



# briefing notes - road safety issues

## Dunedin City

New Zealand Transport Agency has prepared this road safety issues report. It is based on reported crash data and trends for the 2004–2008 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 Dunedin City.

In each new report one year's data is added to a five year block and the oldest dropped so it is unlikely that the core issues would change radically from report to report.

The issues chosen for this report are drawn from either the most common crash types, those that appear over-represented when Dunedin City is compared to similar local bodies or those with high social cost (high numbers of fatal and serious crashes mainly).

We have included a brief overview of crashes in the city.

We encourage Dunedin City to use its free access to the Ministry of Transport's Crash Analysis System (CAS) to delve deeper into the highlighted issues, and other road safety issues in the District. Also the NZTA Christchurch Performance Information team is available to provide further information if required.. All data and maps in this note are from CAS.

### Major road safety issues

#### Dunedin City

|   |
|---|
| Intersections                             |
| Bend - loss of control or Head-on         |
| Road factors - including roadside factors |

### 2008 road trauma

#### Casualties

#### Dunedin City

|                    |     |
|--------------------|-----|
| Deaths             | 4   |
| Serious casualties | 101 |
| Minor casualties   | 583 |

#### Nationally

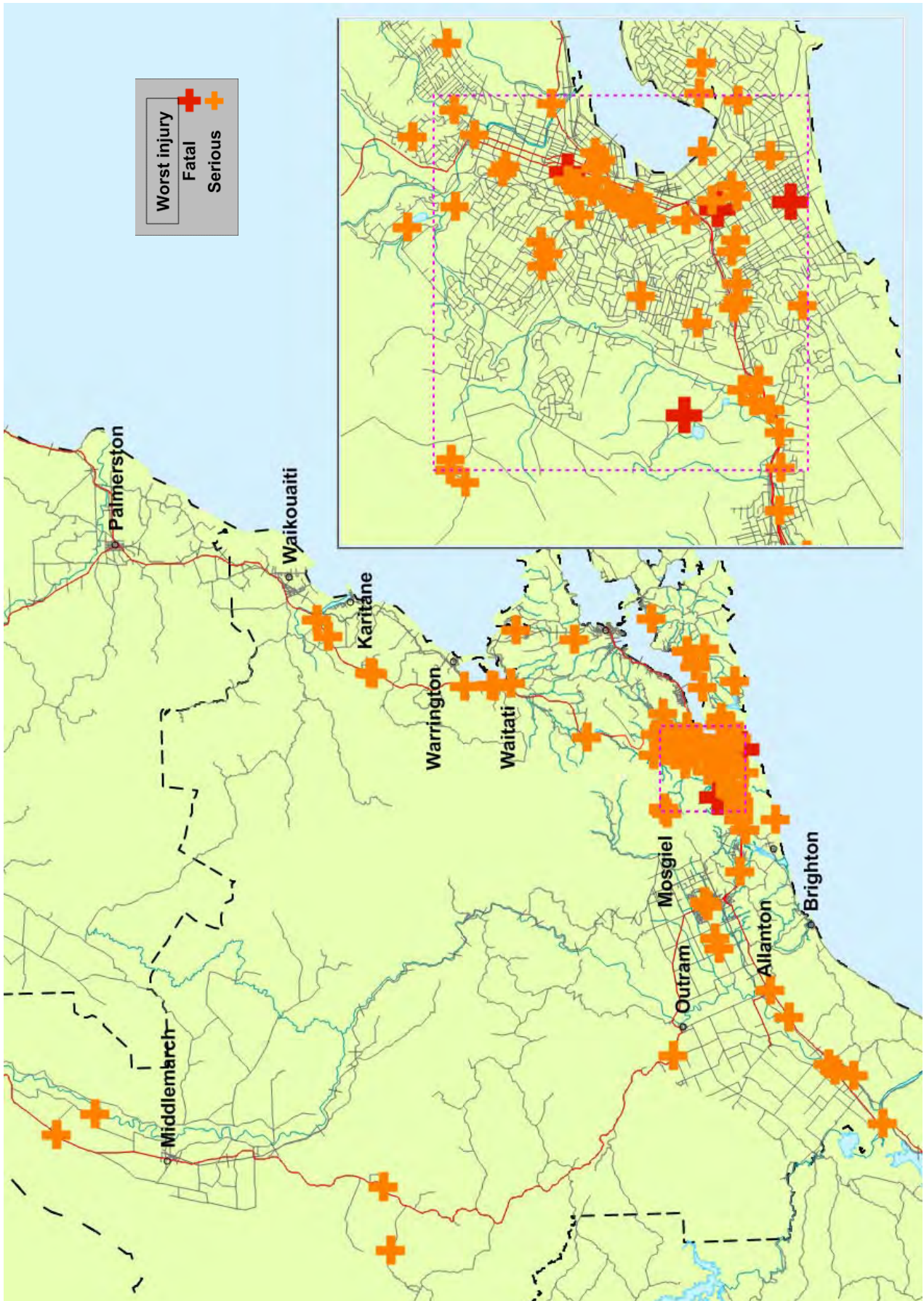
|                     |
|---------------------|
| Speed               |
| Alcohol             |
| Failure to give way |
| Restraints          |

