

road safety issues

Rodney District

Land Transport New Zealand has prepared this road safety issues report. It is based on reported crash data and trends for the 2000–2004 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 the Rodney District.

The data in this report applies only to the local roads within the Rodney District. There is a separate Transit New Zealand report for state highways.

The issues remain similar to those of previous years. The four main issues discussed in this report were chosen because crashes with these characteristics had the highest numbers of fatal injuries. Serious injuries were also significant in these issues, as depicted in a chart in the overview section.

Focusing on crashes resulting in severe injury is consistent with the national *Road Safety to 2010* strategy and the *Auckland Regional Road Safety Plan*. Both of these documents set targets for reductions in deaths and hospitalisations arising from road crashes. While this publication highlights only four issues, crash types not specifically covered also need to be addressed if these targets are to be met.



2004 road trauma for Rodney District



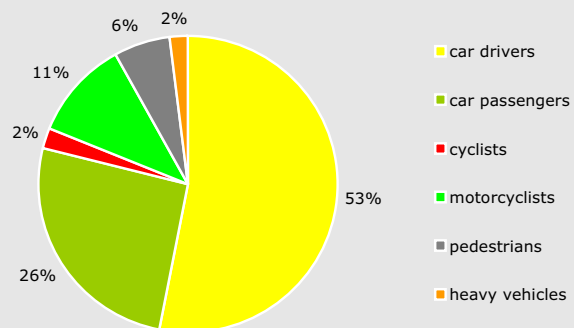
Deaths	19
Serious casualties	84
Minor casualties	279



Fatal crashes	16
Serious injury crashes	64
Minor injury crashes	164
Non-injury crashes	450

Fatal and serious casualties

User type 2000–2004



Estimated social cost of crashes*

Social cost (\$ million)



*The estimated social cost includes loss of life or life quality (estimated by the amount New Zealanders are prepared to pay to reduce their risk of fatal or non-fatal injury), loss of output due to injuries, medical and rehabilitation costs, legal and court costs, and property damage. These costs are expressed at June 2004 prices.

Major road safety issues

Rodney District

- Loss of control on bends
- Roadside hazards
- Speed
- Alcohol

Nationally

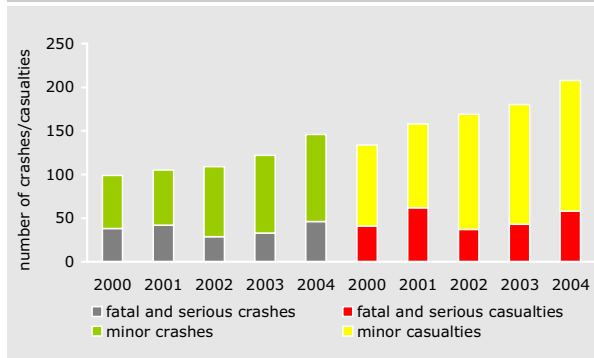
- Speed
- Alcohol
- Failure to give way
- Restraints

Overview

Crash and casualty trends

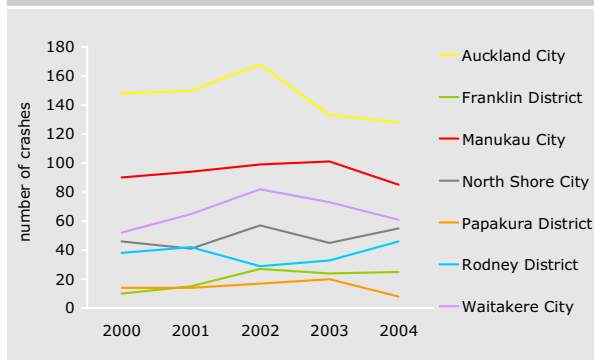
The overall number of crashes and casualties has increased steadily in recent years. Minor injury crashes and casualties have increased yearly, to be about 60 percent higher in 2004 than in 2000. A five-year trend is not obvious with fatal or serious injury crashes; however, the last three years have shown an upward trend in both crash and casualty numbers, in a similar fashion to the minor crash category.

Crash and casualty numbers – injury crashes 2000–2004



The graph below shows the Rodney District fatal and serious crash numbers as compared with other territorial local authorities (TLAs) in the Auckland Region.

