

road safety issues

July 2002

The Land Transport Safety Authority (LTSA) has prepared this Road Safety Issues Report. It is based on reported injury crash data and trends for the 1997–2001 period. The intent of the report is to highlight the key road safety issues and to identify possible ways to reduce the number of road deaths and injuries in the Rodney district. The issues identified in this report are based on analysis of data for the district’s local roads only.

Although state highway issues are covered in a separate report, crashes on state highways are included in the casualty and social cost charts on this page.

The bulk of the district’s crashes occurred on rural roads (three quarters of fatal and 61 percent of all injury crashes). Compared with similar districts throughout New Zealand, these roads appear less safe than many others. Crash and casualty rates per 100 million vehicle kilometres of travel on Rodney district’s rural roads were higher than in most other districts. The past five years have seen a rise in crash numbers on rural roads.

On the other hand, urban roads had lower crash and casualty rates than most other districts, and an improving trend in crash numbers. The main focus of the road safety effort in the Rodney district in the immediate future must therefore be concentrated on rural roads.

The four issues discussed in this report have a strong rural road focus. Although the issues overlap (speed, alcohol and roadside objects feature prominently in loss of control crashes) they nevertheless account for three quarters of the district’s injury crashes. Addressing these issues will hopefully be a step towards improved levels of safety.

Major road safety issues:

Rodney district

Loss of control at bends

Roadside objects

Speed

Alcohol

Nationally

Speed

Alcohol

Failure to give way

Restraints



2001 road toll for Rodney district



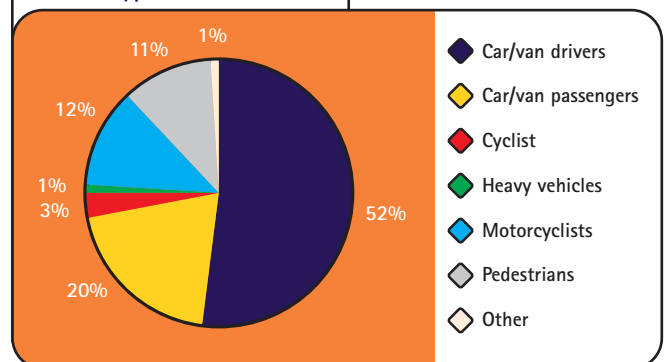
Deaths	15
Serious casualties	97
Minor casualties	205



Fatal crashes	13
Serious injury crashes	63
Minor injury crashes	126
Non-injury crashes	355

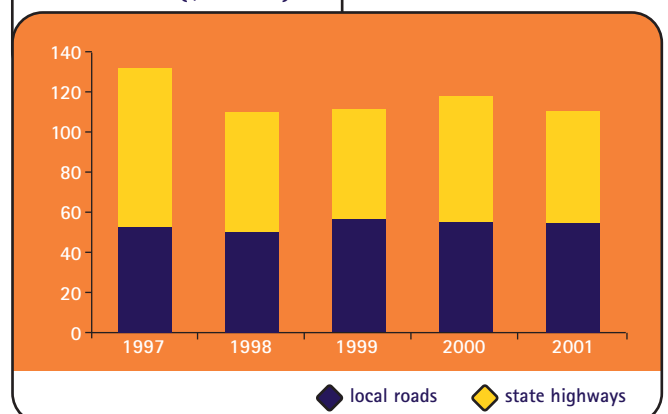
Road deaths 1997–2001

User type 1997–2001



Estimated social cost of crashes*

Social cost (\$ million)

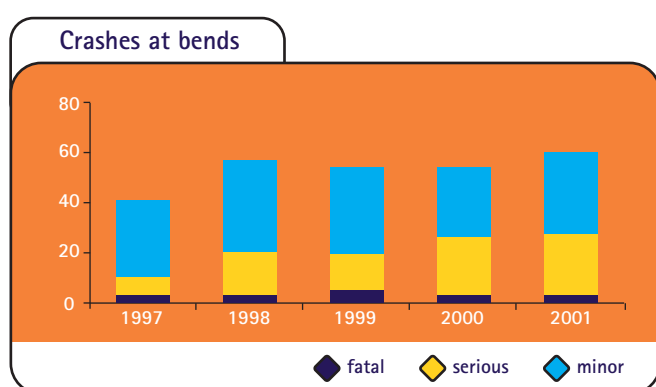


* The estimated social cost includes loss of life or life quality (estimated by the amount New Zealanders are prepared to pay to reduce their risk of fatal or non-fatal injury), loss of output due to injuries, medical and rehabilitation costs, legal and court costs, and property damage. These costs are expressed at June 2001 prices.