#### Crashes

#### Dunedin City

|                        |     |
|------------------------|-----|
| Fatal crashes          | 4   |
| Serious injury crashes | 89  |
| Minor injury crashes   | 393 |
| Non-injury crashes     | 827 |

Fatal and serious crashes  
Dunedin City  
2008



## Overview

In 2008 on local roads in Dunedin City there were 356 injury crashes and 672 non-injury crashes. In addition there were 130 injury crashes and 155 non-injury crashes on State Highways both as reported by the New Zealand Police.

The table below shows the number of injuries resulting from the 486 injury crashes by rural or urban areas for local roads (rural is defined as an area with a speed limit of 80km/h or more).

### Casualties by urban / rural 2008

|       | Fatalities | Serious injuries | Minor injuries | Total |
|-------|------------|------------------|----------------|-------|
| Rural | 0          | 34               | 141            | 175   |
| Urban | 4          | 67               | 442            | 513   |
| Total | 4          | 101              | 583            | 688   |

In 2008, all road deaths, 66 percent of serious injuries, and 76 percent on minor injuries resulted from crashes in urban areas of the City. In addition 88 percent of reported non-injury crashes were in the urban areas.

The increase in crash numbers between 2000 and 2002 was probably due to an improvement in reporting rates. The number of reported serious injury crashes in the city in 2008 was the lowest annual total since 2001. There are no obvious trends for fatal or minor injury crash numbers.

### Crash trends in Dunedin City

| Year | Fatal Crashes | Serious Crashes | Minor Crashes | Total Crashes |
|------|---------------|-----------------|---------------|---------------|
| 1999 | 4             | 57              | 134           | 195           |
| 2000 | 4             | 47              | 109           | 160           |
| 2001 | 4             | 117             | 327           | 448           |
| 2002 | 4             | 119             | 440           | 563           |
| 2003 | 8             | 114             | 391           | 513           |
| 2004 | 7             | 120             | 375           | 502           |
| 2005 | 3             | 120             | 416           | 539           |
| 2006 | 7             | 109             | 366           | 482           |
| 2007 | 4             | 84              | 419           | 507           |
| 2008 | 4             | 89              | 393           | 486           |

### Injury crashes 2004 to 2008

| Crash type or contributory cause 2004 to 2008 | Local road Percentage injury crashes | State Highway Percentage of injury crashes |
|---|--------------------------------------|--|
| Alcohol                                       | 10                                   | 9  |
| Too fast                                      | 18                                   | 11   |
| At bends                                      | 27                                   | 24   |
| At intersections                              | 39                                   | 40   |
| Road factors                                  | 24                                   | 17   |

