

Invercargill City
Road Safety Report
2004 to 2008



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Contents

	Page
Introduction and general information	1
Crash rates and costs (Figures 1.1 to 1.11)	5
Crash counts (Figures 2.1 to 2.14)	17
Road user statistics (Figures 3.1 to 3.28)	25
Crash type statistics (Figures 4.1 to 4.6)	41
Crash factor statistics (Figures 5.1 to 5.14)	47
Environmental statistics (Figures 6.1 to 6.14)	57
Date and time statistics (Figures 7.1 to 7.3)	67
Council road statistics (Figures 8.1 to 8.26)	71
Crash location statistics (Figures 9.1 to 9.5)	89

Appendices

Grouping of crash types

Groupings of contributing factors

List of figures

Crash rates and costs

page 5

Fig. 1.1	Reporting rate serious injuries to hospital admissions
Fig. 1.2	Crashes per 100 million vehicle kilometres travelled
Fig. 1.3	Casualties per 100 million vehicle kilometres travelled
Fig. 1.4	Peer group crash and casualty rates Group B
Fig. 1.5–1.8	Crashes per 100 million vehicle kilometres travelled on: Urban council roads Group B Rural council roads Group B Urban state highways Group B Rural state highways Group B
Fig. 1.9	Crashes per 10,000 people (1999 to 2008)
Fig. 1.10	Casualties per 10,000 people (1999 to 2008)
Fig. 1.11	Social cost of crashes in Invercargill City in 2008

Crash counts

page 17

Fig. 2.1	Crash numbers and severity (2004 to 2008) – whole city
Fig. 2.2, 2.3	Crash numbers and severity (2004 to 2008) – urban/rural
Fig. 2.4	Casualty numbers and severity (2004 to 2008) – whole city
Fig. 2.5, 2.6	Casualty numbers and severity (2004 to 2008) – urban/rural
Fig. 2.7	Number of injury crashes (1999 to 2008) – all roads
Fig. 2.8	Number of casualties (1999 to 2008) – all roads
Fig. 2.9	Number of injury crashes (1999 to 2008) – urban
Fig. 2.10	Number of casualties (1999 to 2008) – urban
Fig. 2.11	Number of injury crashes (1999 to 2008) – rural
Fig. 2.12	Number of casualties (1999 to 2008) – rural
Fig. 2.13, 2.14	Severity ratio (1999 to 2008) – urban/rural

Road user statistics

page 25

Fig. 3.1, 3.2	Road user casualties (2004 to 2008) – urban/rural
Fig. 3.3, 3.4	Male/female casualties (1999 to 2008)
Fig. 3.5	Male casualties by age (2004 to 2008)
Fig. 3.6	Female casualties by age (2004 to 2008)
Fig. 3.7, 3.8	Car/van driver casualties (1999 to 2008)
Fig. 3.9, 3.10	Car/van passenger casualties (1999 to 2008)
Fig. 3.11, 3.12	Heavy vehicle casualties (1999 to 2008)
Fig. 3.13, 3.14	Motorcyclist casualties (1999 to 2008)
Fig. 3.15, 3.16	Pedestrian casualties (1999 to 2008)
Fig. 3.17, 3.18	Cyclist casualties (1999 to 2008)

List of figures continued

Road user statistics

page 25

Fig. 3.19	Car/van driver casualty age (2004 to 2008)
Fig. 3.20	Car/van passenger casualty age (2004 to 2008)
Fig. 3.21	Heavy vehicle casualty age (2004 to 2008)
Fig. 3.22	Motorcyclist casualty age (2004 to 2008)
Fig. 3.23	Pedestrian casualty age (2004 to 2008)
Fig. 3.24	Cyclist casualty age (2004 to 2008)
Fig. 3.25, 3.26	Casualty ethnicity (2004 to 2008)
Fig. 3.27, 3.28	Licence status (1999 to 2008)

Crash type statistics

page 41

Fig. 4.1, 4.2	Crash movement type (2004 to 2008)
Fig. 4.3, 4.4	Crash movement type – trends (1999 to 2008)
Fig. 4.5	Failed to give way/stop – urban (1999 to 2008)
Fig. 4.6	Bend – lost control/head on – rural (1999 to 2008)

Crash factor statistics

page 47

Fig. 5.1, 5.2	Contributing factors (2004 to 2008)
Fig. 5.3–5.6	Contributing factor trends – urban (1999 to 2008)
Fig. 5.7	Alcohol-involved trend – urban (1999 to 2008)
Fig. 5.8	Speed-involved trend – urban (1999 to 2008)
Fig. 5.9–5.12	Contributing factor trends – rural (1999 to 2008)
Fig. 5.13	Alcohol-involved trend – rural (1999 to 2008)
Fig. 5.14	Speed-involved trend – rural (1999 to 2008)

Environmental statistics

page 57

Fig. 6.1, 6.2	Crashes not on state highways (1999 to 2008)
Fig. 6.3, 6.4	Intersection crashes (1999 to 2008)
Fig. 6.5, 6.6	Wet road crashes (1999 to 2008)
Fig. 6.7, 6.8	Crashes in darkness (1999 to 2008)
Fig. 6.9	Unsealed road crashes – rural (1999 to 2008)
Fig. 6.10	Icy road crashes – rural (1999 to 2008)
Fig. 6.11, 6.12	Collisions with objects (1999 to 2008)
Fig. 6.13, 6.14	Objects struck (2004 to 2008)

Date and time statistics

page 67

Fig. 7.1	Time pattern over average week (2004 to 2008)
Fig. 7.2	Day of week (2004 to 2008)
Fig. 7.3	Month of year (2004 to 2008)

List of figures continued

Council road statistics

page 71

Fig. 8.1	Number of injury crashes (1999 to 2008) – all council roads
Fig. 8.2	Number of casualties (1999 to 2008) – all council roads
Fig. 8.3	Number of injury crashes (1999 to 2008) – urban council roads
Fig. 8.4	Number of casualties (1999 to 2008) – urban council roads
Fig. 8.5	Number of injury crashes (1999 to 2008) – rural council roads
Fig. 8.6	Number of casualties (1999 to 2008) – rural council roads
Fig. 8.7, 8.8	Crash movement type – council roads (2004 to 2008)
Fig. 8.9, 8.10	Crash movement type – trends – council roads (1999 to 2008)
Fig. 8.11	Failed to give way/stop – urban council roads (1999 to 2008)
Fig. 8.12	Bend – lost control/head on – rural council roads (1999 to 2008)
Fig. 8.13, 8.14	Contributing factors – council roads (2004 to 2008)
Fig. 8.15, 8.16	Intersection crashes – council roads (1999 to 2008)
Fig. 8.17, 8.18	Wet road crashes – council roads (1999 to 2008)
Fig. 8.19, 8.20	Crashes in darkness – council roads (1999 to 2008)
Fig. 8.21	Unsealed road crashes – rural council roads (1999 to 2008)
Fig. 8.22	Icy road crashes – rural council roads (1999 to 2008)
Fig. 8.23, 8.24	Collisions with objects – council roads (1999 to 2008)
Fig. 8.25, 8.26	Objects struck – council roads (2004 to 2008)

Crash location statistics

page 89

Fig. 9.1	Urban crash blackspot list for the City (2004 to 2008)
Fig. 9.2	Rural crash blackspot list for the City (2004 to 2008)
Fig. 9.3	State Highway crash blackspot list for the City (2004 to 2008)
Fig. 9.4	Urban crash blackspots with a significant increase in crashes in 2008
Fig. 9.4a	Rural crash blackspots with a significant increase in crashes in 2008
Fig. 9.5	State highway crash blackspots with a significant increase in crashes in 2008

Introduction and general information

The New Zealand Transport Agency provides information on road safety to its stakeholders and the public. It also has responsibility for promoting safety and sustainability in land transport, among a variety of other functions. This road safety report is an example of information supplied by the New Zealand Transport Agency.

This report helps identify road safety issues in Invercargill City area ('the city') by presenting tables or graphs of:

- numbers and trends in reported crashes and casualties
- characteristics and types of crashes and casualties
- factors contributing to crashes
- locations with bad crash records
- characteristics of crashes on council authority roads

The information is intended to assist road controlling authorities, the New Zealand Police and others in evaluating the safety performance of the road network in Invercargill City. Comparison with other cities, districts or regions elsewhere in the country is included.

Researchers, students, and organisations with an interest in road safety will also find the information useful.

Source of crash information

This report uses data from the New Zealand Transport Agency's crash database. This database includes all crashes involving injury and non-injury for which Police reports have been completed and forwarded to the New Zealand Transport Agency. Mostly five-year data (2004 to 2008) has been used, but 10-year data (1999 to 2008) has been used to analyse trends.

Council authority peer groups

Traffic crash patterns and features for an area can depend on the traffic and roading characteristics of that area. The most useful comparisons are made with other areas or authorities with similar characteristics, rather than with the whole country. The data for the city is compared with a peer group of similar council authorities (Group B) along with data for all New Zealand.

The peer group used for comparison with Invercargill City is Group B which consists of large urban areas with some rural areas on the outskirts. (Population 40000 - 98000 and/or rural crashes less than 35 percent). Council authorities included in this group are listed in Figure 1.4.

Definitions of urban and rural

Data has been separated for urban and rural (open) roads through this report because each has a distinctly different pattern of crashes. In this report urban roads are defined as all those with a speed limit of 70 km/h or less, however it should be noted that some locations which have been speed limit zoned might be more appropriately defined as rural but are included in urban zones.

Definition of statistically significant

A number of graphs include a comparison between the road controlling authority, all New Zealand and a similar peer group. These graphs can include an indication as to whether the difference is statistically significant. For the purposes of this report statistically significant means that a difference of this size is unlikely to be due to chance. Significance is noted at the 5% level ($P < 0.05$), this means that the observed result would occur by chance in only 1 in 20 similar situations.

Road user compliance data

The Ministry of Transport collects information on road user compliance with traffic law. This information includes speed surveys, occupant restraint use surveys and cycle helmet use surveys. Information about these surveys is available on Ministry of Transport web site.

The appropriate web addresses are as follows:

Speed Surveys <http://www.transport.govt.nz/research/SpeedSurveys/>

Safety belts <http://www.transport.govt.nz/research/safetybeltstatistics/>

Cycle helmets <http://www.transport.govt.nz/research/cyclehelmets2009/>

The information is also distributed quarterly in the Ministry of Transport publication Road safety progress.

The Ministry of Transport also conducts public attitude surveys. These have been undertaken annually since 1994. They evaluate attitudes to road safety issues, primarily alcohol-impaired driving and speed. Surveys are carried out in May and June of each year by trained interviewers who conduct interviews with respondents in their homes. The sample is chosen to be representative of the New Zealand adult population, and includes men and women aged 15 and over from towns, cities and rural areas throughout New Zealand.

The results of these surveys are available from:

<http://www.transport.govt.nz/research/PublicAttitudestoRoadSafety-Survey/>

General explanatory notes

1. Crash and casualty information in this report generally includes data for both council roads and state highways. Some tables and charts can separate this information, however figures 8.1–8.26 provide information for council roads only.
2. Crash and casualty rates are based on 2008 populations estimates updated from the 2006 census, traffic flows from the year 2008, and the average of five year crash data (2004–2008).
3. Traffic flows are based on Road Asset Maintenance and Management (RAMM) data from December 2008. As different road controlling authorities update flow data in RAMM at different times some data will be more up to date than other data, hence caution should be exercised when comparing traffic flow based crash rates in one authority with those of other authorities particularly as the traffic flow data (VKT) used in the calculations can not be considered definitive. Comparisons should be considered as indicative only.
4. With four to five categories of road for each council authority, some categories will only have short lengths of road. This may cause significant variation in the calculated crash and casualty rates.
5. The crash numbers include all those within the road controlling authority. The crash numbers used in the crash rate section can, however, vary slightly from the remainder of the document as only 'on road' crashes can be used. These are crashes on roads that have traffic volume information recorded. Crashes that occurred in car parks, reserves, beaches etc. are excluded.

6. The severity of a crash is determined as the most severely injured casualty in the crash. Injury severity is classified as fatal, serious, or minor as follows:
 - Fatal:** Injuries that result in death within 30 days of a crash.
 - Serious:** Fractures, concussion, internal injuries, crushing, severe cuts and lacerations, severe general shock necessitating medical treatment, and any injury involving removal to and detention in hospital.
 - Minor:** Injuries which are not serious but which require first aid, or cause discomfort or pain to the person injured, eg sprains and bruises.

7. Ethnicity of road users involved in crashes can now be recorded on traffic crash reports, although some reports may not include this data. Figures 3.25 and 3.26 shows the ethnicity of casualties, where known. Ethnicity is divided into five different groups. Only data for 2004 to 2008 is available. The graph includes all casualties irrespective of culpability.

NOTE: Ethnicity data should be treated with caution as the data can be considered subjective and incomplete.

8. For the licence status grouping in Figures 3.27 and 3.28 the 'no/wrong licence' group includes drivers who have never held a licence or have an expired or wrong class licence. This graph includes all drivers irrespective of injury or culpability.

9. See appendix for detailed descriptions of:
 - crash movement types and crash movement groupings (for Figures 4.1–4.4)
 - grouping of factors contributing to crashes (for Figures 5.1–5.14)

10. Blackspot sites listed in Figures 9.1 and 9.3 are listed by the total cost of crashes at the site and are listed regardless of any remedial treatments. Site were initially selected on the basis of 3 reported crashes and then the sites listed were limited to those with a higher number of injury crashes and over a defined social cost, which is indicated on each figure.

11. Alarm crash sites in section 9 as Figures 9.4 to 9.6 are crash sites that have shown a statistically significant increase (at the 95 percent level of confidence) in reported crashes in 2008 compared with the previous five years (2003 to 2007). The sites are initially selected on the basis of 3 or more reported crashes at the sites. Sites are listed regardless of any recent remedial treatments and they may already be under investigation for treatment.

Crash Rates and Costs

Crash reporting rates

The ratio of 'reported serious injuries' can be assessed by comparing seriously injured casualty numbers from Police crash reports to hospital admissions, given that a serious injury is generally one requiring hospital attention.

Figure 1.1 below indicates the serious injury reporting rate for each region.

Figure 1.1 Reporting rate serious injuries to hospital admissions

Region	2004	2005	2006	2007	2008
Northland	34%	30%	28%	34%	31%
Auckland	22%	17%	19%	16%	16%
Waikato	51%	40%	38%	49%	46%
Bay of Plenty	28%	32%	37%	38%	27%
Gisborne	28%	31%	26%	29%	26%
Hawkes Bay	73%	80%	75%	59%	60%
Taranaki	66%	55%	65%	77%	41%
Manawatu-Wanganui	50%	38%	34%	35%	34%
Wellington	61%	68%	61%	73%	64%
Nelson-Marlborough	63%	44%	52%	54%	49%
West Coast	43%	53%	55%	59%	53%
Canterbury	37%	47%	42%	50%	45%
Otago	107%	99%	85%	77%	53%
Southland	74%	78%	103%	73%	53%
New Zealand	39%	36%	35%	37%	34%

This is the ratio of the number of persons with serious injuries in reported crashes divided by the number of persons admitted to hospital with serious injuries.

These variations in reporting rates need to be considered when viewing the trends in crashes and casualties shown in this report.

Note: These values should be considered indicative only.

Figure 1.2 Crashes per 100 million vehicle kilometres travelled

	Council roads		State Highways	
	Urban	Rural	Urban	Rural
Invercargill City	71	53	64	25
Group B	31	32	27	12
All NZ	35	27	30	16

Figure 1.3 Casualties per 100 million vehicle kilometres travelled

	Council roads		State Highways	
	Urban	Rural	Urban	Rural
Invercargill City	104	93	88	40
Group B	38	46	35	17
All NZ	45	39	42	25

Figure 1.4 Peer group crash and casualty rates

Group B

City or District	10,000 Population (5 year average)	Crashes per 100 million vehicle kilometres travelled				10,000 Population (5 year average)	Casualties per 100 million vehicle kilometres travelled				2008 Population	% of rural crashes
		Council roads		State Highways			Council roads		State Highways			
		Urban	Rural	Urban	Rural		Urban	Rural	Urban	Rural		
		Urban	Rural	Urban	Rural		Urban	Rural	Urban	Rural		
Invercargill	41	71	53	64	25	60	104	93	88	40	51600	15
Napier	25	37	38	32	21	32	45	50	42	34	56900	20
Nelson	24	37	19	24	16	29	43	24	26	22	44700	19
Palmerston North	22	40	42	36	21	27	48	67	48	31	79300	19
Papakura	27	34	29	462	11	36	45	38	586	16	48300	40
Group B	27	43	37	44	16	36	55	55	58	24	280800	22
All New Zealand	26	35	27	30	16	36	44	39	41	24	4267970	41

Group B : Major urban areas with some rural areas on the outskirts. (Population 40000-97500 and/or rural crashes less than 35 percent).

Crashes and casualties per 100 million VKT are based on five years of reported injury on-road crash data (2004-2008) and December (2007) VKT.

Crashes and casualties per 10,000 population are based on five year average crash data (2004-2008) and Statistics NZ 2008 population estimates.

Figure 1.5 Crashes per 100 million vehicle-kilometres travelled - urban council roads

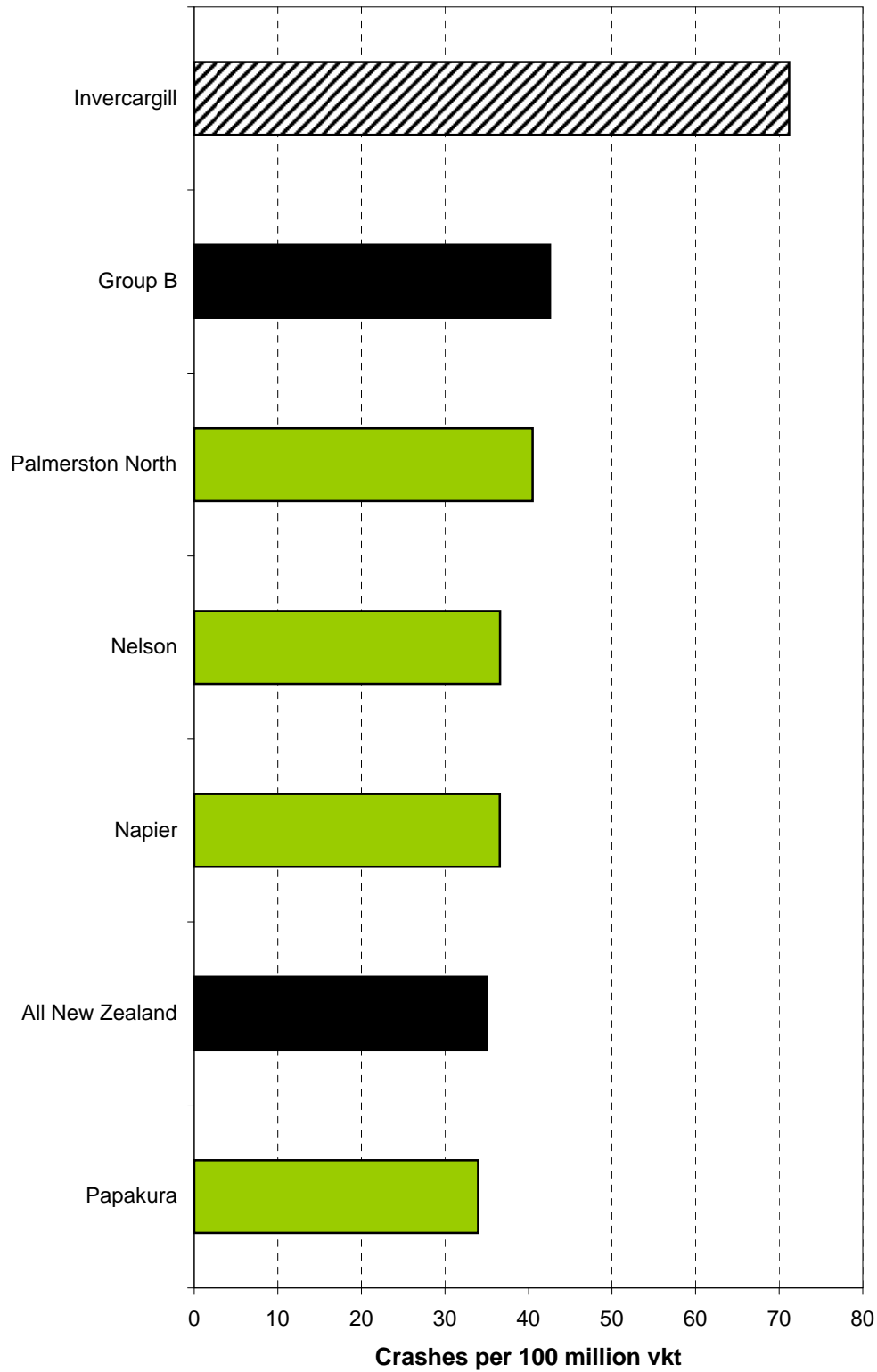


Figure 1.6 Crashes per 100 million vehicle-kilometres travelled - rural council roads

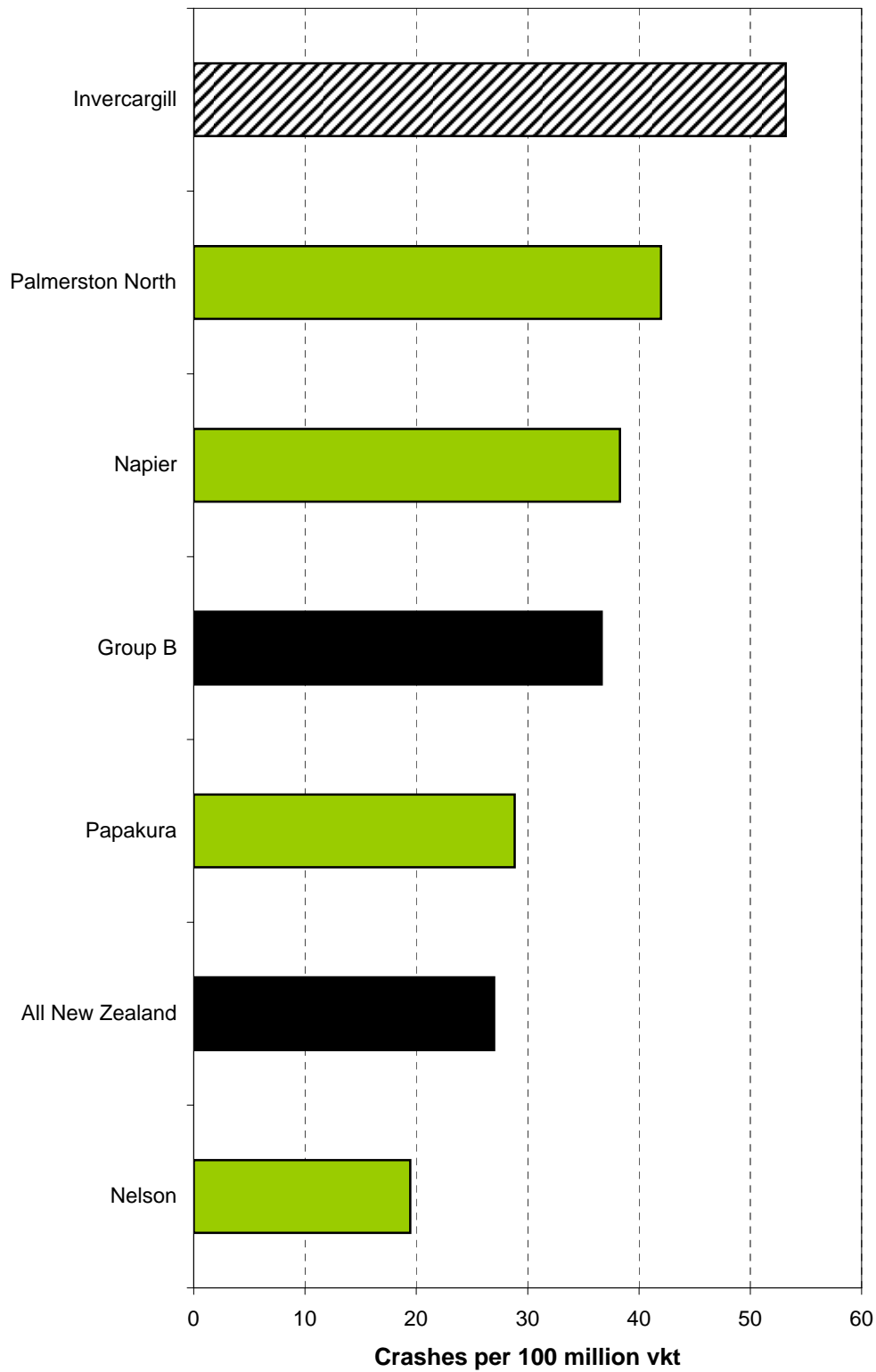


Figure 1.7 Crashes per 100 million vehicle kilometres travelled - urban state highways

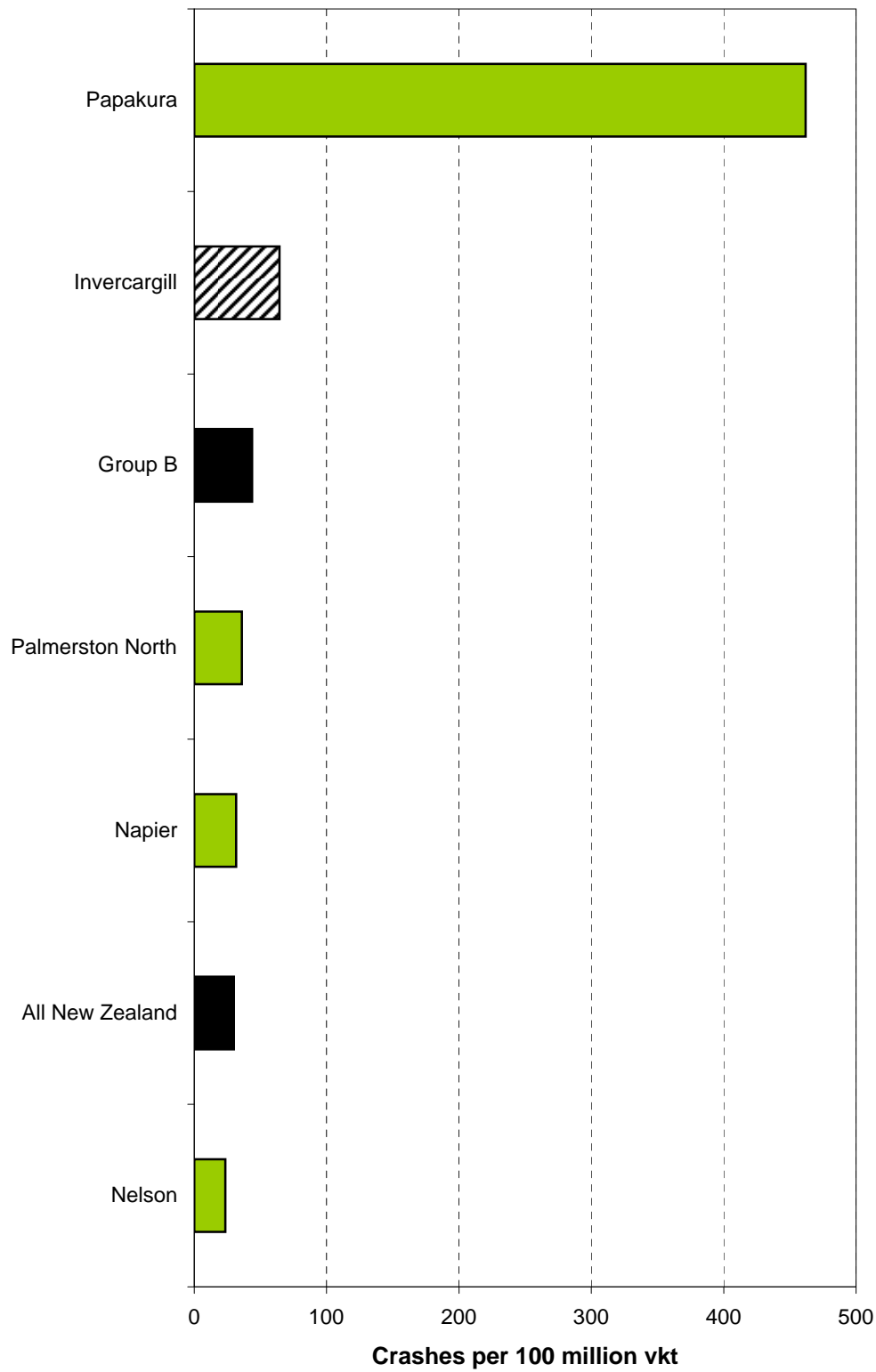
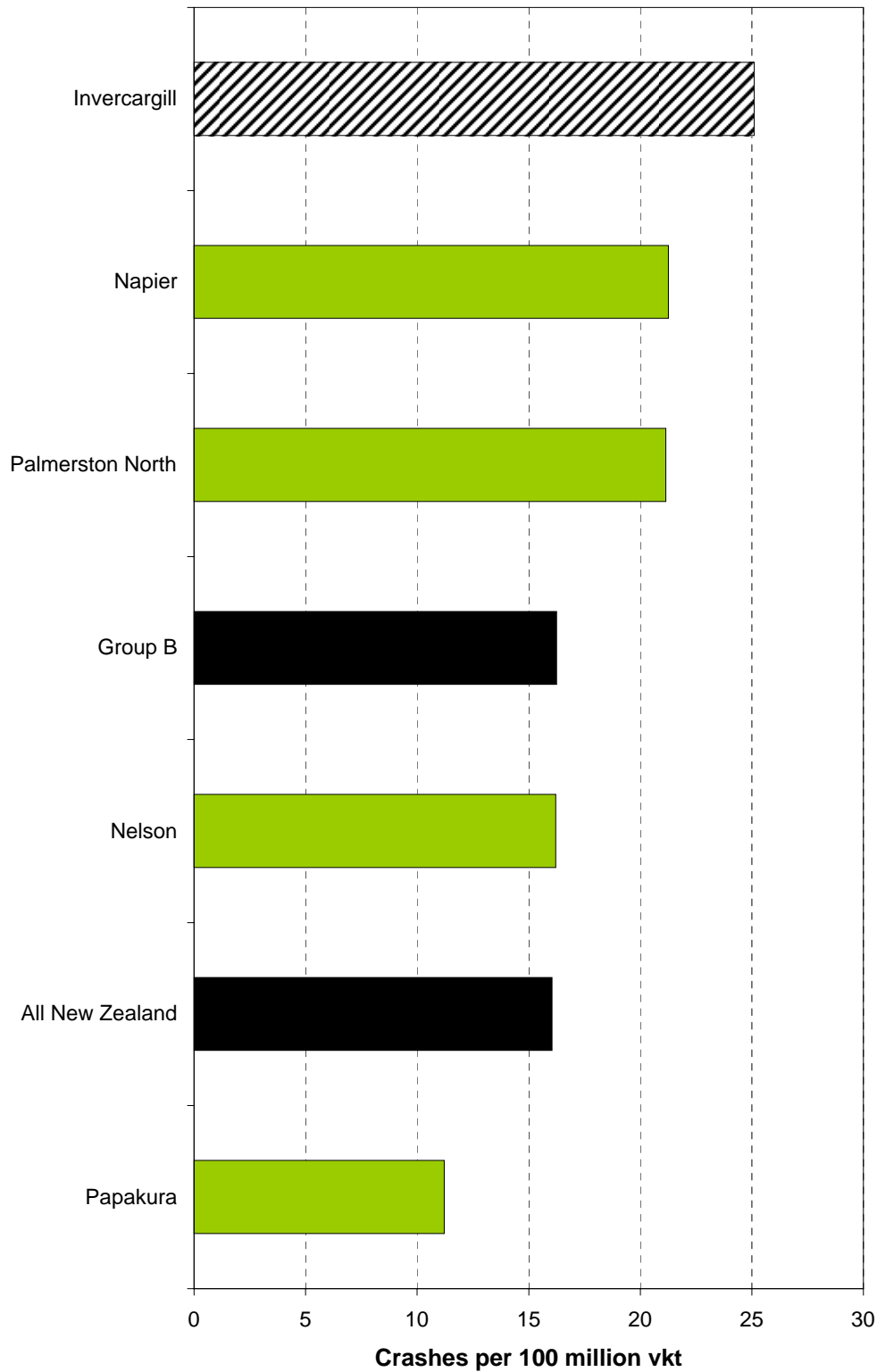


Figure 1.8 Crashes per 100 million vehicle-kilometres travelled - rural state highways



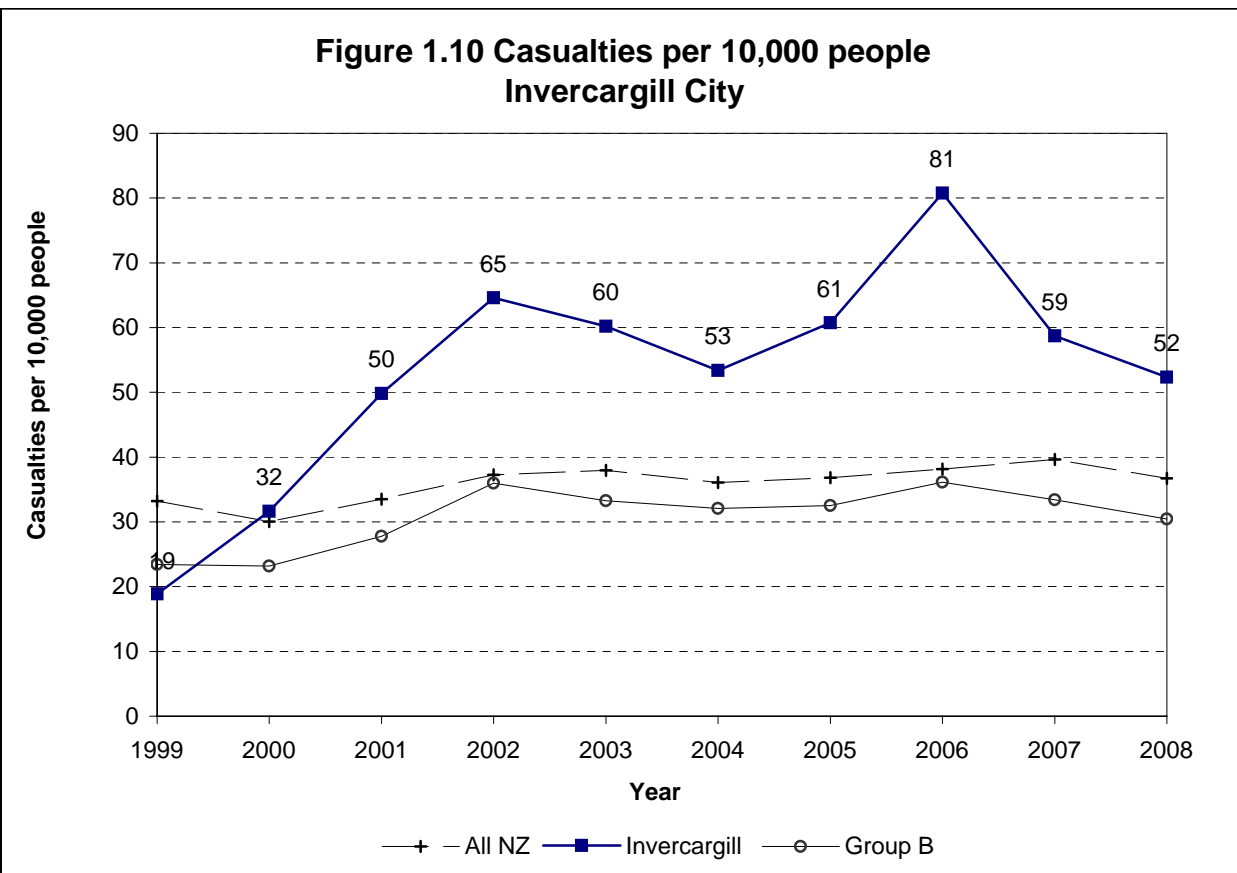
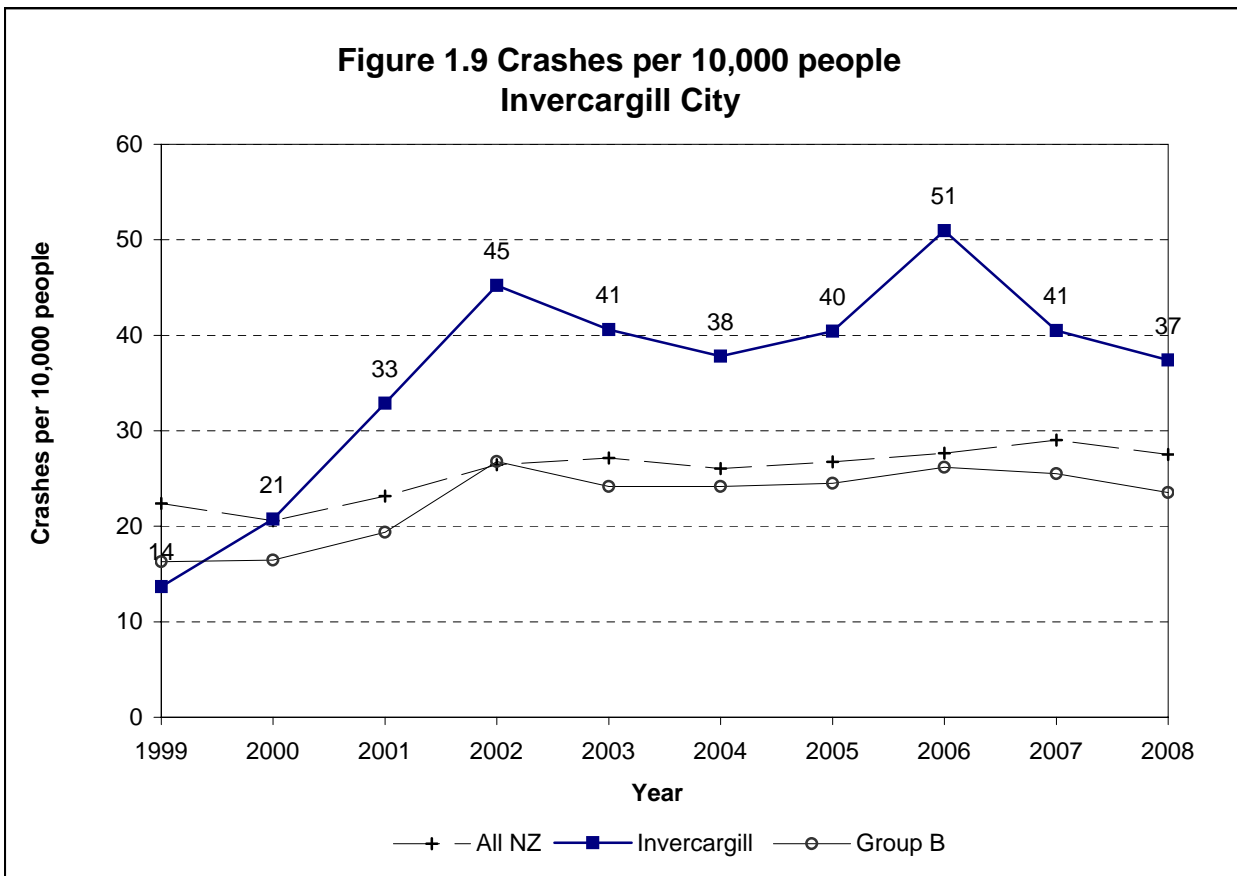


Figure 1.11 Social cost of crashes in Invercargill City in 2008

		Invercargill City	New Zealand
Council roads	urban	\$30.04	\$1,636.63
	rural	\$3.90	\$962.97
State Highways	urban	\$10.53	\$303.03
	rural	\$1.90	\$1,390.98
Total		\$46.38	\$4,293.62

Note: Crash costs are in \$ millions

The social costs of a road crash and the associated injuries include a number of different elements:

- Loss of life and life quality
- Loss of output due to temporary incapacitation
- Medical costs
- Legal costs
- Property damage costs

The average value of a loss of life due to a road crash is estimated by the amount of money the New Zealand population would be willing to pay for a safety improvement that would result in the expected avoidance of one premature death. This is the willingness to pay based value of statistical life or VOSL. The VOSL was established at \$2 million in 1991. This has been indexed to the average hourly earnings (ordinary time) to express the value in current dollars. The updated VOSL is \$3.35 million (in June 2008 dollars). Based on several international and New Zealand studies on VOSL, the average loss of life quality for permanent impairments due to a serious and a minor injury were estimated to be 10% and 0.4% of the VOSL respectively.

Crash rates can vary due to reporting rates. These are adjusted on a regional basis in this report by comparing with hospitalisation rates.

The other social cost components are estimated based on a number of studies conducted during the early to mid-1990s and are updated for price changes by indexing to an appropriate price index.

For a detail discussion on this, please refer to 'The social cost of road crashes and injuries: June 2008 update', available at the Ministry of Transport's website:

<http://www.transport.govt.nz/assets/NewPDFs/NewFolder/Social-Cost-June-2008-update-final.pdf>

The average social cost per reported crash (in June 2008 dollars) are estimated at:

Rural fatal crash	\$4,199,000
Rural serious crash	\$776,000
Rural minor crash	\$90,000
Urban fatal crash	\$3,635,000
Urban serious crash	\$659,000
Urban minor crash	\$81,000

These values include an allowance for non-reported injury crashes, and the totals in Fig. 1.11 also include an allowance for non-injury crashes.

