

# road safety issues

July 2002

This Road Safety Issues Report has been prepared by the Land Transport Safety Authority (LTSA) based on reported 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 level of road deaths and injuries in the Northland region.

The bulk of the region's crashes occurred on open roads (89 percent of fatal crashes and just over two thirds of all injury crashes). Over half (57 percent) of injury crashes also occurred on state highways, including a disproportionately high three quarters of fatal crashes.

The issues identified in this report have a strong open road focus. Although the issues overlap (speed, alcohol and road factors feature prominently in loss of control crashes) they nevertheless account for almost two thirds of the region's injury crashes, including 70 percent of fatal crashes.

The good news is that crash numbers related to all of these issues have shown recent signs of improvement, particularly in 2001. This may well indicate that the many road safety initiatives implemented over the past few years, both regionally and nationally, are beginning to pay dividends. The challenge for Northland is to build on this and sustain long-term improvements that will lead to a safer region to travel in.

## Major road safety issues:

### Northland region

Loss of control at bends

Alcohol

Speed

Road factors

### Nationally

Speed

Alcohol

Failure to give way

Restraints



## 2001 road toll for Northland region



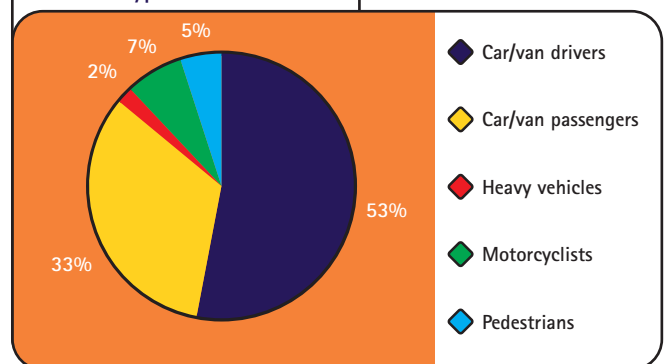
Deaths	27
Serious casualties	127
Minor casualties	303



Fatal crashes	23
Serious injury crashes	89
Minor injury crashes	156
Non-injury crashes	841

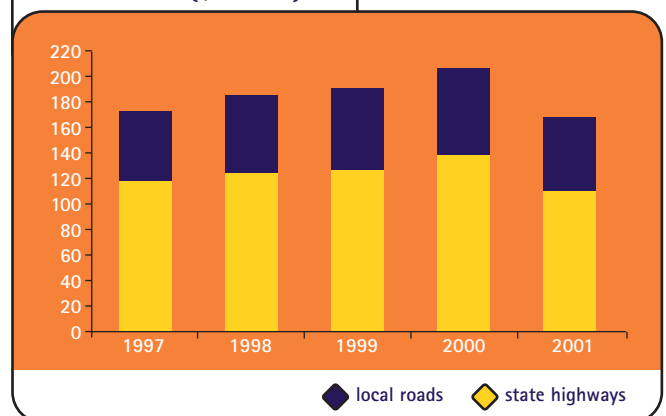
## Road deaths 1997–2001

User type 1997–2001



## Estimated social cost of crashes\*

Social cost (\$ million)

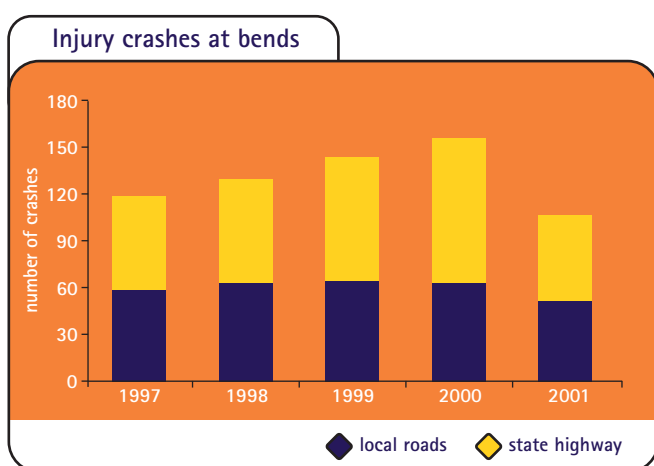


\* The estimated social cost includes loss of life or life quality (estimated by the amount New Zealanders are prepared to pay to reduce their risk of fatal or non-fatal injury), loss of output due to injuries, medical and rehabilitation costs, legal and court costs, and property damage. These costs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



## Loss of control at bends

Loss of control at bends was the most serious road safety issue in the Northland region, accounting for almost half of all injury crashes. Over three quarters of these occurred on open roads. However, last year there was considerable improvement in crash numbers, particularly on state highways, as shown in the chart below.