### Vulnerable road users - casualties

| Road user type          | Local road Percentage of all casualties | State Highway Percentage of all casualties |
|-------------------------|---|--|
| Pedestrians             | 9                                       | 4  |
| Cyclists                | 5                                       | 3  |
| Motorcycles             | 6                                       | 3  |
| <b>Total vulnerable</b> | 20                                      | 10   |

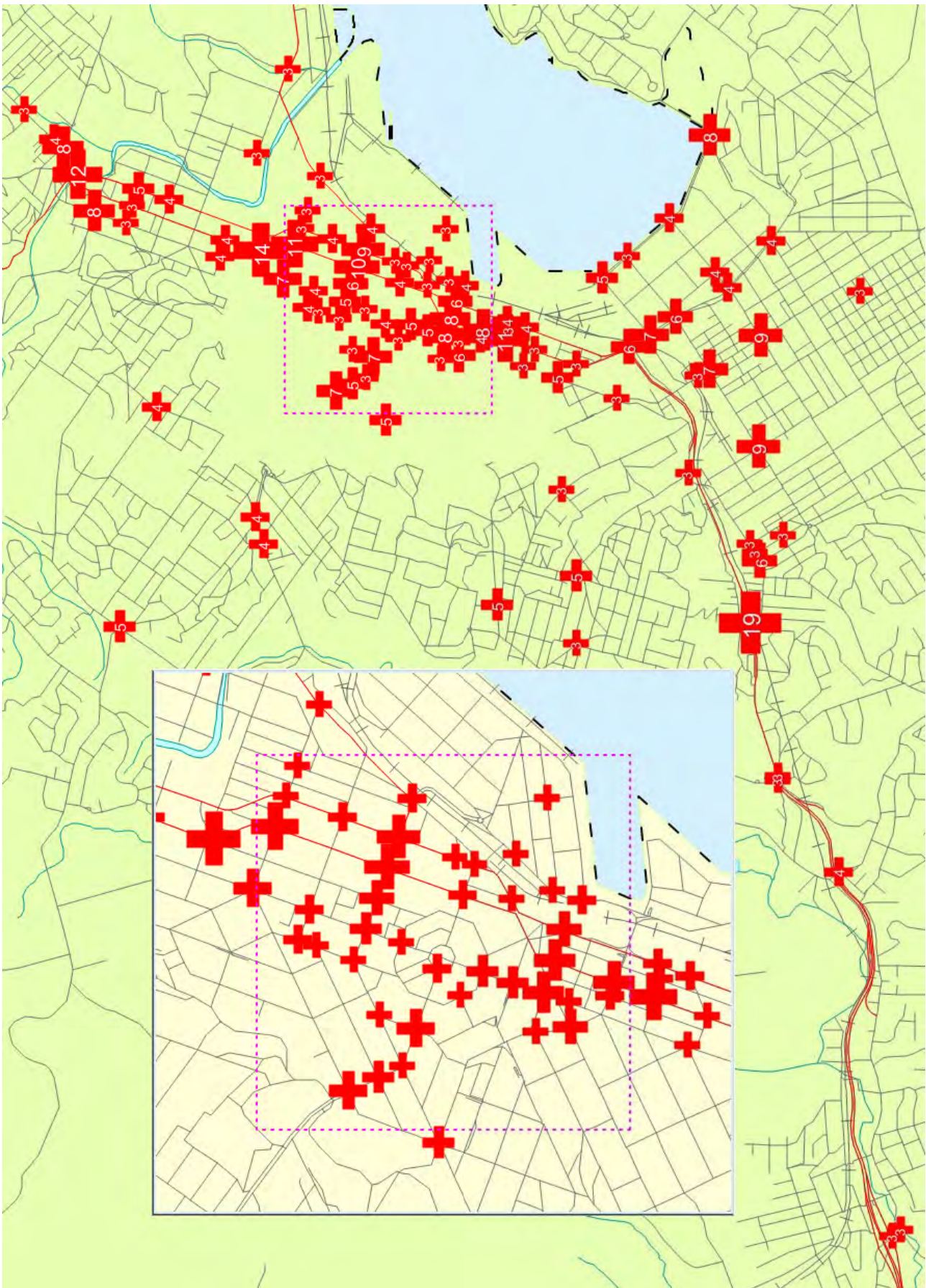
Further information about 2004 to 2008 injury crashes on local roads in Dunedin City :

