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Land Transport NZ
Ikiiki Whenua Aotearoa

road safety issues

North Shore City

Land Transport New Zealand has prepared this road safety issues report. It is based on reported injury 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 North Shore City.

Issues discussed in the body of the report are based on analysis of the city's local roads only and do not include state highways, which are covered in a separate report. However, state highway crashes are included in the casualty and social cost charts on this page.

The overview section of this report provides details of the main crash characteristics for the city. The four main issues were chosen based on reported numbers of fatal and serious crashes. These approximate number of deaths and hospitalisations discussed in the *Auckland Regional Road Safety Plan 2004–2010* and for which target reductions have been set for 2010.

A considerable effort is required by all road controlling authorities, working in collaboration with their road safety partners, to drive the level of road trauma downwards to meet these target figures.

Crash and casualty numbers increased in North Shore City last year, continuing the recent trend.

Major road safety issues

North Shore City

- Vulnerable road users
- Roadside hazards
- Poor observation
- Crashes at bends

Nationally

- Speed
- Alcohol
- Failure to give way
- Restraints

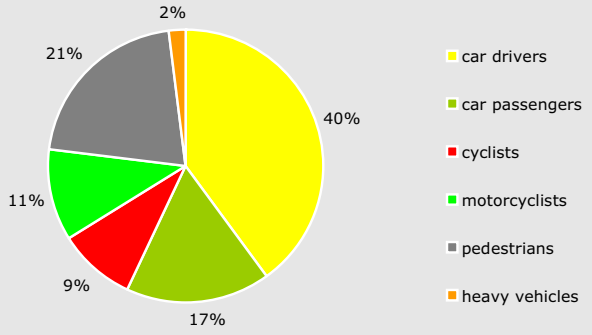
2004 road trauma for North Shore City

Deaths	1
Serious casualties	79
Minor casualties	487

Fatal crashes	1
Serious injury crashes	65
Minor injury crashes	384
Non-injury crashes	1,432

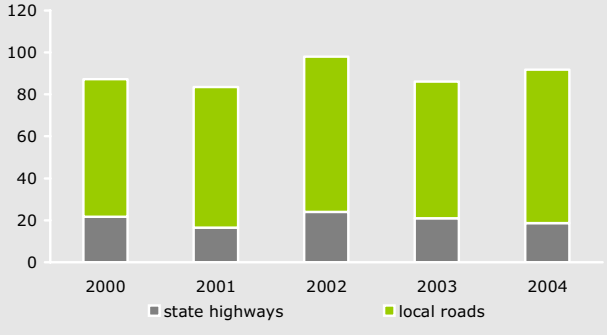
Fatal and serious casualties

User type 2000–2004



Estimated social cost of crashes*

Social cost ($ million)



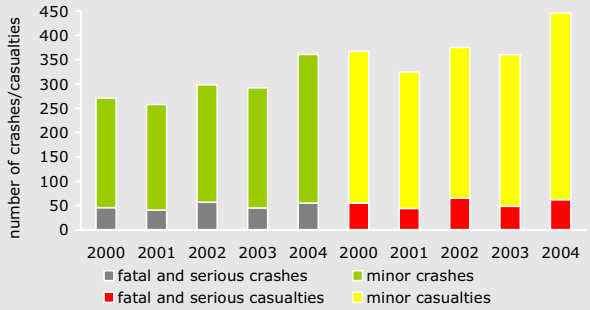
*The estimated social cost includes loss of life or life quality (estimated by the amount New Zealanders are prepared to pay to reduce their risk of fatal or non-fatal injury), loss of output due to injuries, medical and rehabilitation costs, legal and court costs, and property damage. These costs are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

Overview

Crash and casualty trends

Crash and casualty numbers increased in the city last year – this continued a generally upward trend over the past five years.

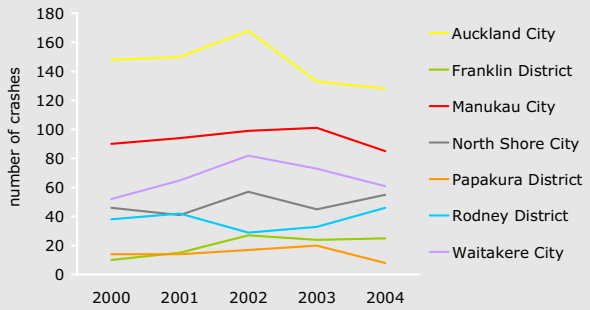
Crash and casualty numbers 2000–2004



Comparison with local authorities in the Auckland Region

The following chart shows the five-year trend in fatal and serious crash numbers for each of the territorial local authorities (TLAs) within the Auckland Region.

