

road safety issues

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 1999–2003 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.

Issues identified in the body of this report are based on analysis of North Shore City's local road crashes only and does not include state highways which are covered in a separate report. State highway crashes, however, are included in the road deaths and social cost charts on this page.

The overview section of this report provides details of trends and the main crash characteristics for North Shore City. Issues reported on are based on fatal and serious crashes, which are comparable with the deaths and hospitalisations figure in the *Auckland Regional Road Safety Plan 2004–2010*. Target reductions have been set for these crashes for 2010.

A considerable effort is required by all road controlling authorities to drive the level of road trauma downwards to meet these target figures.

More detailed information about crash numbers and trends can be found in the Road Safety Data Report for North Shore City published each year by the LTSA. Further analysis of crash data can be carried out using Crash Analysis System (CAS) software held by most road controlling authorities and the LTSA.

Major road safety issues

North Shore City

Crashes at bends or with roadside hazards

Vulnerable road users

Poor observation

Speed

Nationally

Speed

Alcohol

Failure to give way

Restraints



2003 road trauma for North Shore City

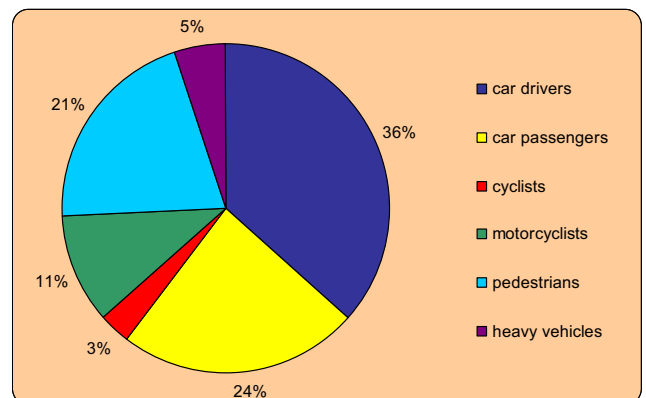
	Deaths	5
	Serious casualties	51
	Minor casualties	426



Fatal crashes	5
Serious injury crashes	47
Minor injury crashes	320
Non-injury crashes	1,451

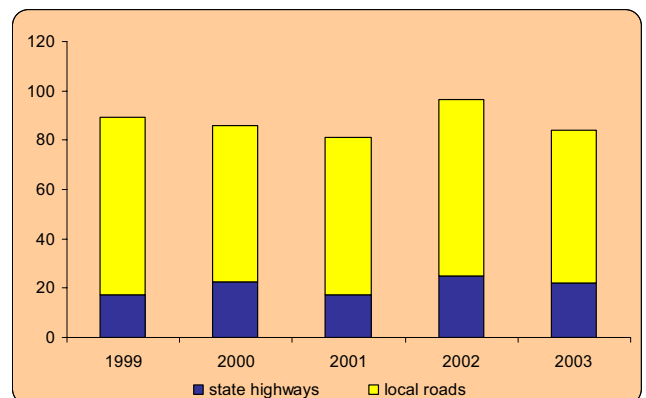
Road deaths 1999–2003

User type



Estimated social cost of crashes*

Social cost (\$ million)



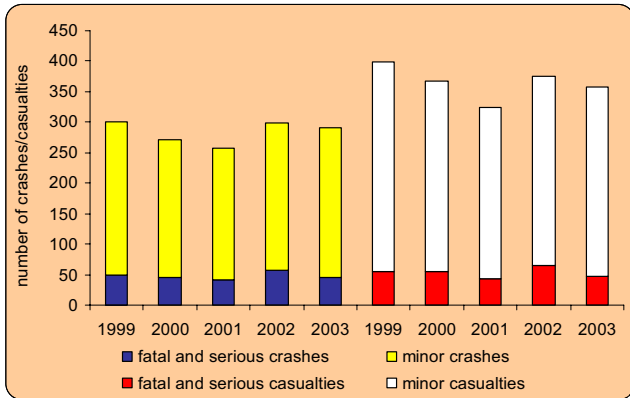
*The estimated social cost includes loss of life or life quality (estimated by the amount New Zealanders are prepared to pay to reduce their risk of fatal or non-fatal injury), loss of output due to injuries, medical and rehabilitation costs, legal and court costs, and property damage. These costs are expressed at June 2002 prices.