- Worst month March
- Worst day Friday
- 32 percent on wet or icy roads
- 32 percent at night
- 39 percent at intersections
- 1038 roadside objects struck
- Social cost of crashes in 2008 \$80.7 m

Further information about 2004 to 2008 injury crashes on State Highways in Dunedin City :

- Worst month July
- Worst day Friday
- 31 percent on wet or icy roads
- 30 percent at night
- 40 percent at intersections
- 398 roadside objects struck
- Social cost of crashes in 2008 \$22.6 m

Intersection sites with three or more injury crashes  
Dunedin City, town area  
2004 - 2008



## Intersections

During the five year period 2004 to 2008 within Dunedin City there were a total of 2432 crashes at intersections, 986 of these were injury crashes and 1446 non-injury.

Seven people were killed, 189 received serious injuries and 1241 received minor injuries.

| Crashes at Intersections |      |      |      |      |      |
|--------------------------|------|------|------|------|------|
|                          | 2004 | 2005 | 2006 | 2007 | 2008 |
| Injury crashes           | 168  | 206  | 183  | 202  | 277  |
| Non-injury crashes       | 263  | 250  | 247  | 320  | 366  |
| Total                    | 431  | 456  | 430  | 522  | 593  |

In 2008 the number of both injury and non-injury was the highest in the last five years.

### Locations with the most injury crashes 2004 to 2008

| Intersection name<br>(Within a radius of 50m) | Injury crashes<br>2004 -<br>2008 | Injury crashes<br>2008 |
|---|----------------------------------|------------------------|
| Caversham Valley Rd / Barnes Dr               | 19                               | 6                      |
| Great King St / Albany St                     | 14                               | 3                      |
| Cumberland St / Great King St                 | 12                               | 4                      |
| Crawford St / Police St                       | 11                               | 3                      |
| Cumberland St / Frederick St                  | 11                               | 2                      |

These sites are listed regardless of any remedial action taken in recent years.

### Junction control Injury and non-injury crashes

| Junction control  | Traffic signals | Nil | Give Way | Stop |
|-------------------|-----------------|-----|----------|------|
| Number of crashes | 686             | 337 | 1069     | 335  |

The most common crash type at intersections is when two vehicles approaching an intersection at right angles to each other collide.

The main causes contributing to crashes described in Police reports were:

- Poor observation
- Failure to give way or stop

### Junction type Injury and Non-injury crashes

| Junction Type              | Rural | Urban |
|----------------------------|-------|-------|
| Roundabout                 | 0     | 43    |
| Tee                        | 69    | 1016  |
| Cross (X)                  | 28    | 1161  |
| Multi leg                  | 2     | 75    |
| Other (includes driveways) | 1     | 37    |

