A review of Casualty Crashes involving Cyclists In Tasmania

Department of Infrastructure, Energy and Resources

Tasmania
Explore the possibilities

A Review of
Casualty Crashes involving Cyclists
in Tasmania

Traffic & Infrastructure Branch
Department of Infrastructure, Energy and Resources
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Contents

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1. Introduction

This Report examines casualty crashes involving cyclists in Tasmania.

The purpose of the Report is to:

- Improve our understanding of the incidence and circumstances of casualty crashes involving cyclists in Tasmania.
- Assess whether there are opportunities to cost-effectively reduce the incidence or severity of crashes involving cyclists.

2. Understanding Casualty Crashes involving Cyclists

2.1 Crash data

Details of all crashes reported to Tasmania Police are recorded on Traffic Accident Report forms that are then electronically stored on the Crash Data Manager computer system which is maintained by DIER.

The Traffic Accident Report categorises the severity of the crash based on the most severe injury that was received by any person involved in the crash. Crash categories are as follows:

- fatal – a person dies within 30 days of the crash;
- serious injury – a person is admitted to hospital for at least 24 hours;
- minor injury – a person is admitted to hospital for less than 24 hours;
- first aid – a person is treated at the scene; and
- property damage only.

The term 'casualty crash' is used to collectively describe fatal, serious injury, minor injury and first aid crashes.

The Table below sets out the crash statistics for Tasmania for the five-year period (2005-2009). The numbers are based on counting each crash once – they do not allow for the fact that more than one person could be injured in the same crash.

Severity	Number of crashes	Number of crashes involving cyclists	% of crashes involving cyclists
Fatal	221	6	2.7%
Serious	1,295	53	4.1%
Minor	5,614	272	4.8%
First aid	1,973	95	4.8%
Property damage	22,025	169	0.8%
Not known	3,114	7	0.2%
Total	**34,242**	**602**	**1.8%**

Table 2.1 – Crash history for five-year period (2005-2009)

During the five-year period (2005-2009) there were some 34,000 reported crashes and around 9,000 of these were casualty crashes (fatal, serious injury, minor injury and first aid).

It can be seen that just less than 5% of casualty crashes involve cyclists, and less than 1% of property damage crashes involve cyclists. There is little data on the number of cyclists using the Tasmanian road network and so it is difficult to know how the crash rate for cyclists compares with other road users. Cyclists are often referred to as 'vulnerable' road users because, if they are involved in a crash, they are more likely to be injured.

2.2 Time of day

The pattern of casualty crashes for bicycles by time of day is similar to that for all vehicles. The higher incidence of crashes in the morning and afternoon peak periods reflects the higher levels of activity at those times.

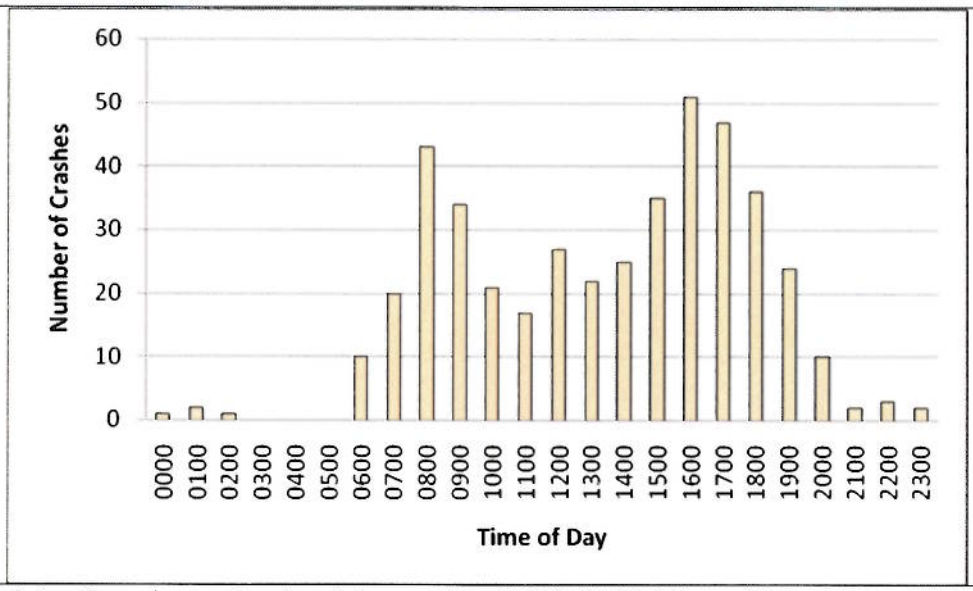

Chart 2.1 – Casualty crashes involving cyclists (2005-2009), Time of day

2.3 Day of week

The variation of casualty crashes for bicycles by day of week shows a slightly lower number of crashes at the weekend. This pattern contrasts with the pattern for all casualty crashes, where the highest number of incidents occurs on a Friday and Saturday.

