



# *briefing notes - road safety issues*

## *Transit New Zealand Region One*

Land Transport New Zealand has prepared this road safety issues report. It is based on reported crash data and trends for the 2002–2006 period.

The intent of the report is to highlight the key road safety issues and be a resource to identify possible ways to reduce the number of road deaths and injuries in Transit New Zealand Region One (Transit NZ R1).

This report is the eighth road safety issues report for Transit NZ R1 and all the material unless otherwise stated in this report applies only to State Highways (SH) in Transit NZ R1.

In each new report one year's data is added to a five year block and the oldest dropped so it is unlikely that the core issues would change radically from report to report.

The issues chosen for this report are drawn from either the most common crash types - those that appear over-represented or those with high social cost (high numbers of fatal and serious crashes mainly).

We have included a brief overview of crashes in the region for 2006.

We encourage Transit NZ to use their free access to the Ministry of Transport's Crash Analysis System to delve deeper into the highlighted issues.

### Major road safety issues

#### Transit NZ Region One

Alcohol and Fatigue

Bends

Speed

### 2006 road trauma

#### Casualties

#### Transit NZ R1

Deaths 18

Serious casualties 68

Minor casualties 300

### Nationally

Speed

Alcohol

Failure to give way

Restraints

### Crashes

#### Transit NZ R1

Fatal crashes 18

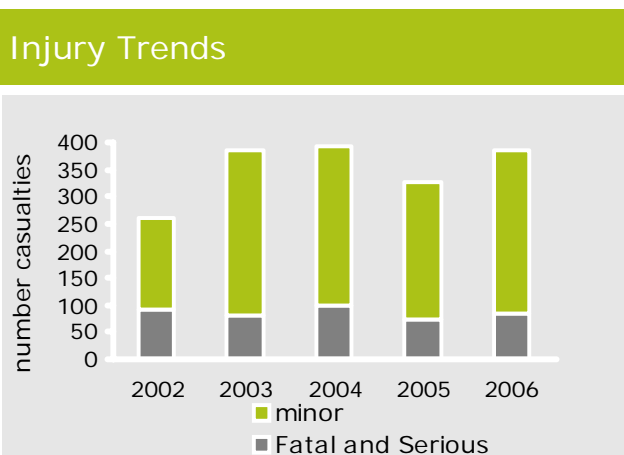
Serious injury crashes 46

Minor injury crashes 188

Non-injury crashes 378

## Overview of 2006

During 2006 in the Transit NZ R1 area there were 18 fatal crashes, 234 injury crashes and 378 non-injury crashes on State Highways reported by the New Zealand Police.



The above graph shows the fatal and serious injury trends over the last five years.

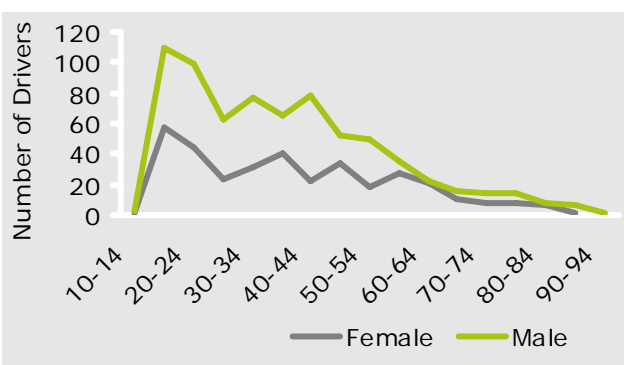
The trend in fatal and serious injuries in the region has been variable over the last five years.

Minor injuries are also variable, there were 300 in 2006, a similar number to the 2003 (303) and 2004 (292) figures.

We can see the spread of the age and gender of the at fault drivers involved in injury crashes in the graph below.

Whilst there is a peak for young drivers, the numbers are still solid for other age brackets.

