road safety issues

The Land Transport Safety Authority (LTSA) has prepared this road safety issues report. It is based on reported 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 on Auckland motorways.

Information in this report covers the northern motorway (in North Shore City), the southern motorway, the south-western motorway, the north-western motorway together with State Highways 20 and 20A.

The number of injury crashes reported in 2003 was the highest recorded over the last 10 years. The main increase was in the number of minor injury crashes (an increase of almost 100 between 2002 and 2003).

The following table shows the distribution of crashes over the network for the period 1999–2003.

Road	Fatal crashes	Injury crashes
SH 1	29	1,178
SH 16	5	357
SH 20	6	191
SH 20A	1	49
Local roads	3	413

Note: The local road crashes shown above and in the social cost graph are those at the junctions of motorway ramps and local authority roads.

Major road safety issues

Auckland motorways

- **Loss of control**
- **Rear-end crashes**
- **Roadside hazards**
- **Interchange crashes**

Nationally

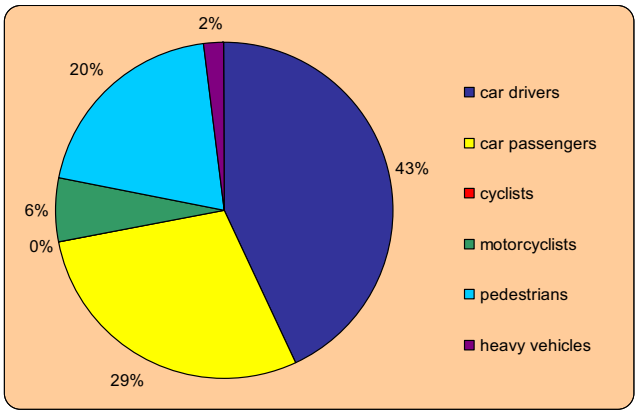
- **Speed**
- **Alcohol**
- **Failure to give way**
- **Restraints**

2003 road trauma for Auckland motorways

Deaths	8
Serious casualties	61
Minor casualties	633
Fatal crashes	7
Serious injury crashes	46
Minor injury crashes	482
Non-injury crashes	2,198

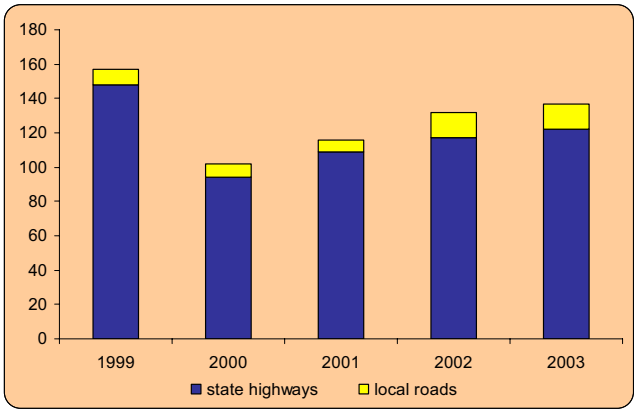
Road deaths 1999–2003

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.

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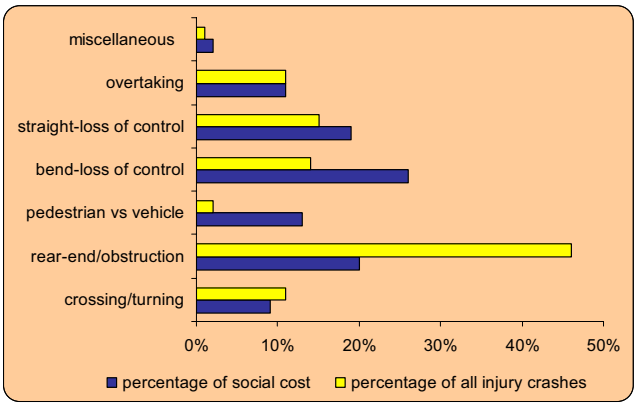
Loss of control

There are a number of methods available to identify road safety issues. The simplest is to use just the number of each type of crash. An alternative is to use the social cost of the crash. The social method allows a larger weighting to be placed on those crashes that result in greater injury severity. The graph below clearly shows this.