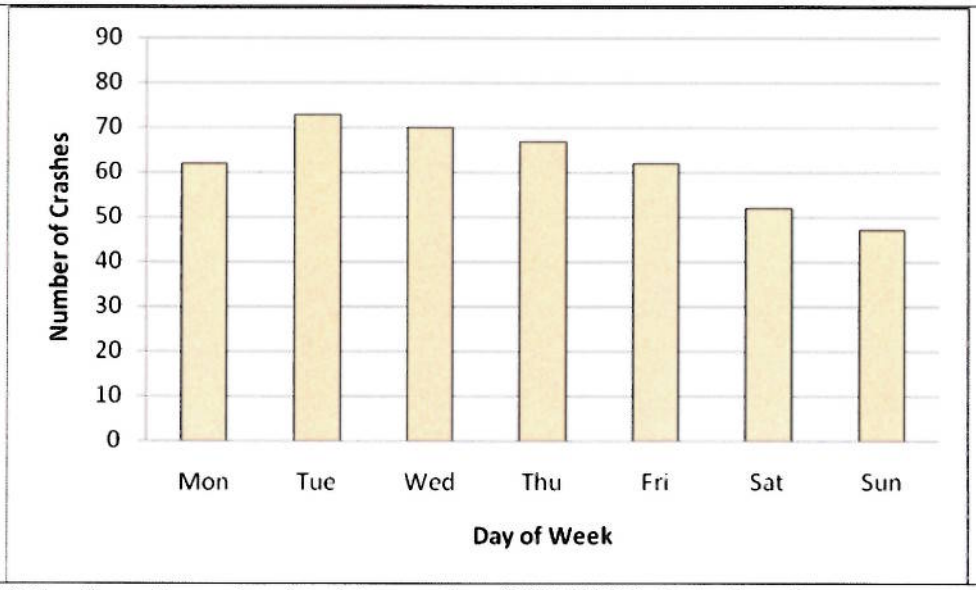

Chart 2.2 – Casualty crashes involving cyclists (2005-2009), Day of week

2.4 Month of year

The pattern of casualty crashes for bicycles by month of year shows a lower number of crashes during the winter months. This reflects the lower levels of cycling at that time of year.

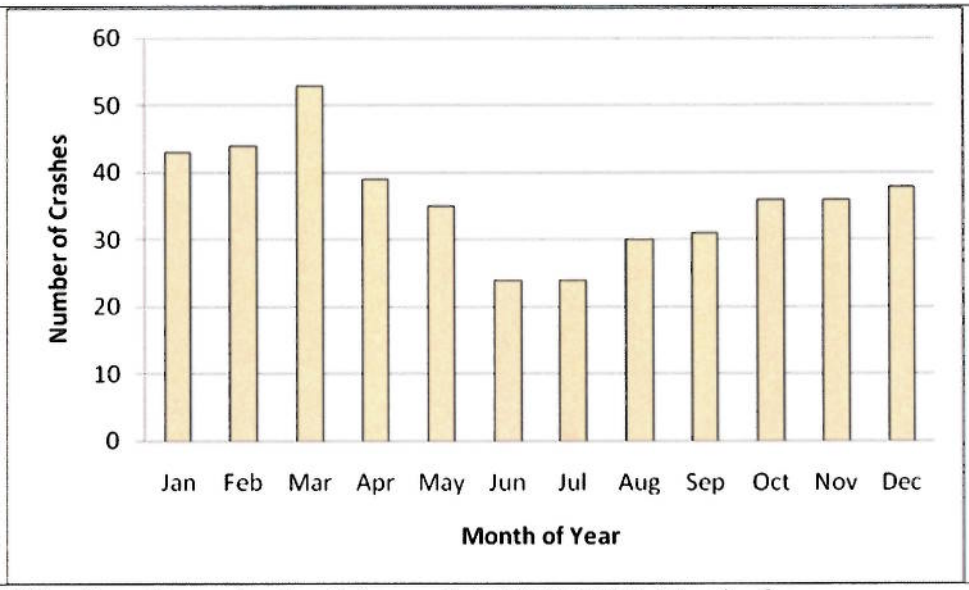

Chart 2.3 – Casualty crashes involving cyclists (2005-2009), Month of year

2.5 Speed limit

The distribution of casualty crashes for cyclists by speed zone shows that the overwhelming majority occur in the urban area, with 86% on roads with a speed limit of 60 km/h or less. This reflects that most cycling activity occurs within urban areas.