Fatal and serious crash trends by TLA 2000–2004

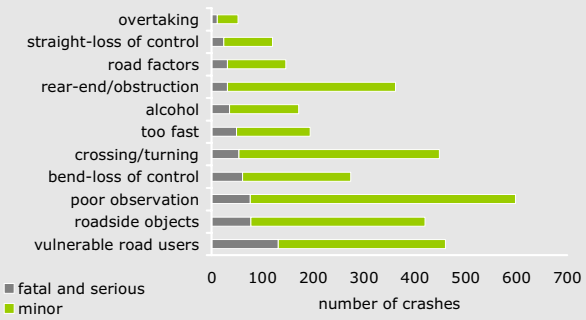


Selecting the issues

The four main issues discussed in this report were chosen because they had the highest reported numbers of fatal and serious crashes. This number of total and serious crashes approximates the number of deaths and hospitalisation, upon which targets to 2010 have been set in the national *Road Safety to 2010* strategy and the *Auckland Regional Road Safety Plan 2004–2010.*

Other issues not covered in this report also need to be addressed in order to reach the targets. Chief among these are speed and alcohol.

Main crash characteristics 2000–2004



Selected crash situations

The table below compares the proportions of injury crashes, as well as crashes resulting in fatal or serious injury, over a range of crash situations in the city.

Situation	Injury	Fatal or serious
Wet road	27%	23%
Dry road	73%	77%
Dark	30%	33%
Light	70%	67%
Rural road	2%	3%
Urban road	98%	97%
Intersection	47%	41%
Mid-block	53%	59%

Crashes at night and away from intersections tended to result in higher injury severity, possibly due to the higher speeds generally associated with them. Crashes on rural roads also had higher injury severity; however, there are very few rural roads within the city.

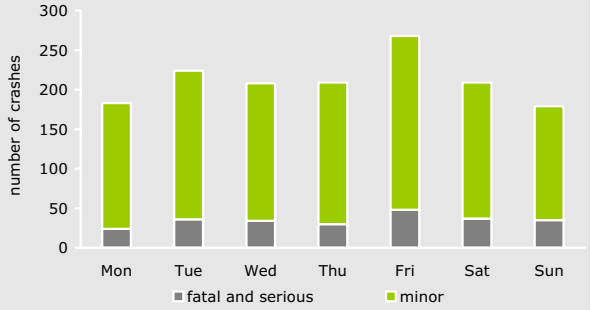
Vulnerable road users are those who have very little physical protection in the event of a crash and who are therefore more susceptible to severe injuries. As shown below, this was the case within North Shore City.

Road user	Injury	Fatal or serious
Pedestrians	16%	27%
Motorcyclists	6%	14%
Cyclists	8%	12%

Crash times

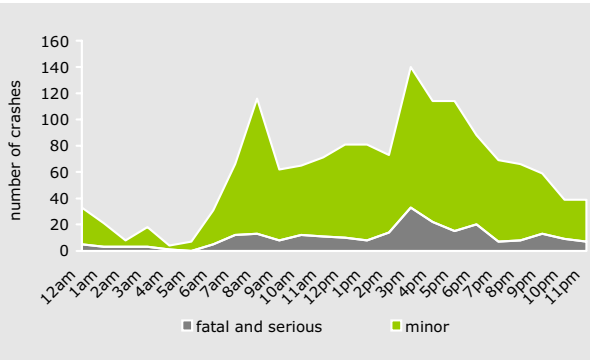
In 2004, there was a large increase in the number of crashes occurring on Friday and Saturday, with smaller increases on Wednesday and Sunday.

Injury crashes by day of week 2000–2004



Most crashes occurred from 3 pm to 5 pm with another peak around 8 am.

