

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 2001–2005 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 crashes on the region's local roads only and do not include state highways which are covered in a separate report. State highway crashes, however, 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 and trends for the city. The four main issues were chosen based on reported numbers of fatal and serious crashes. These approximate deaths and hospitalisations discussed in the *Auckland Regional Road Safety Plan 2004-2010* and for which target reductions have been set for 2010.

The number of fatal and serious crashes, and the overall number of injury crashes has been trending upwards in recent years.

Major road safety issues

North Shore City

Vulnerable road users

Poor observation

Roadside hazards

Crashes at bends

Nationally

Speed

Alcohol

Failure to give way

Restraints



2005 road trauma for North Shore City



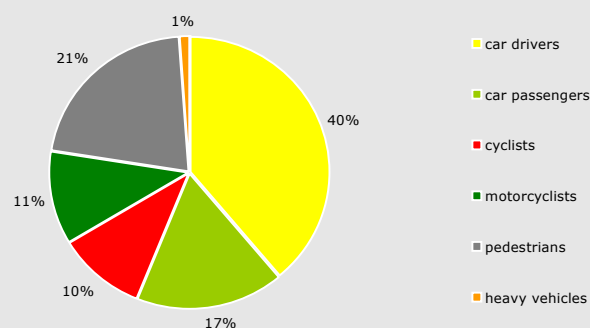
Deaths	3
Serious casualties	69
Minor casualties	526



Fatal crashes	3
Serious injury crashes	64
Minor injury crashes	398
Non-injury crashes	1,574

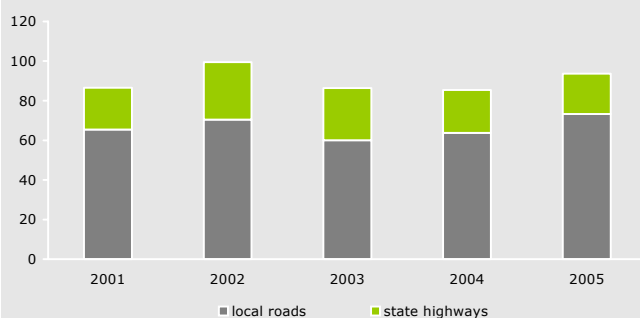
Fatal and serious casualties

User type 2001–2005



Estimated social cost of crashes*

Social cost (\$ million)

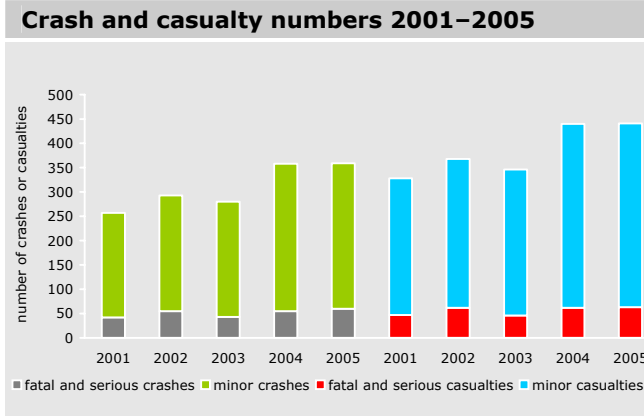


* The estimated social cost includes loss of life or life quality (estimated by the amount New Zealanders are prepared to pay to reduce their risk of fatal or non-fatal injury), loss of output due to injuries, medical and rehabilitation costs, legal and court costs, and property damage. These costs are expressed at June 2005 prices.

Overview

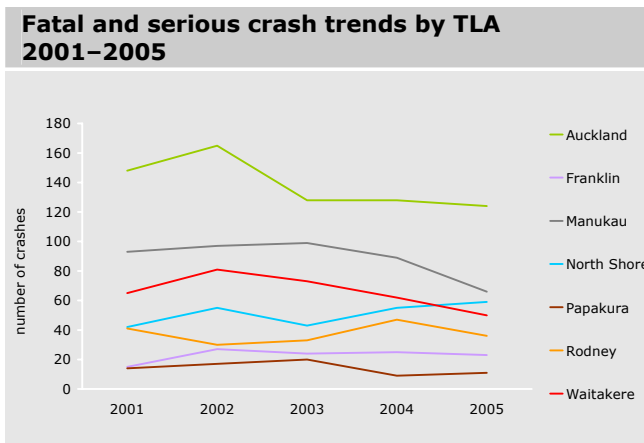
Crash and casualty trends

The number of injury crashes and casualties has continued to trend upwards in the past five years. This general upward trend is also reflected in the number of fatal and serious crashes and casualties.