Loss of control at bends

Vehicles losing control at bends was the most serious issue in the Rodney district, accounting for 51 percent of all injury crashes, including 57 percent of fatal and serious injuries. Over two thirds of these (71 percent) occurred on rural roads. The chart below shows crashes for the past five years and reveals an upward trend in numbers.



Almost three quarters of loss of control crashes involved a single vehicle. The remaining crashes were primarily head-on collisions with other vehicles, and these generally had more severe injuries due to the higher overall impact speeds.

Roadside objects were struck in around two thirds of loss of control crashes, the most common being banks, ditches, poles and trees. These are discussed in more detail as a separate issue.

Alcohol and speed were major factors in these crashes, while poor handling and road factors (primarily slippery surfaces) also featured prominently. Drivers at fault were generally male (72 percent) and relatively young. Just over three quarters were between 15 and 39 years old.

The table below shows features of loss of control crashes that were highly represented when compared with the district average for all crashes:

Description	Loss of control	District average
Alcohol	26%	19%
Speed	36%	23%
Wet road	35%	30%
Dark	40%	32%
Hill road	50%	41%

The higher proportion of crashes at night may be indicative of the need for improved delineation, while wet road crashes may be related to surface friction issues.

Listed below are the 'top 10' roads in Rodney district involving crashes at bends:

Road	No. of crashes	
	Injury	Fatal/serious
Coatesville Riverhead Highway	33	5
East Coast Road	26	12
Old North Road	21	8
Whangaparaoa Road	15	8
Kahikatea Flat Road	11	6
Muriwai Road	11	6
Matakana Road	9	7
South Head Road	6	5
Peak Road	6	5
Mangawhai Road	6	3

Recommended actions

Engineering

- The district should consider developing a strategic plan to tackle this issue. This could include:
 - developing a priority list of routes or individual sites to be realigned or upgraded to a higher geometric standard
 - a systematic investigation of surface friction, drainage, shoulder width, delineation, lighting and signposting standards
 - mitigating the dangers of roadside hazards.

Enforcement

- Support targeted enforcement of speed and alcohol on routes with a history of crashes at bends.
- Support targeted enforcement of younger drivers.

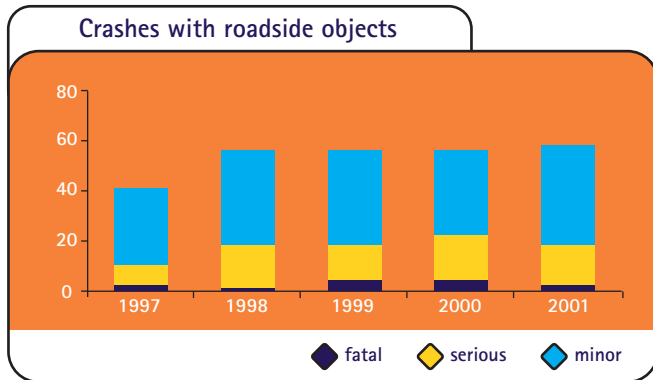
Education

- Conduct programmes aimed at improving cornering behaviour, including driving at appropriate speeds.
- Conduct programmes targeting younger male drivers.



Roadside objects

Roadside objects were struck in just over half of all injury crashes in the Rodney district, of which over two thirds occurred on rural roads. Crash numbers have been increasing over the past five years, as shown in the chart below.



Roadside objects become hazards when struck by vehicles and normally increase the severity of injury sustained by vehicle occupants. This is particularly so for single vehicle crashes, which comprise most crashes with roadside objects.