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

Roadside objects were struck in two thirds of loss of control crashes. Injuries suffered by vehicle occupants will often be more severe in these crashes. Ditches, banks, fences, trees and poles are most likely to cause serious or fatal injuries.

Speed and alcohol were major contributing factors in these crashes, while 'poor handling' and road factors (primarily slippery or poor road surface condition) also featured prominently. Drivers at fault were generally male (71 percent) and relatively young. Almost two thirds were between 15 and 39 years old.

Crash numbers were lowest at the start of the week and rose progressively through to the weekend. The proportion of loss of control crashes occurring at night or on wet roads was higher than the regional average for all crashes, and could be indicative of the need for improved delineation or surface friction on winding roads.



## Recommended actions

- Develop a priority list of routes or individual sites to be realigned, or upgraded to a higher geometric standard.
- Conduct systematic investigation, and improvement where necessary, of road surface condition (including friction values), drainage, shoulder width, delineation, lighting and signposting.
- Remove or relocate dangerous roadside objects or, where this is not feasible, protect the hazard or ensure it is breakable.
- Support targeted enforcement of speed and alcohol on routes with a history of crashes at bends.
- Conduct road safety programmes aimed at improving cornering behaviour, including driving at appropriate speeds.
- Conduct safety programmes targeted at younger male drivers.

