

# *Hamilton City*

## *Road Safety Report*

### *2005 to 2009*



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## Contents

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

## 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 A
Fig. 1.5–1.8	Crashes per 100 million vehicle kilometres travelled on: Urban council roads Group A Rural council roads Group A Urban state highways Group A Rural state highways Group A
Fig. 1.9	Crashes per 10,000 people (2000 to 2009)
Fig. 1.10	Casualties per 10,000 people (2000 to 2009)
Fig. 1.11	Social cost of crashes in Hamilton City in 2009

### Crash counts

page 17

Fig. 2.1	Crash numbers and severity (2005 to 2009) – whole city/district
Fig. 2.2, 2.3	Crash numbers and severity (2005 to 2009) – urban/rural
Fig. 2.4	Casualty numbers and severity (2005 to 2009) – whole city/district
Fig. 2.5, 2.6	Casualty numbers and severity (2005 to 2009) – urban/rural
Fig. 2.7	Number of injury crashes (2000 to 2009) – all roads
Fig. 2.8	Number of casualties (2000 to 2009) – all roads
Fig. 2.9	Number of injury crashes (2000 to 2009) – urban
Fig. 2.10	Number of casualties (2000 to 2009) – urban
Fig. 2.11	Number of injury crashes (2000 to 2009) – rural
Fig. 2.12	Number of casualties (2000 to 2009) – rural
Fig. 2.13, 2.14	Severity ratio (2000 to 2009) – urban/rural

### Road user statistics

page 25

Fig. 3.1, 3.2	Road user casualties (2005 to 2009) – urban/rural
Fig. 3.3, 3.4	Male/female casualties (2000 to 2009)
Fig. 3.5	Male casualties by age (2005 to 2009)
Fig. 3.6	Female casualties by age (2005 to 2009)
Fig. 3.7, 3.8	Car/van driver casualties (2000 to 2009)
Fig. 3.9, 3.10	Car/van passenger casualties (2000 to 2009)
Fig. 3.11, 3.12	Heavy vehicle casualties (2000 to 2009)
Fig. 3.13, 3.14	Motorcyclist casualties (2000 to 2009)
Fig. 3.15, 3.16	Pedestrian casualties (2000 to 2009)
Fig. 3.17, 3.18	Cyclist casualties (2000 to 2009)

## List of figures continued

### Road user statistics

page 25

Fig. 3.19	Car/van driver casualty age (2005 to 2009)
Fig. 3.20	Car/van passenger casualty age (2005 to 2009)
Fig. 3.21	Heavy vehicle casualty age (2005 to 2009)
Fig. 3.22	Motorcyclist casualty age (2005 to 2009)
Fig. 3.23	Pedestrian casualty age (2005 to 2009)
Fig. 3.24	Cyclist casualty age (2005 to 2009)
Fig. 3.25, 3.26	Casualty ethnicity (2005 to 2009)
Fig. 3.27, 3.28	Licence status (2000 to 2009)

### Crash type statistics

page 41

Fig. 4.1, 4.2	Crash movement type (2005 to 2009)
Fig. 4.3, 4.4	Crash movement type – trends (2000 to 2009)
Fig. 4.5	Failed to give way/stop – urban (2000 to 2009)
Fig. 4.6	Bend – lost control/head on – rural (2000 to 2009)

### Crash factor statistics

page 47

Fig. 5.1, 5.2	Contributing factors (2005 to 2009)
Fig. 5.3–5.6	Contributing factor trends – urban (2000 to 2009)
Fig. 5.7	Alcohol-involved trend – urban (2000 to 2009)
Fig. 5.8	Speed-involved trend – urban (2000 to 2009)
Fig. 5.9–5.12	Contributing factor trends – rural (2000 to 2009)
Fig. 5.13	Alcohol-involved trend – rural (2000 to 2009)
Fig. 5.14	Speed-involved trend – rural (2000 to 2009)

### Environmental statistics

page 57

Fig. 6.1, 6.2	Crashes not on state highways (2000 to 2009)
Fig. 6.3, 6.4	Intersection crashes (2000 to 2009)
Fig. 6.5, 6.6	Wet road crashes (2000 to 2009)
Fig. 6.7, 6.8	Crashes in darkness (2000 to 2009)
Fig. 6.9	Unsealed road crashes – rural (2000 to 2009)
Fig. 6.10	Icy road crashes – rural (2000 to 2009)
Fig. 6.11, 6.12	Collisions with objects (2000 to 2009)
Fig. 6.13, 6.14	Objects struck (2005 to 2009)

### Date and time statistics

page 67

Fig. 7.1	Time pattern over average week (2005 to 2009)
Fig. 7.2	Day of week (2005 to 2009)
Fig. 7.3	Month of year (2005 to 2009)

## List of figures continued

### Council road statistics

page 71

Fig. 8.1	Number of injury crashes (2000 to 2009) – all council roads
Fig. 8.2	Number of casualties (2000 to 2009) – all council roads
Fig. 8.3	Number of injury crashes (2000 to 2009) – urban council roads
Fig. 8.4	Number of casualties (2000 to 2009) – urban council roads
Fig. 8.5	Number of injury crashes (2000 to 2009) – rural council roads
Fig. 8.6	Number of casualties (2000 to 2009) – rural council roads
Fig. 8.7, 8.8	Crash movement type – council roads (2005 to 2009)
Fig. 8.9, 8.10	Crash movement type – trends – council roads (2000 to 2009)
Fig. 8.11	Failed to give way/stop – urban council roads (2000 to 2009)
Fig. 8.12	Bend – lost control/head on – rural council roads (2000 to 2009)
Fig. 8.13, 8.14	Contributing factors – council roads (2005 to 2009)
Fig. 8.15, 8.16	Intersection crashes – council roads (2000 to 2009)
Fig. 8.17, 8.18	Wet road crashes – council roads (2000 to 2009)
Fig. 8.19, 8.20	Crashes in darkness – council roads (2000 to 2009)
Fig. 8.21	Unsealed road crashes – rural council roads (2000 to 2009)
Fig. 8.22	Icy road crashes – rural council roads (2000 to 2009)
Fig. 8.23, 8.24	Collisions with objects – council roads (2000 to 2009)
Fig. 8.25, 8.26	Objects struck – council roads (2005 to 2009)

### Crash location statistics

page 89

Fig. 9.1	Urban crash blackspot list for the City (2005 to 2009)
Fig. 9.2	Rural crash blackspot list for the City (2005 to 2009)
Fig. 9.3	State Highway crash blackspot list for the City (2005 to 2009)
Fig. 9.4	Urban crash blackspots with a significant increase in crashes in 2009
Fig. 9.4a	Rural crash blackspots with a significant increase in crashes in 2009
Fig. 9.5	State highway crash blackspots with a significant increase in crashes in 2009

## Introduction and general information

The NZ 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 NZ Transport Agency.

This report helps identify road safety issues in Hamilton 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 Hamilton 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 NZ 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 NZ Transport Agency. Mostly five-year data (2005 to 2009) has been used, but 10-year data (2000 to 2009) 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 A) along with data for all New Zealand.

The peer group used for comparison with Hamilton City is Group A which consists of major urban areas with some rural areas on the outskirts. (Population over 100000 and/or rural crashes less than 30 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	<a href="http://www.transport.govt.nz/research/SpeedSurveys/">http://www.transport.govt.nz/research/SpeedSurveys/</a>
Safety belts	<a href="http://www.transport.govt.nz/research/safetybeltstatistics/">http://www.transport.govt.nz/research/safetybeltstatistics/</a>
Cycle helmets	<a href="http://www.transport.govt.nz/research/cyclehelmets2009/">http://www.transport.govt.nz/research/cyclehelmets2009/</a>

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 2009 populations estimates updated from the 2006 census, traffic flows from the year 2009, and the average of five year crash data (2005–2009).
3. Traffic flows are based on Road Asset Maintenance and Management (RAMM) data from December 2009. 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 2005 to 2009 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 2009 compared with the previous five years (2004 to 2008). 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	2005	2006	2007	2008	2009
Northland	30%	28%	34%	38%	27%
Auckland	17%	20%	16%	18%	18%
Waikato	40%	38%	50%	47%	40%
Bay of Plenty	32%	37%	38%	29%	27%
Gisborne	32%	26%	31%	28%	27%
Hawkes Bay	80%	75%	59%	68%	42%
Taranaki	55%	65%	79%	41%	36%
Manawatu-Wanganui	38%	34%	35%	36%	31%
Wellington	68%	61%	74%	55%	48%
Nelson-Marlborough	44%	52%	54%	50%	39%
West Coast	53%	55%	59%	53%	54%
Canterbury	47%	42%	49%	45%	43%
Otago	99%	85%	77%	69%	39%
Southland	78%	103%	73%	53%	39%
<b>New Zealand</b>	<b>36%</b>	<b>35%</b>	<b>37%</b>	<b>35%</b>	<b>33%</b>

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 1.4 Peer group crash and casualty rates

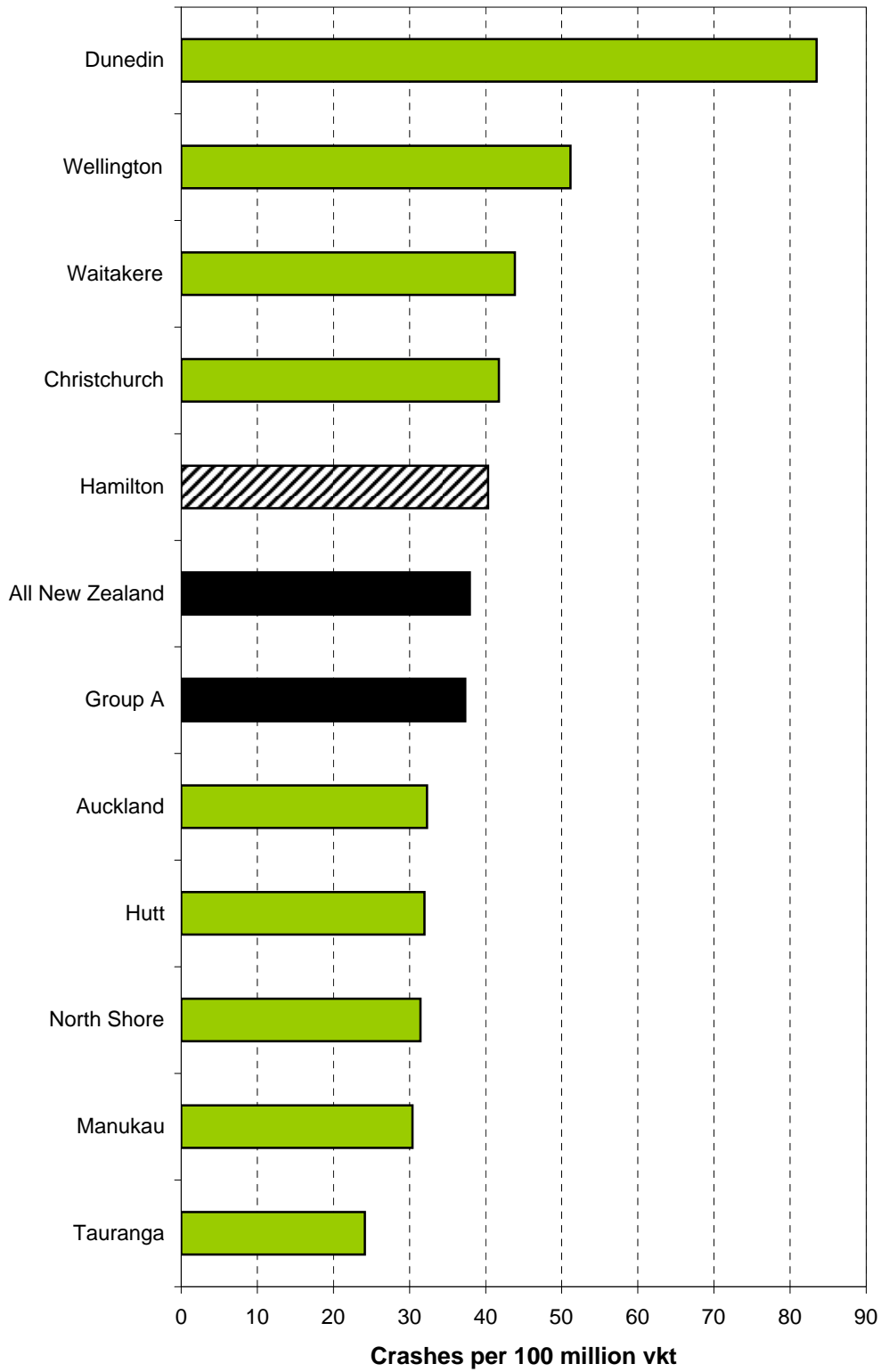
**Group A**

City or District	Crashes per					Casualties per					2009 Population	% of rural crashes
	10,000 Population (5 year average)	100 million vehicle kilometres travelled				10,000 Population (5 year average)	100 million vehicle kilometres travelled					
		Council roads		State Highways			Council roads		State Highways			
		Urban	Rural	Urban	Rural		Urban	Rural	Urban	Rural		
Auckland	26	32	74	54	15	33	40	111	71	19	444100	21
Christchurch	25	42	23	27	19	32	52	31	35	25	372600	9
Dunedin	40	83	67	63	19	57	118	95	91	32	123700	24
Hamilton	23	40	46	20	37	29	50	56	25	55	140700	10
Hutt	21	32	299	128	15	26	39	406	147	19	102100	23
Manukau	18	30	33	57	13	24	40	46	82	19	368600	22
North Shore	19	31	32	54	14	24	39	46	66	19	225800	20
Tauranga	15	24	*	11	15	19	29	*	14	24	112600	14
Waitakere	20	44	15	20	18	26	57	22	25	23	204500	16
Wellington	23	51	29	50	13	28	59	29	66	18	195500	15
<b>Group A</b>	<b>23</b>	<b>37</b>	<b>33</b>	<b>31</b>	<b>15</b>	<b>30</b>	<b>47</b>	<b>46</b>	<b>40</b>	<b>21</b>	<b>2290200</b>	<b>17</b>
<b>All New Zealand</b>	<b>131</b>	<b>38</b>	<b>29</b>	<b>28</b>	<b>18</b>	<b>36</b>	<b>48</b>	<b>42</b>	<b>38</b>	<b>26</b>	<b>4331000</b>	<b>41</b>

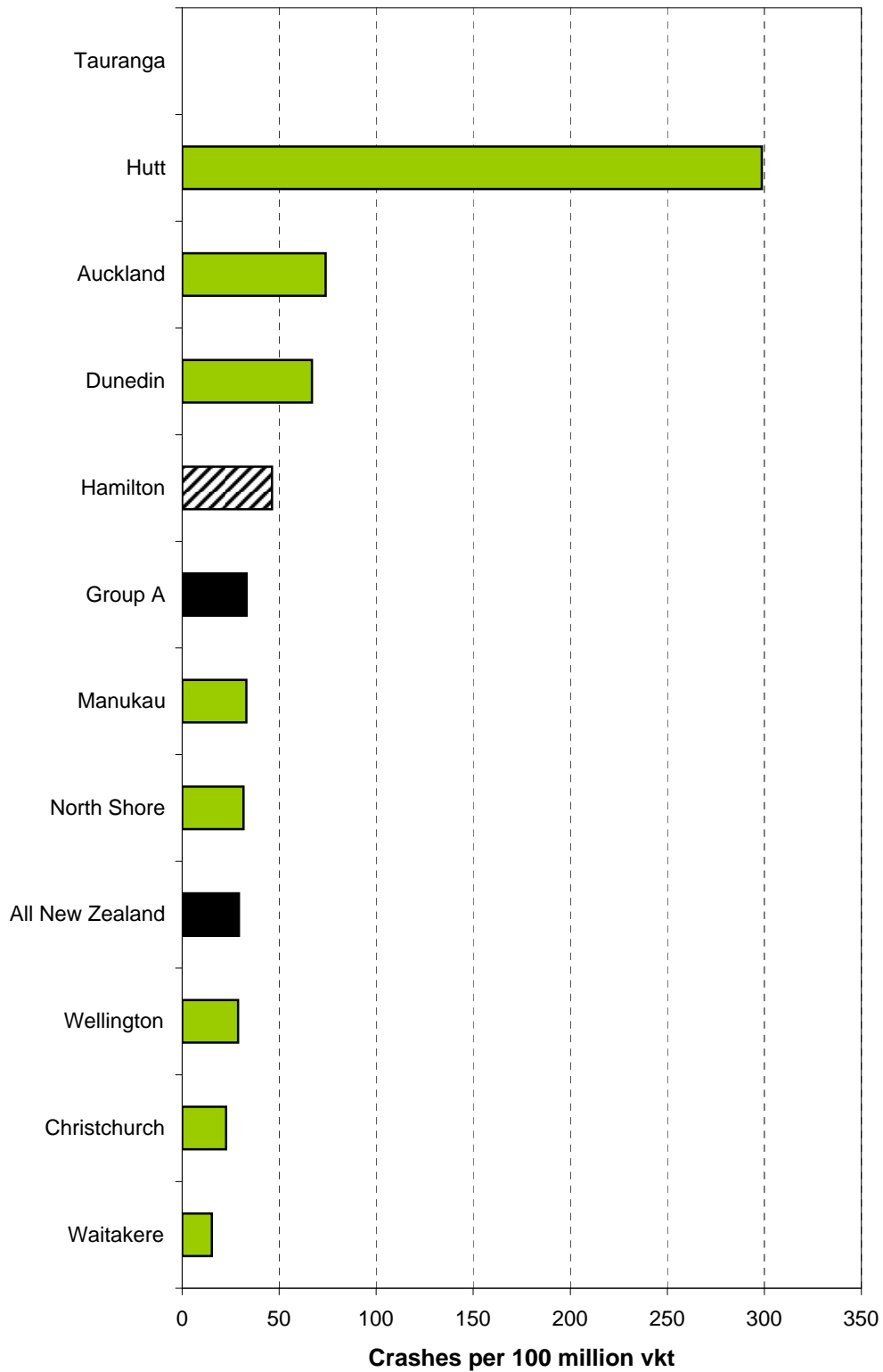
\* due to small numbers of rural crashes values are not considered meaningful

Group A : Major urban areas with some rural areas on the outskirts. (Population > 97500 and/or rural crashes less than 30 percent).  
 Crashes and casualties per 100 million VKT are based on five years of reported injury on-road crash data (2005-2009) and December 2009 VKT estimates.  
 Crashes and casualties per 10,000 population are based on five year average crash data (2005-2009) and Statistics NZ 2009 population estimates.