Fatal and serious crash trends 2000–2004

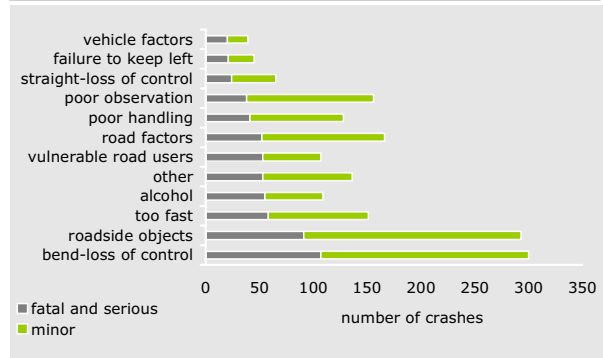


Main crash characteristics

The issues considered for discussion in this report were chosen because they showed the highest numbers of fatal and serious injuries, as shown in the graph below. It is clear that several other characteristics are also significant, and need to be addressed to reduce crash numbers. Alcohol and speed factors have been selected; however, the graph shows similar figures for the categories of poor observation, poor handling, road factors, vulnerable road users and other.

Other is a group of miscellaneous factors that includes any of the 300-plus individual crash factors that fall outside of the 16 specific road safety report crash factor groups.

Main crash characteristics 2000–2004



The categories on the vertical axis are an assortment of entities, including factors associated with crashes, road user groups, crash movement types, and crashes that involved hitting a roadside hazard.

Any one crash may appear in multiple categories (with no blame apportioned), eg a crash involving a speeding motorcyclist who swerved to avoid a drunk pedestrian at a corner, would be counted in the vulnerable road user, alcohol, speed and loss of control on a bend categories.

Vulnerable road users include motorcyclists, pedestrians, cyclists, skateboarders, power-cyclists and wheeled pedestrians. (The latter two groups had two and one casualties respectively.)

Selected crash situations

The following table shows the percentages for all injury crashes and for fatal and serious injury crashes, for several variables, in the Rodney District from 2000 to 2004.

	All injury crashes	Fatal and serious
Dry road	69%	73%
Wet road	30%	26%
Dark	33%	35%
Light	67%	65%
Open road	61%	64%
Urban	39%	36%
Intersection	19%	18%
Mid-block	81%	82%

Crashes in dry conditions, at night, on rural roads, and away from intersections, tended to result in higher injury severity. This may be due to the higher speeds generally associated with crashes under these circumstances. All of these factors have shown an increase in crash numbers from 2003 to 2004. Intersection crashes increased 55 percent and urban crashes 41 percent in this period.

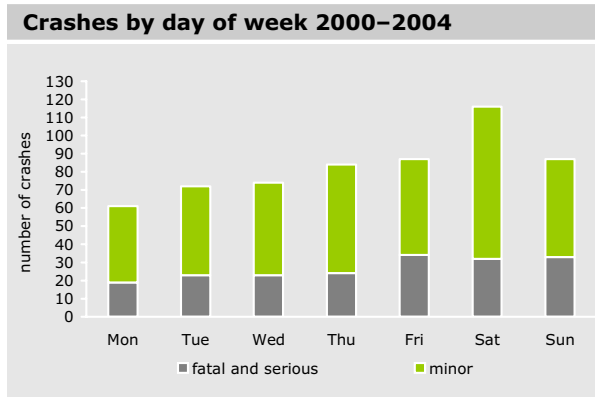
Higher risk of severe injury is also associated with certain types of road user, as shown below.

	All injury crashes	Fatal and serious
Motorcyclists	9%	16%
Cyclists	2%	3%

These road users are often difficult to see, and sometimes position themselves in an unexpected way on the road. They have little physical protection in the event of a crash.

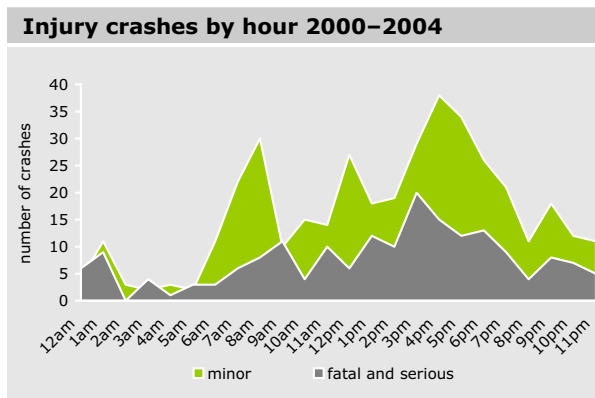
Crash times

The number and severity of crashes generally increased through the week. Perhaps tiredness or work concerns decreased concentration. Social events tend to be toward the end of the working week.