Crash Counts

Figure 2.1: Crash numbers and severity 2004 to 2008 - whole City

	2004	2005	2006	2007	2008	Total	%	Group B
Fatal crashes	2	0	2	4	3	11	1%	2%
Serious crashes	36	47	65	40	22	210	20%	19%
Minor crashes	159	164	198	165	168	854	79%	79%
Total injury crashes	197	211	265	209	193	1075	100%	100%
Non-injury crashes	282	332	279	344	367	1604		

Figure 2.2: Crash numbers and severity 2004 to 2008 - urban roads

	2004	2005	2006	2007	2008	Total	%	Group B
Fatal crashes	2	0	0	1	3	6	1%	1%
Serious crashes	31	36	52	30	17	166	18%	18%
Minor crashes	145	130	173	143	151	742	81%	81%
Total injury crashes	178	166	225	174	171	914	100%	100%
Non-injury crashes	259	295	257	319	344	1474		

Figure 2.3: Crash numbers and severity 2004 to 2008 - rural roads

	2004	2005	2006	2007	2008	Total	%	Group B
Fatal crashes	0	0	2	3	0	5	3%	6%
Serious crashes	5	11	13	10	5	44	27%	22%
Minor crashes	14	34	25	22	17	112	70%	72%
Total injury crashes	19	45	40	35	22	161	100%	100%
Non-injury crashes	23	37	22	25	23	130		

Figure 2.4: Casualty numbers and severity 2004 to 2008 - whole City

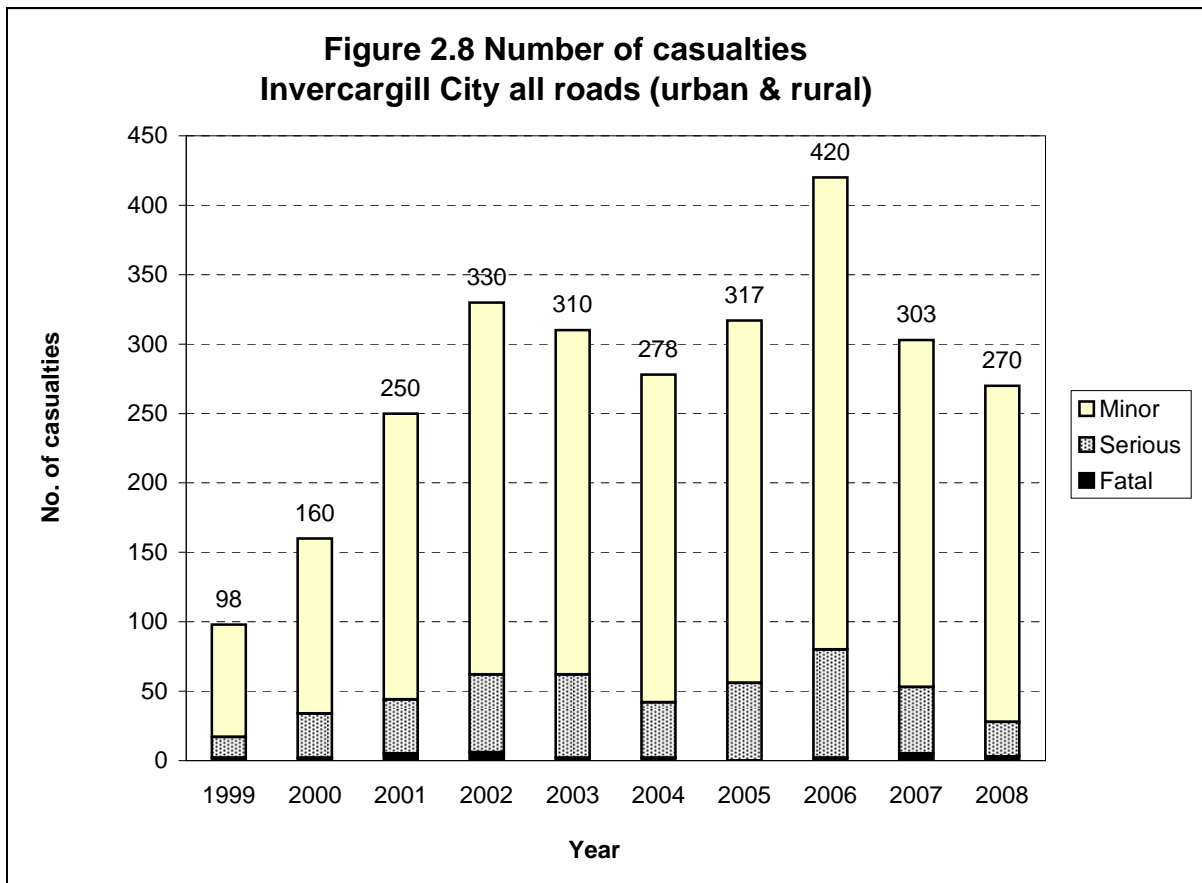
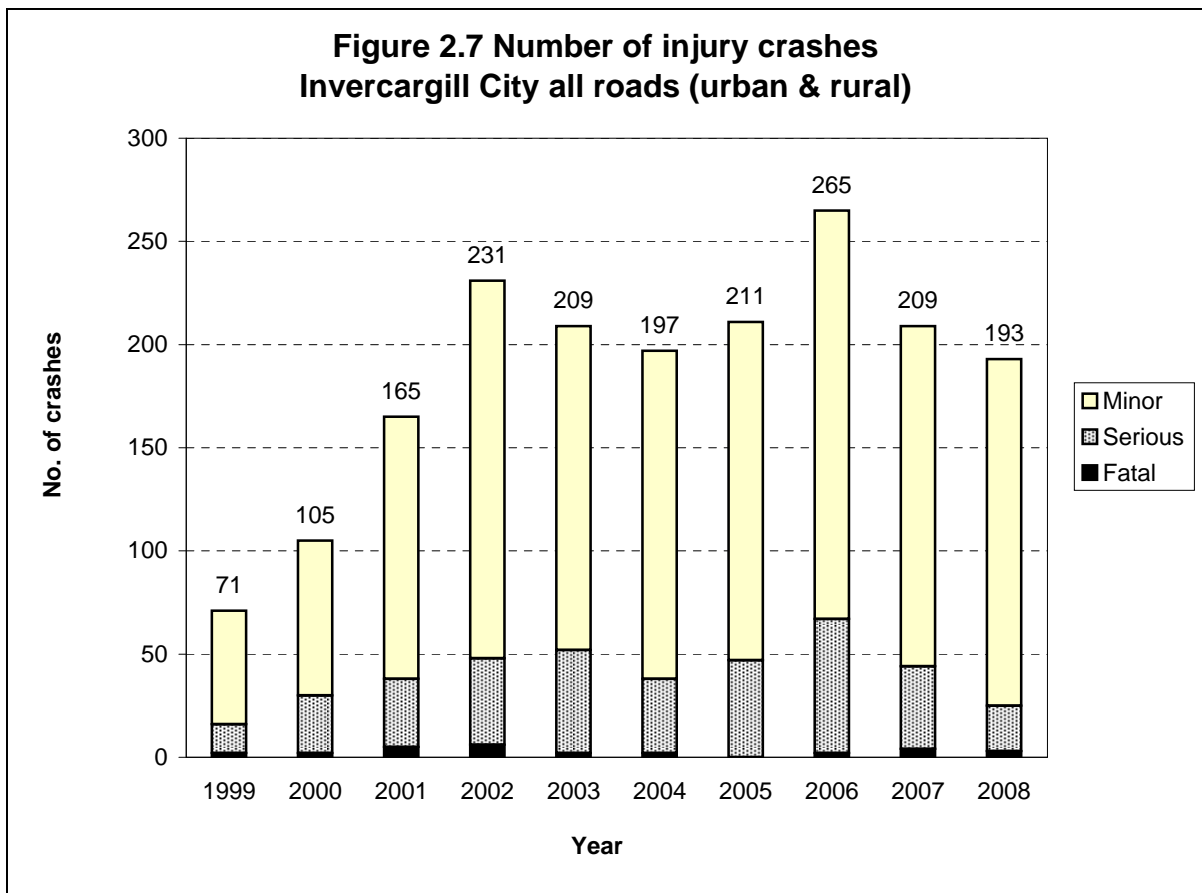
	2004	2005	2006	2007	2008	Total	%	Group B
Fatal casualties	2	0	2	5	3	12	1%	2%
Serious casualties	40	56	78	48	25	247	16%	16%
Minor casualties	236	261	340	250	242	1329	84%	82%
Total casualties	278	317	420	303	270	1588	100%	100%

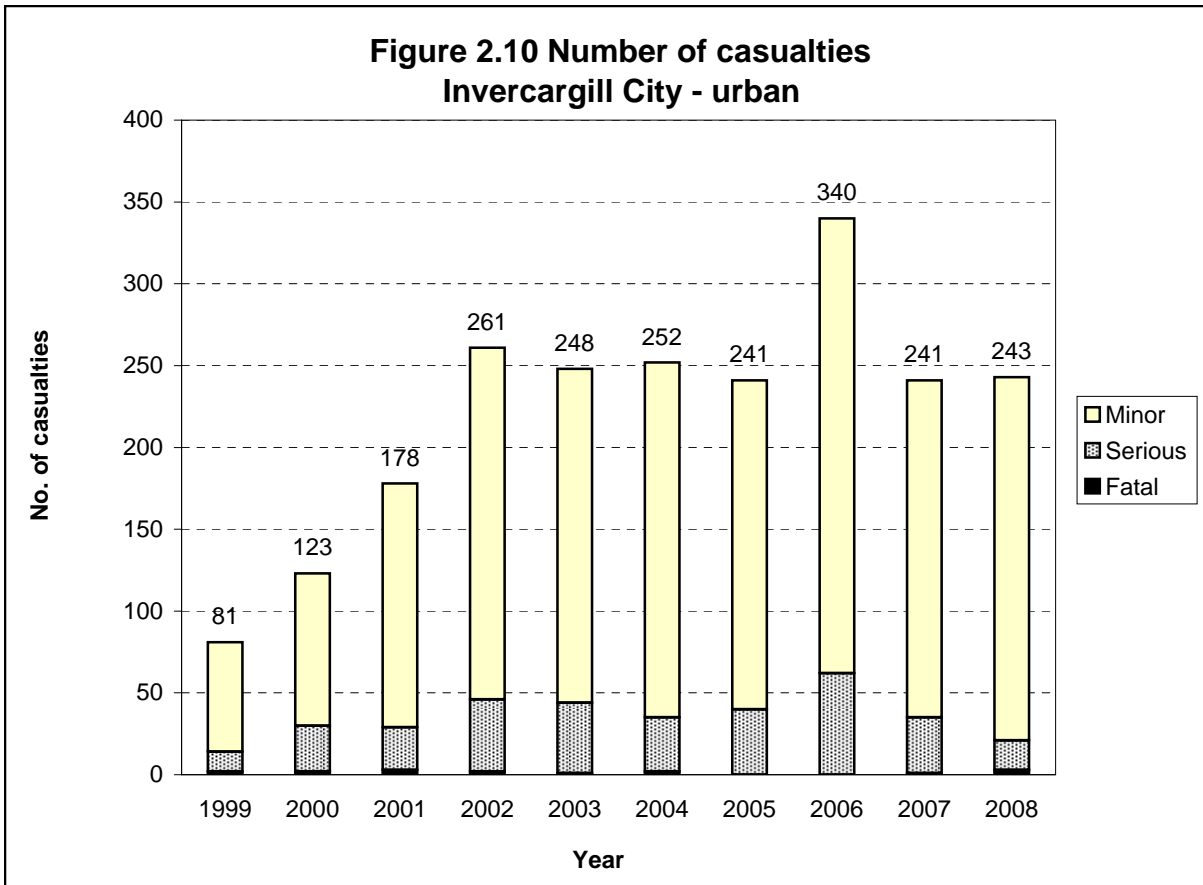
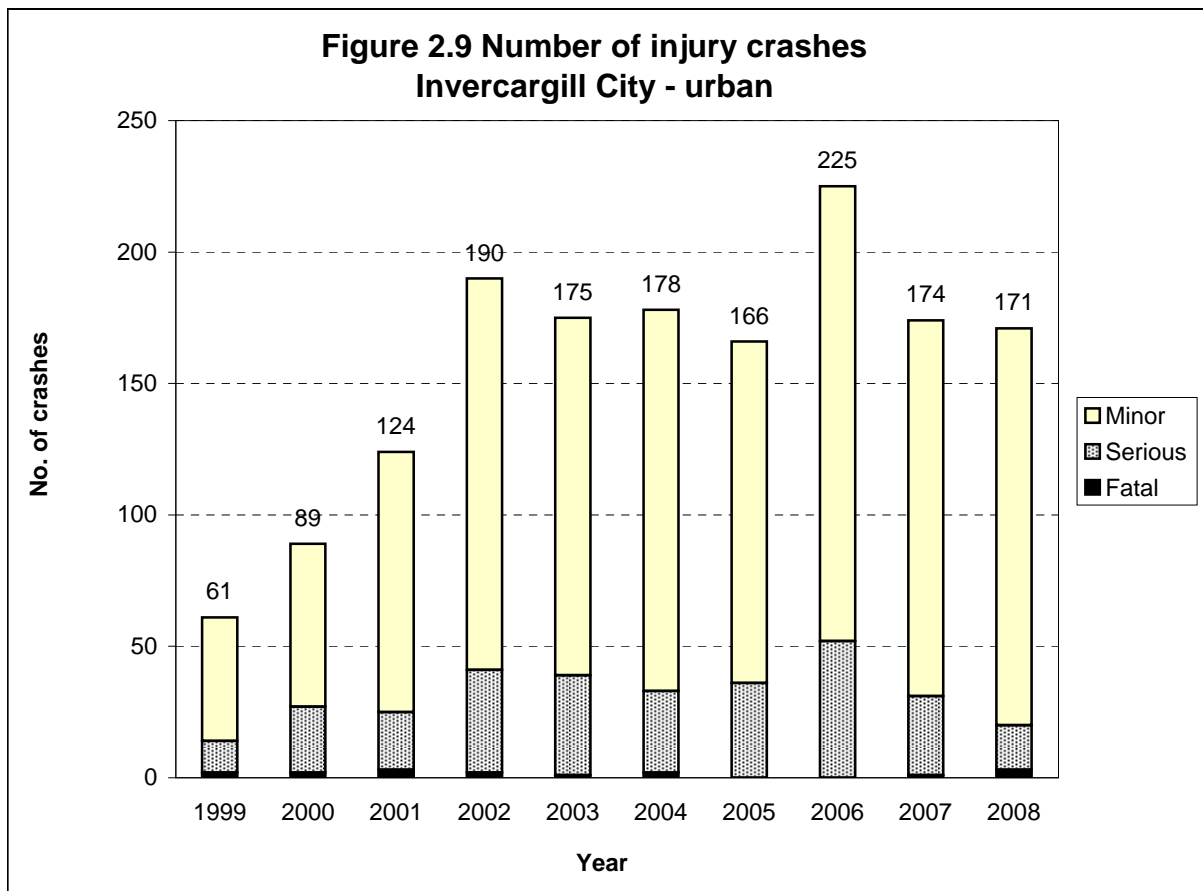
Figure 2.5: Casualty numbers and severity 2004 to 2008 - urban roads

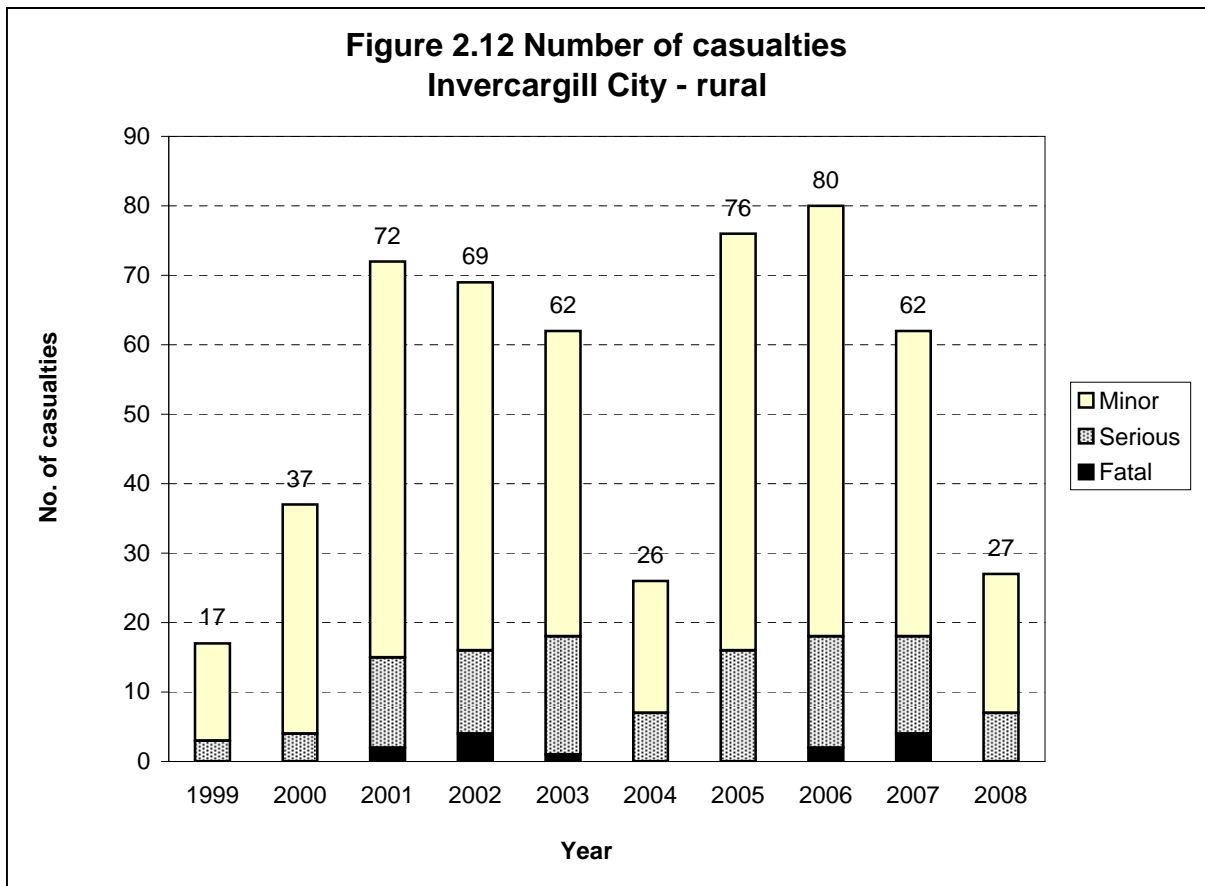
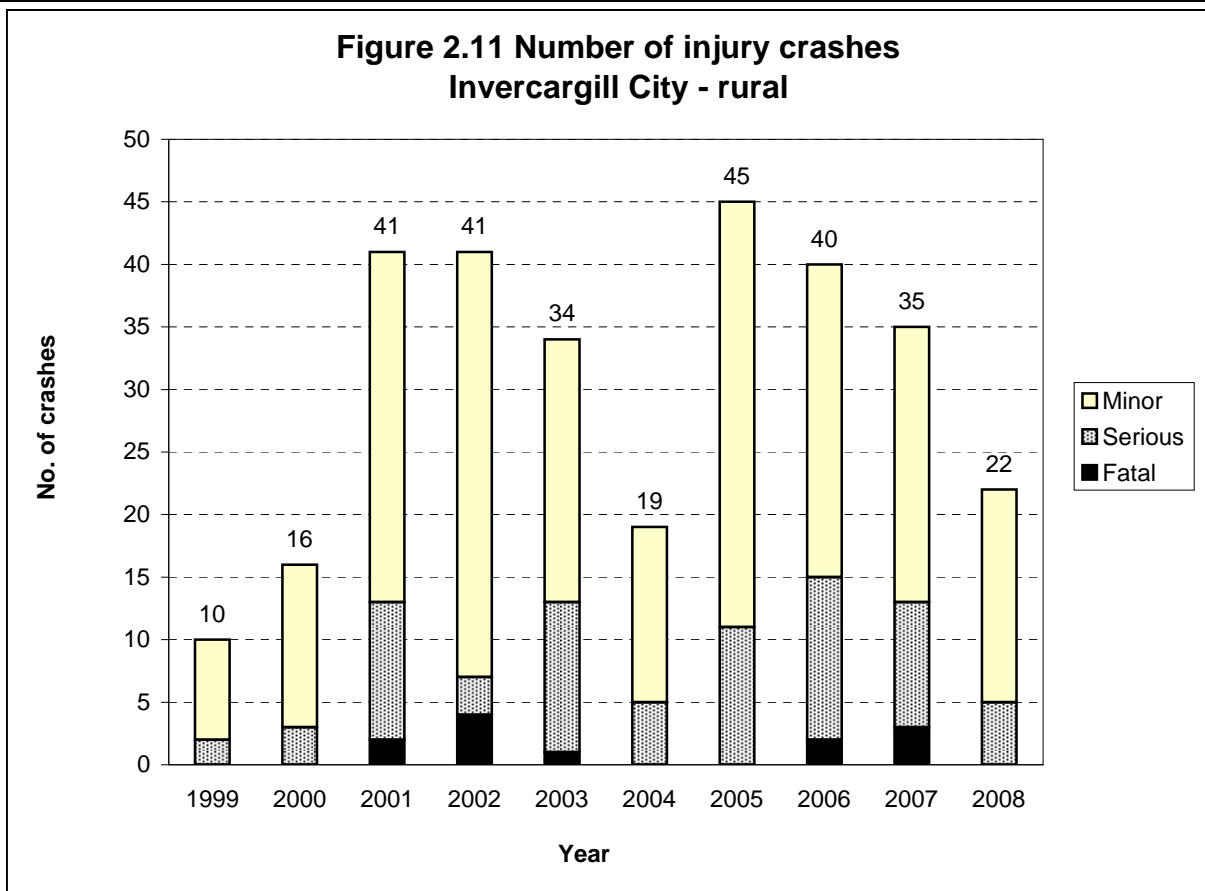
	2004	2005	2006	2007	2008	Total	%	Group B
Fatal casualties	2	0	0	1	3	6	0%	1%
Serious casualties	33	40	62	34	18	187	14%	15%
Minor casualties	217	201	278	206	222	1124	85%	84%
Total casualties	252	241	340	241	243	1317	100%	100%

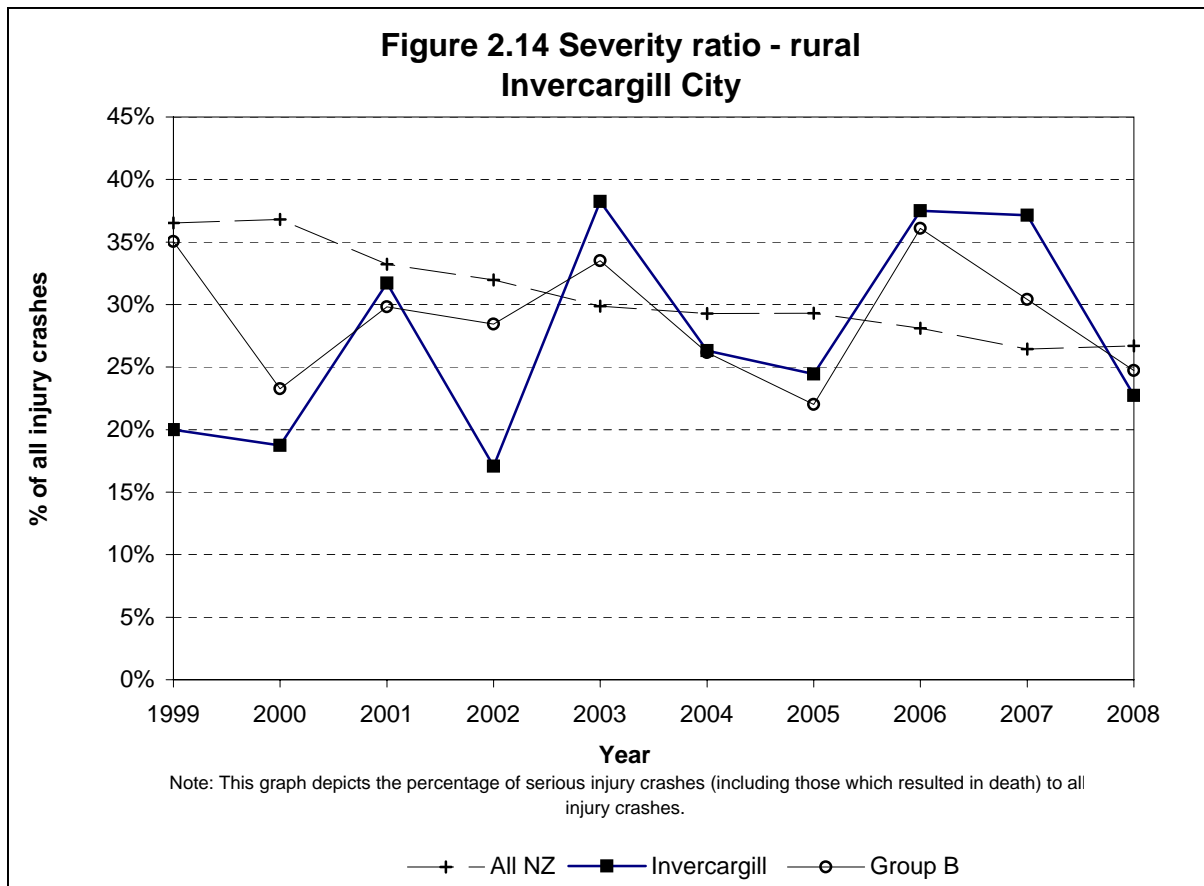
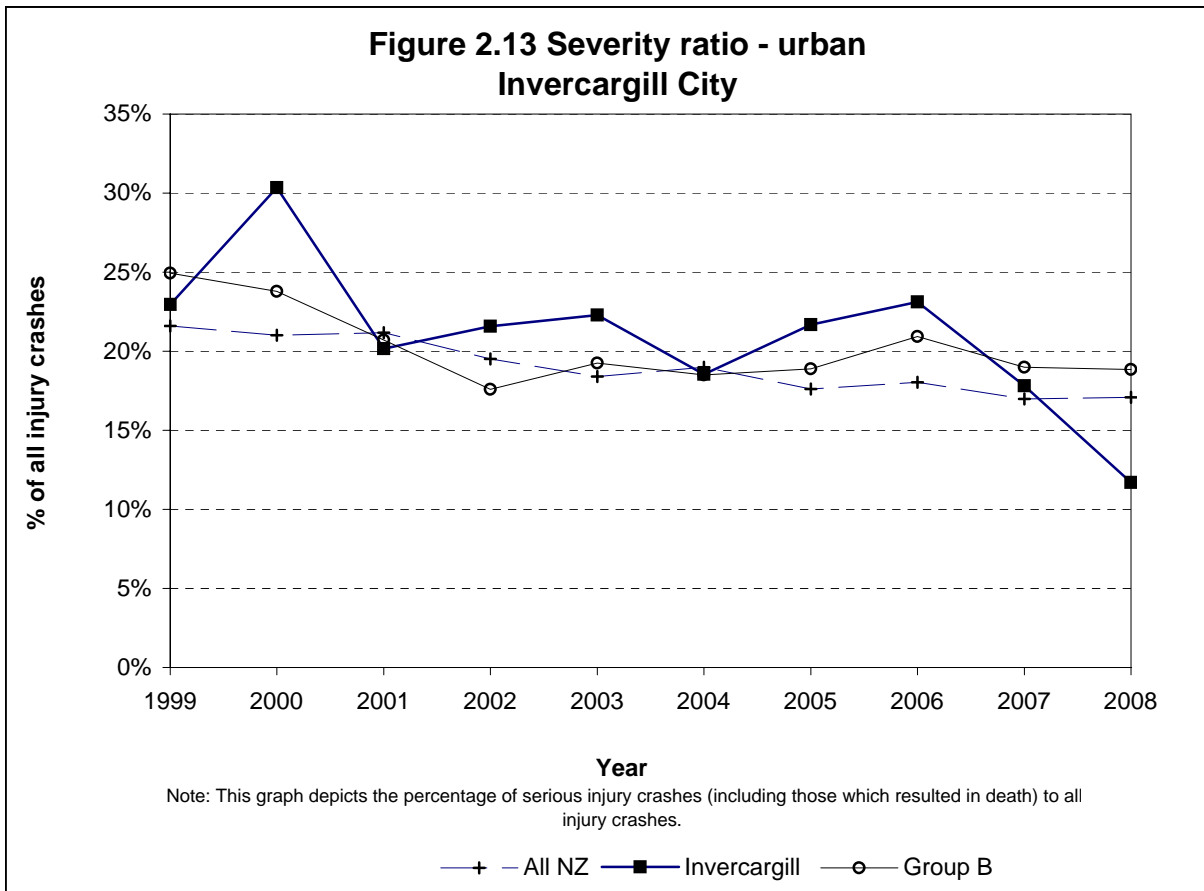
Figure 2.6: Casualty numbers and severity 2004 to 2008 - rural roads

	2004	2005	2006	2007	2008	Total	%	Group B
Fatal casualties	0	0	2	4	0	6	2%	4%
Serious casualties	7	16	16	14	7	60	22%	21%
Minor casualties	19	60	62	44	20	205	76%	76%
Total casualties	26	76	80	62	27	271	100%	100%



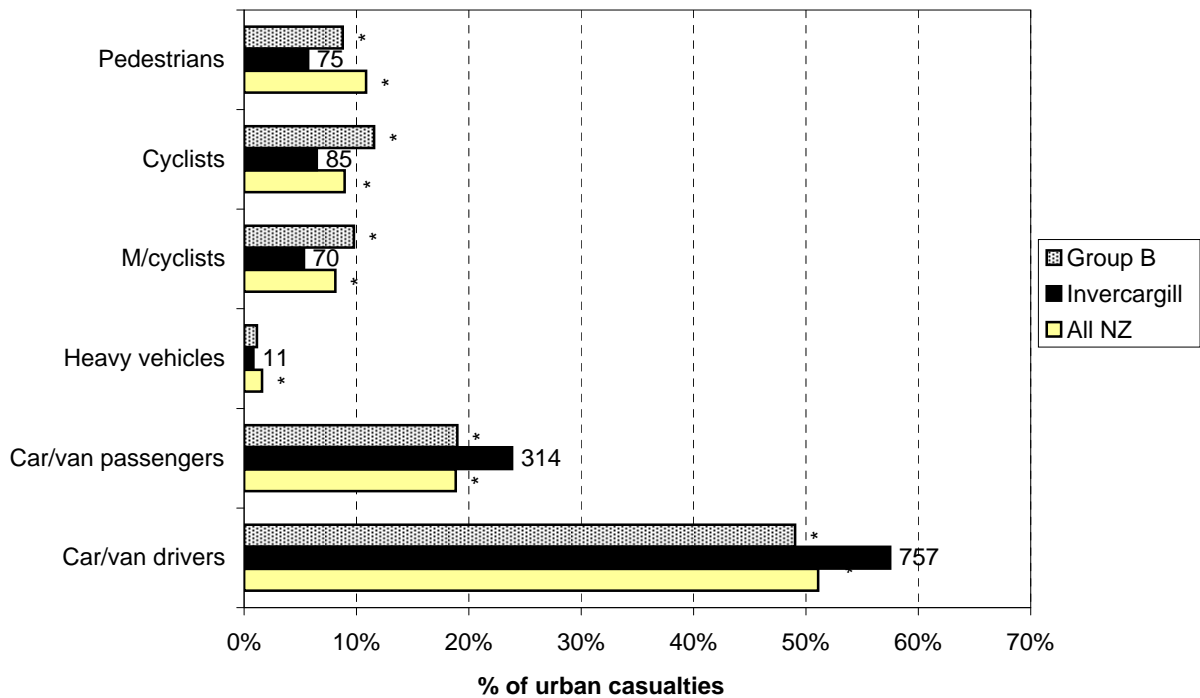






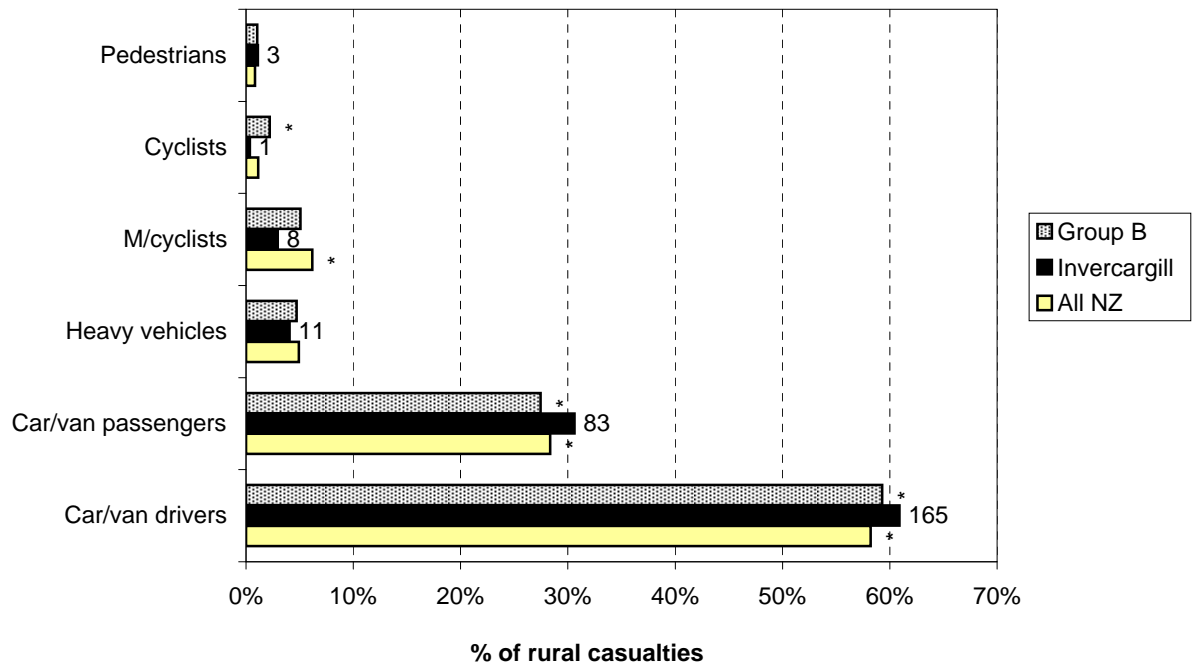
Road User Statistics

**Figure 3.1 Road user casualties - urban
Invercargill City (2004-2008)**



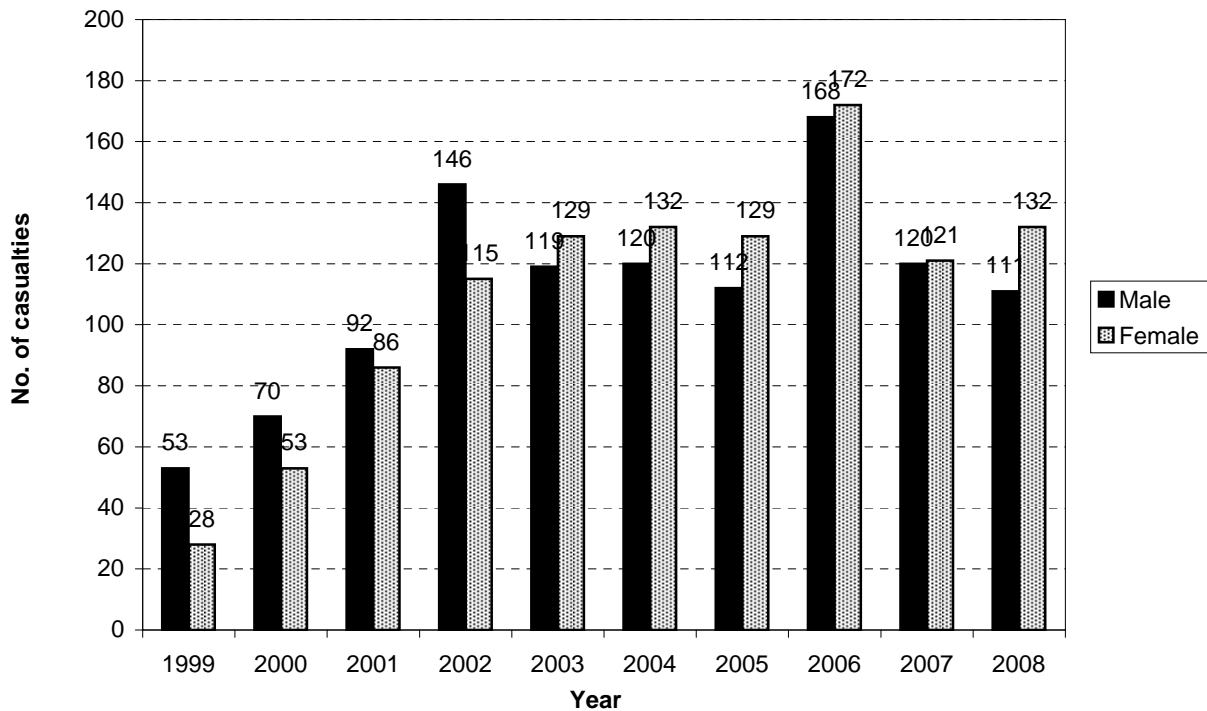
Note: While the graph plots percentages, the number of casualties is shown against the data points.
*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions

**Figure 3.2 Road user casualties - rural
Invercargill City (2004-2008)**



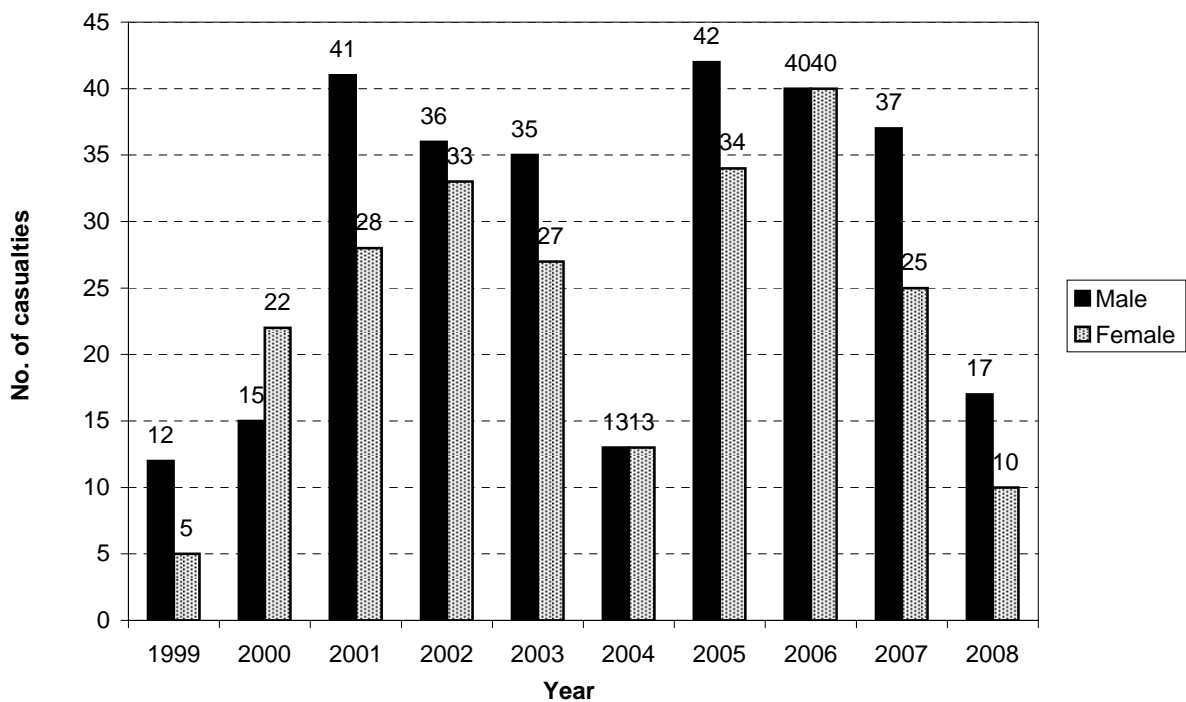
Note: While the graph plots percentages, the number of casualties is shown against the data points.
*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions

**Figure 3.3 Male/female casualties - urban
Invercargill City**



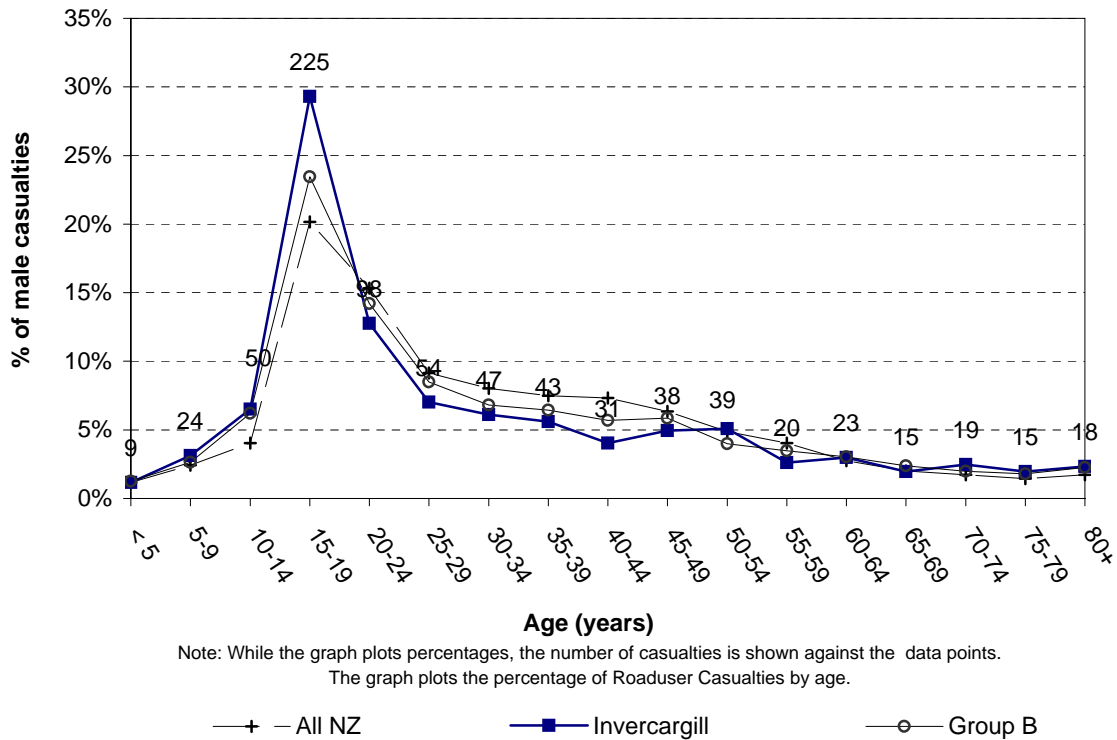
Note: This graph shows the number of male and female roadusers injured

**Figure 3.4 Male/female casualties - rural
Invercargill City**

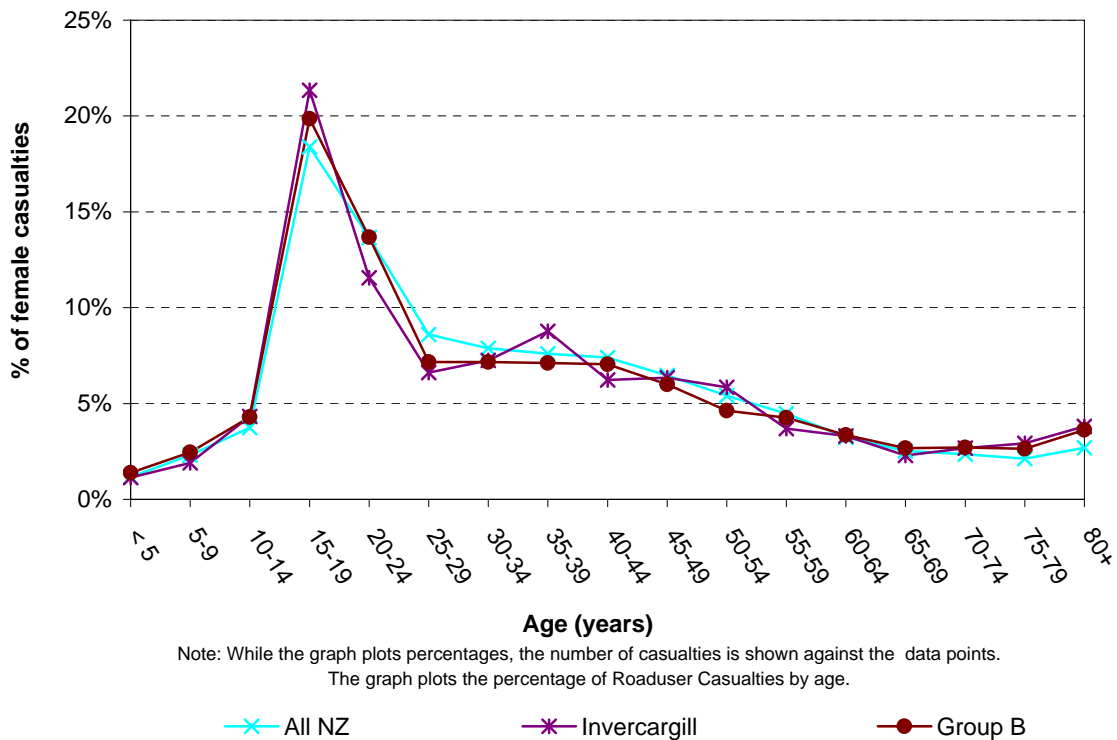


Note: This graph shows the number of male and female roadusers injured

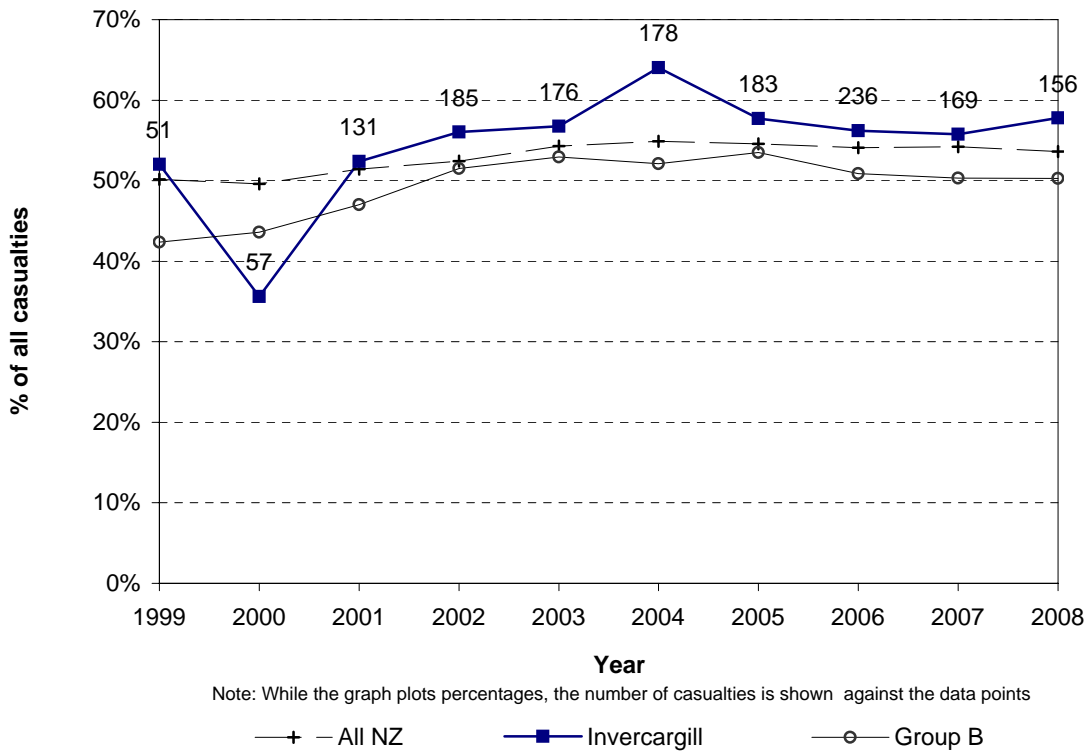
**Figure 3.5 Male casualties by age
Invercargill City (2004-2008)**