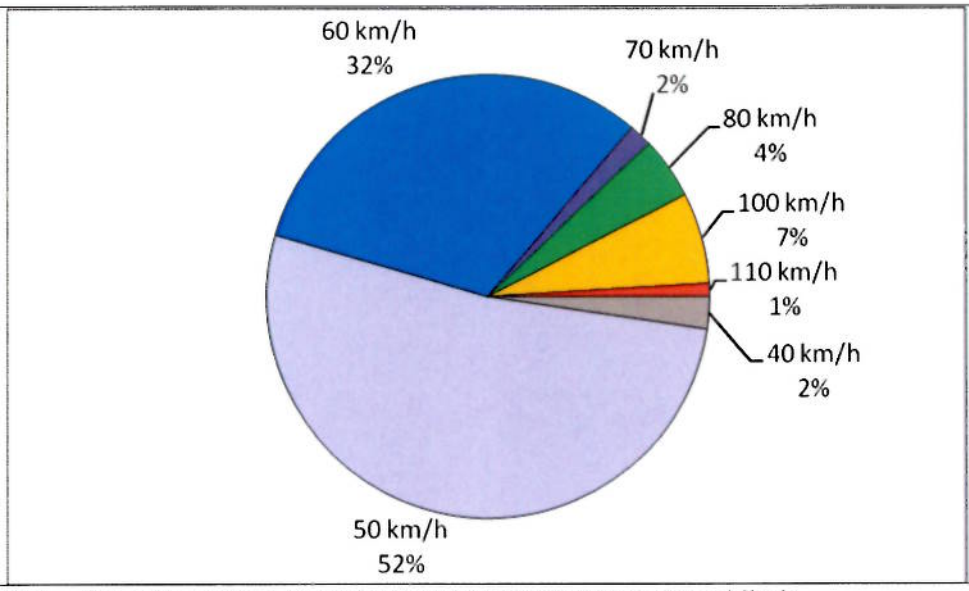

Chart 2.4 – Casualty crashes involving cyclists (2005-2009), Speed limit

When only fatal and serious casualty bicycle crashes are considered, the proportion on roads with a speed limit of 80 km/h or greater increases from 12% to 39%. The higher speeds on rural roads mean that any incidents that do occur tend to be of higher severity.

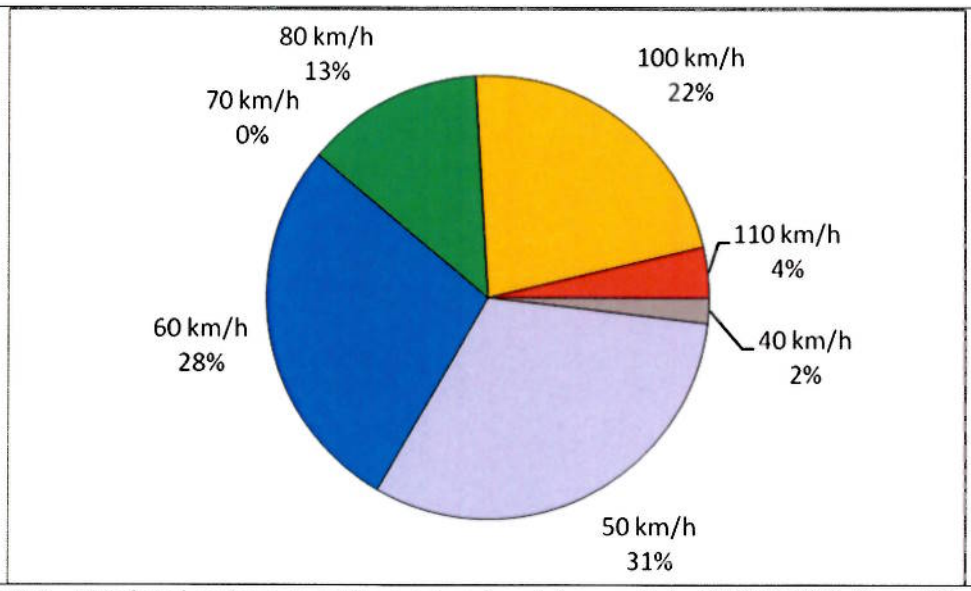

Chart 2.5 – Fatal and serious casualty crashes involving cyclists (2005-2009), Speed limit

