protect road users in the event of a crash.	NZTA	Ongoing
5.4	Encourage the use of technology that reduces distraction (i.e. hands free cell phones kits).	TA's, NZTA, Police and ACC	Ongoing
5.5	Undertake vehicle checks and tests on heavy motor vehicles, support with educational initiatives targeting heavy motor vehicle operators and drivers.	RSC's, NZTA, Police and ACC	Ongoing
5.6	Promote safety as a key consideration in the purchase and operation of heavy motor vehicles.	TA's, NZTA, Police and ACC	Ongoing
5.7	Target known high risk HMV drivers who exceed driving hours.	Police and NZTA	Ongoing

5.8	Encourage people to purchase the safest car they can afford.	TA's, NZTA, Police and ACC	Ongoing
5.9	Use financial incentives to encourage the purchase of safe fleet vehicles.	ACC	Ongoing

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APPENDIX A

CRASH ANALYSIS METHODOLOGY



The identification of crash issues affecting the region is considered vital in understanding the nature and scope of the problem and in directing a coordinated regional response to lower the current road toll. For the Canterbury Road Safety Action Plan the following methodology has been agreed by stakeholders and utilised in order to identify regional crash issues for prioritisation purposes.

Data Sources

Data has been sourced from the Crash Analysis System (CAS). CAS is an integrated computer system that provides tools to collect, map, query and report on road crash and related data. CAS was selected because it contains the most comprehensive source of crash data, including crash location, type and contributing factors.

Canterbury's regional boundaries cover 9 territorial authorities along with part of the Waitaki District Council. For the purpose of transport planning, Waitaki District sits within the Otago region. The data referred to within this strategy therefore includes all regional territorial authorities except Waitaki District Councils.

The Chatham islands are also included in some of the crash statistics.

Analysis method

To establish the current safety performance of the Canterbury region, the Canterbury region has been compared to "All New Zealand". The Canterbury region is considered representative of New Zealand in terms of the ratio of local roads to state highways.

To compare the performance of Territorial Authorities to each other and to the Canterbury region and all of New Zealand, separate calculations have been made to determine the percentage of the various contributing crash factors that were represented in fatal and serious crashes for each Territorial Authority, the Canterbury Region and 'all of New Zealand'. Unless stated otherwise, analysis has been confined to drivers/vehicles that were at fault (or at part fault) in causing fatal and serious crashes.

Analysis period

Five year data (1 January 2009 – 1 January 2014) has been analysed where available.

Data analysed

Where possible, standard CAS reports using the territorial authority areas as defined within CAS have been used. To create the Canterbury region" data from the 9 territorial authorities (excluding Chatham Islands) were amalgamated into one query.

Where specific data analysis has been required, Canterbury regional data has been used with appropriate data queries from CAS. The required statistics have then been calculated using an Excel Spreadsheet. Where this has occurred, the process has been documented so that it can be reviewed for accuracy and repeated as required in the future.