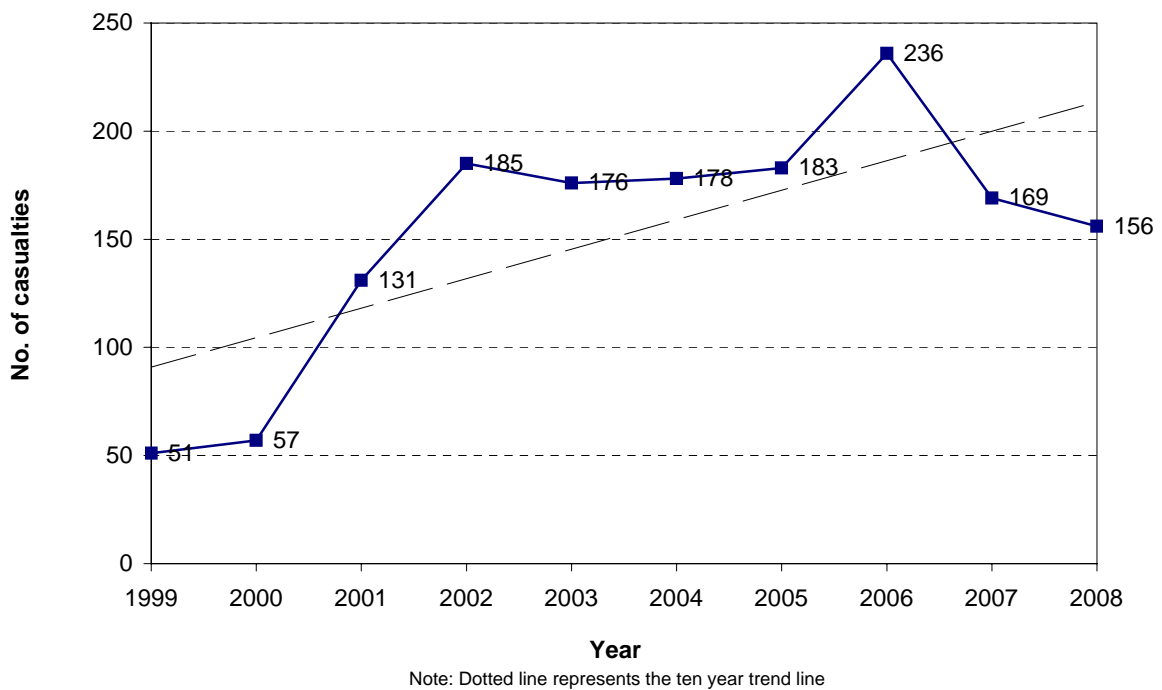
**Figure 3.6 Female casualties by age
Invercargill City (2004-2008)**



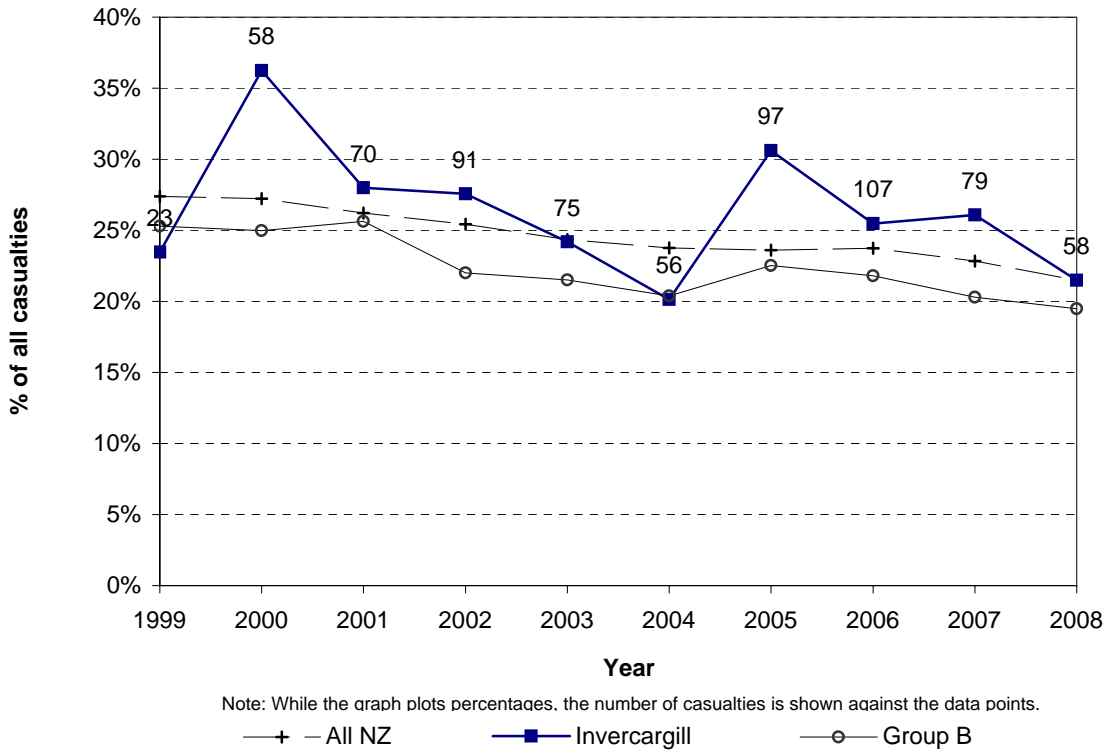
**Figure 3.7 Car/van driver casualties
Invercargill City**



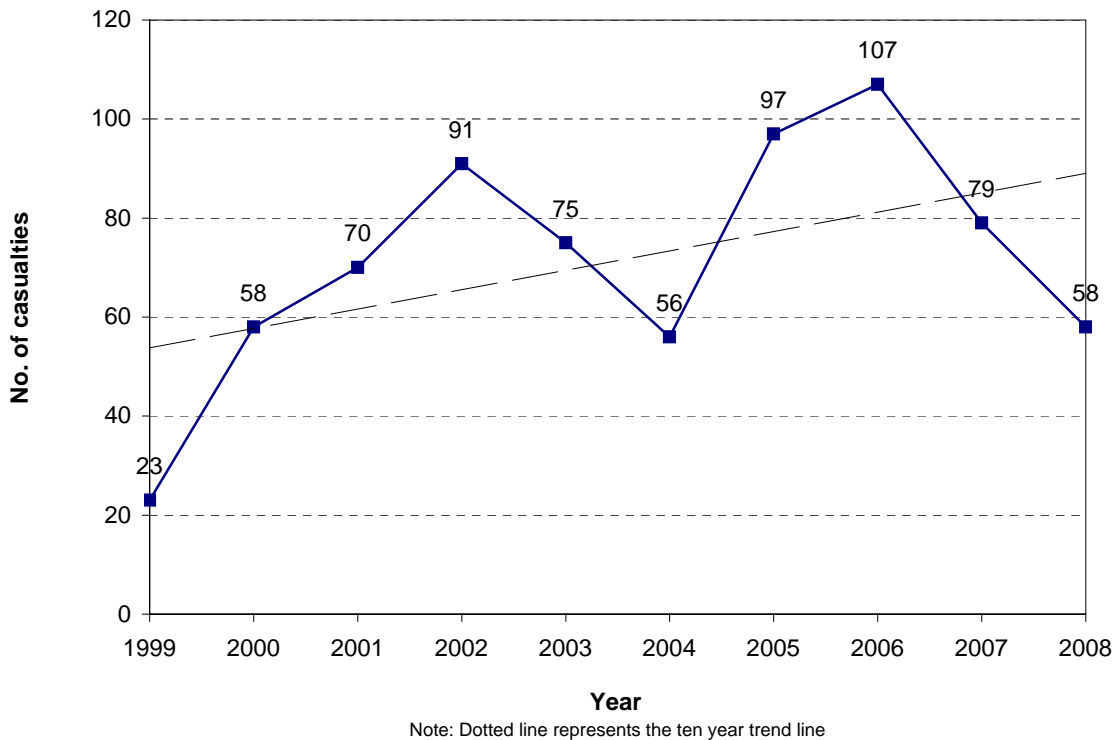
**Figure 3.8 Car/van driver casualties
Invercargill City**



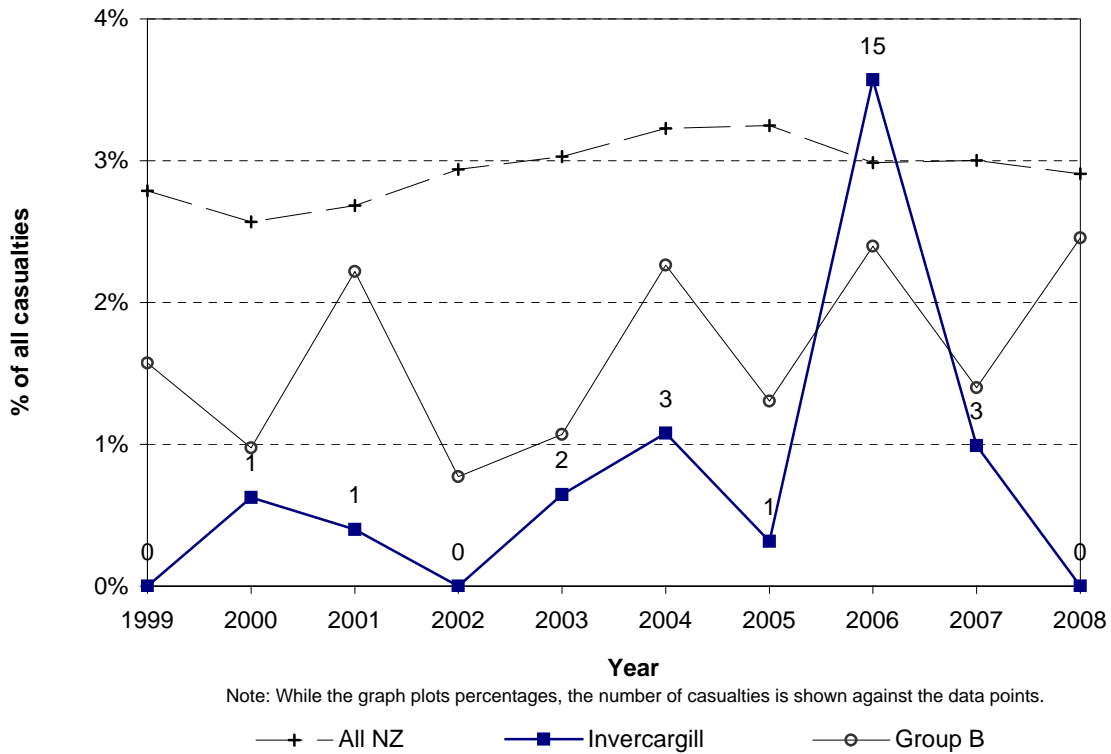
**Figure 3.9 Car/van passenger casualties
Invercargill City**



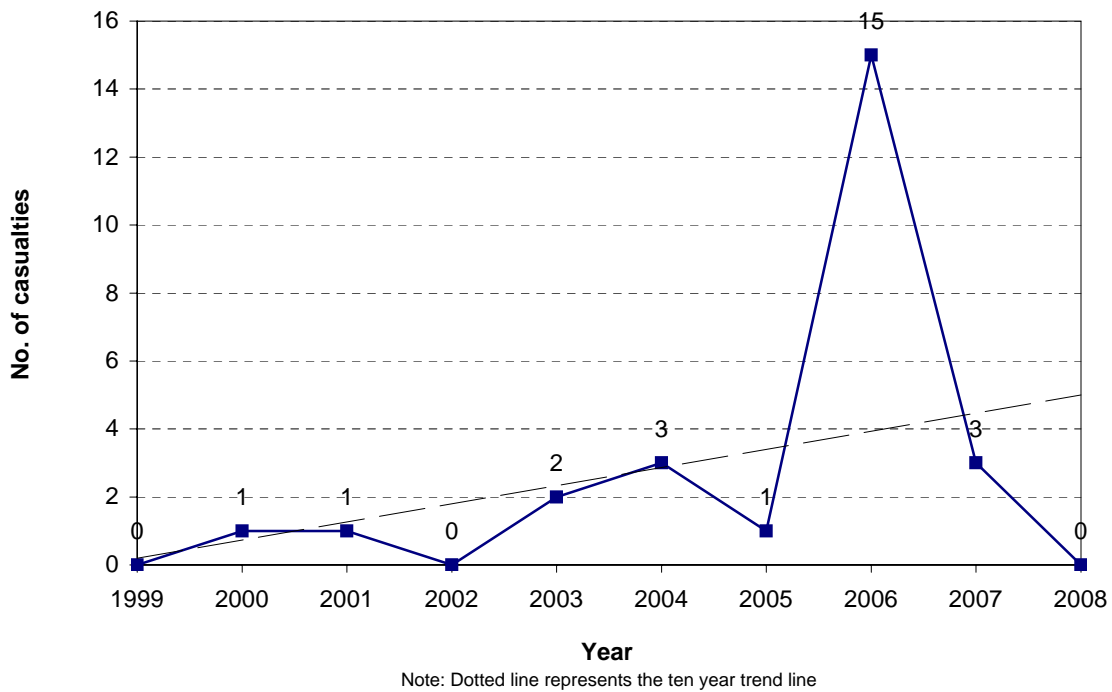
**Figure 3.10 Car/van passenger casualties
Invercargill City**



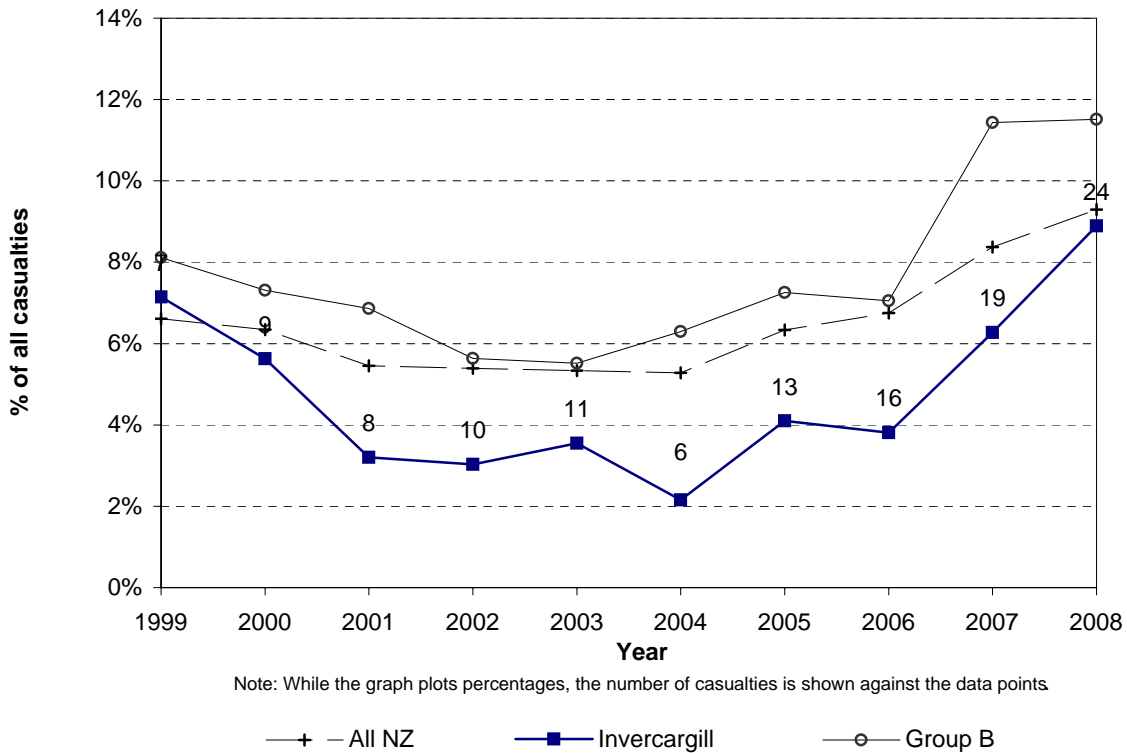
**Figure 3.11 Heavy vehicle casualties
Invercargill City**



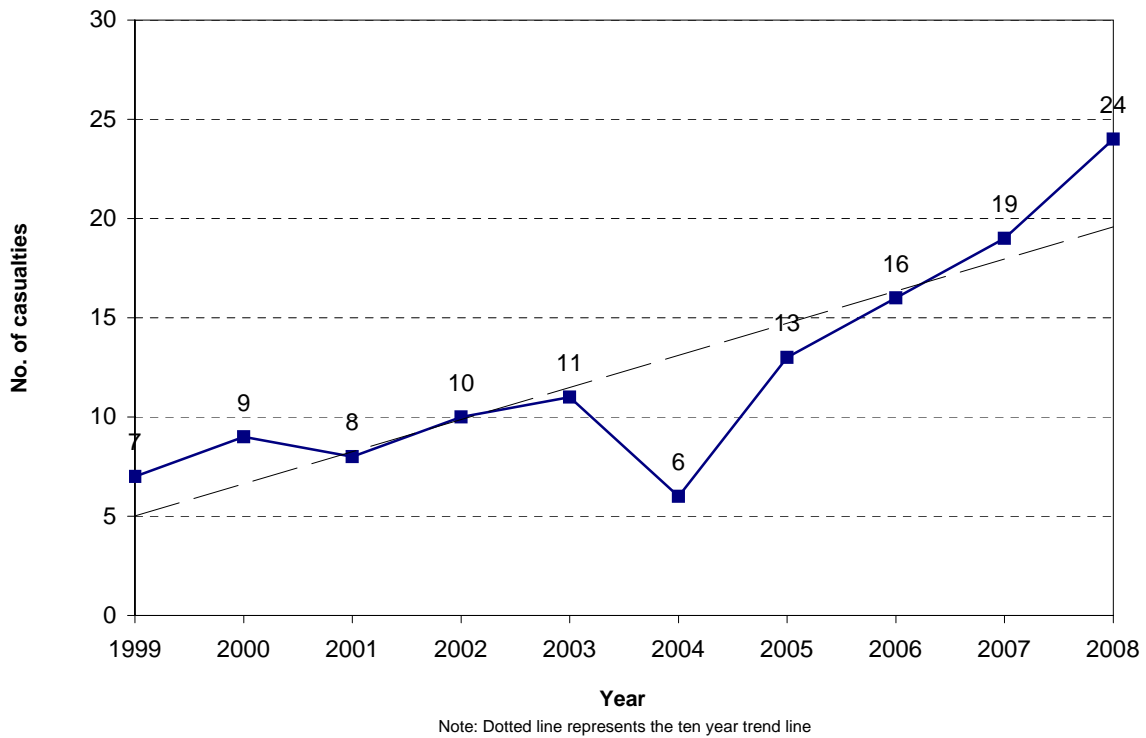
**Figure 3.12 Heavy vehicle casualties
Invercargill City**



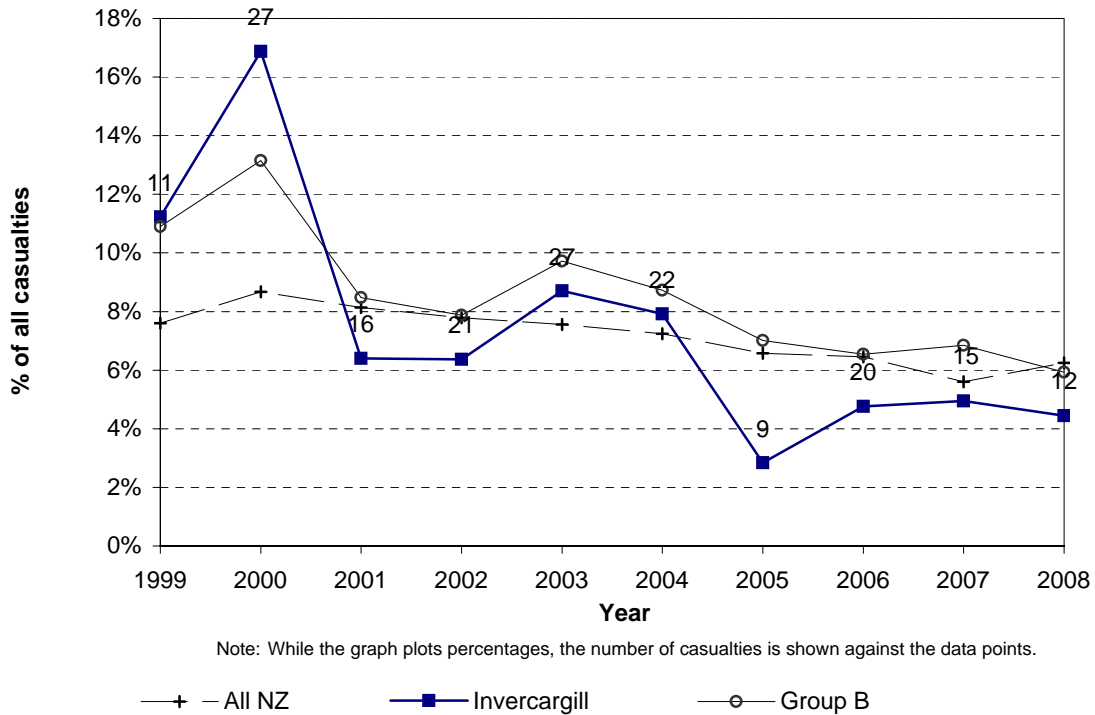
**Figure 3.13 Motorcyclist casualties
Invercargill City**



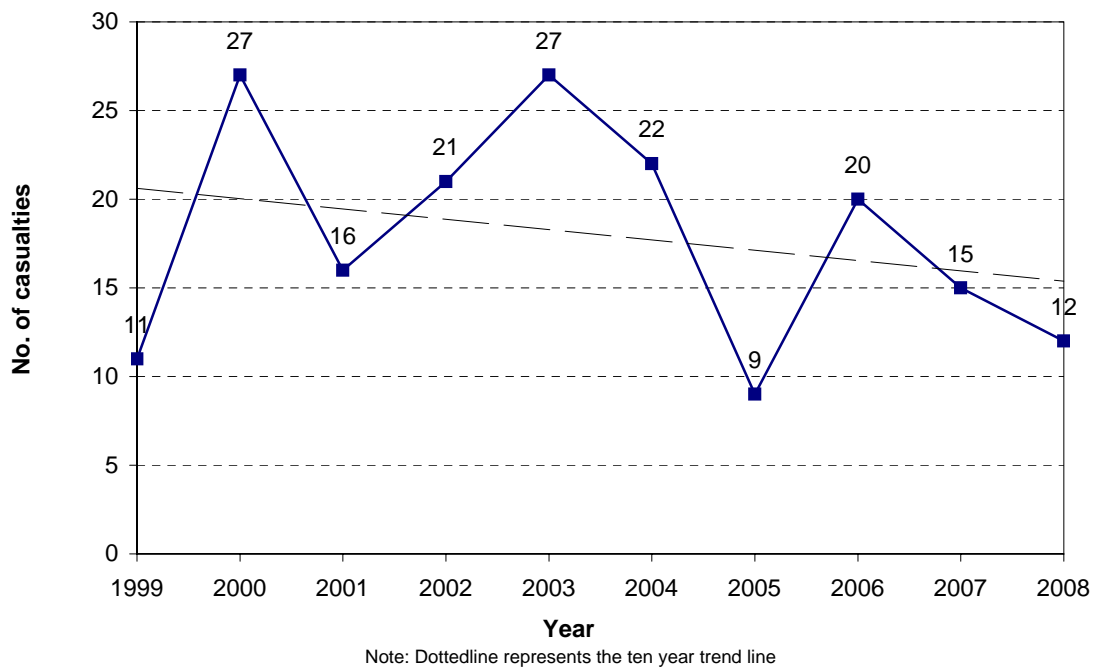
**Figure 3.14 Motorcyclist casualties
Invercargill City**



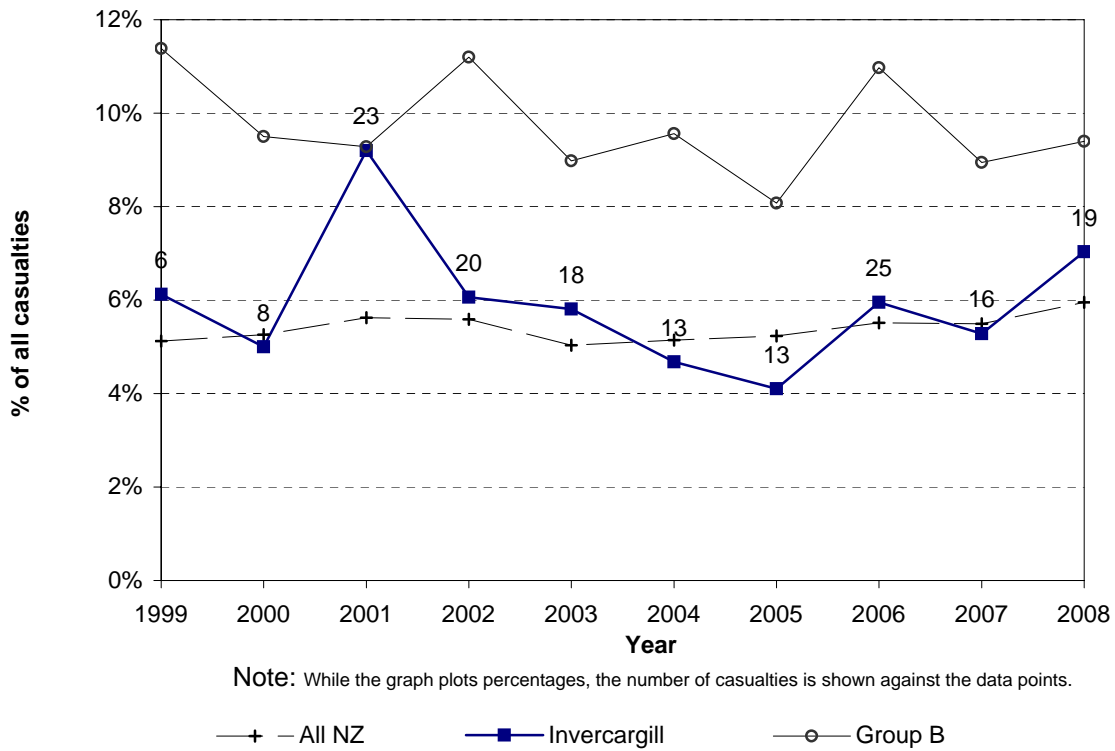
**Figure 3.15 Pedestrian casualties
Invercargill City**



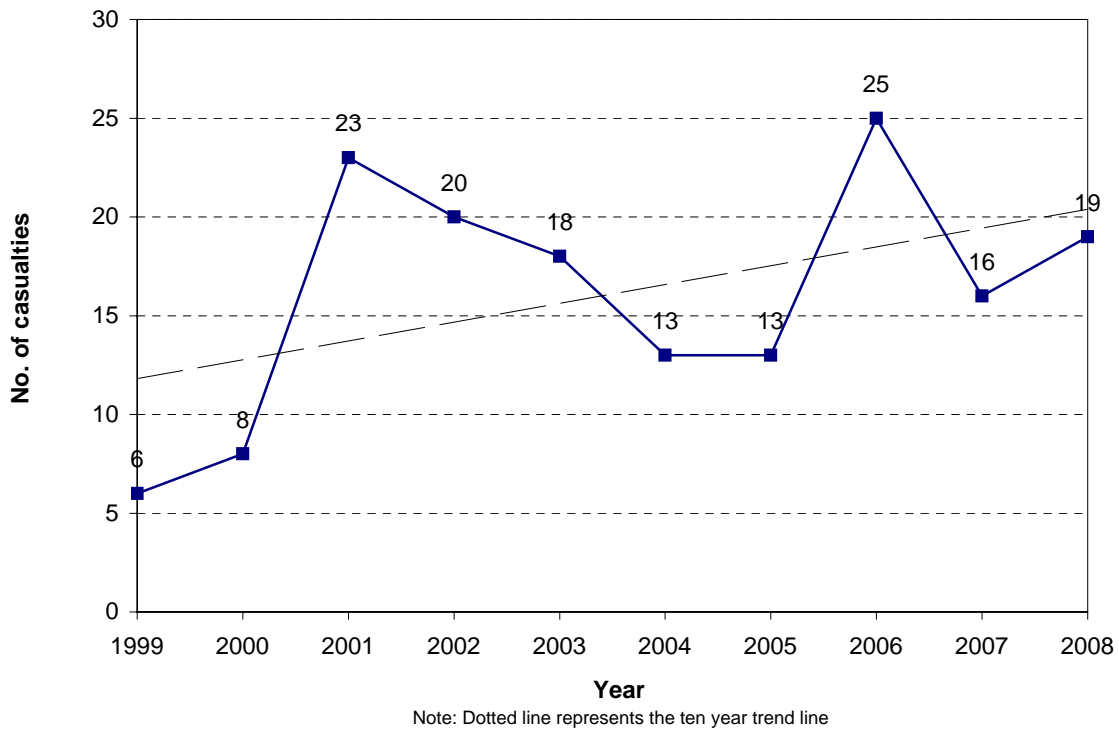
**Figure 3.16 Pedestrian casualties
Invercargill City**



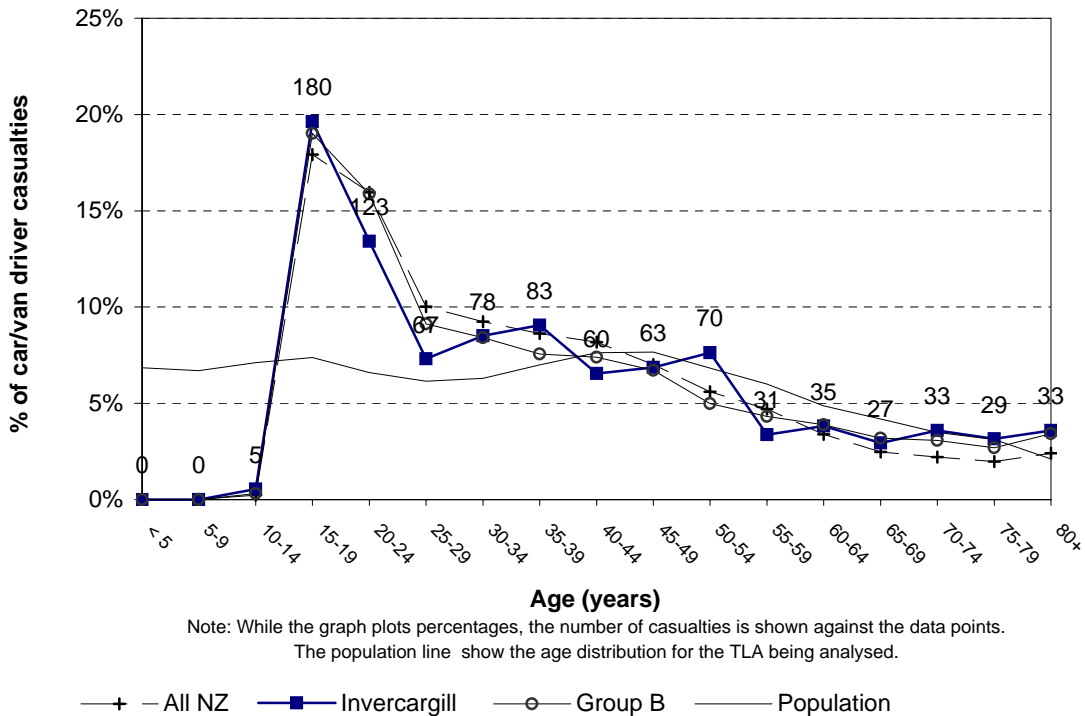
**Figure 3.17 Cyclist casualties
Invercargill City**



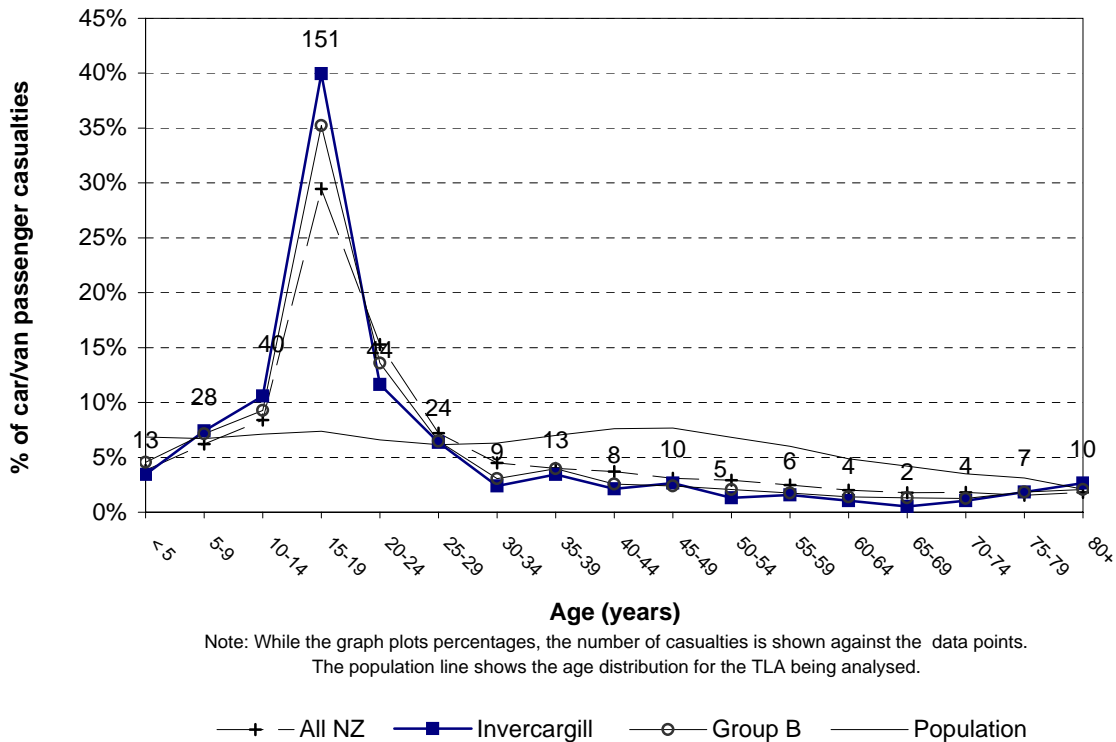
**Figure 3.18 Cyclist casualties
Invercargill City**



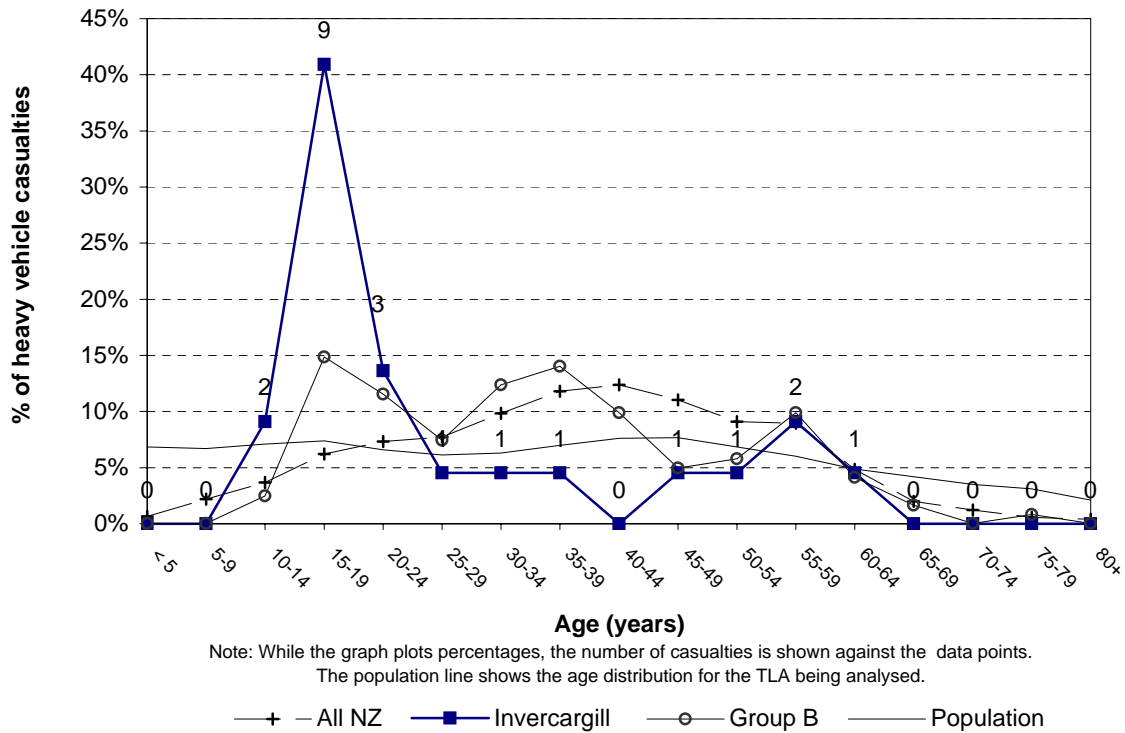
**Figure 3.19 Car/van driver casualty age
Invercargill City (2004-2008)**



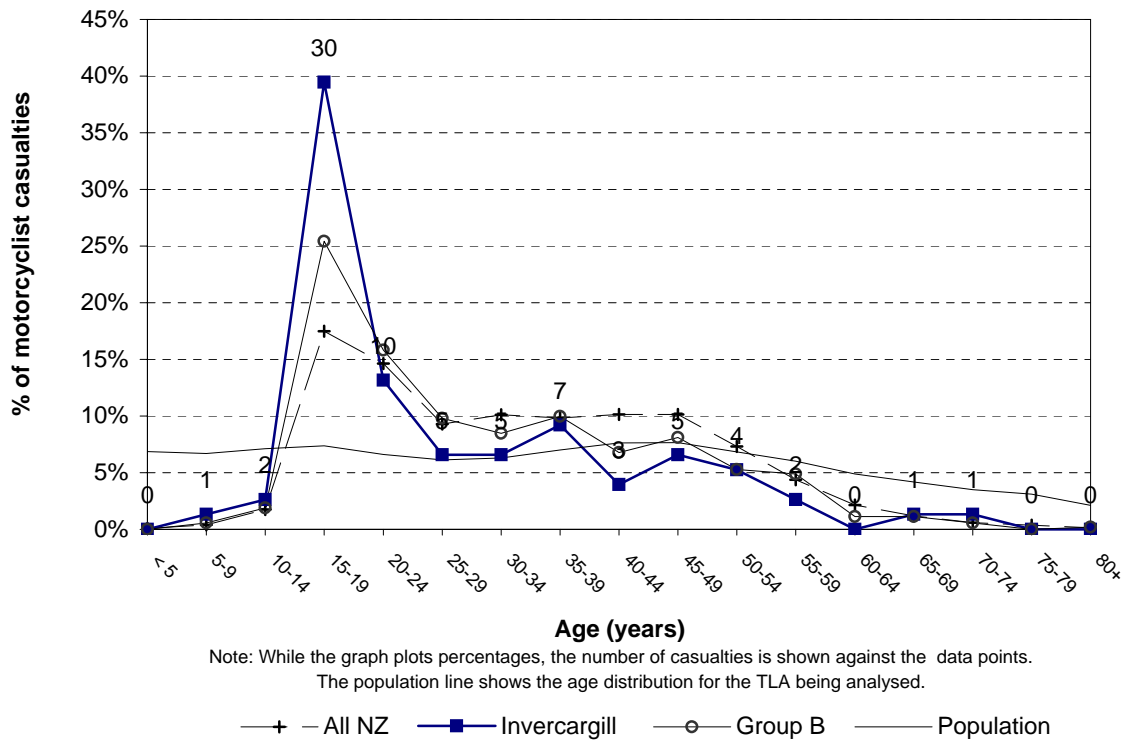
**Figure 3.20 Car/van passenger casualty age
Invercargill City (2004-2008)**



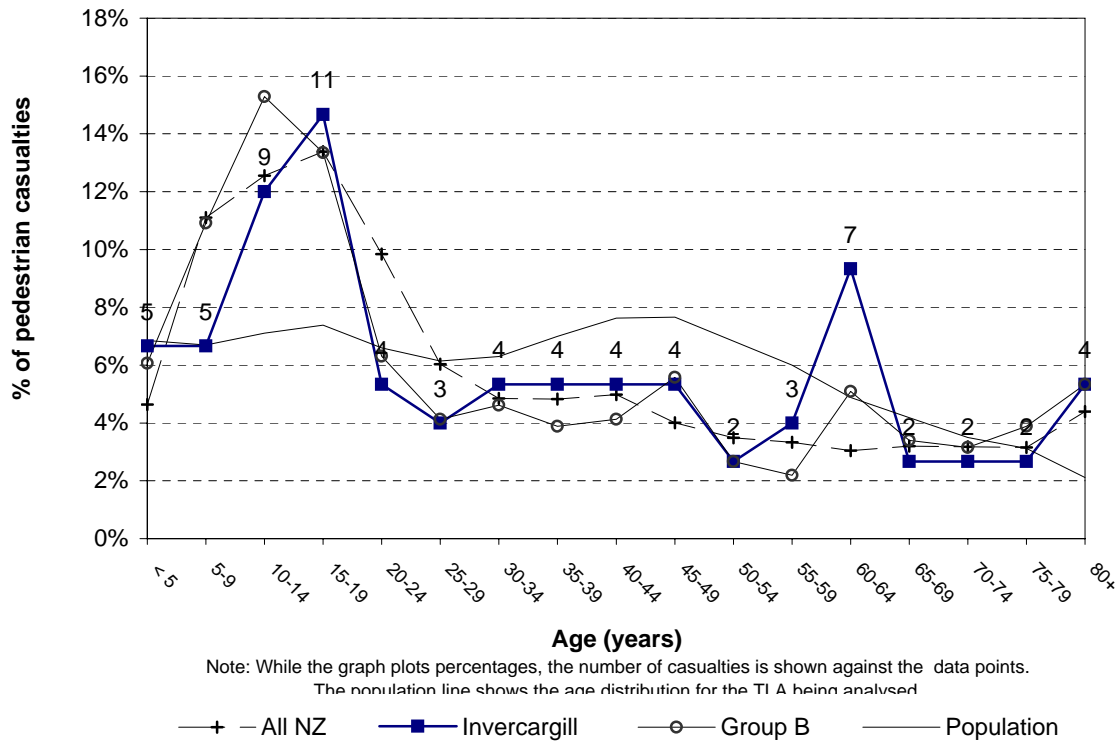
**Figure 3.21 Heavy vehicle casualty age
Invercargill City (2004-2008)**



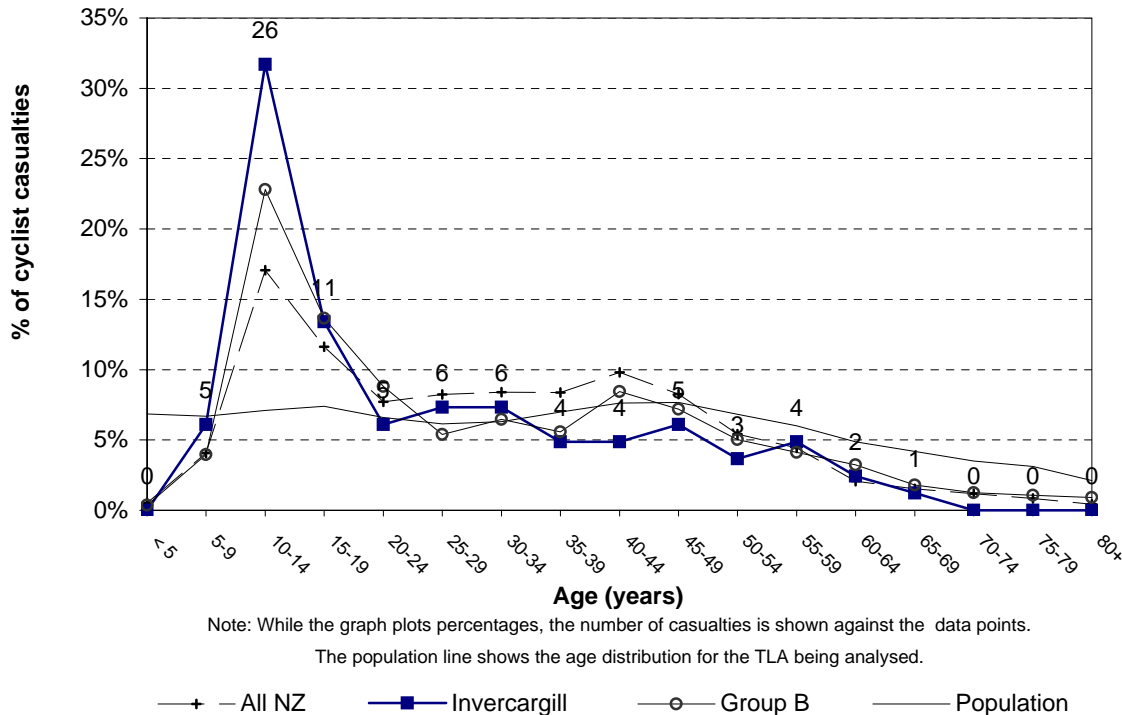
**Figure 3.22 Motorcyclist casualty age
Invercargill City (2004-2008)**



