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Land Transport NZ
Ikiiki Whenua Aotearoa

road safety issues

Waitakere 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 Waitakere City.

Issues discussed in the body of the report are based on analysis of crashes on 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 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 crashes resulting in fatal or serious injury has been steadily reducing since 2002.

Major road safety issues

Waitakere City

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

Nationally

- Speed
- Alcohol
- Failure to give way
- Restraints

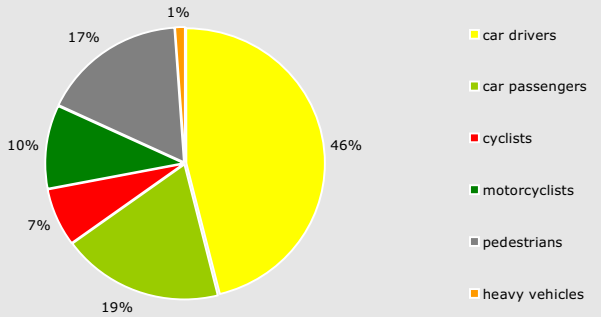
2005 road trauma for Waitakere City

Deaths	6
Serious casualties	51
Minor casualties	451

Fatal crashes	6
Serious injury crashes	47
Minor injury crashes	331
Non-injury crashes	1,212

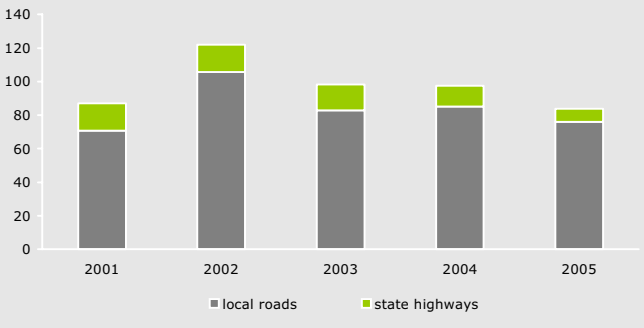
Fatal and serious casualties

User type 2001–2005



Estimated social cost of crashes*

Social cost ($ million)



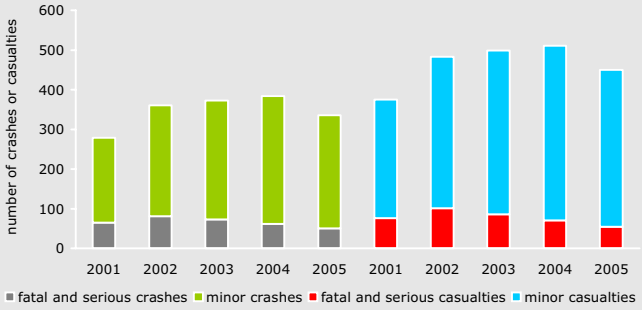
* The estimated social cost includes loss of life or life quality (estimated by the amount New Zealanders are prepared to pay to reduce their risk of fatal or non-fatal injury), loss of output due to injuries, medical and rehabilitation costs, legal and court costs, and property damage. These costs are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

Overview

Crash and casualty trends

The number of crashes resulting in fatal or serious injury has been reducing steadily since 2002.

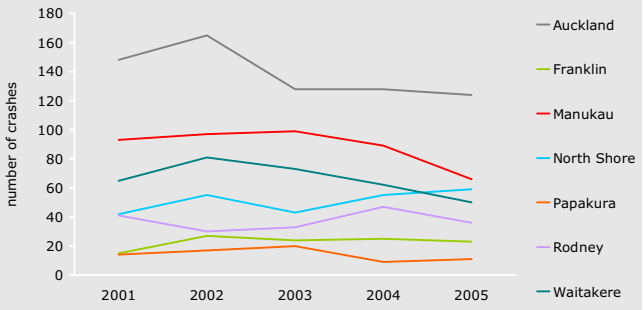
Crash and casualty numbers 2001–2005



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.

