

# road safety issues

July 2002

The Land Transport Safety Authority (LTSA) has prepared this Road Safety Issues Report. It is 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 number of road deaths and injuries in North Shore City.

The issues identified in this report are based on analysis of crash data for the city'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.

When compared with other New Zealand cities, North Shore City is a relatively safe place to travel. City roads as a whole have lower crash and casualty rates per 100 million vehicle kilometres of travel than most other cities, and are below the national average. The city also fares well when comparing crashes per 10,000 population, and has a reasonably low ratio of serious and fatal injuries in crashes to all injury crashes.

There is still room, however, for improvement. Injury crash numbers in North Shore City for the past five years have remained relatively static, while crash rates in other countries, including Australia, are well below those in New Zealand. If New Zealand is to improve its level of road safety, all road controlling authorities must endeavour to further lower their crash rates.

## Major road safety issues:

### North Shore City

Loss of control at bends

Crossing or turning crashes

Poor observation

Pedestrians

### Nationally

Speed

Alcohol

Failure to give way

Restraints



## 2001 road toll for North Shore City



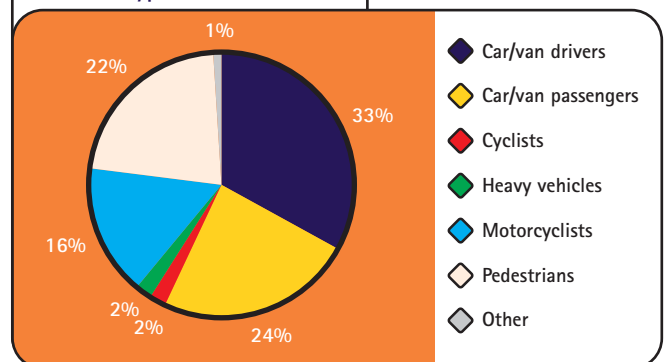
Deaths	8
Serious casualties	41
Minor casualties	355



Fatal crashes	8
Serious injury crashes	35
Minor injury crashes	273
Non-injury crashes	1,262

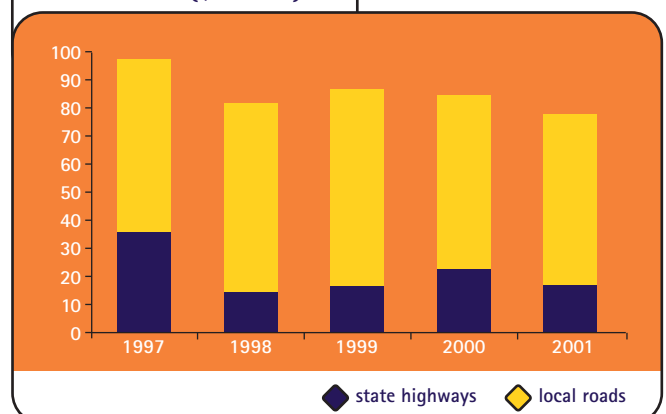
## Road deaths 1997–2001

User type 1997–2001



## Estimated social cost of crashes\*

Social cost (\$ million)



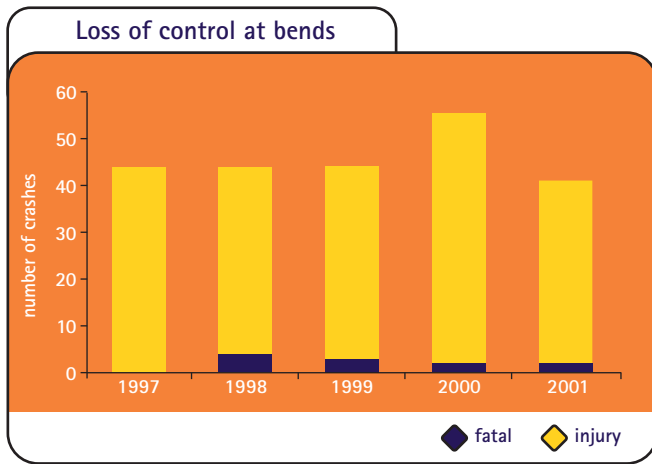
\* The estimated social cost includes loss of life or life quality (estimated by the amount New Zealanders are prepared to pay to reduce their risk of fatal or non-fatal injury), loss of output due to injuries, medical and rehabilitation costs, legal and court costs, and property damage. These costs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



