

road safety issues

July 2003

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 1998–2002 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 Waitakere City.

Issues identified in this report are based on analysis of the city's local road crashes only, and do not include state highways, which are covered in a separate report. State highway crashes, however, do feature in the casualty and social cost charts.

The social cost of crashes in the city increased significantly last year after higher numbers of crashes were recorded on local roads. In 2002 there were 11 fatalities and 540 other injuries caused by crashes in the city. The severity of some of these crashes could have been reduced if more drivers and passengers were wearing safety belts. Wearing a safety belt reduces the chance of death or serious injury in a crash by 40 percent. Surveys of front seat occupants last year showed that wearing rates were slightly lower than in previous years.

This year's report includes a general overview of local road crash trends, followed by a closer look at the main issues identified. More detailed information about crash numbers and trends can be found in the road safety report for Waitakere City published each year by the LTSA.

Major road safety issues

Waitakere City

Crashes on bends or with roadside hazards

Alcohol

Speed

Poor observation

Nationally

Speed

Alcohol

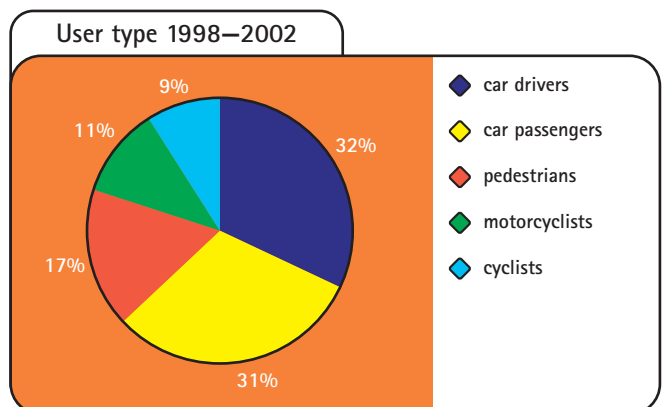
Failure to give way

Restraints

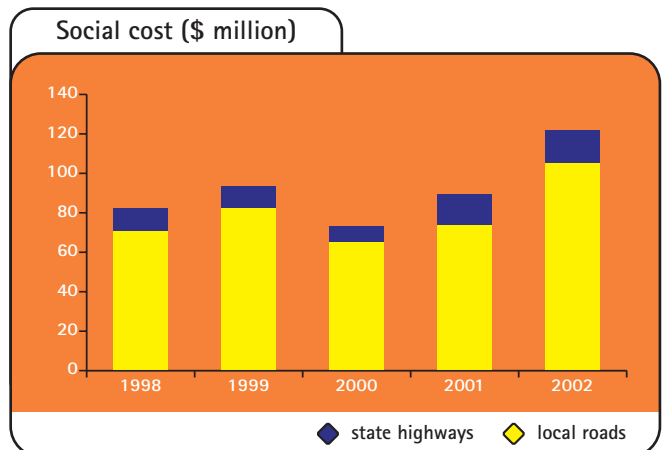
2002 road trauma for Waitakere City

Deaths	11
Serious casualties	100
Minor casualties	440
Fatal crashes	11
Serious injury crashes	82
Minor-injury crashes	310
Non-injury crashes	1,398