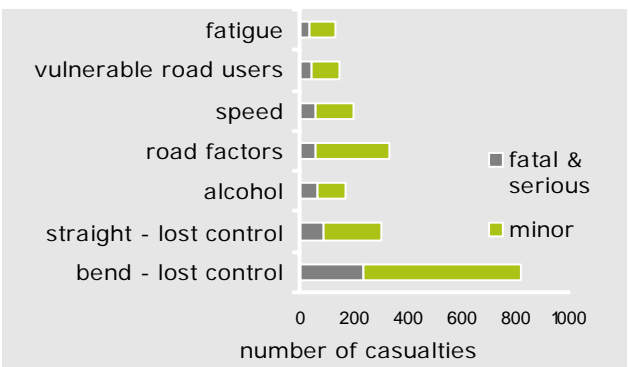
### Ages and sex at fault drivers 2002 – 2006 injury crashes



Further information about 2006 injury crashes:

- Worst day of the week Sunday (52), best Monday (24)
- Wet road crashes, 25 percent
- Night time crashes, 32 percent
- Mid-block crashes, 84 percent
- Single party crashes, 57 percent
- Male drivers are at fault or part fault in 65 percent of injury crashes
- 56 percent of at fault drivers hold a full NZ licence
- Social cost of crashes in 2006 \$135m

### Main crash characteristics



In 2006 on the Transit NZ R1 network bend loss of control crashes are prominent, accounting for 46 percent of injury crashes and eight out of the 18 fatalities.

Additionally the straight loss of control crashes account for another 22 percent of injury crashes.

Poor observation (25 percent), speed (20 percent), alcohol (18 percent) and poor handling (26 percent) were the leading factors in 2006 injury crashes.

## Overview of 2006 continued

One issue that stands out is that the condition of the road as noted by the Police. It was a factor in 19 percent of crashes on State Highways in Transit NZ R1.

This compares less than favourably with the 13 percent figure for all Transit NZ roads in New Zealand.

The main factor mentioned in 91 crashes, is slippery road due to rain, which when noted by the Police is a more serious than just the road being wet.

Other factors of note were surface under construction or maintenance (32 crashes), surface slippery due to oil/fuel (23 crashes) and road surface with deep loose metal (19 crashes).

There are three sites with four injury crashes in five years due to road factors - they are:

- SH10 1350 metres south of Cottle Hill Drive where all crashes were in the wet and on a curve - one was fatal
- SH11 2 kilometres south of Rigden Road where three crashes were in the wet at night
- SH1N 220 metres west of Hautapu Road where three crashes were on a curve in the wet

The issues explored in this report will be loss of control crashes at bends, speed crashes and drink driving crashes (encompassing fatigue crashes).

Alcohol and speed are touched upon in the national issues section, but will be explored more fully also.

It has been observed nationally that there is a growing group of drivers who have not been exiting the graduated licence system and who are choosing to stay on restricted licences.

This is making it increasingly difficult to distinguish drivers who are truly inexperienced from those that should have moved to a full licence.

As a consequence it is more difficult to target educational material.

This does appear to be the case in Transit NZ R1 and the number of drivers who are disqualified is also of concern.

### At fault driver licence status 2006

Driver Licence status (Injury crashes, at fault drivers) Transit NZ R1 2006	Percentage of total at fault drivers (New Zealand 2006 value in brackets)
Full	56.3 (58.4) %
Learner	8.4 (9.5) %
Restricted	14.7 (17.6) %
Never Licenced	2.1 (2.2) %
Disqualified	4.2 (1.7) %
Overseas	7.5 (4.2) %
Expired	1.6 (0.5) %
Other / unknown	5.0 (5.6) %

### Network safety co-ordination projects

In 2005 a national project was introduced to identify and investigate sections of the Transit NZ State Highway (SH) network with high injury crash rates.

The implementation of the remedial measures decided upon is underway, now that provision has been made in budgets to fund these projects. The table below shows the number of injury and non-injury crashes for each National Safety Co-ordination (NSC) route for the period 2002-2006.