## Loss of control at bends

In terms of crash severity, the most serious issue in North Shore City was vehicles losing control at bends. Just over a third of all fatal crashes were of this type. Eighteen percent of all injury crashes involved a loss of control at bends.

The following chart shows the number of these crashes over the past five years. Although crash numbers were down last year, the overall trend remained flat. Improving this trend in the years ahead should be a major focus for road safety within the city.



Almost two thirds of loss of control crashes involved a single vehicle. When other vehicles were involved it normally resulted in a head-on crash. Due to the high impact speeds, injuries were more severe. Head-on crashes resulting from a loss of control accounted for almost two thirds of the fatal crashes. Around five percent of out of control vehicles hit a vulnerable road user, such as a pedestrian or cyclist. Motorcyclists were also extremely vulnerable, accounting for just seven percent of injuries but 36 percent of fatalities.

A high proportion (65 percent) of loss of control crashes resulted in a roadside object being struck. Injuries suffered by the vehicle occupant would often be more severe when an object was hit. Posts or poles, fences, trees and parked vehicles were most likely to cause serious or fatal injuries. The city needs to be aware of the damage that roadside objects can inflict and plan to mitigate the effects.

Drivers at fault in loss of control crashes tended to be male (70 percent) and young. Exactly half the drivers were aged between 15 and 24 years, and a further 31 percent were aged between 25 and 39 years.

Alcohol and speed were major factors in these crashes. The percentage of loss of control crashes with these factors is shown in the table below and compared with the city average. Other points of interest are also shown in the table.

Description	Loss control	City average
Alcohol	33%	13%
Speed	33%	10%
Wet road	43%	28%
Dark	49%	32%
Hill road	55%	39%

The high percentage of wet road crashes indicates that surface friction could be an issue, while crashes occurring in the dark could be indicative of the need for improved delineation.

## Recommended actions

### Engineering

- North Shore City should consider adopting a strategic plan to reduce crash numbers and injury severity. This could include:
  - realigning or improving the geometric standards of routes or individual sites where high crash numbers occur, based on a priority list
  - a systematic investigation of surface friction, drainage, shoulder width, delineation, lighting and signposting standards
  - removing or relocating dangerous roadside objects or, where this is not possible, protecting the hazard or ensuring it is frangible.

### Enforcement

- Support targeted enforcement of speed and alcohol at bends.
- Support targeted enforcement of young drivers.

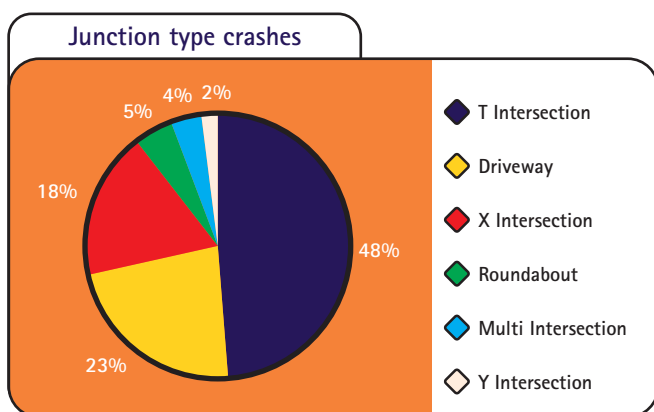
### Education

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

## Crossing or turning crashes

Conflicts between crossing or turning vehicles predominated in the city, accounting for almost a third of injury crashes. Injuries tended to be less severe than loss of control crashes, however, and only nine percent of fatal crashes were of this type. Crash numbers fluctuated between 55 and 106 in the past five years, with no clear trend emerging.