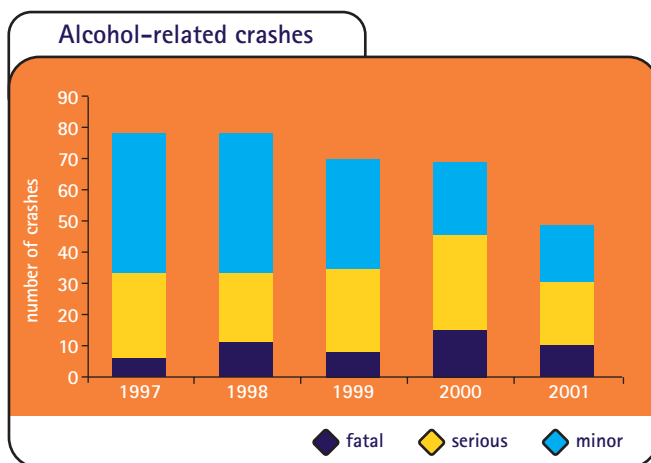


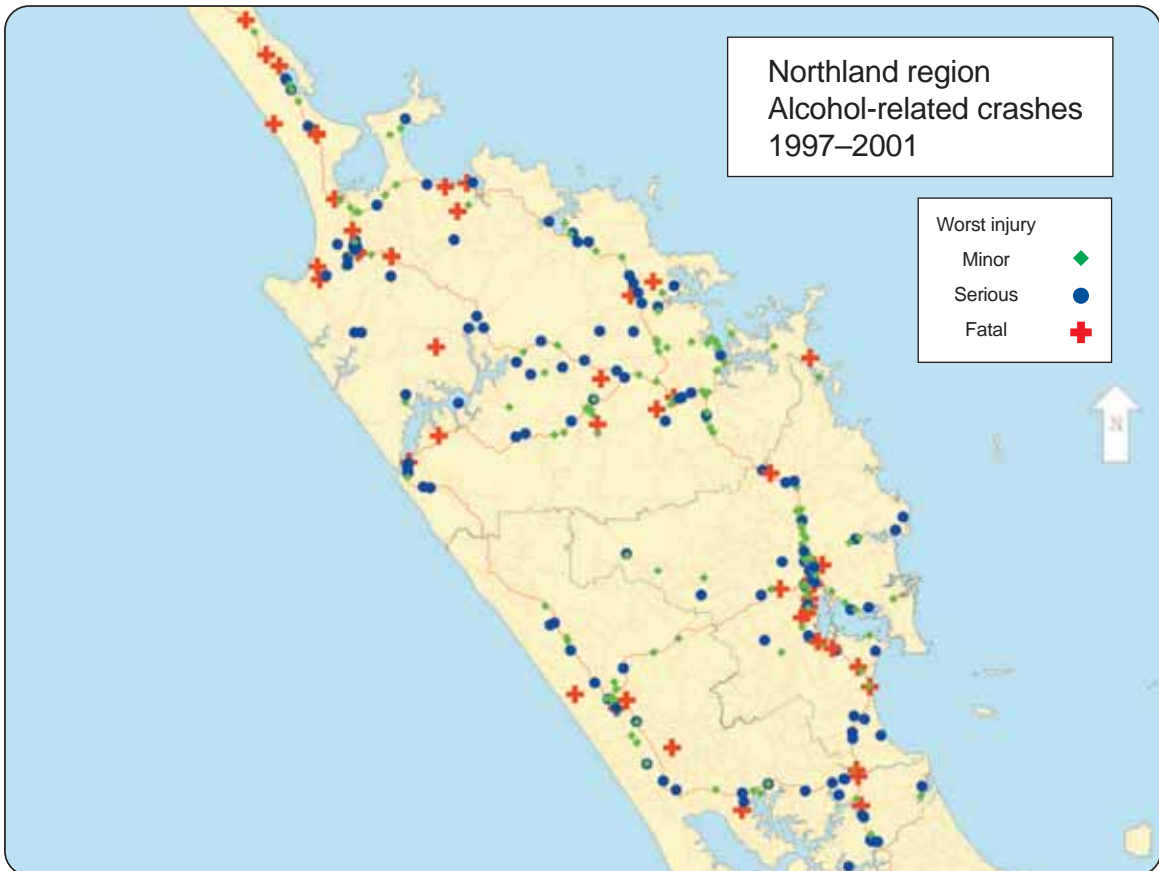
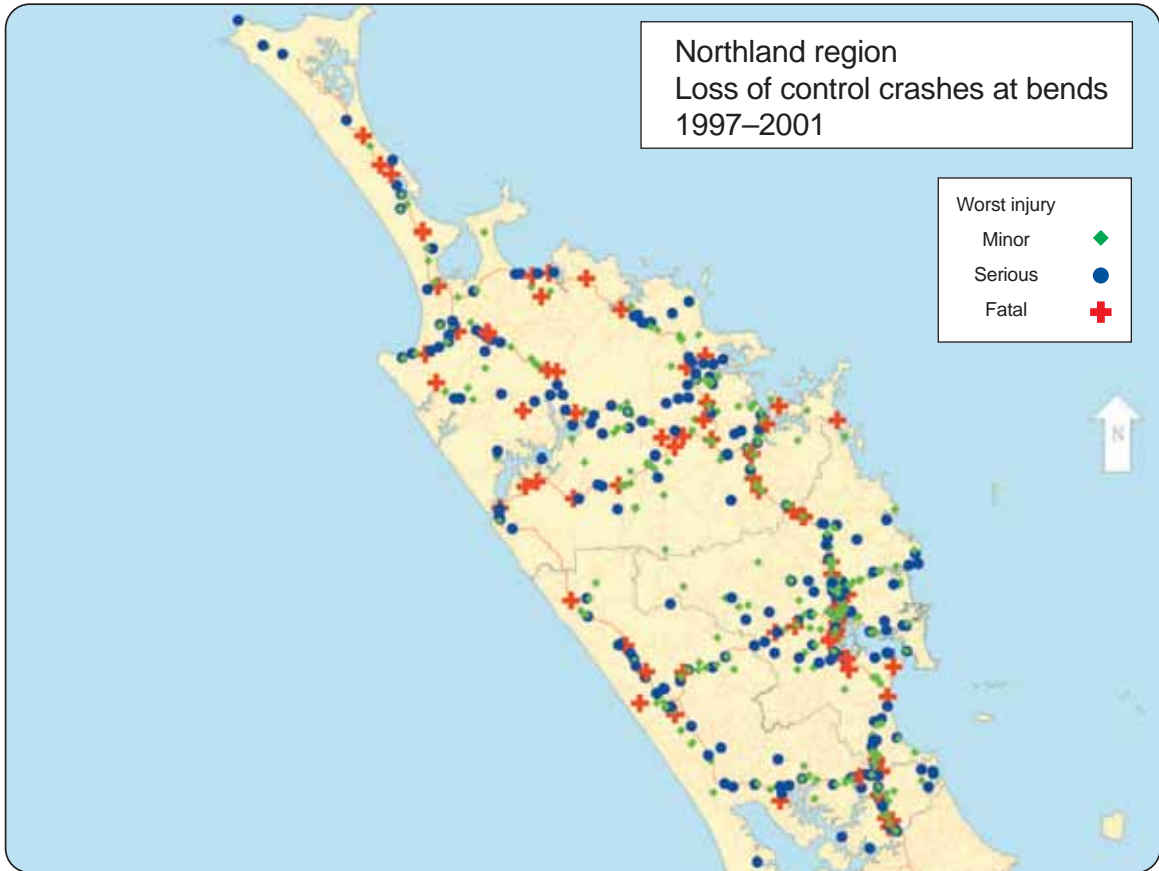
## Alcohol