Road deaths 1998–2002



Estimated social cost of crashes*

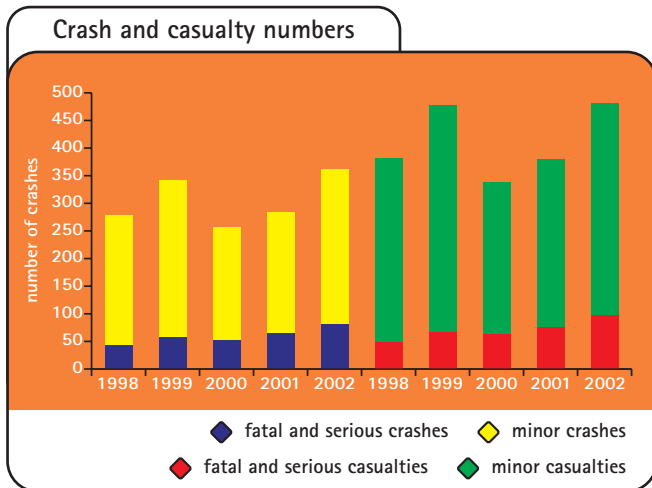


* The estimated social cost includes loss of life or life quality (estimated by the amount New Zealanders are prepared to pay to reduce their risk of fatal or non-fatal injury), loss of output due to injuries, medical and rehabilitation costs, legal and court costs, and property damage. These costs are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

Overview of local road crashes

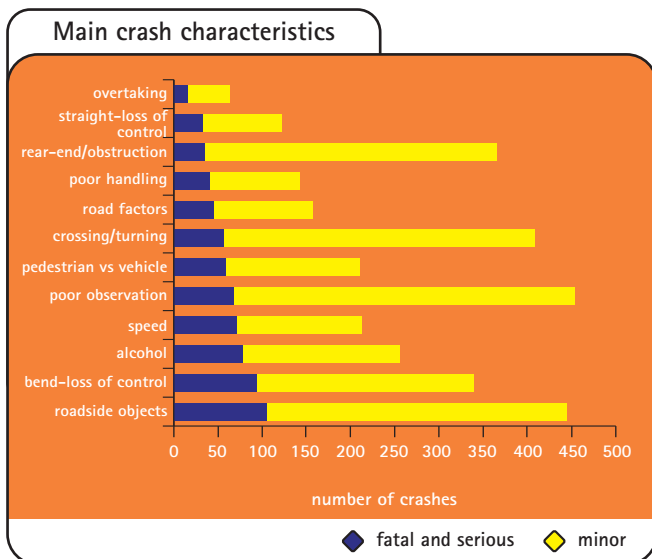
Crash and casualty trends

The overall number of crashes on Waitakere City local roads increased significantly in 2002. The increase in crash numbers occurred in all severity categories, and resulted in higher casualty numbers as seen in the chart below.



Main crash characteristics

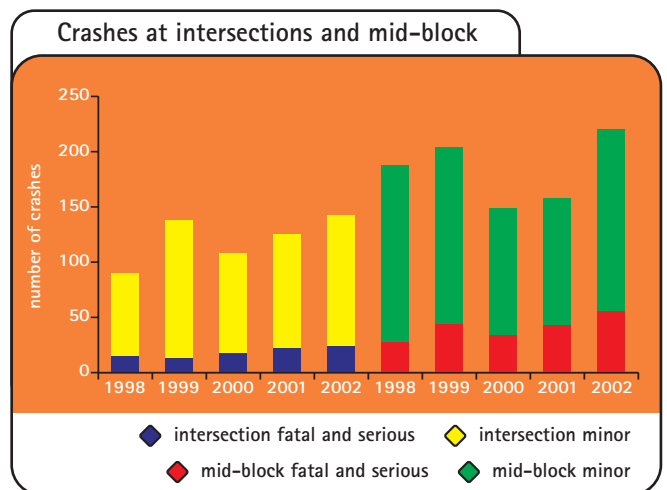
The following chart illustrates the main characteristics of crashes within the city. The four issues discussed later in this report were chosen because crashes with their characteristics had the highest incidences of fatal and serious injuries. However some other categories had considerably more minor-injury crashes. In 2002 there were increased numbers of crashes for all categories shown in the chart.



Examination of all major crash types followed by appropriate treatment of problems is required for a significant improvement in safety to be made. Because crashes are generally the result of many inter-related circumstances, examination of the four main issues will overlap into other issues not specifically looked at in this report. For instance, poor observation was a major factor in rear-end crashes and contributed significantly to crossing or turning crashes.