2.6 Type of crash

Cyclists are involved in a wide variety of different crash types. The main categories are described below:

- Loss-of-control – involves the cyclist losing control and crashing.
- Parked car – involves the cyclist crashing into a parked car that is unoccupied and not moving.
- Entering from driveway / footpath – involves the cyclist riding out onto the road without giving way to traffic.
- Intersection – involves a cyclist and another vehicle colliding at an intersection.
- Rear-end – involves a motorist running into the back of a cyclist.
- Side-swipe – involves a motorist trying to pass a cyclist but leaving insufficient width and knocking the cyclist off, or a cyclist veering into the path of a vehicle travelling in the same direction.
- Vehicle door – involves the occupant of a vehicle opening the door into the path of a cyclist.
- Head-on – involves a collision between a cyclist and a vehicle travelling in the opposite direction.

The pie chart below shows the distribution of crash types for casualty crashes involving cyclists.

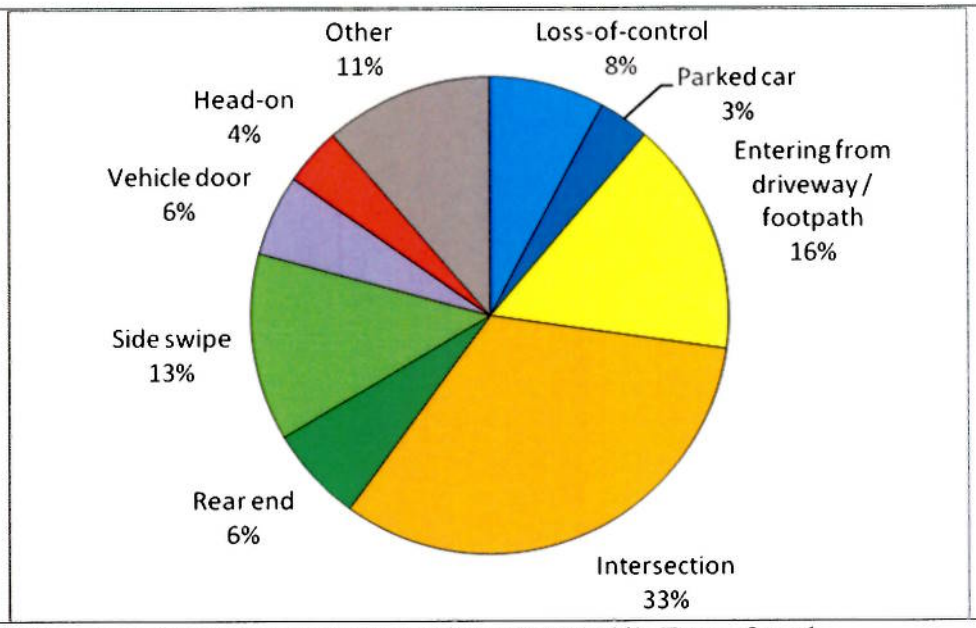

Chart 2.6 – Casualty crashes involving cyclists (2005-2009), Type of crash

When considering fatal and serious casualty bicycle crashes only, the proportion relating to loss-of-control and head-on crashes increases, while the proportion of intersection crashes decreases. There were no serious casualty bicycle crashes at roundabouts.