Fatal and serious crash trends by TLA 2001–2005

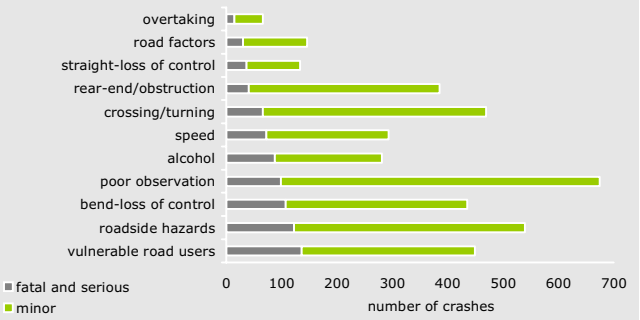


Selecting the issues

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.

Main crash characteristics 2001–2005



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	32%	30%
Dry road	68%	70%
Dark	35%	40%
Light	65%	60%
Rural road	8%	10%
Urban road	92%	90%
Intersection	42%	35%
Mid-block	58%	65%

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.

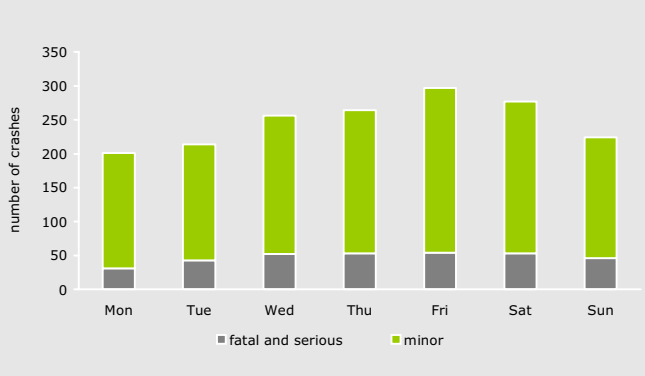
Vulnerable road users are those who have very little physical protection in the event of a crash and who are therefore more susceptible to severe injuries as shown below.

Road user	Injury	Fatal and serious
Pedestrians	14%	21%
Motorcyclists	6%	12%
Cyclists	5%	8%

Crash times

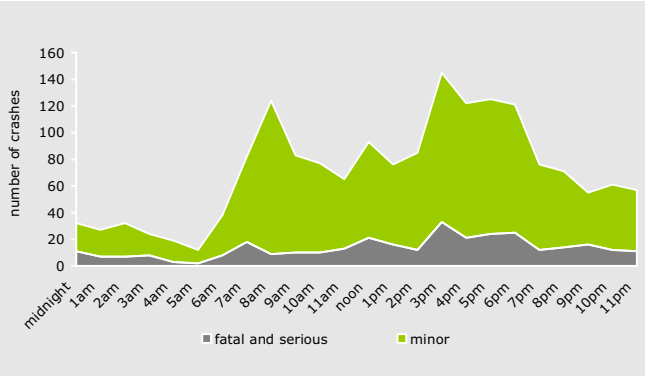
The number of crashes increased from Monday through to a peak on Friday, and then tailed away on Saturday and more so on Sunday.

Injury crashes by day of week 2001–2005



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.

Injury crashes by hour 2001–2005



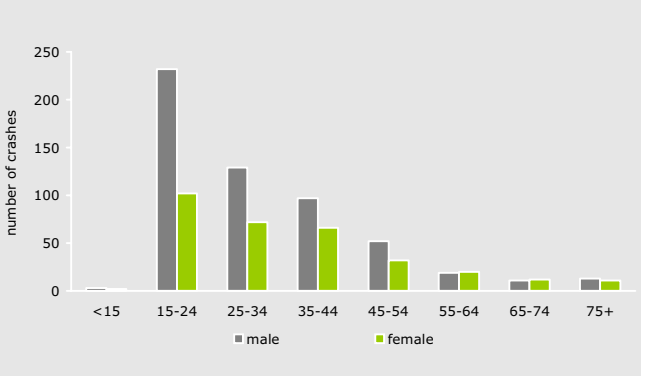
A number of crash characteristics were over-represented at night. The numbers in the table below compare with a city average of 35 percent of all injury crashes occurring at night.

Crash characteristic	Crashes at night
Alcohol	75%
Straight – loss of control	56%
Single vehicle crash	55%
Roadside hazard struck	52%
Excessive speed	50%
Bend – loss of control	47%
Weekend	47%

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 2001–2005



Most crashes (64 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 and poor observation.