Injury crashes by time of day 2000–2004



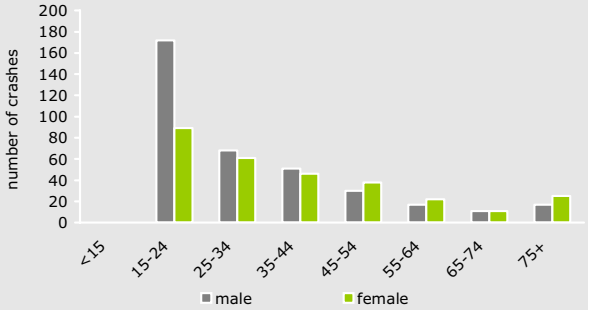
A number of crash characteristics were over-represented at night. The figures in the table below compare with a city average of 30 percent for all injury crashes that occurred at night.

Crash characteristic	Crashes at night
Alcohol	78%
Excessive speed	50%
Straight–loss of control	53%
Roadside hazard struck	49%
Bend–loss of control	50%
Weekend	45%
Single vehicle crash	57%

Drivers at fault

The following chart shows the gender and age distribution of drivers deemed to have been at fault in crashes.

Age and gender of at-fault drivers 2000–2004



Most crashes (56 percent) were caused by male drivers, and typically resulted in more severe injuries than crashes involving female drivers. Male drivers were primarily responsible for crashes involving:

- alcohol
- excessive speed for the conditions
- overtaking
- loss of control
- poor handling
- fatigue.

Women drivers were disproportionately represented in crashes involving failure to give way or stop, poor observation and rear-end collisions.

The table below compares at-fault drivers with all drivers involved in crashes for different classes of driver licence.

Licence status	All drivers	At-fault drivers
Full	70%	65%
Learner/restricted/ overseas	26%	29%
Disqualified/expired/forbidden/ never licensed/wrong class	4%	6%

Unlicensed or disqualified drivers and drivers with conditional licences were disproportionately at fault in crashes compared with drivers holding a full licence.

Vulnerable road users

Vulnerable road users are those who have very little physical protection in the event of a crash. Motor-cyclists have been included in the analysis for this year's report, in addition to pedestrians and cyclists, who were reported on last year.

Vulnerable road users were involved in over half (54 percent) of the city's fatal or serious crashes and 31 percent of all injury crashes between 2000 and 2004. In this period, they accounted for nine fatalities, 122 serious injuries and 344 minor injuries. No clear trend has emerged, although fatal or serious crash numbers have increased marginally in recent years.

Vulnerable road user injury crashes 2000–2004

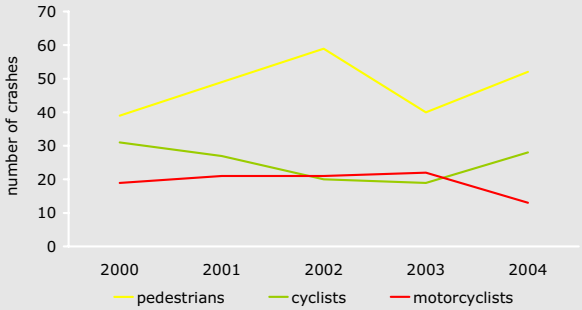
The following table compares the relative involvement of pedestrians, cyclists and motorcyclists in crashes over a range of road situations.

Situation	Pedestrian	Cyclist	Motorcyclist
Wet road	20%	11%	17%
Dry road	80%	89%	83%
Dark	21%	13%	35%
Light	79%	87%	65%
Rural road	0%	0%	3%
Urban road	100%	100%	97%
Intersection	30%	62%	49%
Mid-block	70%	38%	51%

Compared with city averages, a much lower proportion of crashes occurred on wet roads or in the dark (apart from motorcycle crashes). Over two thirds of pedestrian crashes took place at mid-block locations. Conversely, the majority of cyclist crashes occurred at intersections.

The chart below shows the relative numbers and the crash trends of the three vulnerable road user categories. Pedestrians were involved in more crashes than cyclists and motorcyclists combined.

Vulnerable road user categories 2000–2004



Pedestrians

Approximately 14 percent of crashes were the result of pedestrians being in the wrong place at the wrong time, for instance, being struck as a result of a collision between vehicles. The majority of the remaining crashes involved pedestrians attempting to cross the road, with most being struck by a vehicle travelling from their right side (giving the driver little time to react and stop). Common crash causes are shown below.