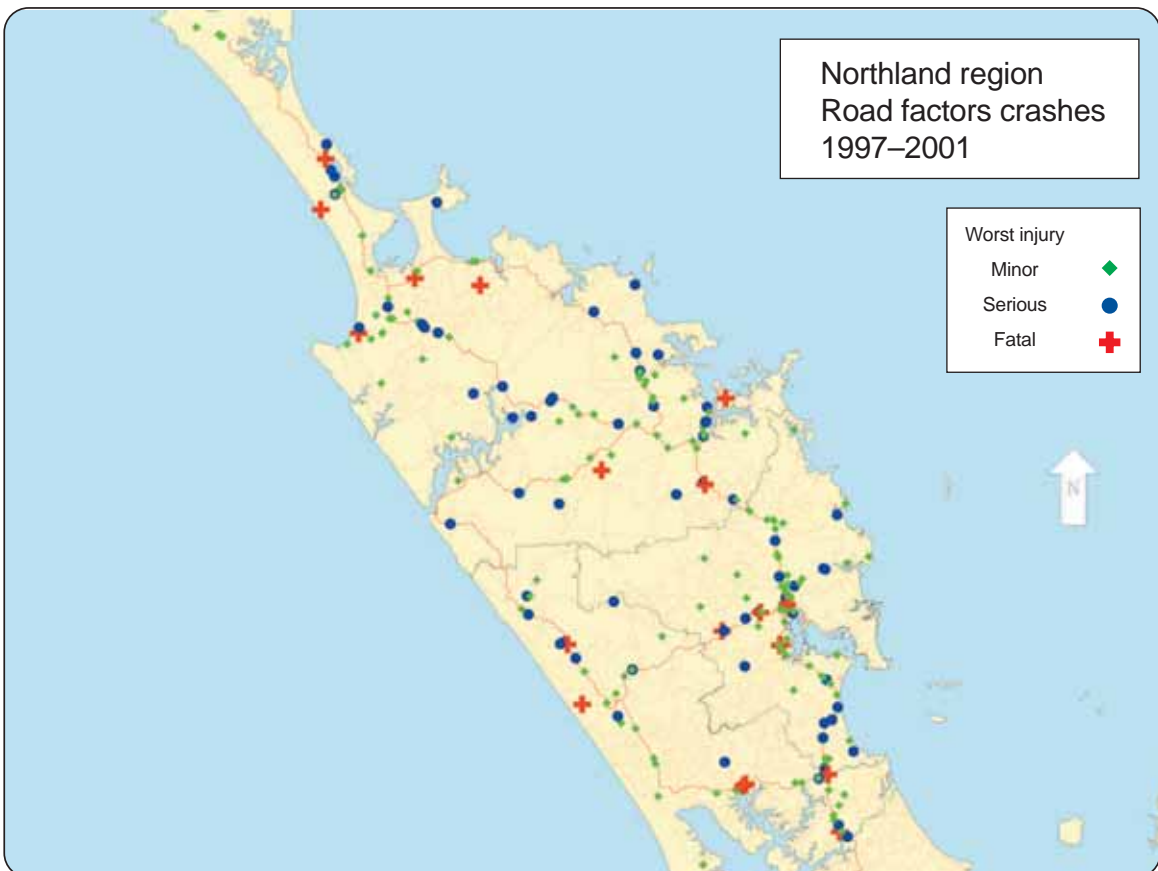
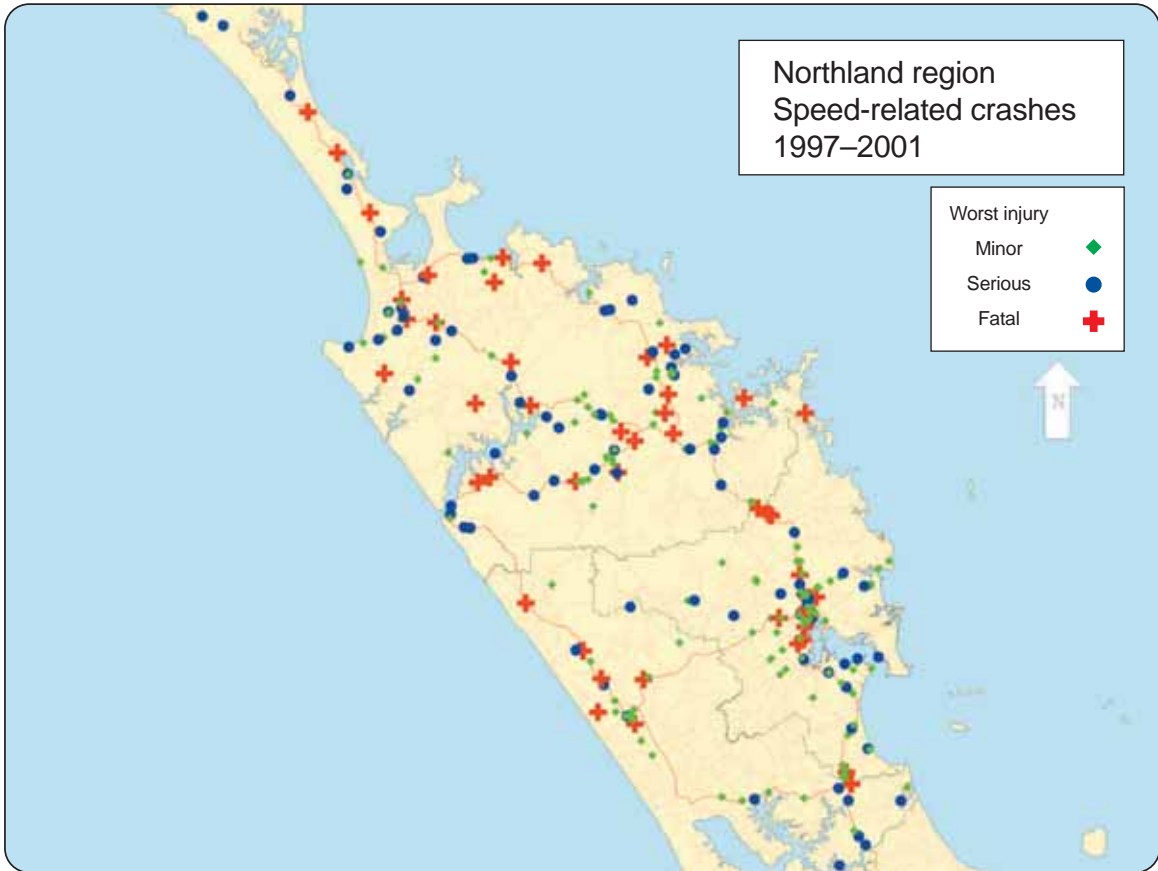
Just under a quarter of injury crashes and 35 percent of fatal crashes in the region had alcohol as a contributing factor. Over two thirds of these were on open roads.