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

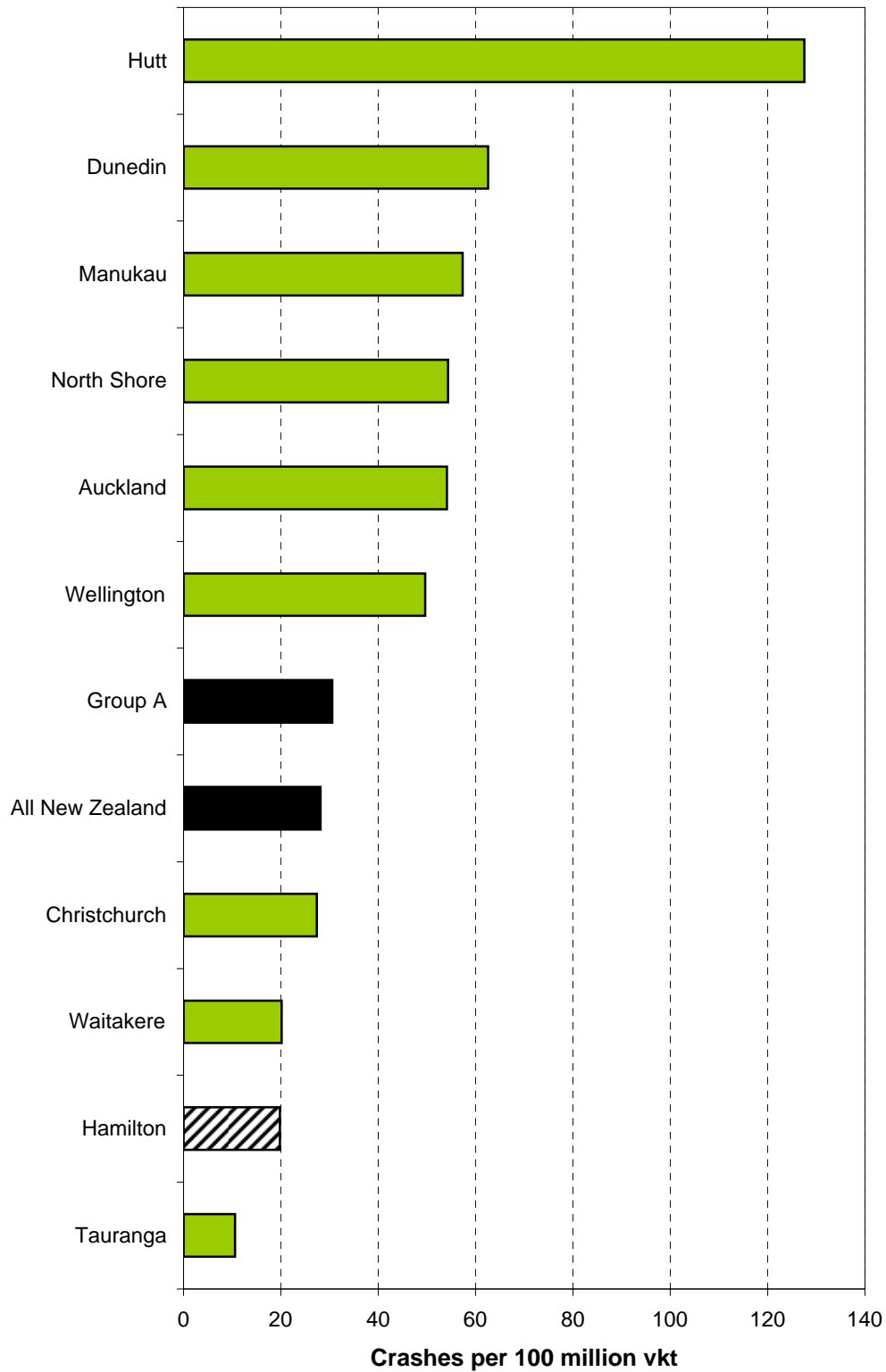


**Figure 1.6 Crashes per 100 million vehicle-kilometres travelled - rural council roads**

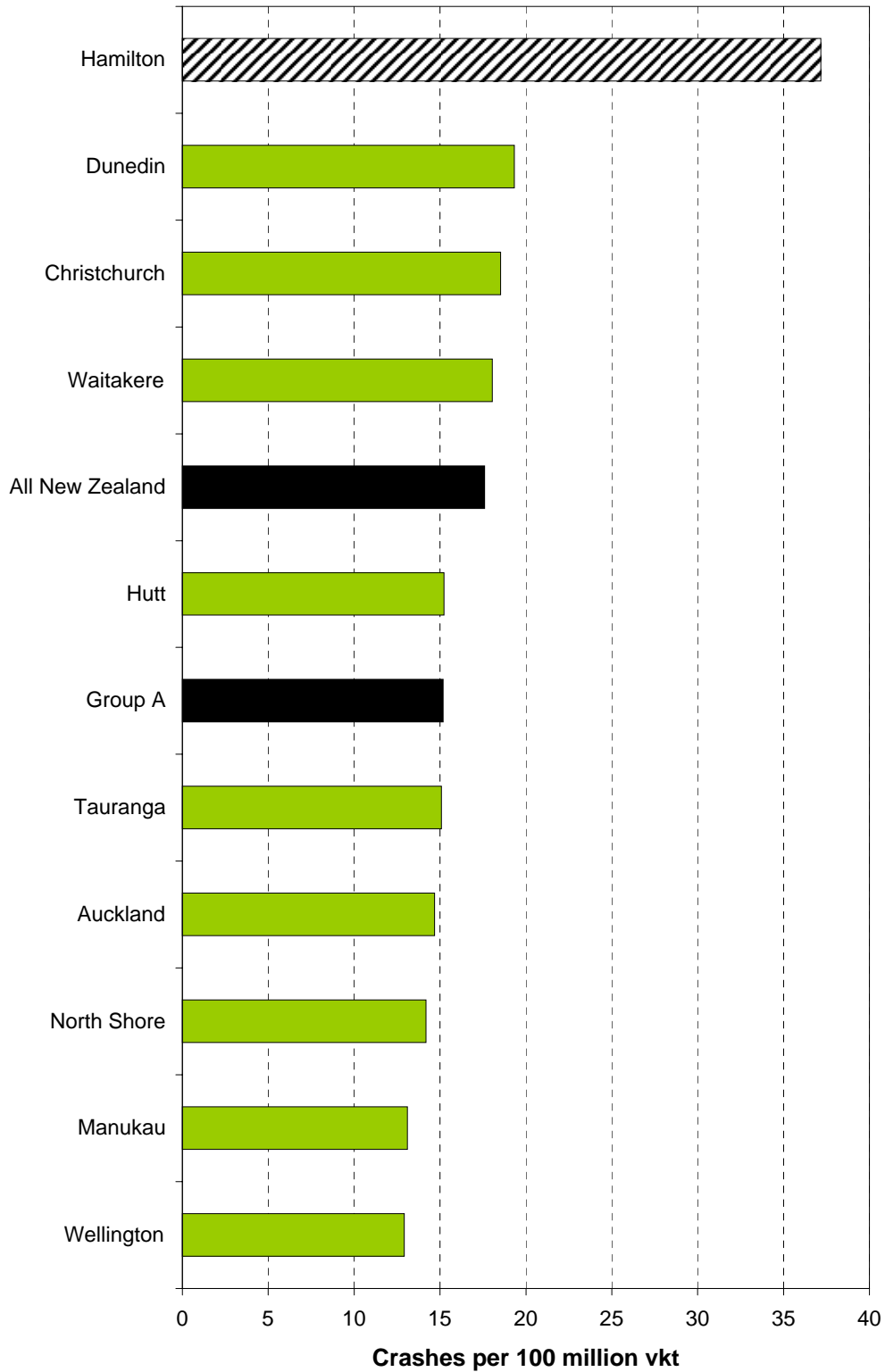




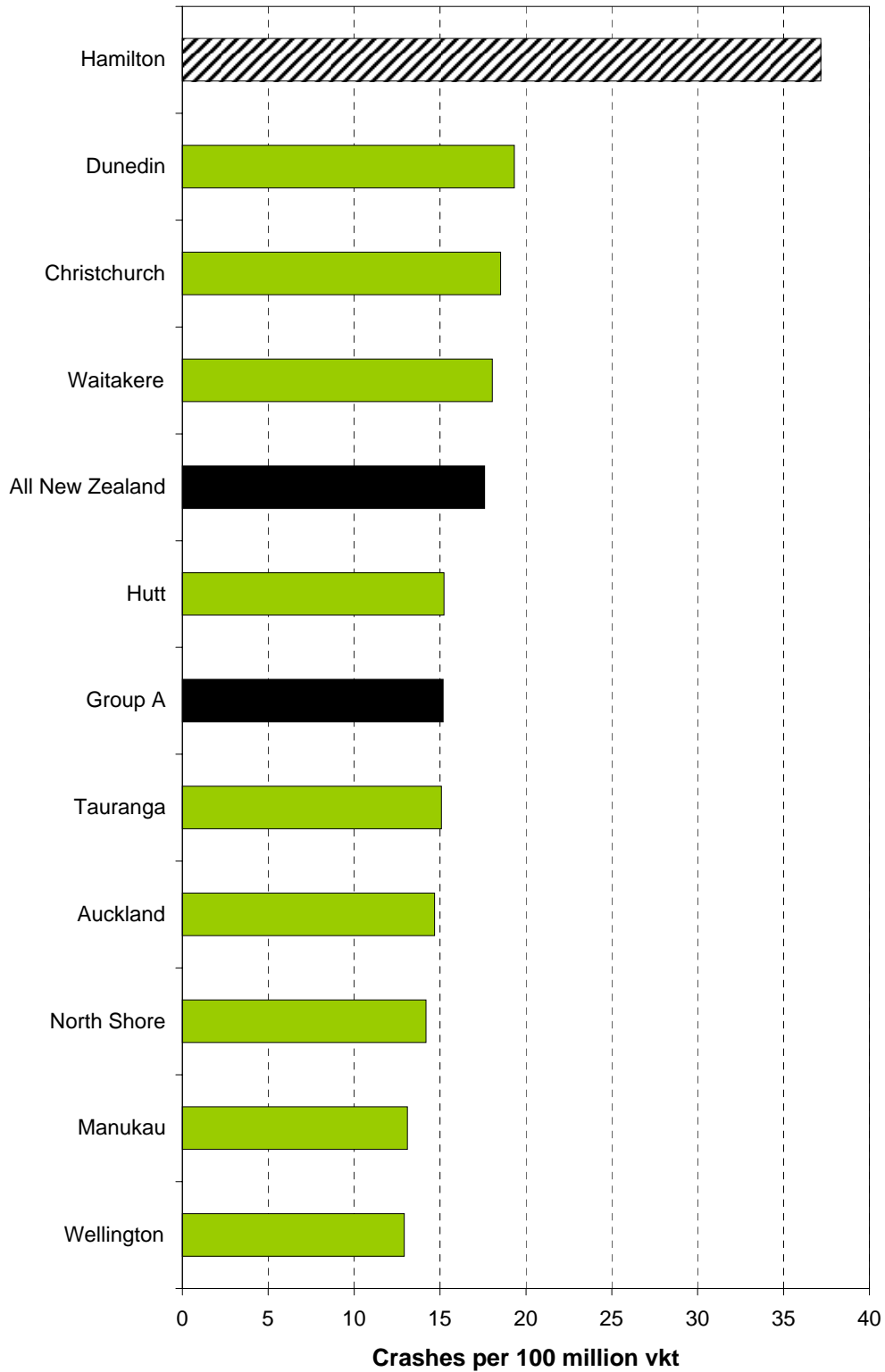
**Figure 1.7 Crashes per 100 million vehicle kilometres travelled  
- urban state highways**



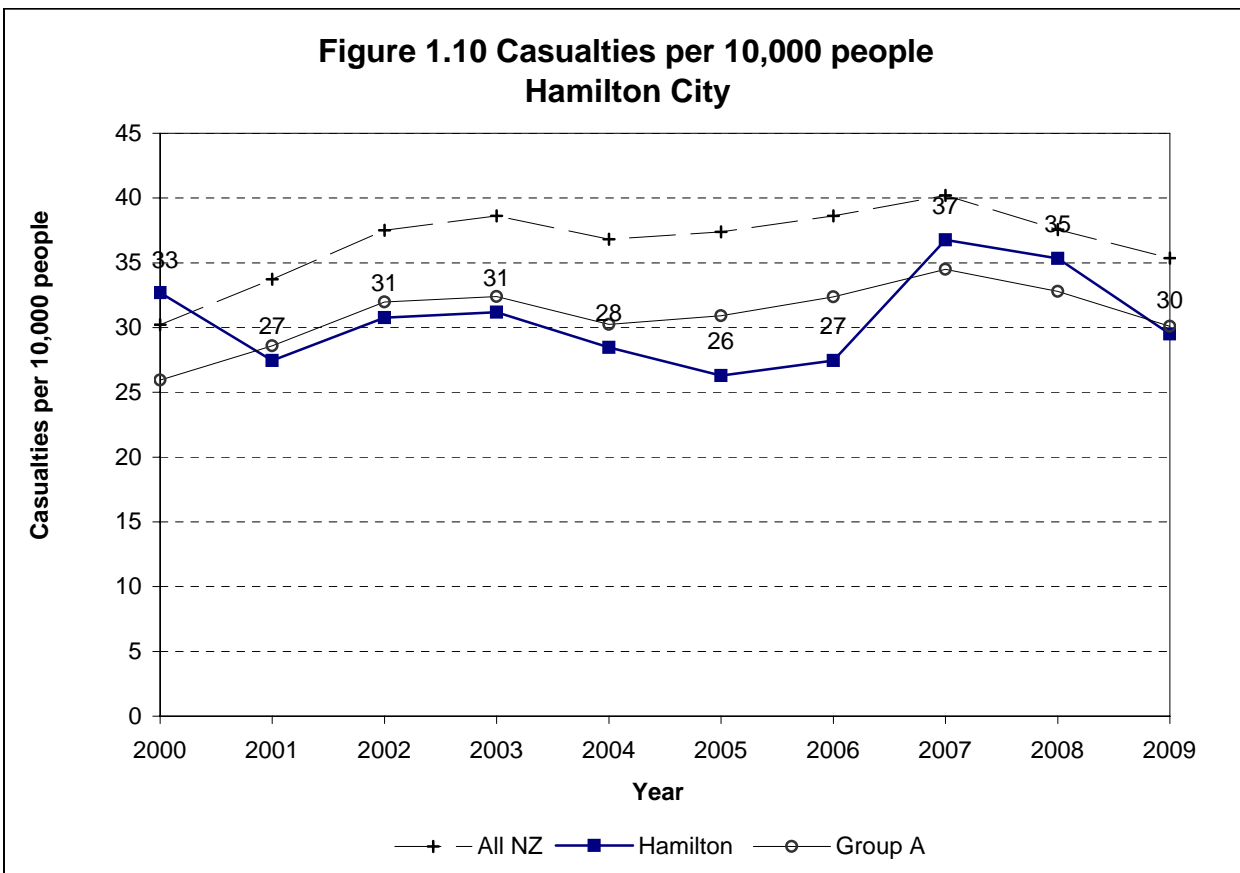
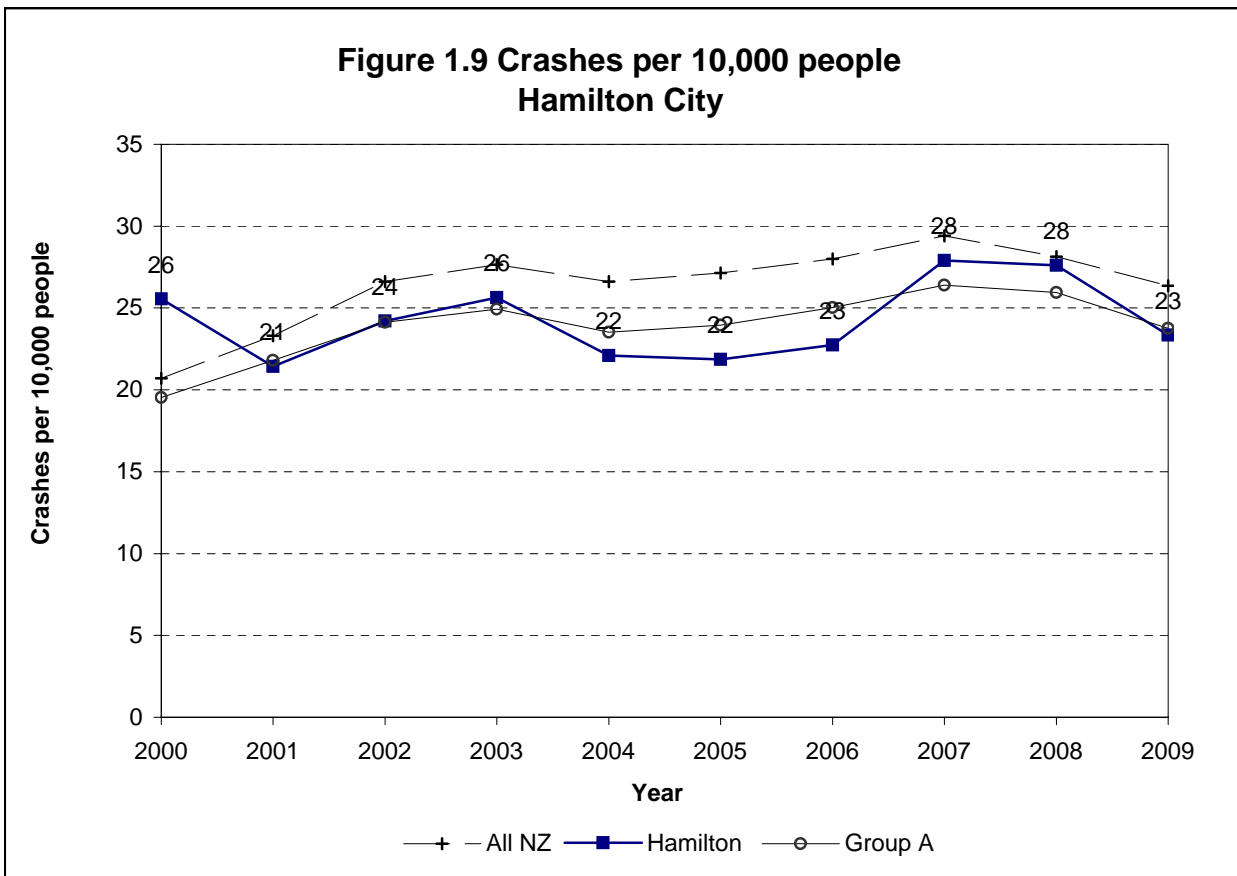
**Figure 1.8 Crashes per 100 million vehicle-kilometres travelled - rural state highways**