Crash cause	Crashes
Running/walking heedless of traffic	49%
Vehicle failed to give way at a crossing	7%
Vehicle failed to give way in other situations	5%
Stepped from behind a parked car	6%
Unsupervised child	6%
Pedestrian intoxicated	3%
Pedestrian not complying with traffic signals or school patrol	3%
Driver failed to check adequately when reversing	5%

Almost half of pedestrians injured were aged 19 or less, with peak times for crashes coinciding with school start and finish times on weekdays.

Cyclists

Increasing numbers of cyclists using the road network in response to government initiatives could lead to an increase in crashes in the years ahead. However, research indicates that once cyclist numbers reach 'critical mass' on the roads, they enjoy an improved level of safety.

Two thirds of cyclist crashes involved crossing or turning movements, mostly at intersections. The remaining crashes generally involved rear-end collisions or overtaking manoeuvres and occurred primarily at mid-block locations. The most common crash causes are shown in the table below.

Crash cause	Crashes
Failure to give way at a driveway	8%
Failure to give way or stop in other situations	45%
Inadequate checking before giving way	43%
Riding on the footpath	10%

Over three quarters of cyclist crashes involved males, with the peak age groups being 15 to 19 year olds and 10 to 14 year olds – however, crash numbers were fairly consistent right through the age groups up to 55 years. The peak times for crashes were from 7 am to 9 am and 3 pm to 6 pm. Crash numbers were reasonably consistent on all days except for very low numbers on Friday.