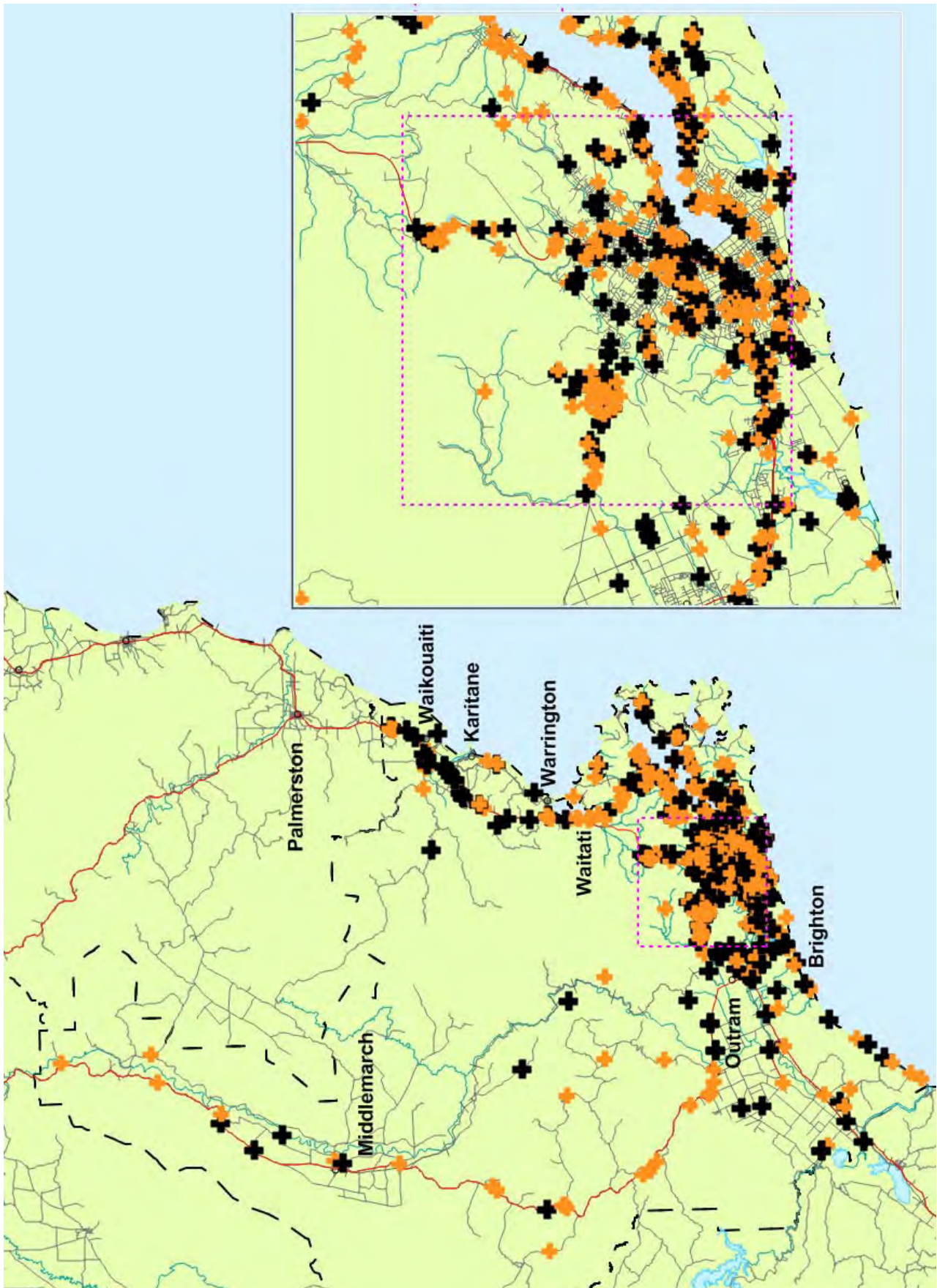
Further information about the 715 injury crashes at intersections on local roads in Dunedin City 2004 to 2008:

- 5 deaths, 158 serious injuries and 881 minor injuries
- 29 percent wet or icy roads
- 28 percent night time
- Worst month April
- Worst day of week Friday
- Worst time period 3 pm till 6 pm

Further information about the 271 injury crashes at intersections on State Highways in Dunedin City 2004 to 2008:

- 2 deaths, 31 serious injuries and 360 minor injuries
- 21 percent wet or icy roads
- 25 percent night time
- Worst month May
- Worst day of week Thursday
- Worst time period 3 pm till 6 pm

Injury bend - loss of control or head on crashes  
Dunedin City  
2004 - 2008



## Bend - loss of control or head on

Between 2004 and 2008 twenty seven percent of all injury crashes in Dunedin City were bend - loss of control or head on. These crashes resulted in 9 fatalities, 207 serious injuries and 802 minor injuries.

There have been no fatal bend - loss of control or head on crashes since 2006. Overall crash numbers increased from 2004 to a high in 2007. In 2008 the total dropped.