Overview of local road crashes

Crash and casualty trends

The number of fatal and serious injury crashes in North Shore City fell slightly in 2003.

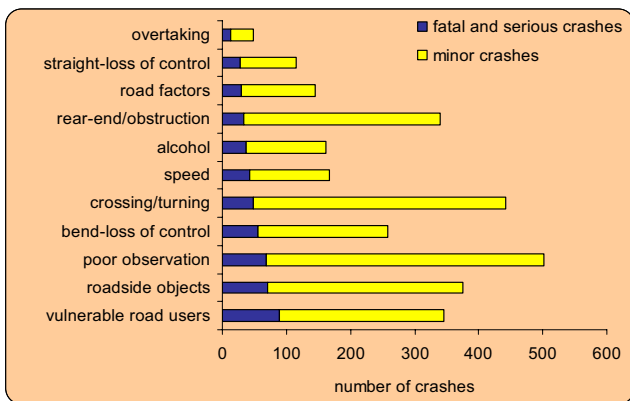
Crash and casualty numbers 1999–2003



Main crash characteristics

The four main issues discussed in this report were chosen because crashes with their characteristics had the highest numbers of fatal and serious injuries (as shown in the following chart). Focusing on crashes resulting in severe injury is consistent with the *Road Safety to 2010* strategy and the *Auckland Regional Road Safety Plan 2004–2010*. Both these documents set targets for reductions in deaths and hospitalisations arising from road crashes.

Main crash characteristics



Crash types not specifically covered in this report also need to be addressed if road safety targets are to be met.

Selected crash situations

The following table shows the proportion of injury crashes as well as crashes resulting in fatal or serious injury for a selected number of crash situations in North Shore City.

Situation	Injury crashes	Fatal/serious crashes
Wet road	28%	24%
Dry road	72%	76%
Dark	30%	35%
Light	70%	65%
Rural road	2%	3%
Urban road	98%	97%
Intersection	49%	39%
Mid-block	51%	61%

Crashes at night and away from intersections tended to result in higher injury severity. This may be due to higher speeds generally associated with these crashes. Crashes on rural roads also resulted in higher injury severity, however, there are very few rural roads in the city.

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

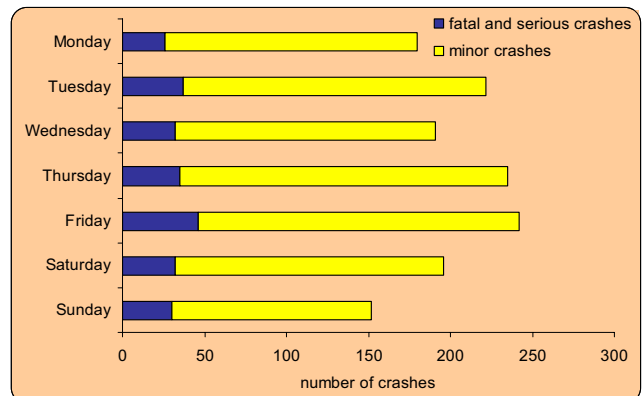
Road users	Injury crashes	Fatal/serious crashes
Pedestrians	16%	28%
Motorcyclists	8%	18%
Cyclists	8%	10%

All of these road users are vulnerable as they have little protection in a crash. Motorcyclists often travel at higher speeds than other traffic.

Crash times

Fridays and Thursdays were the days with the highest numbers of crashes, with Tuesdays not far behind.

Day of week for crashes

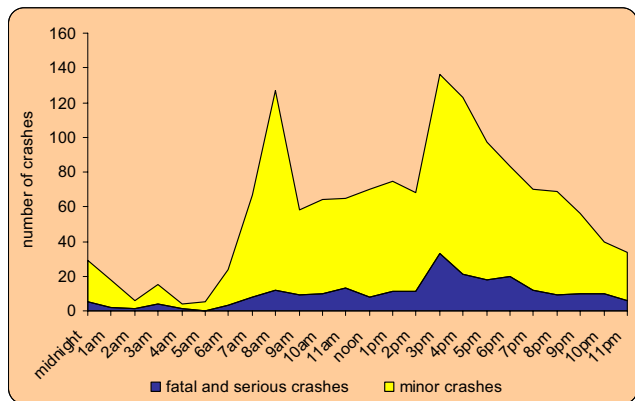


The peak periods for crashes were from around 3 pm to 5 pm and around 8 am. These times roughly coincided with school traffic and accounted for a high proportion of pedestrian and cyclist crashes.