While most of these crashes occurred at intersections, almost a quarter were at driveways in mid-block locations. The chart below shows the breakdown.



All crossing or turning crashes involved failure by one party or more to give way or stop in time. Failure to give way was the predominant problem, the biggest factor being where a turning vehicle failed to give way to a non-turning vehicle. Where vehicles were required to come to a stop, most offences occurred at traffic signals (84 percent) rather than at Stop signs. Other factors associated with these crashes were failure to look properly, misjudging the speed of an oncoming vehicle and restricted visibility.

The most common crash movements involved right turns into and out of side roads or driveways and right-angle collisions as shown below.



Cyclists were involved in 17 percent of crossing or turning crashes, which was more than double their average involvement rate within the city. To a lesser extent, motorcyclists were also over-represented. This suggests that both cyclists and motorcyclists might be difficult to see, particularly in busy or complex situations. Most cyclists were also young and relatively inexperienced in dealing with demanding traffic situations.

Analysis of drivers at fault showed a different picture to most other crashes within the city, with over half (54 percent) being female. Young drivers once again predominated, with 45 percent aged between 15 and 29 years.

Most crashes occurred during the day. There was a reasonably even spread between 7am and 8pm, with a peak between 4pm and 6pm. The highest numbers of crashes occurred on Thursday and Friday, with much lower numbers on Sunday.