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	63%	54%
Learner/restricted/ overseas	30%	35%
Disqualified/expired/forbidden/ never licensed/wrong class	7%	11%

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

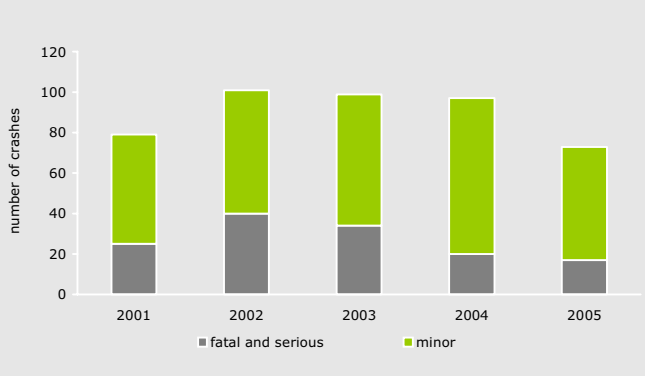
Vulnerable road users

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 26 percent of the city's injury crashes and 41 percent of the fatal or serious crashes between 2001 and 2005. In this period they accounted for 10 fatalities, 130 serious injuries and 354 minor injuries.

Crash numbers have been reducing since 2002, particularly those resulting in fatal or serious injury which have more than halved in this period.

Vulnerable road user injury crashes 2001–2005

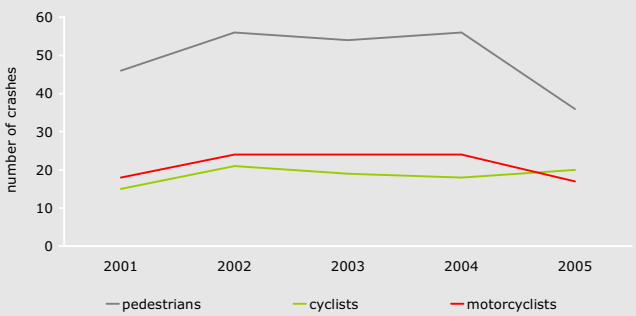


The table below compares the relative involvement of pedestrians, cyclists and motorcyclists in crashes over a range of road situations.

Situation	Pedestrian	Cyclist	M/cyclist
Wet road	22%	12%	23%
Dry road	78%	88%	77%
Dark	22%	20%	32%
Light	78%	80%	68%
Rural road	1%	3%	10%
Urban road	99%	97%	90%
Intersection	35%	42%	41%
Mid-block	65%	58%	59%

Compared with city averages, a much lower proportion of crashes occurred on wet roads or in the dark (apart from motorcyclists). Almost two thirds of pedestrian crashes and the majority of cyclist and motorcyclist crashes took place at mid-block locations. The following chart shows the relative numbers and the crash trends of the three vulnerable road user categories. There was a sharp reduction in the number of pedestrian crashes in 2005, a lesser reduction in motorcyclist crashes and a small increase in cyclist crashes.

Vulnerable road user categories 2001–2005



Pedestrians

Most pedestrian crashes occurred on roads with high traffic volumes such as arterials 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	54%
Vehicle failed to give way at crossing	8%
Vehicle failed to give way or stop in other situations	6%
Stepped out from behind parked car	4%
Unsupervised child	11%
Pedestrian intoxicated	4%
Pedestrian wearing dark clothing	4%
Driver failed to check adequately when reversing	5%
Pedestrian playing on road	2%

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

Cyclists

Almost two thirds of cyclist crashes involved crossing or turning movements, over half of these in mid-block locations. The remaining crashes were generally overtaking or rear-end crash movements and also occurred primarily in mid-block locations. Some of the most common crash causes are listed below.

Crash cause	Crashes
Failure to give way at a driveway	17%
Failure to give way or stop in other situations	42%
Inadequate checking before giving way	31%
Riding on the footpath	22%

Ninety percent of cyclist crashes involved males. The peak age groups for crashes were five to 14 year olds and 35 to 44 year olds. The peak times for crashes were from 3 pm to 6 pm. Crash numbers were highest from Monday to Thursday, with much lower numbers on Friday and the weekend.