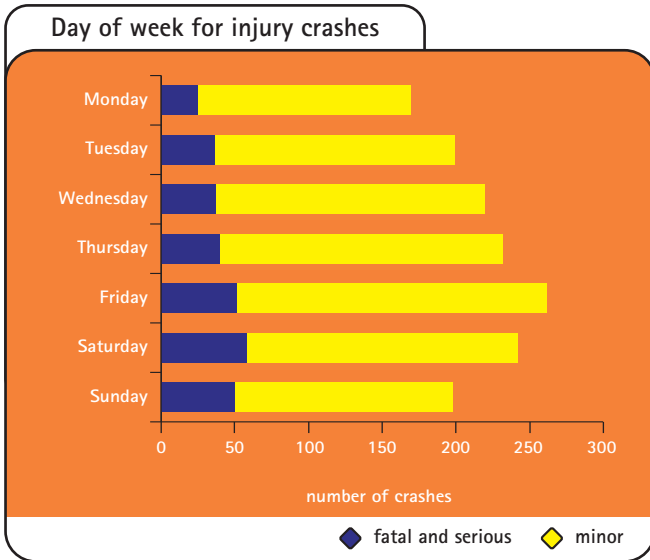
Intersection and mid-block crashes

Crash numbers at intersections and non-intersections increased substantially last year. Around 60 percent of crashes occurred in mid-block locations between 1998 and 2002, and these resulted in almost 70 percent of fatal and serious injuries. The higher severity ratio in mid-block crashes can probably be attributed to higher speeds associated with them (such as loss of control crashes) and higher numbers of crashes involving vulnerable road users such as pedestrians, motorcyclists and cyclists.

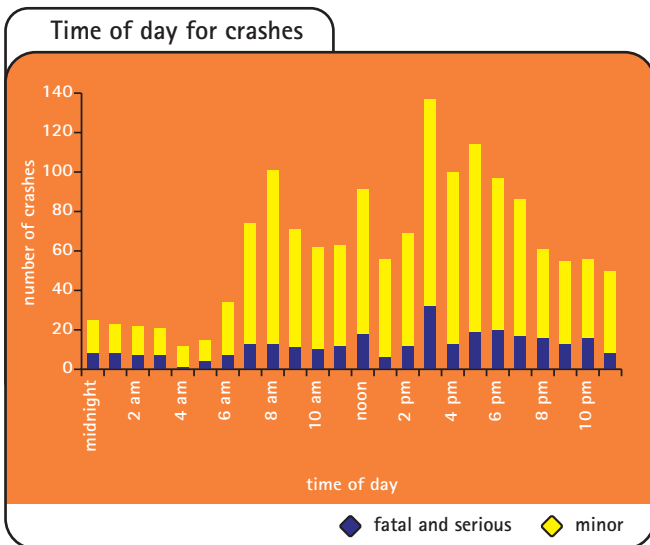


Crash times

The number and severity of crashes generally increased throughout the week with the exception of lower numbers on Sundays.



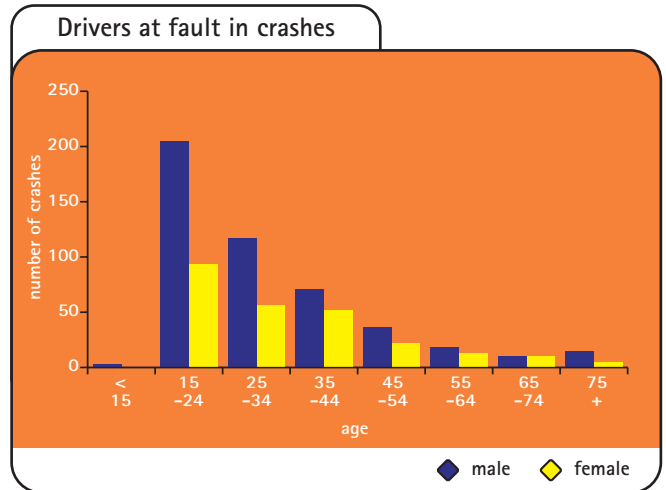
The peak period for crashes was from 3 pm to 7 pm, with smaller peaks around 8 am and noon. Outside of these times, crash numbers were reasonably consistent from 7 am through to late evening.