Crash severity

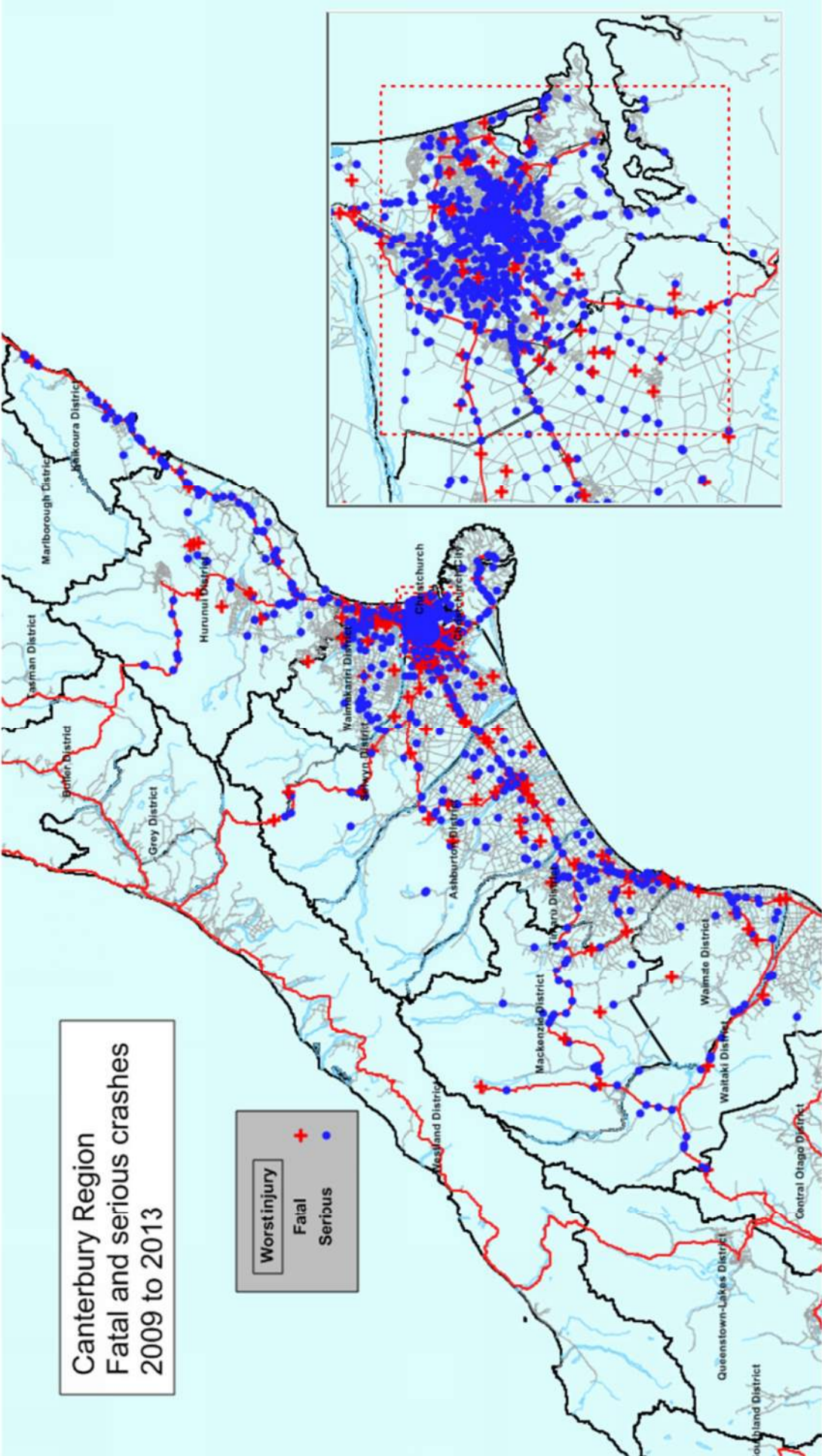
All of the analysis is confined to fatal and serious crashes so that the crash factors and patterns that cause fatal or serious injuries can be identified. A decision was made not to include the numerous minor and non-injury crashes that occur. It was felt that including the number and type of the lower severity crashes might draw the focus of the strategy away from the cause of the most serious crash types in the region.

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APPENDIX B

DETAILED CRASH MAPS





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APPENDIX C

CRASH ANALYSIS SYSTEM EXTRACT



Combined Crash List Detail report - Run on: 9 Jun 2014

Injury and non-injury crashes

Page 1 of 2

Crash List: Canterbury Region fatal and serious 2009-2013

Overall Crash Statistics

Crash Severity	Number	%	Social cost (\$m)
Fatal	185	12	794.43
Serious	1416	88	1093.79
Minor Injury	0	0	0
Non-injury	0	0	0
	1601	100	1888.21

Crash Numbers

Year	Fatal	Serious	Minor	Non-inj
2009	29	310	0	0
2010	42	320	0	0
2011	34	267	0	0
2012	32	252	0	0
2013	48	267	0	0
TOTAL	185	1416	0	0
Percent	12	88	0	0

Note: Last 5 years of crashes shown

Overall Casualty Statistics

Injury Severity	Number	% all casualties
Death	198	8
Serious Injury	1635	70
Minor Injury	509	22
	2342	100