Best practice design of new roads now calls for clear zones outside the road edges, to allow errant vehicles sufficient room for safe recovery without hitting any hazards. In most cases it would be uneconomical to provide clear zones on existing roads, so the challenge for the district is to identify the most dangerous hazards and mitigate these dangers.

The most frequently struck objects are shown in the table below. In total, 358 objects were hit by vehicles in 267 crashes between 1997 and 2001.

Roadside object	No. of hits	
	Injury	Fatal/serious
Ditch	77	28
Cliff/bank	66	18
Post/pole	50	16
Tree	43	20
Fence	38	12
Parked vehicle	18	4
Over bank	17	6

Roadside objects were most often struck in loss of control crashes (82 percent) and to a much lesser extent rear-end collisions or overtaking crashes. Alcohol and speed were major factors in these crashes (each cited in roughly a quarter of crashes), along with a group of factors associated with some form of driver error, namely poor handling, poor observation and poor judgement. Road factors, in particular slippery or poor road surface, were also prominent.

Drivers at fault in these crashes were generally male (72 percent) and in the younger age groups (73 percent were between 15 and 39 years old). Saturday and Sunday had the highest crash numbers and 42 percent occurred at night.

Recommended actions

Engineering

- Develop a roadside hazard management strategy to identify and rank hazardous roadside objects, with the purpose of removing or relocating the hazards or, where this is not possible, protecting them or making them frangible.
- Continue to work with utility companies to eliminate poles and relocate services within the road reserve underground.
- Adopt the clear zone philosophy for new roads, and use the safety audit approach for new roads and upgrades of existing roads.
- Ensure there is adequate separation between parked vehicles and through traffic on major or problem routes.

Enforcement

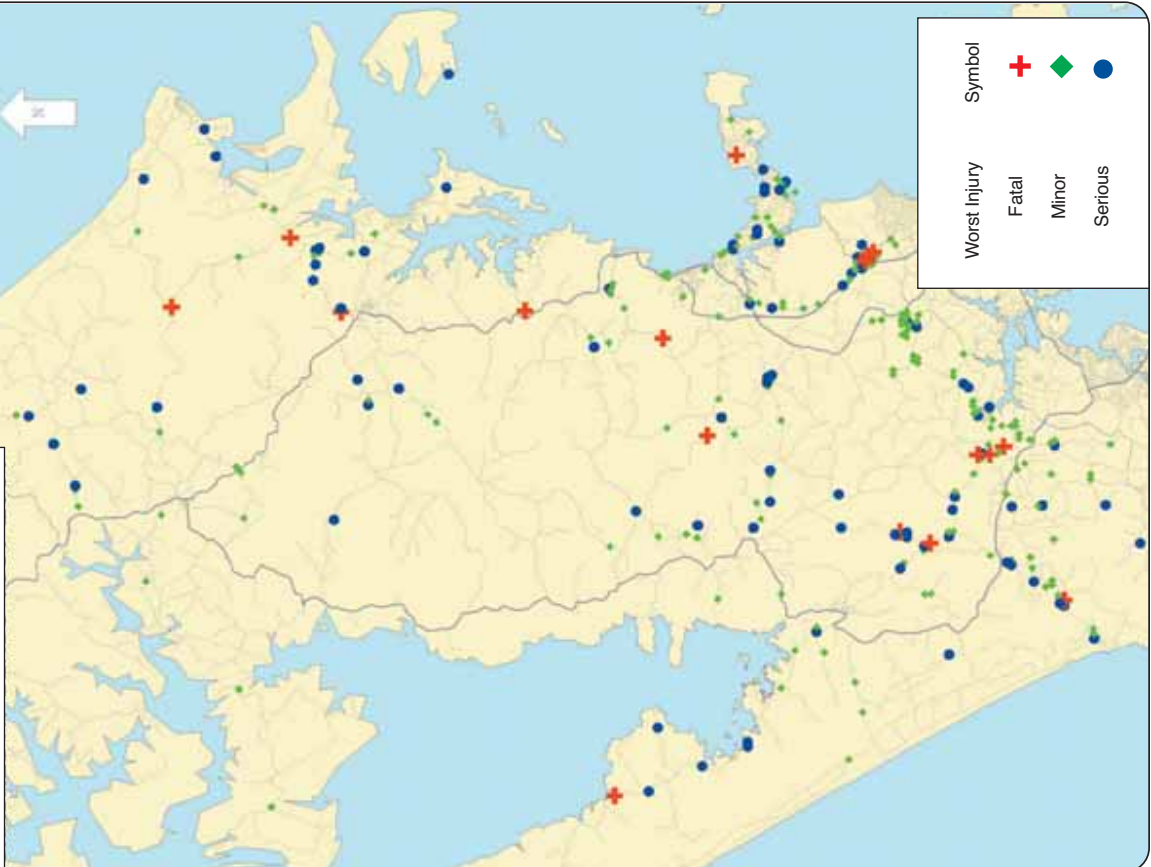
- Support targeted enforcement of speed and alcohol.