A number of crash factors were highly over-represented in night crashes, particularly alcohol, speed and fatigue.

Alcohol and speed contributed significantly to loss of control crashes, where almost half of the crashes occurred at night.

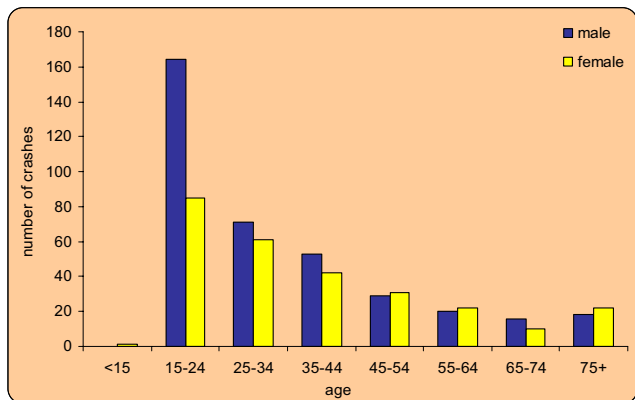
Time of day for crashes



Drivers at fault

The following chart shows the gender and age distribution of drivers deemed to have been at fault in crashes. Fifty-seven percent of crashes were caused by male drivers and 39 percent by drivers aged between 15 and 24 years.

Age and gender of drivers at fault



Male drivers had proportionately more crashes resulting in severe injuries. This can be explained by males being involved in the majority of crashes involving excess speed. Women drivers were disproportionately represented in crossing or turning crashes, where failing to give way was often a factor.

The table below compares the proportion of drivers at fault with all drivers in crashes for various classes of driver licence.

Licence status	All drivers	Drivers at fault
Full	71%	66%
Learner/restricted/overseas	24%	27%
Disqualified/expired/forbidden/never licenced	4%	6%

It is evident that unlicensed/disqualified drivers and also drivers with conditional licences were at fault in proportionately more crashes than those holding a full licence.

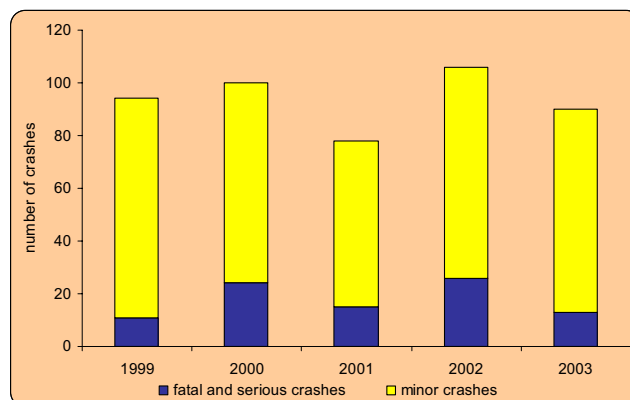
Crashes at bends or with roadside hazards

Between 1999 and 2003, 37 percent of crashes resulting in fatal or serious injury and one third of all injury crashes in North Shore City, occurred at bends or involved a collision with a roadside hazard.

- Two out of every three crashes at bends involved a roadside hazard being struck.
- 44 percent of crashes with roadside hazards occurred at bends.

Crash numbers have been fluctuating for the past few years and in 2003, there was a significant reduction in crashes resulting in fatal or serious injuries.

Crashes at bends or with roadside hazards



Crashes at bends and those where roadside hazards were struck had similar characteristics, generally involving:

Crash characteristic	% of crashes
Loss of control	70%
Single vehicle	58%
Excessive speed	28%
Alcohol	25%
Poor handling	25%
Road factors	17%

Many of these characteristics occurred disproportionately at night or in the wet as shown below.