### Crashes at NSC Sites

		2002	2003	2004	2005	2006
NSC 1 SH1	Injury	1	7	8	5	8
	Non-inj	7	11	11	10	11
NSC 2 SH1	Injury	12	13	10	12	19
	Non-inj	18	29	19	26	30
NSC 3 SH1	Injury	18	16	24	14	10
	Non-inj	23	28	35	22	22
NSC 4 SH11	Injury	16	10	15	7	11
	Non-inj	28	27	19	30	14
NSC 5 SH10	Injury	3	12	5	4	4
	Non-inj	7	7	5	9	8



## Alcohol and Fatigue

Alcohol affects the way people drive. Studies show that the risk of being involved in a crash increases rapidly as a driver's blood alcohol level rises. A driver over the legal limit (80mg of alcohol per 100ml of blood) is three times more likely to be involved in a crash than a sober driver.

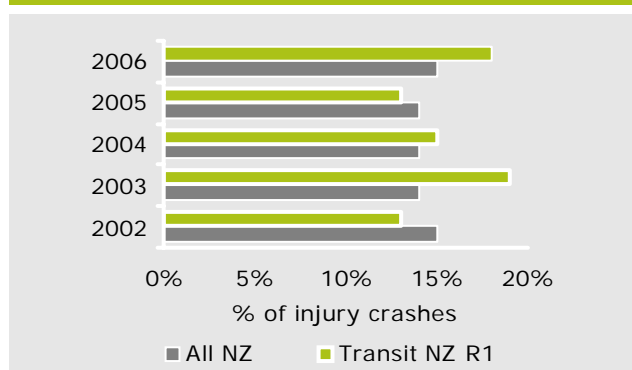
Contrary to popular opinion, people with high blood alcohol levels are more likely to be injured or killed in a crash than sober drivers in the same crash and if injured, they are also more likely to encounter complications in their recovery.

In New Zealand for the 12 months to December 2006, alcohol-affected drivers contributed to 31 percent of all fatal crashes and 15 percent of all injury crashes.

In Transit NZ R1 alcohol was a factor in 18 percent of injury crashes in 2006, a large increase from 2005 (13 percent). The trends over time are shown on the following graph. Nationally alcohol related injury crashes are stable at around 14-15 percent of all injury crashes however on Transit NZ R1 roads this factor became more prominent in 2006 after three years of decline 2003-2005.

There were 184 alcohol-related injury crashes reported in the last five years.

### Percentage of injury crashes that are alcohol related



Sixty-four percent of these crashes were bend loss of control crashes and a further 22 percent were loss of control on a straight road crash types. Giving a total of 86 percent of alcohol crashes involving the driver simply losing control of the vehicle.

Speed, poor handling and fatigue were the other factors most often associated with alcohol crashes.

Even though it is generally socially acceptable to drive while fatigued, as opposed to drink driving, research indicates that the effects on cognitive skills are similar.

It is extremely difficult for Police to prevent people from driving while fatigued. It is also difficult to attribute fatigue as a factor after the crash so the factor is thought to be well under-reported. For the years 2002 to 2006 fatigue was reported as a contributory factor in around six percent of all injury crashes. However for the same period fatigue has been implicated in between 11 and 14 percent of all fatal crashes.

In Transit NZ R1 between 2002 and 2006 there were 150 injury crashes where fatigue was a contributory cause. In these crashes 17 people died, 53 received serious injuries and 131 received minor injuries.

### Types of driver fatigue identified

Type of Fatigue identified by Police	Percentage of Injury crashes in Transit NZ R1	Percentage of Injury crashes in New Zealand
General (unspecified)	10.8 %	4.9 %
Long trip	1.0 %	0.3 %
Lack of sleep	1.1 %	0.5 %
Worked long hours before driving	0 %	0.6 %
Exceeded driving hours	0 %	0.2 %

The following table illustrates the licence status of at fault drivers in alcohol related crashes in Transit NZ R1 and all New Zealand.