Just over a third (35 percent) of crashes occurred during the hours of darkness. However some crash factors were highly over-represented at night, namely alcohol (81 percent), fatigue (64 percent) and speed (47 percent). These factors all contributed significantly to loss of control crashes (62 percent of loss of control crashes on straight roads and 47 percent of those at bends) and occurred at night.

Drivers at fault

The following chart shows the gender and age distribution of drivers deemed to have been at fault in crashes. Sixty-five percent of crashes were caused by male drivers, and almost three quarters of all drivers were aged between 15 and 39 years. Women drivers were disproportionately represented in crossing or turning crashes where failure to give way was often a factor.





Crashes on bends or with roadside hazards

In the period 1998–2002, almost half (47 percent) of crashes resulting in fatal or serious injury, and 38 percent of all injury crashes in Waitakere City occurred at bends or involved a collision with a roadside hazard. Crash numbers have been increasing for the past two years.

Crash severity	1998	1999	2000	2001	2002
Fatal and serious	23	29	24	32	33
Minor	69	110	72	78	101
Total	92	139	96	110	134

Crashes on bends and crashes involving roadside hazards being struck had similar characteristics. A high proportion involved loss of control, generally a single vehicle was involved, and excessive speed and alcohol featured strongly. Other prominent factors were poor handling, poor observation and road factors (primarily a slippery road surface). Crashes at night were over-represented (50 percent), as were crashes on wet roads (41 percent).

Almost three quarters of drivers at fault in these crashes were male, and over three quarters were aged between 15 and 39 years.

The roadside hazards most frequently struck are shown below. Roadside hazards contributed to 15 fatalities and over 480 other injuries in crashes between 1998 and 2002.

Roadside hazard	Number of strikes
Post or pole	115
Parked vehicle	107
Tree	80
Fence	60
Cliff or bank	55
Ditch	27

Sixty-one percent of the parked vehicles struck were in rear-end type collisions where a vehicle in the traffic stream wandered off track. Most of the remaining 39 percent were hit by out of control vehicles.

Solid objects or unprotected hazards near the side of a road make it much less safe than a road with good clear zones outside the road edges that allow errant vehicles room to recover safely.



Recommended actions

Engineering

Waitakere City should consider developing a safety management system (SMS) for its roading network. Funding and assistance from the LTSA is available for this purpose. An SMS would help to identify road safety strategies, standards, expertise, management systems and audit regimes appropriate to the roading network.