Description	% at night	% in wet
Loss of control	50%	39%
Single vehicle	59%	33%
Speed	53%	44%
Alcohol	85%	32%
Poor handling	40%	41%
Road factors	34%	67%

The North Shore City average for crashes at night was 30 percent, and on wet roads was 28 percent, as shown in the overview section of this report. Night-time delineation and lighting on routes and road surface friction should be investigated in response to these crashes.

Drivers at fault in two thirds of these crashes were young males and almost half were aged between 15 and 24 years.

Roadside hazards contributed to 13 fatalities and 465 other injuries between 1999 and 2003. The roadside hazards most frequently struck are shown below.

Roadside hazard	Number of strikes
Parked vehicle	113
Post or pole	91
Fence	62
Tree	61
Kerb	46
Cliff or bank	29

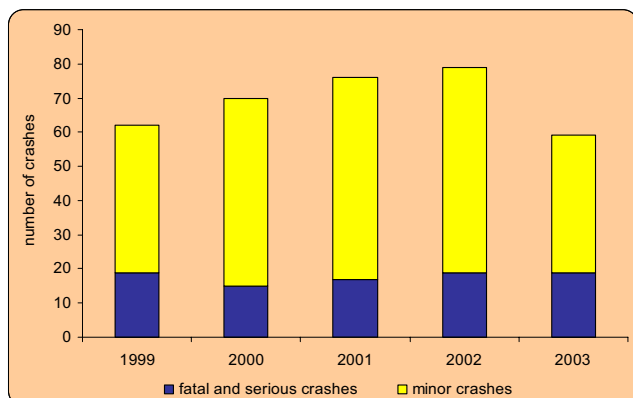
Most roadside hazards were struck by out of control vehicles, except for parked vehicles which were generally struck in rear-end type collisions where a vehicle in the traffic stream wandered off course.

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.

Vulnerable road users

Vulnerable road users were involved in 37 percent of fatal or serious crashes and 24 percent of all injury crashes in North Shore City. Pedestrians accounted for 65 percent of vulnerable road user crashes and cyclists accounted for most of the remainder. Pedestrian crashes resulting in minor injury accounted for most of last year's drop in crash numbers.

Crashes involving vulnerable road users



The following table compares details for pedestrians and cyclists in a number of selected crash situations using the same format as in the overview of local road crashes.

Situation	Pedestrians	Cyclists
Wet	20%	11%
Dry	80%	89%
Dark	23%	13%
Light	77%	87%
Rural road	0%	0%
Urban road	100%	100%
Intersection	29%	61%
Mid-block	71%	39%

When comparing these figures with the city averages shown in the overview section, it is apparent that pedestrians and cyclists had less crashes than other road users in the wet, at night and on rural roads. Since many pedestrian and cyclist trips were connected with school activities, it is not surprising that a higher proportion of crashes occur on urban roads in daytime. Lower numbers of wet road crashes could suggest that pedestrians and cyclists use other transport modes during inclement weather.

A high proportion of pedestrian crashes occurred in mid-block locations, generally where no formal pedestrian crossings existed. The most common crash causes were:

Cause of crash	% of crashes
Running/walking heedless of traffic	50%
Vehicle failed to give way at crossing	8%
Stepped from behind parked car	6%
Driver didn't check when reversing	5%
Unsupervised child	4%

Two thirds of cyclist crashes involved crossing or turning movements, generally at intersections, with most remaining crashes being either overtaking or rear-end type collisions. The most common crash causes were:

Cause of crash	% of crashes
Failure to give way at give way sign or when turning, to non-turning traffic	35%
Inadequate checking before giving way to traffic from another direction	26%
Failure to give way at driveway	11%
Riding on footpath	9%

Around two thirds of crashes involving vulnerable road users occurred on roads classified as arterials or major collectors within North Shore City. Although more than three quarters of cyclist crashes involved males, most pedestrian crashes (56 percent) involved females. The following table shows the age distribution of vulnerable road users involved in crashes within the city. A high proportion of mature road users were involved in these crashes.