Education

- Conduct programmes to increase driver awareness of the problem.

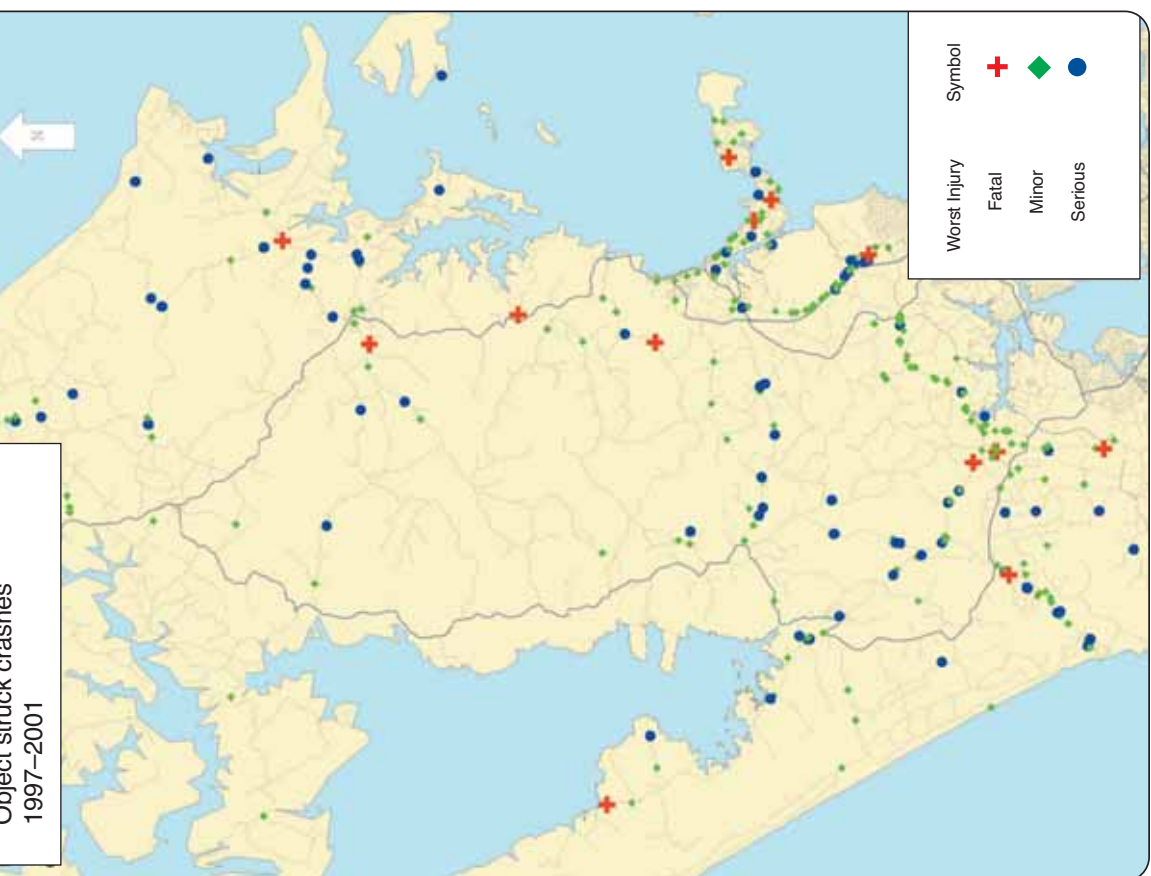
transport safety

Rodney district local roads
Crashes at bends 1997-2001

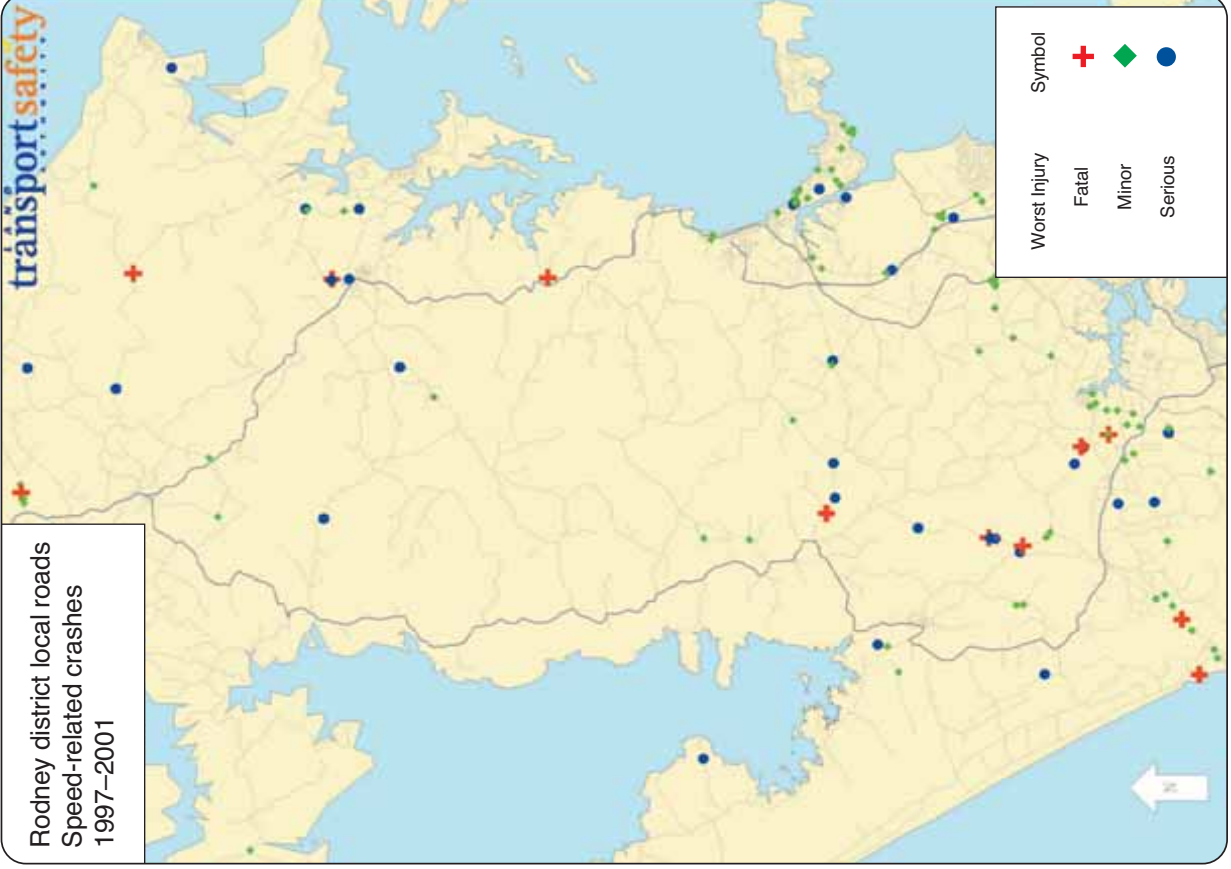


transport safety