Comparison with local authorities in Auckland Region

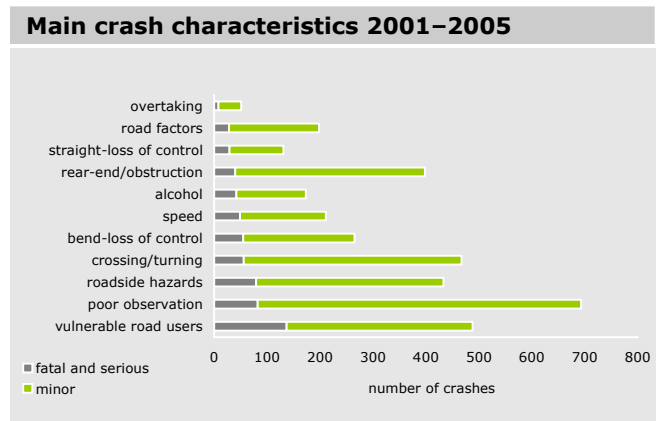
The following chart shows the five-year trend in fatal and serious crash numbers for each of the territorial local authorities (TLA) within Auckland Region.



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 (as shown in the following chart). Fatal and serious crashes approximate deaths and hospitalisations, 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 significant issues not covered in this report, such as alcohol and speed, also need to be addressed in order to reach the targets.



Selected crash situations

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

Situation	Injury	Fatal and serious
Wet road	26%	21%
Dry road	74%	79%
Dark	31%	36%
Light	69%	64%
Rural road	2%	4%
Urban road	98%	96%
Intersection	44%	42%
Mid-block	56%	58%

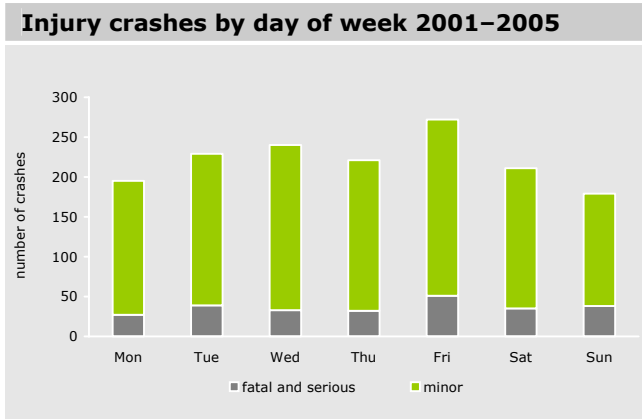
Crashes at night, on rural roads and away from intersections tended to result in higher injury severity. This may be due to higher speeds generally associated with these crashes.

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.

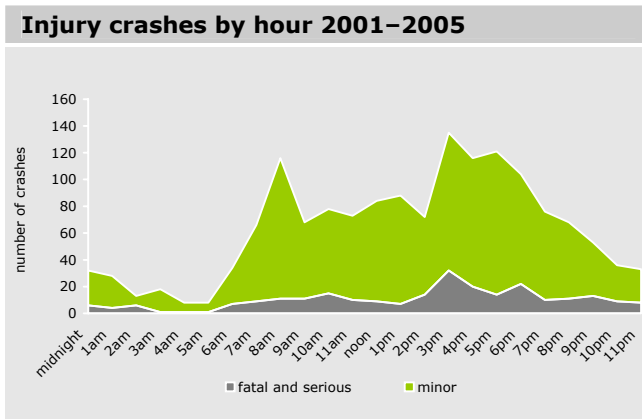
Situation	Injury	Fatal and serious
Pedestrians	16%	27%
Motorcyclists	7%	13%
Cyclists	9%	13%

Crash times

With the exception of Thursday, the number of crashes increased from Monday through to a peak on Friday, and then tailed away on Saturday and more so on Sunday.



The highest numbers of fatal and serious as well as total injury crashes occurred between 3 and 4 pm. This coincides with pupils travelling home from school.