### Bend - loss of control or head on crashes 2004 to 2008

| Crash year | Fatal crashes | Serious crashes | Minor crashes | Total |
|------------|---------------|-----------------|---------------|-------|
| 2004       | 2             | 37              | 94            | 133   |
| 2005       | 1             | 37              | 90            | 128   |
| 2006       | 5             | 37              | 99            | 141   |
| 2007       | 0             | 30              | 116           | 146   |
| 2008       | 0             | 27              | 94            | 121   |
| Total      | 8             | 168             | 493           | 669   |

After drivers lose control their vehicles often crash into roadside hazards such as ditches, banks, poles or trees. Hitting these objects can result in a relatively minor off-road event turning into something far more serious.

The most common roadside hazards struck in injury loss of control or head on crashes on bends in Dunedin City were cliffs or banks (160), over bank (113), fences (111), posts or poles (72) and trees (72) from a total of 803 objects struck.

### Main characteristics of injury bend - loss of control or head on crashes

| Crash characteristic               | Percentage of crashes |
|------------------------------------|-----------------------|
| Single vehicle                     | 79                    |
| Alcohol                            | 18                    |
| Excessive speed for the conditions | 39                    |
| Road factors                       | 46                    |
| Poor handling                      | 58                    |
| Rural road                         | 48                    |
| Wet or icy road                    | 51                    |
| Night time                         | 45                    |

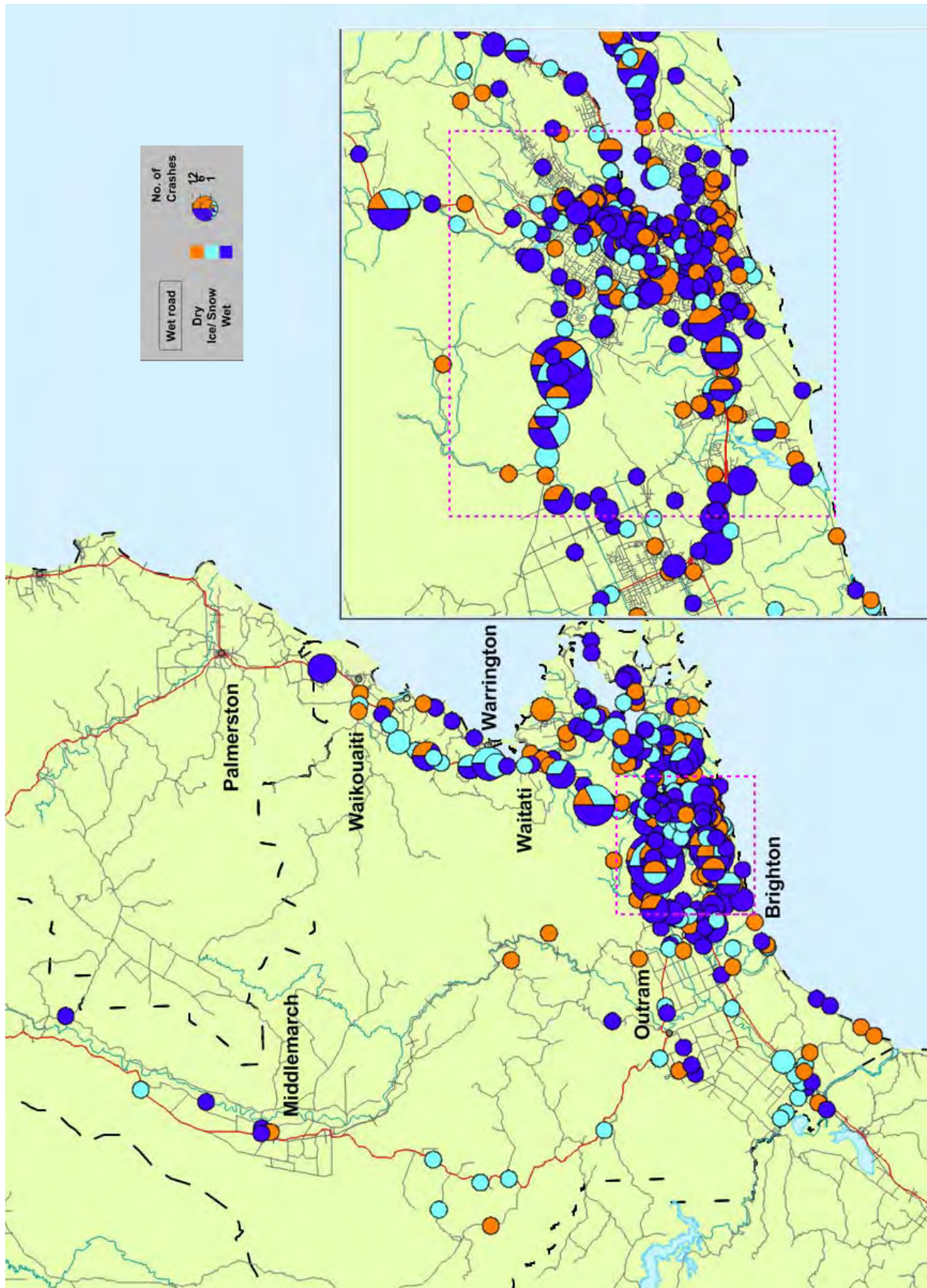
Further information about the 505 injury bend - loss of control or head on crashes (2004 to 2008) on local roads in Dunedin City :