Crash types 1999–2003

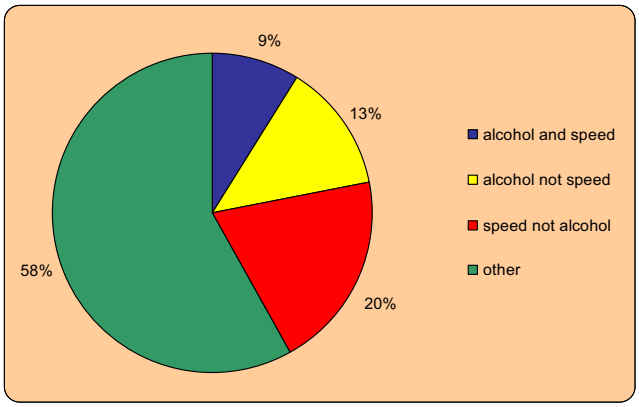


The social cost of loss of control crashes was higher than for rear-end crashes, even though the majority of crashes were of the rear-end type. Fatal and serious crashes made up 17 percent of the loss of control crashes compared with 13 percent for all motorway injury crashes combined.

On average, 37 percent of injury crashes on the motorway network occurred when the road surface was wet. The percentage of loss of control crashes in the wet was a lot higher at 51 percent. Night-time crashes were also over-represented for this type of crash (48 percent compared with the motorway average of 32 percent). These factors highlight the importance of ensuring the motorway has a very high standard of surface friction and night-time delineation.

The graph below shows the level of involvement of speed and alcohol in this type of crash.

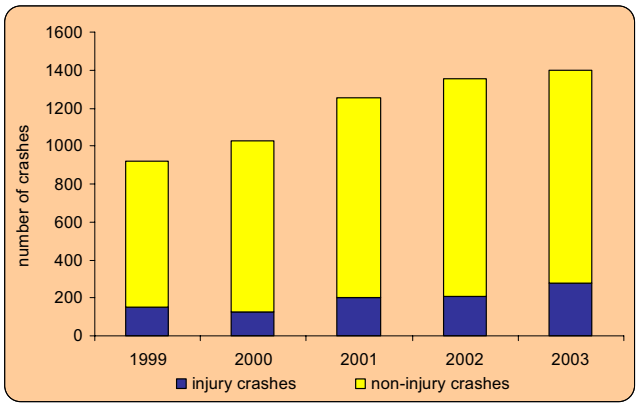
Loss of control injury crashes 1999–2003



Rear-end crashes

The number of rear-end crashes reported on Auckland's motorway network continued to increase in 2003 as they have done over the last five years.

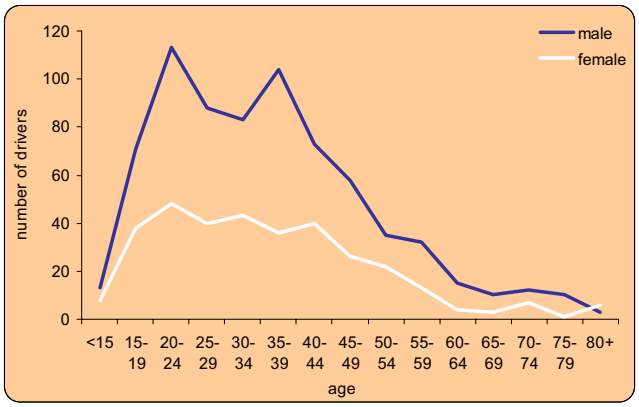
Rear-end crashes 1999–2003



Following too closely and inattention were the two most common contributing factors associated with this type of collision. These factors, mixed with the high levels of congestion that occur on Auckland motorways have resulted in almost 6,000 rear-end crashes being recorded in the past five years. Non-injury crashes made up 83 percent of these crashes. The injury crashes resulted in three deaths, 55 serious injuries and 1,210 minor injuries.

When looking at the age and gender of the drivers at fault in those crashes involving injury there are a couple of clear peaks (20 to 24 and 35 to 39 year old males).

Age and gender of drivers at fault in rear-end crashes 1999–2003



The biggest concentrations of rear-end crashes occurred in the areas of Gillies Avenue, Khyber Pass, Green Lane, Newton Road and Penrose Road (refer to map on page four).