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.

The good news is that the number of alcohol-related crashes has been reducing for the past few years, particularly in 2001. This improvement was mostly in the number of crashes resulting in minor injuries, as crashes involving fatal and serious injuries remained fairly static. The chart below illustrates this point.

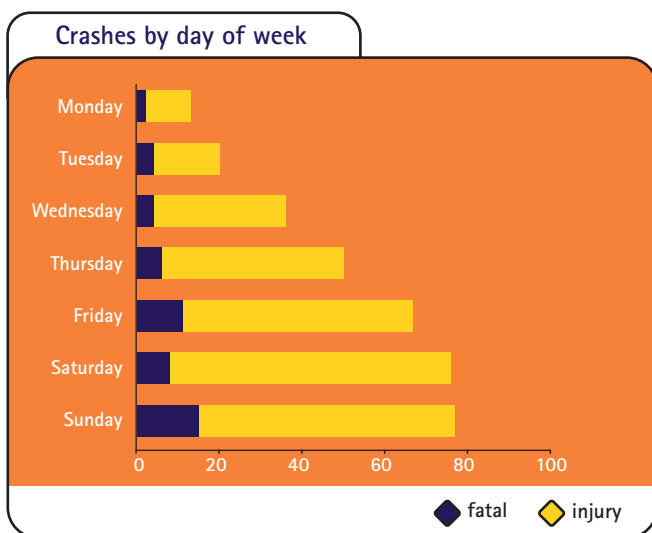






Over two thirds of alcohol-related crashes involved a single vehicle running off the road after losing control. Most of these also involved roadside objects being struck. Male drivers were involved in most crashes, with over three quarters aged between 15 and 39 years. Speed was an additional factor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

Alcohol-related crashes were twice as likely to occur during the hours of darkness than most other crashes in the region. The peak period for these crashes was between 4pm and 5am. Crash numbers rose progressively throughout the week with 80 percent occurring from Thursday to Sunday. This is illustrated in the chart below.