## Recommended actions

### Engineering

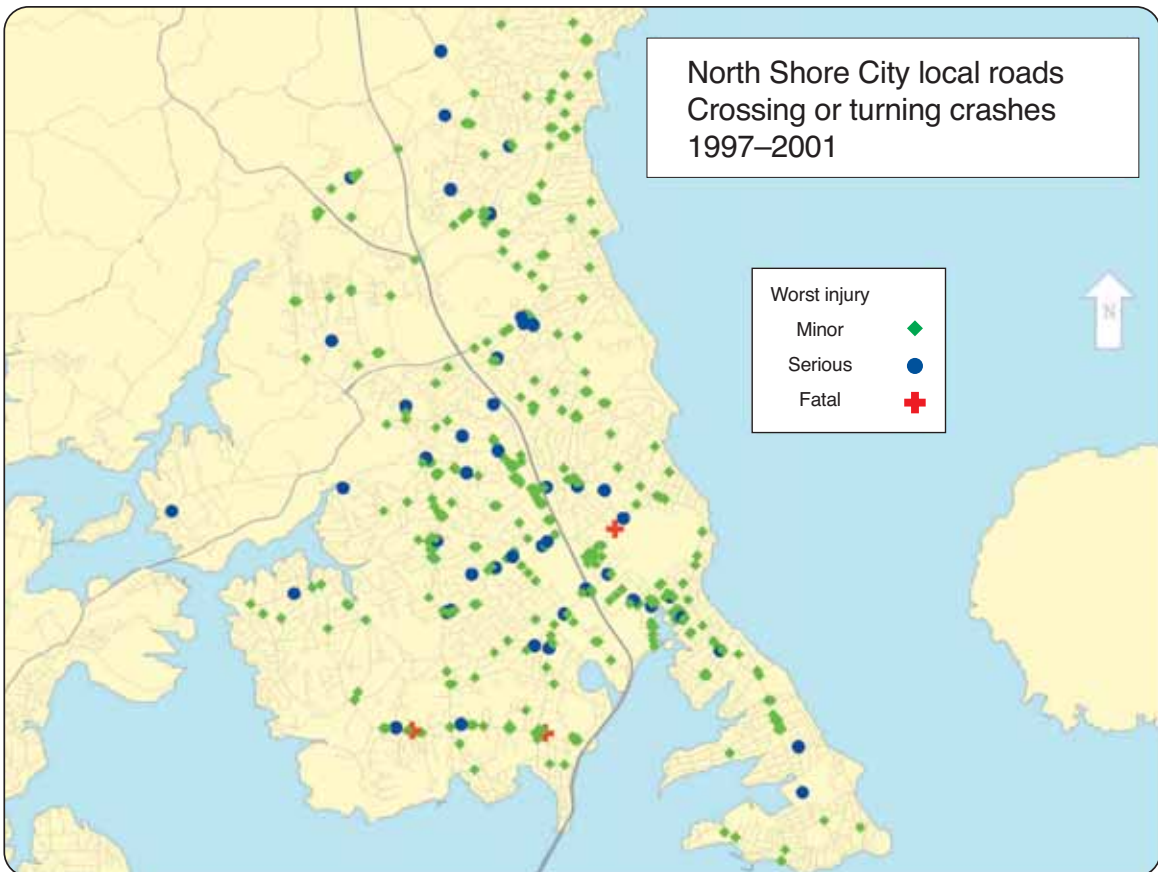
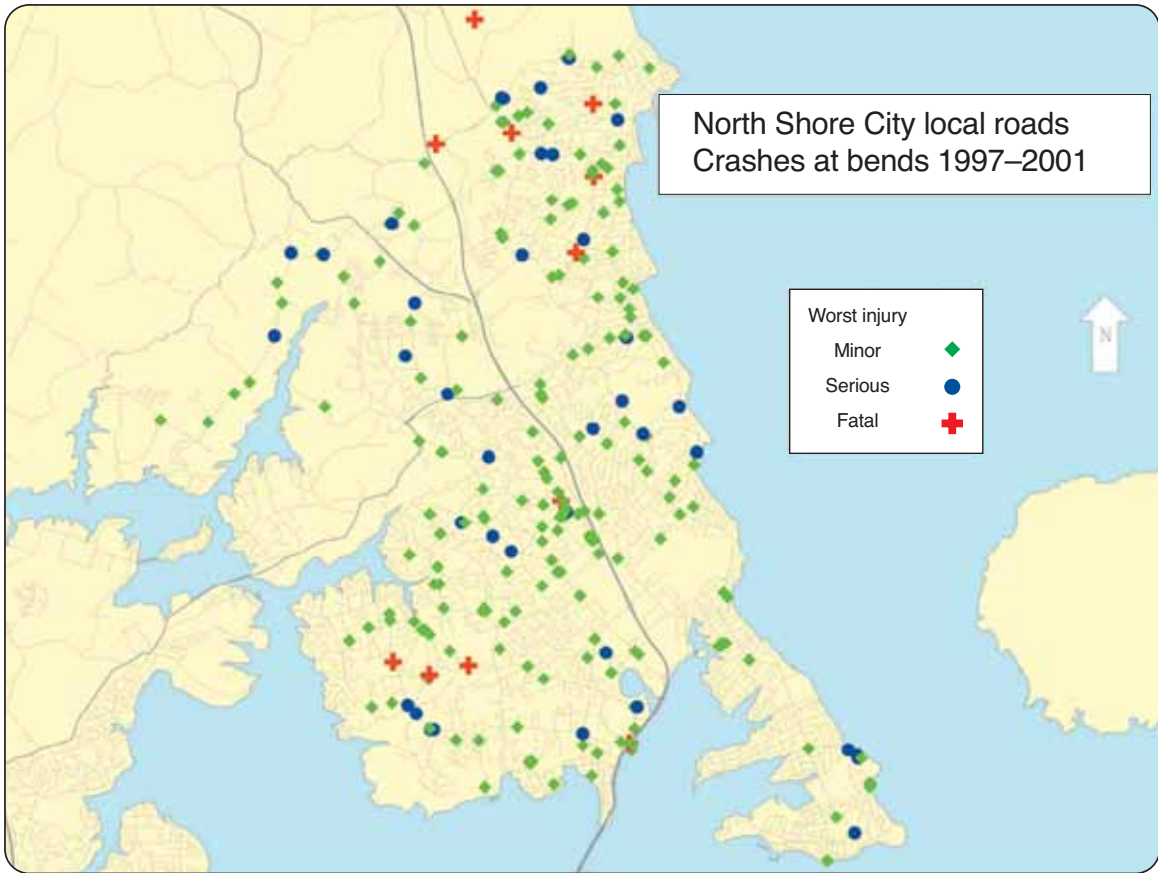
- Continue crash reduction studies at black spot sites.
- Carry out systematic checking and upgrading (where necessary) of appropriate controls and visibility at intersections.