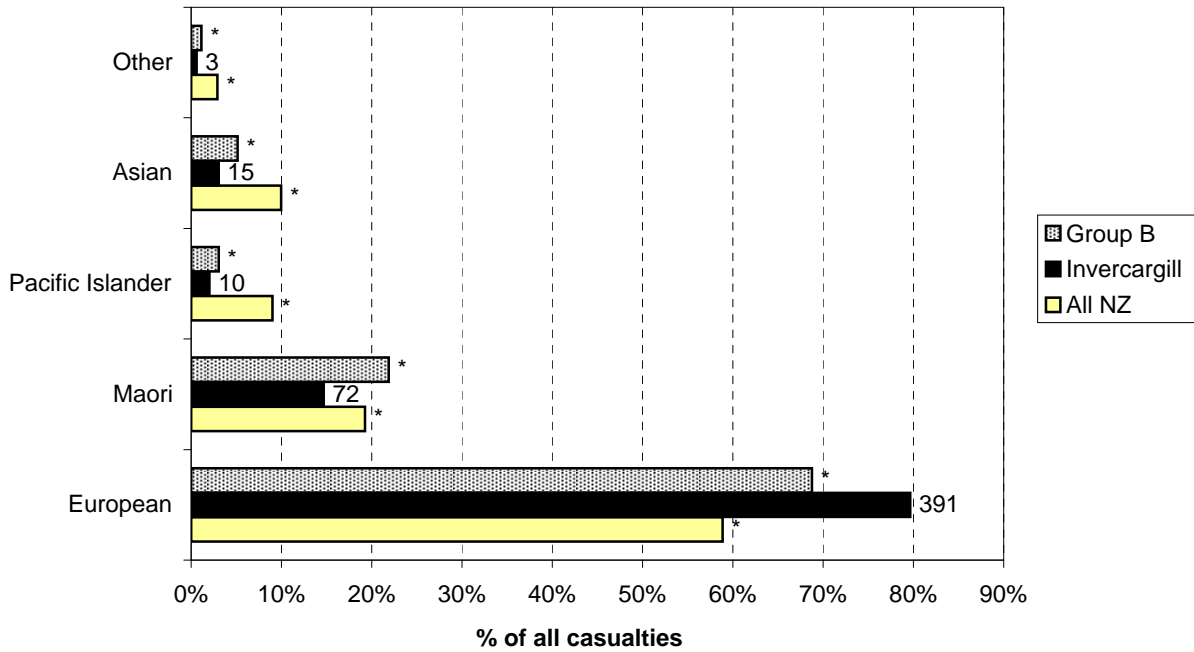
**Figure 3.23 Pedestrian casualty age
Invercargill City (2004-2008)**



**Figure 3.24 Cyclist casualty age
Invercargill City (2004-2008)**

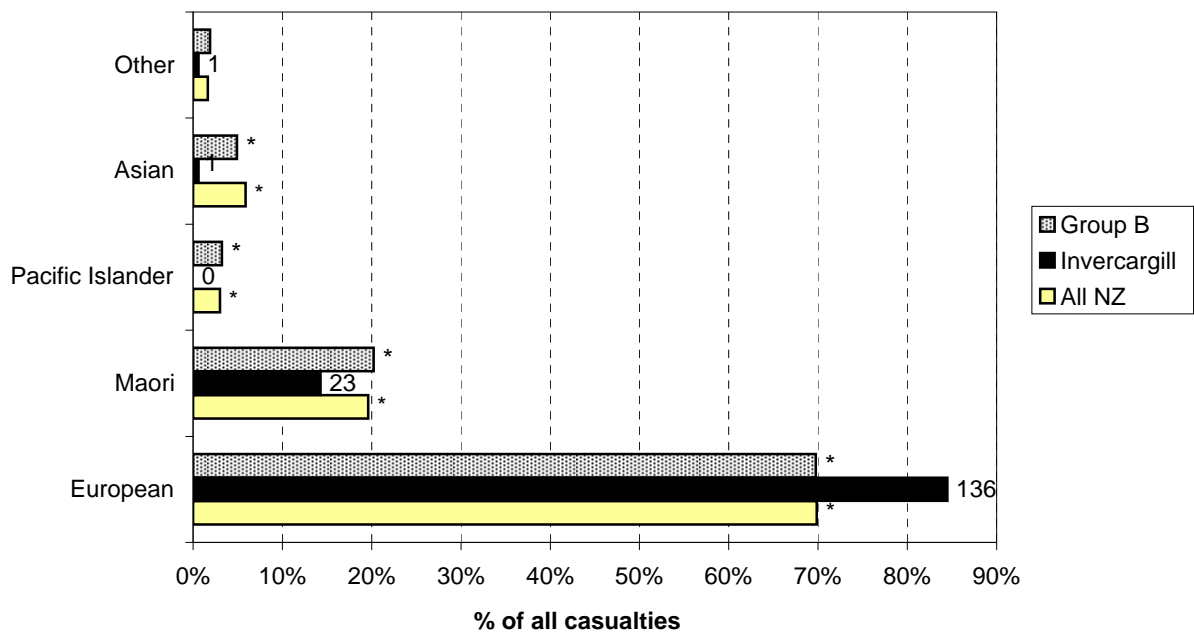


**Figure 3.25 Casualty ethnicity - urban
Invercargill City (2004-2008)**



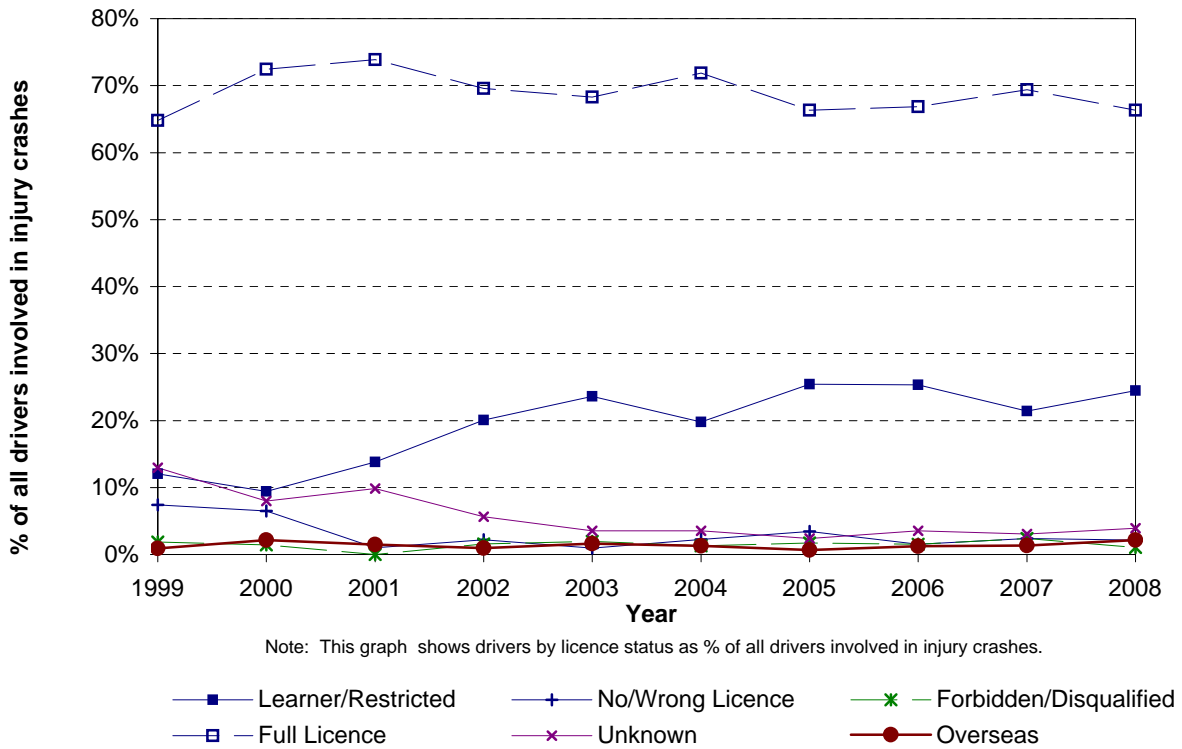
Note: While the graph plots percentages, the number of crashes is shown against the data points.
*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions

**Figure 3.26 Casualty ethnicity - rural
Invercargill City (2004-2008)**

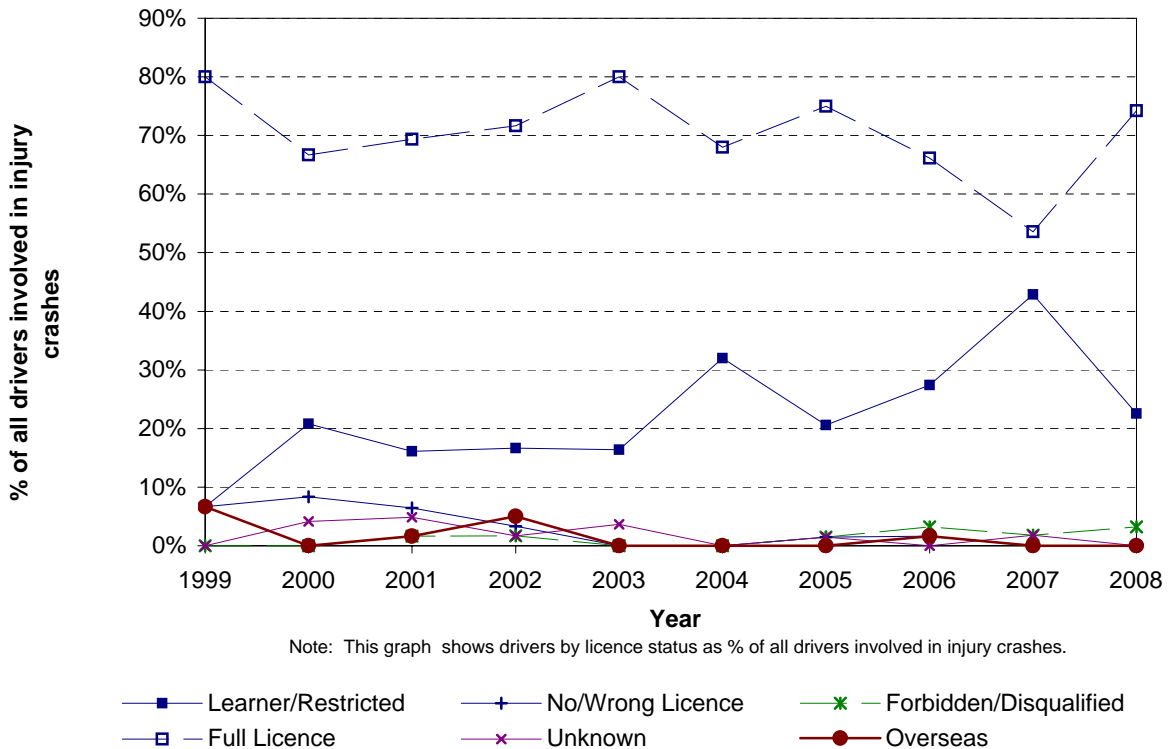


Note: While the graph plots percentages, the number of crashes is shown against the data points.
*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions

**Figure 3.27 Licence status - urban
Invercargill City**

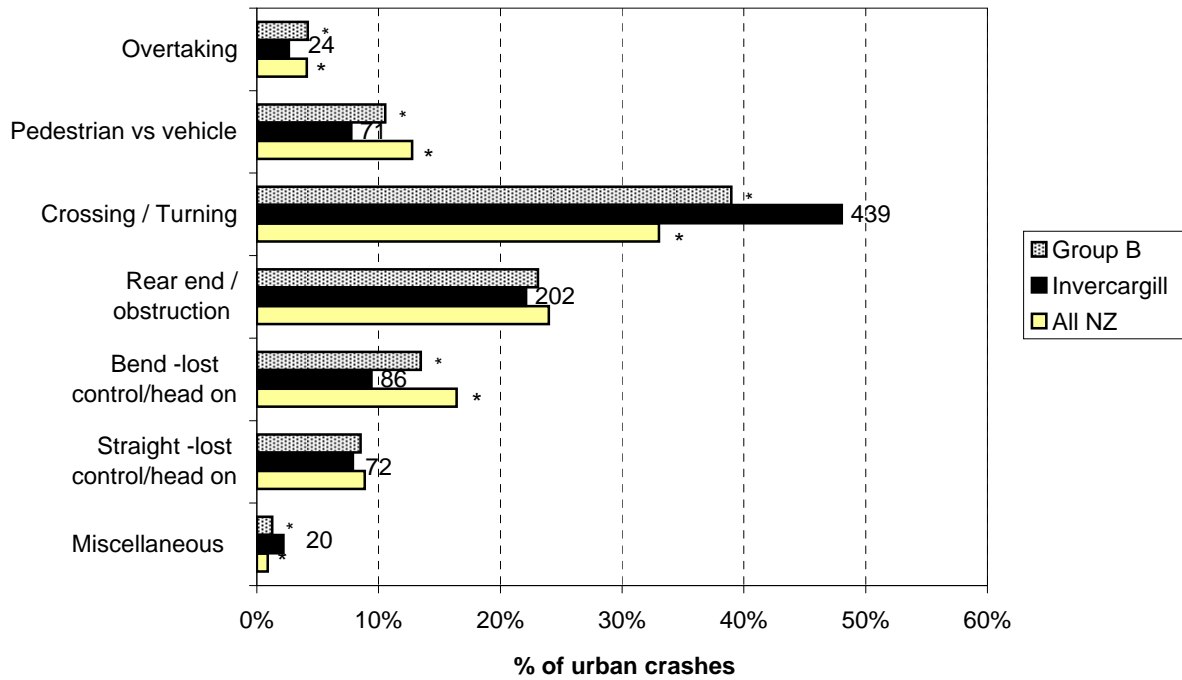


**Figure 3.28 Licence status - rural
Invercargill City**



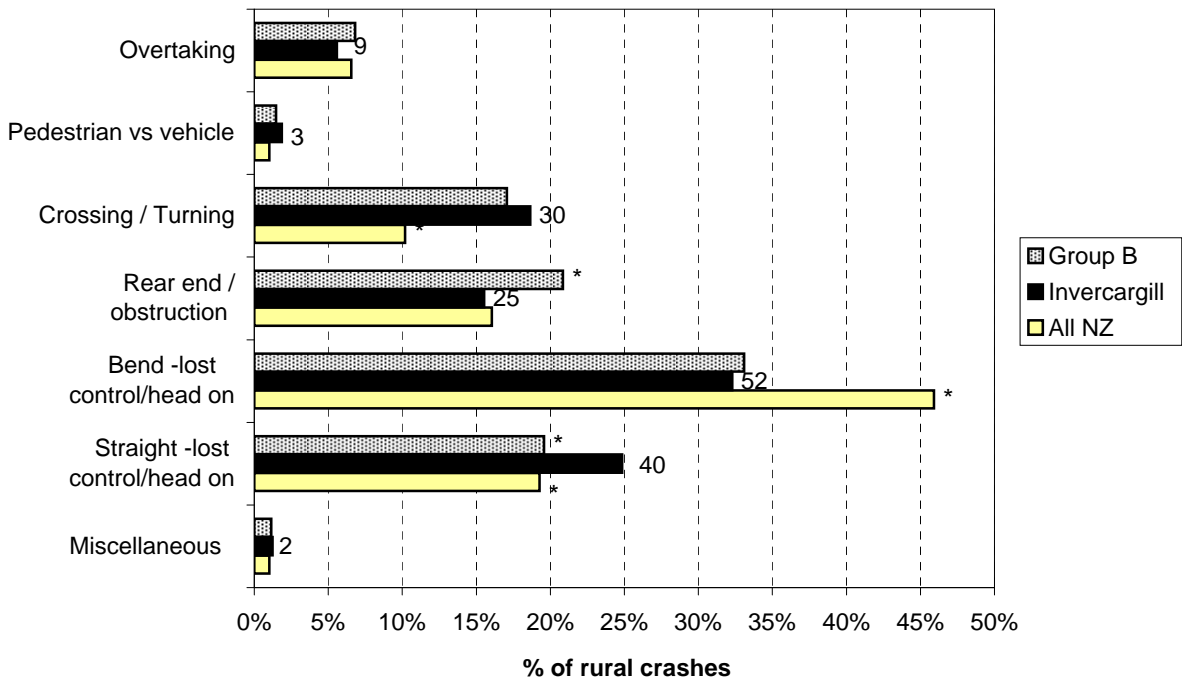
Crash Type Statistics

**Figure 4.1 Crash movement type - urban
Invercargill City (2004-2008)**



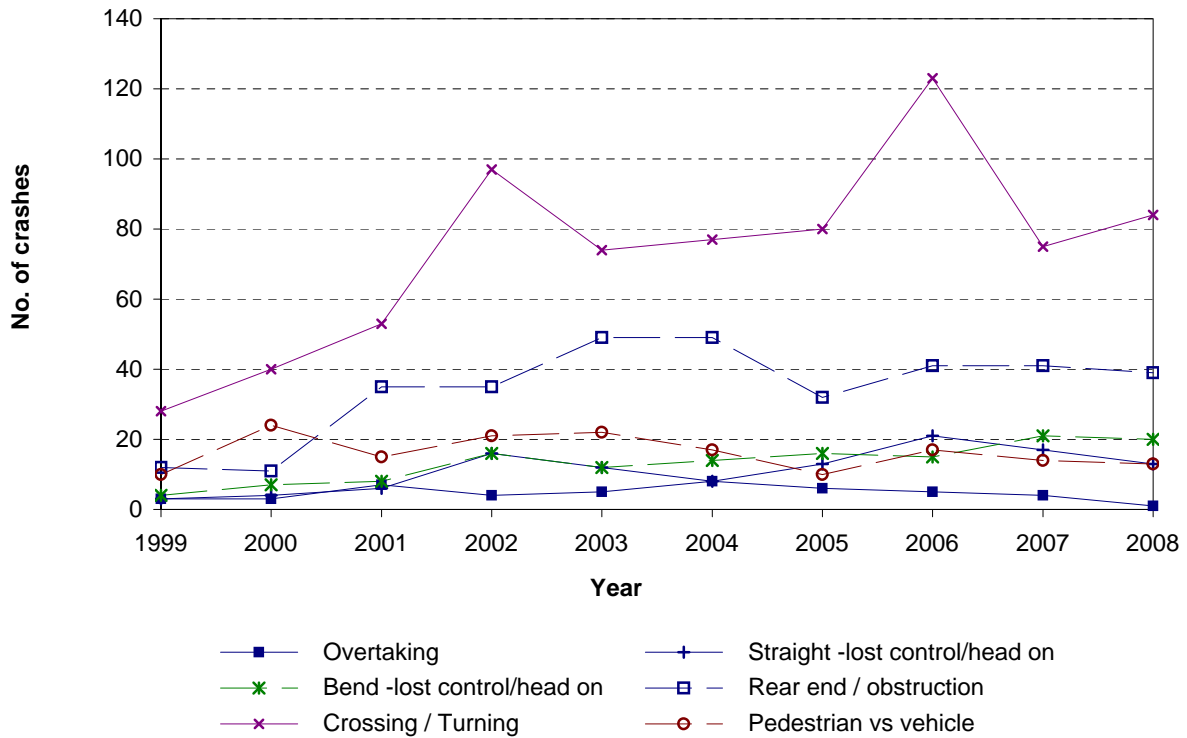
Note: While the graph plots percentages, the number of crashes is shown against the data points.
*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions

**Figure 4.2 Crash movement type - rural
Invercargill City roads (2004-2008)**

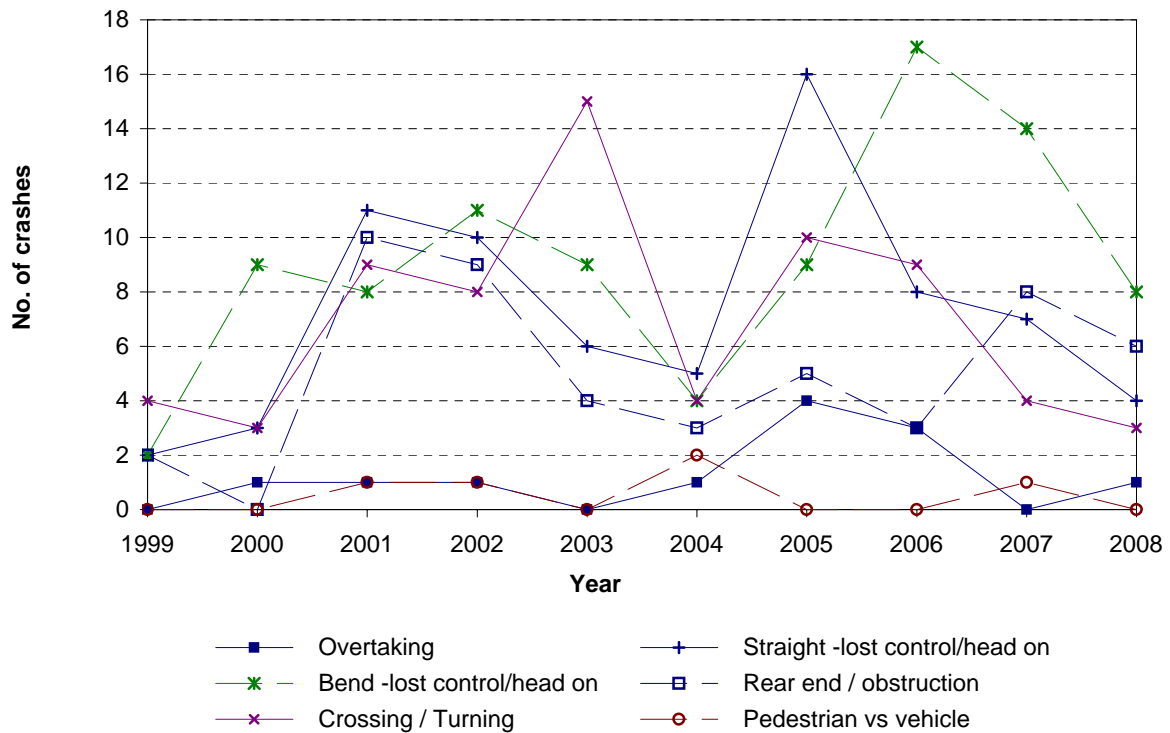


Note: While the graph plots percentages, the number of crashes is shown against the data points.
*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions

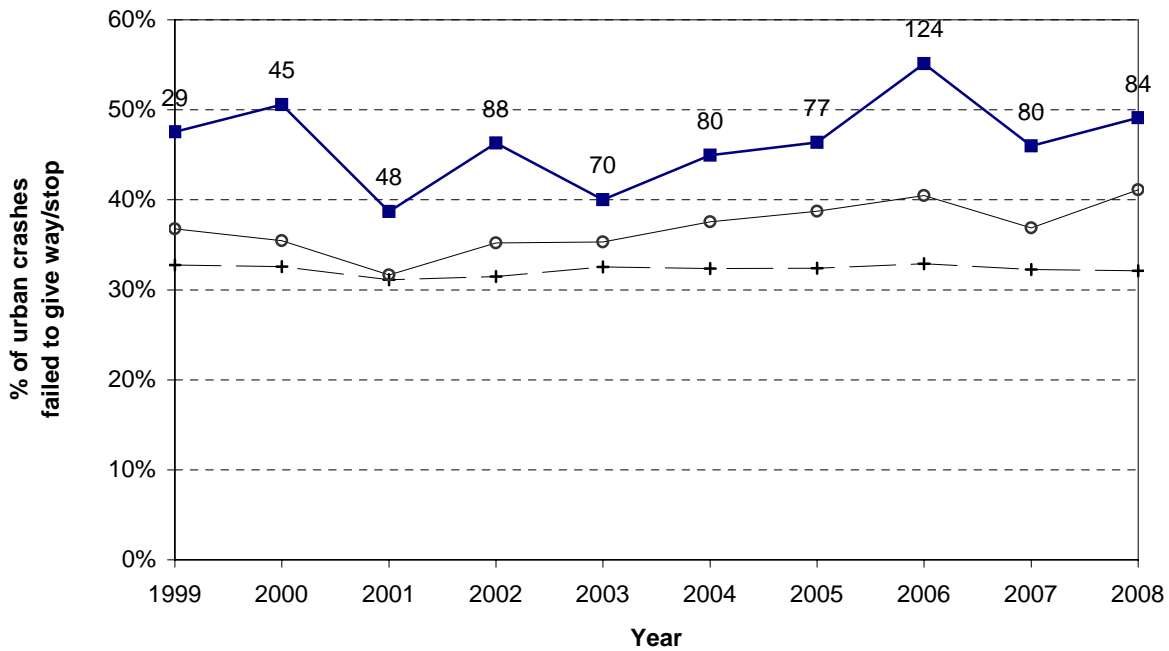
**Figure 4.3 Crash movement type - trends
Invercargill City - urban roads**



**Figure 4.4 Crash movement type - trends
Invercargill City - rural roads**



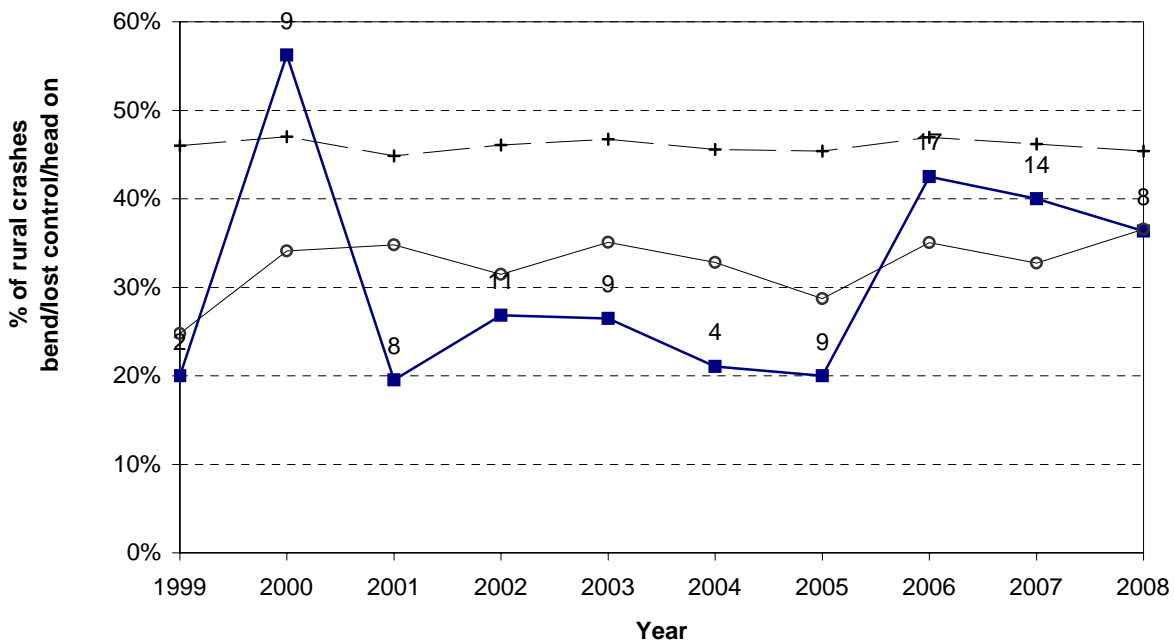
**Figure 4.5 Failed to give way / stop
Invercargill City - urban roads**



Note: While the graph plots percentages, the number of crashes is shown against the data points.

+ All NZ ■ Invercargill ○ Group B

**Figure 4.6 Bend - lost control / head - on
Invercargill City - rural roads**

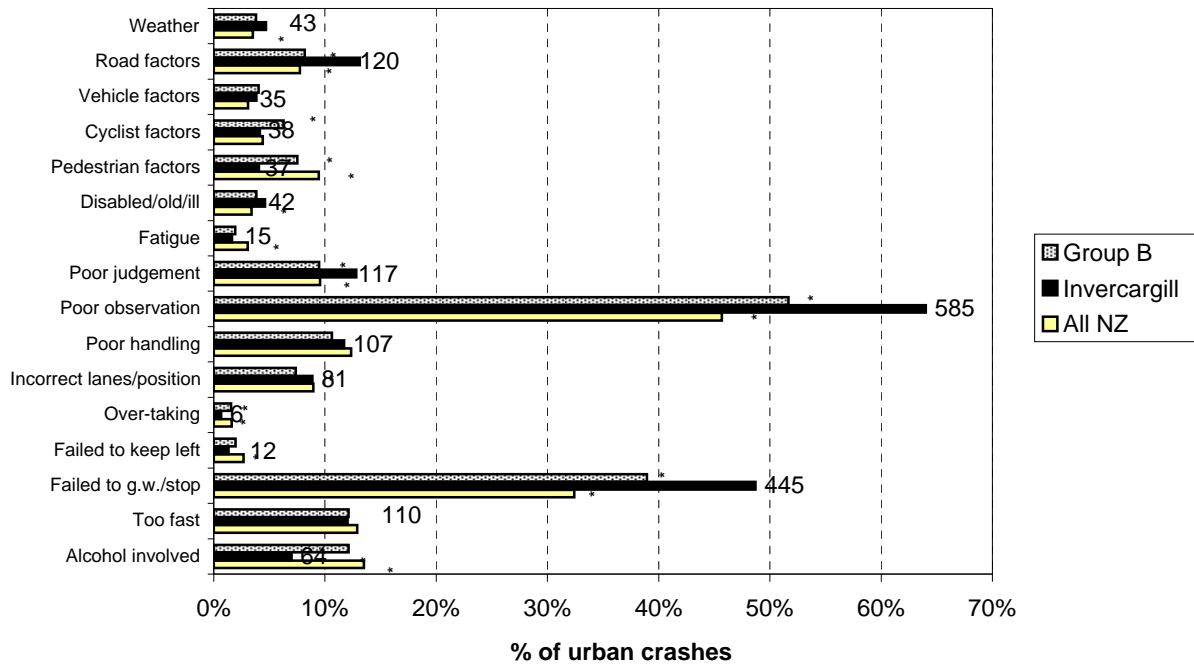


Note: While the graph plots percentages, the number of crashes is shown against the data points.

+ All NZ ■ Invercargill ○ Group B

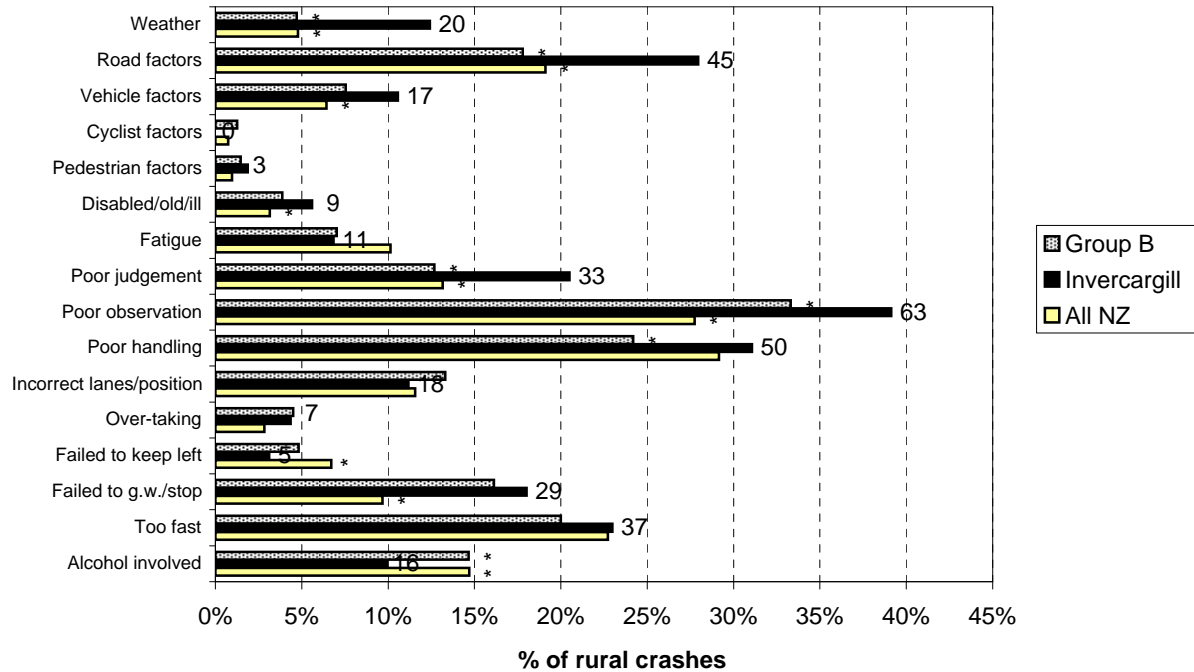
Crash Factor Statistics

**Figure 5.1 Contributing factors - urban
Invercargill City (2004-2008)**



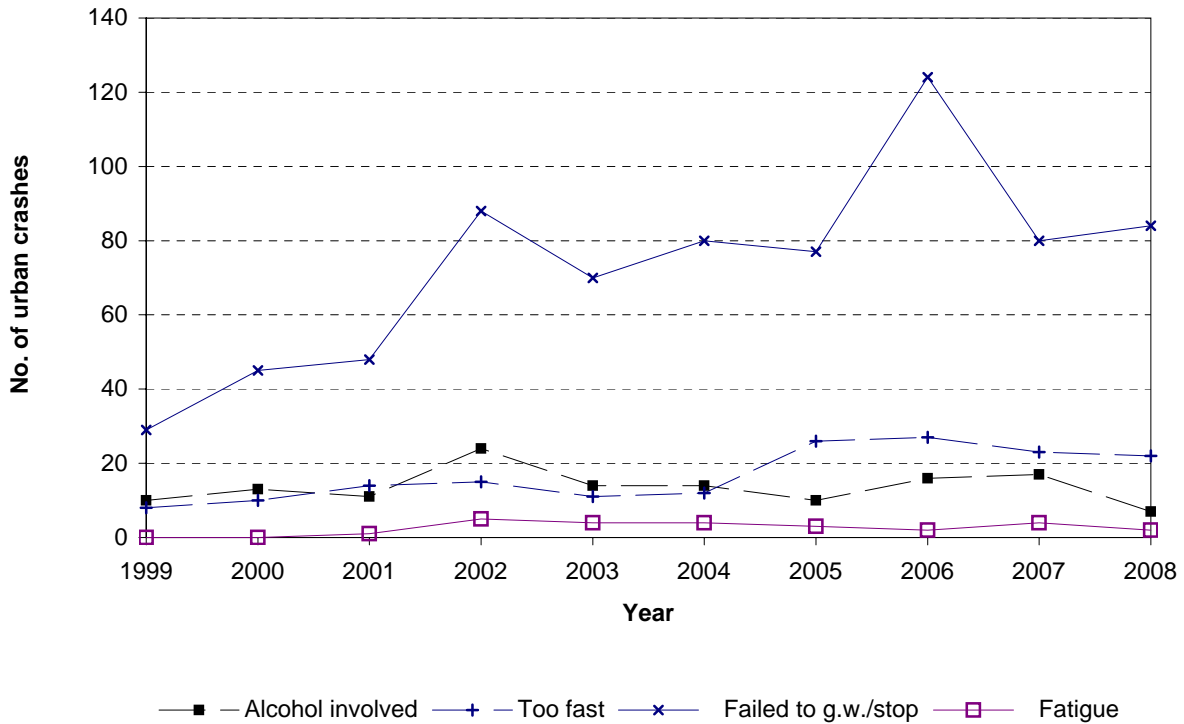
Note: While the graph plots percentages, the number of crashes is shown against the data points.
*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions

**Figure 5.2 Contributing factors - rural
Invercargill City (2004-2008)**

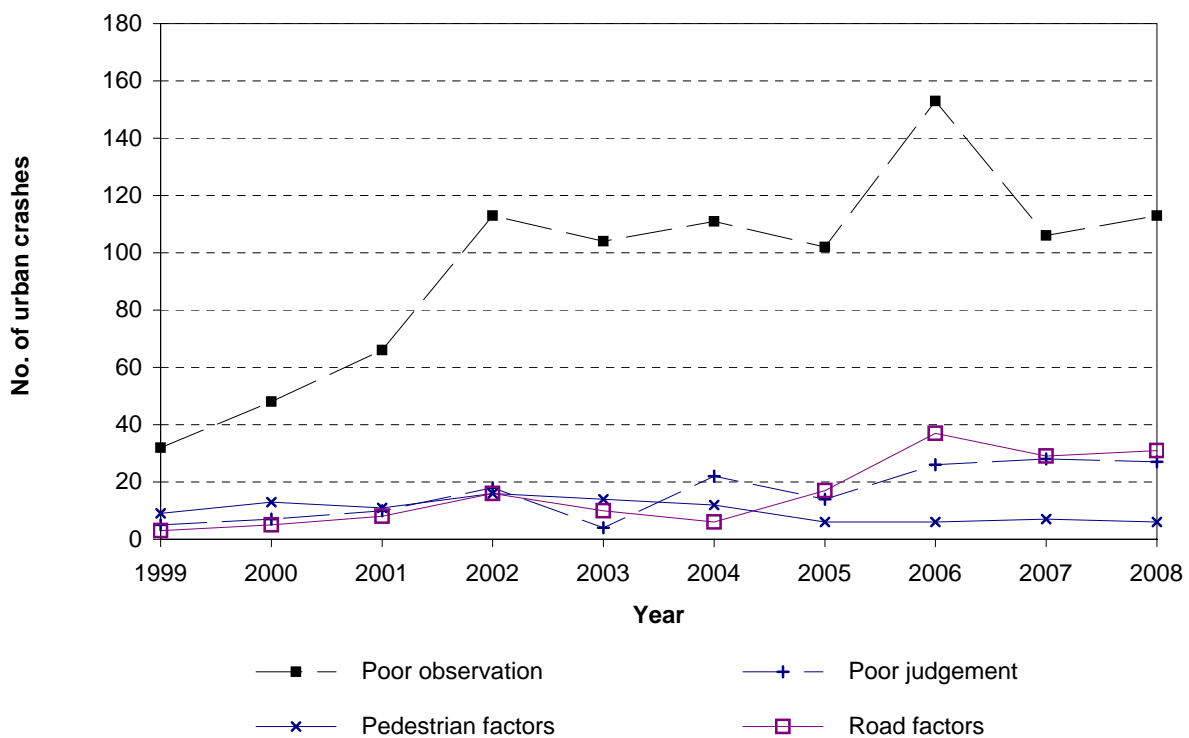


Note: While the graph plots percentages, the number of casualties is shown against the data points.
*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions

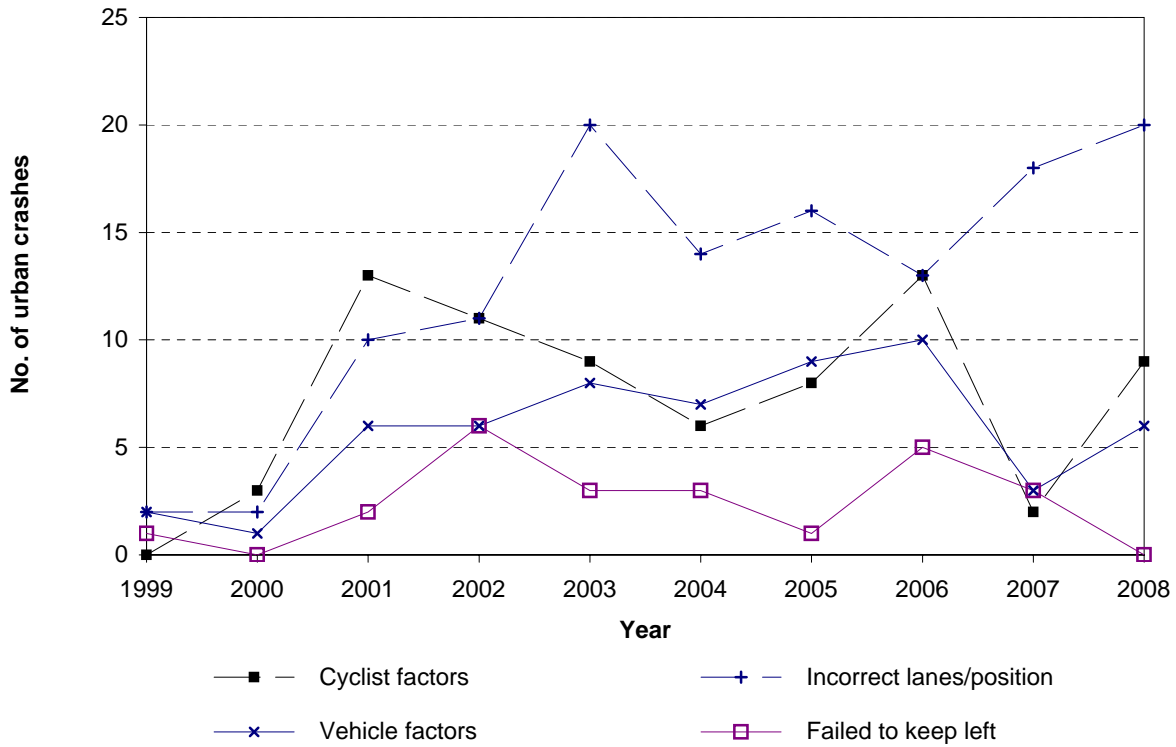
**Figure 5.3 Contributing factor trends
Invercargill City - urban roads**



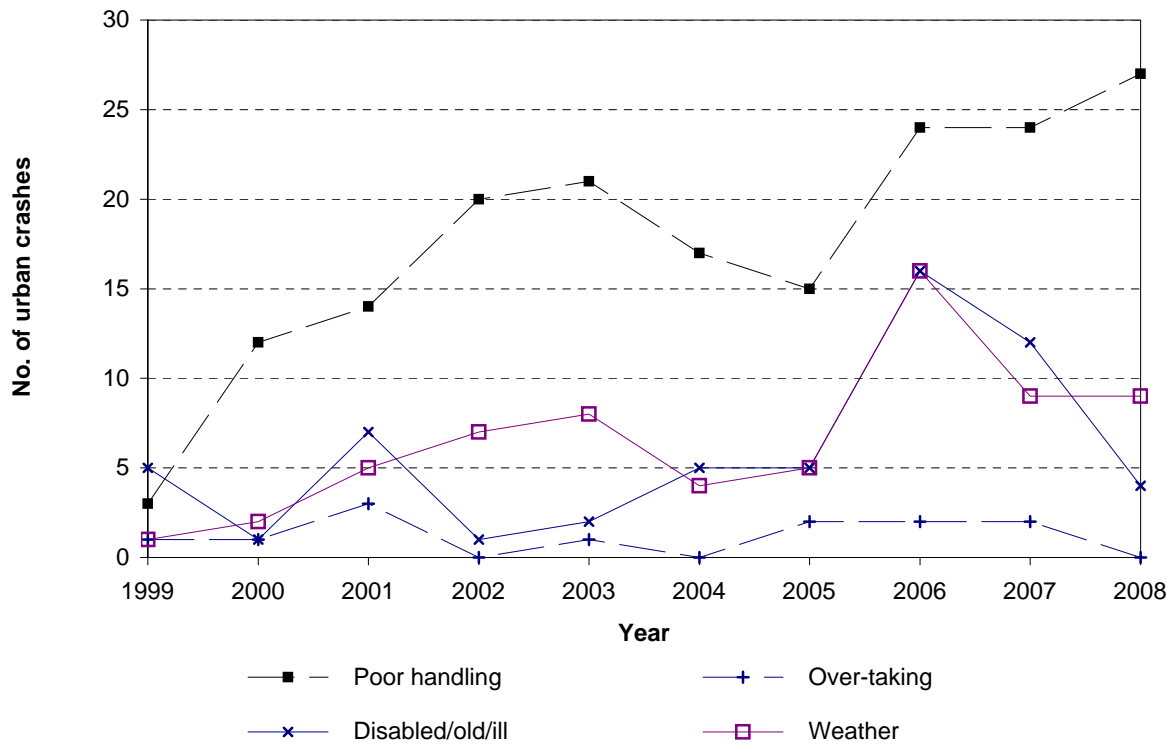
**Figure 5.4 Contributing factor trends
Invercargill City - urban roads**