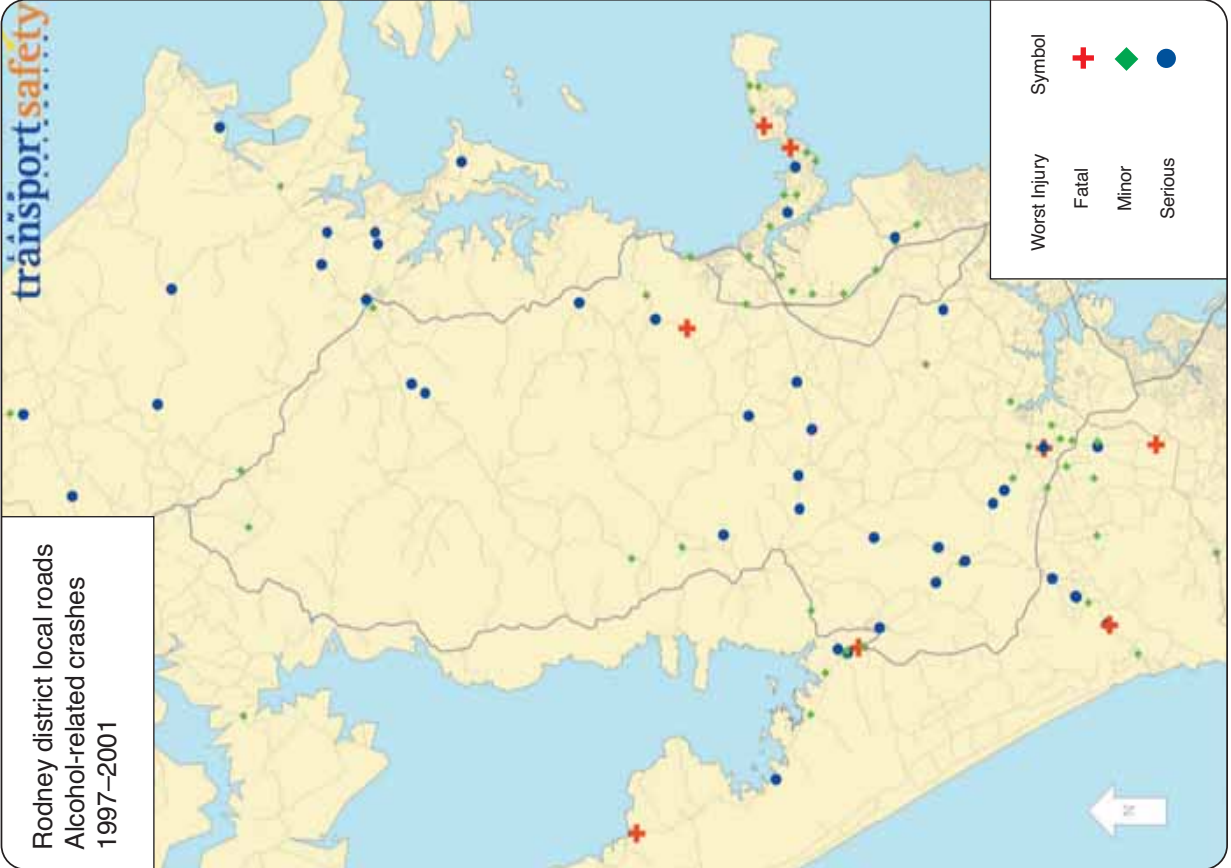
Rodney district local roads
Object struck crashes
1997-2001



Rodney district local roads
Speed-related crashes
1997-2001



Rodney district local roads
Alcohol-related crashes
1997-2001



80 Speed

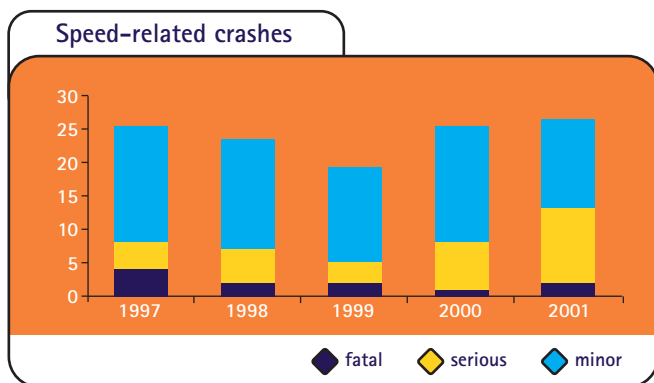
Excessive speed for the conditions was a factor in almost a third of fatal crashes and 23 percent of injury crashes between 1997 and 2001 in the Rodney district. Just over two thirds of speed crashes occurred on rural roads.