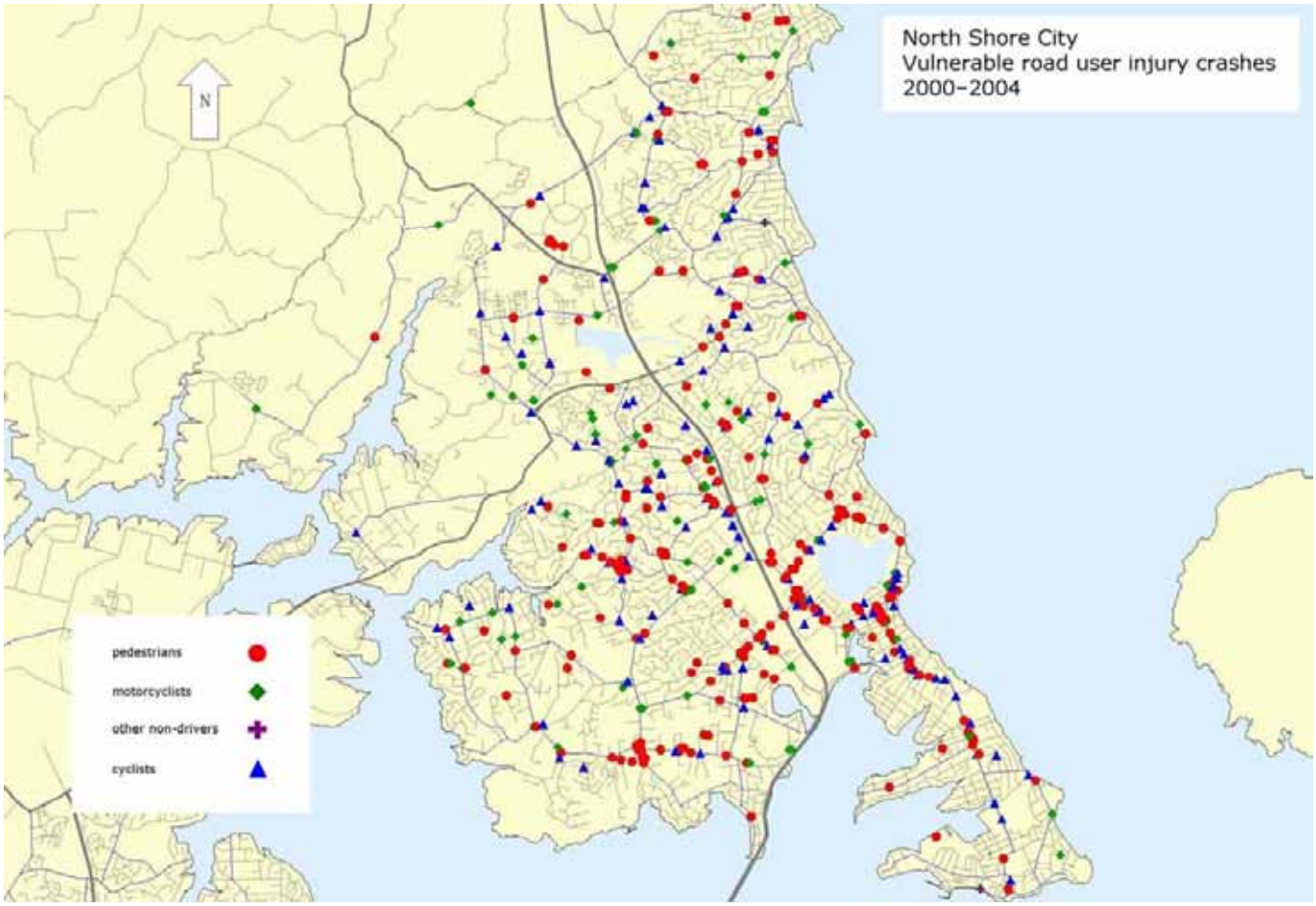
Motorcyclists

Almost a third of crashes involving motorcyclists were crossing or turning movements, with around 80 percent being at intersections. Loss of control accounted for another 30 percent of crashes, most at mid-block locations. Rear-end and overtaking crashes made up the remainder. The most common crash causes are listed below.

Crash cause	Crashes
Poor observation	41%
Failure to give way or stop	31%
Excessive speed for the conditions	16%
Poor handling	18%
Road factors	17%

Road factors were divided fairly evenly between limited visibility along the road and a slippery road surface.

Ninety-three percent of motorcyclist injury crashes involved males, with over two thirds between 15 and 34 years old. Crashes were spread evenly throughout the week.



Roadside hazards

Roadside hazards were struck in 32 percent of fatal or serious crashes and 28 percent of all injury crashes between 2000 and 2004. Crash numbers generally increased during this period.

Roadside hazard injury crashes 2000–2004

In total, 608 roadside hazards were struck in 460 crashes in the last five years. These crashes resulted in 10 fatalities, 78 serious injuries and 443 minor injuries. The roadside hazards most frequently struck are shown below.

Roadside hazard	Strikes
Parked vehicle	142
Post/pole	89
Fence	71
Tree	67
Kerb	44
Cliff/bank	33
Traffic sign	27
Traffic island	24

Of these hazards, proportionally more fatal or serious injuries occurred when trees or poles were struck.

Some of the main characteristics of roadside hazard crashes are shown below.

Crash characteristic	Crashes
Loss of control of vehicle	64%
Crash at a bend	48%
Urban road	96%
Mid-block location	71%
Single vehicle	71%
Excessive speed	28%
Alcohol	27%
Road factors	13%
Poor handling	27%
Fatigue	5%

In the overview section of this report, roadside hazard crashes at night are shown to be over-represented compared with all crashes in the city. The following table shows individual characteristics of these crashes that occurred disproportionately at night or in the wet.

Crash characteristic	Night	Wet
Alcohol	85%	29%
Excessive speed	65%	39%
Road factors	51%	67%
Poor handling	49%	39%
Fatigue	45%	27%

Road factors primarily involved a slippery surface, although the condition of the road surface itself and restricted visibility along the road were also concerns.

Male drivers were at fault in two thirds of crashes and half were aged between 15 and 24 years. Crash numbers were highest on Friday, Saturday and Sunday with slightly fewer crashes the rest of the week.

Poor observation

Poor observation contributed to 31 percent of crashes resulting in fatal or serious injuries, and 40 percent of all injury crashes between 2000 and 2004. These crashes resulted in three fatalities, 83 serious injuries and 669 minor injuries. Crash numbers increased markedly in 2004.

Poor observation injury crashes 2000–2004

Most crashes involving poor observation were either crossing or turning movements or rear-end collisions.

Crossing or turning crashes

These crashes generally involved drivers failing to give way by not checking properly for other traffic at intersections or driveways. The table below shows some of the common factors associated with these crashes.

Crash factor	Crashes
Checked too late when required to give way to traffic from another direction	69%
Failure to give way to non-turning traffic when turning	39%
Failure to give way at Give Way sign	30%
Failure to stop at Stop sign	7%
Failure to give way at driveway	10%
Failure to stop for red light at signals	5%

A disproportionate number of cyclists were involved in these crashes, possibly because they were difficult to see in busy traffic. Female drivers were at fault in two thirds of crossing or turning crashes, predominantly aged between 15 and 45 years. Peak times were from 8 am to 10 am, noon to 2 pm and 3 pm to 6 pm. Friday had the most crashes and the weekend the least.