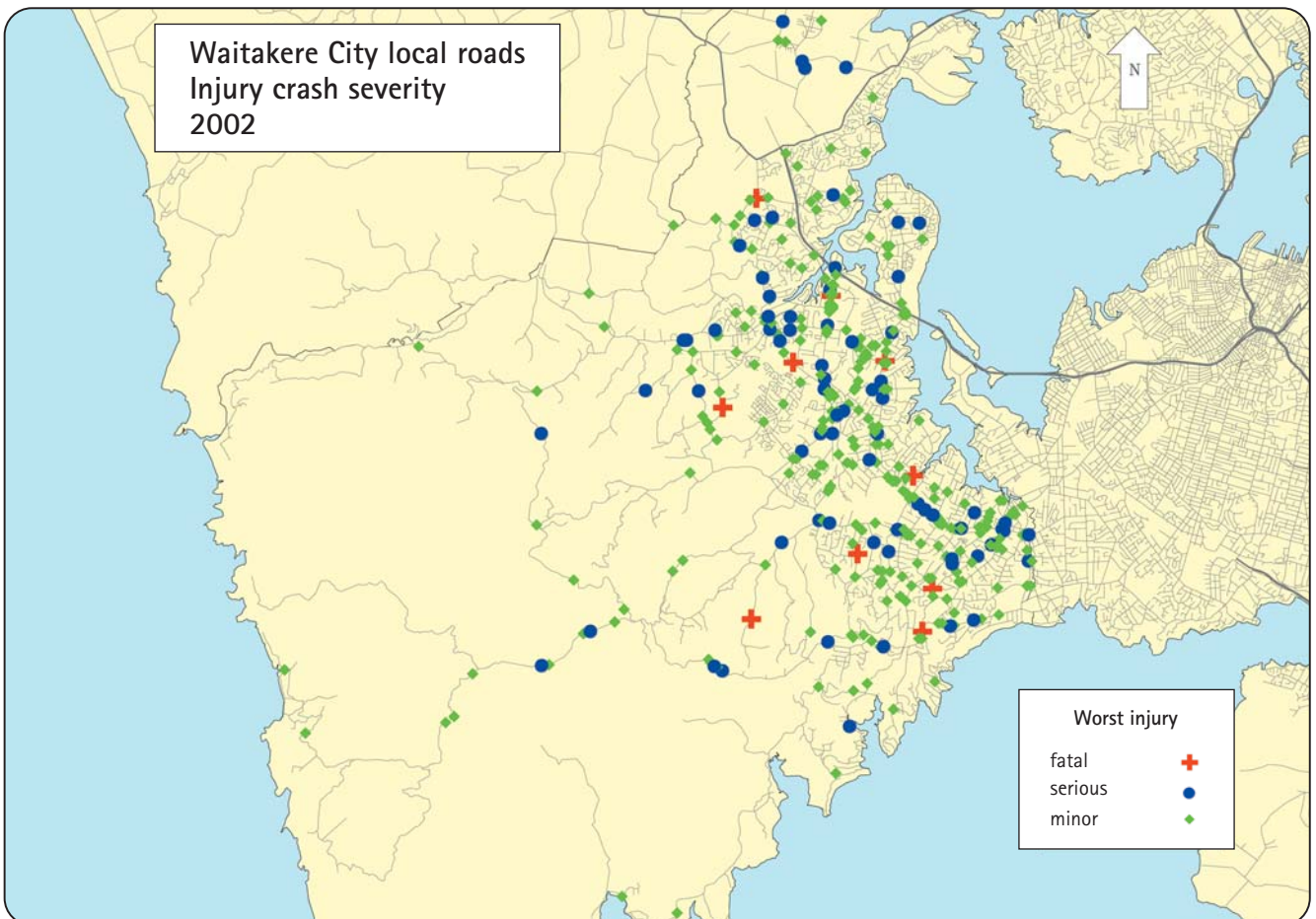
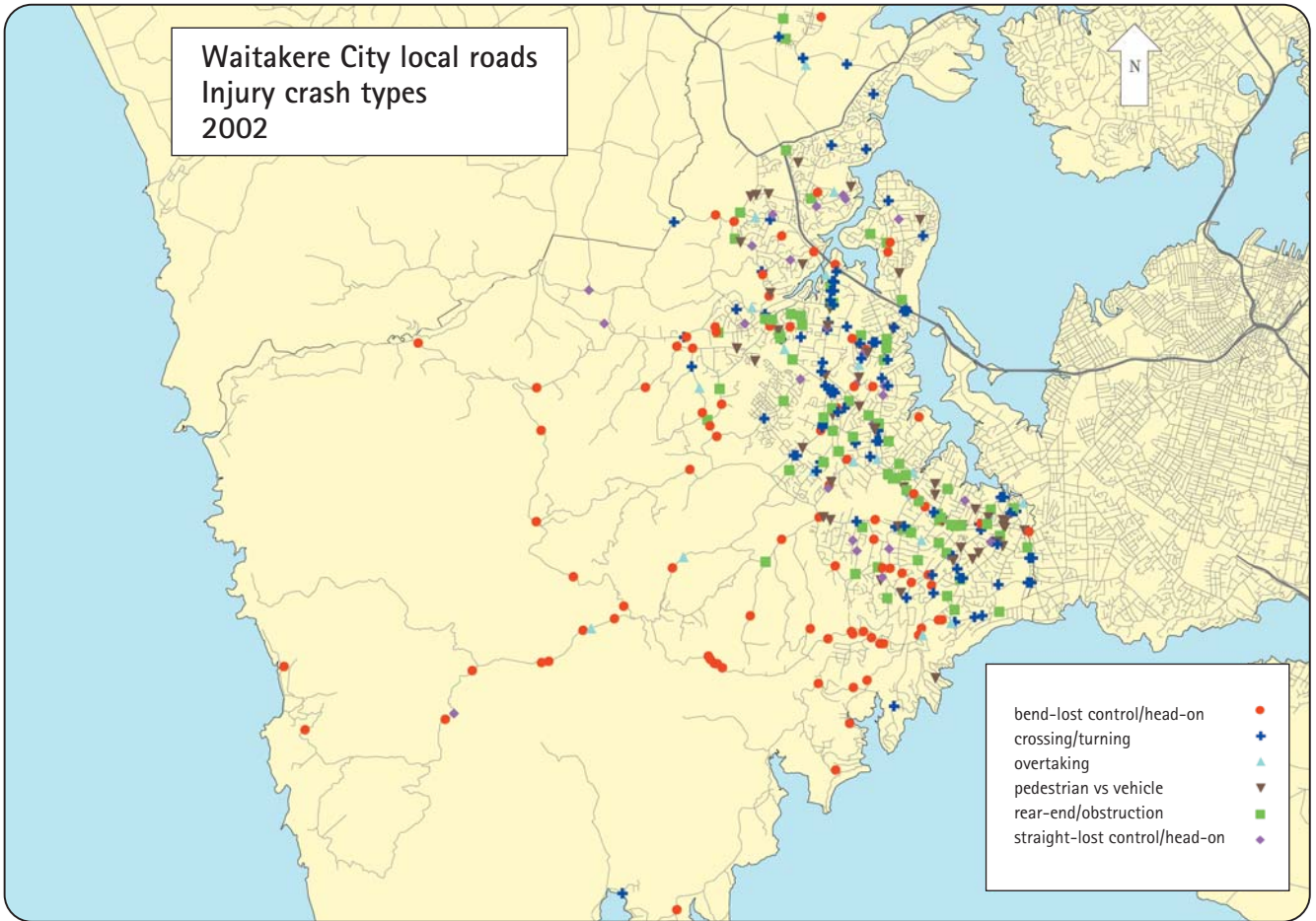
- Either within or outside of an SMS framework, specific actions to address crashes at bends or with roadside hazards could include:
 - prioritising routes for treatment according to their crash rates
 - systematically investigating and treating surface friction, drainage, delineation, lighting, signposting and road geometry issues
 - removing, relocating or protecting hazards depending on specific circumstances
 - working with utility companies to remove poles from within the road reserve and to place services underground where possible
 - adoption of clear zones on new or upgraded roads
 - ensuring that adequate separation exists between parked vehicles and through traffic on major or problem routes.