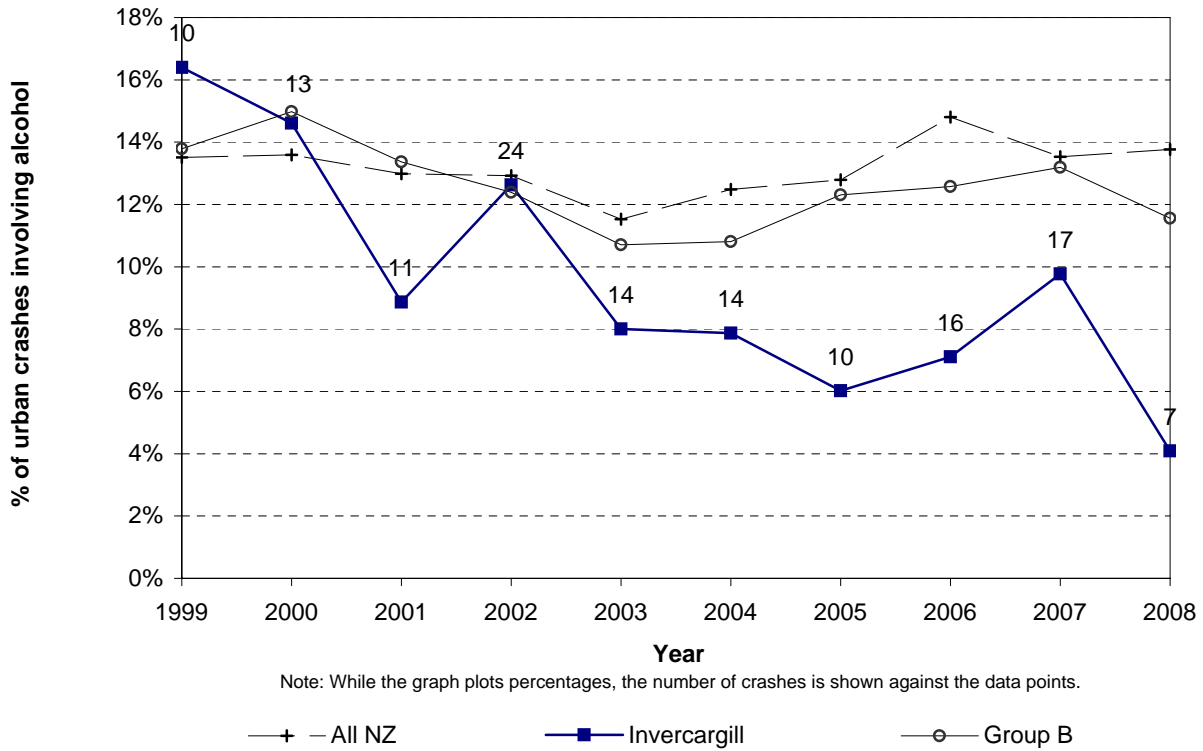
**Figure 5.5 Contributing factor trends
Invercargill City - urban roads**



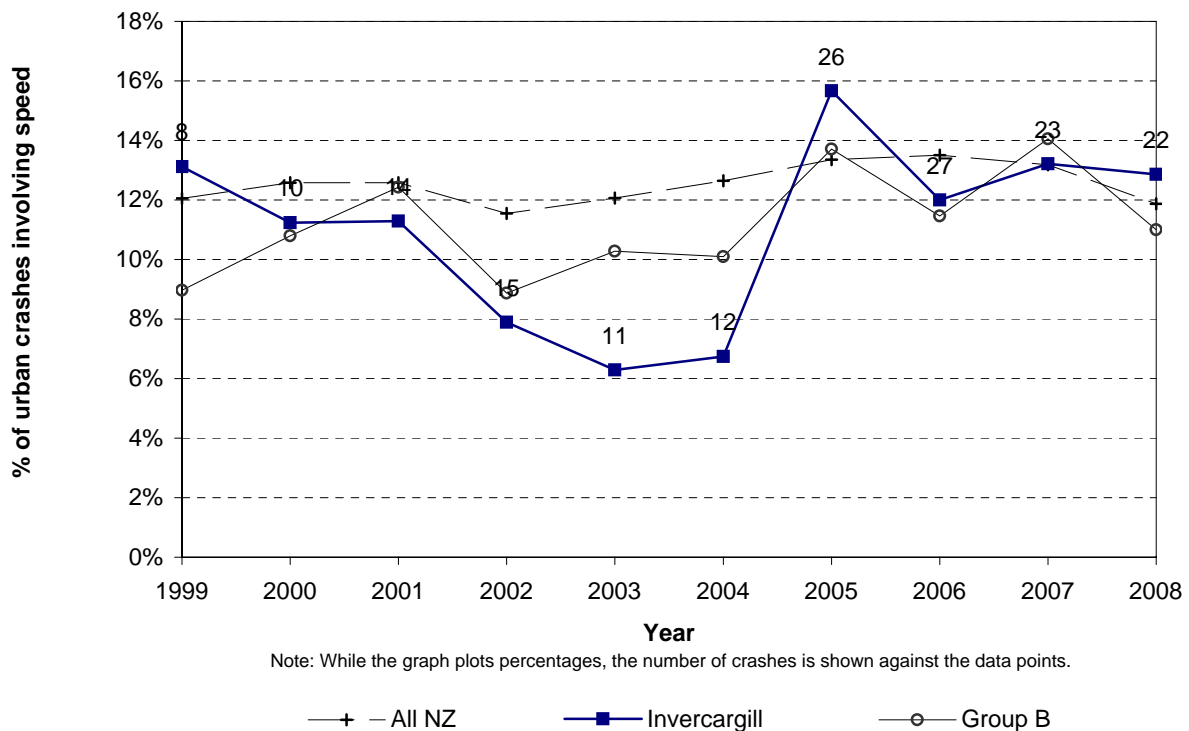
**Figure 5.6 Contributing factor trends
Invercargill City - urban roads**



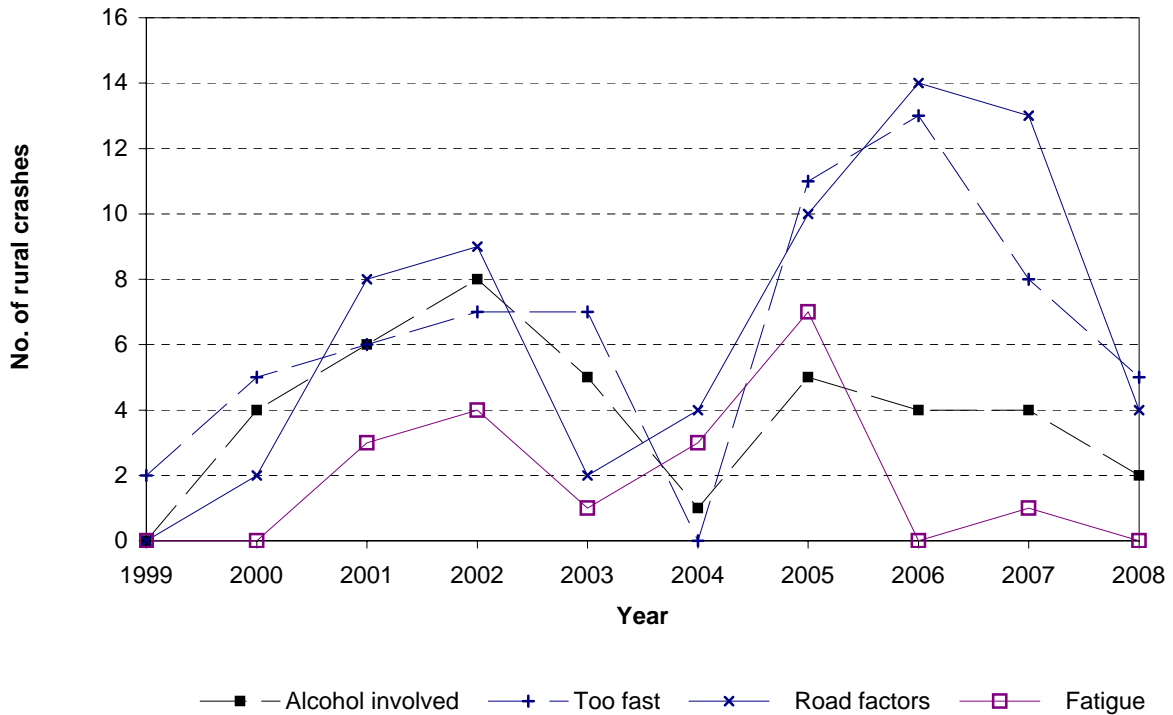
**Figure 5.7 Alcohol involved trend
Invercargill City - urban roads**



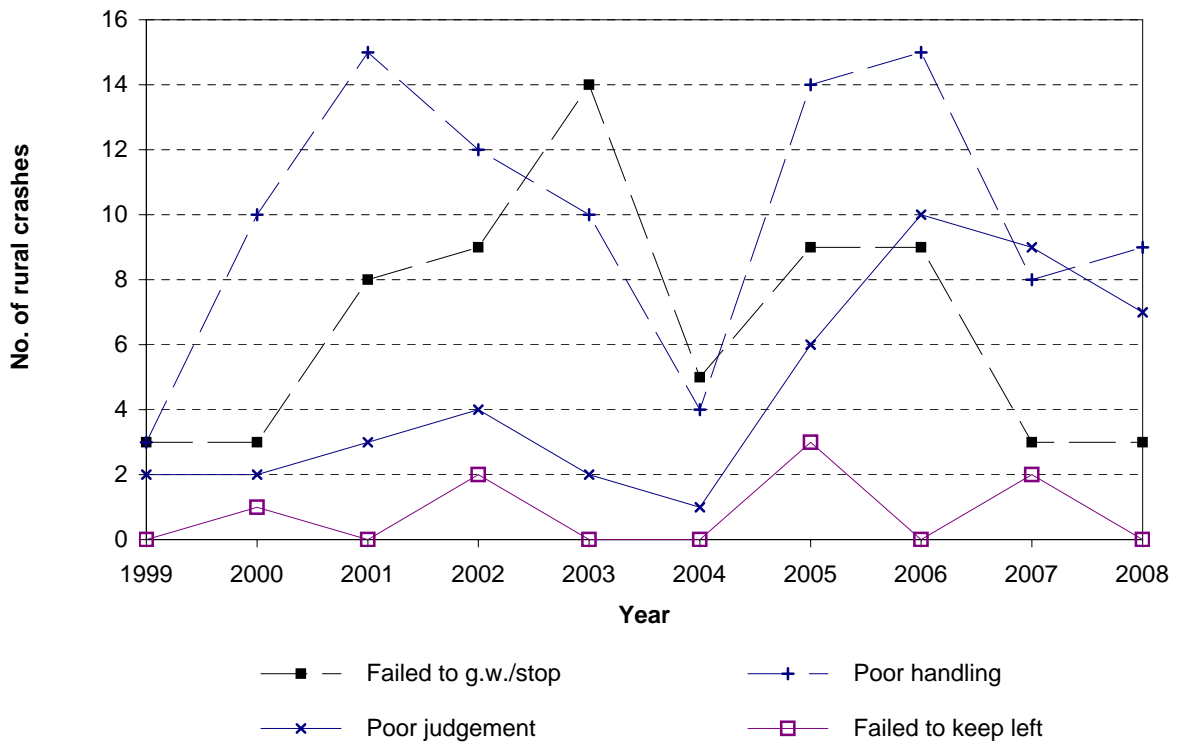
**Figure 5.8 Speed involved trend
Invercargill City - urban roads**



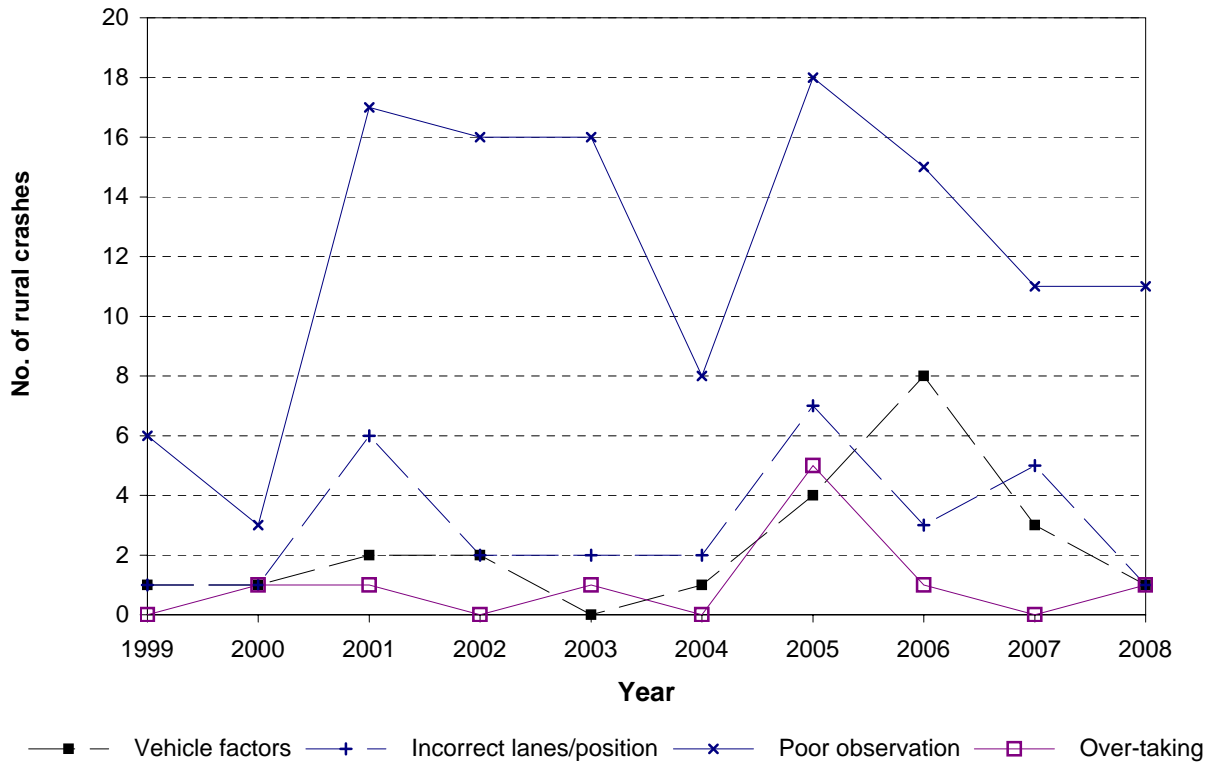
**Figure 5.9 Contributing factor trends
Invercargill City - rural roads**



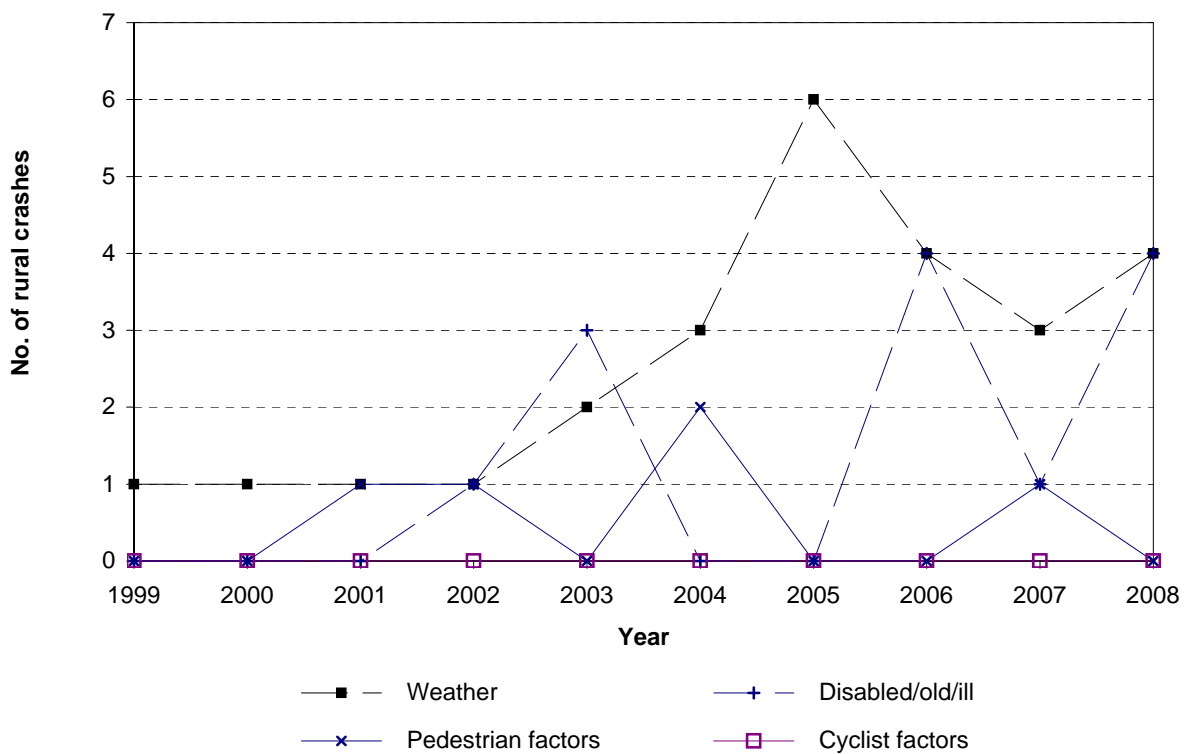
**Figure 5.10 Contributing factor trends
Invercargill City - rural roads**



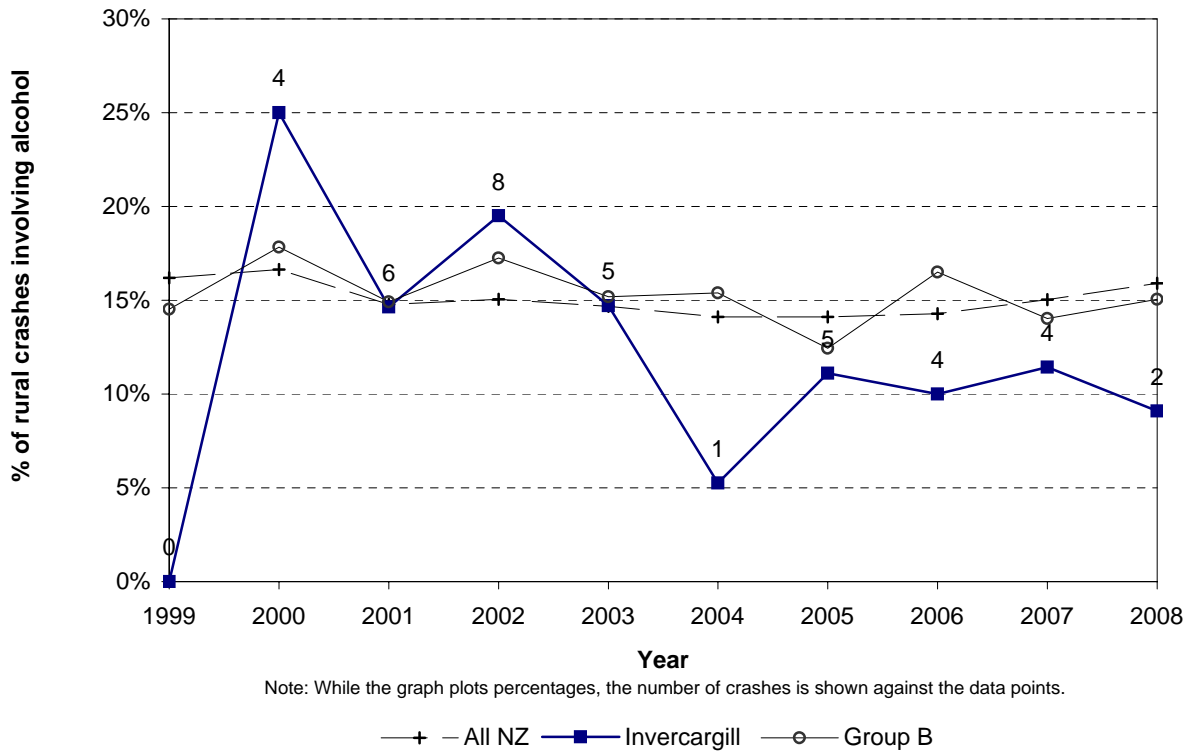
**Figure 5.11 Contributing factor trends
Invercargill City - rural roads**



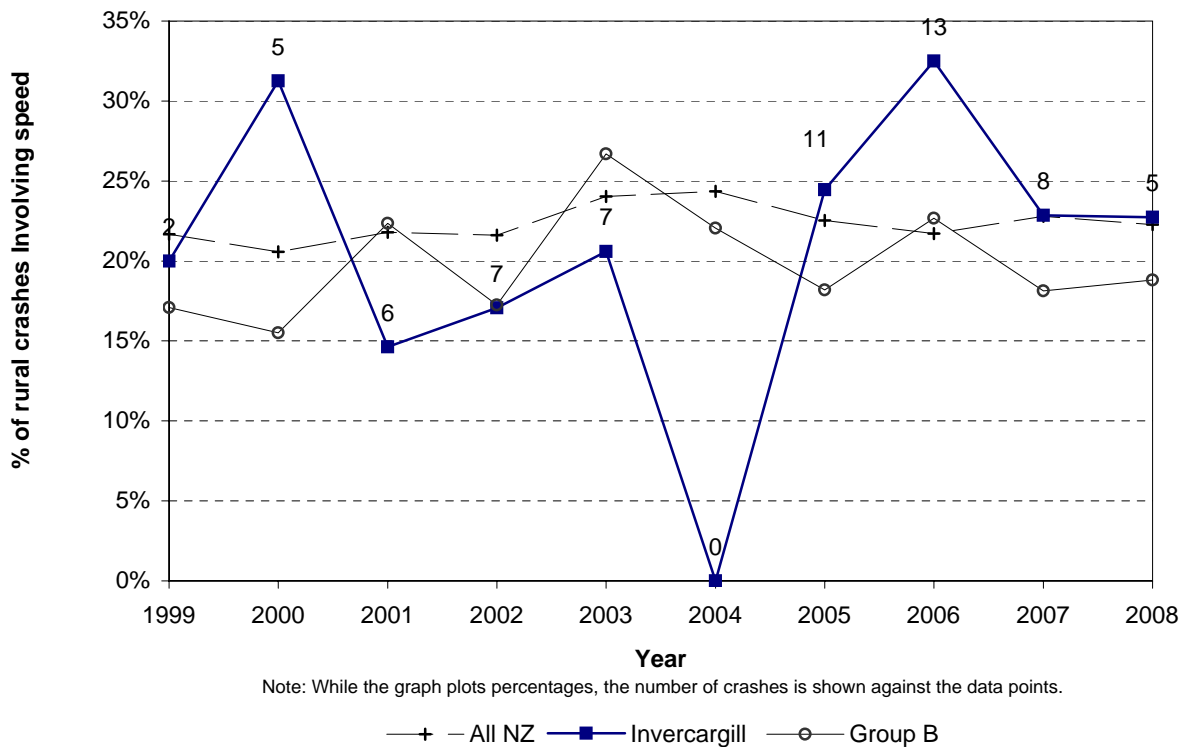
**Figure 5.12 Contributing factor trends
Invercargill City - rural roads**



**Figure 5.13 Alcohol involved trend
Invercargill City - rural roads**

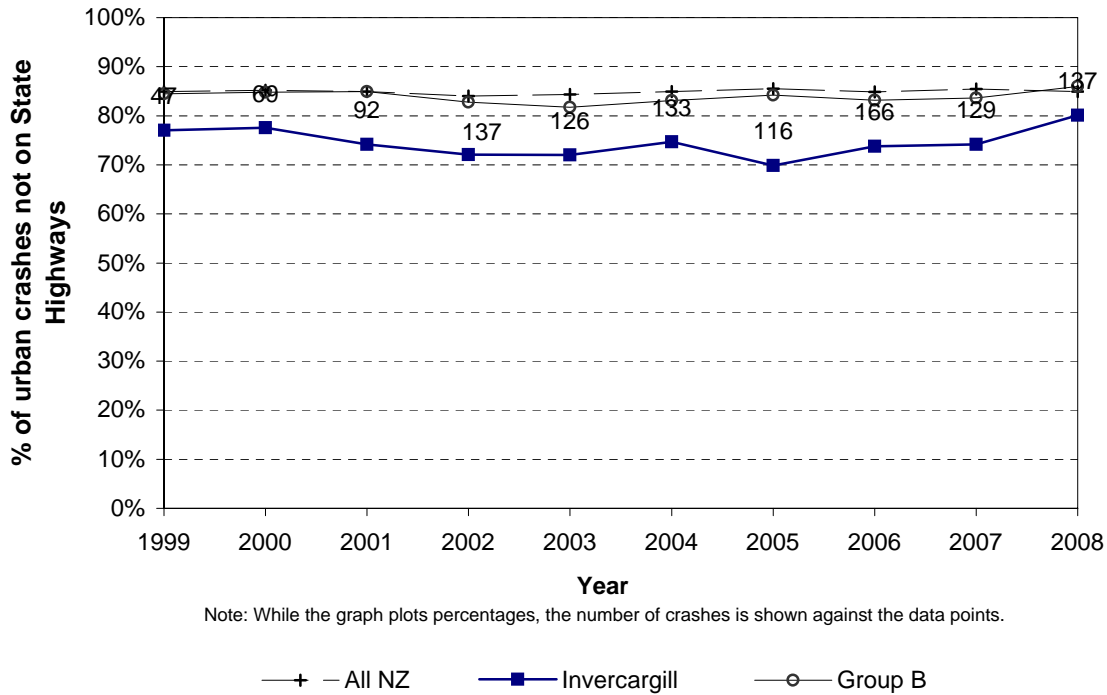


**Figure 5.14 Speed involved trend
Invercargill City - rural roads**

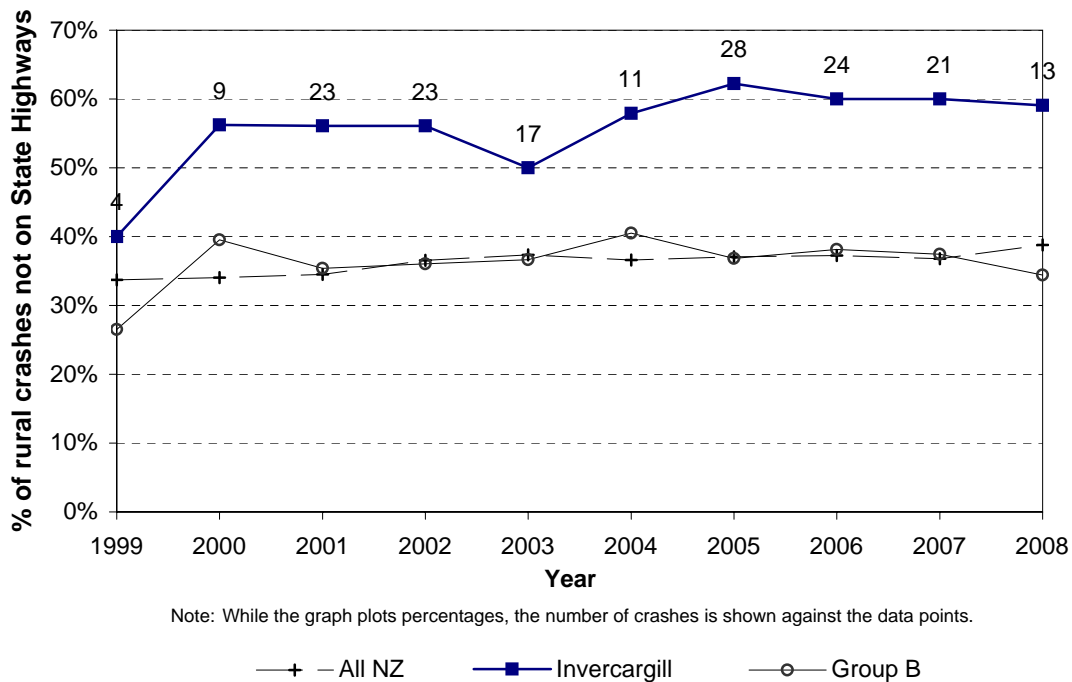


Environmental Statistics

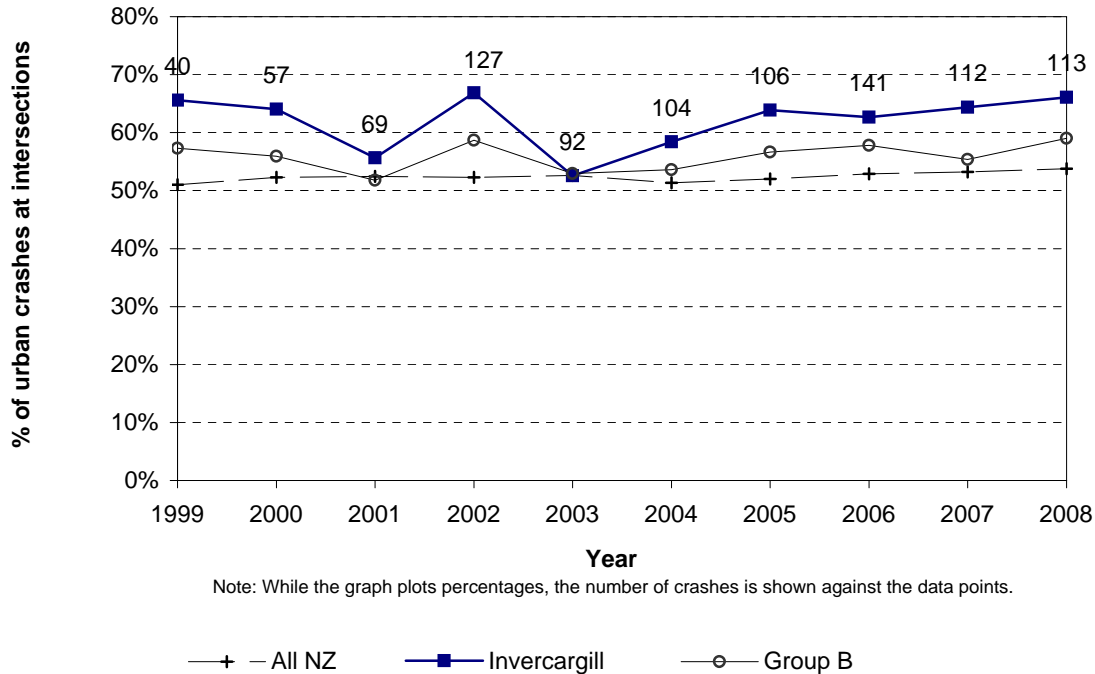
**Figure 6.1 Crashes not on state highways
Invercargill City - urban roads**



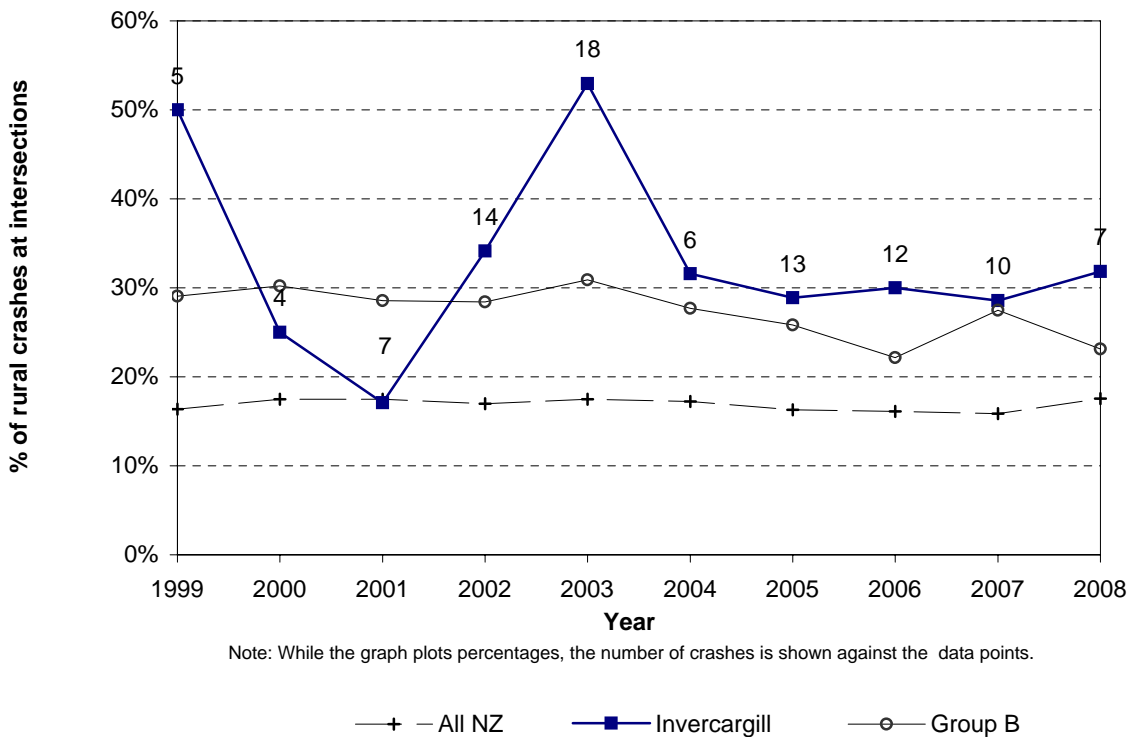
**Figure 6.2 Crashes not on state highways
Invercargill City - rural roads**



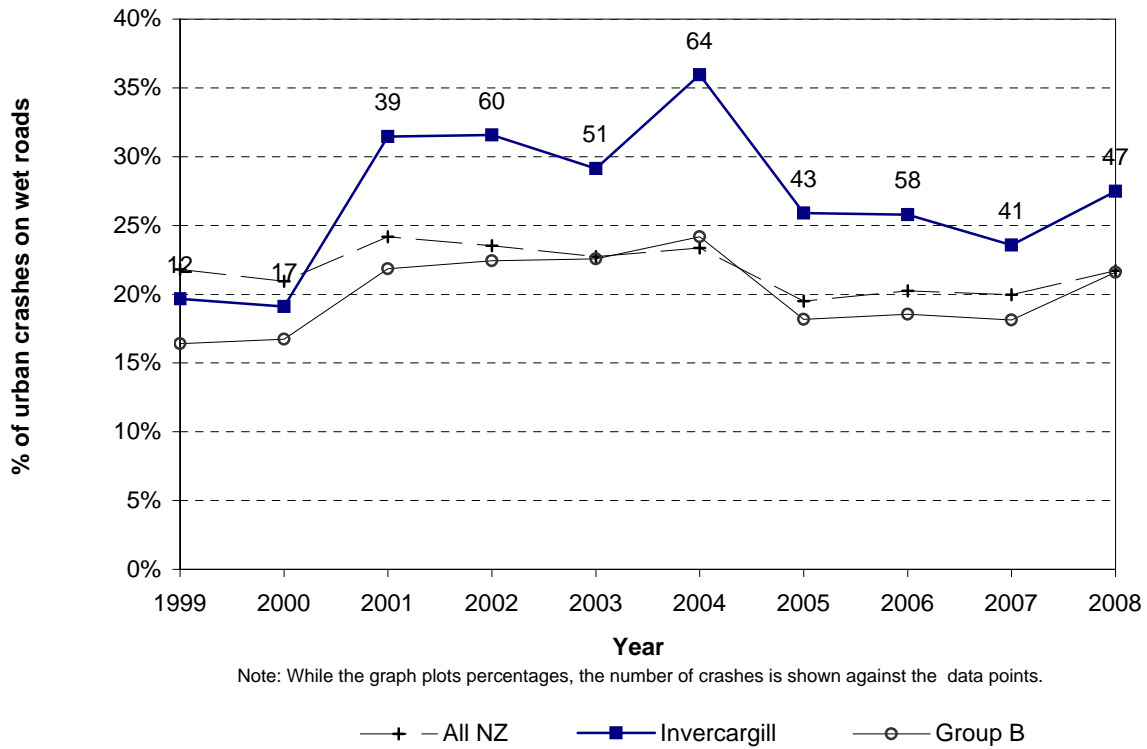
**Figure 6.3 Intersection crashes
Invercargill City - urban roads**



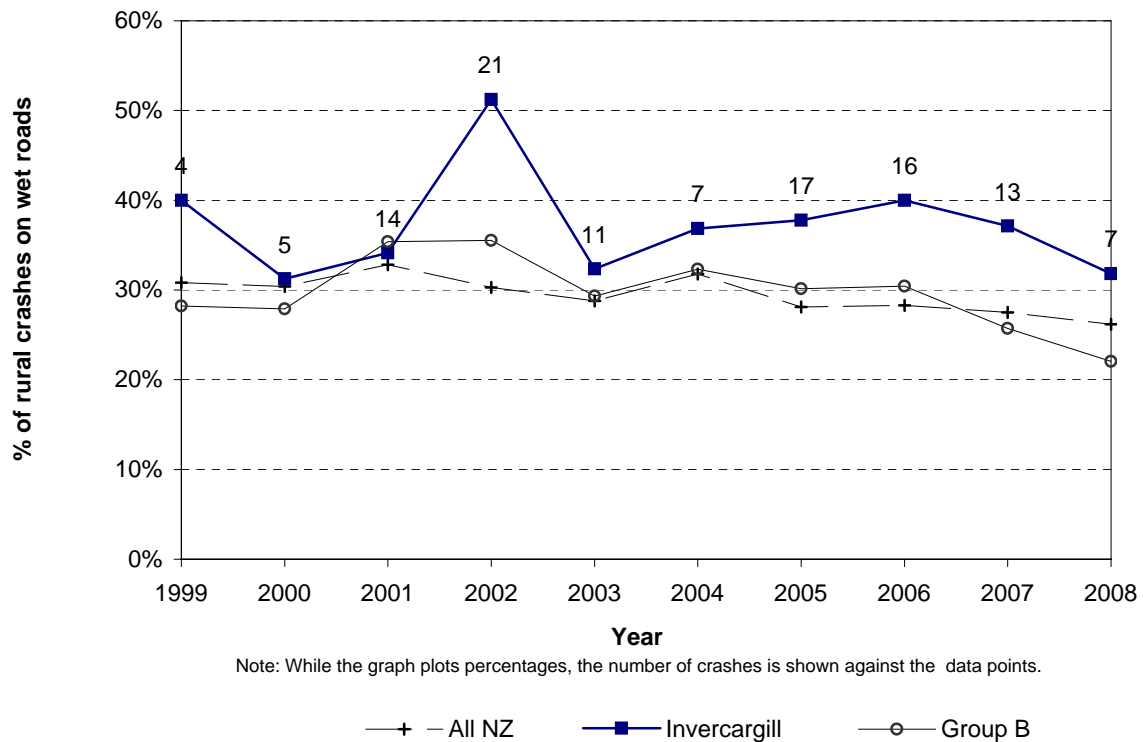
**Figure 6.4 Intersection crashes
Invercargill City - rural roads**



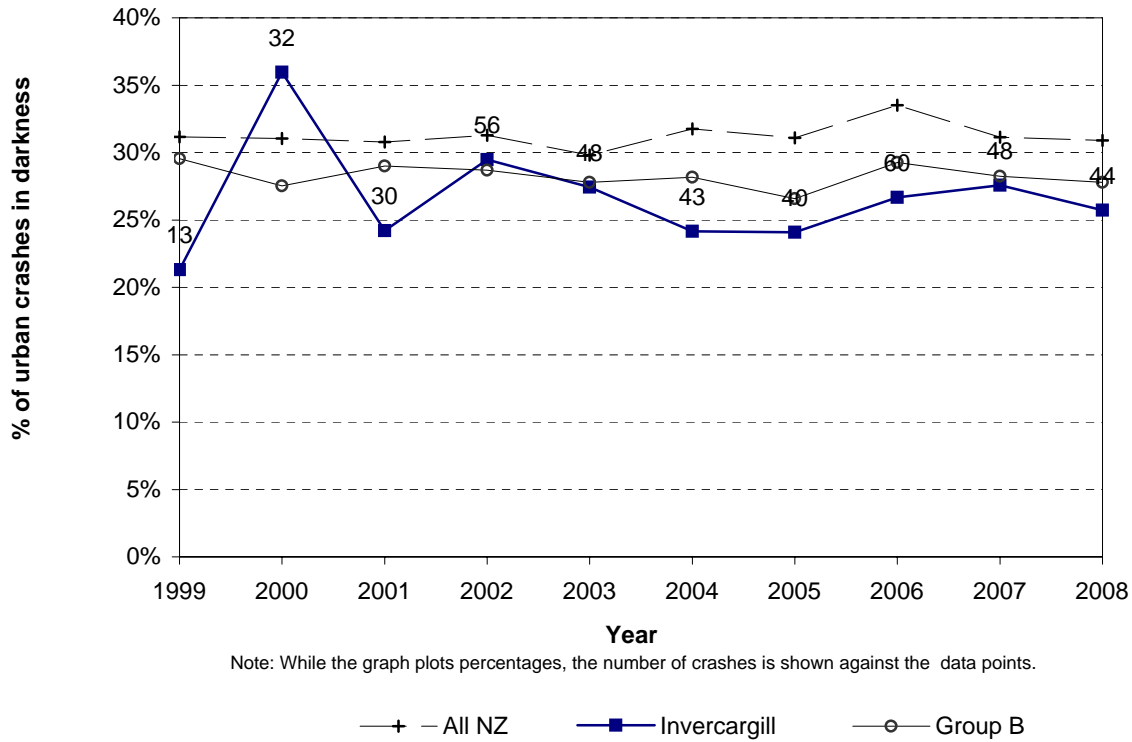
**Figure 6.5 Wet road crashes
Invercargill City - urban roads**



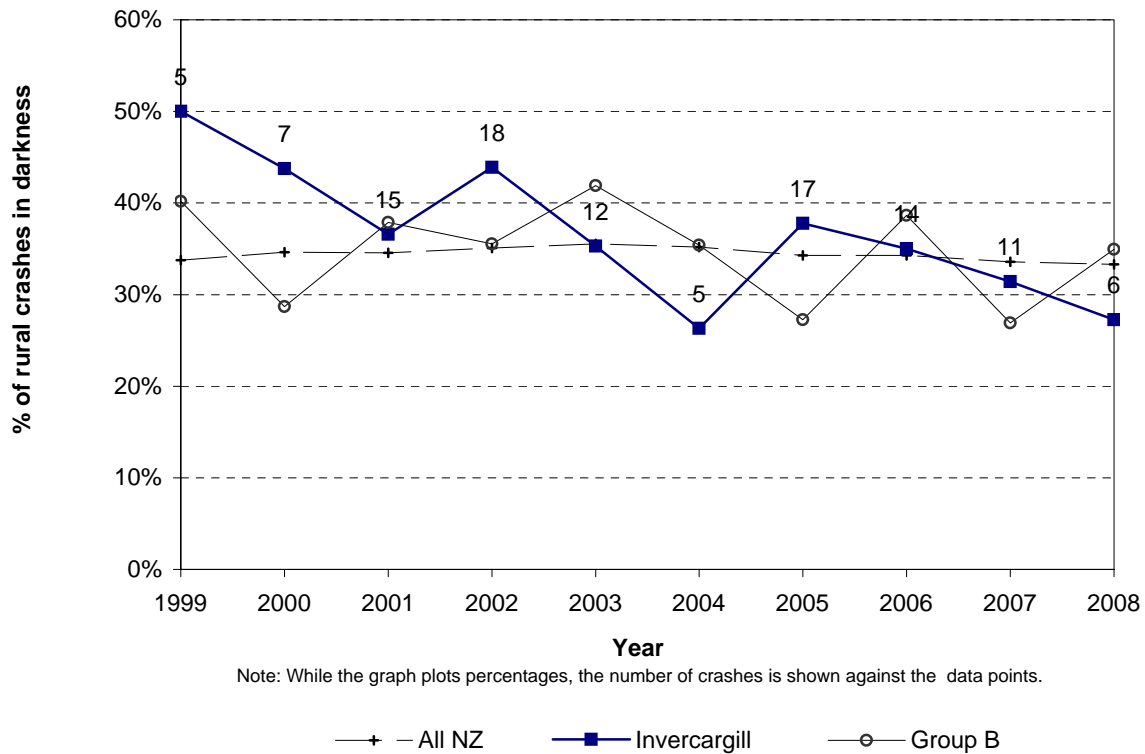
**Figure 6.6 Wet road crashes
Invercargill City - rural roads**