Restricting speeds to appropriate levels must remain a major road safety focus. Excessive speed hampers safety by increasing:

- the chances of having a crash, because the time available for a driver to respond to a hazardous situation is reduced
- the severity of injuries in a crash.

Average speeds in the greater Auckland region were higher than most other places in New Zealand. On rural roads, these speeds were actually increasing in defiance of the national trend towards lower speeds.

The chart below shows crash numbers in the Rodney district for the past five years. For the past two years the number of crashes has increased, following a period of reductions.



Excessive speed was primarily associated with loss of control crashes (86 percent), and to a much lesser extent overtaking and rear-end collisions. Other factors often associated with these crashes were alcohol, slippery or poor road surfaces and poor observation. Roadside objects were struck in many of these crashes, which is not surprising given the high numbers involving loss of control.

Males were the drivers at fault in 86 percent of speed-related crashes. A high proportion of drivers were in the younger age groups (84 percent were between 15 and 39 years old).

Crash numbers were relatively low on Monday and Tuesday with an even spread thereafter. Crashes at night were slightly over-represented at 40 percent compared with the district average of 32 percent.

Recommended actions

Engineering

- Conduct studies of roads/routes where excessive speed is a problem, with the purpose of improving or upgrading to appropriate and consistent standards, eg delineation, signposting, shoulder width, alignment and surface friction.
- Mitigate the dangers of roadside objects being struck.

Enforcement

- Continue targeted enforcement of high-risk times and locations.
- Implement stricter enforcement of speed limits.

Education

- Conduct programmes to improve awareness of driving at appropriate speeds for the conditions, particularly on winding roads.
- Conduct programmes designed to influence younger male drivers.



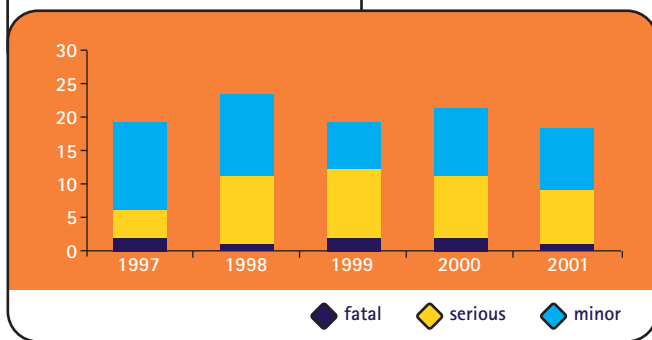
Alcohol

Between 1997 and 2001, just over a quarter of crashes involving fatal or serious injury and 19 percent of all injury crashes listed alcohol as a contributing factor. Two thirds of these were on rural roads.

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 (of 80 mg of alcohol per 100 ml of blood) is three times more likely to be involved in a crash than a sober driver.

Crash numbers in the district have remained relatively static for the past five years (see chart below), while the proportion of alcohol-related crashes remains higher than in New Zealand as a whole.

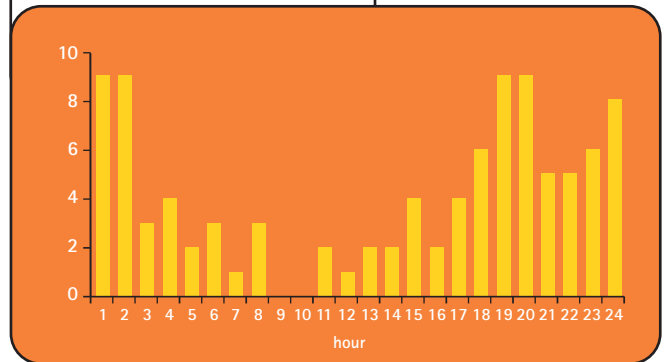
Alcohol-related crashes



Over three quarters of alcohol-related crashes involved a single vehicle running off the road after losing control. Most of these also involved roadside objects being struck. Male drivers were at fault in most crashes, with over three quarters aged between 15 and 39 years. Speed was cited as an additional factor in over a quarter of alcohol crashes while poor handling, poor observation and fatigue also featured.