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







**Figure 1.11 Social cost of crashes in Hamilton City in 2009**

		Hamilton City	New Zealand
Council roads	urban	\$64.91	\$1,607.40
	rural	\$6.25	\$909.43
State Highways	urban	\$10.02	\$299.76
	rural	\$7.52	\$1,487.35
<b>Total</b>		<b>\$88.69</b>	<b>\$4,303.94</b>

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 \$3.5 million (in June 2009 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 2009 update', available at the Ministry of Transport's website:

<http://www.transport.govt.nz/assets/NewPDFs/NewFolder/Social-Cost-June-2009-update-final.pdf>

The average social cost per reported crash (in June 2009 dollars) are estimated at:

Rural fatal crash	\$4,260,000
Rural serious crash	\$820,000
Rural minor crash	\$91,000
Urban fatal crash	\$3,775,000
Urban serious crash	\$699,000
Urban minor crash	\$82,000

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 2005 to 2009 - whole City**

	2005	2006	2007	2008	2009	Total	%	Group A
Fatal crashes	10	6	6	1	2	25	2%	1%
Serious crashes	36	35	45	57	52	225	14%	15%
Minor crashes	231	254	317	313	265	1380	85%	84%
<b>Total injury crashes</b>	<b>277</b>	<b>295</b>	<b>368</b>	<b>371</b>	<b>319</b>	<b>1630</b>	<b>100%</b>	<b>100%</b>
Non-injury crashes	1214	1213	1117	890	893	5327		

**Figure 2.2: Crash numbers and severity 2005 to 2009 - urban roads**

	2005	2006	2007	2008	2009	Total	%	Group A
Fatal crashes	9	4	6	1	2	22	2%	1%
Serious crashes	32	29	38	50	42	191	13%	15%
Minor crashes	212	233	281	286	237	1249	85%	84%
<b>Total injury crashes</b>	<b>253</b>	<b>266</b>	<b>325</b>	<b>337</b>	<b>281</b>	<b>1462</b>	<b>100%</b>	<b>100%</b>
Non-injury crashes	1147	1132	1013	816	815	4923		

**Figure 2.3: Crash numbers and severity 2005 to 2009 - rural roads**

	2005	2006	2007	2008	2009	Total	%	Group A
Fatal crashes	1	2	0	0	0	3	2%	2%
Serious crashes	4	6	7	7	10	34	20%	14%
Minor crashes	19	21	36	27	28	131	78%	84%
<b>Total injury crashes</b>	<b>24</b>	<b>29</b>	<b>43</b>	<b>34</b>	<b>38</b>	<b>168</b>	<b>100%</b>	<b>100%</b>
Non-injury crashes	67	81	104	74	78	404		

**Figure 2.4: Casualty numbers and severity 2005 to 2009 - whole City**

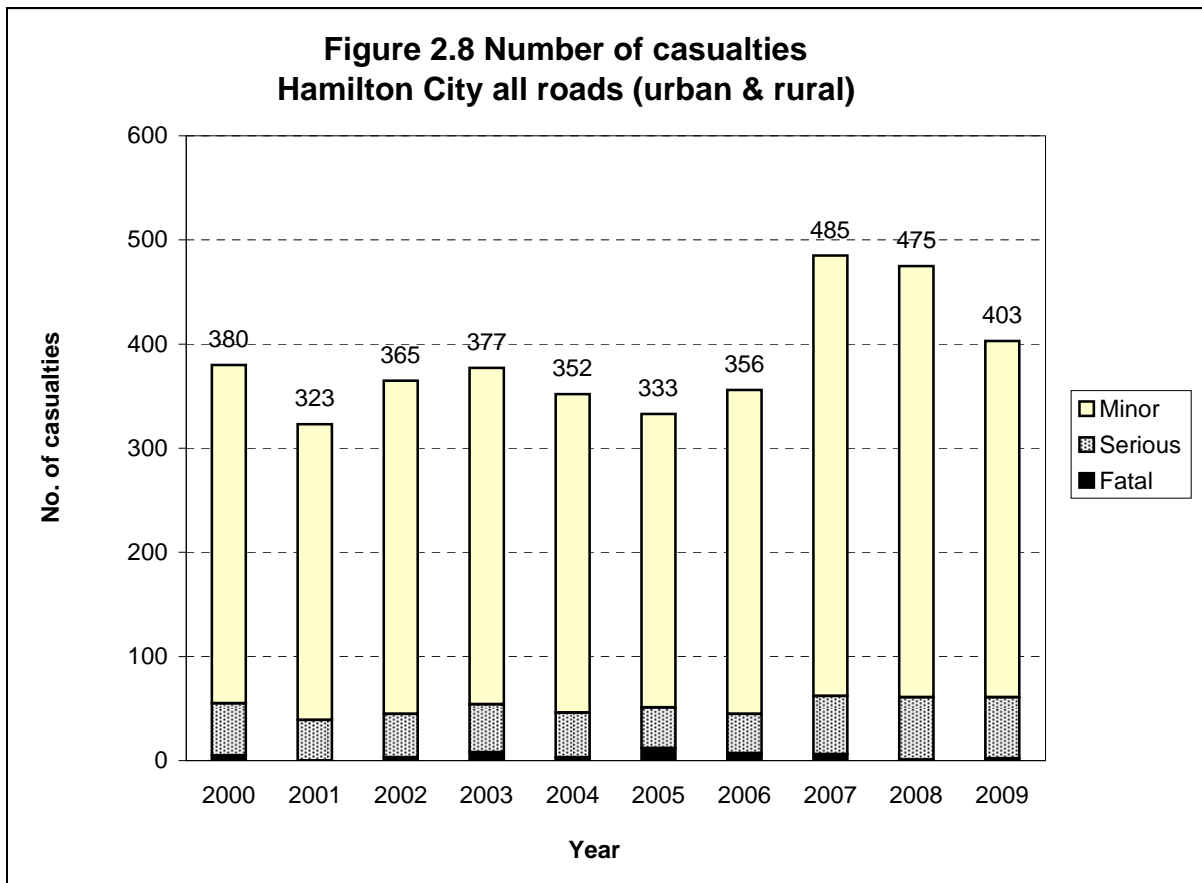
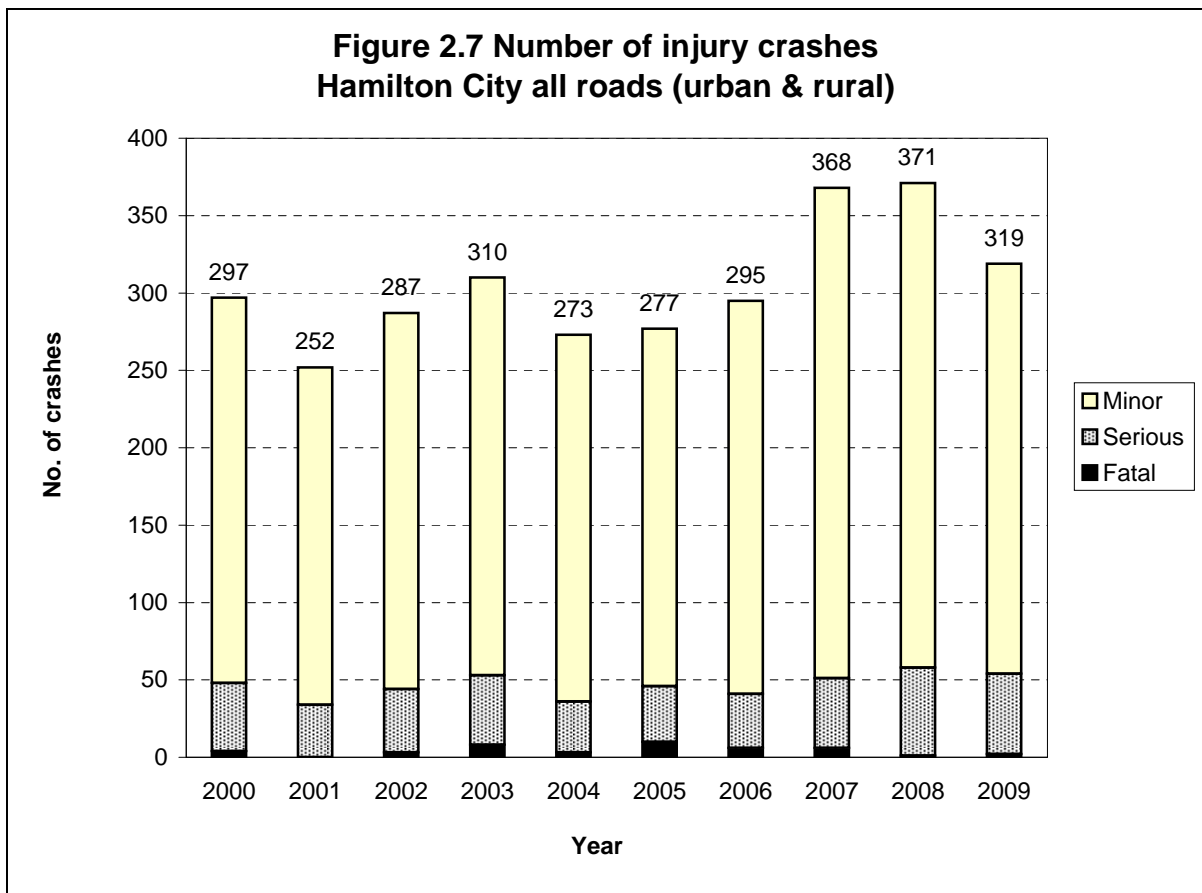
	2005	2006	2007	2008	2009	Total	%	Group A
Fatal casualties	12	7	6	1	2	28	1%	1%
Serious casualties	39	38	56	60	59	252	12%	13%
Minor casualties	282	311	423	414	342	1772	86%	86%
<b>Total casualties</b>	<b>333</b>	<b>356</b>	<b>485</b>	<b>475</b>	<b>403</b>	<b>2052</b>	<b>100%</b>	<b>100%</b>

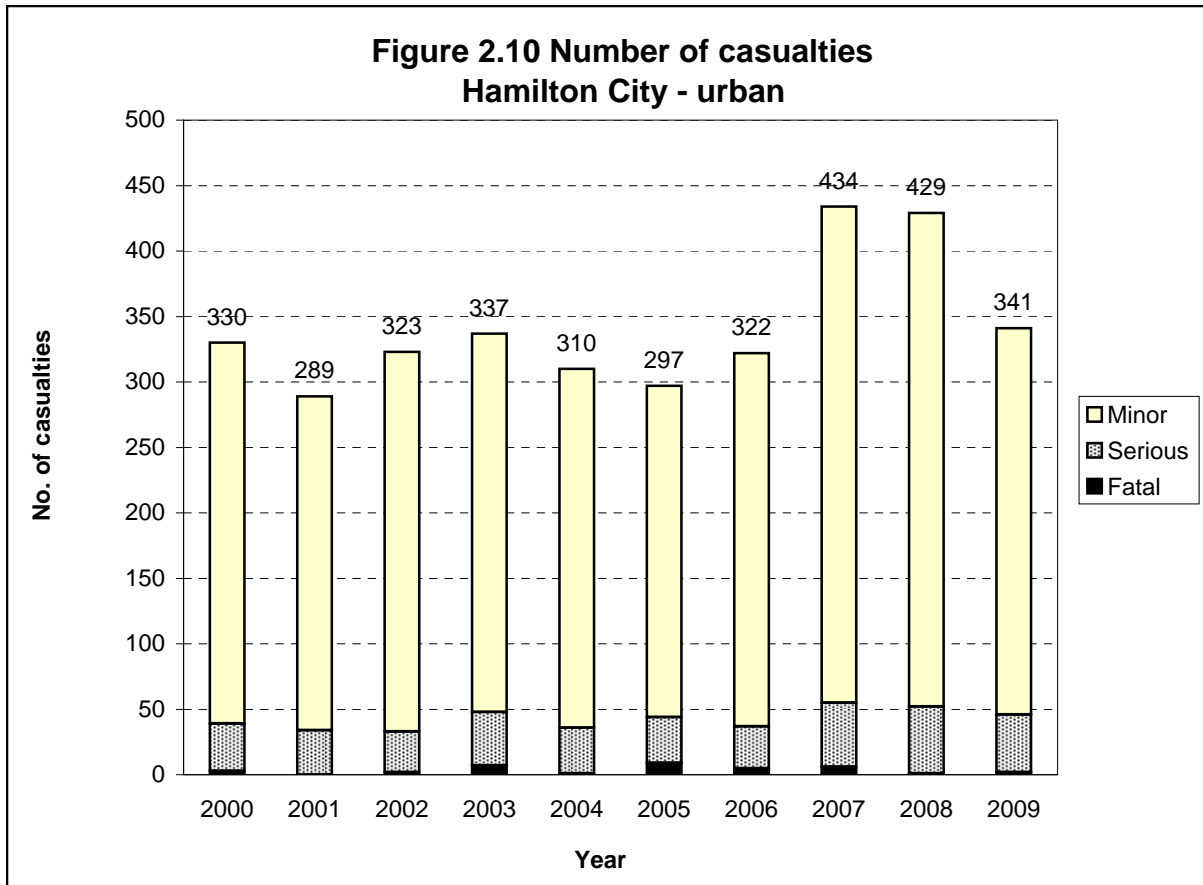
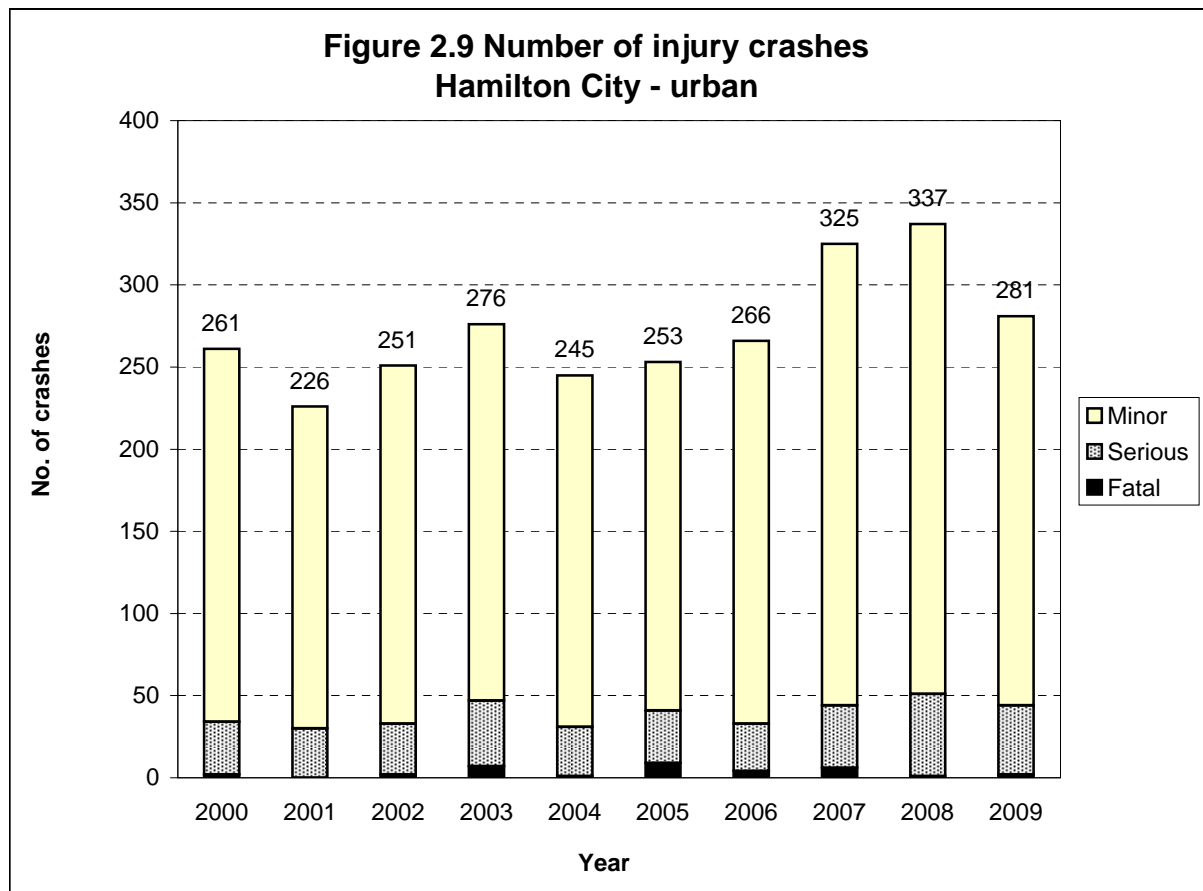
**Figure 2.5: Casualty numbers and severity 2005 to 2009 - urban roads**