### At fault driver licence status

Driver Licence status	Percentage of total at fault drivers in alcohol related crashes (New Zealand 2006 value in brackets)
Full	38.5 (41.6) %
Learner	12.4 (15.8) %
Restricted	16.0 (20.8) %
Never Licenced	8.3 (4.6) %
Disqualified	10.7 (6.2) %
Overseas	1.2 (1.0) %
Expired	2.4 (1.4) %
Other / unknown	10.7 (8.2) %

## Alcohol continued

The following provides a breakdown of the key locations in Transit NZ R1 at which drink-driving crashes occurred during the 2002 to 2006 period.

- SH 1N 500 metres north of Donald Road, just north of Kaitaia. There have been three alcohol crashes on this curve, all at night, one was a fatality
- SH 1N 50 metres south of Hautapu Road, (Turntable hill) near Moerewa. There have been three alcohol crashes on this curve, all at night, one involved a drunk pedestrian rather than a driver

The day of week and time of day when higher numbers of alcohol crashes are occurring is depicted in the table below.

Day and time of alcohol crashes						
	Mid night -4am	4am-8am	8am-noon	Noon-4pm	4pm-8pm	8pm-mid night
Mon	0	1	2	3	4	4
Tues	1	2	0	2	3	4
Wed	2	1	0	1	6	6
Thur	5	1	0	2	8	8
Fri	5	1	1	2	8	11
Sat	11	8	0	6	8	13
Sun	23	8	0	2	4	2

Further facts about alcohol related crashes on State Highways in Transit NZ R1 2002 to 2006.

- 33 deaths, 70 serious injuries and 185 minor injuries
- 83 percent of at fault drivers are male
- 11 percent are at intersections
- 73 percent occur on a dry road
- 74 percent are at night
- Worst day of week Saturday
- Worst time period midnight to 4am Sunday

## Bends

Between 2002 and 2006 46 percent of all injury crashes in Transit NZ R1 were classified as lost control at bends. These crashes resulted in 48 fatalities, 186 serious injuries and 591 minor injuries.

Fatal and serious casualty numbers have shown a variable trend for the past five years, with the 2006 figures down on the 2004 high of 45 fatal and serious injuries and 94 minor injuries.

### Injury crashes at bends 2002-2006



Most crashes at bends involved a driver losing control of their vehicle and either running off the road or colliding with another vehicle.

After drivers lose control, their vehicles can crash into roadside hazards such as ditches, banks, poles or trees. Hitting these objects can result in a relatively minor off-road event turning into something far more serious.

The most common roadside hazards struck in bend loss of control injury crashes in Transit NZ R1 were a cliff or bank (26 percent), ditch (24 percent), fence (17 percent), and tree (15 percent) from a total of 560 objects struck.

### Main characteristics of crashes at bends

Crash characteristic	Percentage of bend crashes
Single vehicle	78 %
Roadside object struck	106 %
Excessive speed for the conditions	36 %
Road factors	27 %
Poor handling	29 %
Night time	38 %

## Bends continued

The four main road factors are slippery due to rain (75 crashes), surface under construction (20 crashes), deep loose metal (16 crashes) and road slippery due to oil/diesel/fuel (16 crashes).

Poor handling is a collection of lost control of vehicle, failed to indicate and incorrect use of vehicle controls factors.

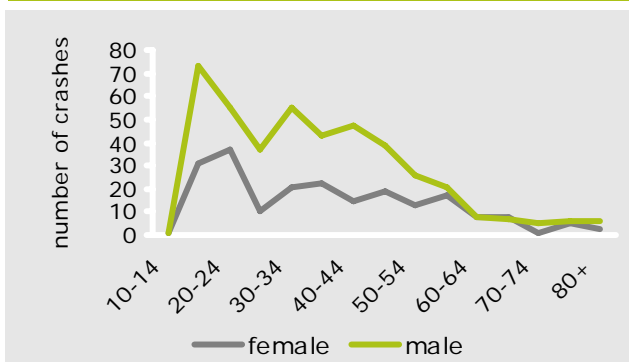
The driving licence status for the at fault drivers involved in loss of control at bends crashes is shown in the following table.