Casualty Numbers

Year	Fatal	Serious	Minor
2009	32	362	113
2010	48	369	110
2011	35	300	90
2012	33	295	97
2013	50	309	99
TOTAL	198	1635	509
Percent	8	70	22

Note: Last 5 years of casualties shown

Crash Type and Cause Statistics

Crash Type	All crashes	% All crashes
Overtaking Crashes	84	5
Straight Road Lost Control/Head On	253	16
Bend - Lost Control/Head On	382	24
Rear End/Obstruction	238	15
Crossing/Turning	435	27
Pedestrian Crashes	189	12
Miscellaneous Crashes	20	1
TOTAL	1601	100

Crash factors (*)	All crashes	% All crashes
Alcohol	262	16
Too fast	232	14
Failed Giveaway/Stop	466	29
Failed Keep Left	41	3
Overtaking	30	2
Incorrect Lane/posn	148	9
Poor handling	453	28
Poor Observation	575	36
Poor judgement	192	12
Fatigue	103	6
Disabled/old/ill	82	5
Pedestrian factors	124	8
Vehicle factors	63	4
Road factors	145	9
Weather	62	4
Other	123	8
TOTAL	3101	193

Crashes with a:

Driver factor	2584	160
Environmental factor	207	13

(*) factors are counted once against a crash - ie two fatigued drivers count as one fatigue crash factor.

Note: 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.

Note: % represents the % of crashes in which the cause factor appears

Number of parties in crash	All crashes	% All crashes
Single party	562	35
Multiple party	1039	65
TOTAL	1601	100

Driver and Vehicle Statistics

Note: Driver information is not computerised for non-injury crashes

Drivers at fault or part fault in injury crashes

Age	Male	%	Female	%	Total	%
15-19	125	13	54	11	179	12
20-24	169	17	58	12	227	15
25-29	91	9	42	9	133	9
30-39	143	14	57	12	200	14
40-49	164	16	75	16	239	16
50-59	147	15	63	13	210	14
60-69	93	9	56	12	149	10
70+	66	7	71	15	137	9
TOTAL	998	100	476	100	1474	100

Drivers at fault or part fault in injury crashes

Licence	Male	Female	Total	%
Full	654	329	983	65
Learner	61	25	86	6
Restricted	107	69	176	12
Never licensed	15	10	25	2
Disqualified	28	6	34	2
Overseas	46	22	68	5
Expired	23	2	25	2
Other/Unknown	85	20	105	7
TOTAL	1019	483	1502	100

Vehicles involved in injury crashes

	No. of vehicles	% Injury crashes
SUV	270	16
Bus	30	2
Car/Stn Wagon	1375	68
School Bus	1	0
Motor Cycle	294	18
Other	6	0
Moped	57	4
Bicycle	219	14
Truck	152	9
Van Or Utility	212	13
Taxi	8	0
TOTAL	2624	144

Note: % represents the % of injury crashes in which the vehicle appears

Combined Crash List Detail report - Run on: 9 Jun 2014

Injury and non-injury crashes

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Crash List: Canterbury Region fatal and serious 2009-2013

Road Environment Statistics

Road Type	Local road	%	State highway	%	Total	%
Urban	745	47	142	9	887	55
Open Road	372	23	342	21	714	45
TOTAL	1117	70	484	30	1601	100

Conditions	Injury	Non-injury	Total	%
Light/overcast	1107	0	1107	69
Dark/twilight	494	0	494	31
TOTAL	1601	0	1601	100

Conditions	Injury	Non-injury	Total	%
Dry	1363	0	1363	85
Wet	222	0	222	14
Ice/snow	16	0	16	1
TOTAL	1601	0	1601	100

Intersection/mid-block	All crashes	% All crashes
Intersection	656	41
Midblock	945	59
TOTAL	1601	100

Objects Struck	Injury crashes	%	Non-injury crashes	%
Crashes w/obj.struck	533	33	0	0