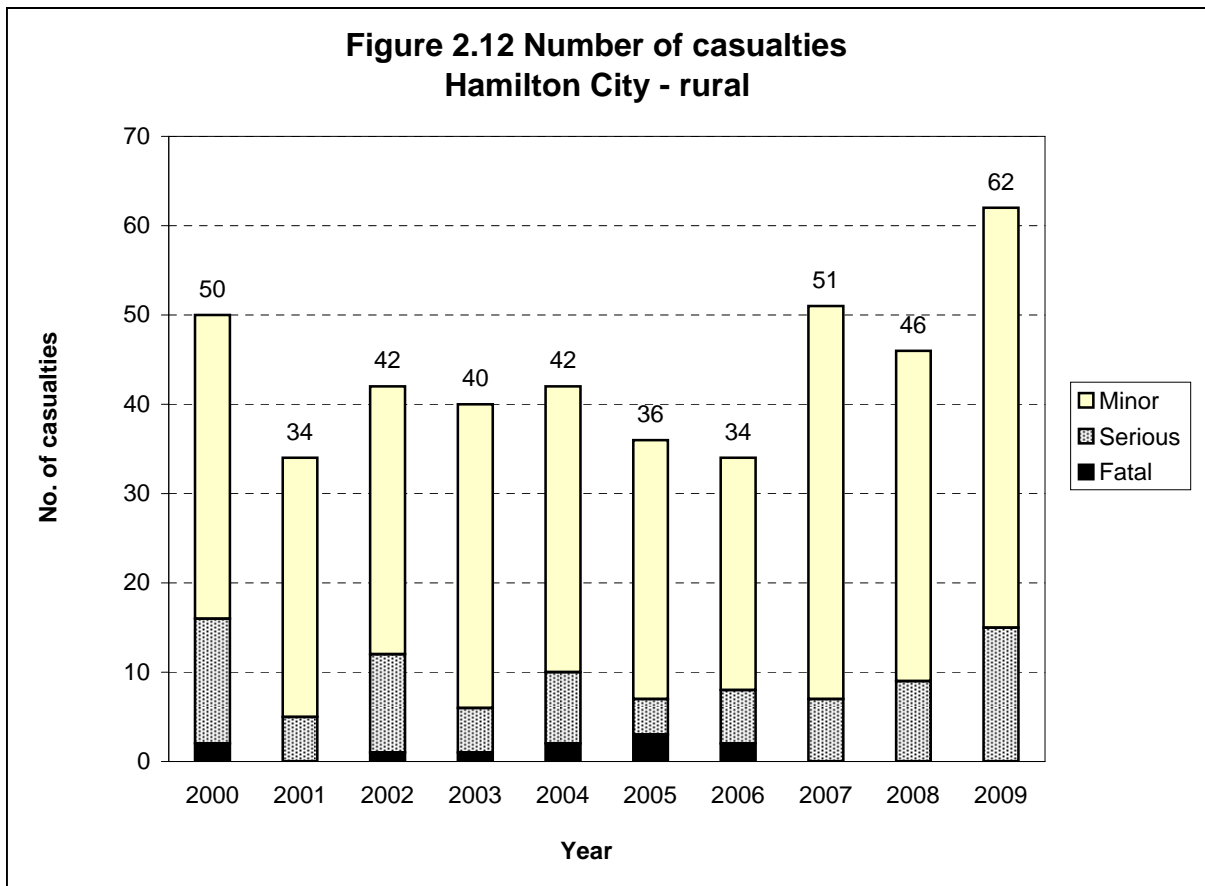
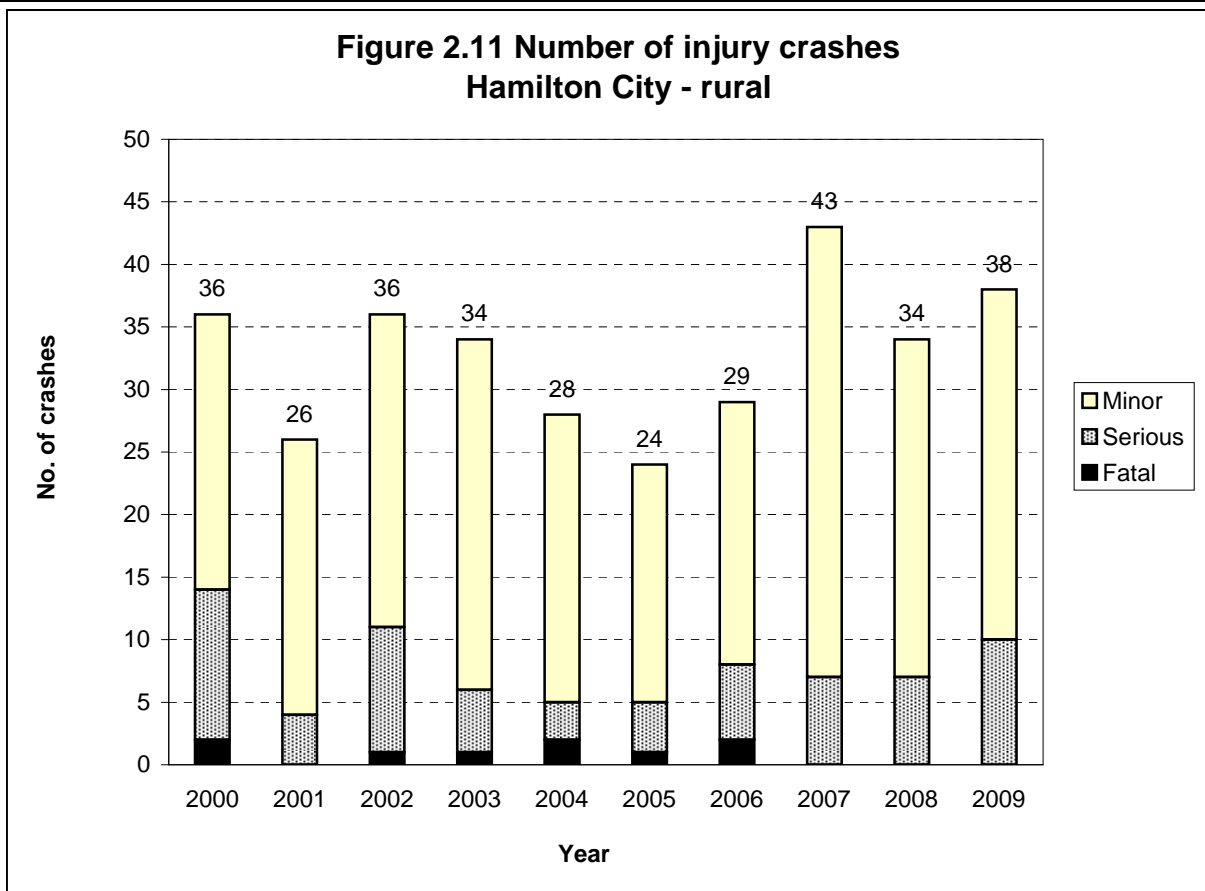
	2005	2006	2007	2008	2009	Total	%	Group A
Fatal casualties	9	5	6	1	2	23	1%	1%
Serious casualties	35	32	49	51	44	211	12%	13%
Minor casualties	253	285	379	377	295	1589	87%	86%
<b>Total casualties</b>	<b>297</b>	<b>322</b>	<b>434</b>	<b>429</b>	<b>341</b>	<b>1823</b>	<b>100%</b>	<b>100%</b>

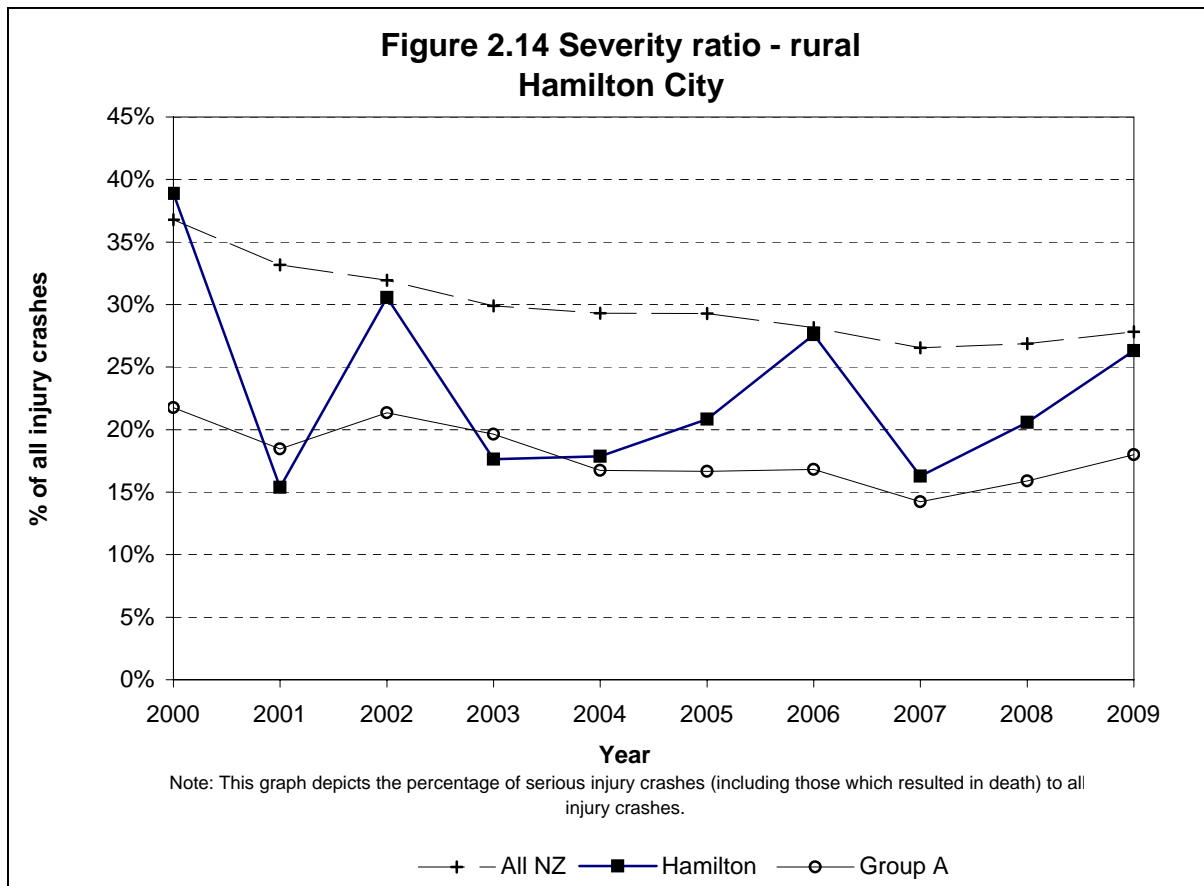
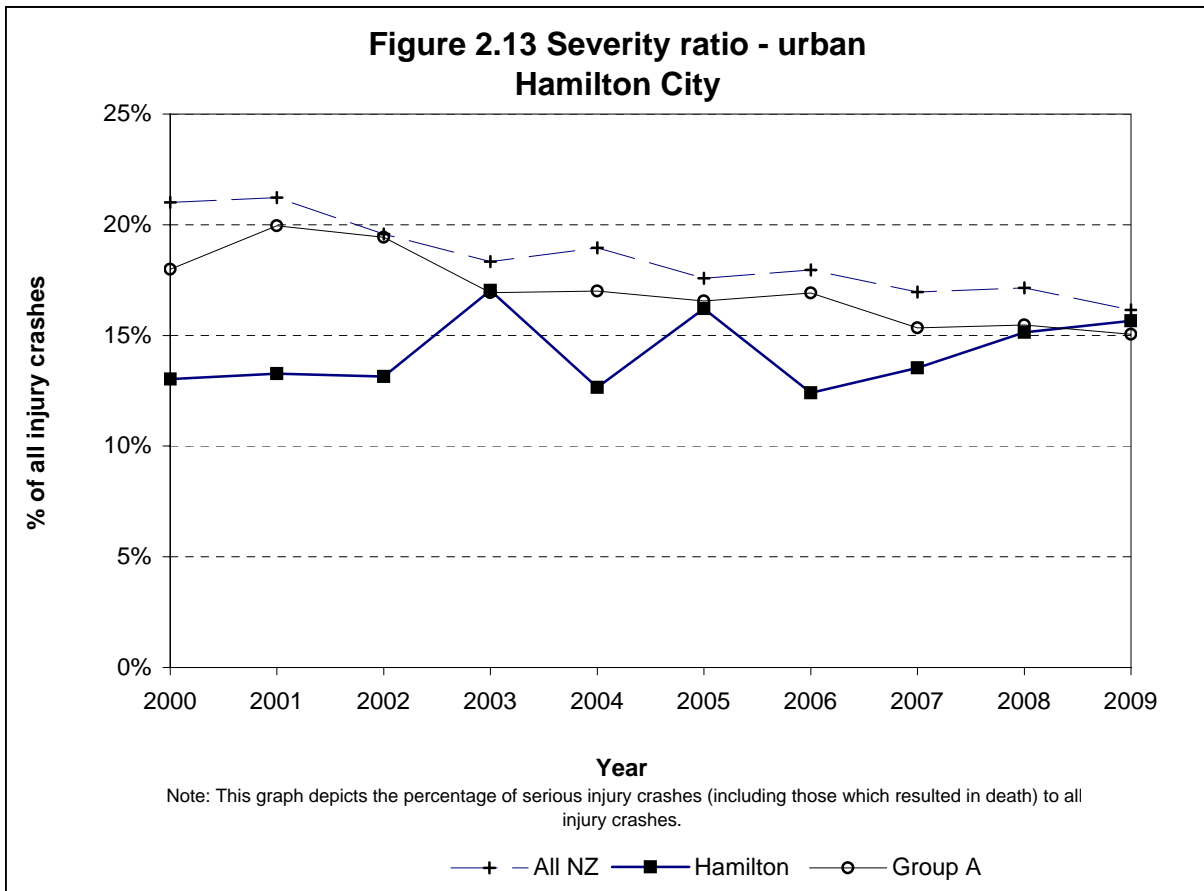
**Figure 2.6: Casualty numbers and severity 2005 to 2009 - rural roads**

	2005	2006	2007	2008	2009	Total	%	Group A
Fatal casualties	3	2	0	0	0	5	2%	2%
Serious casualties	4	6	7	9	15	41	18%	13%
Minor casualties	29	26	44	37	47	183	80%	85%
<b>Total casualties</b>	<b>36</b>	<b>34</b>	<b>51</b>	<b>46</b>	<b>62</b>	<b>229</b>	<b>100%</b>	<b>100%</b>