- 4 deaths, 152 serious injuries and 609 minor injuries
- 66 percent of at fault drivers were male
- Most common at fault driver age group 15 -19 years (34 percent of all at fault drivers)
- 17 percent of crashes involved alcohol
- 43 percent of crashes involved speed too fast for the conditions
- Worst month March
- Worst day of week Sunday
- Worst time period 3 pm till 6 pm

Further information about the 164 injury bend - loss of control or head on crashes (2004 to 2008) on State Highways in Dunedin City:

- 5 deaths, 55 serious injuries and 193 minor injuries
- 66 percent of at fault drivers were male
- Most common at fault driver age group 15 - 24 years (44 percent of at fault drivers)
- 20 percent of crashes involved alcohol
- 27 percent of crashes involved speed too fast for the conditions
- Worst month July
- Worst day of week Saturday
- Worst time period 9 pm to midnight

Injury crashes with a road factor reported  
Dunedin City  
2004 - 2008





## Road Factors - including roadside hazards

A safe road environment includes appropriate geometric design standards, good delineation, adequate surface skid resistance and a roadside free of unforgiving hazards.

From 2004 to 2008 in Dunedin City, "road factors" were a contributing factor in 22 percent of fatal and injury crashes.

Additionally in Dunedin City between 2004 and 2008 41 percent of all fatal and injury crashes involved a roadside hazards were being struck.

### Road factor related injury crashes

| Road type | 2004 | 2005 | 2006 | 2007 | 2008 |
|-----------|------|------|------|------|------|
| Rural     | 45   | 33   | 51   | 53   | 46   |
| Urban     | 65   | 49   | 75   | 86   | 58   |
| Total     | 110  | 82   | 126  | 139  | 104  |

Roadside hazards normally contribute to the overall crash outcome by increasing injury severity but can in themselves be a contributory factor in a crash. For example occupants in an errant vehicle striking a large tree close to the road edge are likely to sustain worse injuries than if the tree was not present. If the same tree had low branches and was located at an intersection it could also contribute to a lack of visibility.

In the 1036 injury crashes in Dunedin City from 2004 to 2008 where a roadside hazard was struck 12 people died, 304 received serious injuries and 1144 minor injuries.

The most commonly struck objects are shown below.