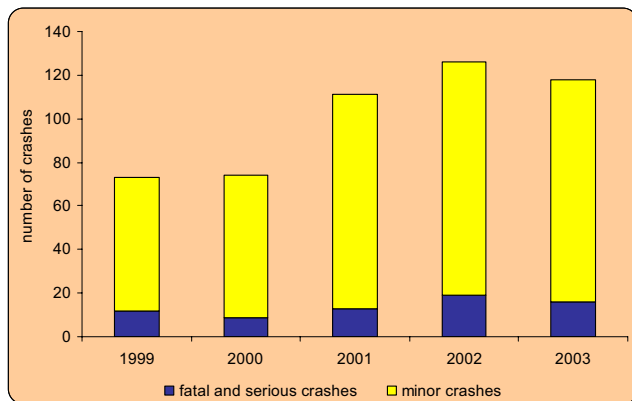
Age	% of injuries
0 to 9 years	11%
10 to 14 years	19%
15 to 24 years	23%
25 to 49 years	22%
50 years and over	26%

Crash numbers generally increased from Monday to Thursday and then tapered off from Friday to Sunday. Peak crash times were between 3 pm to 5 pm, and around 8 am.

Poor observation

Poor observation contributed to 29 percent of crashes resulting in fatal or serious injuries and 35 percent of all injury crashes in the city between 1999 and 2003. Crash numbers reduced slightly last year after two years of substantial increases.

Poor observation crashes



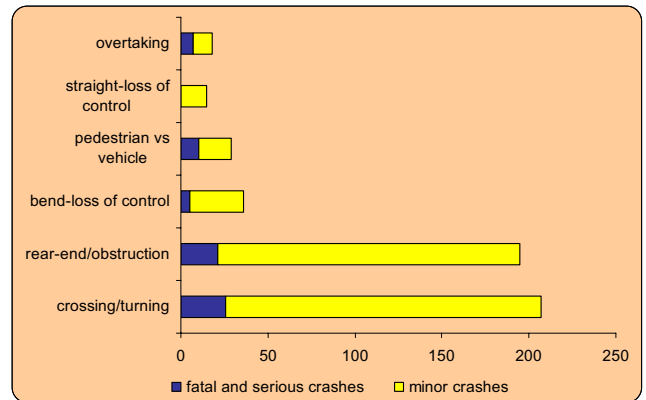
Most crashes were either rear-end collisions or intersection type crossing or turning movements. Rear-end crashes typically involved drivers not responding properly to situations around them in the traffic stream, such as:

- not checking behind thoroughly when changing lanes
- not noticing vehicles slowing ahead.

Crossing or turning crashes generally involved drivers failing to give way by not checking properly for other traffic at intersections or driveways. A disproportionate number of cyclists were involved in these crashes. Cyclists may be difficult for other road users to see in busy traffic.

Women drivers were at fault in 55 percent of crossing or turning crashes and 42 percent of rear-end collisions, compared with the city wide average of 43 percent in all crashes. Almost three quarters of crashes were caused by drivers aged between 15 and 44 and most occurred during daylight hours with a reasonably even spread between 7 am and 8 pm. Crash numbers generally increased throughout the week from Monday to Friday, dropping slightly on Saturday and substantially on Sunday.

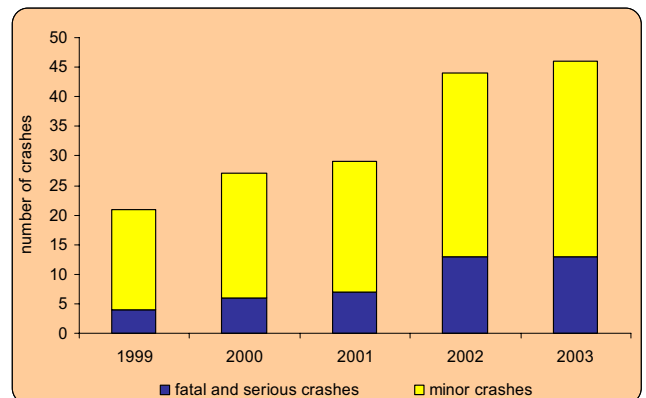
Crash movement types



Speed

Speed was a factor in 18 percent of fatal and serious crashes and 12 percent of all injury crashes between 1999 and 2003. In the last five years, excessive speed was a factor in 12 deaths on North Shore City roads. Crash numbers have been increasing steadily since 1999.