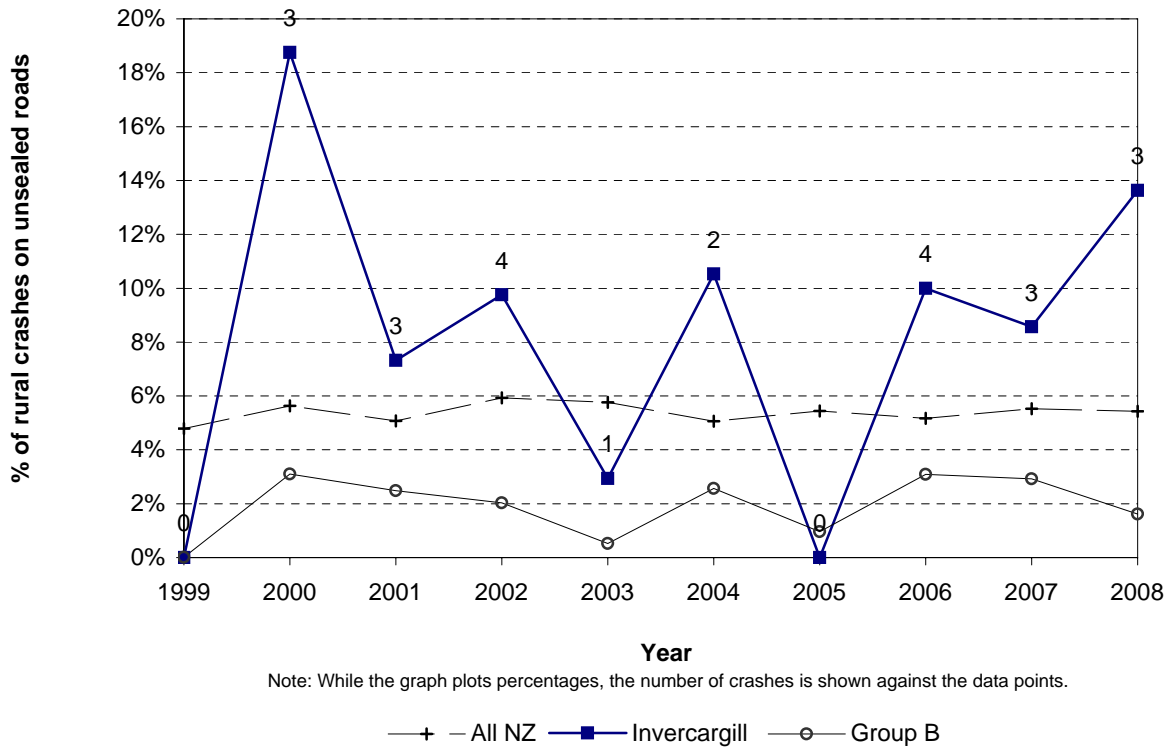
**Figure 6.7 Crashes in darkness
Invercargill City - urban roads**



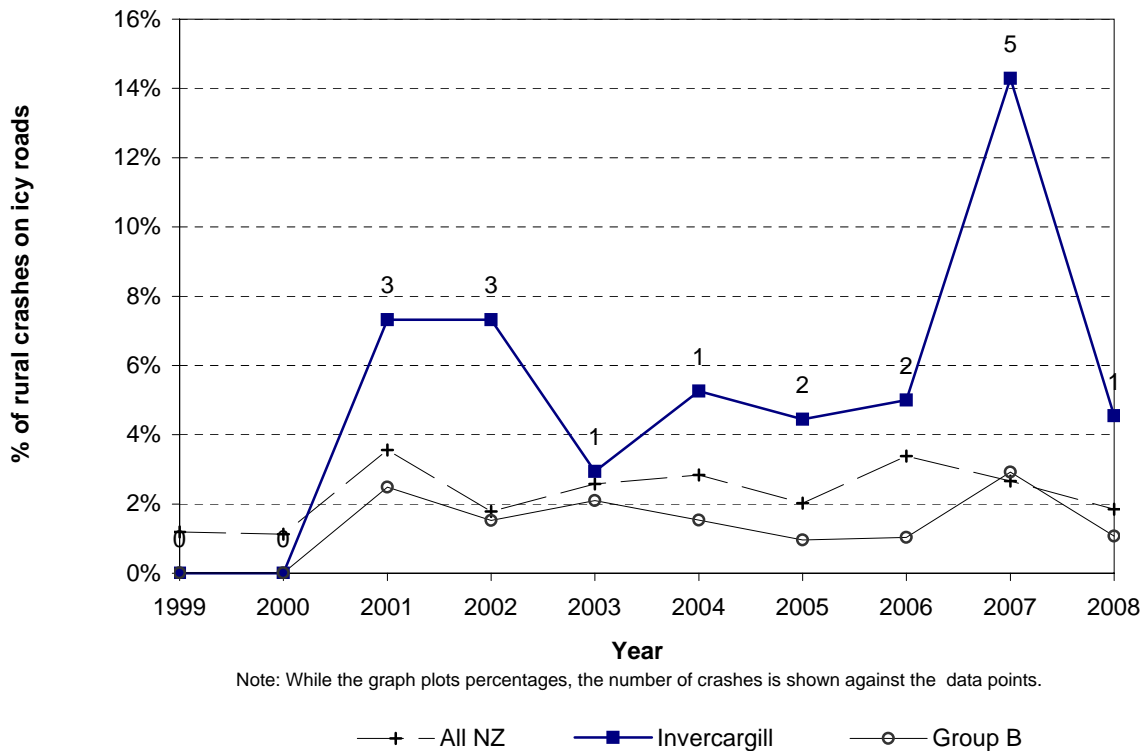
**Figure 6.8 Crashes in darkness
Invercargill City - rural roads**



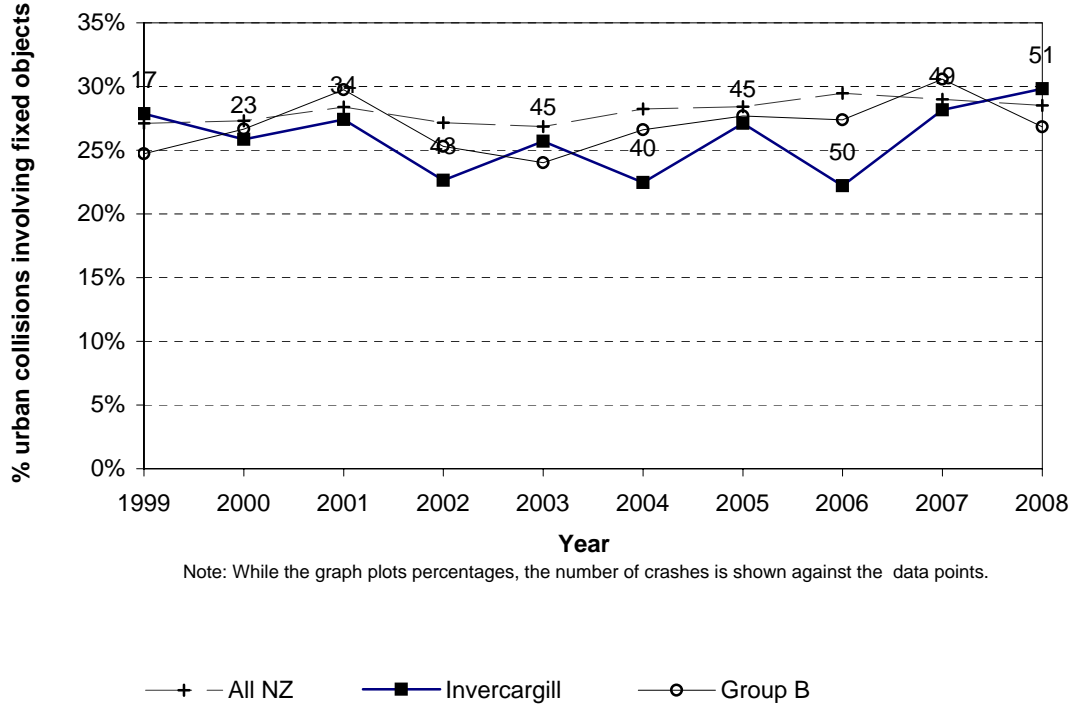
**Figure 6.9 Unsealed road crashes
Invercargill City - rural roads**



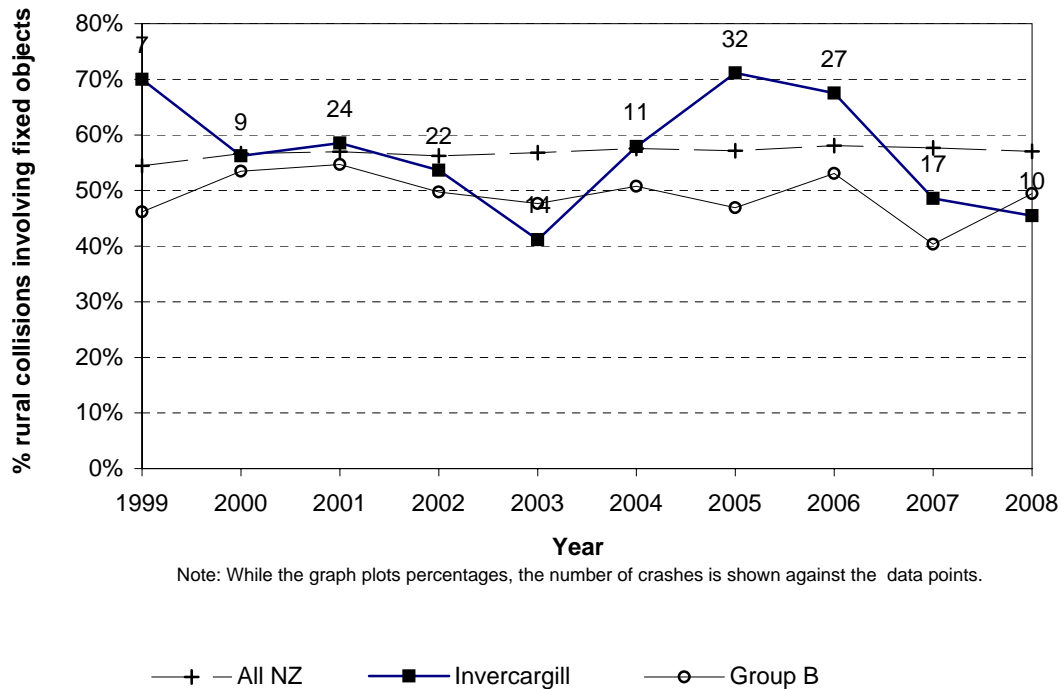
**Figure 6.10 Icy road crashes
Invercargill City - rural roads**



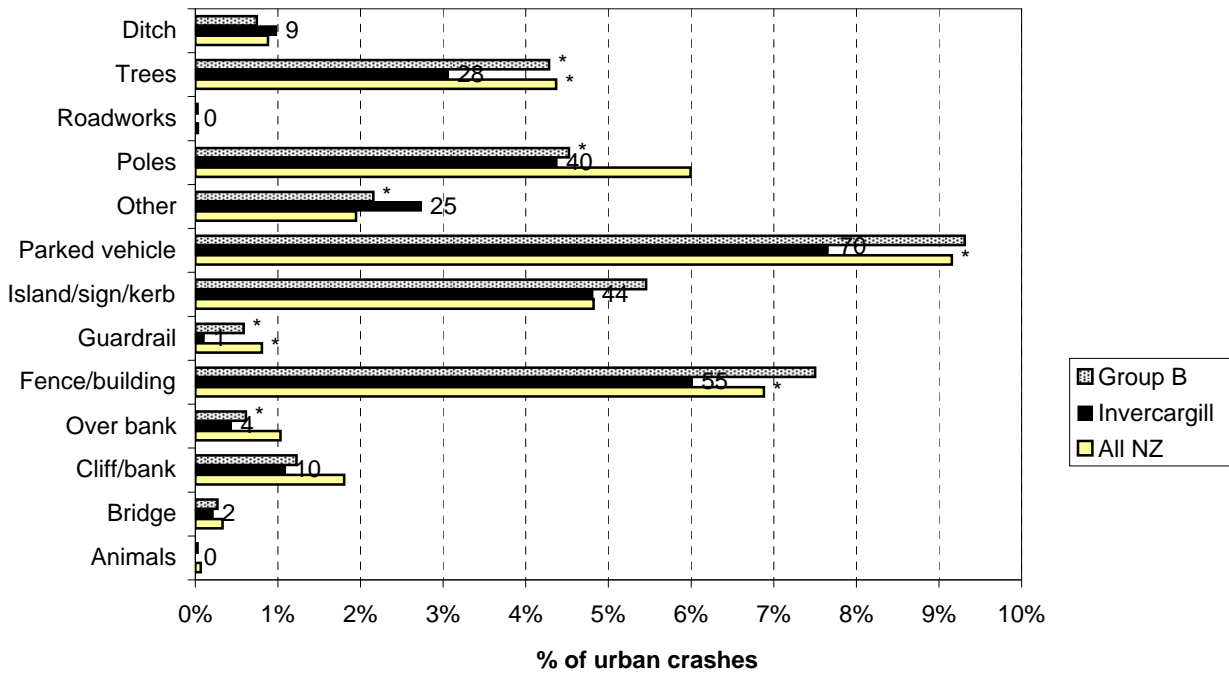
**Figure 6.11 Collisions with objects
Invercargill City - urban roads**



**Figure 6.12 Collisions with objects
Invercargill City - rural roads**

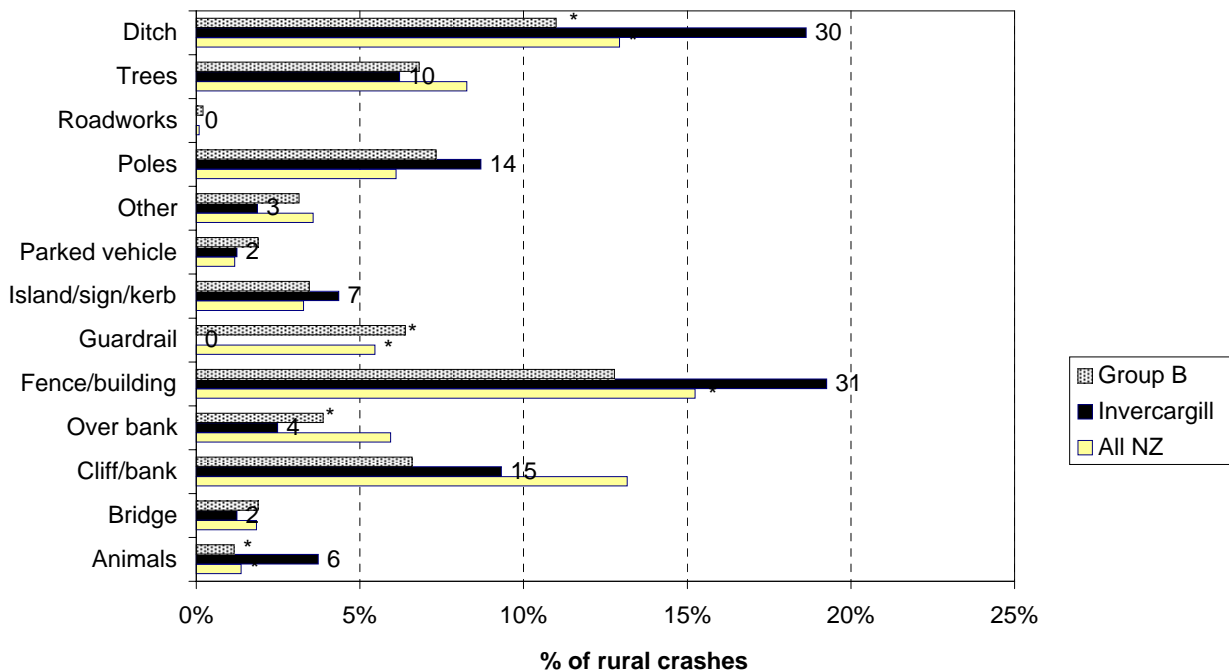


**Figure 6.13 Objects struck - urban
Invercargill City (2004-2008)**



Note: While the graph plots percentages, the number of crashes is shown against the data points.
*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions

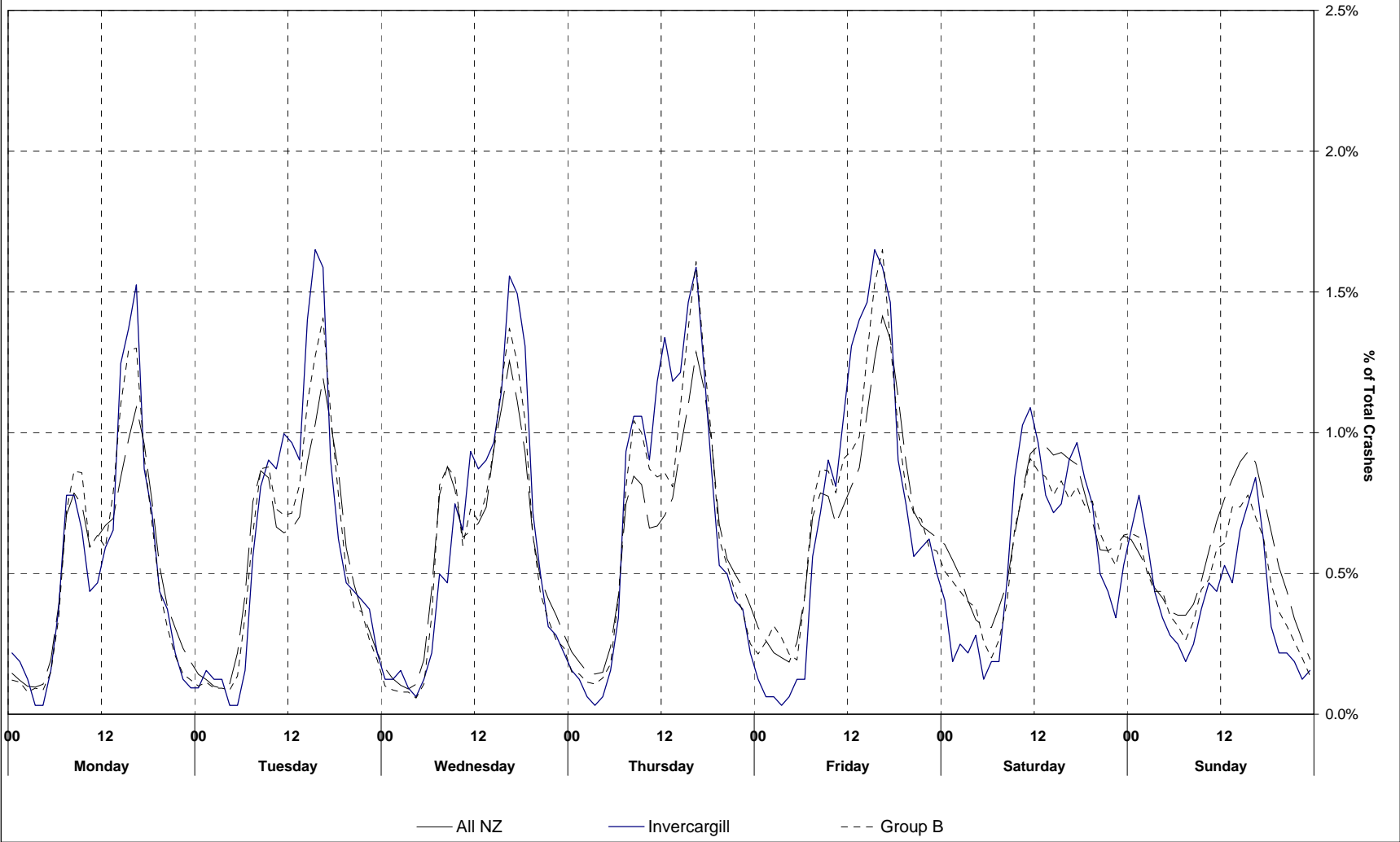
**Figure 6.14 Objects struck - rural
Invercargill City (2004-2008)**



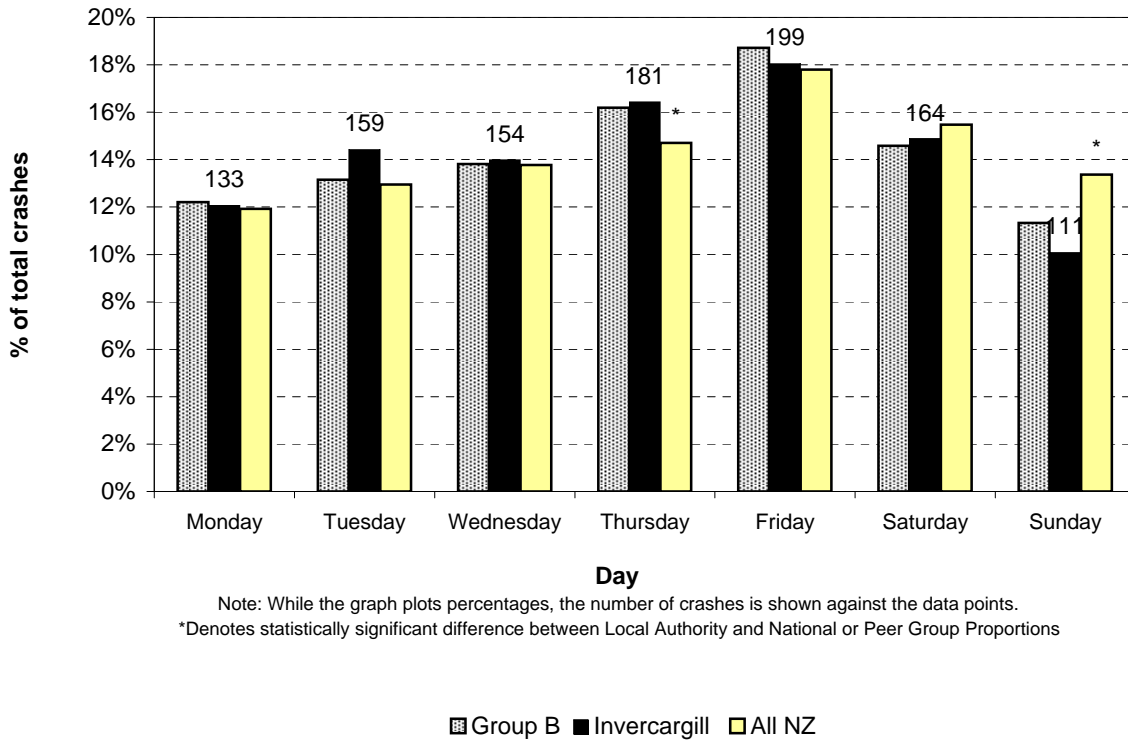
Note: While the graph plots percentages, the number of crashes is shown against the data points.
*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions

Date and Time Statistics

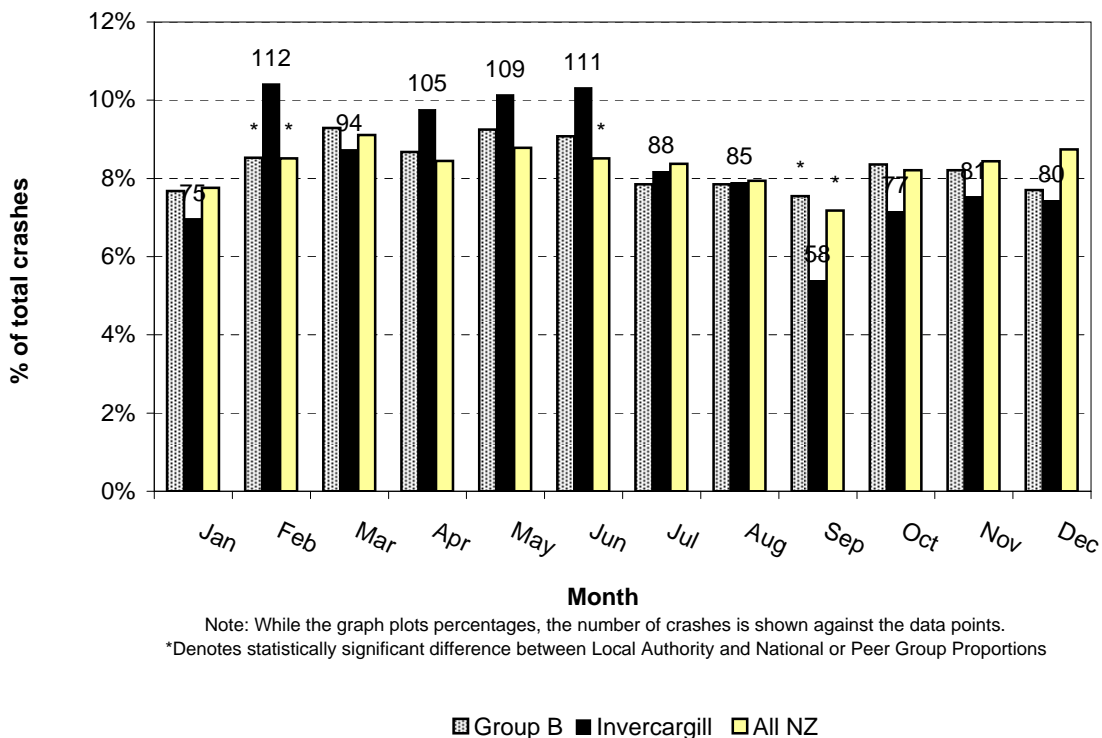
Figure 7.1 Time pattern over average week
Invercargill City (2004-2008)



**Figure 7.2 Day of week (6 a.m. to 6 a.m.)
Invercargill City (2004-2008)**



**Figure 7.3 Month of year
Invercargill City (2004-2008)**



Local Road Statistics

Figure 8.1 Number of injury crashes
Invercargill City - council roads (urban & rural)

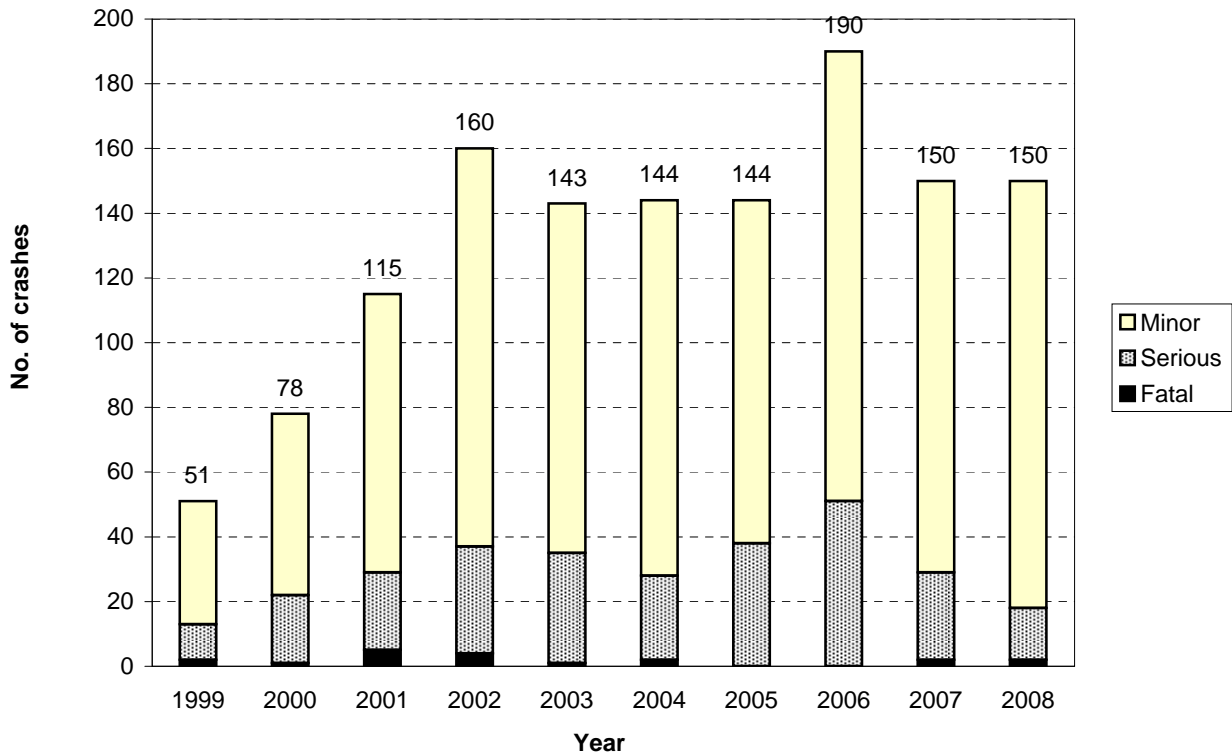
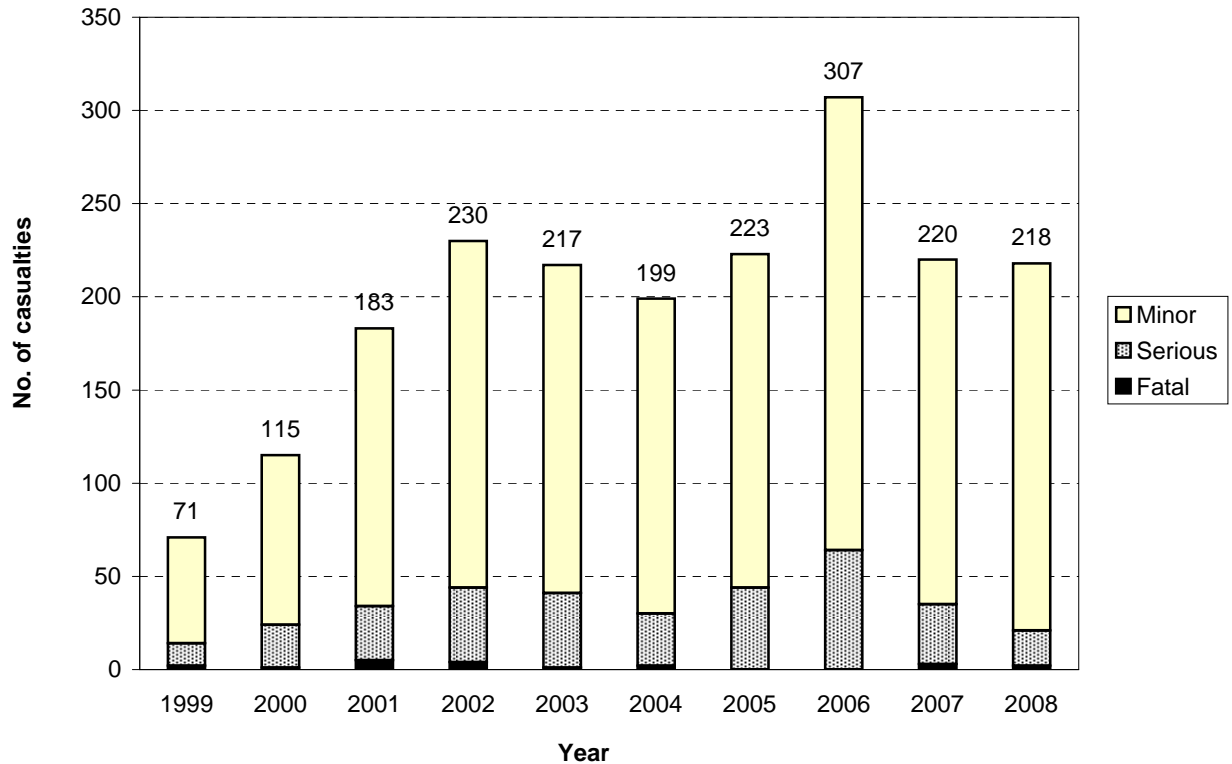
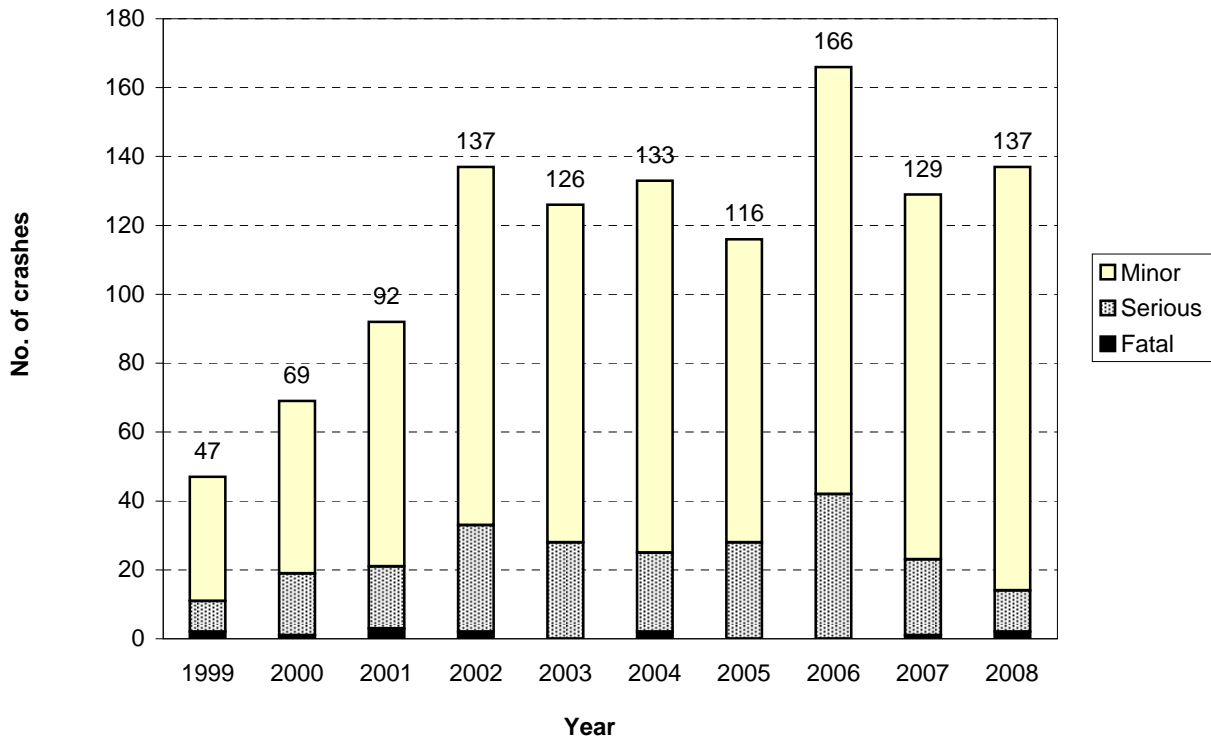


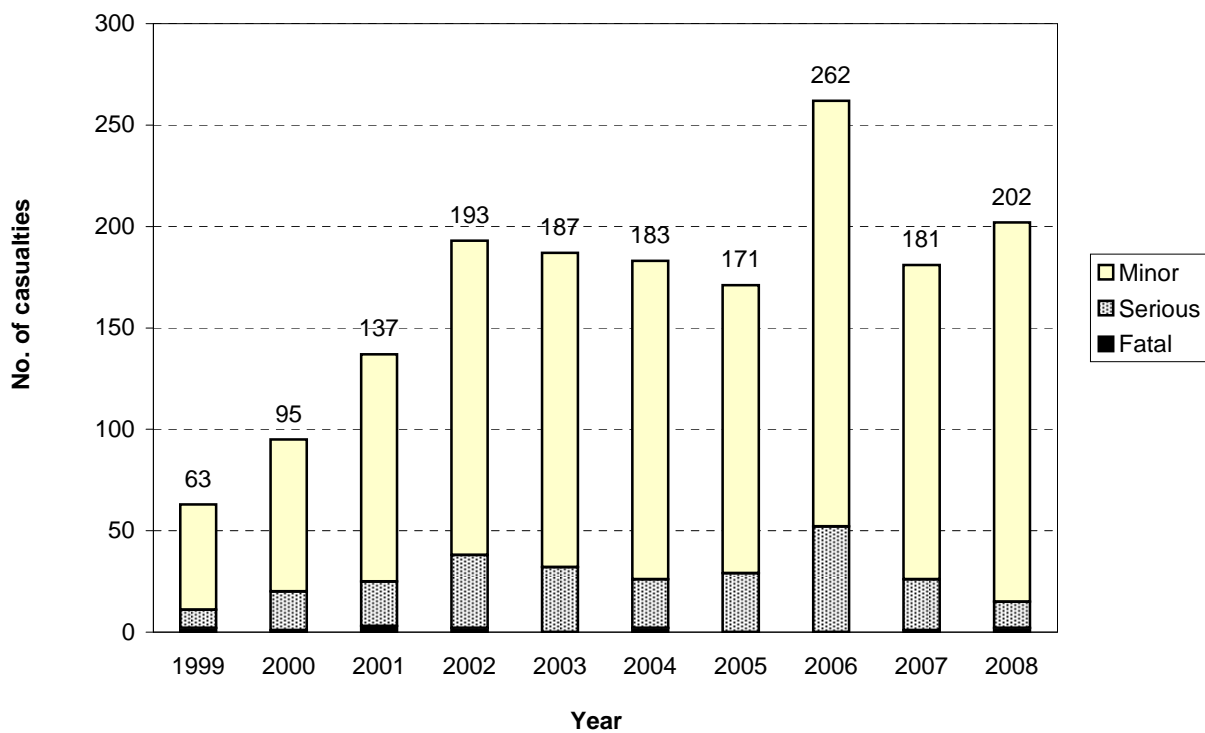
Figure 8.2 Number of casualties
Invercargill City - council roads (urban & rural)



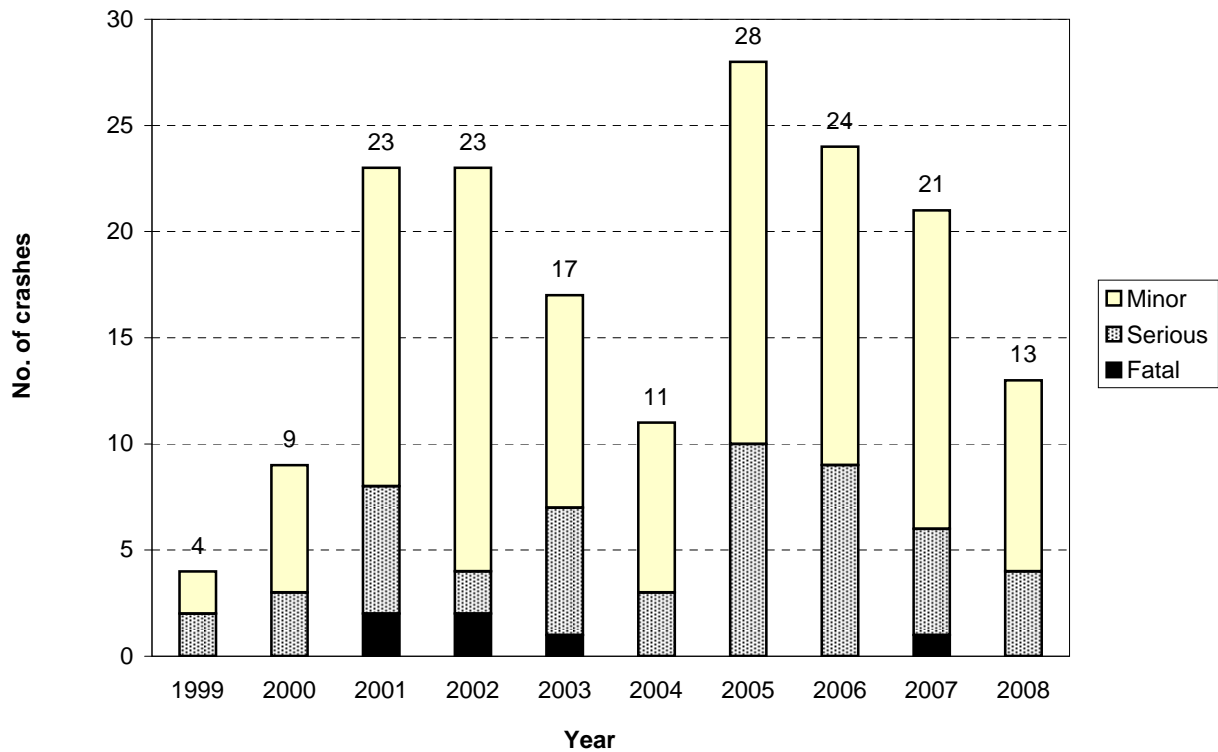
**Figure 8.3 Number of injury crashes
Invercargill City - urban council roads**



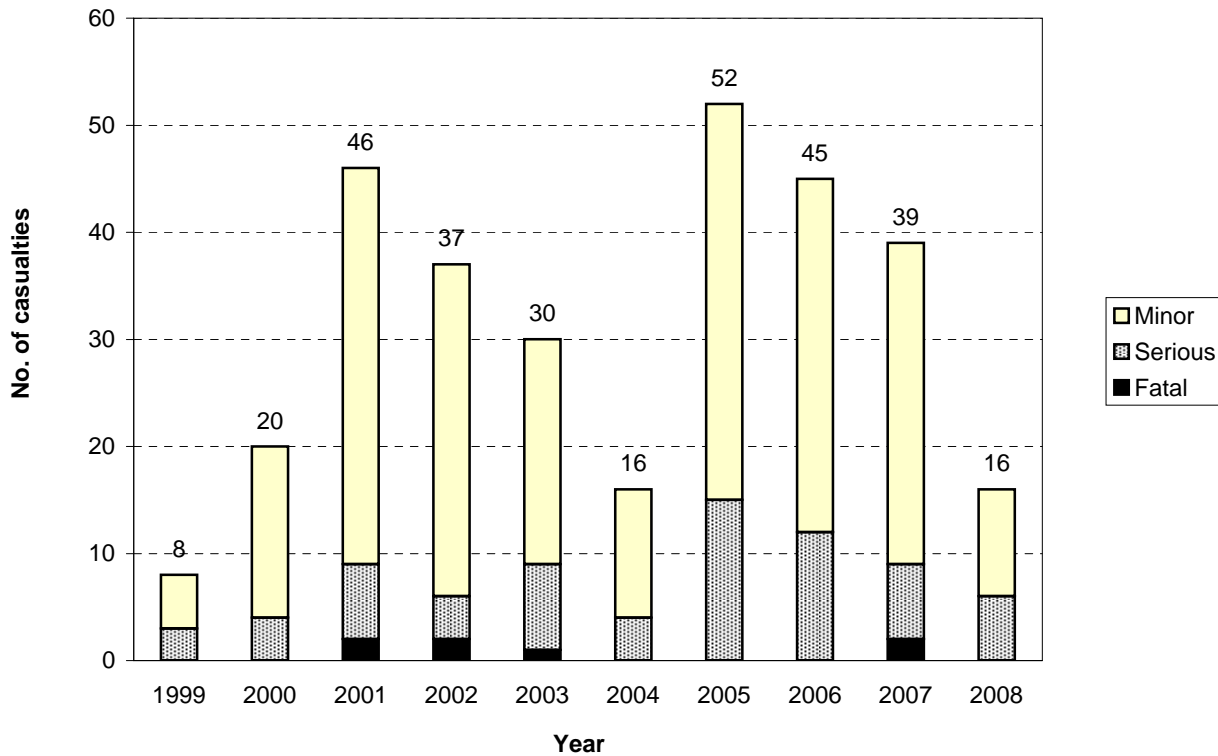
**Figure 8.4 Number of casualties
Invercargill City - urban council roads**



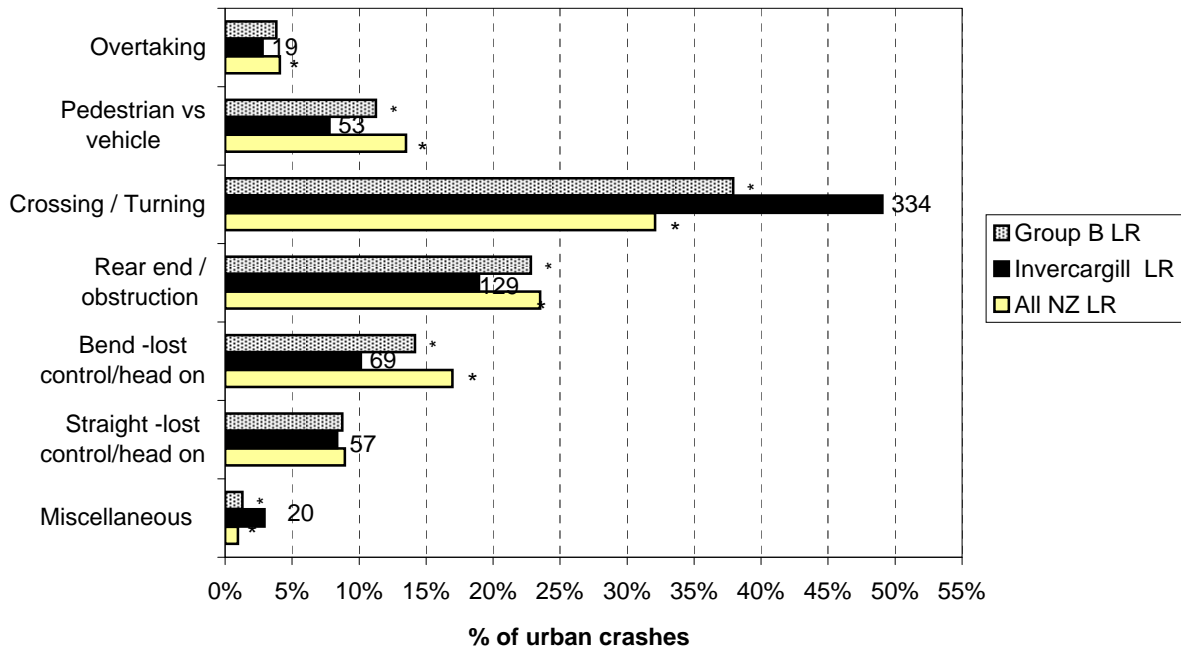
**Figure 8.5 Number of injury crashes
Invercargill City - rural council roads**