### Most common types of hazard struck (all injury crashes in Dunedin City)

| Type of hazard 2004 to 2008 | Number of times hazard struck |
|-----------------------------|-------------------------------|
| Cliff or bank               | 205                           |
| Fence                       | 201                           |
| Parked vehicle              | 185                           |
| Post or pole                | 167                           |
| Ditch                       | 112                           |
| Tree                        | 107                           |
| Guard rail                  | 66                            |
| Water / river               | 50                            |

### Types of road factors in injury crashes

| Road factor type 2004 to 2008       | Number of occasions reported |
|-------------------------------------|------------------------------|
| Slippery road                       | 471                          |
| Road surface in poor condition      | 91                           |
| Road obstructed                     | 5                            |
| Visibility limited                  | 92                           |
| Signs or signals (needed or faulty) | 11                           |
| Markings (needed or faulty)         | 8                            |
| Street lighting                     | 10                           |

Further information about the 449 road factor related injury crashes in Dunedin City on local roads (2004 to 2008):

- 4 deaths, 103 serious injuries and 523 minor injuries
- Most common crash type, bend - loss of control or head on
- 26 percent at intersections
- 69 percent urban
- 72 percent wet or icy road
- 37 percent night time
- Worst month June
- Worst day Friday
- Worst time 3 pm - 6 pm

Further information about the 112 road factor related injury crashes in Dunedin City on State Highways (2004 to 2008):

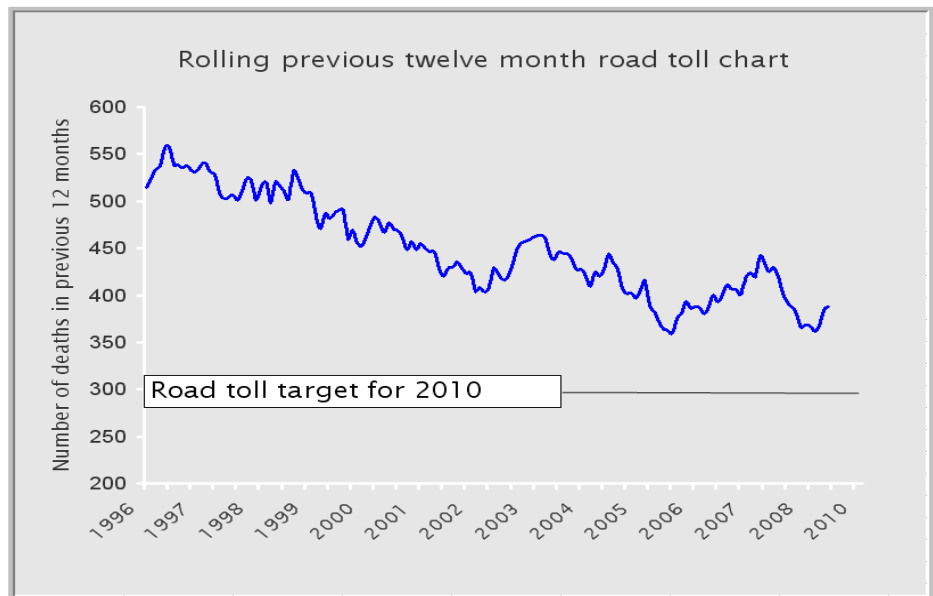
- 2 deaths, 23 serious injuries and 145 minor injuries
- Most common crash type, bend - loss of control or head on
- 15 percent at intersections
- 20 percent urban
- 86 percent wet or icy road
- 42 percent night time
- Worst month July
- Worst day Wednesday, Thursday
- Worst time 9 am - midday

## The next ten years—moving beyond Road Safety 2010

In August this year the Ministry of Transport (MoT) will embark on a nationwide road safety consultation programme as it moves to formulate priorities for the next ten years.

The chart on the right illustrates the progress made during the life of the Road Safety 2010 strategy and while progress has been made it would seem unlikely that the target of 300 or fewer fatalities will be met.

Information will be published on the Ministry of Transport web site and we would encourage any person or group with an interest in road safety to watch the site carefully for developments.



Follow this link: <http://www.transport.govt.nz/ourwork/Land/landsafety/SaferJourneys-RoadSafetyStrategyto2020/>

### Restraints

The Ministry of Transport conducts surveys of restraint use. Results are available for front, rear and child restraints although not all at a local authority level. The results of these surveys are available at the MoT website: <http://www.transport.govt.nz/research/safetybeltstatistics/>

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