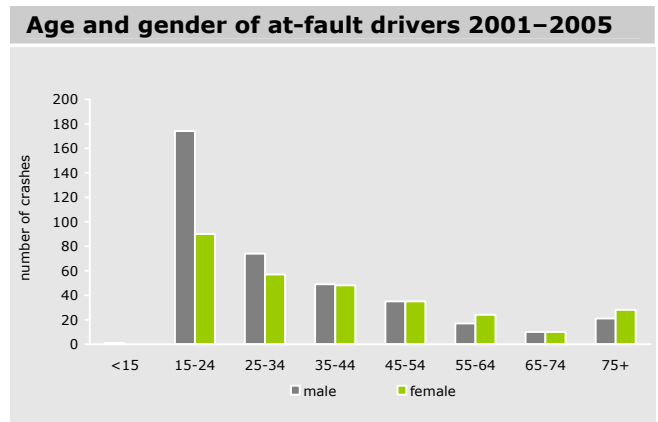


A number of crash characteristics were over-represented at night. The numbers in the table below compare with a city average of 31 percent of all injury crashes occurring at night.

Crash characteristic	Crashes at night
Alcohol	77%
Single vehicle crash	58%
Straight – loss of control	52%
Excessive speed	49%
Roadside hazard struck	49%
Bend – loss of control	49%
Weekend	45%

Drivers at fault

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



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 drivers at fault with all drivers involved in crashes for different classes of driver licence.

Licence status	All drivers	Drivers at fault
Full	70%	63%
Learner/restricted/overseas	26%	31%
Disqualified/expired/forbidden/never licensed/wrong class	4%	6%

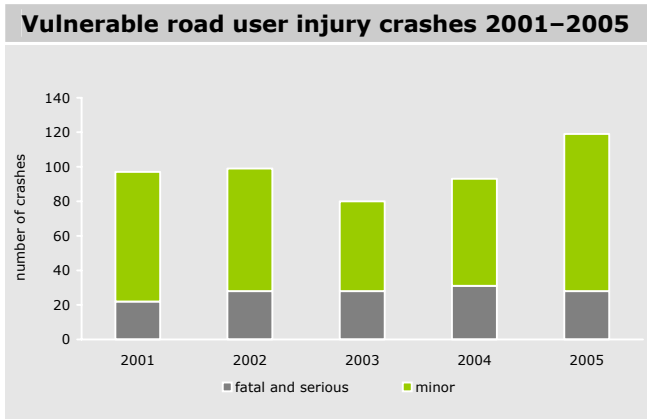
Unlicensed or disqualified drivers and drivers with conditional licences were disproportionately at fault in crashes compared with drivers holding a full licence

Vulnerable road users

Vulnerable road users are those who have very little physical protection in the event of a crash and are therefore susceptible to severe injuries.

Vulnerable road users were involved in 32 percent of the city's injury crashes, and 54 percent of the fatal or serious crashes between 2001 and 2005. In this period they accounted for nine fatalities, 133 serious injuries and 381 minor injuries.

Crashes resulting in minor injury have increased significantly in recent years, while those resulting in fatal or serious injury have remained fairly stable.

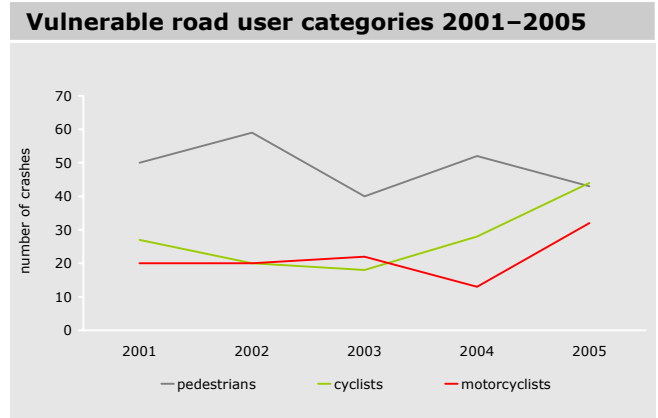


The table below compares the relative involvement of pedestrians, cyclists and motorcyclists in crashes over a range of road situations.

Situation	Pedestrian	Cyclist	M/cyclist
Wet road	21%	13%	19%
Dry road	79%	87%	81%
Dark	21%	15%	37%
Light	79%	85%	63%
Rural road	1%	0%	4%
Urban road	99%	100%	96%
Intersection	31%	58%	51%
Mid-block	69%	42%	49%

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

The following chart shows the relative numbers and the crash trends of the three vulnerable road user categories. The number of pedestrian crashes is trending downwards, while cyclist and motorcyclist crashes increased significantly in 2005.