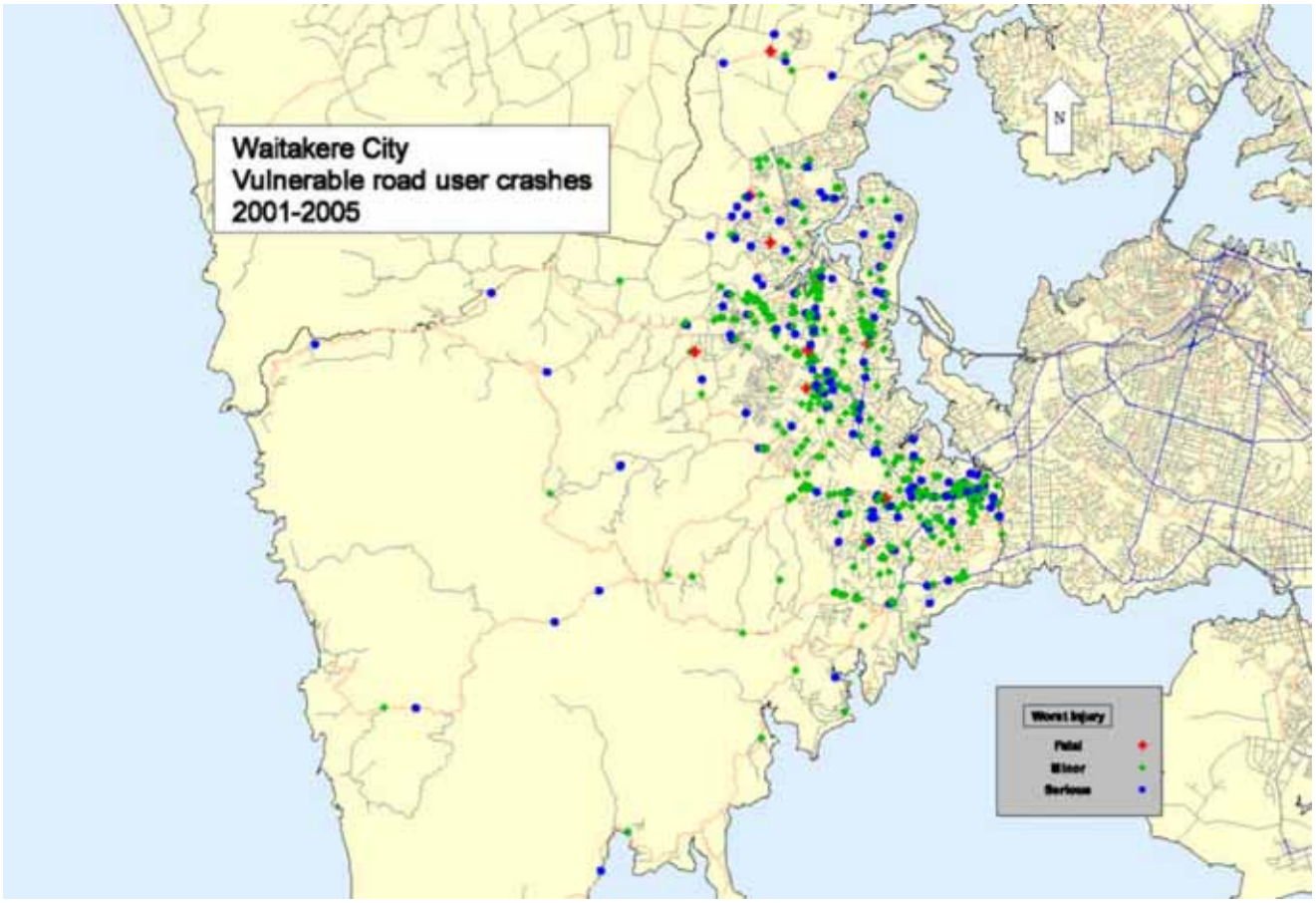
Motorcyclists

Thirty-eight percent of crashes involving motorcyclists were crossing or turning movements, around two thirds of these being at intersections. Rear-end collisions and loss of control crashes at bends comprised most of the remaining crashes, the vast majority of these being at mid-block locations. The most common crash causes are listed below.