At fault driver licence status	
Driver Licence status, bend related injury crashes, at fault drivers in Transit NZ R1 2002 to 2006	Percentage of total at fault drivers in bend related crashes (New Zealand 2006 value in brackets)
Full	54.2 (51.1) %
Learner	8.5 (10.7) %
Restricted	13.6 (17.9) %
Never Licenced	3.5 (4.1) %
Disqualified	3.1 (2.8) %
Overseas	8.5 (5.6) %
Expired	1.0 (0.9) %
Other / unknown	7.6 (6.8) %

The age and gender of the drivers involved in bend loss of control crashes is shown in the following graph.

While there is a spike at the younger age brackets and a subsequent general downward trend as age increases, the crash numbers are still high for male drivers well into middle age.

### Age and sex of at fault drivers



The six main locations where these crashes are happening are shown below, these sites have four bend loss of control crashes within a 50 metre radius in the last five years.

- SH 10 about 1000 metres north of Wakelin road (Bulls Gorge). There were three crashes in 2003, and all crashes have been in the wet
- SH10 about 1350 metres south of Cottle Hill drive (Bulls Gorge) where there have been four crashes in the wet
- SH11 about 1980 metres east of Yorke road where there have been no crashes in 2005 and 2006
- SH12 at the intersection with Tokatoka road
- SH1N 80 metres south of Oaks road.
- SH1N 3060 metres south of Waipu Gorge road (Brynderwyn's)

Further information about bend loss of control injury crashes on State Highways in Transit NZ R1 (2002 to 2006):

- 68 percent of at fault drivers are male
- 92 percent are mid-block crashes
- 40 percent are wet road crashes
- Alcohol is a factor in 22 percent of crashes
- The worst month is December, best is September
- Worst day of week Saturday, best Monday

## Speed

Nationally, speed is one of the major contributing factors to road crashes. For the twelve months to the end of December 2006, excessive speed contributed to around 31 percent of fatal crashes and 16 percent of injury crashes.

During 2006, there were 1,839 injury crashes where the driver was travelling too fast for the conditions.

Reducing speeds to appropriate levels is an important road safety goal. Excessive speed increases the likelihood of a crash occurring by reducing the time available for drivers to respond to hazardous situations and it also leads to more serious injuries.

Research has shown that a one km/h reduction in mean speeds can produce up to a three percent reduction in injury crashes.

In the Transit NZ R1 excessive speed was a factor in 20 percent of injury crashes in 2006.

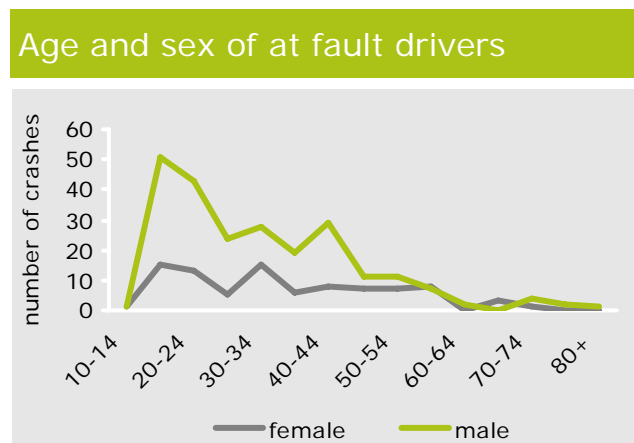
Speed related injury crashes					
	2002	2003	2004	2005	2006
Number of crashes	24	66	68	42	51

There were 251 speed-related injury crashes reported in the last five years.

Males account for 76 percent of at fault drivers.