**Figure 8.6 Number of casualties
Invercargill City - rural council roads**

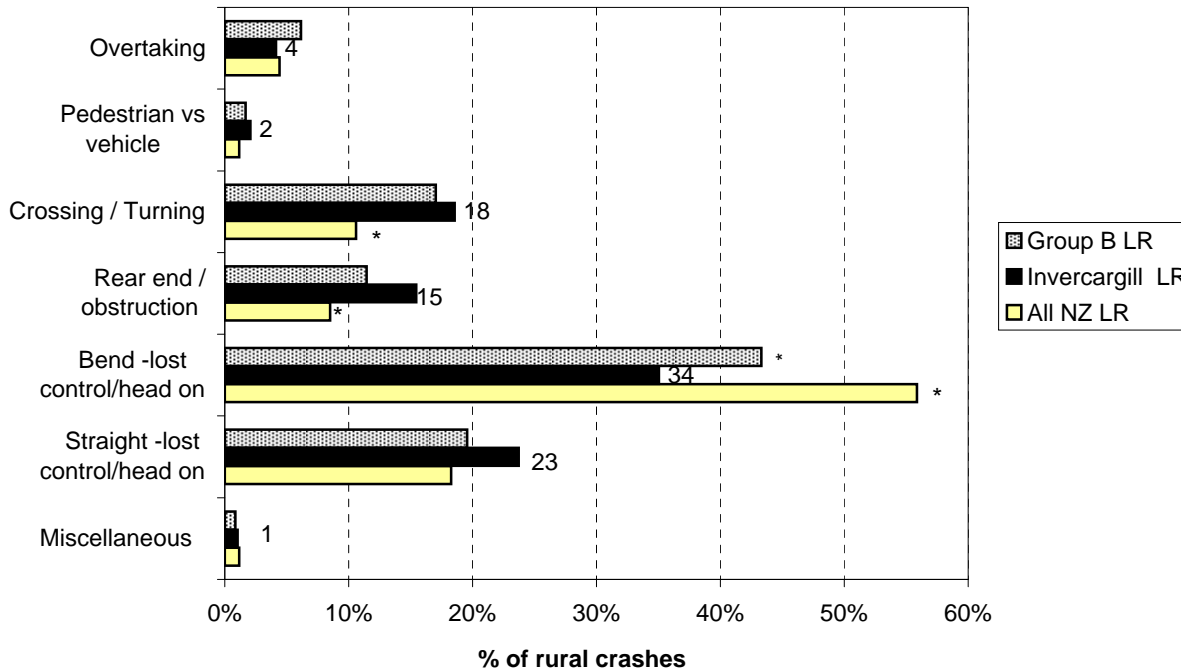


**Figure 8.7 Crash movement type - urban
Invercargill City council roads (2004-2008)**



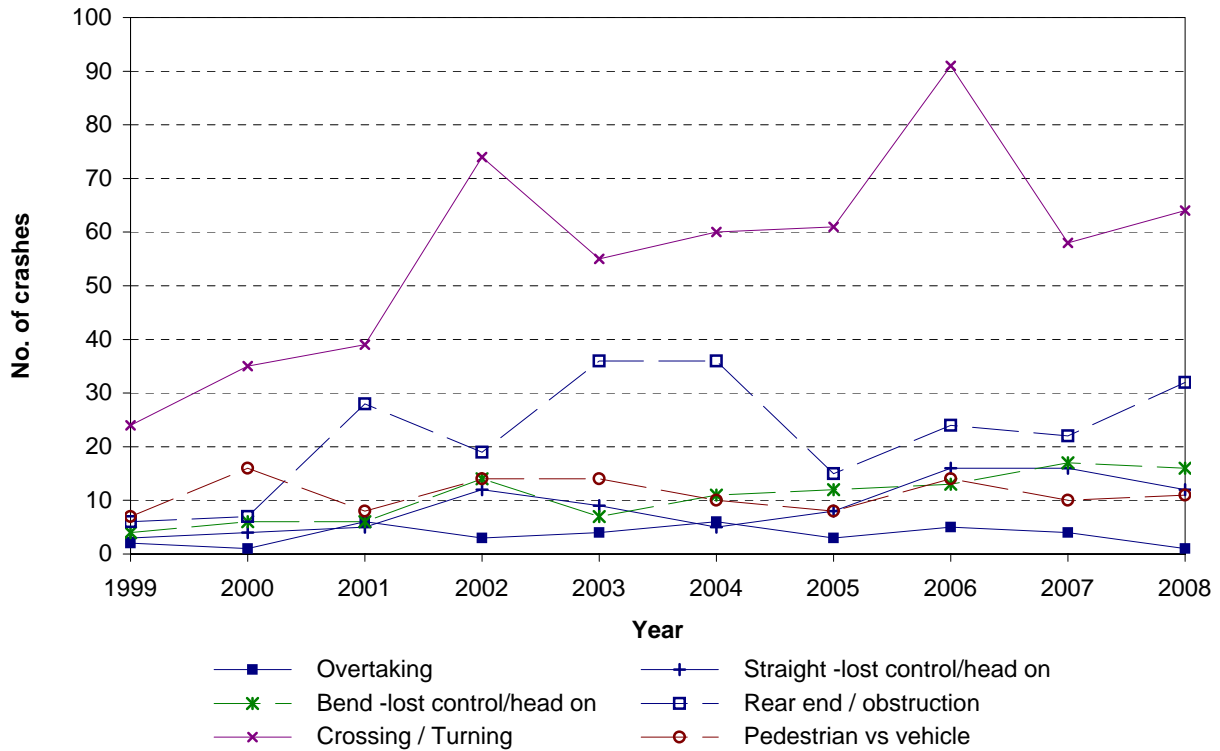
Note: While the graph plots percentages, the number of crashes is shown against the data points.
*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions

**Figure 8.8 Crash movement type - rural
Invercargill City council roads (2004-2008)**

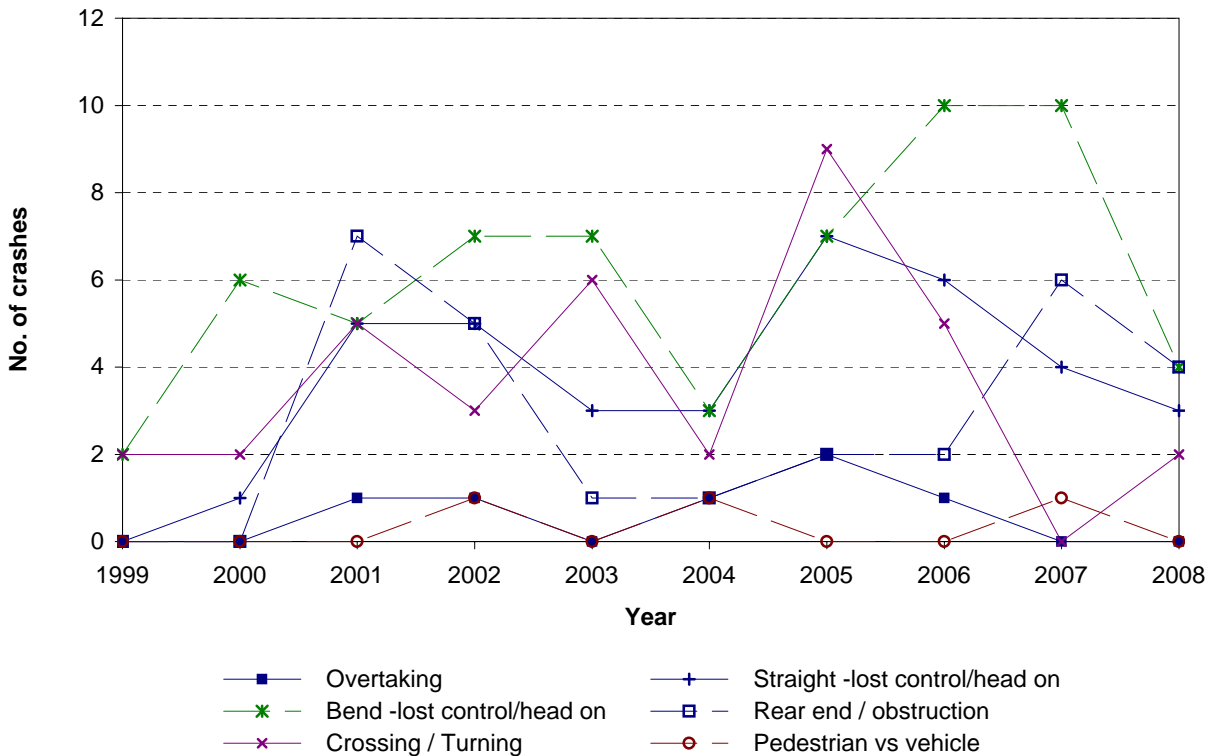


Note: While the graph plots percentages, the number of crashes is shown against the data points.
*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions

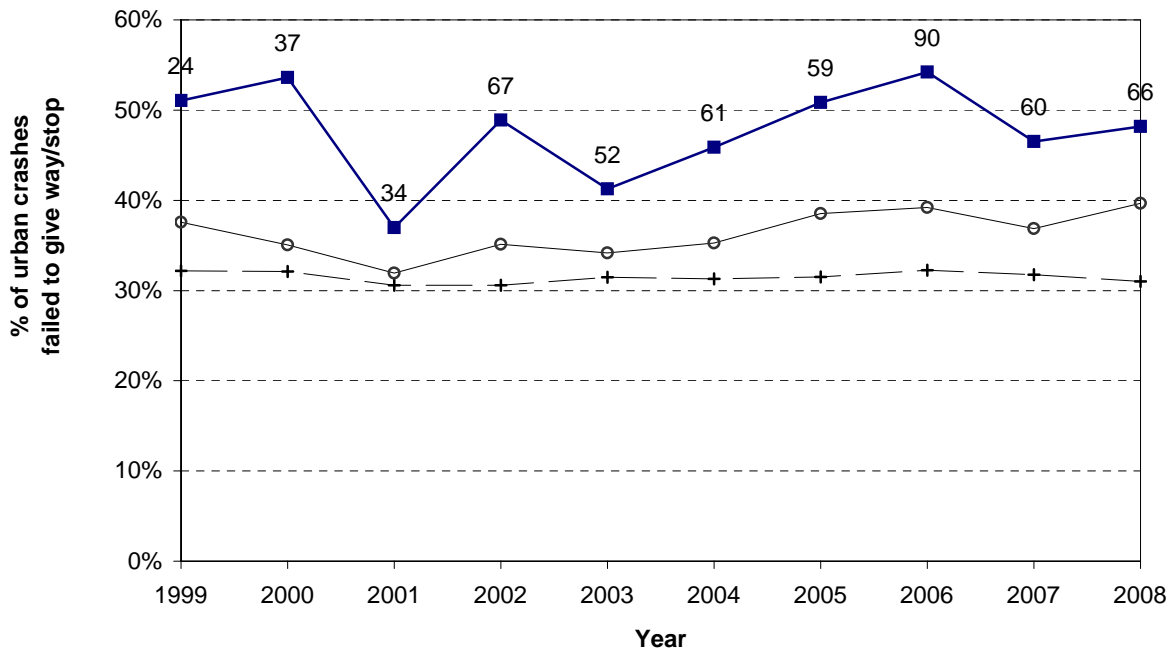
**Figure 8.9 Crash movement type - Trends
Invercargill City - urban council roads**



**Figure 8.10 Crash movement type - Trends
Invercargill City - rural council roads**



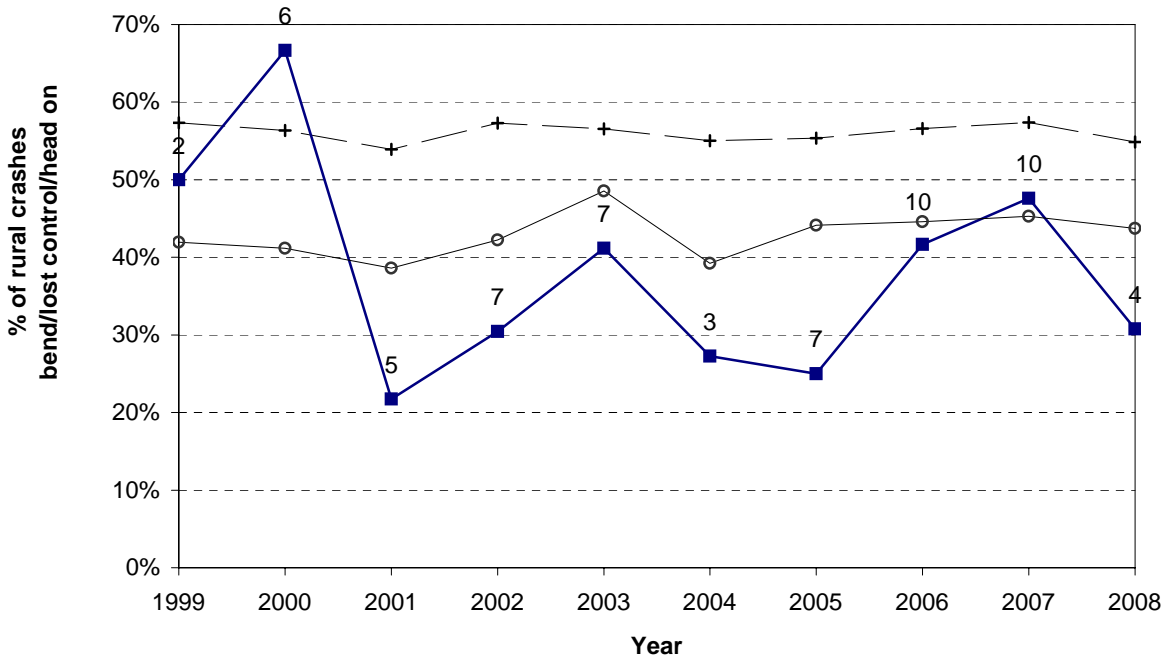
**Figure 8.11 Failed to give way/stop
Invercargill City - urban council roads**



Note: While the graph plots percentages, the number of crashes is shown against the data points.

+ All NZ LR ■ Invercargill LR ○ Group B LR

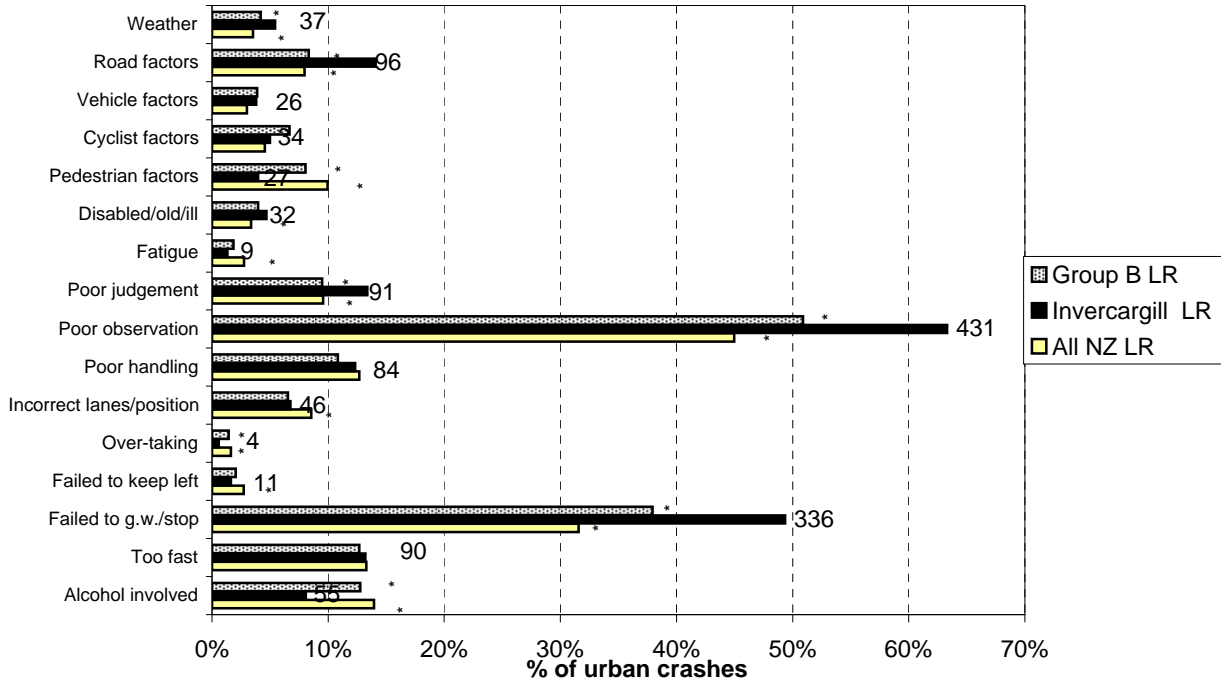
**Figure 8.12 Bend - lost control / head - on
Invercargill City - rural council roads**



Note: While the graph plots percentages, the number of crashes is shown against the data points.

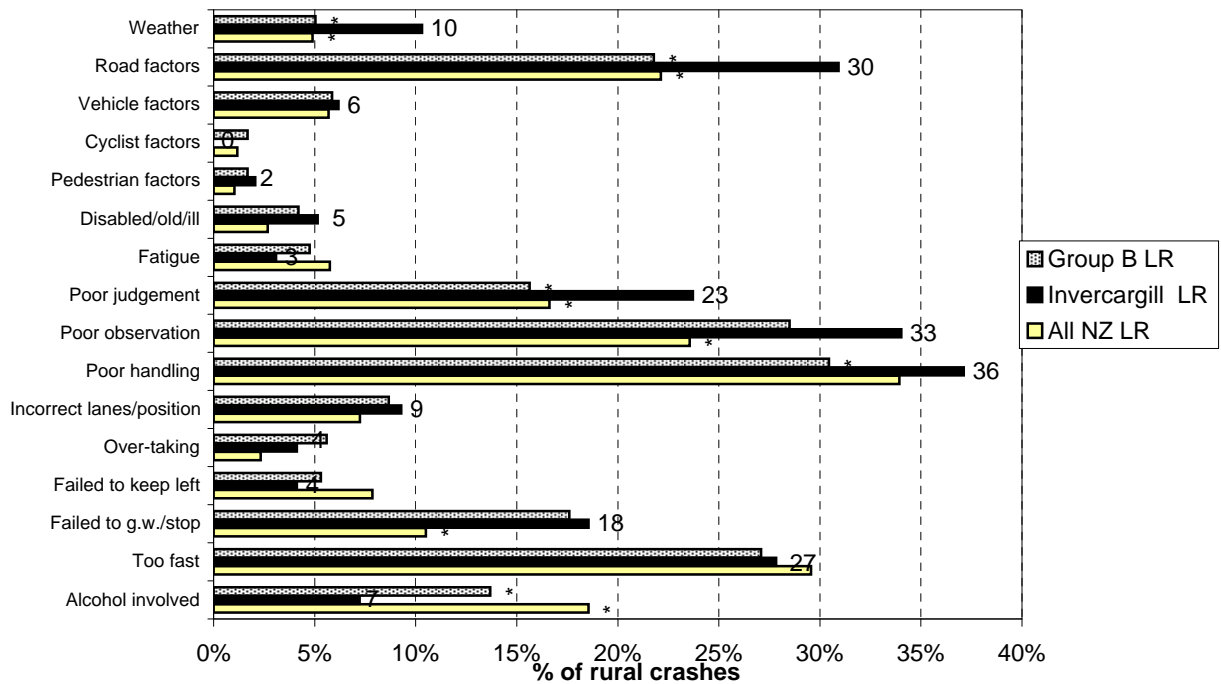
+ All NZ LR ■ Invercargill LR ○ Group B LR

**Figure 8.13 Contributing factors - urban
Invercargill City council roads (2004-2008)**



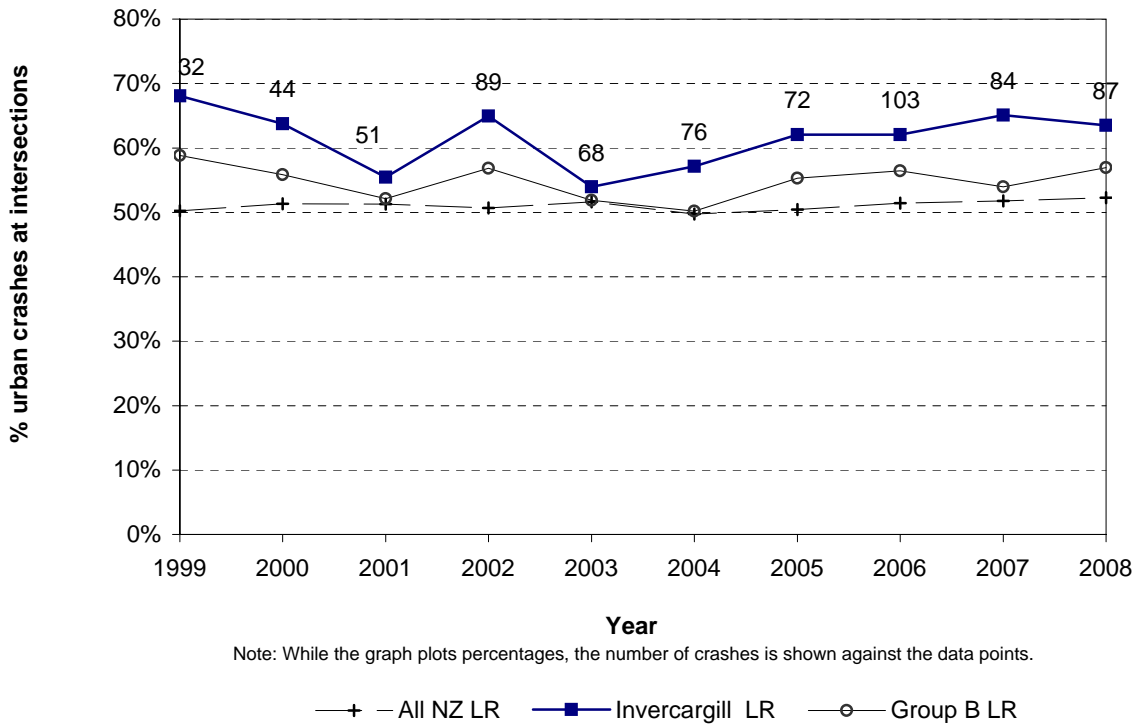
Note: While the graph plots percentages, the number of crashes is shown against the data points.
*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions

**Figure 8.14 Contributing factors - rural
Invercargill City council roads (2004-2008)**



Note: While the graph plots percentages, the number of casualties is shown against the data points.
*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions

**Figure 8.15 Intersection crashes
Invercargill City - urban council roads**



**Figure 8.16 Intersection crashes
Invercargill City - rural council roads**

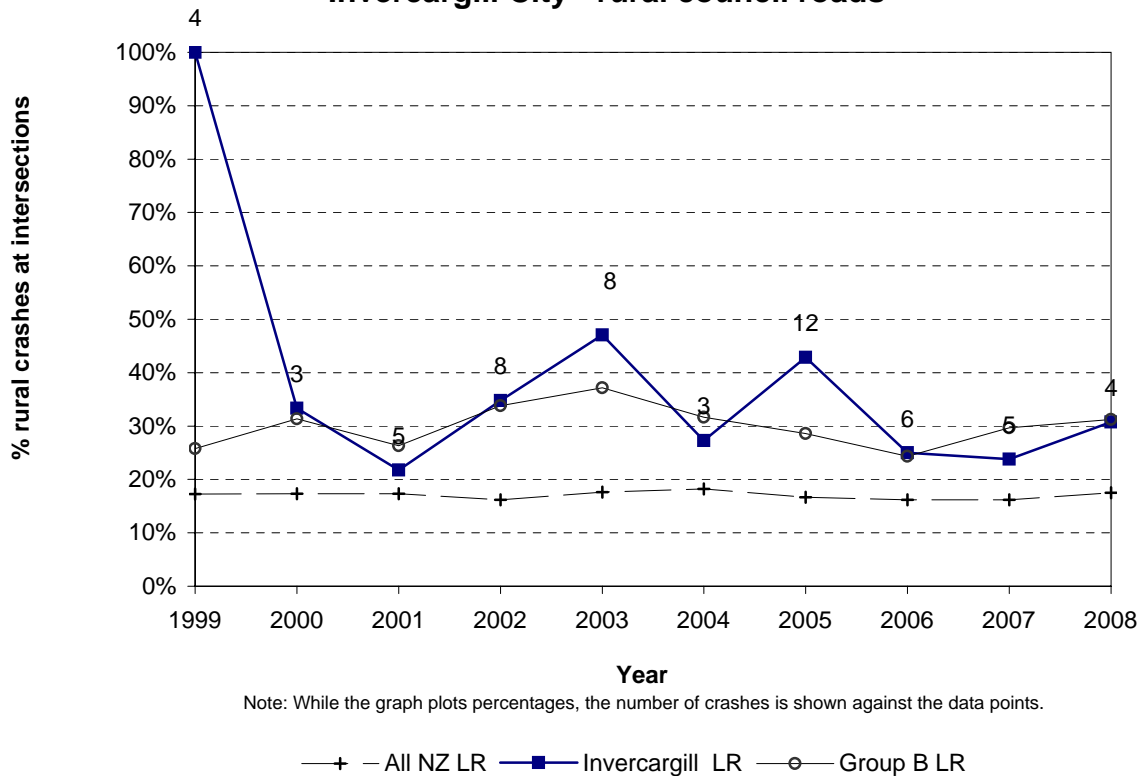


Figure 8.17 Wet road crashes
Invercargill City - urban council roads

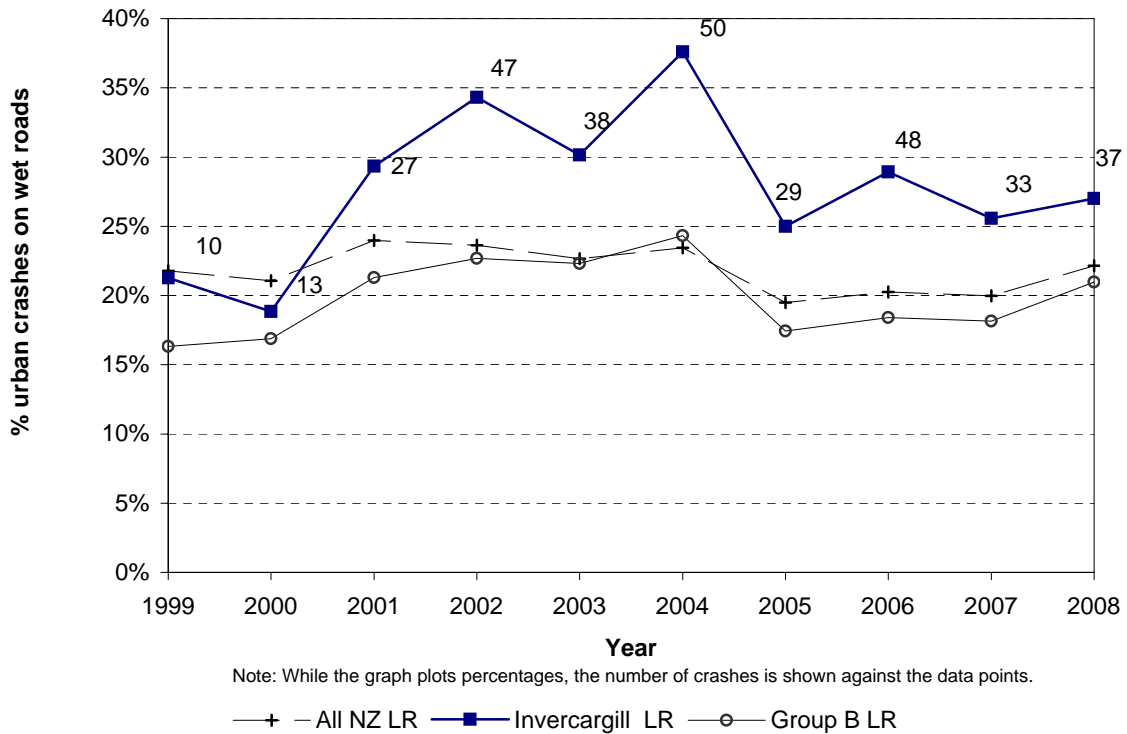
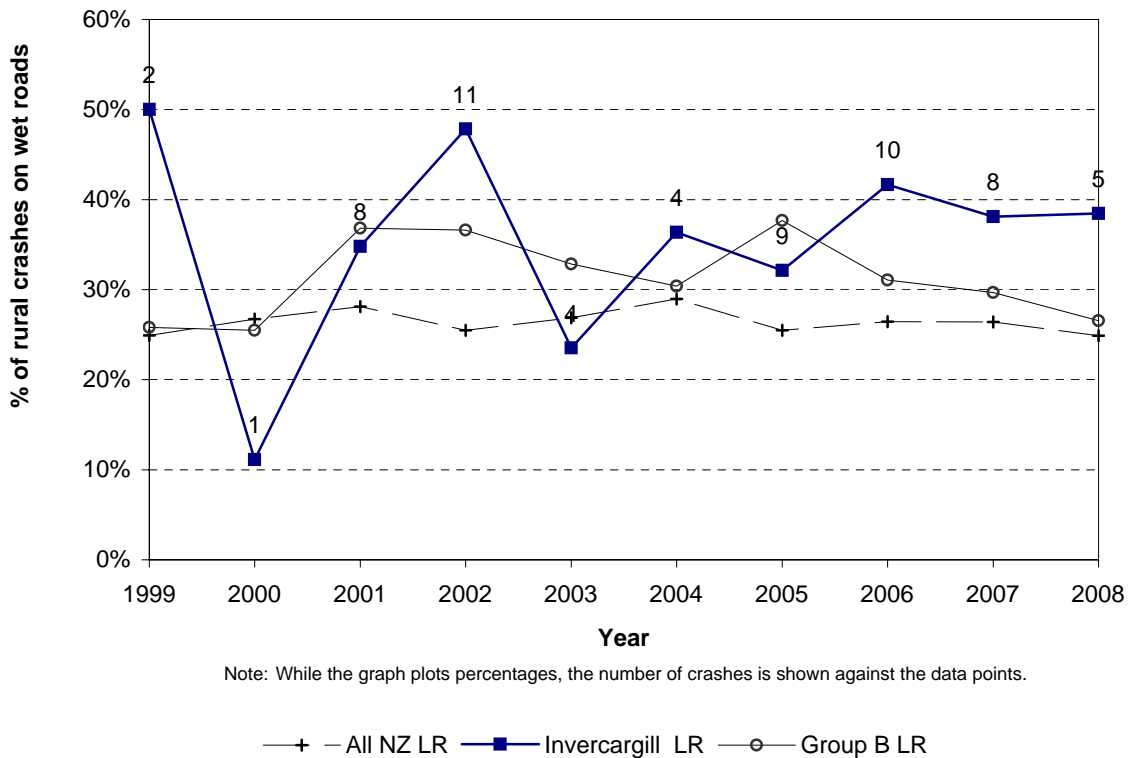
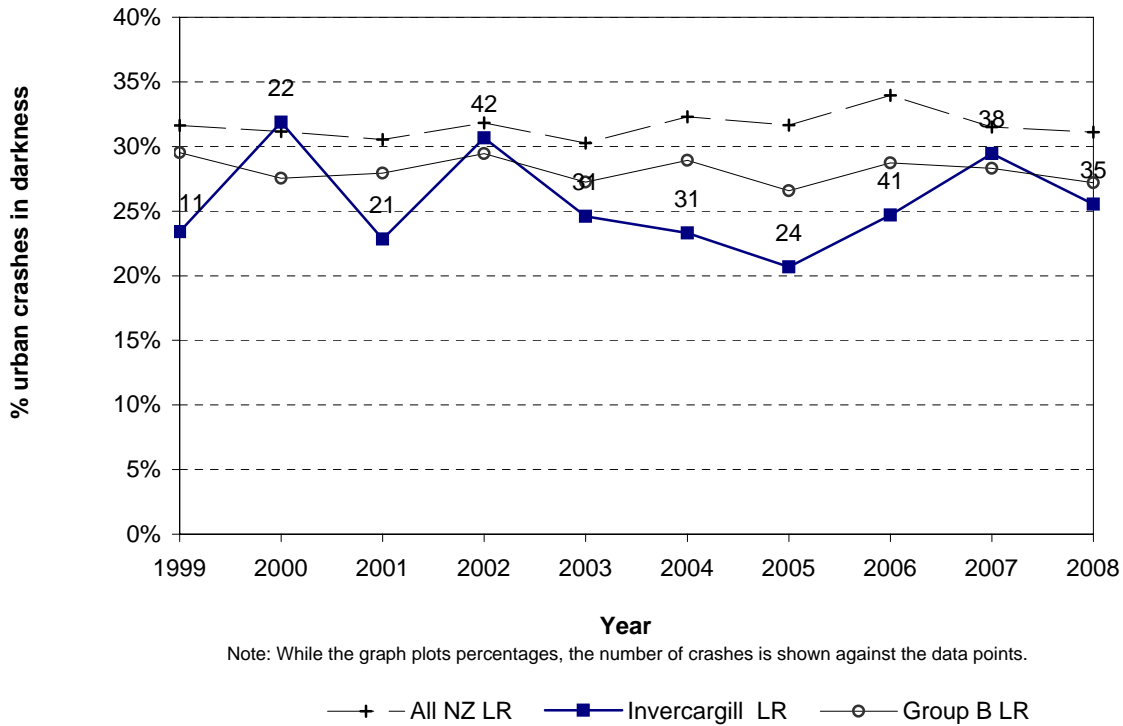


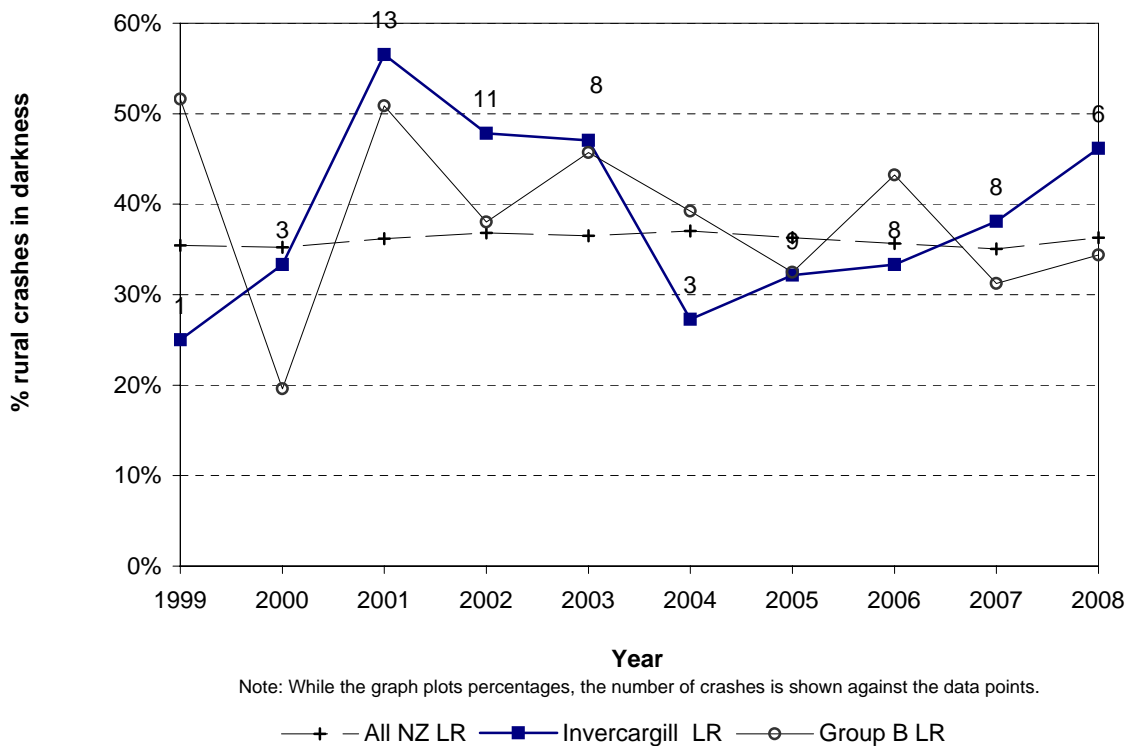
Figure 8.18 Wet road crashes
Invercargill City - rural council roads



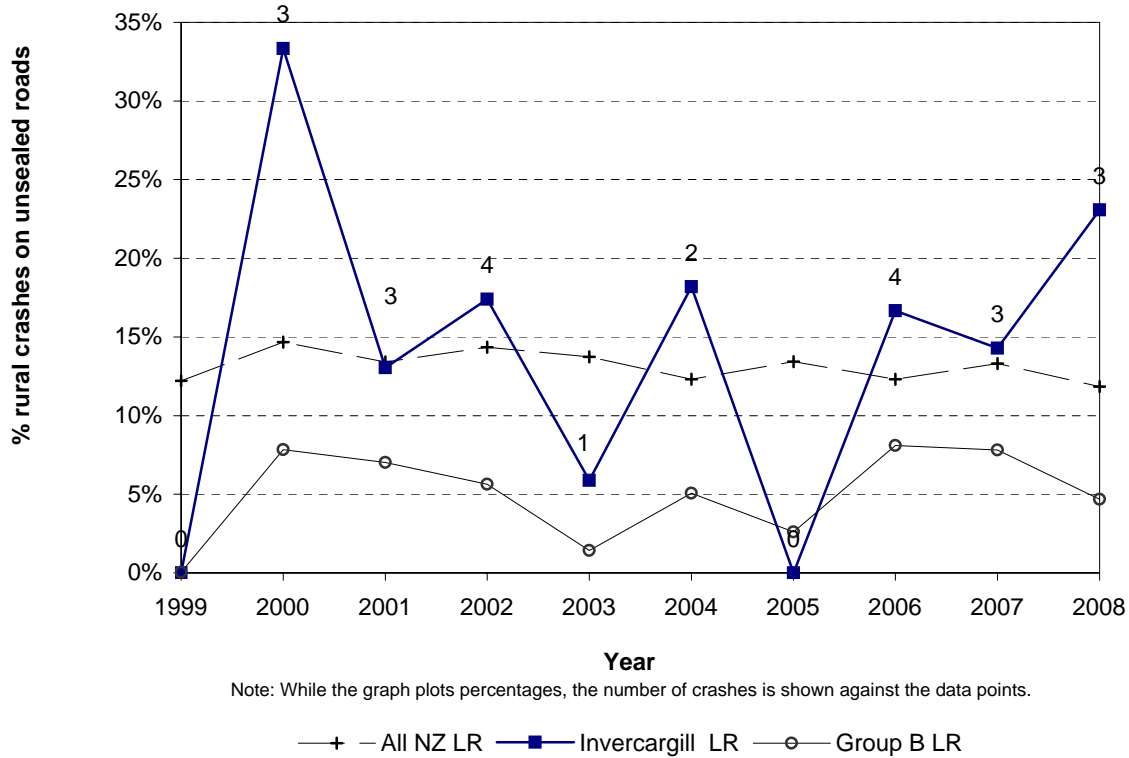
**Figure 8.19 Crashes in darkness
Invercargill City - urban council roads**



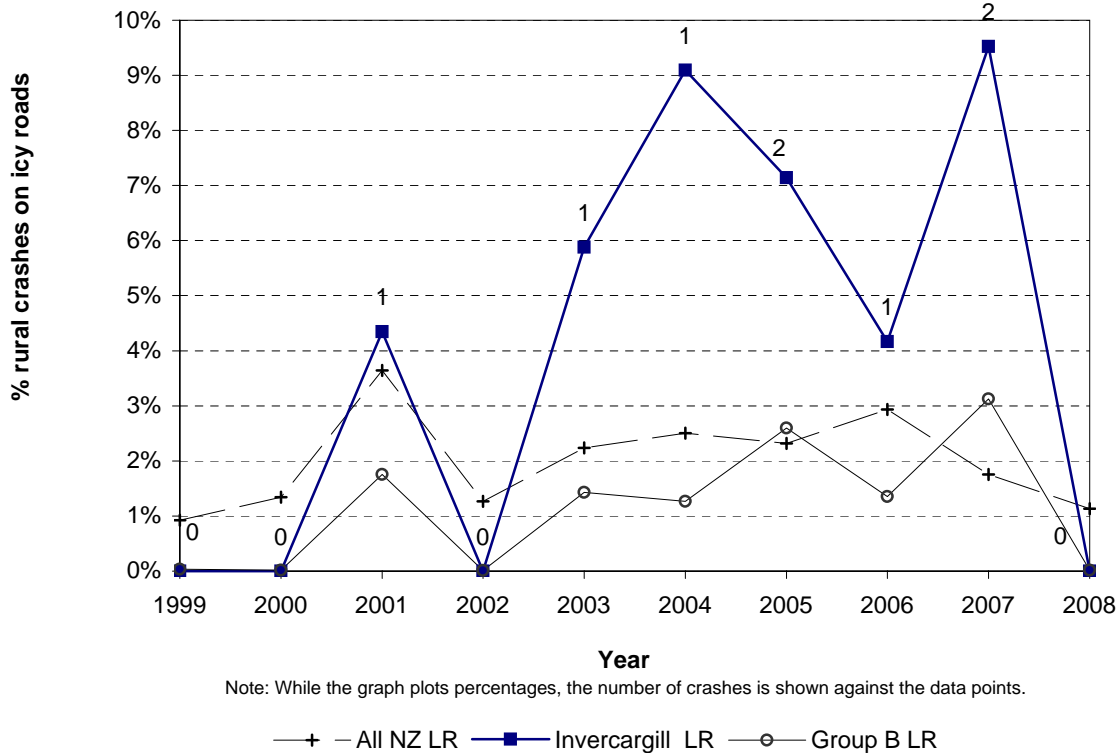
**Figure 8.20 Crashes in darkness
Invercargill City - rural council roads**



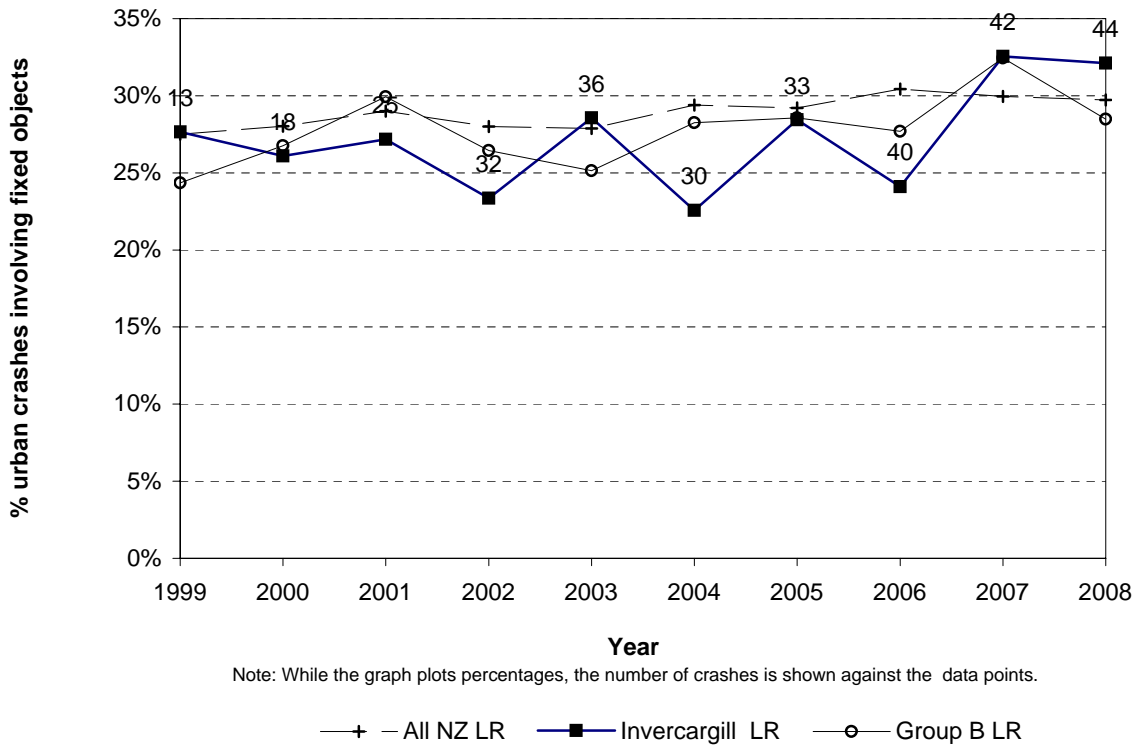
**Figure 8.21 Crashes on unsealed roads
Invercargill City - rural council roads**