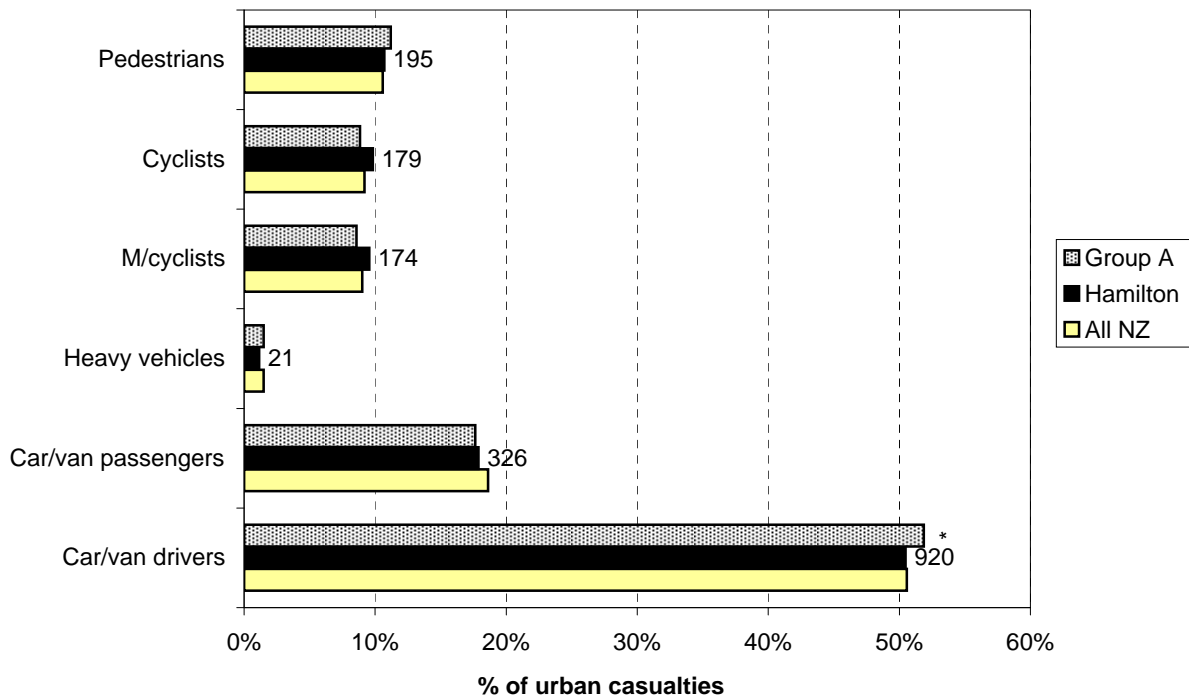


# *Road User Statistics*



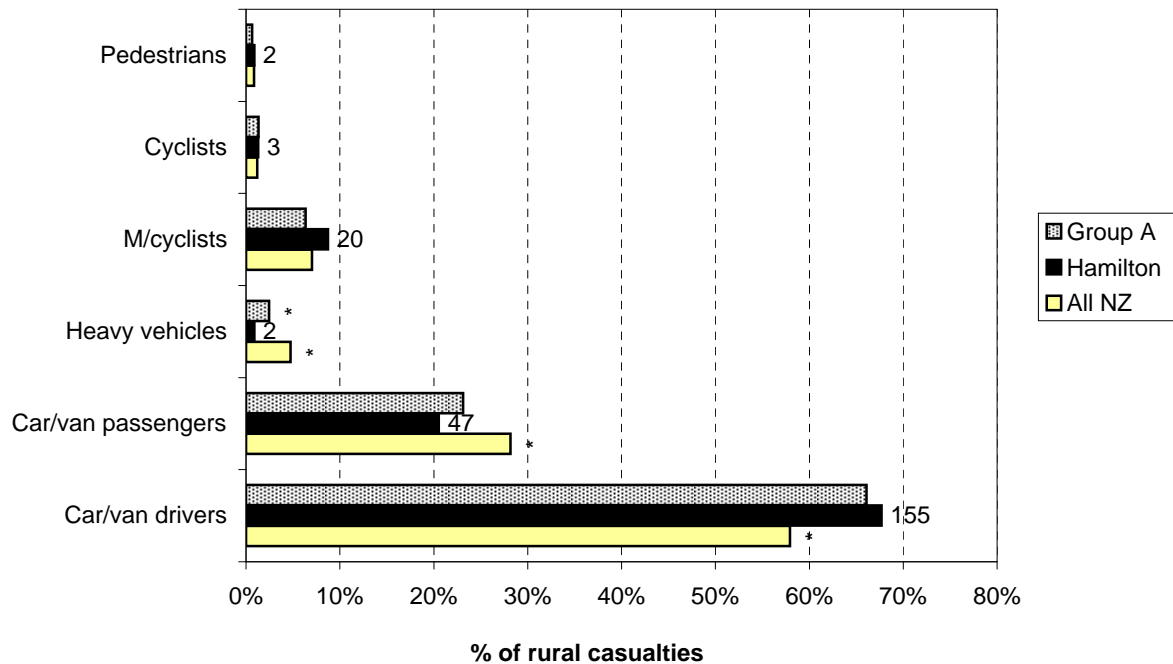


**Figure 3.1 Road user casualties - urban  
Hamilton City (2005-2009)**



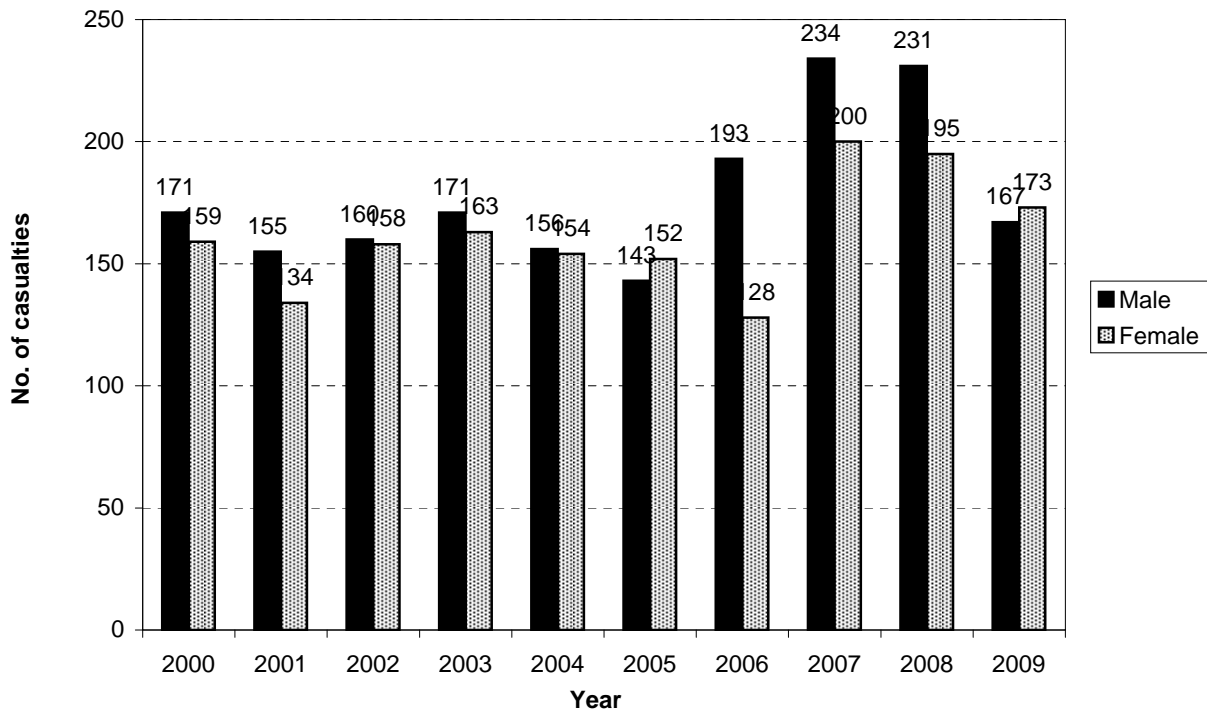
Note: While the graph plots percentages, the number of casualties is shown against the data points.  
\*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions

**Figure 3.2 Road user casualties - rural  
Hamilton City (2005-2009)**



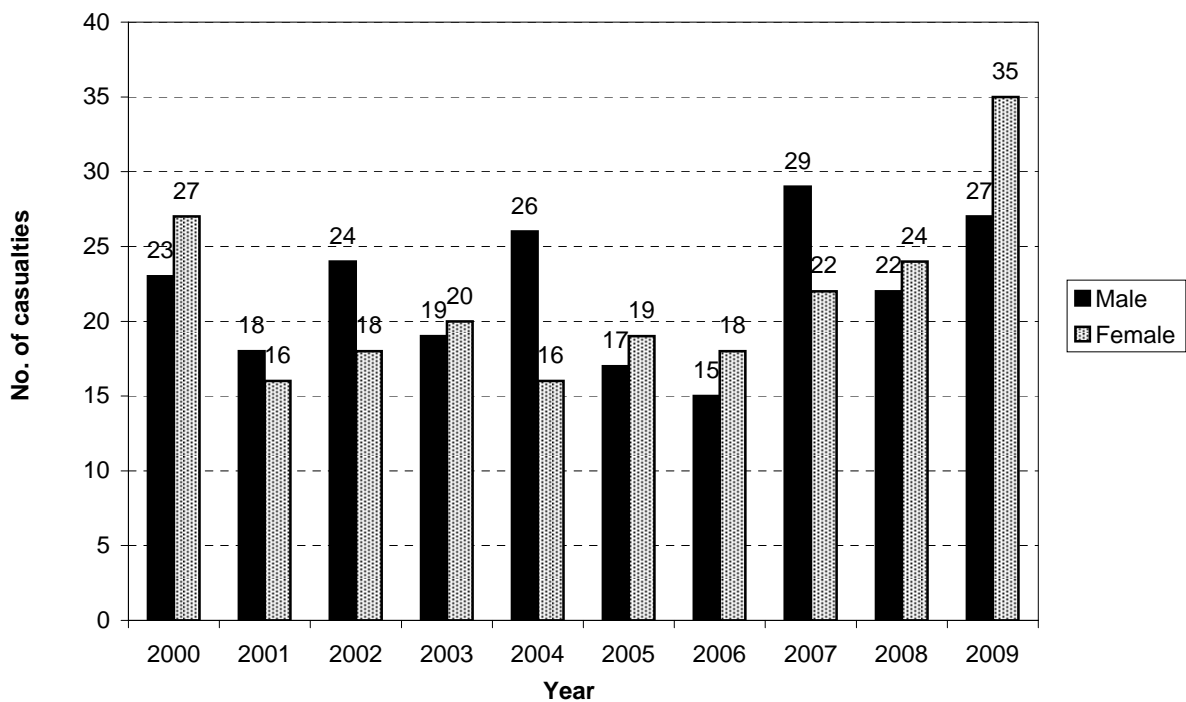
Note: While the graph plots percentages, the number of casualties is shown against the data points.  
\*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions

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



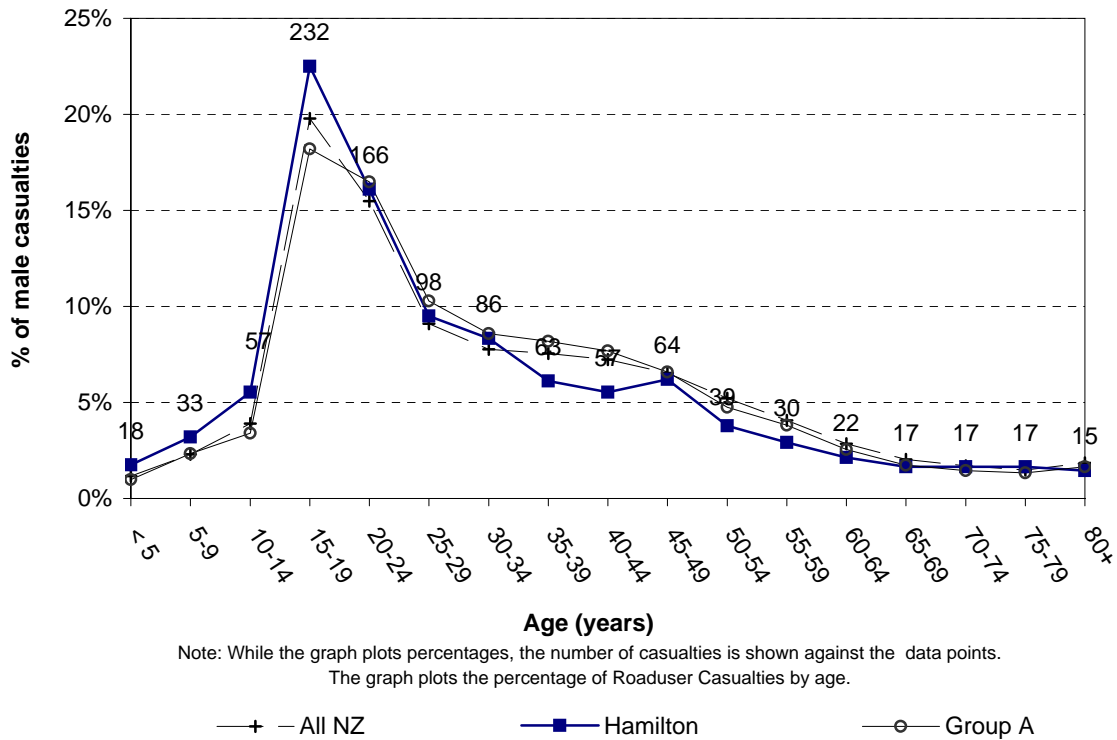
Note: This graph shows the number of male and female roadusers injured

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

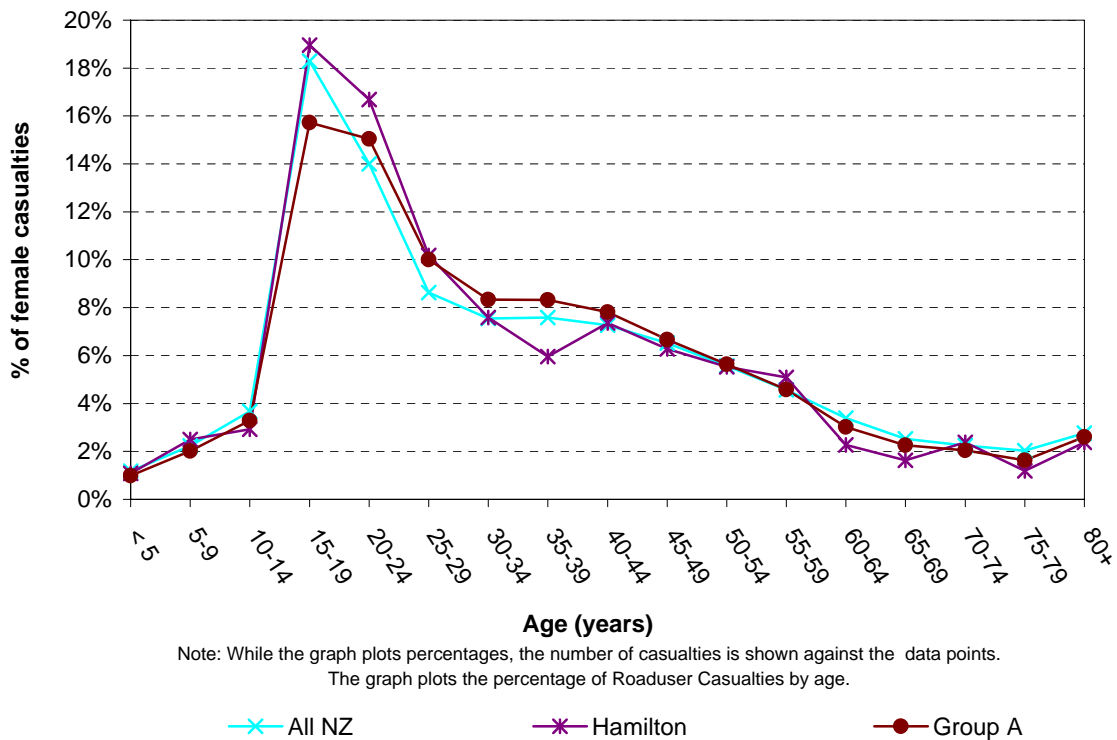


Note: This graph shows the number of male and female roadusers injured

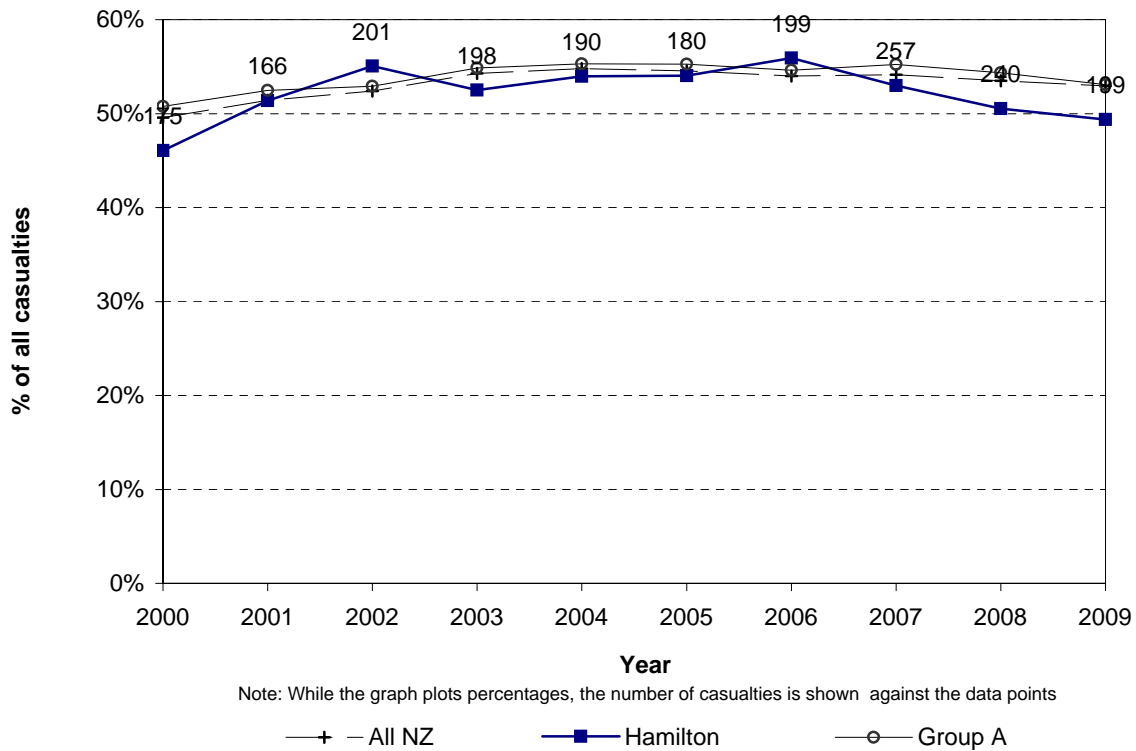
**Figure 3.5 Male casualties by age  
Hamilton City (2005-2009)**



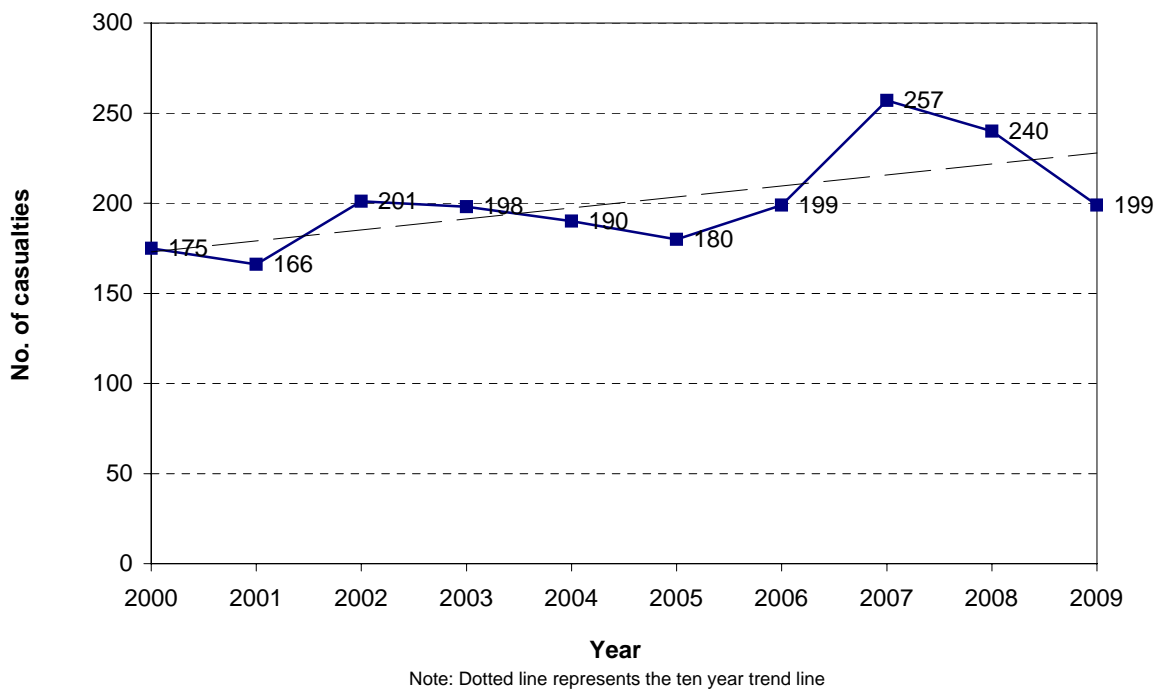
**Figure 3.6 Female casualties by age  
Hamilton City (2005-2009)**