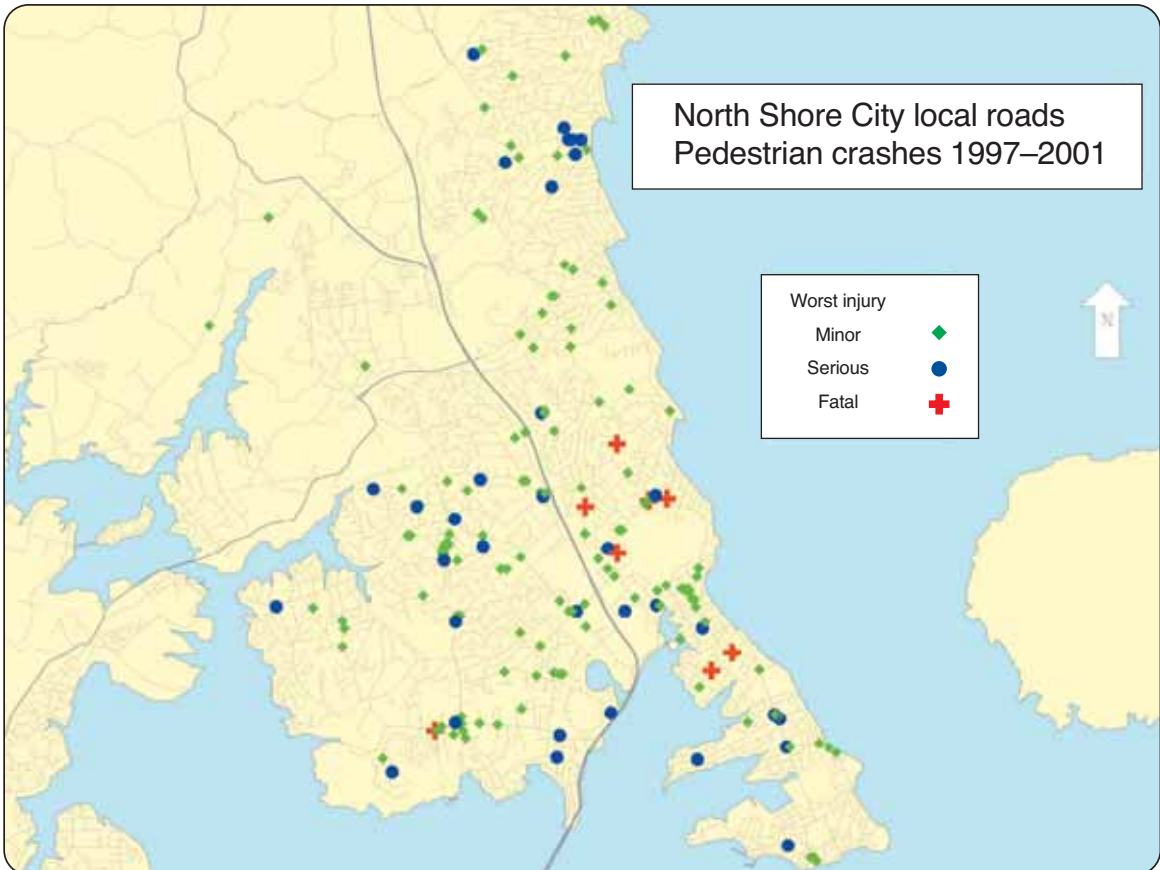
### Enforcement

- Conduct enforcement programmes targeting drivers who fail to give way or stop.