Pedestrians

Most pedestrian crashes occurred on roads with high traffic volumes such as arterial or major collector roads. The majority of crashes involved pedestrians attempting to cross the road where in most cases they were struck by a vehicle approaching from the pedestrian's right side. Common crash causes are shown below.

Crash cause	Crashes
Running/walking heedless of traffic	50%
Vehicle failed to give way at crossing	7%
Vehicle failed to give way in other situation	6%
Stepped out from behind parked car	8%
Unsupervised child	5%
Pedestrian intoxicated	5%
Pedestrian not complying with traffic signals or school patrol	2%
Driver failed to check adequately when reversing	5%

Approximately half of pedestrians injured were aged 19 years or less, with peak times for crashes coinciding with school start and finish times on week days.

Cyclists

Just over 60 percent of cyclist crashes involved crossing or turning movements, mostly at intersections. The remaining crashes were generally rear-end or overtaking types and occurred primarily in mid-block locations. Some of the most common crash causes are listed in the table below.

Crash cause	Crashes
Failure to give way at a driveway	7%
Failure to give way in other situations	43%
Inadequate checking before giving way	40%
Riding on the footpath	9%

Almost three quarters of cyclist crashes involved males. Crashes were fairly evenly spread among the age groups from 10 to 54 years old. The peak times for crashes were from 7 to 9 am and 3 to 6 pm. Crash numbers were reasonably consistent on all days except for low numbers on Friday.