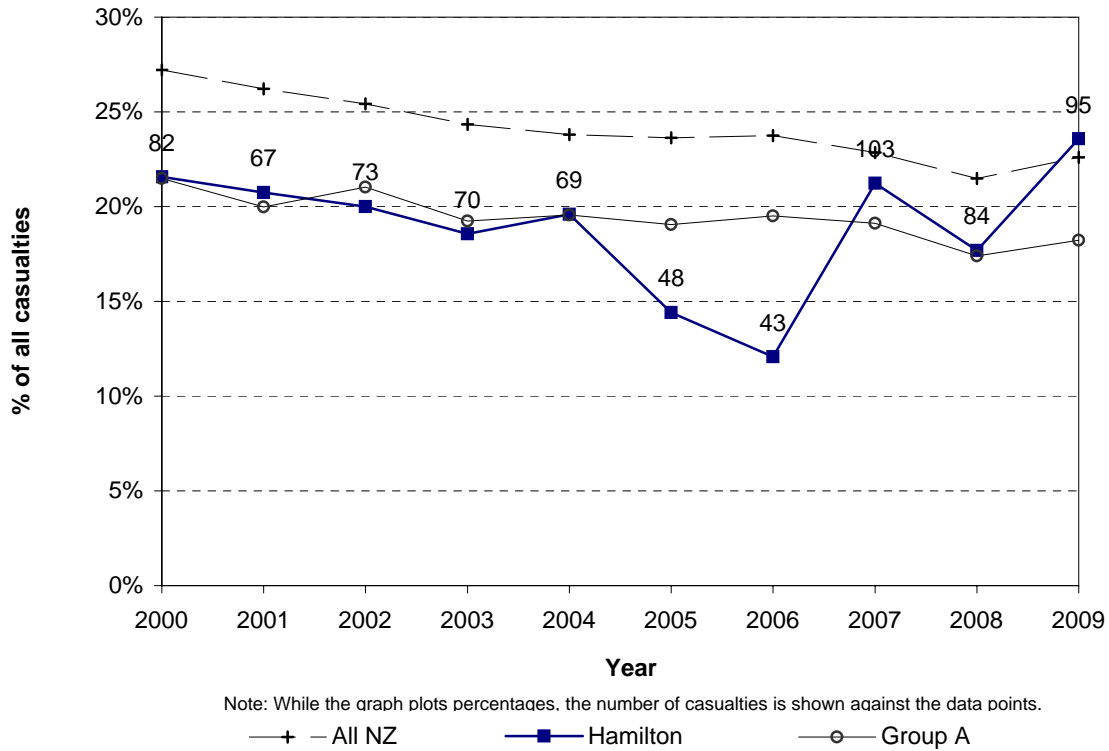
**Figure 3.7 Car/van driver casualties  
Hamilton City**



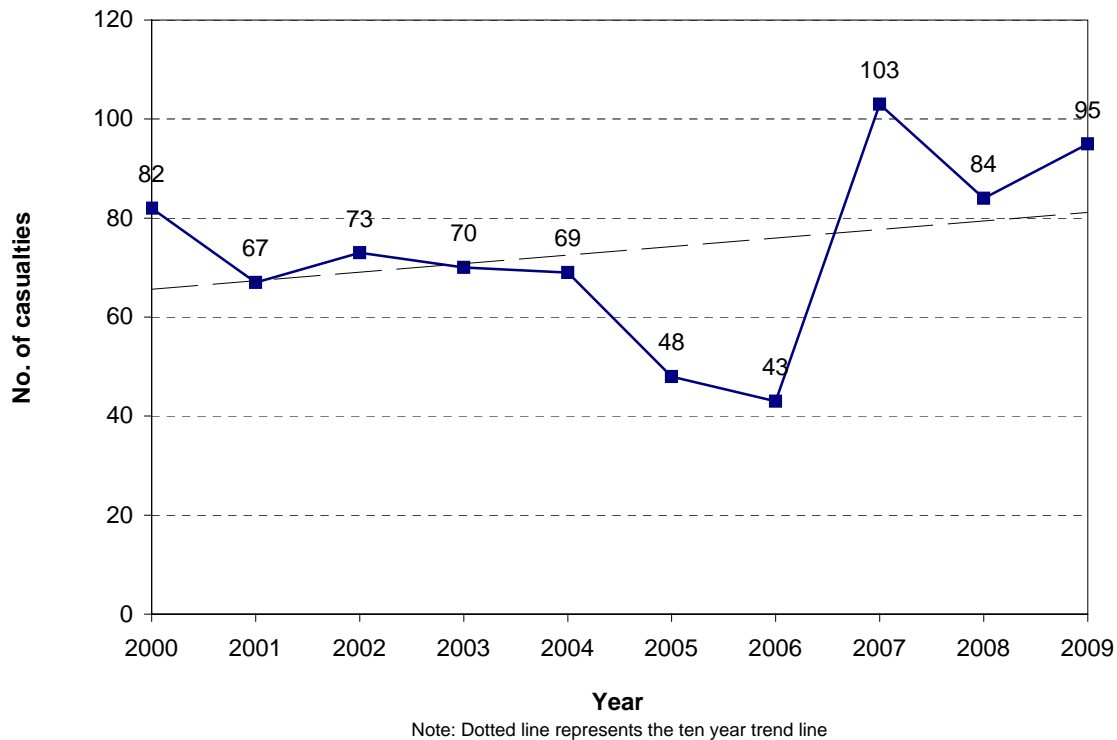
**Figure 3.8 Car/van driver casualties  
Hamilton City**



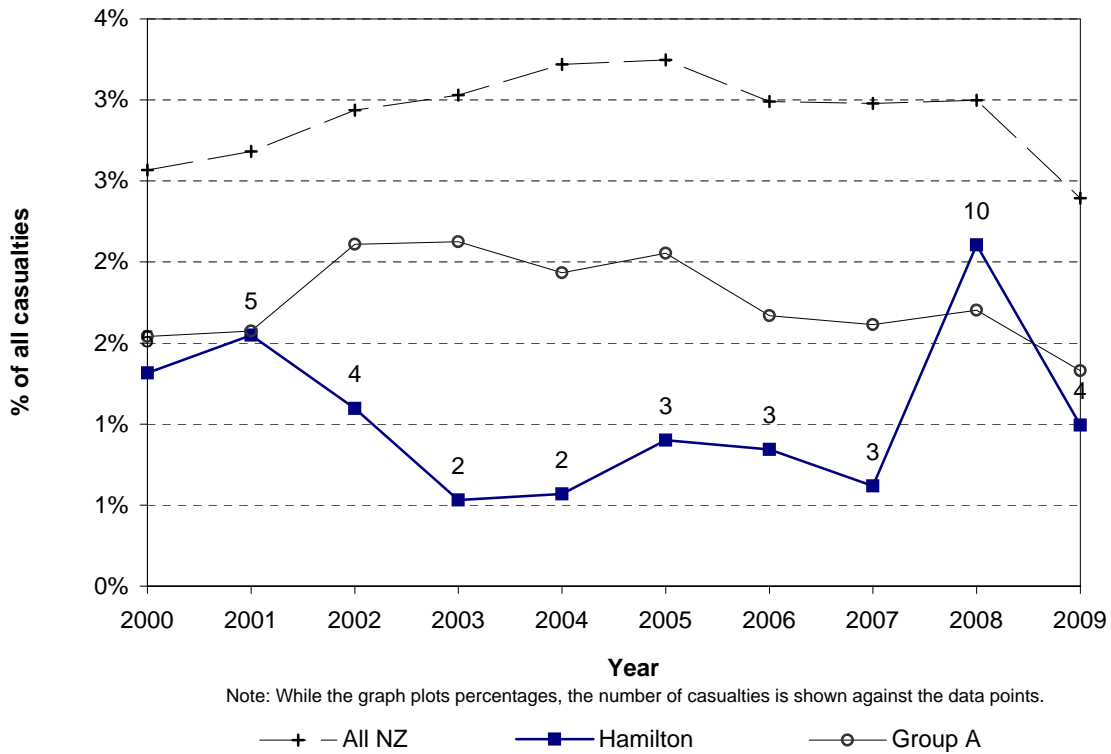
**Figure 3.9 Car/van passenger casualties  
Hamilton City**



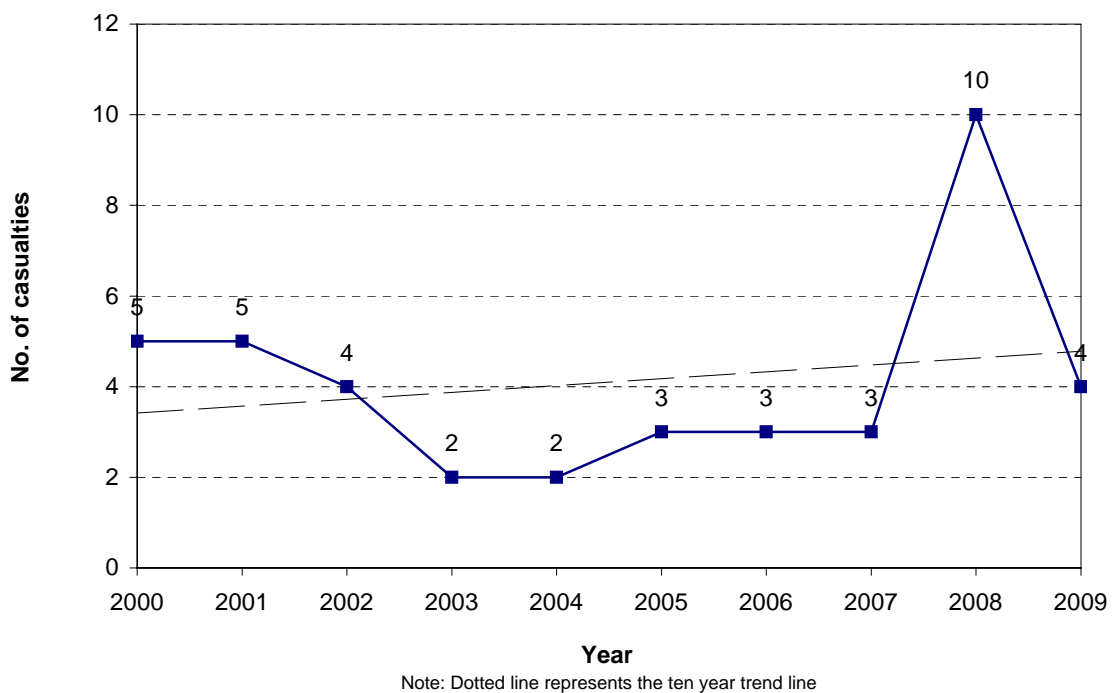
**Figure 3.10 Car/van passenger casualties  
Hamilton City**



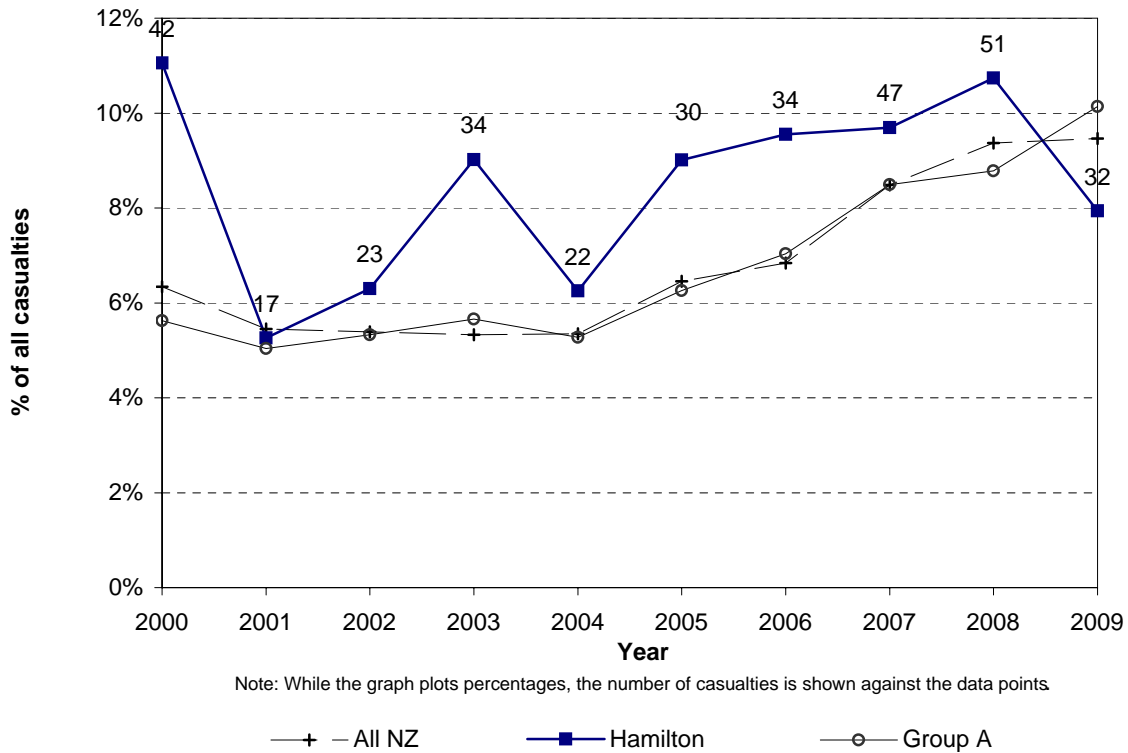
**Figure 3.11 Heavy vehicle casualties  
Hamilton City**



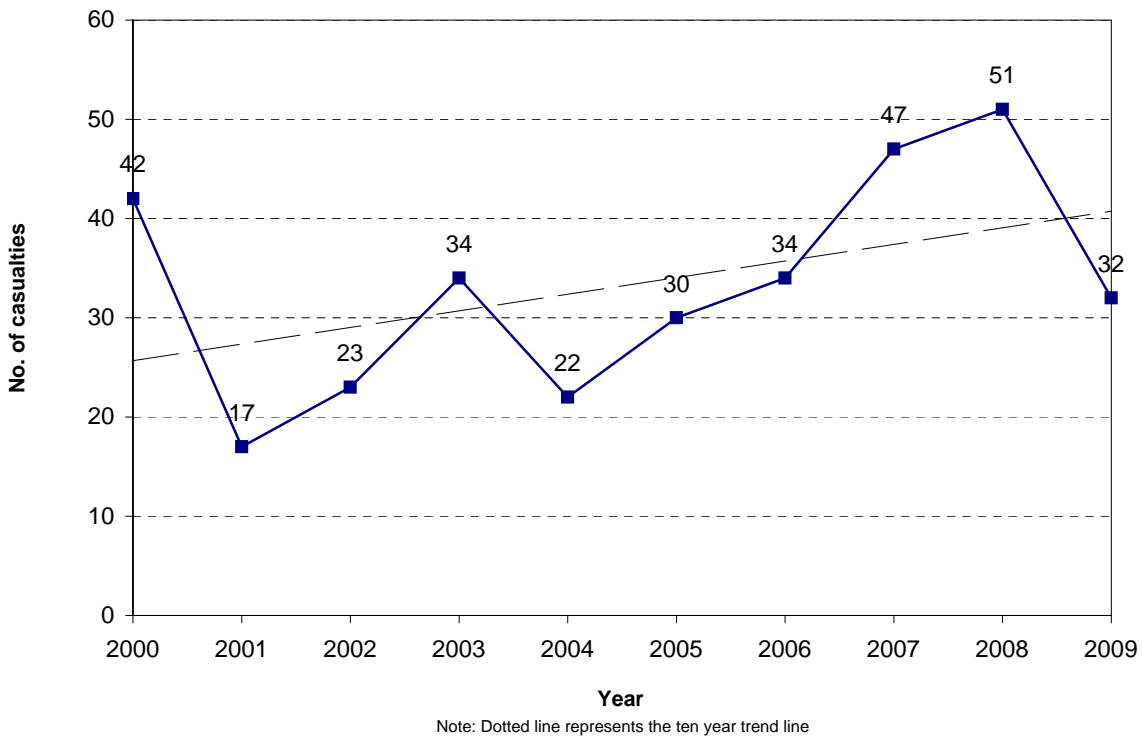
**Figure 3.12 Heavy vehicle casualties  
Hamilton City**