Crash cause	Crashes
Poor observation	62%
Failure to give way or stop	40%
Excessive speed for the conditions	12%
Poor handling	11%
Alcohol	7%
Road factors	6%

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

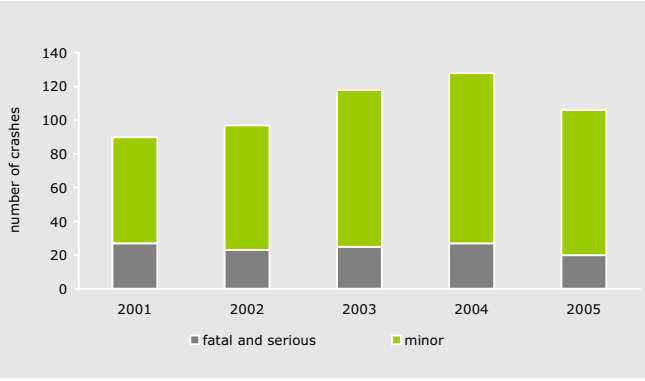
Ninety-four percent of motorcyclist injuries involved males, with the peak age groups between 20 and 39 years old. Peak crash times were 3 pm to 6 pm. Most crashes occurred on Sunday and Friday, with a fairly even distribution throughout the remainder of the week apart from low numbers on Monday.



Roadside hazards

Roadside hazards were struck in 37 percent of fatal or serious crashes and 31 percent of injury crashes between 2001 and 2005. Crash numbers reduced last year after several years of increases.

Roadside hazard injury crashes 2001–2005



In total, 753 roadside hazards were struck in 539 crashes in the last five years. These crashes resulted in 21 fatalities, 119 serious injuries and 572 minor injuries. Some of the roadside hazards most frequently struck are shown below.

Roadside hazard	Number of strikes	Proportion fatal and serious
Post or pole	137	24%
Parked vehicle	120	25%
Fence	96	21%
Tree	91	32%
Cliff or bank	76	32%
Ditch	38	18%
Traffic island	27	19%
Traffic sign	26	4%
House or building	24	17%

Posts or poles were the most commonly struck roadside hazard, and one in four resulted in a fatal or serious injury. Trees and cliffs/banks were the most dangerous hazard, resulting in a fatal or serious injury in one out of every three crashes. Some of the main characteristics of roadside hazard crashes are set out below.

Crash characteristic	Crashes
Vehicle lost control	73%
Crash at a bend	56%
Urban road	86%
Mid-block location	76%
Single vehicle	79%
Excessive speed for the conditions	34%
Alcohol	34%
Road factors	13%
Poor handling	29%
Fatigue	11%

Fifty-two percent of roadside hazard crashes occurred at night compared with 35 percent of all crashes in Waitakere 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	78%	38%
Excessive speed	60%	40%
Road factors	39%	79%
Poor handling	49%	48%
Fatigue	68%	32%

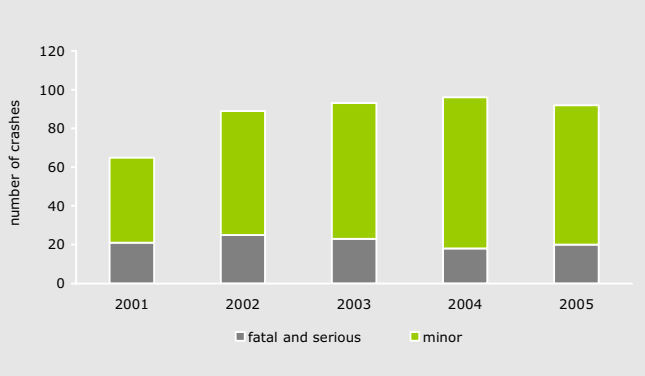
Road factors were primarily a slippery surface, although the condition of the road surface itself and restricted visibility along the road were also concerns.

Male drivers were at fault in two thirds of crashes and 55 percent of drivers were aged between 15 and 29 years old. The worst days for crashes were Fridays, Saturdays and Sundays.

Crashes at bends

Between 2001 and 2005, 32 percent of crashes resulting in fatal or serious injury and 25 percent of all injury crashes occurred at bends. These crashes resulted in 16 fatalities, 121 serious injuries and 507 minor injuries. Crash numbers have remained fairly constant for the past four years.