Most crashes occurred from mid-afternoon to mid-evening, with another peak around 9 am.

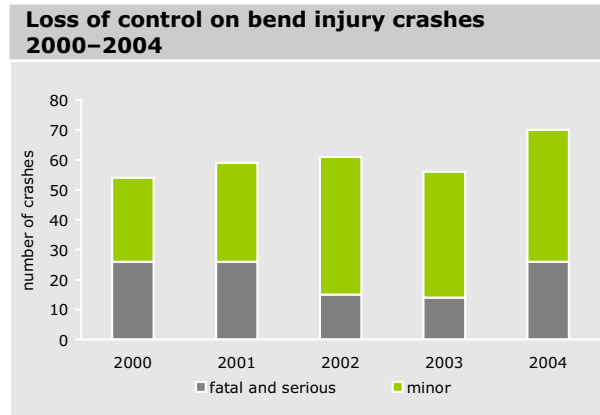
A very high proportion (74 percent) of alcohol-related crashes occurred at night, while speed-related crashes were also over-represented (40 percent) at night.



Loss of control on bends

Between 2000 and 2004, 57 percent of crashes resulting in fatal or serious injury and 47 percent of all crashes in the Rodney District were due to loss of control on bends. The number of injury crashes rose

substantially last year, largely due to the increase in fatal and serious crashes, from 14 in 2003 to 26 in 2004. These resulted in six fatalities and 23 serious injuries. Loss of control on bend crashes, particularly in urban areas, were significantly more common in the Rodney District than in similar local authorities or all of New Zealand.



Crashes at bends usually involved a driver losing control of his/her vehicle and had the following main characteristics.

Crash characteristic	Injury crashes
Loss of control—not head-on	69%
Loss of control—head-on	28%
Loss of control—intersection	3%
Single vehicle	70%
Roadside hazard struck	94%
Rural road	74%
Excessive speed	38%
Poor handling	31%
Road factors	27%
Alcohol	26%

Poor handling was predominantly loss of control except where a vehicle fault or road conditions were implicated. Many of these crashes occurred under heavy braking.

Around 46 percent of crashes on bends were located on just 10 roads.

Road	Number of crashes
Coatesville-Riverhead H'way	26
Old North Rd	22
East Coast Rd	20
Whangaparaoa Rd	15
Kahikatea Flat Rd	14
Mangawhai Rd	11
South Head Rd	9
Leigh Rd	7
Muriwai Rd	7
Matakana Rd	6

Roadside hazards

Between 2000 and 2004, roadside objects were struck in 74 percent of the fatal or serious crashes, and also in 71 percent of all crashes in the district. Injury crash numbers increased again last year, resulting in a three-year increasing trend. However, on rural roads in the Rodney District since 2002, this crash type has been around 10 percent lower when compared with its peer group of local authorities and all of New Zealand.

On urban roads, the proportion of crashes into roadside hazards is generally 10 percent above that of similar authorities, and up to 20 percent more than all of New Zealand rates.

Crashes involving roadside hazards 2000–2004



In total, 400 roadside hazards were struck in 581 injury crashes between 2000 and 2004. These crashes resulted in 18 fatalities, 95 serious injuries and 292 minor injuries in this period. There were five fatalities in 2004 involving crashes with roadside hazards. On both urban and rural roads in the Rodney District, trees, ditches and cliffs/banks were hit more frequently than in other similar local authorities and all of New Zealand.

The roadside hazards most frequently struck are shown in the following table.

Roadside hazard	Number of strikes
Ditch	73
Cliff/bank	68
Tree	63
Post/pole	49
Fence	51
Over bank	22
Parked vehicle	15

Solid objects or unprotected hazards near the side of a road increase the likelihood of severe injuries occurring in a crash. A programme to remove hazards or mitigate their effects based on risk would be beneficial. This could include:

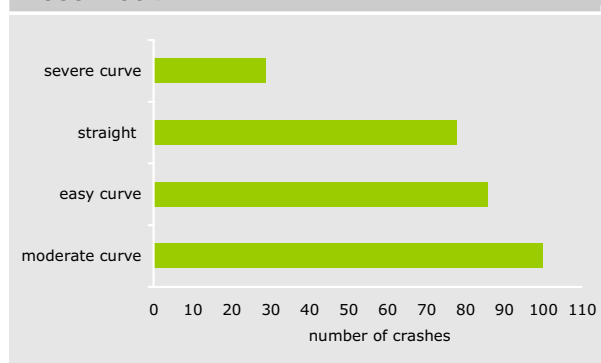
- a long-term initiative to resite transmission lines
- developing and initiating a process to progressively remove banks and make ditches traversable
- installing sections of guard rail
- liaising with landscapers and planners to ensure a road safety input is included in any new development
- making landowners aware of the dangers of roadside hazards such that new fences and culvert designs include safety considerations.