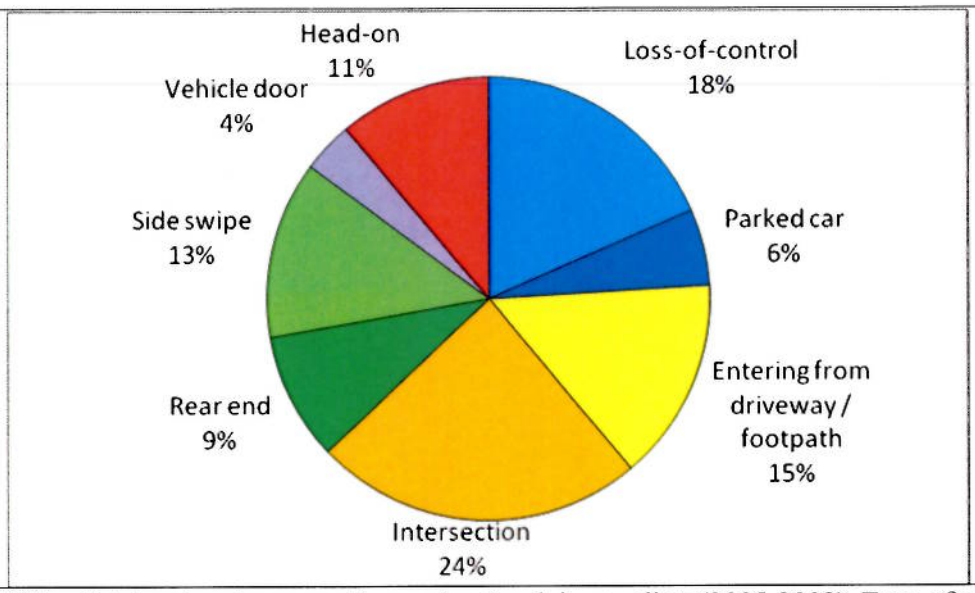

Chart 2.7 – Fatal and serious casualty crashes involving cyclists (2005-2009), Type of crash

2.7 Cause of serious casualty crashes

By reading the description contained in the Traffic Accident Report it is possible to make an assessment about which road user was most responsible for the crash occurring. The objective of this analysis is not to assign blame but to gain a better understanding of the mechanisms of bicycle crashes that can then inform strategies to reduce their incidence.

The fatal and serious casualty bicycle crashes for the five-year period (2005-2009) were analysed accordingly. The total number of crashes is too small to provide statistically robust conclusions but provides a useful insight.

The crashes fell into three categories:

- 23% involved only the cyclist. These comprise all 'parked car' crashes and nearly all 'loss-of-control' crashes (one 'loss-of-control' crash was caused by another vehicle passing so close to the cyclist that, even though there was no physical contact, the draught created caused the cyclist to lose control). Some of these crashes involved the cyclist travelling downhill at speed.
- 41% appeared to be the fault of the cyclist. These comprise all 'entering from driveway / footpath' crashes, more than half of 'intersection' crashes, some 'side swipe' crashes and more than half of 'head-on' crashes.
- 36% appeared to be the fault of the other road user (not the cyclist). These comprise some 'intersection' crashes, all 'rear-end' crashes, most 'side-swipe' crashes, all 'vehicle door' crashes and some 'head-on' crashes.

2.8 Age of cyclist

Older children and teenagers are involved in more bicycle crashes than other age groups. Cyclists aged between 10 and 19 years old account for 31% of casualty crashes involving cyclists.

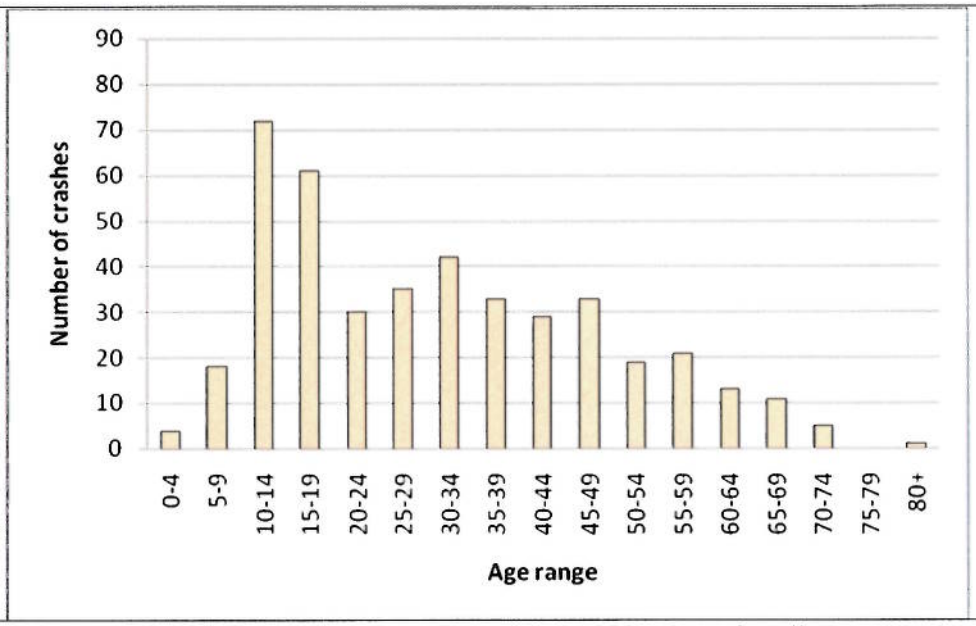

Chart 2.8 – Casualty crashes involving cyclists (2005-2009), Age of cyclist

Further analyses, were carried out for casualty crashes involving cyclists aged between 10 and 19 years old and the results were compared to those for all cyclists. It was found that older children and teenagers:

- Had fewer crashes in the morning peak period.
- Had slightly more crashes at the weekend.
- Had more crashes involving 'Entering from driveway / footpath' where a cyclist has ridden out onto the road without giving way to traffic.