Object Struck	Injury crashes	%	Non-injury crashes	%
Bridge	18	1	0	0
Cliff Bank	37	2	0	0
Debris	2	0	0	0
Over Bank	34	2	0	0
Fence	137	9	0	0
Guard Rail	14	1	0	0
House Or Bldg	14	1	0	0
Traffic Island	16	1	0	0
Phone Box Etc.	13	1	0	0
Kerb	22	1	0	0
Slip Or Flood	1	0	0	0
Parked Vehicle	77	4	0	0
Train	4	0	0	0
Post Or Pole	103	6	0	0
Vehicle	3	0	0	0
Traffic Sign	25	2	0	0
Tree	99	6	0	0
Ditch	63	4	0	0
Stray Animal	7	0	0	0
Other	30	2	0	0
Obj	1	0	0	0
Water/River	13	1	0	0
TOTAL	733	0		

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

Time Period Statistics

Day/Period	All crashes	% All crashes
Weekday	1135	71
Weekend	466	29
TOTAL	1601	100

Day/Period	0000- 0259	0300- 0559	0600- 0859	0900- 1159	1200- 1459	1500- 1759	1800- 2059	2100- 2400	Total
Weekday	29	26	170	176	192	292	163	79	1127
Weekend	52	30	24	70	96	92	52	47	463
TOTAL	81	56	194	246	288	384	215	126	1590

Note: Weekend runs from 6 pm on Friday to 6 am on Monday

Day/Period	0000- 0259	0300- 0559	0600- 0859	0900- 1159	1200- 1459	1500- 1759	1800- 2059	2100- 2400	Total
Mon	4	4	30	37	34	58	22	10	199
Tue	4	6	34	30	28	55	24	13	194
Wed	2	3	34	32	44	52	36	8	211
Thu	5	7	40	43	44	73	43	23	278
Fri	14	6	32	34	42	54	38	25	245
Sat	27	18	11	33	51	53	31	29	253
Sun	25	12	13	37	45	39	21	18	210
TOTAL	81	56	194	246	288	384	215	126	1590

Month	Injury	%	Non-injury	%	Total	%
Jan	120	7	0	0	120	7
Feb	149	9	0	0	149	9
Mar	162	10	0	0	162	10
Apr	116	7	0	0	116	7
May	145	9	0	0	145	9
Jun	120	7	0	0	120	7
Jul	127	8	0	0	127	8
Aug	118	7	0	0	118	7
Sep	135	8	0	0	135	8
Oct	128	8	0	0	128	8
Nov	137	9	0	0	137	9
Dec	144	9	0	0	144	9
TOTAL	1601	100	0	0	1601	100

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APPENDIX D

POLICE ACTIONS



Police Actions

To reduce death and serious injury, we will:

- > Work with the neighbourhoods to deliver locally-led prevention programmes on road safety matters;
- > Work with our established partners to deliver road safety education, improve environmental design and the safety vehicles; and
- > Implement measures, as appropriate to Police, adopted under the Government's Safer Journeys strategy.

In 2010, road deaths and injuries saw around one person in New Zealand being killed every 23 hours and another being admitted to hospital every 69minutes.

Police contributes to all areas of the safe system approach, and will work at identifying how future road trauma can be prevented by working with individuals, communities and partners to:

- > Determine speeds that are suitable for particular roads, and that people understand and comply with
- > Focus on vehicles meeting minimum safety requirements so that they will protect road users in the event of a crash
- > Help New Zealanders to become more skilled and competent road users
- > Educate them about unlawful and unsafe practices.

Will contribute to the safe system approach by:

- > Encouraging New Zealanders to observe and abide by the road rules because they want to
- > Working with individuals and groups in our community so they take responsibility for themselves and others on our roads
- > Listening to our community to further understand the risks
- > Working with local authorities, for example to reduce speed
- > Considering road safety through the environmental design.

This will enable us to make an even greater difference to our community's safety and quality of life.