Enforcement

- Support the continued development of road safety action plans (RSAPs) to direct resources to the areas of greatest road safety risk, including:
 - targeted enforcement of speed and alcohol
 - targeted enforcement of younger male drivers.

Education

- Conduct programmes aimed at improving cornering behaviour, including driving at appropriate speeds.
- Conduct programmes targeting younger male drivers.
- Conduct programmes to increase driver awareness of the dangers of roadside hazards.





Alcohol

In the period 1998–2002, 26 percent of crashes resulting in fatal or serious injury, and 17 percent of all injury crashes, involved alcohol as a contributing factor. Last year saw a significant increase in crash numbers, including seven fatal crashes.

Crash severity	1998	1999	2000	2001	2002
Fatal and serious	12	13	13	15	25
Minor	39	47	31	24	37
Total	51	60	44	39	62

Studies show that the risk of being involved in a crash increases rapidly as a driver’s blood alcohol level rises. A driver over the legal limit (80 mg of alcohol per 100 ml of blood) is three times more likely to be involved in a crash than a sober driver.

Younger male drivers (15 to 39 years old) were at fault in most of these crashes, which were generally single vehicle loss of control crashes. Rear-end collisions and crossing or turning crashes were the next most common crash types. Excessive speed for the conditions was cited as an additional factor in around a quarter of alcohol-related crashes, while poor observation and failure to give way also featured.

Around two thirds of alcohol-related crashes occurred from Friday to Sunday, and 81 percent were during the hours of darkness. Fifteen roads in the city accounted for exactly half the crashes. The top six roads were as follows:

Road	Number of alcohol crashes
Great North Road	21
Te Atatu Road	14
Don Buck Road	11
Swanson Road	11
West Coast Road	11
Scenic Drive	10

Recommended actions

Engineering

- Carry out studies of roads or routes where high numbers of alcohol-related crashes occur, with the purpose of upgrading them to appropriate and consistent standards. Specific treatments that could be looked at include street lighting, delineation, signposting, road marking, use of profiled edge lines.

Enforcement

- Support the continued development of road safety action plans (RSAPs) to direct resources to the areas of greatest road safety risk, including:
 - targeted enforcement of high-risk times and locations
 - targeted enforcement of younger male drivers.

Education

- Support continued programmes targeting younger male drivers.



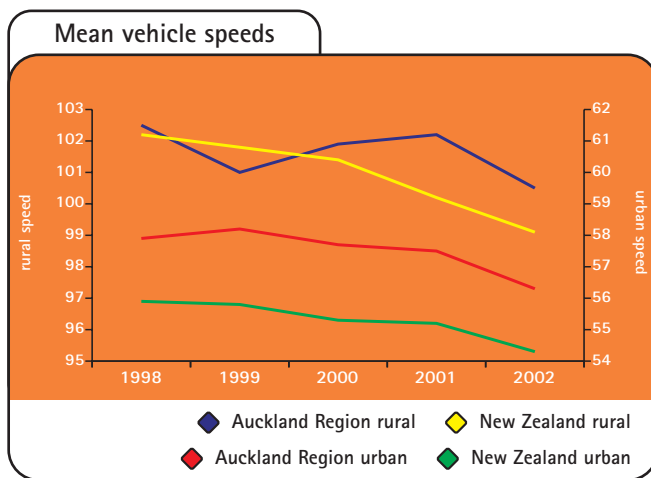
Speed

Between 1998 and 2002, 24 percent of crashes resulting in fatal or serious injury and 14 percent of all injury crashes involved excessive speed for the conditions as a contributing factor. The overall number of these crashes in Waitakere City increased substantially last year.

Crash severity	1998	1999	2000	2001	2002
Fatal and serious	13	15	13	17	13
Minor	25	29	33	18	37
Total	38	44	46	35	50

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, and 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 figures were not available for Waitakere City, but throughout the Auckland Region mean speeds in both rural and urban areas reduced substantially last year. However, speeds were still higher than throughout New Zealand as a whole, as shown in the following chart.



Younger male drivers (15 to 39 years old) were at fault in a very high proportion of speed-related crashes within the city. These crashes generally involved loss of control or rear-end collisions. Other factors often associated with them were alcohol, poor handling and slippery road surface.

➔ Recommended actions

Engineering

- Carry out studies of roads or routes where high numbers of speed-related crashes occur, with the purpose of upgrading them to appropriate and consistent standards. Specific treatments that could be looked at include delineation, signposting, shoulder width, alignment and surface friction.

Enforcement

- Support the continued development of road safety action plans (RSAPs) to direct resources to the areas of greatest road safety risk, including:
 - targeted enforcement of high-risk times and locations
 - stricter enforcement of speed limits.