2.9 Distribution of crashes

Crashes involving cyclists are widely dispersed across the Tasmanian road network. There are only four sections of road in Tasmania that have had more than two bicycle crashes in the last five years (2005-2009) and these are listed below.

Location	Number of bicycle crashes during the last five years
Elizabeth Street, North Hobart	6
Hobart Road, Kings Meadows	5
Gladstone Street, Battery Point	4
Sandy Bay Road, near Casino	3

The crashes at each of these locations were examined in detail to better understand the issues and assess whether anything has been done or could be done to address them.

Elizabeth Street, North Hobart

Two of the crashes were caused by vehicle occupants opening the door of their vehicle into the path of a cyclist. One crash involved a motorist carrying out a U-turn in front of a cyclist, one involved a motorist turning right across the path of a cyclist and two involved drivers turning left.

This section of Elizabeth Street has a 40 km/h speed limit which recognises the busy nature of the area. It is noted that cycle lanes were marked in the parallel section of Argyle Street in 2009, and this may form a safer alternative route for some cyclists.

Hobart Road, Kings Meadows

Two of the crashes were caused by motorists opening the door of their vehicle into the path of a cyclist. The other three crashes involved vehicles colliding with cyclists when turning into accesses.

This section of Hobart Road is subject to a 50 km/h Shopping Zone. There is high demand for the available road space and no scope to install cycle lanes.

Gladstone Street, Battery Point

Three of the four bicycle crashes occurred at the Salamanca Place intersection. Two of these were caused by motorists travelling north along Salamanca Place not giving way to cyclists coming down Gladstone Street. The other crash involved a cyclist coming down Gladstone Street losing control.

A roundabout has since been installed at the intersection and is improving safety for all road users by moderating the speed of traffic passing through the intersection and simplifying the layout so that drivers only have to give way to one direction of traffic.

Sandy Bay Road, near Casino

All three crashes involving cyclists were caused by drivers failing to give way to cyclists – one was carrying out a U-turn manoeuvre, one was turning into an access and one was exiting a driveway.

Hobart City Council is developing a scheme to install cycle lanes along Sandy Bay Road. It is expected that marked cycle lanes would help alert motorists to the possible presence of cyclists and reduce the incidence of these types of crashes.

3. Discussion

It was found that just less than 5% of casualty crashes in Tasmania involve cyclists, and less than 1% of property damage crashes involve cyclists. There is little data on the number of cyclists using the Tasmanian road network and so it is difficult to know how the crash rate for cyclists compares with other road users. Cyclists are often referred to as 'vulnerable' road users because, if they are involved in a crash, they are more likely to be injured.

3.1 Urban areas

The great majority of casualty crashes involving cyclists occur within urban areas (where the speed limit is 60 km/h or less). The incidence of some types of bicycle crashes such as motorists running into the back of cyclists, or side-swiping cyclists while passing, or opening a vehicle door into the path of a cyclist would be reduced by marking cycle lanes that allocate separate road space for cycling.

However, this can be difficult to achieve in practice because of the limited width of most urban roads and the high demand for the space available.

An alternative measure to improve cyclist safety that has been suggested would be to reduce the speed limit on urban arterials from 60 to 50 km/h. This would reduce the speed differential between cyclists and motorised traffic, and reduce the severity of any collisions that did occur. This would also improve safety for pedestrians. However, community reaction and compliance to lower speed limits would need to be carefully considered.

3.2 Rural areas

The proportion of bicycle crashes that occur on rural roads is quite low, although any incidents that do occur are more likely to result in serious injury.

Cycling safety would be improved by providing sealed shoulders that allow the cyclist to travel outside the traffic lane. Unfortunately the cost of this treatment is high and it is considered that the number of cyclists using rural roads is comparatively low.

3.3 Age of cyclist

Almost one-third of bicycle crashes involved cyclists between 10 and 19 years old. Road safety education and cycling proficiency training targeted at this age group might help to address this issue. This would be particularly relevant in reducing the incidence of crashes that only involve cyclists or crashes that are caused by cyclists.

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