### Education

- Conduct programmes aimed at improving knowledge of right of way rules.
- Conduct programmes to promote appropriate behaviour at intersections and driveways, including adequate checking for other traffic and selecting a safe gap.
- Conduct programmes to educate cyclists and motorcyclists of the need to take special care at intersections and be visible (eg using bright clothing and headlights).





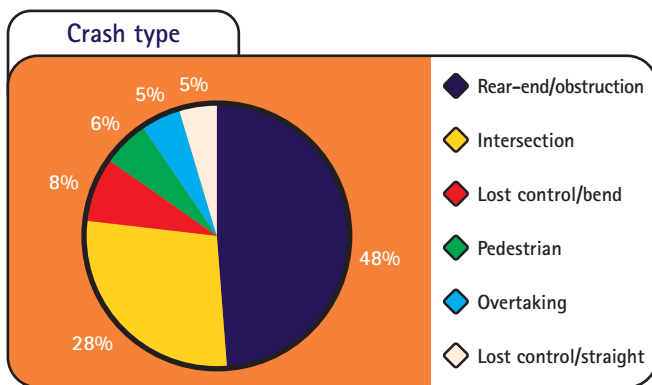
## Poor observation

Poor observation on the part of drivers contributed to over a quarter (28 percent) of crashes in North Shore City. It also contributed to 22 percent of fatal crashes. In 2001, there was a sharp increase in the number of these crashes.

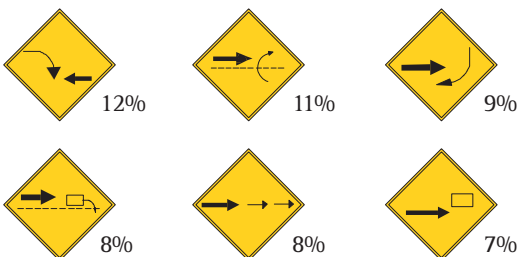
These crashes comprised a group of factors where drivers were inattentive, distracted, or simply failed to look for other traffic in time. The most common individual factors were:

- did not check behind when changing lanes (17 percent)
- did not check when required to give way to traffic from another direction (15 percent)
- failed to notice vehicle slowing (14 percent).

Typically these crashes involved the driver of a vehicle in the traffic stream failing to respond in time to a situation ahead (as in rear-end type crashes), or not checking properly for other traffic at intersections or driveways. The chart below provides more details.



The main crash movements associated with poor observation crashes were:



Most crashes occurred during the day, with peak times between 8am to 9am and 2pm to 6pm. Crash numbers were highest from Thursday to Saturday and lowest on Sunday.

There was an almost even split between males (51 percent) and females (49 percent) when looking at drivers at fault. This was contrary to the overall city trend where male drivers were at fault in approximately 61 percent of crashes.

## Recommended actions

### Engineering

- Ensure adequate separation between through vehicles and turning or parked vehicles on problem routes and/or other major routes. This could involve the use of flush medians, right turn bays and marked parking lanes.
- Ensure that signs, signals and markings at intersections are in good condition and easily visible, and that sight triangles are adequate.

### Enforcement

- Conduct campaigns targeting driver behaviour in the traffic stream, including following too closely and changing lanes.
- Conduct campaigns targeting drivers who fail to give way or stop.