Crashes where roadside hazards were struck shared many similarities with crashes on bends. Some of the main crash characteristics of injury crashes were as follows.

Crash characteristic	% of crashes
Vehicle loss of control	82%
Loss of control on a bend	67%
Rural road	67%
Single vehicle	84%
Alcohol	28%
Road factors	20%
Poor handling	29%

Most crashes where a roadside hazard was struck did not occur at severe curves. The following graph shows that most drivers misjudged easy and moderate curves or came off straight sections of road to hit these hazards.

Roadside hazard crashes by road curvature 2000–2004



Approximately 43 percent of crashes into roadside hazards were located on just 10 roads. They were the same roads listed in the table in the previous section, except South Head Road is omitted and Sandspit Road is included.

Speed

Speed was a factor in 31 percent of all fatal and serious crashes for the years 2000–2004. In 25 percent of all injury crashes, inappropriate speed was a factor. Over this period, excessive speed has been a factor in 17 deaths on Rodney District roads, eight in 2004 alone. Crash numbers have been increasing steadily since 2000. Fatal and serious crashes show a five-year rising trend with quite a large step in both 2001 and 2004. The occurrence of urban speed-related crashes in the Rodney District is significantly worse than for all of New Zealand and slightly worse than for similar local authorities. The Rodney District is on a par with all of New Zealand and its peer group local authorities for rural speed-related crashes.

Speed-related injury crashes 2000–2004



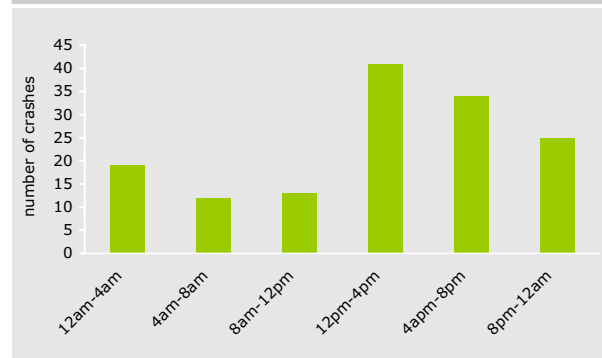
Reducing speeds to appropriate levels is an important road safety goal. Excessive speed increases the likelihood of a crash occurring by reducing the time available for drivers to respond to hazardous situations, as well as increasing the severity of injuries. Research has shown that a one km/h reduction in mean speed can produce up to a three percent reduction in injury crashes.

Specific information relating to speed-related crashes within the district is shown in the table below.

Crash characteristics	Injury crashes
Male drivers at fault	82%
Drivers aged 15 to 29	70%
Loss of control	87%
Single vehicle	64%
Mid-block location	84%
Wet road	39%
Night-time	41%
Alcohol also a factor	29%
Roadside hazard struck	66%

Speed-related crashes were often accompanied by other factors, the most prominent being alcohol (29 percent), poor handling (23 percent), road factors (21 percent) and poor judgement (14 percent). Road factors frequently involved a slippery road surface, and to a lesser extent the condition of the road surface. Poor handling involved loss of control except where a vehicle fault or road conditions were implicated. Poor judgement involved basically either a miscalculation (of speed, distance or position) or inexperience.

Speed-related injury crashes by time period 2000–2004

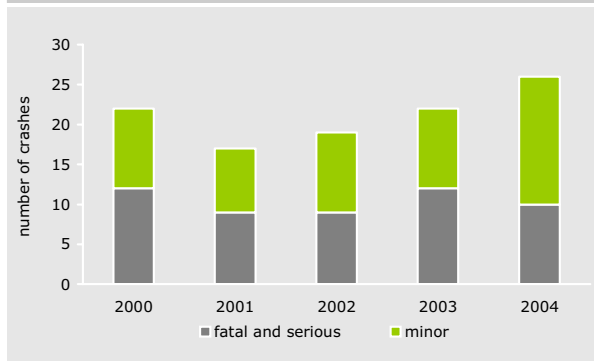


Crashes were most common between noon and 4 pm, with the highest numbers recorded on Saturday, then Thursday, followed by Sunday. The hours from 4 pm to 8 pm also featured on these three days.