A very high proportion of crashes occurred during the hours of darkness (70 percent), which is reflected in the chart below. Two thirds of crashes occurred on Friday, Saturday or Sunday.

Crashes by time of day



Recommended actions

Engineering

- Conduct studies of roads/routes where alcohol crashes are a problem, with the purpose of improving or upgrading to appropriate and consistent standards. Street lighting, delineation, signposting and road marking, including the use of wider or profiled edge lines, could be considered.

Enforcement

- Continue targeted enforcement of high-risk times and locations.

Education

- Continue programmes targeting younger male drivers.

New Zealand Road Safety Programme

Reducing trauma involves a multi-pronged approach, which includes education, engineering and enforcement. The New Zealand Road Safety Programme (NZRSP) provides funding to educate road users to change their behaviour through projects delivered by road safety co-ordinators and community groups. The programme also funds the New Zealand Police for their targeted enforcement activities and support of community road safety projects. Transfund New Zealand provides funding to local authorities for roading projects through its National Roding Programme.

Community projects

Community funding of road safety projects aims to encourage local involvement and ownership of issues, and target local resources and effort to local risks. Central to community programmes is the need to develop and motivate local partnerships in road safety to help reduce the number of deaths and injuries in the Rodney district.

Funding for community projects in the Rodney district from the NZRSP for the 2002/2003 year includes:

Project	Funding	Police hours
Road safety co-ordinator	\$38,000	
Open road speed	\$6,000	90
Eat drink and be driven	\$8,000	45
Road safe Rodney	\$7,000	50
Billboards	\$8,000	
Kia Tupato O Ngati Whatua, Kia Whakatupato I Runga I Nga Ruarahi, Kia Whakatupato I Nga Wa Katoa	\$17,450	

Police enforcement

In addition to the 185 police hours spent on community projects, a further 26,400 hours will be delivered by police in the Rodney district as follows:

Project	Hours
Strategic – alcohol/drugs, restraint, speed and visible road safety enforcement	21,490
Traffic management – crash attendance events, incidents, emergencies and disasters, traffic flow supervision	3,950
School road safety education	900
Police community services	60

Road environment

The LTSA's Crash Reduction Monitoring database shows that works implemented as a result of crash reduction studies have reduced crashes at the study sites by 47 percent in the Rodney district (54 percent at state highway sites and 14 percent at local road sites).

Recommendations from recent studies should be implemented and further studies undertaken to consider mass action or local area traffic management to reduce crash problems.

References

Rodney District Road Safety Report 1997–2001

LTSA Crash Analysis System

Where to get more information

For more specific information relating to road crashes in the Rodney district, please refer to the 1997 to 2001 Road Safety Report or the LTSA Accident Investigation System, or contact the people or organisations listed below:

Land Transport Safety Authority

Regional Manager
Peter Kippenberger

Regional Education Advisor
Rae-Anne Kurucz

Senior Road Safety Engineer
John Janssen

See LTSA staff contact details at bottom of page

Road Safety Co-ordinator

Jacki Dawson
Rodney District Council
Private Bag 500, Orewa
Phone 09 426 5169

Rodney District Council
Engineering Manager

Barry George
As above

New Zealand Police
District Strategic Traffic
Manager

Superintendent Dick Trimble
North Shore Waitakere Police
PO Box 40-003, Glenfield
Phone 09 489 4008

Auckland Regional Office

Level 6, 1 Queen Street

Private Bag 106 602, Auckland

Phone 09 377 3400, Fax 09 357 1615

www.ltsa.govt.nz

LAND
transport safety
AUTHORITY