**Figure 3.13 Motorcyclist casualties  
Hamilton City**

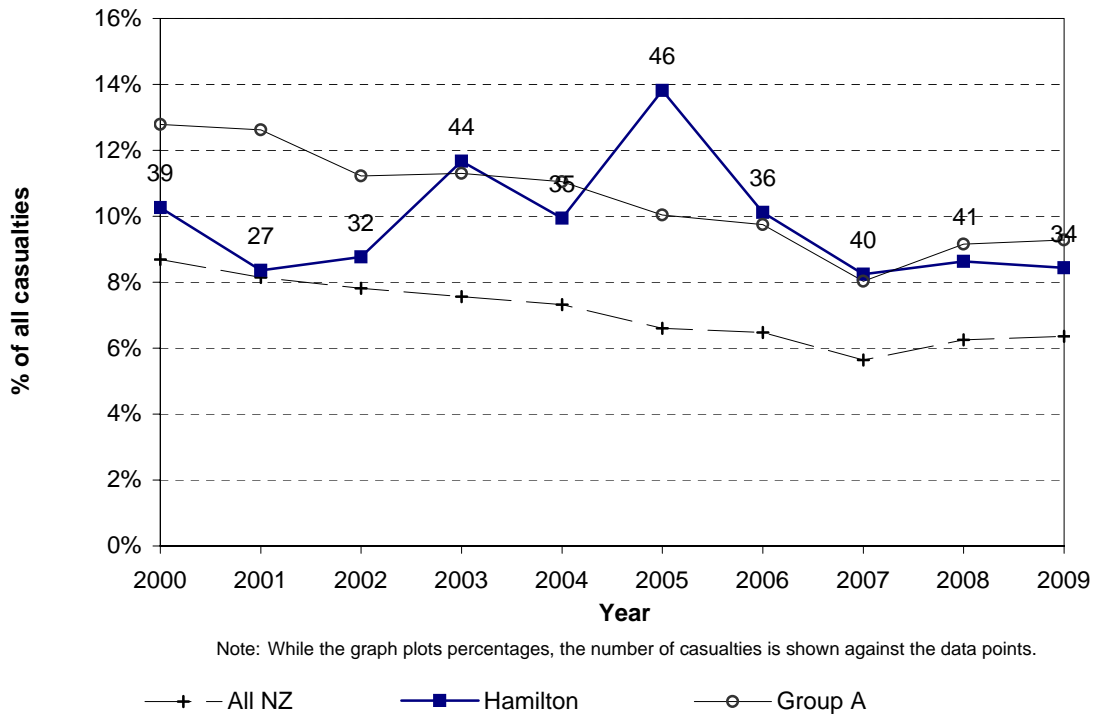


**Figure 3.14 Motorcyclist casualties  
Hamilton City**

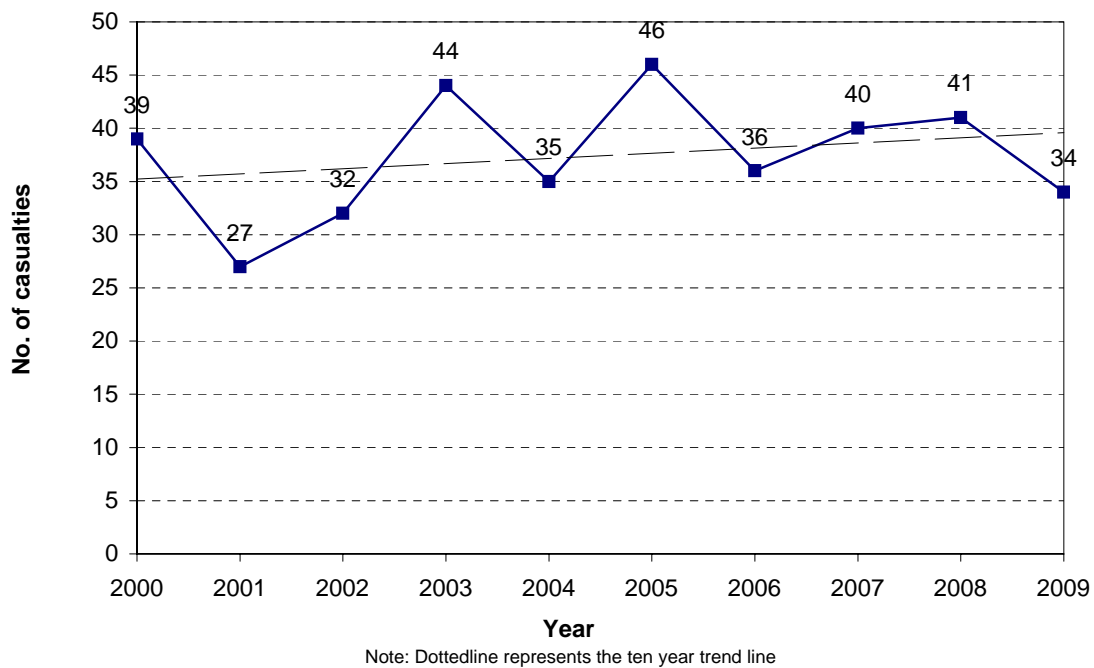




**Figure 3.15 Pedestrian casualties  
Hamilton City**



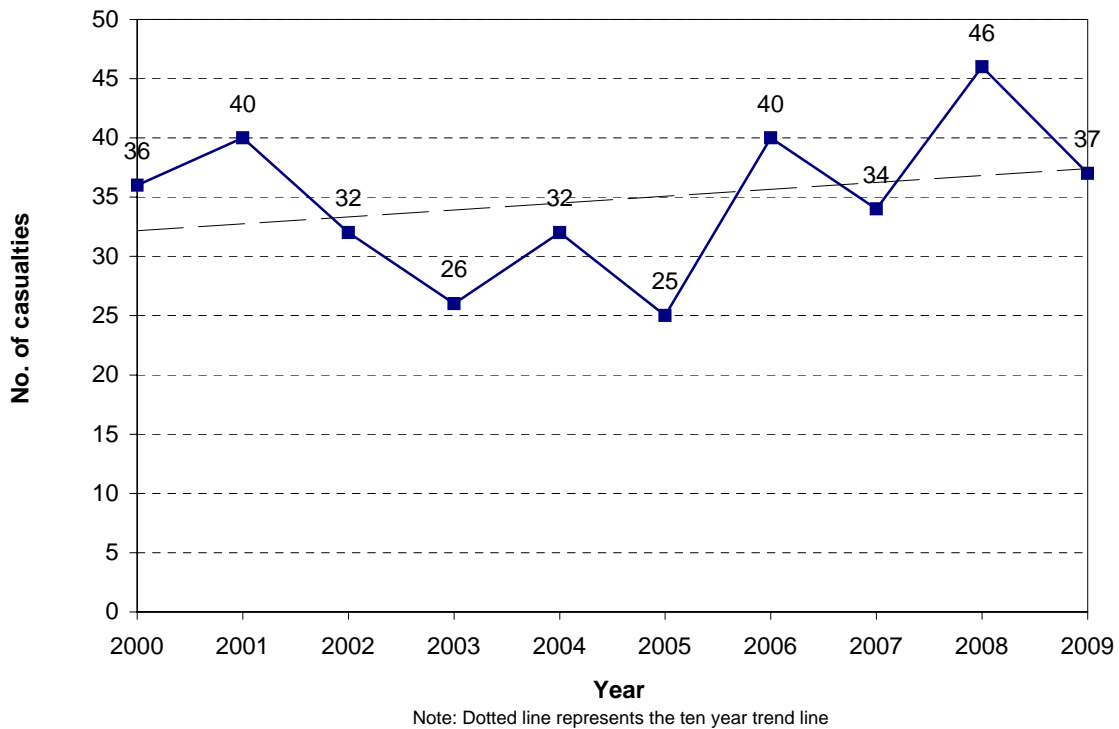
**Figure 3.16 Pedestrian casualties  
Hamilton City**



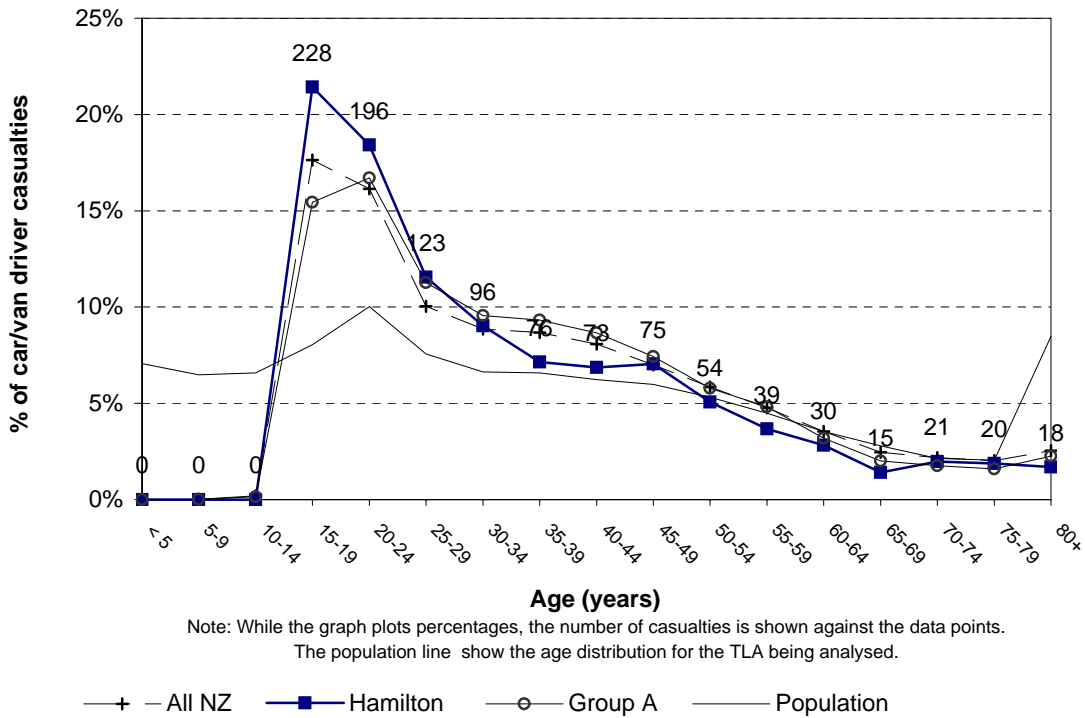
**Figure 3.17 Cyclist casualties  
Hamilton City**



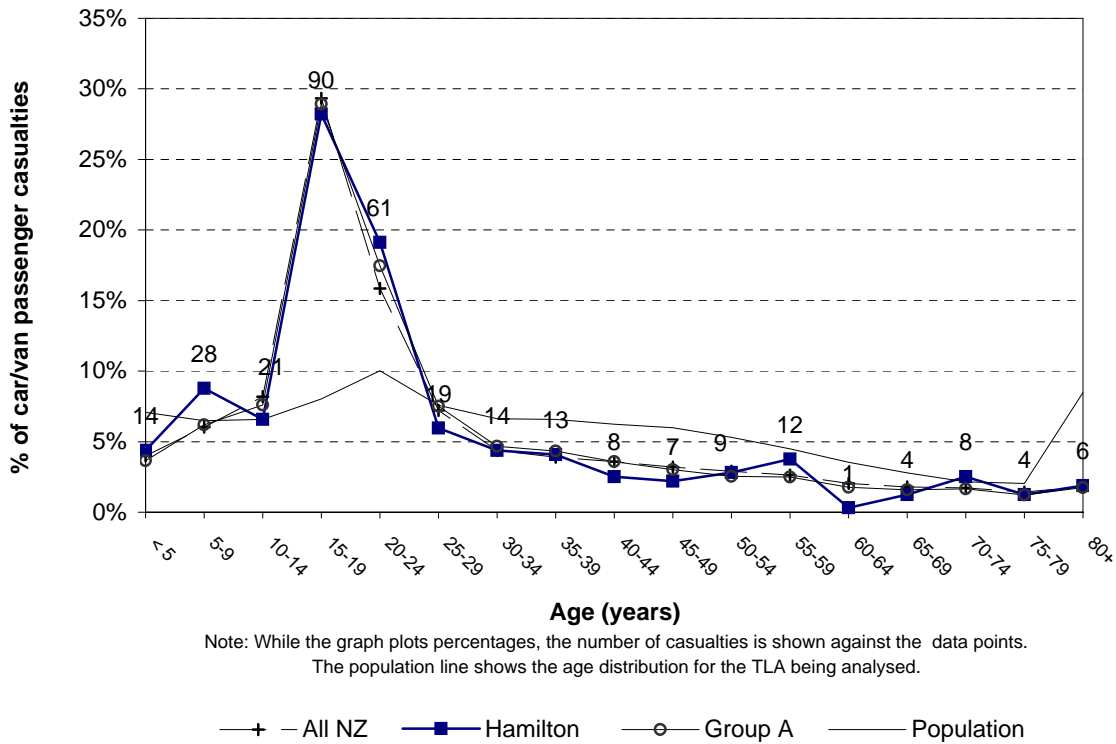
**Figure 3.18 Cyclist casualties  
Hamilton City**



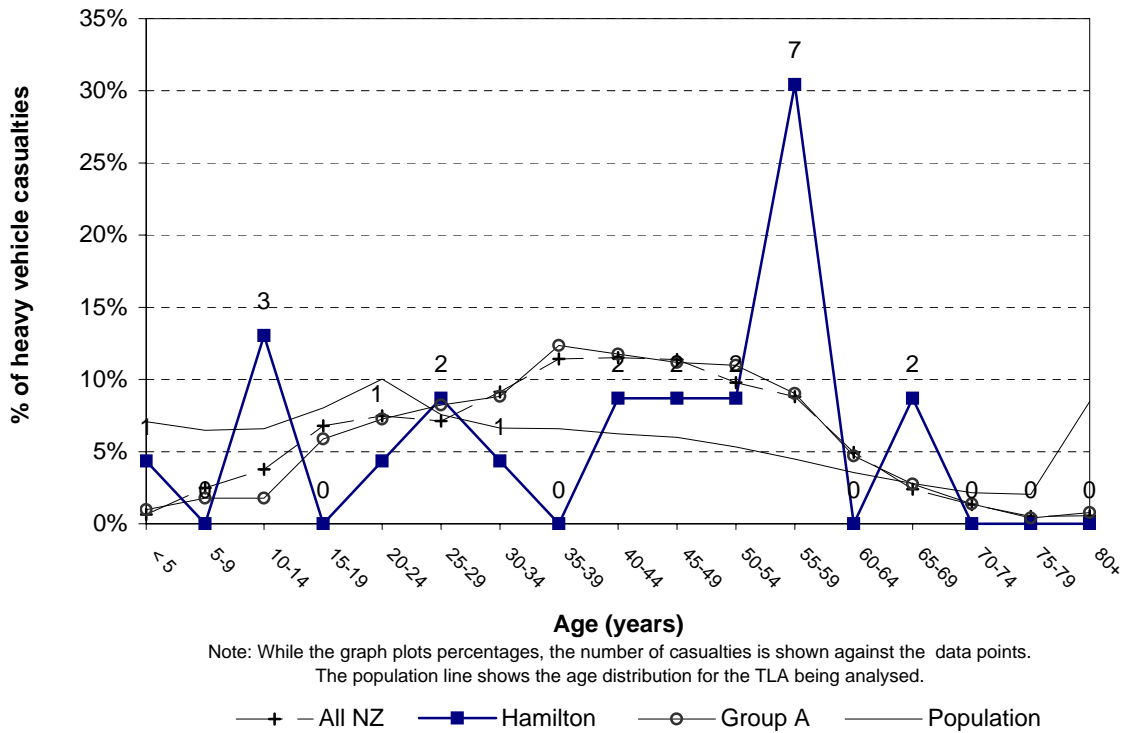
**Figure 3.19 Car/van driver casualty age  
Hamilton City (2005-2009)**



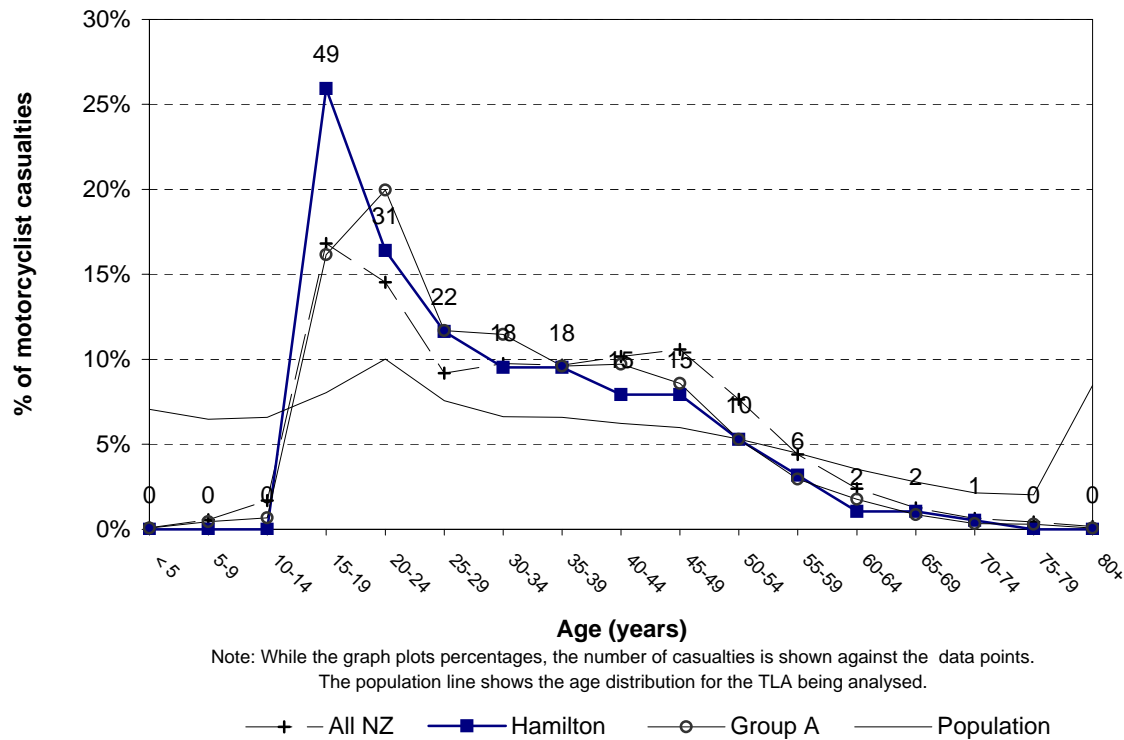
**Figure 3.20 Car/van passenger casualty age  
Hamilton City (2005-2009)**