Injury crashes at bends 2001–2005



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	27%
Roadside hazard struck	69%
Alcohol	29%
Excessive speed for the conditions	44%
Road factors	18%
Poor handling	40%
Urban road	77%
Poor handling	29%
Fatigue	11%

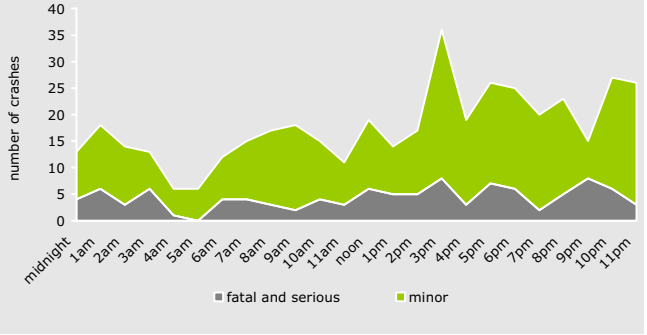
Crashes at bends were over-represented at night (47 percent) and on wet roads (47 percent) when compared with the city average. Some of the individual characteristics of these crashes were also over-represented.

Description	Night	Wet
Head-on	80%	35%
Alcohol	49%	45%
Excessive speed	33%	80%
Road factors	44%	53%

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 three quarters of these crashes and around two thirds were aged between 15 and 29 years. Crash numbers generally rose throughout the week from Monday to Saturday, with a slight drop on Sunday. The following graph shows the distribution of crashes throughout the day.

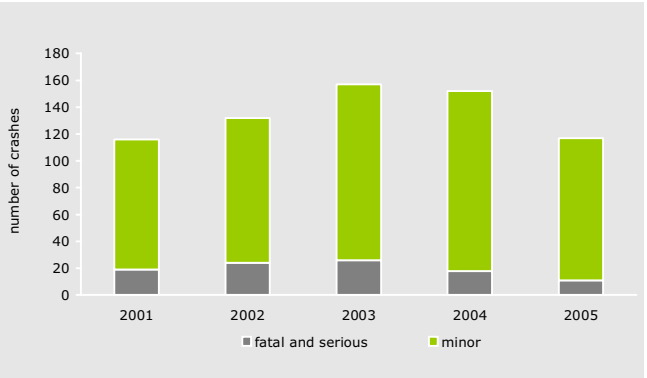
Crashes at bends by hour 2001–2005



Poor observation

Poor observation contributed to 30 percent of crashes resulting in fatal or serious injuries, and 39 percent of all injury crashes between 2001 and 2005. In this period, six fatalities, 98 serious injuries and 795 minor injuries were attributed to crashes where poor observation was a factor. Crash numbers reduced substantially in 2005.

Poor observation injury crashes 2001–2005



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	77%
Failure to give way to non-turning traffic when turning	36%
Failure to give way at Give Way sign	29%
Failure to give way or stop at Stop sign	8%
Failure to give way at driveway	14%
Failure to stop for red light at signals	5%

A disproportionate number of cyclists and motorcyclists were involved in these crashes. Female drivers were at fault in just over half of crossing or turning crashes. Crash numbers were consistently high from 7 am to 9 pm and between Tuesday and Friday.

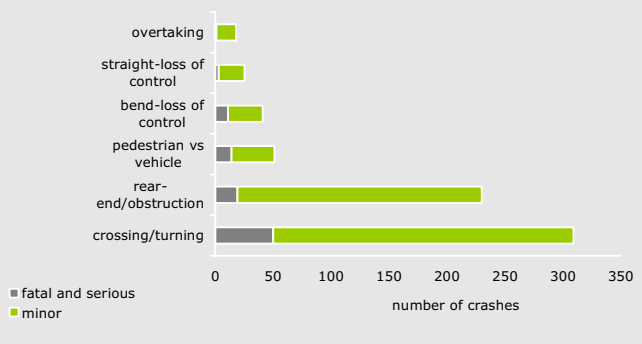
Rear-end crashes

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

Crash factor	Crashes
Failure to notice car slowing	40%
Didn't check behind when changing lanes	17%
Alcohol	9%
Attention diverted – driver dazzled by sun/lights	7%
Attention diverted by other traffic	7%

Female drivers were at fault in 46 percent of rear-end crashes, more than the average of 36 percent for all crashes citywide. Crashes were spread quite evenly throughout the age groups from 15 to 49 years old. Crashes were spread fairly evenly from Monday to Saturday, with much lower numbers on Sunday. There was also a fairly even spread of crashes throughout the day from 7 am to 9 pm.

Crash type 2001–2005



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