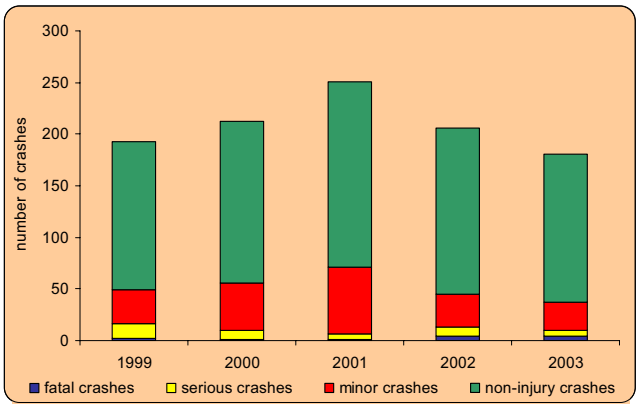

Wet road
Dry
Ice/ Snow
Wet
No. of Crashes
13
7
1
Auckland Motorways
Loss of control
1999-2003 injury crashes


No.of Crashes
Symbol
1
6
11
2003 Rear-end
Injury crashes

Roadside hazards

Motorways are generally designed to a high standard where hazards such as crossing traffic and sharp bends are eliminated. They also incorporate safe clear zone areas to minimise the chances of injury in the event of a vehicle losing control and running off the road. This is done by either removing or protecting roadside hazards. However, on the open road sections of Auckland motorways, 340 people have been killed or injured in crashes that involved a collision with a roadside hazard in the last five years (13 fatalities, 58 serious injuries and 269 minor injuries). Many other crashes involving roadside hazards resulted in non-injury crashes.

Open road collisions with roadside hazards



These crashes were selected by searching the crash database for collisions with the following objects in open road speed limit areas over the 1999–2003 period.

Object type	Number collided with
Pole (ie lighting column)	330
Tree	191
Upright bank	183
Ditch	83
Bridge	41
Over edge of bank	35
Water (ie sea or river)	15
Slip or flood water	15

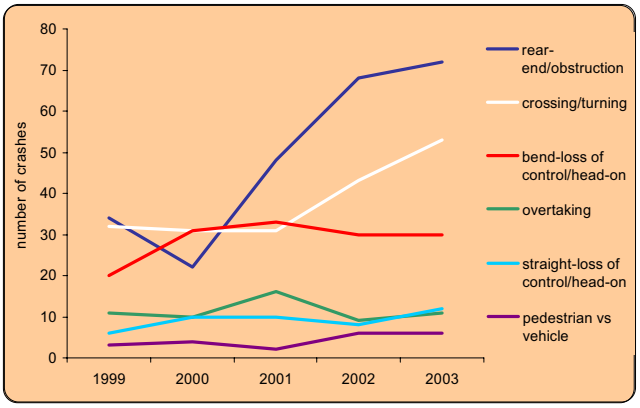
Three quarters of the injury crashes were loss of control on straights or bends and a similar proportion were single vehicle crashes. Over half of the injury crashes occurred at night, well above the average percentage.

Safety audit techniques could be used to determine if any of these hazards can be removed, be made safer or protected.

Interchange crashes

The number of injury crashes occurring at the many motorway interchanges has increased over the last five years. The main increase has been in the number of rear-end and crossing/turning crashes as shown in the graph below.