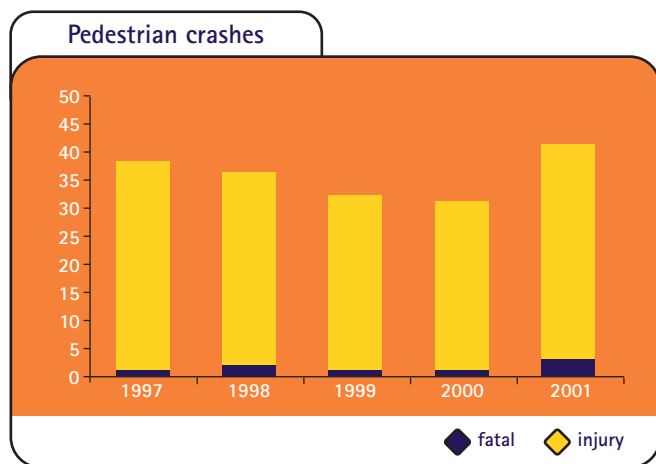
### Education

- Organise programmes aimed at increasing driver awareness of the problem.
- Conduct programmes designed to improve driver behaviour at intersections and in the traffic stream.



## Pedestrians

Pedestrians were involved in 14 percent of injury crashes and 25 percent of fatal crashes in North Shore City between 1997 and 2001. The high proportion of fatalities reflects the vulnerability of pedestrians to severe injury. The chart below shows crash numbers during this period.



Three quarters of pedestrian crashes occurred in mid-block locations (including eight percent on footpaths at driveways), with the remainder at intersections. Very few occurred at pedestrian crossings (six percent) or where school patrols operated (two percent), which suggested these facilities were relatively safe. Most crashes involved a pedestrian crossing the road (89 percent) rather than walking along or being on the road (11 percent). This was reflected in the two main crash movements, shown below.



48%



30%

Not surprisingly, more crashes involved pedestrians stepping out from the driver's left, rather than from the right. The higher numbers probably reflect the reduced time available for drivers to react.

By far the most common factor associated with these crashes was a pedestrian walking or running across the road heedless of traffic (66 percent of crashes). A high proportion of pedestrians involved in crashes were either very young (35 percent aged 14 years or younger) or elderly (21 percent aged 60 years or over). Both groups are known to sometimes have difficulty determining suitable gaps in the traffic stream. Crashes were split almost evenly between males and females.

Drivers of vehicles involved in pedestrian crashes presented a different profile. Almost two thirds were male and three quarters were aged between 15 and 44 years.

Most pedestrian crashes occurred during the day, with the peak times being 3pm to 4pm and 8am to 9am. Crashes were spread fairly evenly throughout the week, with slightly smaller numbers during the weekend.

### Recommended actions

#### Engineering

- Provide adequate safe crossing facilities on main roads and any other roads where pedestrians have difficulty with crossing. Facilities could include pedestrian crossings, signalised crossings, school crossing points, solid refuge islands and kerb extensions.

#### Enforcement

- Support enforcement activities directed at pedestrians who do not use crossing facilities where they are provided (ie at traffic signals, pedestrian crossings and refuge islands).

#### Education

- Continue education of young pedestrians with respect to crossing the road at facilities provided.
- Continue education of young pedestrians on safe crossing practice, including the need to look both ways and particularly to the right before crossing a road.

# 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 North Shore City.

Funding for community projects in North Shore City from the NZRSP for the 2002/2003 year includes:

Project	Funding	Police hours
Road safety co-ordinators	\$76,000	
Cyclists	\$4,000	
Intersection safety	\$6,000	300
Rear-end crashes	\$3,000	
Cornering safety	\$5,000	100
Learner driver licensing for Tuvalu, Kiribati and Tokelau people in the Auckland region	\$6,000	

## Police enforcement

In addition to the 400 police hours spent on community projects, a further 49,210 hours will be delivered by police in the North Shore City as follows:

Project	Hours
Strategic – alcohol/drugs, restraint, speed and visible road safety enforcement	32,900
Traffic management – crash attendance events, incidents, emergencies and disasters, traffic flow supervision	12,450
School road safety education	1,870
Police community services	1,990

## 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 42 percent in North Shore City (48 percent at state highway sites and 38 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

North Shore City Road Safety Report 1997–2001

LTSA Crash Analysis System

## Where to get more information

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

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Regional Manager  
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Regional Education Advisor  
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Senior Road Safety Engineer  
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