Will use combination of prevention, deterrence and enforcement to achieve our priorities. Alongside core functions will focus on:

High risk drivers and driving

- > Be out in force during risk periods e.g. long weekends where greater numbers of drivers are on the roads
- > Actively follow up on high risk drivers, particularly repeat alcohol/drug impaired offenders and repeat speed offenders
- > Identify the 'top ten' repeat offenders in our districts and areas and take action to prevent offending
- > Target high risk locations and roads to alter driver behaviour
- > Concentrate on risky behaviours such as failing to keep left and passing offences
- > Enforce illegal street racing legislation, targeting repeat offenders and known locations

Alcohol and drugged driving:

- > Breath test every driver we stop
- > Use a whole of Police approach as part of CBT operations e.g. carry out high volume license screening supported by technology

Speed

- > Focus on excess and inappropriate speed
- > Enforce low speed zones around schools to reduce harm to young people

- > Reduced tolerance during holiday weekends

Driver licenses

- > High volume and routine driver license screening, particularly for young drivers, to improve compliance with license requirements
- > Work with community-based programmes to prevent offending, such as getting those on learners' licenses through to successful completion of their full licenses.

Heavy vehicle fleet

- > Target known high risk HMV drivers who exceed driving hours.

Restraints

- > Educate those who are less likely to comply with restraint use e.g. at risk communities

Motorcyclists

- > Follow up on known careless or deliberately unsafe motorcyclists

Road Policing

Fatal 5:

- > Speed: there are too many people driving too fast resulting in too many speed related crashes;
- > Alcohol/impaired driving: surveys show a decreasing percentage of people think there is a high probability of being stopped at a CBT checkpoint;
- > Young drivers: poor compliance with Graduated Driver License conditions resulting in a high serious and fatal crash rate.
- > High risk drivers: high percentage of disqualified, unlicensed, fleeing or racing drivers in fatal/serious crashes.
- > Restraints: poor restraint use in some communities

Tactics:

Increase the perception of apprehension for the fatal 5 offences:

Increasing the perceived risk of apprehension for Fatal 5 offending will reduce the incidence of it occurring e.g. reduce the incidence of drink driving and alcohol related crashes by increasing the perception of apprehension.

Implement the safe system approach under the Government's Safer Journeys strategy:

Safer Journeys Strategy is understood by all police and implemented.

Deny recidivist offenders use of the roads:

Recognising the correlation between high risk drivers and criminal activity. Reducing the mobility of offenders and their opportunities to offend through tactical enforcement and preventative activities.

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APPENDIX E

MONITORING FRAMEWORK



Measurement of Targets and Monitoring Indicators

Taken from the Canterbury Regional Land Transport Strategy, Appendix J.

Outcome	Performance Indicator	2024 Targets	Monitoring Responsibilities	Notes
Reduction in fatal and serious injuries for all modes	Deaths per annum on regions' roads	Not more than 30 per annum	NZTA – to supply Regional Council with annual data	New target moves away from “per 100,000” target in old RLTS, as absolute number in line with NZTS. Safer Journeys 2020 does not set explicit targets. 25 is a stronger target than 6 per 100,000 in the 2008-2018 strategy. 2023 target represents modest improvement on the best two annual results during the period 2000 to 2010 – which was 32 in 2000 and 2009.
Reduction in fatal and serious injuries for all modes	Serious injuries per annum on regions' roads	Not more than 250 per annum	NZTA – to supply Regional Council with annual data	As above. Rationale for 200 is that it is roughly a halving of the rate seen over the past 20 years – consistently in the upper 300's. 2023 target is just below 'best' years during 2000-2010.
Reduction in fatal and serious injuries for all modes	Casualties per annum – deaths plus serious injuries – car, truck, bus	No	NZTA – to supply Regional Council with annual data	Whilst targets only set for total regional figures, intention is to track and report modal breakdown, to advise policy responses.
Reduction in fatal and serious injuries for all modes	Casualties per annum – death plus serious injuries – cycle	No	NZTA – to supply Regional Council with annual data	Whilst targets only set for total regional figures, intention is to track and report modal breakdown, to advise policy responses.
Reduction in fatal and serious injuries for all modes	casualties per annum – death plus serious injuries – motorcycle	No	NZTA – to supply Regional Council with annual data	Whilst targets only set for total regional figures, intention is to track and report modal breakdown, to advise policy responses.
Reduction in fatal and serious injuries for all modes	casualties per annum – death plus serious injuries – pedestrian	No	NZTA to supply Regional Council with annual data	Whilst targets only set for total regional figures, intention is to track and report modal breakdown to advise policy responses.
Improve personal safety and reduce security risks to all transport users	How safe do you feel people are when driving a car in Canterbury	No	Regional Council via Resident Survey	No target as baseline data series does not exist. Intent is to implement monitoring via perceptions survey – scale = “Always safe”, “Mostly safe, but not always”, “Quite often safe but quite often unsafe”, “Mostly unsafe, but not always”, “Always unsafe”. This approach is similar to other major regions.
Improve personal safety and reduce security risks to all transport users	How safe do you feel people are when travelling on public transport in Canterbury	No	Regional Council – via Resident Survey	No target as baseline data series does not exist. Intent is to implement monitoring via perceptions survey – scale = “Always safe”, “Mostly safe, but not always”, “Quite often safe but quite often unsafe”, “Mostly unsafe but not always”, “Always unsafe”. This approach is similar to other major regions.
Improve personal safety and reduce security risks to all transport users	How safe do you feel people are when walking in Canterbury	No	Regional Council – via Resident Survey	No target as baseline data series does not exist. Intent is to implement monitoring via perceptions survey – scale = “Always safe”, “Mostly safe, but not always”, “Quite often safe but quite often unsafe”, “Mostly unsafe, but not always”, “Always unsafe”. This approach is similar to other major regions.