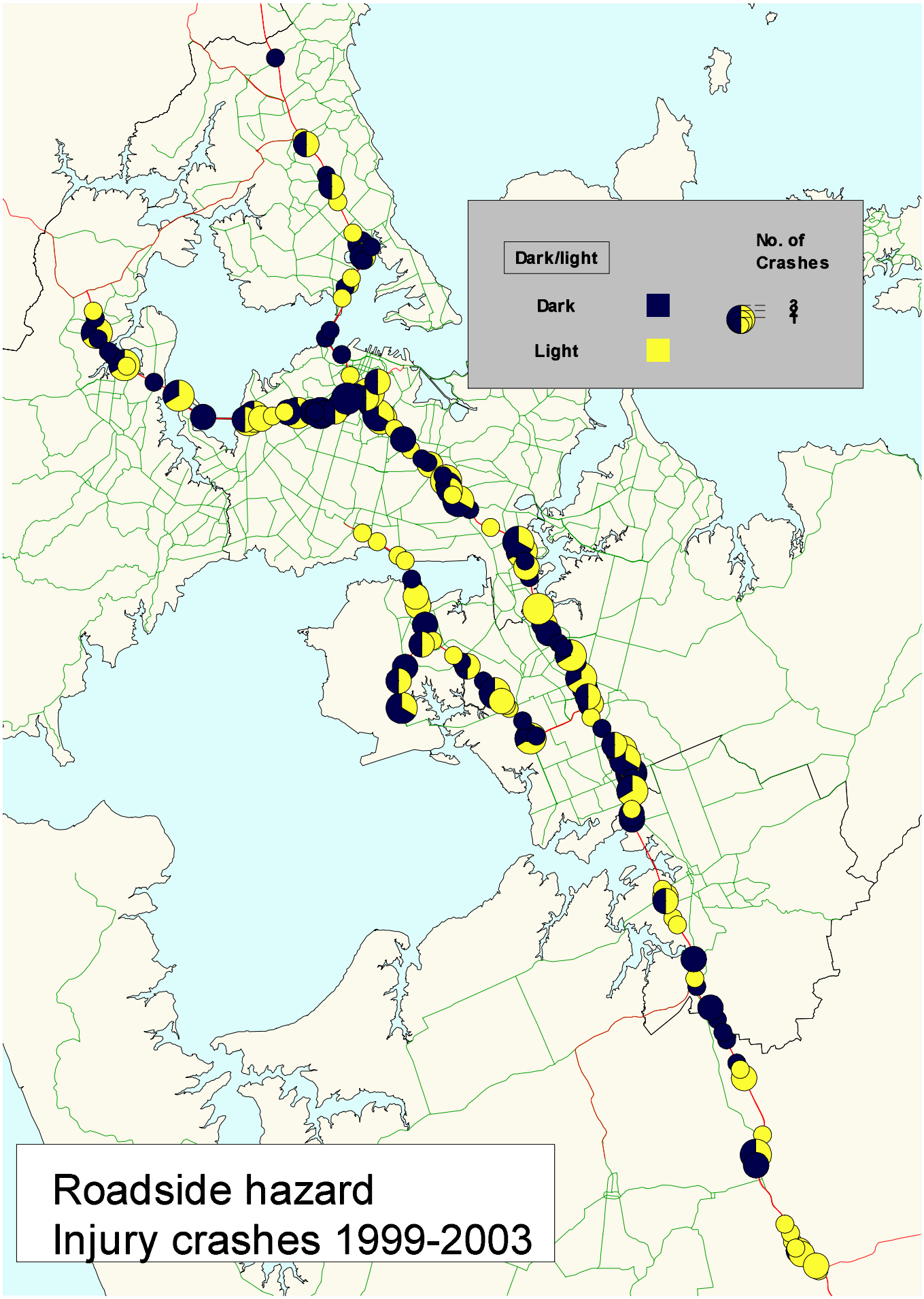
Interchange injury crashes 1999–2003

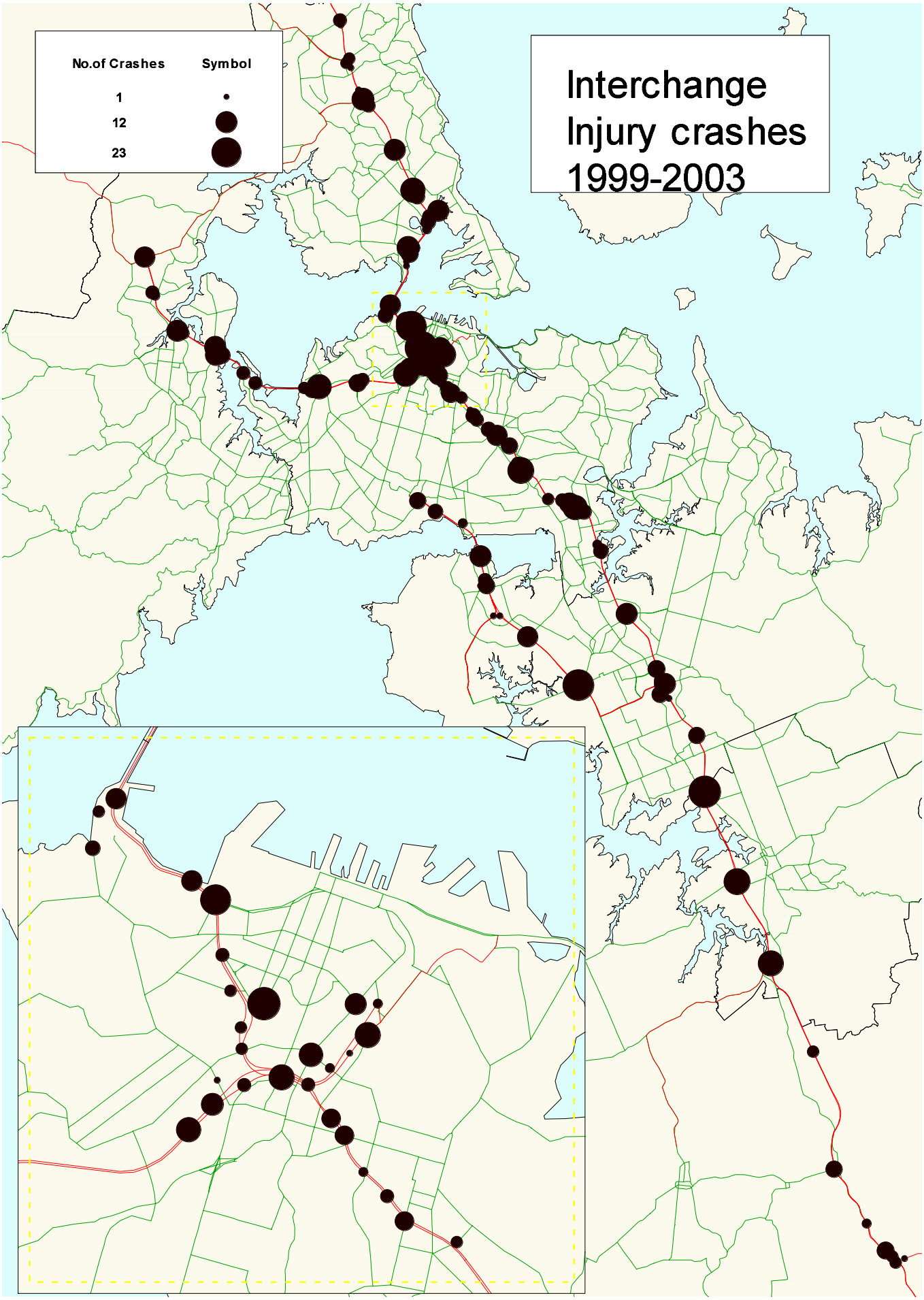


The following table lists the interchanges with the largest number of reported injury crashes. Work has occurred or is planned at a number of these sites. However, Transit New Zealand needs to closely monitor these interchanges and plan for future safety and efficiency improvements as traffic volumes continue to increase.

Interchange name	1999	2000	2001	2002	2003	Total
Union/Nelson/ Hobson/Pitt	6	4	8	6	5	29
Te Atatu	4	3	5	8	9	29
Waterview/ Pt Chevalier	4	4	7	8	6	29
Fanshawe/ Beaumont Streets	8	5	5	5	6	29
Takanini	4	4	4	5	10	27
Mt Wellington	5	3	4	8	6	26
Manukau	6	3	7	3	5	24
Akoranga/Barrys Point/Esmonde	4	4	4	9	2	23
Onewa	2	8	2	2	8	22
Puhinui	4	4	7	5	1	21
Penrose	4	2	5	1	8	20
Newton	1	1	7	5	6	20

An example of how these interchanges are defined is shown on the back page.


Dark/light
Dark
Light
No. of Crashes
3
1
Roadside hazard