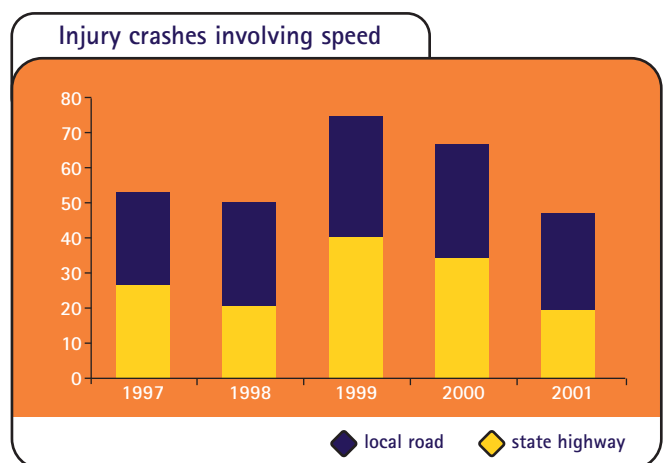
## Recommended actions

- Conduct studies of roads and routes where alcohol-related 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.
- Continue targeted enforcement of high-risk times and locations.
- Continue education and publicity programmes targeted at younger male drivers.

## 80 Speed

Excessive speed for the conditions was a factor in 22 percent of injury crashes and 35 percent of fatal crashes between 1997 and 2001. Almost three quarters of these crashes occurred on open roads.

There has been a huge improvement in the number of speed-related crashes on Northland roads in the past few years, especially in 2001. Since 1999, crashes involving excessive speed have reduced by 51 percent on state highways and by 20 percent on local roads. The chart below illustrates this point.



Northland currently has the lowest open road speeds of any region in the country, according to the Land Transport Safety Authority's annual speed surveys. However, it is no time for the region to rest on its laurels. 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.

Most factors involving excessive speed in the region were associated with loss of control crashes (88 percent) and, to a much lesser extent, rear-end collisions and overtaking crashes. Roadside objects were struck in many of these crashes which is not surprising given the high numbers involving loss of control. Other factors often associated with these crashes were alcohol, slippery or poor road surface and poor handling or poor judgement. A disproportionately high number of crashes occurred during the hours of darkness or on wet roads.

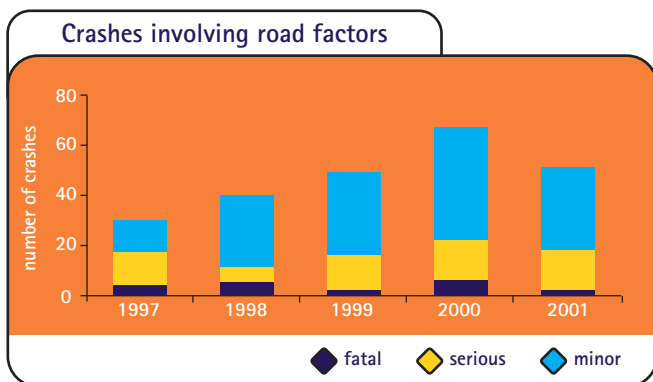
Males were the drivers at fault in 73 percent of these crashes, and once again the younger age groups featured prominently, with 84 percent between 15 and 39 years old.

## Recommended actions

- Conduct studies of roads and 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.
- Continue targeted enforcement of high-risk times and locations.
- Strictly enforce speed limits.
- Conduct education and publicity programmes to heighten driver awareness of the risks of speed, particularly on winding roads.
- Continue education via community programmes and media campaigns for young male drivers.

## Road factors

Factors associated with the condition or maintenance of roads accounted for 17 percent of injury crashes between 1997 and 2001. After several years of increasing crash numbers, there was a welcome improvement last year as shown in the chart below.