Education

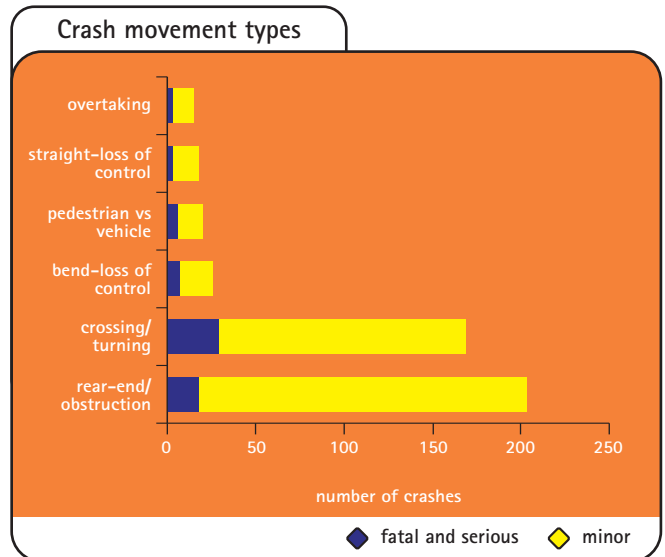
- Conduct programmes to improve awareness of driving at speeds appropriate for the conditions, particularly on winding roads.
- Conduct programmes designed to influence younger male drivers.

👓 Poor observation

Poor observation contributed to 23 percent of crashes resulting in fatal and serious injuries, and almost a third of injury crashes in the city between 1998 and 2002. Crash numbers have been increasing significantly in recent years.

Crash severity	1998	1999	2000	2001	2002
Fatal and serious	2	12	11	19	24
Minor	74	52	51	99	109
Total	76	64	62	118	133

Most crashes were either rear-end collisions or intersection type turning or crossing movements. Rear-end crashes typically involved drivers not responding properly to situations around them in the traffic stream, for instance not checking behind thoroughly when changing lanes, or 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.



Women drivers were slightly over-represented in these crashes compared with the city average. Over three quarters of the crashes were caused by drivers aged between 15 and 44 years, and most occurred during daylight hours with a reasonably even spread between 7 am and 7 pm.

➔ Recommended actions

Engineering

- Ensure that major roads or problem routes are marked to appropriate standards. For instance allow adequate separation between through vehicles and turning or parked vehicles by utilising flush medians, right turn bays, marked parking lanes, etc.
- Ensure that signs, signals and markings at intersections are in good condition and easily visible, and that sight triangles are adequate.

Enforcement

- Support the continued development of road safety action plans (RSAPs) to direct resources to areas of greatest road safety risk, including targeting driver behaviour in the traffic stream, eg following too closely, or changing lanes abruptly or without signalling.

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.

New Zealand Road Safety Programme

Reducing road 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 Land Transport Programme.

Community projects

Through the Community Road Safety Programme (CRSP) the NZRSP provides funding for community development and community programmes to support road safety and to bring about positive and sustainable changes in community attitudes and behaviours. CRSP funding of community initiatives aims to encourage local involvement and ownership of road safety issues, and to target local resources and effort to local risks. This year's review of the programme initiates a re-focus of effort and funding into community development. This involves working with and within different communities of people to assist them in becoming aware of their own local road safety issues and developing solutions to achieve better road safety outcomes.

Road policing

Police enforcement hours to support community projects are now allocated to police community service hours rather than to individual projects. The delivery of these hours to support community initiatives will need to be negotiated by the road safety co-ordinator.

In the 2003/2004 year 47,380 hours will be delivered by the Police in Waitakere City as follows:

Project	Police hours
Strategic – alcohol/drugs, restraints, speed and visible road safety enforcement	33,470
Traffic management – crash attendance events, incidents, emergencies and disasters, traffic flow supervision	9,950
School road safety education	2,150
Police community services	1,810

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 22 percent in Waitakere City (23 percent at state highway sites and 21 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

Waitakere City Road Safety Report 1998–2002

LTSA Crash Analysis System

Where to get more information

For more specific information relating to road crashes in Waitakere City, please refer to the 1998 to 2002 Road Safety Data Report or the Land Transport Safety Authority Crash Analysis System, or contact the people or organisations listed below:

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