The age and gender of drivers involved in speed related crashes is shown in the following graph.

The over representation of male drivers is evident together with a spike for young males, however the crash counts for males are still high to around age 45.



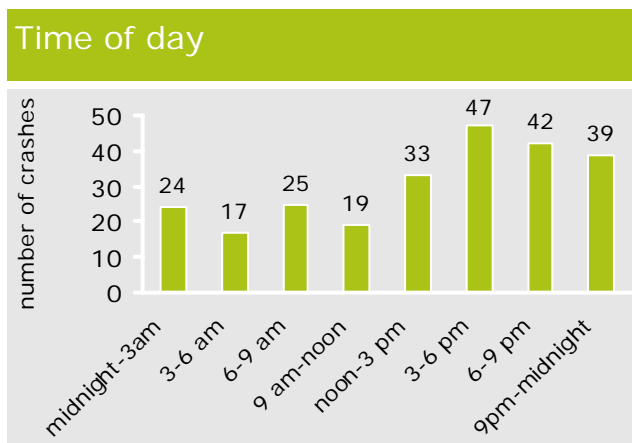
At fault driver licence status	
Driver Licence status, speed related injury crashes, at fault drivers Transit NZ R1 2002 - 2006	Percentage of total at fault drivers in speed related crashes (New Zealand 2006 value in brackets)
Full	48.8 (43.0) %
Learner	11.0 (15.3) %
Restricted	17.7 (22.5) %
Never Licenced	5.9 (4.5) %
Disqualified	3.1 (4.1) %
Overseas	3.5 (3.7) %
Expired	1.2 (0.5) %
Other / unknown	8.7 (6.2) %

Alcohol (31 percent), poor handling (32 percent) and road factors (27 percent) were the other driver factors most often associated with speed crashes. Poor handling is a collection of lost control of vehicle, failed to indicate, and incorrect use of vehicle controls factors. The road factors are mainly slippery surface due to rain (40 crashes) and road surface under construction (15 crashes).

The time of day in which speed related crashes are occurring is depicted in the following chart.

Fifty-three percent of speed crashes happen in the daylight hours, with the highest incidence between 3pm and 6pm (19 percent).

Although this is similar to the time distribution for State Highways across all New Zealand it is much more exaggerated in the post midday period.