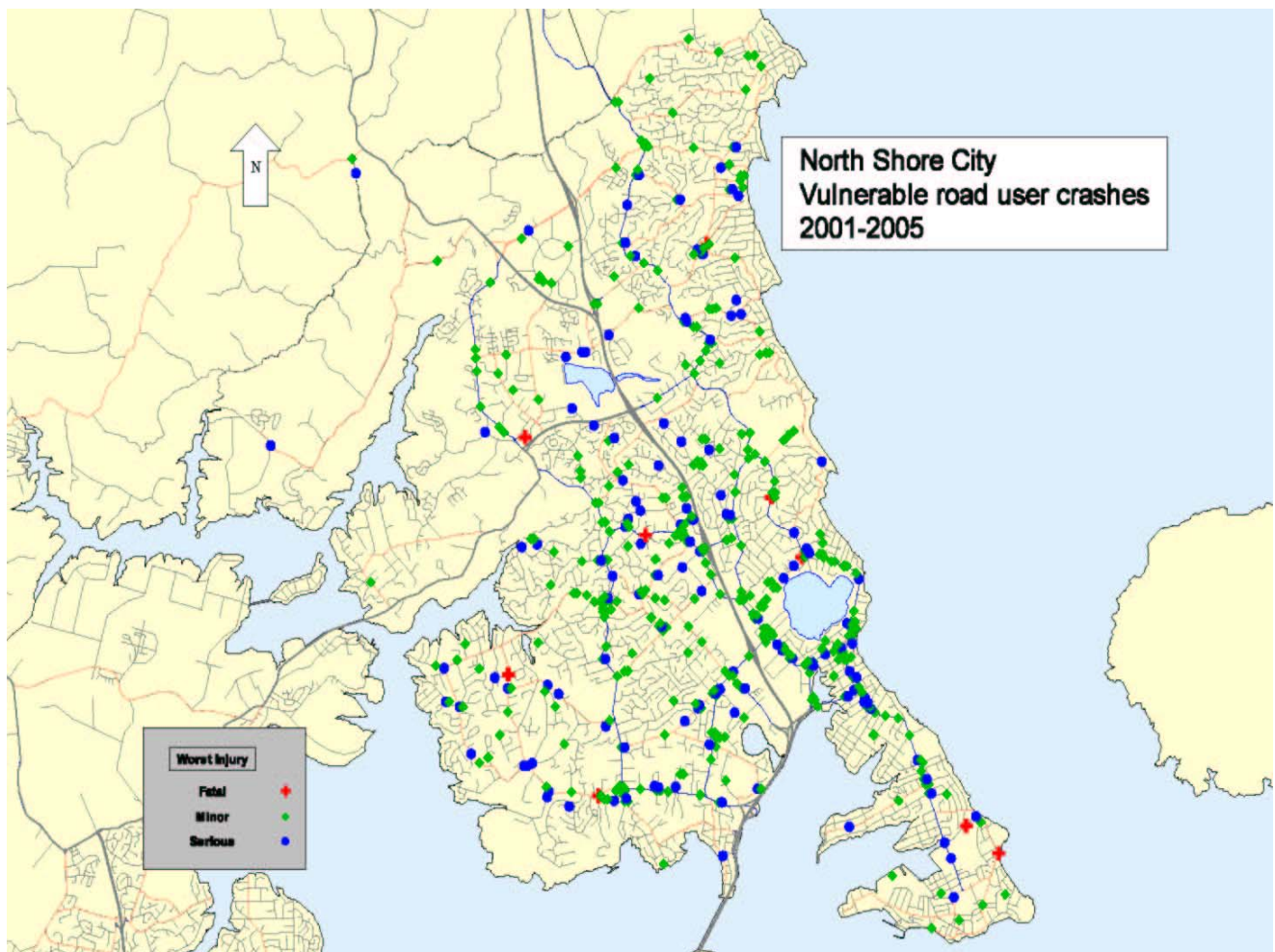
Motorcyclists

Over one third of crashes involving motorcyclists were crossing or turning movements, around three quarters of these being at intersections. Loss of control accounted for another 30 percent of crashes, most occurring 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	39%
Failure to give way or stop	35%
Excessive speed for the conditions	13%
Poor handling	16%
Road factors	18%

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

Eighty-seven percent of motorcyclist injuries involved males, and 70 percent were aged between 15 and 34 years old. Crashes were spread fairly evenly throughout the week apart from a peak on Fridays.



Poor observation

Poor observation contributed to almost one third of crashes resulting in fatal or serious injuries, and 41 percent of all injury crashes between 2001 and 2005. In this period, two fatalities, 87 serious injuries and 703 minor injuries were attributed to crashes where poor observation was a factor. Crashes resulting in minor injury reduced substantially in 2005.



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

Crossing or turning crashes

Crossing or turning crashes generally involved drivers failing to give way by not checking properly for other traffic at intersections or driveways. The most common factors associated with these are shown below.

Crash factor	Crashes
Checked too late when required to give way to traffic from another direction	70%
Failure to give way to non-turning traffic when turning	39%
Failure to give way at Give Way sign	31%
Failure to give way or stop at Stop sign	6%
Failure to give way at driveway	14%
Failure to stop for red light at signals	3%

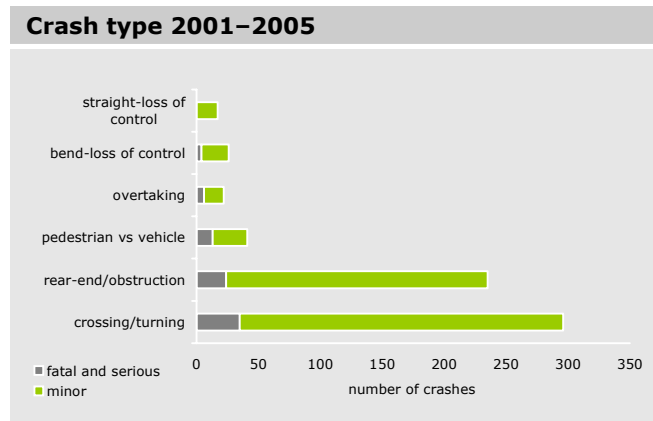
A disproportionate number of cyclists were involved in these crashes. Female drivers were at fault in around 60 percent of crossing or turning crashes. Peak times for crashes were from 8 am to 10 am, noon to 2 pm and 3 to 6 pm. Friday had the most crashes and the weekend the least.

Rear-end crashes

Rear-end crashes typically involved drivers not responding appropriately to situations around them in the traffic stream. The most common factors are shown below.

Crash factor	Crashes
Failure to notice car slowing	41%
Didn't check behind when changing lanes	16%
Alcohol	6%
Attention diverted – driver dazzled by sun/lights	7%
Attention diverted by other traffic	6%

Female drivers were at fault in approximately two thirds of rear-end crashes. Young drivers in the 15 to 24 year old age group were over-represented. Crashes occurred fairly evenly between 7 am and 8 pm and crash numbers generally increased throughout the week from Monday to Friday and tailed off during the weekend.



Roadside hazards

Roadside hazards were struck in 31 percent of fatal or serious crashes and 28 percent of injury crashes between 2001 and 2005. Crashes resulting in minor injury reduced last year while fatal or serious crashes increased in number.



In total, 614 roadside hazards were struck in 433 crashes in the last five years. These crashes resulted in 10 fatalities, 78 serious injuries and 440 minor injuries. Some of the roadside hazards most frequently struck are shown below.