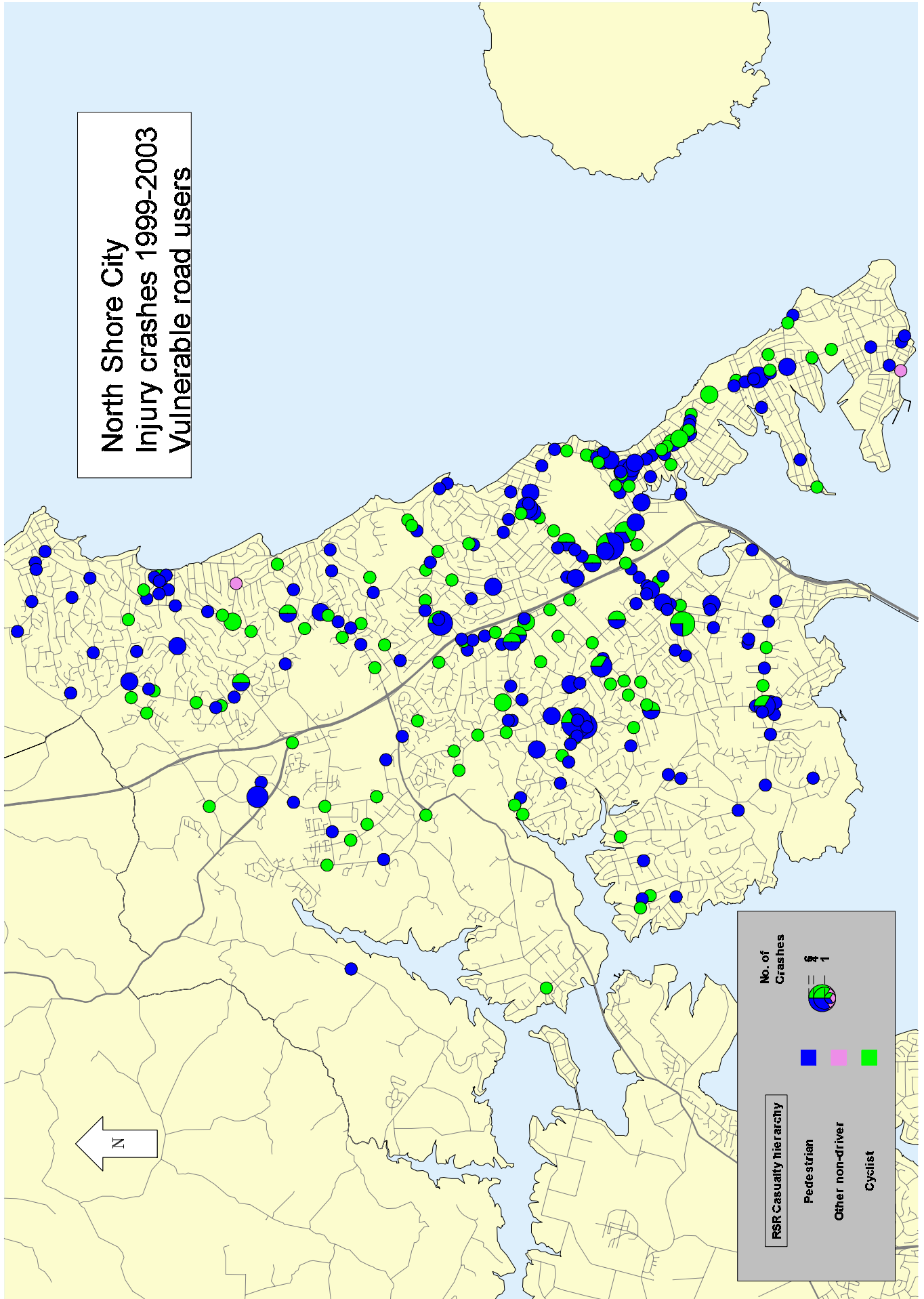
Speed-related crashes

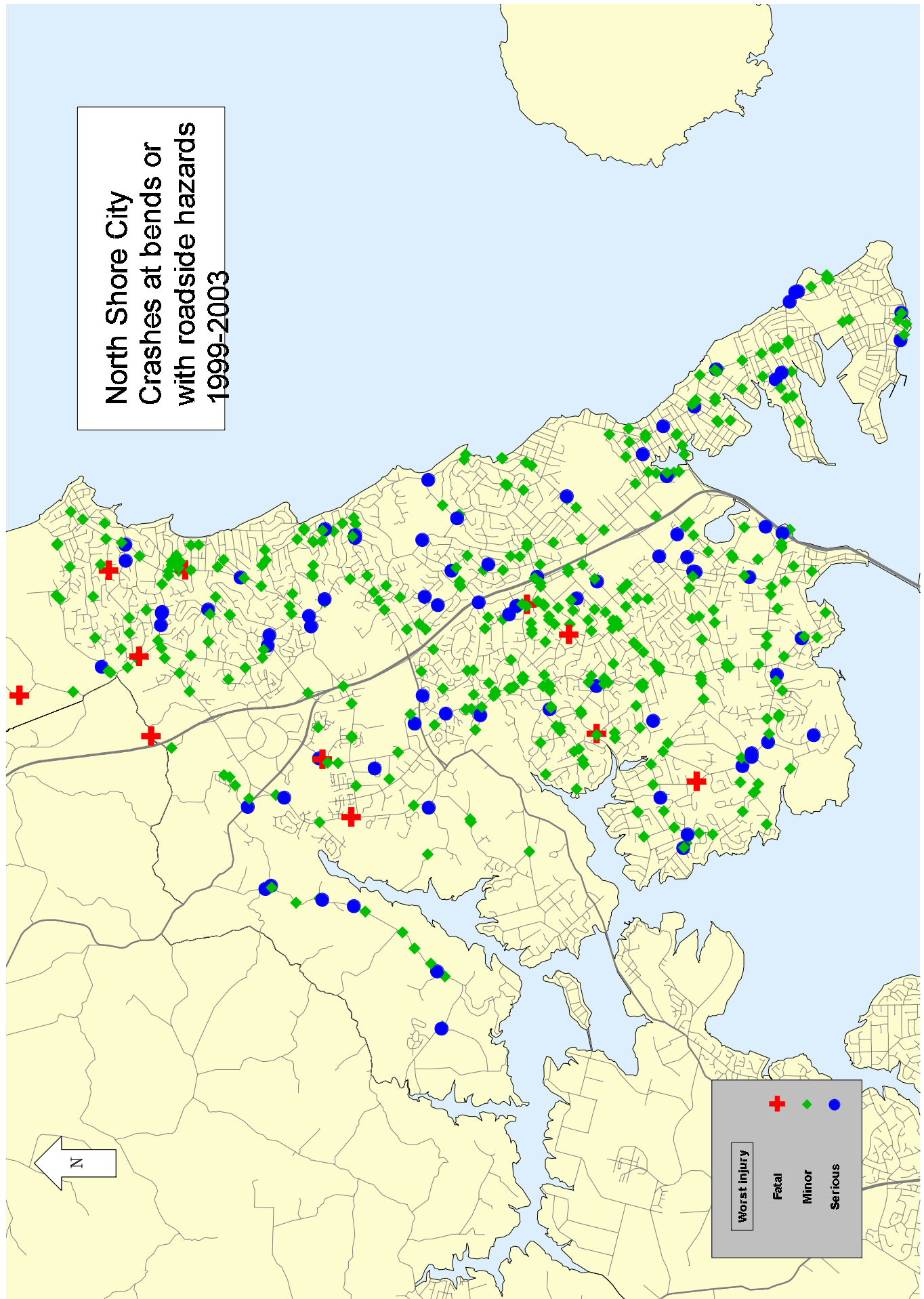


Reducing speeds to appropriate levels is an important road safety goal. Excessive speed increases the likelihood of a crash occurring by reducing the time available for drivers to respond to hazardous situations. It also increases the severity of injuries. Research has shown that a one km/h reduction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

Specific information relating to speed crashes within the city is shown below:

Cause of crash	% of crashes
Male drivers at fault	85%
Drivers aged between 15 and 24	63%
Loss of control	74%
Single vehicle	52%
Mid-block location	67%
Wet road	44%
At night	48%





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 51 percent in North Shore City (63 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 crash numbers and severity.

Where to get more information

For more specific information relating to road crashes in North Shore City, please refer to the 1999 to 2003 Road Safety Data Report, the LTSA's Crash Analysis System or contact the LTSA as listed below.

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