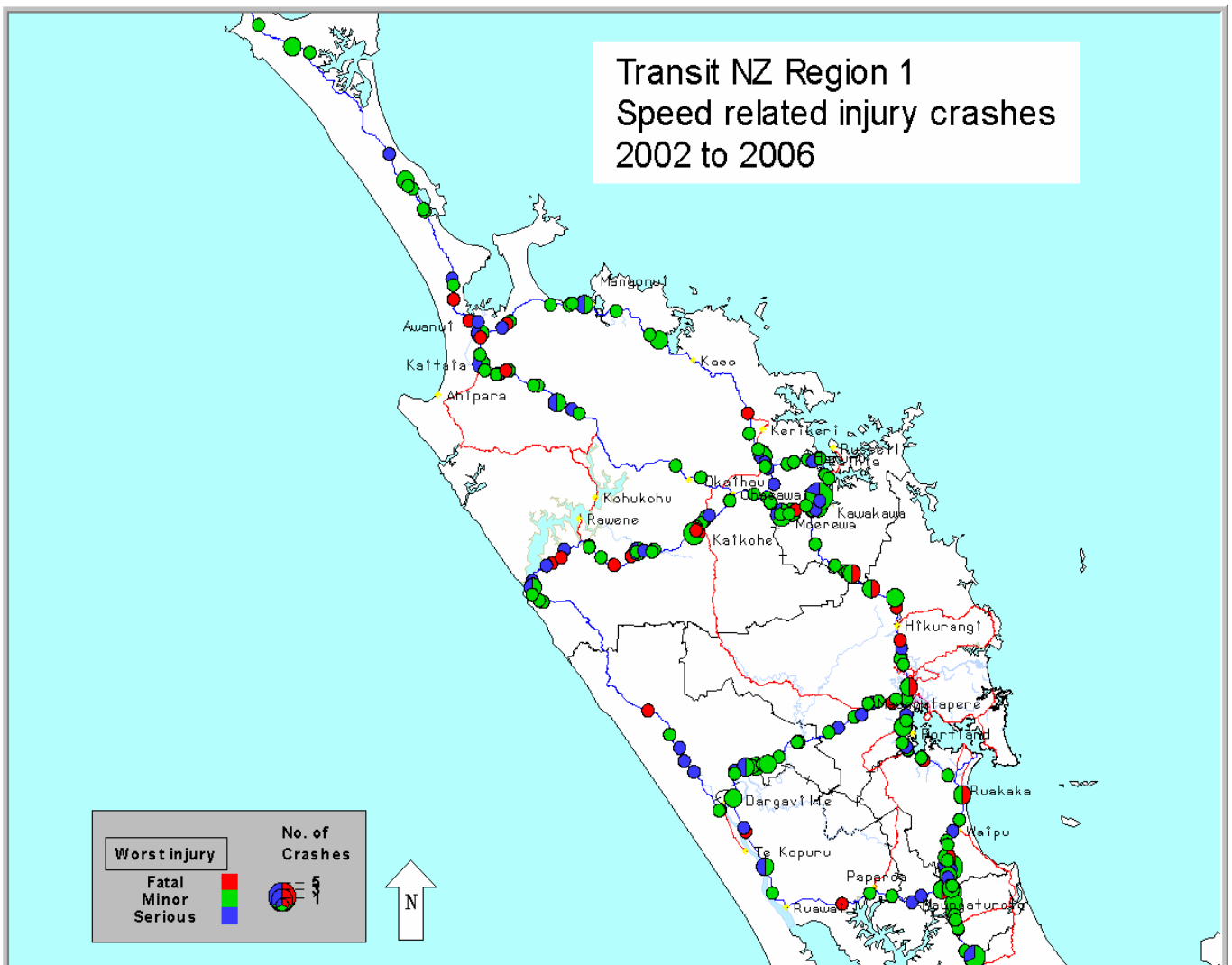
## Speed continued

The two sites with four or more speed related injury crashes in the past five years are:

- SH 11 1430 metres north of Waikare Road, where there have been five crashes, four in wet conditions
- SH 1N 3000 metres south of Waipu Gorge Road

Further information about speed related injury crashes on State Highways in Transit NZ R1 (2002 to 2006):

- 43 deaths, 94 serious injuries and 272 minor injuries
- 76 percent of at fault drivers are male
- 87 percent are mid-block crashes
- 44 percent are wet road crashes
- The worst month is December, best is May
- Worst day of week Saturday, best Monday
- 76 percent of speed-related injury crashes were bend loss of control crashes



## National issues

This section contains some brief information on the key national road safety issues as measured in Transit NZ Region 1. They may have been covered elsewhere in this document or not be a specific issue.

### Speed

“Too fast” was recorded in 22 percent of injury crashes in the district in the last five years resulting in 43 deaths and 366 injures.

Speed as a factor in crashes is fluctuating from year to year in the region.

Male drivers accounted for 76 percent of the at fault drivers.

### Alcohol

Alcohol was involved in 16 percent of injury crashes in the region in the last five years resulting in 33 deaths and 255 other injuries. The number of injury crashes involving alcohol is not decreasing.

### Failure to give way

Failure to give way or stop was reported in 12 percent of all reported injury crashes for the last five years resulting in 9 deaths and 211 other injuries.

Sixty-one percent of at fault drivers in injury crashes were male.

### Restraints

The Ministry of Transport conducts surveys of restraint use. The results of these surveys are at a regional level, and may not be fully appropriate to a Local Authority. The results are obtainable from the Ministry of Transport website.

<http://www.transport.govt.nz/belts-index/>

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