Roadside hazard	Number of strikes	Proportion of fatal and serious crashes
Parked vehicle	153	14%
Post or pole	81	21%
Fence	76	17%
Tree	65	23%
Kerb	43	14%
Cliff or bank	32	16%
Traffic sign	25	16%

Although parked vehicles were the most commonly struck roadside hazard, only one in seven resulted in a fatal or serious injury. Trees were the most dangerous hazard resulting in a fatal or serious injury in almost one crash out of four. Some of the main characteristics of roadside hazard crashes are set out below.

Crash characteristic	Crashes
Loss of control of vehicle	61%
Crash at a bend	44%
Urban road	96%
Mid-block location	71%
Single vehicle	70%
Excessive speed for the conditions	28%
Alcohol	26%
Road factors	15%
Poor handling	27%
Fatigue	6%

Forty-nine percent of roadside hazard crashes occurred at night compared with 31 percent of all crashes in North Shore City. The following table shows examples of individual characteristics of these crashes that occurred disproportionately at night or in the wet.

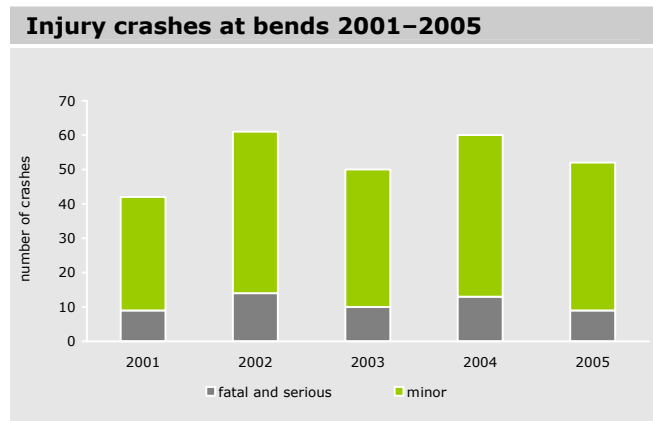
Description	Night	Wet
Alcohol	83%	31%
Excessive speed	66%	39%
Road factors	49%	63%
Poor handling	47%	40%
Fatigue	58%	31%

Road factors were primarily 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 almost two thirds of crashes and almost half of drivers were aged between 15 and 24 years old. The worst days for crashes were Fridays, Wednesdays, Sundays and Saturdays.

Crashes at bends

Between 2001 and 2005, 22 percent of crashes resulting in fatal or serious injury and 17 percent of all injury crashes, occurred at bends. These crashes resulted in eight fatalities, 55 serious injuries and 312 minor injuries. There is no clear trend in crash numbers although crashes did reduce in 2005 compared with the previous year.



Most crashes at bends involved a driver losing control of their vehicle. The following lists the main characteristics.

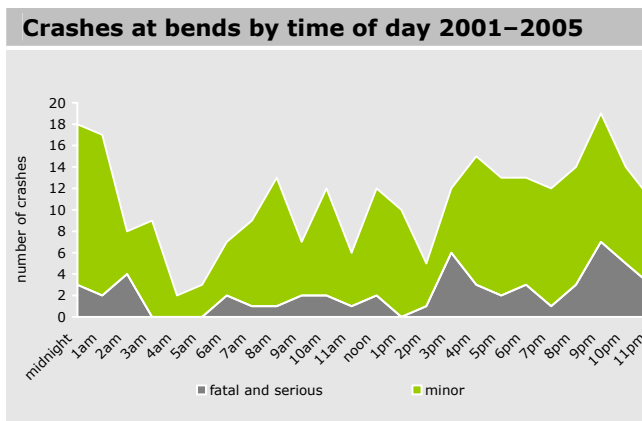
Crash characteristic	Crashes
Single vehicle	67%
Head-on collision	26%
Roadside hazard struck	67%
Alcohol	28%
Excessive speed for the conditions	48%
Road factors	20%
Poor handling	41%

Crashes at bends were over-represented at night (49 percent) and on wet roads (42 percent) compared with the city average. Some of the individual factors contributing to these crashes were also over-represented.

Description	Night	Wet
Poor handling	44%	50%
Alcohol	84%	35%
Excessive speed	59%	46%
Road factors	44%	74%

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

Drivers at fault were young males in approximately two thirds of these crashes and almost half were aged between 15 and 24 years. Crash numbers were highest from Friday to Sunday. The distribution of crashes throughout the day is shown below.



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