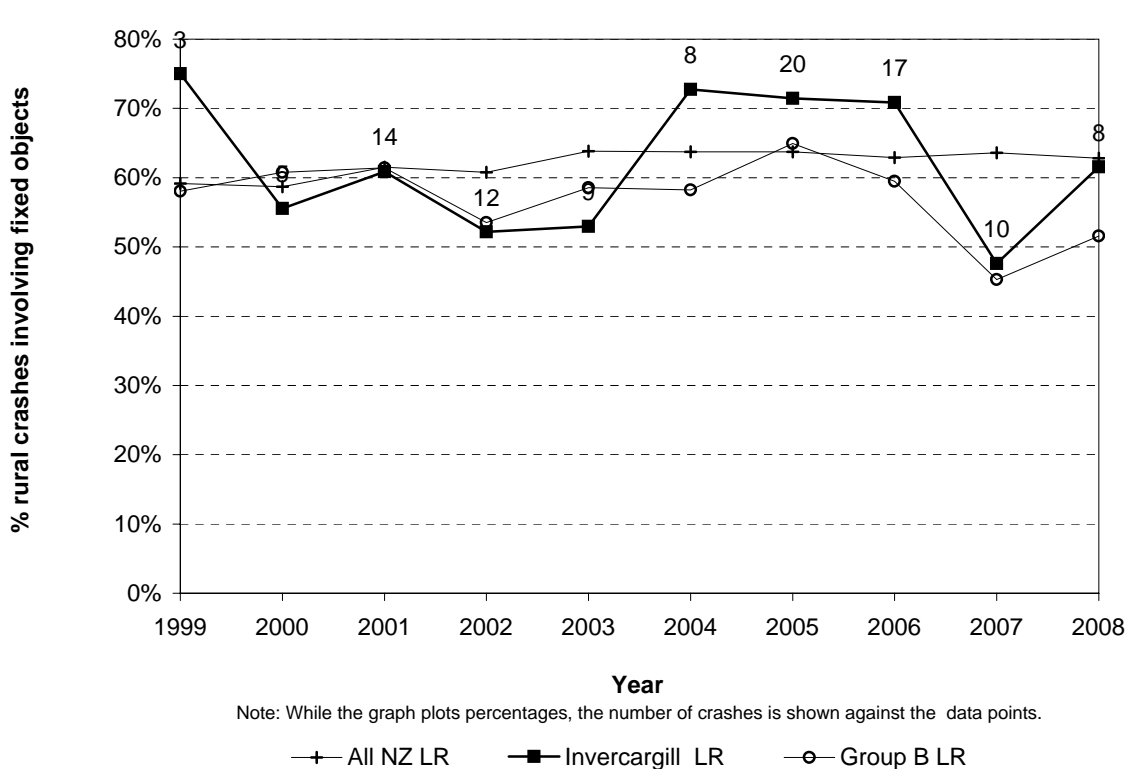
**Figure 8.22 Icy road crashes
Invercargill City - rural council roads**



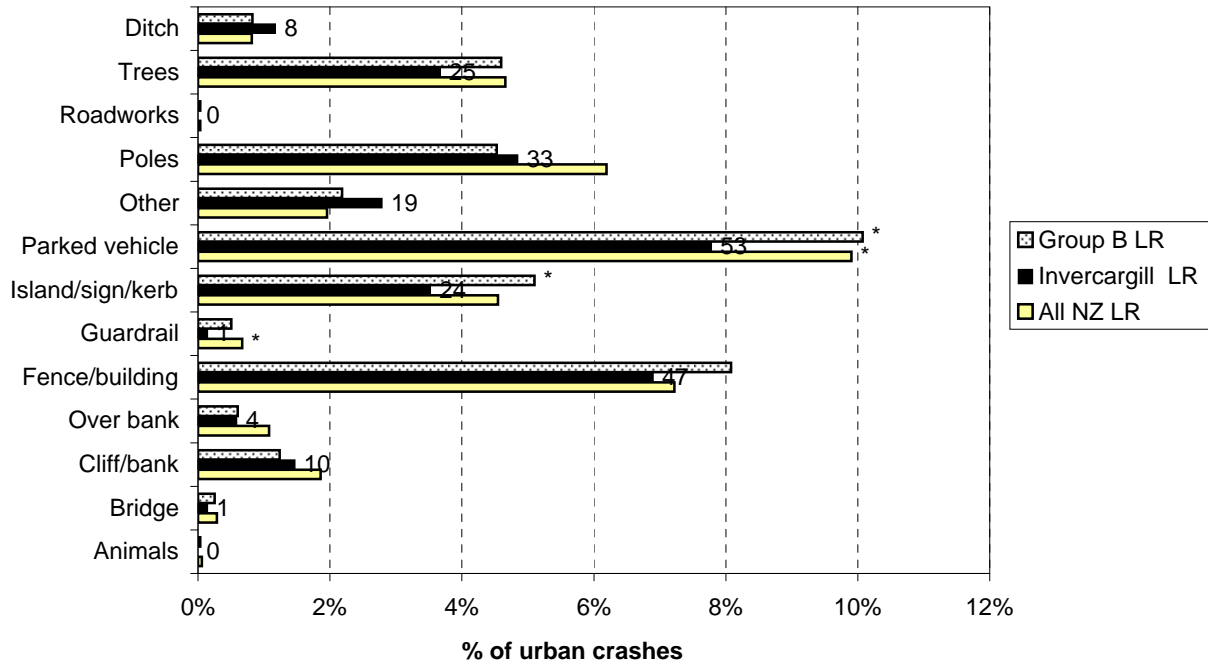
**Figure 8.23 Collisions with objects
Invercargill City - urban council roads**



**Figure 8.24 Collisions with objects
Invercargill City - rural council roads**

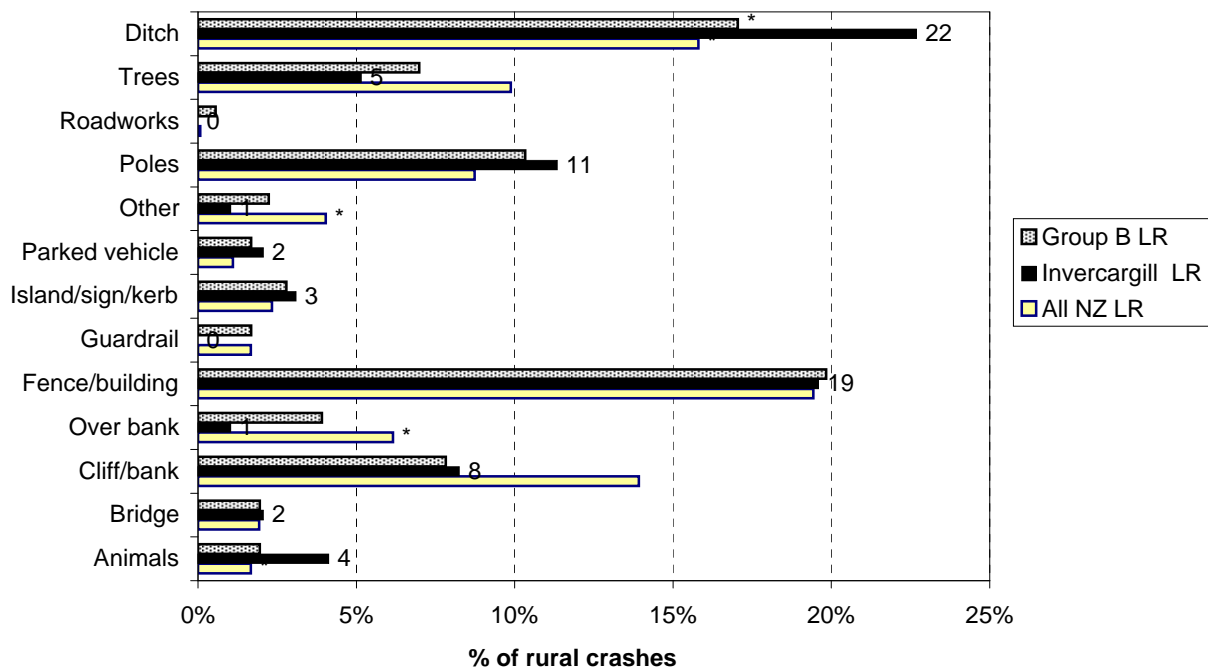


**Figure 8.25 Objects struck - urban
Invercargill City council roads (2004-2008)**



Note: While the graph plots percentages, the number of crashes is shown against the data points.
*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions

**Figure 8.26 Objects struck - rural
Invercargill City council roads (2004-2008)**



Note: While the graph plots percentages, the number of crashes is shown against the data points.
*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions

Crash Location Statistics

**Table 9.1: Council Roads Black Spot List Urban
(Injury and Non-Injury Crashes)**

Site Radius = 30 metres

Sites with 3 or more injury crashes or more than \$1500000 in social costs

CRASH ROAD		SIDE ROAD	2004	2005	2006	2007	2008	TOTAL	Non-Injury	Wet Crash %	Dark Crash %	Crash Costs
ST ANDREWS ST	I	QUEENS DRIVE	1	1	3		3	8	4	13	25	\$3,405,597
YTHAN ST	I	EYE ST		2	1	1		4	2		50	\$3,229,606
ELLES ROAD	I	MARTIN ST	3	8	3	6	7	27	17	26	22	\$1,923,187
BOND ST	I	SPEY ST	2	2	4			8	1	38	13	\$1,902,924
DEVERON ST	I	LEET ST	2	2	4	2	2	12	6	17	25	\$1,880,509
YARROW ST	I	MARY ST			3	1	2	6		50	17	\$1,780,200
BALMORAL DRIVE	I	NESS ST	2		3	1		6	3	17	33	\$1,628,275
QUEENS DRIVE	I	GALA ST	9	6	4	8	5	32	22	22	9	\$1,545,755
DON ST	I	JED ST	2	1	3	3	3	12	5	42	8	\$1,513,137
VICTORIA AVENUE	I	LIFFEY ST	3		2	5	4	14	9	43	21	\$1,426,561
ELLES ROAD	I	TWEED ST	2	4	7	11	7	31	23	23	42	\$1,410,809
YARROW ST	I	ISABELLA ST	1	1	3		1	6	2	50	17	\$1,241,286
ELLES ROAD	I	TRAMWAY ROAD	3	4	1	3	2	13	4	31	31	\$1,191,999
SPEY ST	I	MERSEY ST		4	3	2	4	13	4	15		\$1,190,935
CONON ST	I	BOWMONT ST		1	2		1	4	1	50		\$1,134,084
TWEED ST	I	YTHAN ST	4	2	4	8	4	22	12	27	18	\$938,131
KELVIN ST	I	GALA ST	1	5	3	2	1	12	7	42	25	\$930,485
DON ST	I	DEVERON ST	2	1	2	5		10	5	20	20	\$919,737
ELLES ROAD	I	CRINAN ST	3		2		2	7	1			\$910,484
REGENT ST	I	CENTRE ST	2		3	1	1	7	1	43	43	\$908,764
ELLES ROAD	I	SCOTT ST	2	1		1	2	6	1	17		\$835,868
SCANDRETT ST	I	YTHAN ST	1	1	1	2		5		20	20	\$820,440
TEVIOT ST	I	CONON ST	1	5		1		7	3	43		\$803,249
ETTRICK ST	I	PRINCES ST	2		3	1	1	7	3	43	57	\$790,635
TWEED ST	I	NESS ST	2	1	2		1	6	2	50	17	\$777,991
YARROW ST	I	DEVERON ST	2		1		2	5	1	20	20	\$760,844
CENTRE ST	I	MORTON ST	1	1		2	1	5	2	60	40	\$725,327
BROWN ST	I	MCQUARRIE ST	1	1	3		1	6	3			\$720,115
LEET ST	I	JED ST	1		1		4	6	3	50	17	\$717,331
NESS ST	I	CRINAN ST		1	3	1	1	6	3	33	17	\$715,570
ELLES ROAD		50 S TWEED ST	1		1		2	4	1	50	50	\$705,804
LAYARD ST	I	WARD ST	1	2		1		4	1	50	25	\$690,282
TWEED ST	I	BOND ST	1		1	1	1	4	1			\$685,164
YARROW ST	I	MACMASTER ST	1		2	1		4	1	25	25	\$685,164
SCANDRETT ST	I	NESS ST			1	1	2	4	1		25	\$683,444
NITH ST	I	EYE ST	2	2	6	2	1	13	5	31	8	\$676,561
HEYWOOD ST	I	PATERSON ST		1		1	1	3			33	\$670,800
TWEED ST	I	MORTON ST	1	3	4	2	8	18	12	28	11	\$639,466
YARROW ST	I	QUEENS DRIVE	4	2	4	4	3	17	12	29	12	\$565,955
NELSON ST	I	MARTIN ST		2		2	6	10	4	20	30	\$511,494
QUEENS DRIVE	I	DON ST	6	4	1	1	1	13	8	54	15	\$499,120
TWEED ST	I	CONON ST	4	3	2	3	3	15	11	67	20	\$473,494
ELLES ROAD	I	GRACE ST	1	4	3	4	6	18	15	17	44	\$462,315
YARROW ST	I	DOON ST	3	1	4	3	3	14	10	36	7	\$459,420
ELLES ROAD	I	ETTRICK ST	3	4		2	3	12	8	33	17	\$434,091
ELLES ROAD	I	MCQUARRIE ST	3	3	2	1	1	10	6	10	20	\$401,965
RACECOURSE ROAD	I	HERBERT ST	1		2	2	2	7	2	57	57	\$401,311
TWEED ST	I	NITH ST	3	1	1	3	5	13	10	23	23	\$380,707
TEVIOT ST	I	NITH ST		1	1	1	2	5		20	20	\$373,240
SPEY ST	I	JED ST	1		5		1	7	3	29		\$343,435

**Table 9.1: Council Roads Black Spot List Urban
(Injury and Non-Injury Crashes)**

Site Radius = 30 metres

Sites with 3 or more injury crashes or more than \$1500000 in social costs

CRASH ROAD		SIDE ROAD	2004	2005	2006	2007	2008	TOTAL	Non-Injury	Wet Crash %	Dark Crash %	Crash Costs
KELVIN ST	I	YARROW ST	1	2	2	2	2	9	6	33	11	\$321,125
DEVERON ST	I	GALA ST	2	1	1	2	1	7	4	29		\$290,719
TWEED ST	I	POMONA ST	2	1	2		2	7	4	43		\$288,343
TWEED ST	I	INGLEWOOD ROAD		5		1		6	3	67	50	\$280,369
DUNNS ROAD	I	ORETI ROAD		1	1	1	1	4	1	50		\$275,088
CONON ST	I	EYE ST	1			1	3	5	2		20	\$255,767
HERBERT ST	I	EXMOUTH ST	1	1		1	2	5	2	40	20	\$255,726
CHESNEY ST	I	MCQUARRIE ST		2	1	1		4	1		25	\$241,362
DRURY LANE	I	RENFREW ST	1		1	1	1	4	1	25		\$239,684
FORTH ST	I	ELLES ROAD	1		3			4	1	25	25	\$237,308
DALRYMPLE ST	I	NESS ST	1		1		1	3				\$223,600

**Table 9.2: Council Roads Black Spot List Rural
(Injury and Non-Injury Crashes)**

Site Radius = 250 metres

Sites with 3 or more injury crashes or more than \$1500000 in social costs

CRASH ROAD		SIDE ROAD	2004	2005	2006	2007	2008	TOTAL	Non-Injury	Wet Crash %	Dark Crash %	Crash Costs
CHESNEY ST	I	SCOTT ST	2	2	3	1		8	2	25	13	\$1,782,818
GORGE ROAD-INVERCARG I		ROCKDALE ROAD	2	3	1			6	1	50	33	\$1,645,421
MILL ROAD NORTH	A	FINDLAY ROAD		3	2			5	1	20	40	\$1,502,341
STEELE ROAD	150 S	MOORE ROAD				2	1	3		67	33	\$1,364,160
STEAD ST	500 W	AIRPORT AVENUE	1	2		2		5	2	80	80	\$902,582
MILL ROAD NORTH	300 N	FINDLAY ROAD	1	1		1		3			33	\$831,040
OTATARA ROAD	I	FERRY ROAD		1	1	1		3		33	67	\$830,060
SANDY POINT ROAD	980 S	CHRISTIES ROAD			1	2		3			33	\$829,080

**Table 9.3: State Highway
Urban and Rural Black Spot List
(Injury and Non-Injury Crashes)**

**Urban Site Radius = 30 metres
Rural Site Radius = 250 metres**

Sites with 3 or more injury crashes or more than \$1500000 in social costs

CRASH ROAD		SIDE ROAD	2004	2005	2006	2007	2008	TOTAL	Non- Injury	Wet Crash %	Dark Crash %	Crash Costs
SH 1S	I	MILL ROAD N	0	3	1	3	1	8	4	75	50	\$4,552,263
SH 1S	I	BAY VIEW ROAD	1	0	2	1	1	5	2	20	40	\$3,838,821
SH 1S	I	MOTU RIMU ROAD	0	4	1	2	0	7	6	29	43	\$3,798,645
SH 1S	I	LINDISFARNE ST	5	3	3	3	2	16	10	31	19	\$3,653,170
SH 1S	I	ROCKDALE ROAD	3	8	6	3	4	24	12	33	33	\$2,441,370
SH 1S	I	CRINAN ST	1	0	2	2	3	8	2	38	13	\$1,814,087
SH 1S	I	ELLES ROAD	1	2	2	2	3	10	6	60	30	\$1,687,921
SH 1S	I	ELLES ROAD	1	10	8	7	5	31	19	32	32	\$1,650,342
SH 1S	I	TWEED ST	6	7	5	5	7	30	26	30	33	\$1,632,449
SH 6	I	SPEY ST	6	5	3	6	7	27	15	26	33	\$1,587,685
SH 1S	I	CONON ST	2	0	2	4	3	11	4	9	0	\$1,476,455
SH 1S	I	KEW ROAD	1	1	4	1	0	7	4	29	29	\$1,391,784
SH 6	I	DON ST	3	2	7	2	5	19	11	21	21	\$1,242,009
SH 6	I	HERBERT ST	5	4	3	4	5	21	15	14	14	\$1,130,531
SH 6	I	YARROW ST	2	3	1	6	3	15	8	20	27	\$1,098,667
SH 1S	I	YTHAN ST	4	1	2	3	6	16	10	19	25	\$1,049,787
SH 1S		1000 E MILL ROAD NORTH N	1	2	3	0	1	7	3	14	43	\$1,041,038
SH 6	I	FILLEUL ST	0	1	2	1	3	7	1	43	43	\$908,764
SH 6	I	SH 99	1	0	1	2	0	4	1	25	50	\$866,438
SH 1S	I	ETTRICK ST	0	2	3	1	0	6	1	33	33	\$834,762
SH 1S		10 E SH 6	5	2	3	6	5	21	13	29	48	\$806,910
SH 1S	I	SH 6	1	9	8	7	1	26	21	15	23	\$715,869
SH 1S	I	EYE ST	0	2	1	0	0	3	0	0	0	\$674,240
SH 6	I	DURHAM ST	1	0	2	0	0	3	0	0	0	\$669,080
SH 6	I	GALA ST	7	4	4	3	0	18	12	17	44	\$640,240
SH 6	I	BAY ROAD	3	3	2	1	2	11	6	36	9	\$472,444
SH 6	I	WEST PLAINS ROAD	1	2	1	2	1	7	1	43	0	\$464,962
SH 6		100 N WEST PLAINS ROAD	2	0	0	2	2	6	2	50	0	\$441,198
SH 1S		430 W MCGORLICK ST	1	1	2	0	1	5	1	20	20	\$427,360
SH 1S	I	NITH ST	3	1	2	4	1	11	7	9	18	\$411,169
SH 1S		270 W CLAPHAM ROAD	0	1	0	2	2	5	2	20	40	\$369,621
SH 6 DEE	I	LEET ST	1	2	4	1	2	10	7	20	10	\$333,727
SH 6	I	BAINFIELD ROAD	1	3	1	4	0	9	6	11	11	\$321,084
SH 6	I	LOUISA ST	0	1	3	1	0	5	2	0	0	\$257,487
SH 1S	I	WOOD ST	0	1	2	1	0	4	1	25	50	\$241,404

**Table 9.4 : Urban Council Road Crash Sites
with a Significant Increase in Crashes in 2008
(Injury and Non-Injury Crashes)**

**Site Radius =
30 metres**

CRASH ROAD		SIDE ROAD	2003	2004	2005	2006	2007	2008	TOTAL	Non-Injury	Wet Crash %	Dark Crash %
ELLES ROAD	I	GRACE ST	3	1	4	3	4	6	21	17	14	38
TWEED ST	I	MORTON ST	1	1	3	4	2	8	19	13	26	11
NELSON ST	I	MARTIN ST	2		2		2	6	12	6	25	42
LEET ST	I	JED ST		1		1		4	6	3	50	17
JANET ST	I	YTHAN ST			1		1	4	6	4	33	
CONON ST	I	EYE ST		1			1	3	5	2		20
ETTRICK ST	I	YTHAN ST		1				4	5	3	20	20
MARTIN ST	I	POMONA ST					1	3	4	3	25	50
HYDE ST	I	WICKLOW ST			1			2	3	2		67
BAY ROAD	I	CUNNINGHAM ST		1				2	3	1	67	33
GALA ST	I	JED ST	1					2	3	1	67	33
NESS ST	I	OHARA ST						3	3	1	67	
QUEENS DRIVE	I	GEORGE ST	1					2	3	1		67
ELLES ROAD		50 N JANET ST			1			2	3	2	33	
CONON ST	I	BALMORAL DRIVE	1					2	3	2		33
LIDDEL ST	I	ETTRICK ST	1					2	3	2	33	33
JOHN ST	I	POMONA ST	1					2	3	3		33

**Table 9.4a : Rural Council Road Crash Sites
with a Significant Increase in Crashes in 2008
(Injury and Non-Injury Crashes)**

**Site Radius =
250 metres**

CRASH ROAD	SIDE ROAD	2003	2004	2005	2006	2007	2008	TOTAL	Non-Injury	Wet Crash %	Dark Crash %
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There are no rural alarm sites for 2008

**Table 9.5 : State Highway Crash Sites
with a Significant Increase in Crashes in 2008
(Injury and Non-Injury Crashes)**

**Urban Site Radius = 30 metres
Rural Site Radius = 250 metres**

CRASH ROAD		SIDE ROAD	2003	2004	2005	2006	2007	2008	TOTAL	Non-Injury	Wet Crash %	Dark Crash %
SH 1S	I	YTHAN ST	3	4	1	2	3	6	19	13	16	21
SH 6	I	FILLEUL ST	0	0	1	2	1	3	7	1	43	43
SH 1S	I	LAKE ST	0	0	0	1	0	2	3	1	33	67
SH 6	I	MCIVOR ROAD	1	0	0	0	0	2	3	2	33	0
SH 1S		20 W PALMER ST	0	0	0	0	1	2	3	3	33	0

appendix


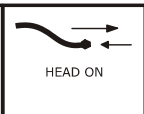


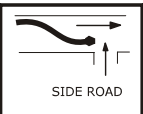


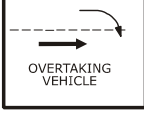
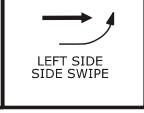







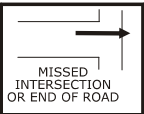
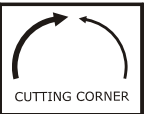
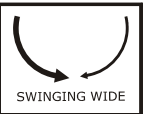
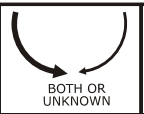
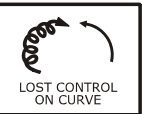





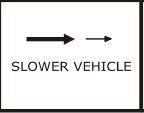

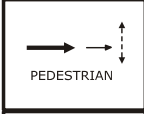
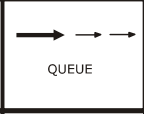
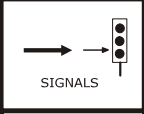
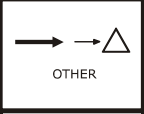

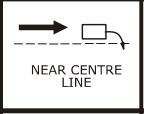

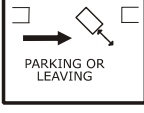
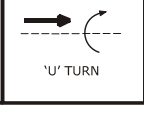
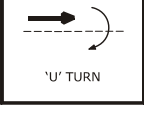

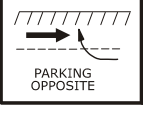


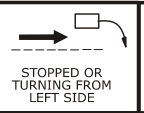
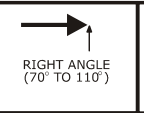
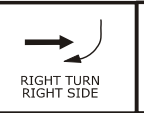
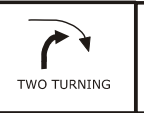
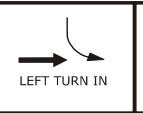
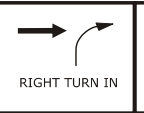
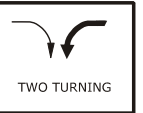
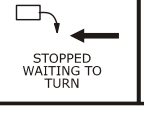
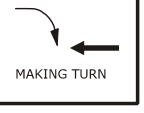
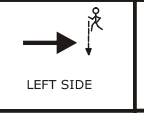
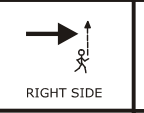
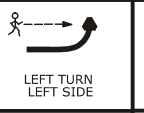
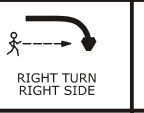





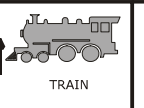
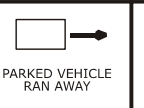

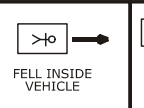
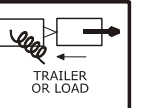


- Groupings of crash types
- Grouping of contributing factors

Explanatory notes for the appendix

1. Each traffic crash report has a diagram and a description of what happened. These are used to classify the movements the vehicles were making when they crashed eg 'collided with parked vehicle', or 'lost control while overtaking'. In this report, crash types are grouped into seven categories. The following page shows the types of crashes which are included in each group.
2. Traffic crash reports also include information on why the crash occurred, or on factors contributing to the crash. In this report the hundreds of contributing factor codes used by New Zealand Transport Agency have been condensed into 16 groups for practical reasons. Lists of the factor groups used in this report, and of all the contributing factors used by New Zealand Transport Agency, are shown on the following pages.
3. Note that in the year 2000 there were some minor changes to the contributing factor groups. The most significant change was that 'inattention' was grouped with 'inadequate check' to form 'poor observation'. This allowed a more accurate assessment of 'fatigue' as a contributing factor, as it now has its own grouping.
4. The factor group 'poor handling' includes factor codes that were only introduced in 1998. This could explain why there may have been a sudden change at this time.
5. The coding of the factors contributing to a crash is subjective. Therefore analysis using contributing factor groups needs to be interpreted with caution. Also, to effectively target safety or enforcement campaigns more analysis of the specific contributing factors involved may be needed.
6. It should be noted that a traffic crash generally has more than one contributing factor. Therefore, adding the number of crashes on graphs showing the number of crashes with a given factor or factor group will be greater than the total number of crashes in the city or district.

Groupings of crash types

Overtaking	AA	AB	AC	AD	AE	AF	AG						
	 PULLING OUT OR CHANGING LANE TO RIGHT	 HEAD ON	 CUTTING IN OR CHANGING LANE TO LEFT	 LOST CONTROL (OVERTAKING VEHICLE)	 SIDE ROAD	 LOST CONTROL (OVERTAKEN VEHICLE)	 WEAVING IN HEAVY TRAFFIC						
Straight - Lost control / Head on	GE	GB	BA	CA	CB	CC	BE						
	 OVERTAKING VEHICLE	 LEFT SIDE SIDE SWIPE	 ON STRAIGHT	 OUT OF CONTROL ON ROADWAY	 OFF ROADWAY TO LEFT	 OFF ROADWAY TO RIGHT	 LOST CONTROL ON STRAIGHT						
Bend - Lost control / Head on	DA	DB	DC	BB	BC	BD	BF						
	 LOST CONTROL TURNING RIGHT	 LOST CONTROL TURNING LEFT	 MISSED INTERSECTION OR END OF ROAD	 CUTTING CORNER	 SWINGING WIDE	 BOTH OR UNKNOWN	 LOST CONTROL ON CURVE						
Rear end / Obstruction	EA	EB	EC	ED	EE	FA	FB						
	 PARKED VEHICLE	 ACCIDENT OR BROKEN DOWN	 NON VEHICULAR OBSTRUCTIONS (INCLUDING ANIMALS)	 WORKMANS VEHICLE	 OPENING DOOR	 SLOWER VEHICLE	 CROSS TRAFFIC						
Crossing / Turning	FC	FD	FE	FF	GA	GD	GF						
	 PEDESTRIAN	 QUEUE	 SIGNALS	 OTHER	 REAR OF LEFT TURNING VEHICLE	 NEAR CENTRE LINE	 TWO TURNING						
Pedestrian vs Vehicle	MA	MB	MC	MD	ME	MF	MG						
	 PARKING OR LEAVING	 'U' TURN	 'U' TURN	 DRIVEWAY MANOEUVRE	 PARKING OPPOSITE	 ENTERING OR LEAVING	 REVERSING ALONG ROAD						
Miscellaneous	GC	HA	JA	JC	KA	KB	KC						
	 STOPPED OR TURNING FROM LEFT SIDE	 RIGHT ANGLE (70° TO 110°)	 RIGHT TURN RIGHT SIDE	 TWO TURNING	 LEFT TURN IN	 RIGHT TURN IN	 TWO TURNING						
Miscellaneous	LA	LB	NA	NB	NC	ND	NE	NF	NG				
	 STOPPED WAITING TO TURN	 MAKING TURN	 LEFT SIDE	 RIGHT SIDE	 LEFT TURN LEFT SIDE	 RIGHT TURN RIGHT SIDE	 LEFT TURN RIGHT SIDE	 RIGHT TURN LEFT SIDE	 MANOEUVRING VEHICLE				
Miscellaneous	PA	PB	PC	PD	PE	PF	QA	QB	QC	QD	QE	QF	QG
	 FELL WHILE BOARDING OR ALIGHTING	 FELL FROM MOVING VEHICLE	 TRAIN	 PARKED VEHICLE RAN AWAY	 EQUESTRIAN	 FELL INSIDE VEHICLE	 TRAILER OR LOAD						

Groupings of contributing factors

Factor group	Factor codes included
Alcohol involved	100 – 101 103 – 109
Too fast	110 – 119 430 – 432
Failed to give way or stop	300 – 314 320 – 328
Failed to keep left	120 – 128 205
Overtaking	150 – 161
Incorrect lanes or position	129 170 – 183 200 – 204 206 – 209 440 – 448
Poor handling	130 – 134 137 – 149 420 – 429
Poor observation	330 – 360 370 – 379
Poor judgement	380 – 387 400 – 407
Fatigue	410 – 415
Disabled, old age or illness	500 – 507
Pedestrian factors	700 – 731
Cyclist factors	Any factor coded against a cyclist
Vehicle factors	136, 600 – 699
Road factors	135, 800 – 899
Weather	900 – 909

Note:

The following factor codes are not included as they do not fit adequately into any of the above groupings: 102, 106, 190–198, 433, 434, 510–534 and 910–999.

FACTORS PROBABLY CONTRIBUTING TO CRASHES

DRIVER CONTROL

- 100 **Alcohol or drugs**
 - 101 Alcohol suspected
 - 102 Alcohol test below limit
 - 103 Alcohol test above limit or test refused
 - 104 Alcohol test result unknown
 - 105 Visibly intoxicated non-driver (pedestrian / cyclist / passenger)
 - 106 Dead driver not suspected, tested negative (MOT only)
 - 107
 - 108 Drugs suspected
 - 109 Drugs proven
- 110 **Too fast for conditions**
 - 111 Cornering
 - 112 On straight
 - 113 To give way at intersection
 - 114 Approaching railway crossing
 - 115 When passing stationary school bus
 - 116 At temporary speed limit
 - 117 At crash or emergency
- 120 **Failed to keep left**
 - 121 Swung wide on bend
 - 122 Swung wide at intersection
 - 123 Cutting corner on bend
 - 124 Cutting corner at intersection
 - 125 On straight section
 - 126 Vehicle crossed raised median
 - 127 Driving or riding abreast (cyclists more than 2 abreast)
 - 128 Wandering or wobbling
 - 129 Too far left / right
- 130 **Lost control**
 - 131 When turning
 - 132 Under heavy braking
 - 133 Under heavy acceleration
 - 134 While returning to seal from unsealed shoulder
 - 135 Due to road conditions (requires road series code)
 - 136 Due to vehicle fault (requires vehicle series code)
 - 137 Avoiding another vehicle, pedestrian, party or obstacle on roadway
 - 138 On unsealed road
 - 139 End of seal
- 140 **Failed to signal in time**
 - 141 When moving to left, pulling over to left
 - 142 When turning left
 - 143 When pulling out or moving to the right
 - 144 When turning right
 - 145 Incorrect Signal
- 150 **Overtaking**
 - 151 Overtaking line of traffic or queue
 - 152 Deliberately in the face of oncoming traffic
 - 153 Failed to notice oncoming traffic
 - 154 Misjudged speed or distance of oncoming traffic
 - 155 At no passing line
 - 156 With insufficient visibility
 - 157 At an intersection without due care
 - 158 On left without due care
 - 159 Cut in after overtaking
 - 160 Vehicle signalling right turn
 - 161 Without care at a pedestrian crossing
- 170 **Wrong lane or turned from wrong position**
 - 171 Turned right from incorrect lane
 - 172 Turned left from incorrect lane
 - 173 Travelled straight ahead from turning lane or flush median
 - 174 Turned right from left side of road
 - 175 Turned left from near centre line
 - 176 Turned into incorrect lane
 - 177 Weaving or cut in on multi-lane roads
 - 178 Moved left to avoid slow vehicle

- 180 **In line of traffic**
 - 181 Following too closely
 - 182 Travelling unreasonably slowly
 - 183 Motorist crowded cyclist

- 190 **Sudden action**
 - 191 Braked
 - 192 Turned left
 - 193 Turned right
 - 194 Swerved to avoid pedestrian
 - 195 Swerved to avoid animal
 - 196 Swerved to avoid crash or broken down vehicle
 - 197 Swerved to avoid vehicle
 - 198 Swerved to avoid object or for unknown reason
- 200 **Forbidden movements**
 - 201 Wrong way in one way street, motorway or roundabout
 - 202 When turning or U turning contrary to a sign
 - 203 Contrary to "in" or "out" only driveway sign
 - 204 Driving or riding on footpath
 - 205 On incorrect side of island or median
 - 206 Contrary to "no entry" sign
 - 207 In Car Park
 - 208 Motor vehicle in cycle lane
 - 209 Bus / Transit lane

VEHICLE CONFLICTS

- 300 **Failed to give way**
 - 301 At Stop sign
 - 302 At Give Way sign
 - 303 When turning to non-turning traffic
 - 304 When deemed turning by markings, not geometry
 - 305 When turning left, to opposing right turning traffic
 - 306 To pedestrian on a crossing
 - 307 When turning at signals to pedestrians
 - 308 When entering roadway from driveway
 - 309 To traffic approaching or crossing from the right
 - 310 Failed to give way at one lane bridge / road
 - 311 Failed to give way to pedestrian on footpath or verge
 - 312 Entering roadway not from driveway or intersection
 - 313 To emergency vehicle
 - 314 Driver waved through
- 320 **Did not stop**
 - 321 At stop sign
 - 322 At steady red light
 - 323 At steady red arrow
 - 324 At steady amber light
 - 325 At steady amber arrow
 - 326 At flashing red lights (Rail Xing, Fire Stn etc)
 - 327 For police or flag-person
 - 328 For school patrol / kea crossing
- 330 **Inattentive: failed to notice**
 - 331 Car slowing, stopping or stopped in front
 - 332 Bend in road
 - 333 Indication of vehicle in front
 - 334 Traffic lights
 - 335 Intersection or its Stop / Give Way control
 - 336 Other regulatory sign / markings
 - 337 Warning sign
 - 338 Direction, information signs / markings
 - 339 Road-works signs
 - 340 Lane use arrows / markings?
 - 341 Obstructions on Roadway
- 350 **Attention diverted by:**
 - 351 Passengers
 - 352 Scenery or persons outside vehicle
 - 353 Other traffic
 - 354 Animal or insect in vehicle
 - 355 Trying to find intersection, house number, destination
 - 356 Advertising or signs
 - 357 Emotionally upset
 - 358 Cigarette, radio, glove box etc, obj under drivers feet/pedals etc
 - 359 Cell phone / navigation device or any communications device
 - 360 Driver dazzled

- 370 **Did not see or look for another party until too late**
 - 371 Behind when reversing / manoeuvring
 - 372 Behind when changing lanes position or direction (includes U-turns)
 - 373 Behind when pulling out from parked position
 - 374 Behind when opening door or leaving vehicle
 - 375 When required to give way to traffic from another direction
 - 376 When required to give way to pedestrians.
 - 377 When visibility obstructed by other vehicles
 - 378 When visibility limited by roadside features
 - 379 When first in queue on receiving green light
- 380 **Misjudged speed, distance, size or position of:**
 - 381 Other vehicle coming from behind or alongside
 - 382 Other vehicle coming from another direction with right of way
 - 383 Pedestrian movement or intention
 - 384 Towed vehicle, or while towing a vehicle
 - 385 Size or position of fixed object or obstacle
 - 386 Of own vehicle
 - 387 Misjudged intentions of another party

GENERAL DRIVER

- 400 **Inexperience**
 - 401 In driving in fast, complex or heavy traffic
 - 402 New driver showed inexperience
 - 403 Driving strange vehicle
 - 404 Overseas driver fails to adjust to local conditions
 - 405 Driver under instruction
 - 406 At towing trailer / other vehicle
 - 407 Driver over-reacted
 - 408 Unsupervised cyclist
- 410 **Fatigue (drowsy, tired, fell asleep)**
 - 411 Long trip
 - 412 Lack of sleep
 - 413 Exhaust fumes
 - 414 Worked long hours before driving
 - 415 Exceeded driving hours
- 420 **Incorrect use of vehicle controls**
 - 421 Started in gear
 - 422 Stalled engine
 - 423 Wrong pedal
 - 424 Footrest, stand
 - 425 Ignition turned off (steering locked)
 - 426 Lights not switched on
 - 427 Foot slipped
 - 428 Parking brake not fully applied
 - 429 Trailer coupling or safety chain not secured
- 430 **Showing off**
 - 431 Racing
 - 432 Playing chicken
 - 433 Wheel spins / wheelies / doughnuts etc
 - 434 Intimidating driving
- 440 **Parked or stopped**
 - 441 Inadequately lit at night: (not lit by street lights or park lights off)
 - 442 At point of limited visibility
 - 443 Not as close as practicable to side of road
 - 444 On incorrect side of road
 - 445 Double parked
 - 446 In 'No Stopping' area
 - 447 Not clear of rail crossing
 - 448 In cycle or Transit lane

GENERAL PERSON

- 500 Illness and disability**
501 Illness with no warning e.g. heart attack, unexpected epilepsy)
502 Physically disabled
503 Defective vision
504 Medical illness (not sudden) flu, diabetes
505 Mental illness (depression, psychosis)
506 Suicidal (but not successful)
507 Impaired ability due to old age
- 510 Intentional or criminal**
511 Deliberate homicide (only if succeeded)
512 Intentional collision
513 Committed suicide (only if succeeded)
514 Evading enforcement
515 Object deliberately thrown at or dropped on vehicle / shot at
516 Object thrown from vehicle
517 Stolen vehicle
- 520 Driver or passenger, boarding, leaving, in vehicle**
521 Boarding moving vehicle
522 Intentionally leaving moving vehicle
523 Riding in insecure position
524 Interfered with driver
525 Opened door inadvertently
526 Overloaded vehicle (with passengers)
527 Child playing in parked vehicle
- 530 Miscellaneous person**
531 Casualty drowned
532 Casualty thrown from vehicle
533 Equestrian not keeping to verge
534 Cyclist or M/cyclist wearing dark clothing

VEHICLES

- 600 Lights and reflectors at fault or dirty**
601 Dazzling headlights
602 Headlights inadequate or no headlights
603 Headlights failed suddenly
604 Brake-lights or indicators faulty or not fitted
605 Tail-lights inadequate or no tail-lights
606 Reflectors inadequate or no reflectors
607 Lights or reflectors obscured
- 610 Brakes**
611 Parking brake failed
612 Parking brake defective
613 Service brake failed
614 Service brake defective
615 Jack-knifed
- 620 Steering**
621 Defective
622 Failed suddenly
- 630 Tyres**
631 Puncture or blowout
632 Worn tread on tyre
633 Incorrect tyre type
634 Mixed treads / space savers
- 640 Windscreen or mirror**
641 Shattered windscreen
642 Windscreen or rear window dirty
643 Rear vision mirror not adjusted correctly
644 No rear vision mirror
645 Windscreen or rear window misted/frosted
646 Inadequate or no sun-visors
647 Inadequate or no windscreen wipers
648 Cycle / Motorcycle visor, glasses, goggles or screen
- 650 Mechanical**
651 Engine failure
652 Transmission failure (including chains and gears)
653 Accelerator or throttle jammed

- 660 Body or chassis**
661 Body, chassis or frame (cycle, m/c) failure
662 Suspension failure
663 Failure of door catch or door not shut
664 Inadequate mudguards
665 Inadequate tow coupling
666 Inadequate or no safety chain
667 Bonnet catch failed
668 Wheel off
669 Broken axle
670 Inconspicuous colour
671 Blind spot
672 Seat belt / restraint failed
673 Air-bag failed to inflate (fully)
- 680 Load**
681 Load interferes with driver
682 Not well secured or load moved
683 Over-hanging
684 Load obscured vision
685 Excess dimensions not adequately indicated
686 Over dimension vehicle or load
687 Load too heavy
688 Towed vehicle or trailer too heavy or incompatible
- 690 Miscellaneous vehicle**
691 Emergency Vehicle attending emergency
692 Vehicle caught fire
693 Being towed
694 Air-bag contributed to crash or injury
695 Seatbelt / restraint absent or unusable
696 Dangerous goods

PEDESTRIANS

- 700 Walking along road**
701 Not keeping to footpath
702 Not keeping to side of road
703 Not facing oncoming traffic
704 Not on outside of blind curve
705 Wheeled ped inconsiderate or dangerous on footpath
- 710 Crossing road**
711 Walking heedless of traffic
712 Stepping out from behind vehicles
713 Running heedless of traffic
714 Failed to use pedestrian crossing when one within 20 metres
715 Waiting on roadway for moving traffic
716 Confused by traffic or stepped back
717 Suddenly stepped onto pedestrian crossing
718 Not complying with traffic signals or school patrols
719 Misjudged speed and / or distance of vehicle
- 720 Miscellaneous**
721 Pushing, working on or unloading vehicle
722 Playing on road or unnecessarily on road
723 Working on road
724 Wearing dark clothing
725 Vision obscured by umbrella or clothing
726 Child escaped from supervision
727 Unsupervised child
728 Sitting / lying on road
729 Pedestrian from school bus
730 Pedestrian behind reversing / manoeuvring vehicle
731 Overseas pedestrian

ROAD

- 800 Slippery**
801 Rain
802 Frost or ice
803 Snow or hail
804 Loose material on seal
805 Mud
806 Oil / Diesel / Fuel
807 Painted markings
808 Recently graded
809 Surface bleeding / defective

- 810 Surface**
811 Potholed
812 Uneven
813 Deep loose metal
814 High crown
815 Curve not well banked
816 Edge badly defined or gave way
817 Under construction or maintenance
818 Unusually narrow
819 Broken glass
- 820 Obstructed**
821 Fallen tree or branch
822 Slip or subsidence
823 Flood waters, large puddles, ford
824 Road works not adequately lighted
825 Road works not adequately signposted
826 Roadside object fell on vehicle
827 Object flicked up by vehicle
- 830 Visibility limited**
831 Curve
832 Crest
833 Building
834 Trees
835 Hedge or fence
836 Scrub or long grass
837 Bank
838 Temporary obstruction, dust or smoke
839 Parked vehicle
- 840 Signs and signals**
841 Damaged, removed or malfunction
842 Badly located
843 Ineffective or inadequate
844 Necessary
845 Signals turned off

- 850 Markings**
851 Faded
852 Difficult to see under weather conditions
853 Markings necessary
854 Not visible due to geometry or vehicles
855 Old markings not adequately removed
- 860 Street lighting**
861 Failed
862 Inadequate
863 Glare on wet road
864 Pedestrian crossing not adequately lighted
- 870 Raised islands and roundabouts**
871 Traffic island(s) difficult to see
872 Traffic island(s) Ineffective, badly located or designed
873 Cyclist squeeze point

MISCELLANEOUS

- 900 Weather**
901 Heavy rain
902 Dazzling sun
903 Strong wind
904 Fog or mist
905 Snow, sleet or hail
- 910 Animals**
911 Household pet rushed out or playing
912 Farm animal straying
913 Farm animal attended, but inadequate warning or unexpected
914 Farm animal attended, but out of control
915 Wild animal
- 920 Entering or leaving land use**
921 Roadside stall
922 Service station
923 Specialised liquor outlet
924 Take away foods
925 Shopping complex
926 Car parking building / area
927 Other commercial
928 Industrial site
929 Private house / farm
930 Other non-commercial
931 Mobile shop or vendor
- 999 Unknown**