Improve personal safety and reduce security risks to all transport users	How safe do you feel people are when travelling by cycle in Canterbury	No	Regional Council – via Resident Survey	No target as baseline data series does not exist. Intent is to implement monitoring via perceptions survey – scale: “Always safe”, “Mostly safe, but not always”, “Quite often safe, but quite often unsafe”, “Mostly unsafe, but not always”, “Always unsafe”.
Improve personal safety and reduce security risks to all transport users	How safe do you feel people are when travelling by motorcycle in Canterbury	No	Regional Council – via Resident Survey	No target as baseline data series does not exist. Intent is to implement monitoring via perceptions survey – scale: “Always safe”, “Mostly safe, but not always”, “Quite often safe, but quite often unsafe”, “Mostly unsafe, but not always”, “Always unsafe”.

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APPENDIX F

GLOSSARY OF ACRONYMS



Glossary

Table of Acronyms

ACC	Accident Compensation Corporation
BAC	Blood Alcohol Concentration
CAS	Crash Analysis System
CTA's	Community Travel Advisors
HMV	Heavy Motor Vehicle
NLTP	National Land Transport Programme. The programme established for the prioritisation and distribution of the National Land Transport Fund.
NZTA	New Zealand Transport Agency
RCA	Road Controlling Authority. Each local council is a Road Controlling Authority, as is the NZTA which manages the State Highway network. DOC also function as a RCA.
RLTP	Regional Land Transport Plan. The regional plan must include: <ul style="list-style-type: none"> - A statement of transport priorities - A financial forecast of anticipated revenue and expenditure - A list of regionally significant expenditure to be funded from other sources - A list of those activities with inter-regional significance.
RLTS	Regional Land Transport Strategy 2012-42.
RPS	Regional Policy Statement
RRSWG	Regional Road Safety Working Group. A multi-agency group which oversees regional road safety direction in Canterbury and which has also served as the steering group for the development of this plan
RSAP	Road Safety Action Plan. A planning tool used by local road safety partners to co-ordinate activities. Also a funding requirement of the NZTA.
RSC	Road Safety Coordinators
RTC	Regional Transport Committee. Chaired by Canterbury Regional Council including representatives from local authorities, community representatives and the NZTA.
TA	Territorial Authority. Otherwise known as district or city council.
VKT	Vehicle kilometres travelled

About Cardno

Cardno is a professional infrastructure and environmental services company, with expertise in the development and improvement of physical and social infrastructure for communities around the world. Cardno's team includes leading professionals who plan, design, manage and deliver sustainable projects and community programs. Cardno is an international company listed on the Australian Securities Exchange [ASX:CDD].

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