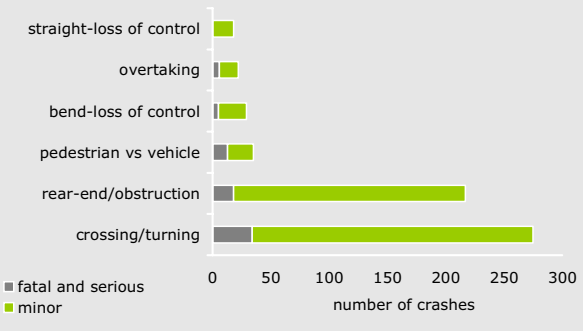
Rear-end crashes

These typically involved drivers not responding properly to situations around them in the traffic stream. The most common factors are shown below.

Crash factor	Crashes
Failure to notice car slowing	42%
Didn't check behind when changing lanes	16%
Alcohol	6%
Attention diverted – driver dazzled by sun/lights	7%
Attention diverted by other traffic	7%

Female drivers were at fault in almost two thirds of these crashes, with younger drivers in the 15 to 29 year age group being over-represented. Crash times were spread fairly evenly between 7 am and 6 pm. Crash numbers generally increased throughout the week from Monday to Friday and tailed off during the weekend.

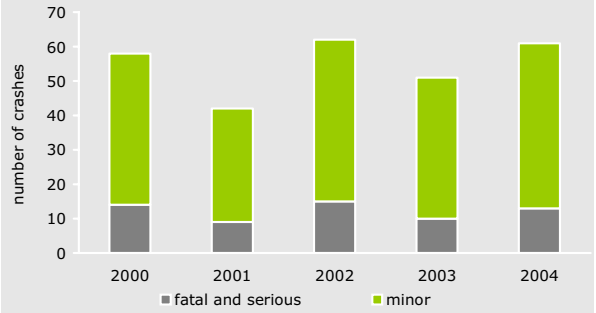
Crash type 2000–2004



Crashes at bends

Between 2000 and 2004, 25 percent of crashes resulting in fatal or serious injury and 19 percent of all injury crashes involved loss of control or a head-on collision at a bend. These crashes resulted in 10 fatalities, 62 serious injuries and 323 minor injuries. Crash numbers have fluctuated over the past five years.

Injury crashes at bends 2000–2004



The main characteristics of these crashes are shown in the following table.

Crash characteristic	Crashes
Single vehicle	68%
Head-on collision	25%
Roadside hazard struck	69%
Alcohol	31%
Excessive speed	46%
Road factors	24%
Poor handling	39%

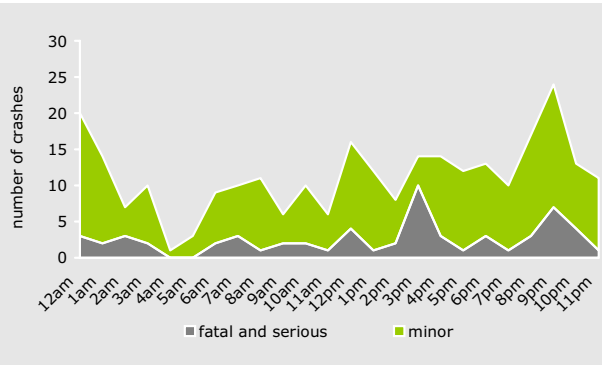
Crashes at bends were over-represented at night (50 percent) and on wet roads (43 percent) compared with the city averages of 30 and 27 percent respectively. Some of the individual characteristics of these crashes were also over-represented.

Description	Night	Wet
Head-on	36%	62%
Alcohol	85%	35%
Speed	59%	46%
Road factors	43%	78%

Road factors generally involved a slippery road surface, although the condition of the road surface itself and restricted visibility along the road also featured.

Male drivers were at fault in 71 percent of crashes and over half were between 15 and 24 years old. Crash numbers rose throughout the week from Monday to Saturday, with a slight drop on Sunday. The distribution of crashes throughout the day is shown below.

Injury crashes at bends by hour 2000–2004



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 50 percent in North Shore City (59 percent at state highway sites and 42 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 North Shore City, please refer to the 2000 to 2004 road safety data report, the Land Transport New Zealand crash analysis system or contact the office listed at right.

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