Injury crashes 1999-2003


No.of Crashes
Symbol
1
12
23
Interchange
Injury crashes
1999-2003

Road environment

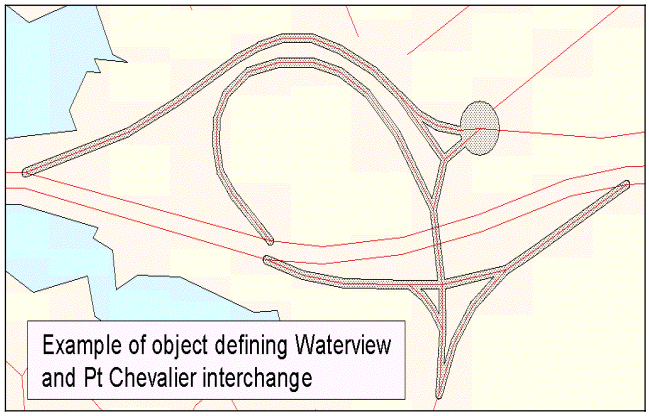
The LTSA's crash reduction monitoring database shows that works implemented as a result of crash reduction studies have reduced state highway crashes at the study sites by 45 percent in the Auckland Region.

Recommendations from recent studies should be implemented as soon as possible. Analysis of the crashes at all completed sites should continue to be undertaken regularly to ensure that safety has been improved and sites re-examined if no improvement has occurred.

Where to get more information

For more specific information relating to road crashes in Auckland motorways, please refer to the 1999 to 2003 Road Safety Data Report, the LTSA's Crash Analysis System or contact the LTSA as listed on this page.

Auckland motorways spatial object



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