Alcohol

Alcohol was a factor in 28 percent of fatal and serious crashes occurring between 2000 and 2004 in the Rodney District. Eighteen percent of all injury crashes also had alcohol as a factor. Injury crash numbers have been rising since 2001, and although there was a drop in fatal crash numbers in 2004, there was a large increase in serious injury crashes. The Rodney District had comparable levels of alcohol-related crashes to all of New Zealand and to similar local authorities. Two people died last year in alcohol-related crashes.

Alcohol-related injury crashes 2000–2004



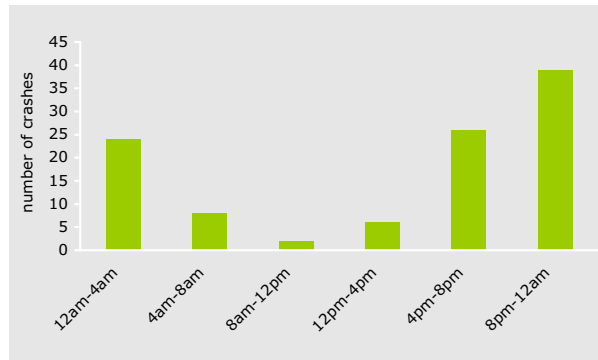
Studies show that the risk of being involved in a crash increases rapidly as a driver's blood alcohol level rises. A driver over the legal limit (80 mg of alcohol per 100 ml of blood) is three times more likely to be involved in a crash than a sober driver.

Some of the main characteristics of alcohol-related crashes are tabled below.

Crash characteristics	Injury crashes
Male drivers at fault	73%
Female drivers at fault	24%
Drivers aged 15 to 29	51%
Loss of control	83%
Single vehicle	77%
Mid-block location	84%
Wet road	25%
Night-time	75%
Speed also a factor	40%
Roadside hazard struck	76%
Poor handling also a factor	25%

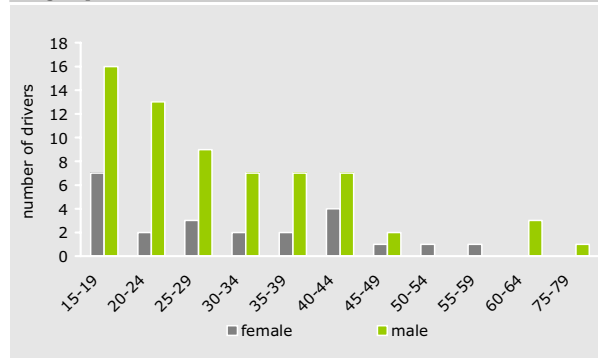
The 75 percent of crashes occurring at night can be further broken down as shown in the following graph. It is surprising how early in the evening alcohol-related crash numbers start to build.

Alcohol-related injury crashes by time period 2000–2004



The map on the next page shows the locations, severity and whether alcohol or speed were involved in crashes.

Driver age and gender in alcohol-related injury crashes 2000–2004



Young males stood out as being at fault in many alcohol-related crashes, although females under 20 also featured. While too detailed to show in a graph this size, when age is broken down to single years the trend is:

- a peak for ages 17–20
(This may relate to the lower alcohol limit of 30 milligrams for drivers less than 20 years old, meaning more drivers are classified as drunk. There may also be behavioural issues surrounding access to alcohol, how to use it responsibly and gaining more social freedoms.)
- very flat for drivers aged 21 to 41
(This shows that drivers up to their early 40s are commonly culpable alcohol crash drivers. It may be wise to ensure that the targeting of education and enforcement campaigns reaches this age group. This may again relate to behavioural issues surrounding access to alcohol and how to use it responsibly.)
- a step down to a lower plateau for drivers above age 41.

Road environment

The Land Transport New Zealand crash reduction monitoring database shows that works implemented as a result of crash reduction studies have reduced crashes at the study sites by 49 percent in the Rodney District (57 percent at state highway sites and 20 percent at local road sites).

Recommendations from recent studies should be implemented as soon as possible. Analysis of the crashes at all completed sites should be undertaken regularly to ensure that safety has been improved and sites re-examined if no improvement has occurred. Further crash reduction studies should be undertaken to continue the reduction of crashes.

Where to get more information

For more specific information relating to road crashes in the Rodney District, please refer to the 2000 to 2004 road safety data report, the Land Transport New Zealand's crash analysis system or contact the office listed below right.

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