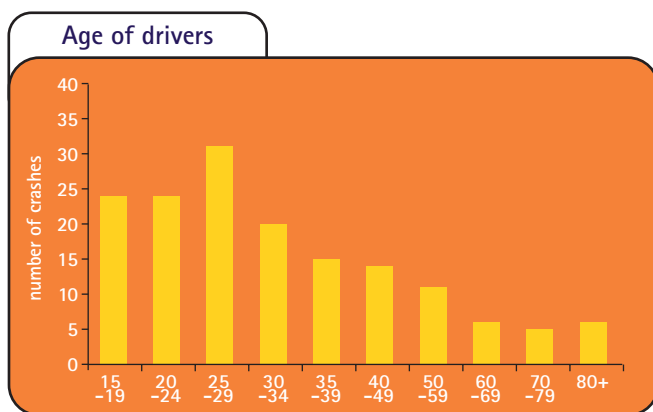
Most road factors mentioned in crash reports were connected with the condition or slipperiness of the road surface. The most prominent amongst these were:

- slippery surface from rain
- deep loose metal surface
- loose material on seal
- surface under construction or maintenance
- slippery surface from oil or fuel
- road unusually narrow.

Sight distance restrictions caused by inadequate vertical or horizontal geometry along the road (crests or bends) also contributed to some crashes.

Most crashes (81 percent) involving road factors occurred on rural roads, and unusually high proportions were on wet roads (57 percent) or on unsealed roads (22 percent). The crashes generally involved loss of control, where excessive speed for the conditions, poor handling and alcohol impairment were contributing factors.

The gender of drivers at fault was distributed more evenly for crashes involving road factors than for the other issues covered in this report, with a 60/40 split between males and females. Likewise, age distribution was a little more even, although younger drivers still predominated. Details are shown in the chart below.



Most crashes occurred during daylight hours, with over three quarters in the period between 8am and 8pm. Crashes were spread fairly evenly throughout the week, apart from lower numbers on Monday and higher numbers on Sunday.

## Recommended actions

- Conduct studies of roads and routes where crashes involving road factors are a problem, with the purpose of improving or upgrading to appropriate and consistent standards eg skid resistance, signposting, sight distance, shoulder width and drainage.
- Ensure that routine maintenance works are carried out at appropriate intervals eg grading of metal roads and trimming of vegetation.
- Continue targeted enforcement of speed and alcohol at high-risk times and locations.
- Continue education via community programmes and media campaigns to highlight the need for drivers to slow down, particularly at bends and through roadwork sites.



# 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 Roothing 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 Northland region.

Funding for community projects across Northland from the NZRSP for the 2002/2003 year includes:

Project	Funding	Police hours
Road safety co-ordinator	\$38,000	
Road safety co-ordinator	\$27,000	
Speed control for the conditions	\$22,000	200
Rural alcohol watch (RAW)	\$26,000	1,000
Restraint use programme	\$36,000	300
Intersection safety	\$10,000	
Driver licence training assistance	\$40,000	400
Safety culture	\$5,000	
Students against driving drunk (SADD)	\$9,500	
Small projects community involvement	\$12,300	
Sign project maintenance	\$4,500	

## Police enforcement

In the Northland region, 56,055 police hours will be delivered by police as follows:

	Hours
Strategic – drinking or drugged driver, restraint device, speed, visible road safety enforcement	41,755
Traffic management – crash attendance events, incidents, emergencies and disasters, traffic	9,530
School road safety education	2,200
Police community services	670
Regional community projects	1,900

In addition to these hours there is the delivery by the highway patrol, commercial vehicle investigation, the enhanced alcohol CBT project and traffic camera operations.

## Road environment

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 49 percent in the Northland region (55 percent at state highway sites and 44 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

Northland Region Road Safety Report 1997–2001

LTSA Crash Analysis System

## Where to get more information

For more specific information relating to road crashes in the Northland region, 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  
Land Transport Safety Authority  
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Phone 09 377 3400

Regional Education Advisor  
Karen Sandoy  
See Whangarei Office details below  
Phone 09 459 6314

Senior Road Safety Engineer  
John Garvitch  
See Whangarei Office details below  
Phone 09 459 6315

### Road Safety Co-ordinator

Gillian Archer  
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### New Zealand Police

Inspector Rex Knight  
Private Bag 9016, Whangarei  
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Inspector Paul Carpenter  
PO Box 31, Kerikeri  
Phone 09 407 4850

### Transit New Zealand

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