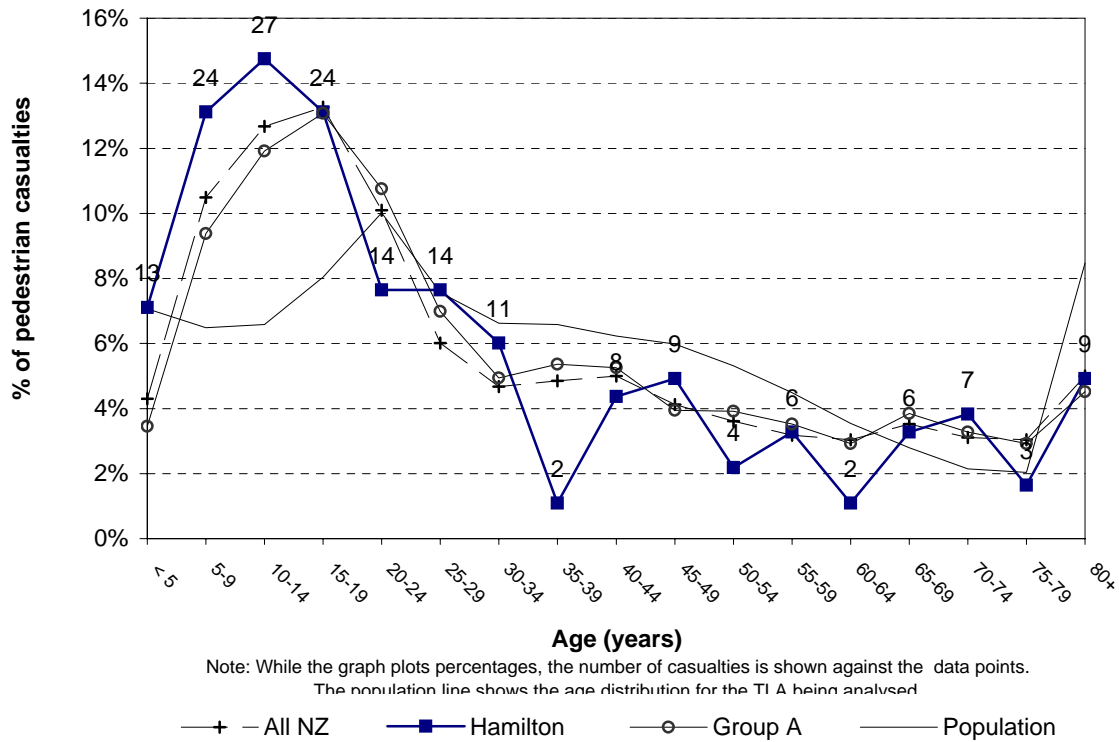
**Figure 3.21 Heavy vehicle casualty age  
Hamilton City (2005-2009)**



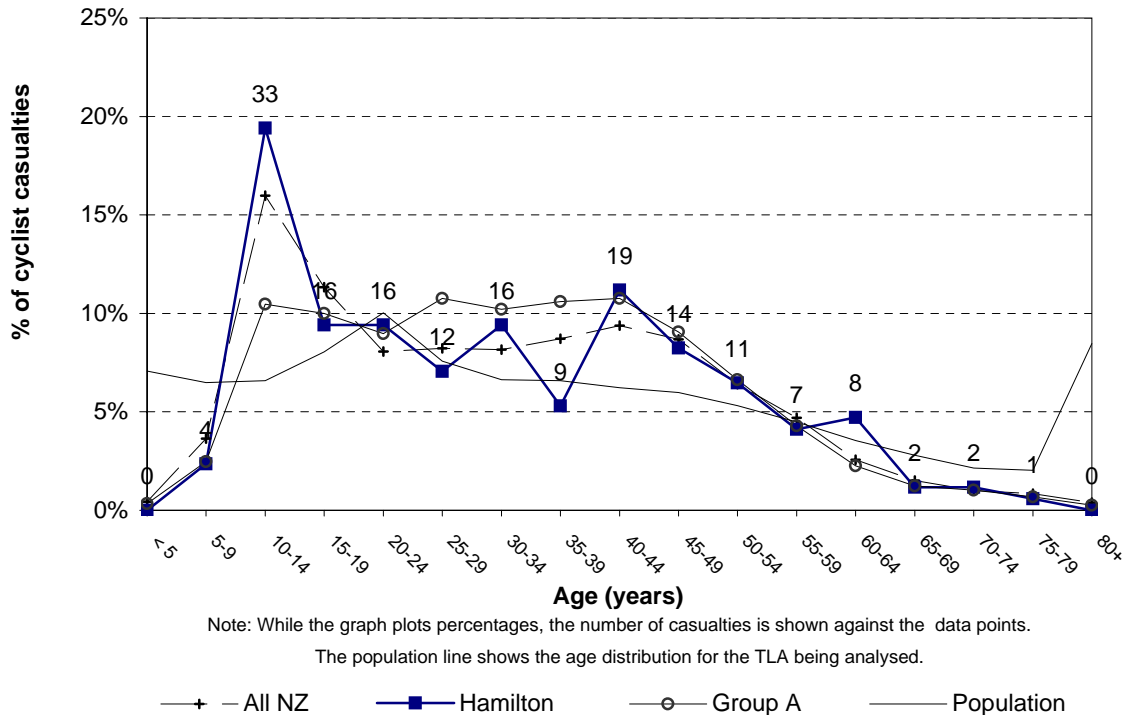
**Figure 3.22 Motorcyclist casualty age  
Hamilton City (2005-2009)**



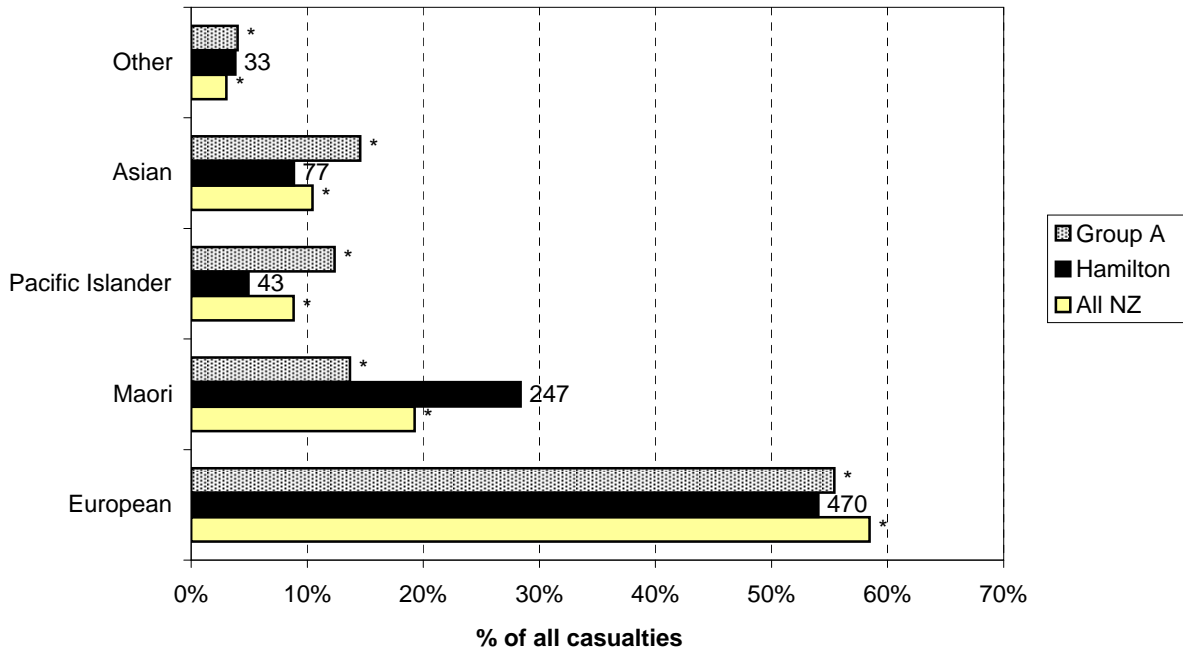
**Figure 3.23 Pedestrian casualty age  
Hamilton City (2005-2009)**



**Figure 3.24 Cyclist casualty age  
Hamilton City (2005-2009)**

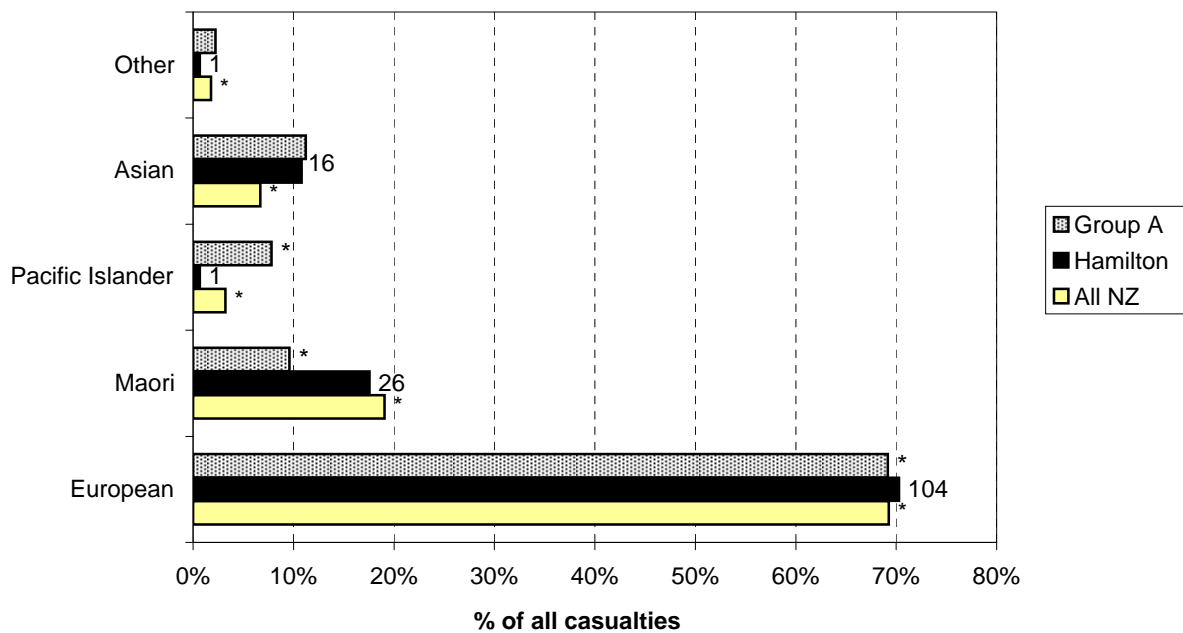


**Figure 3.25 Casualty ethnicity - urban  
Hamilton City (2005-2009)**



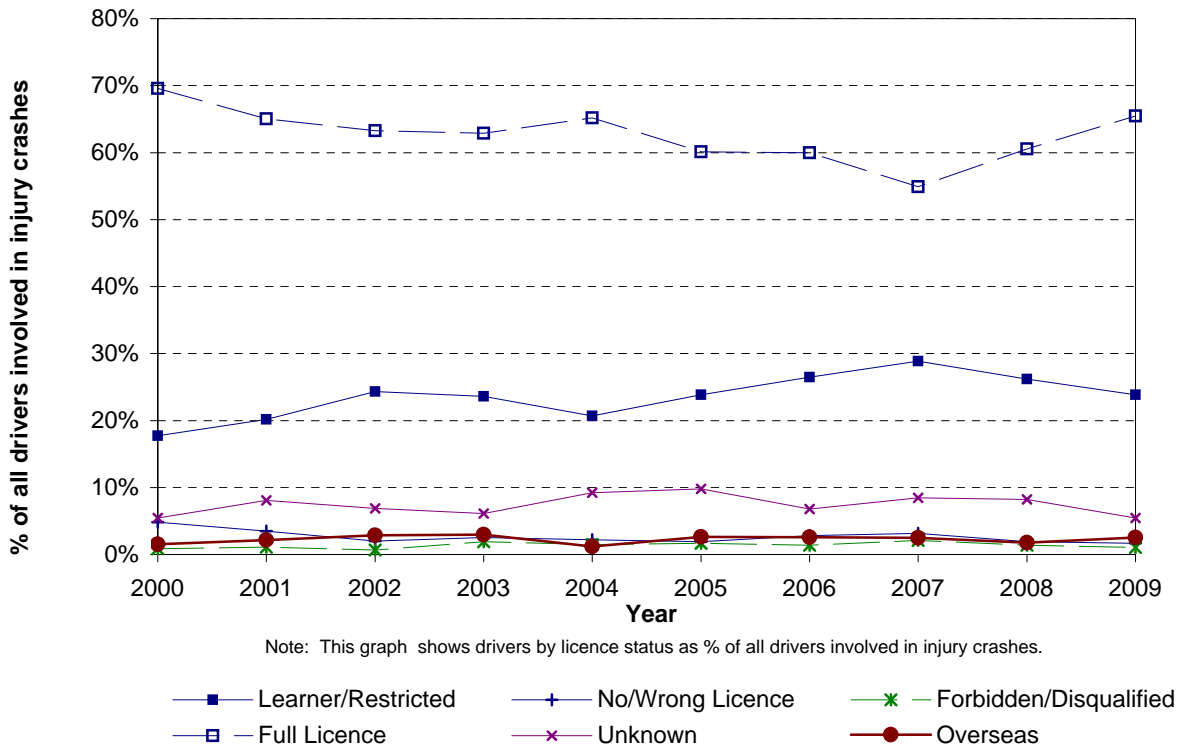
Note: While the graph plots percentages, the number of crashes is shown against the data points.  
\*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions

**Figure 3.26 Casualty ethnicity - rural  
Hamilton City (2005-2009)**

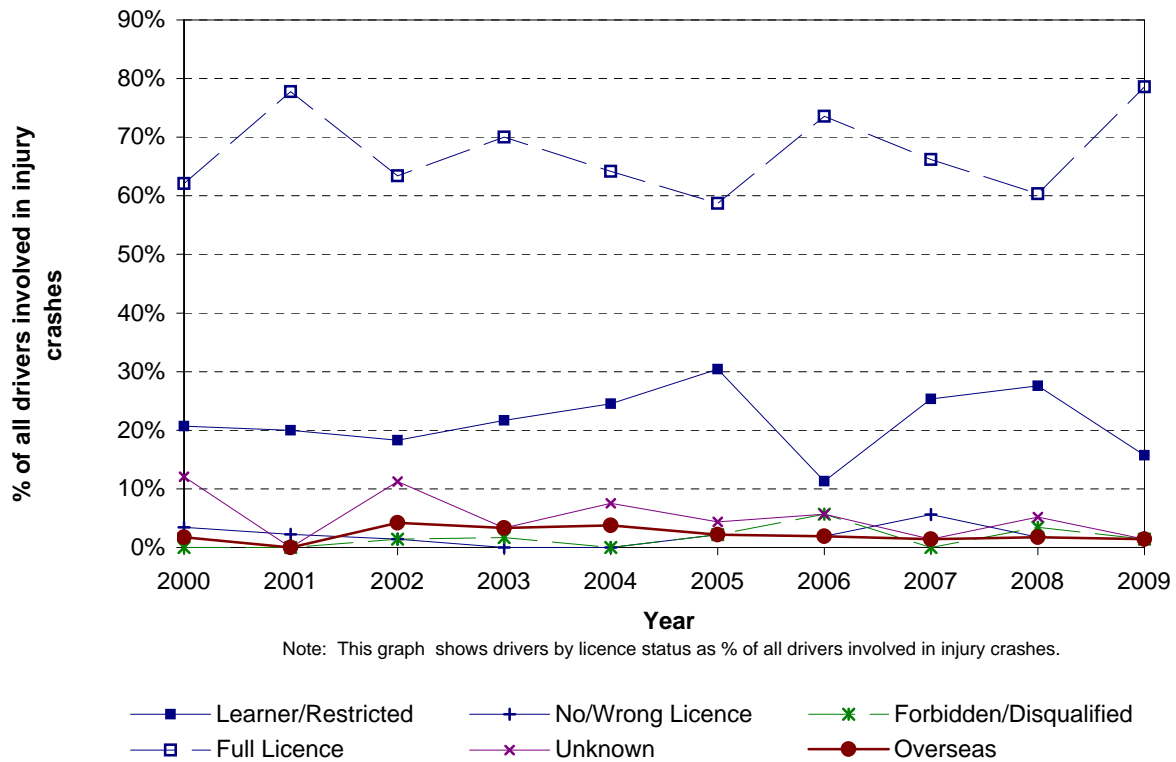


Note: While the graph plots percentages, the number of crashes is shown against the data points.  
\*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions

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



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

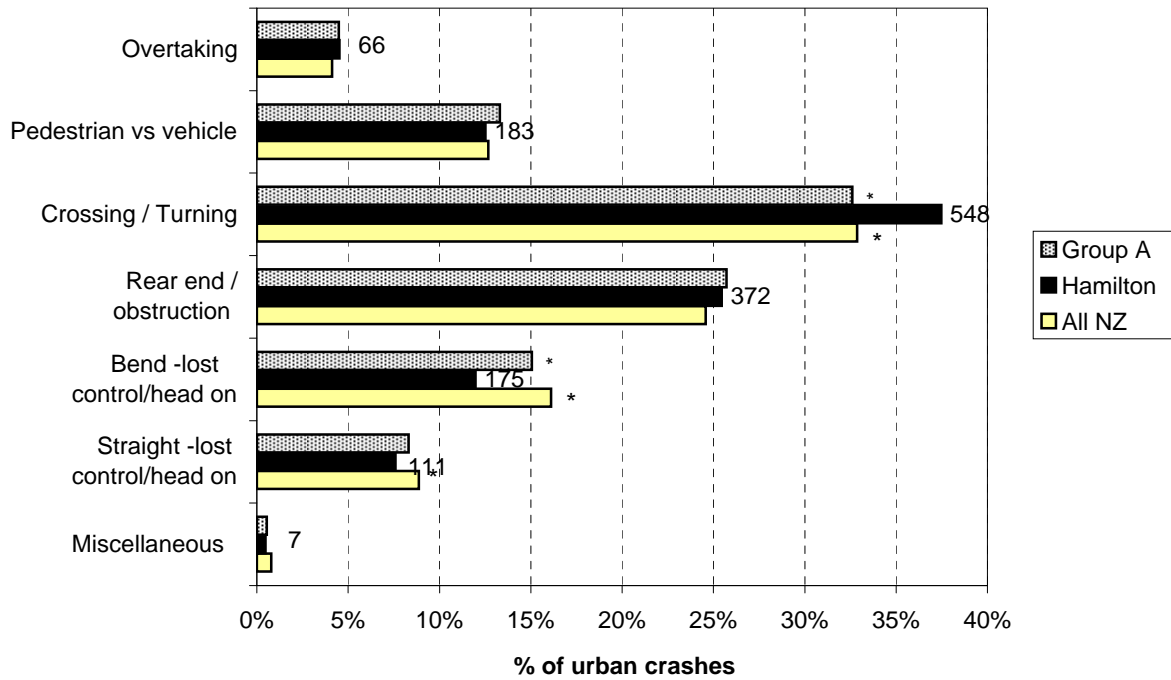


# *Crash Type Statistics*



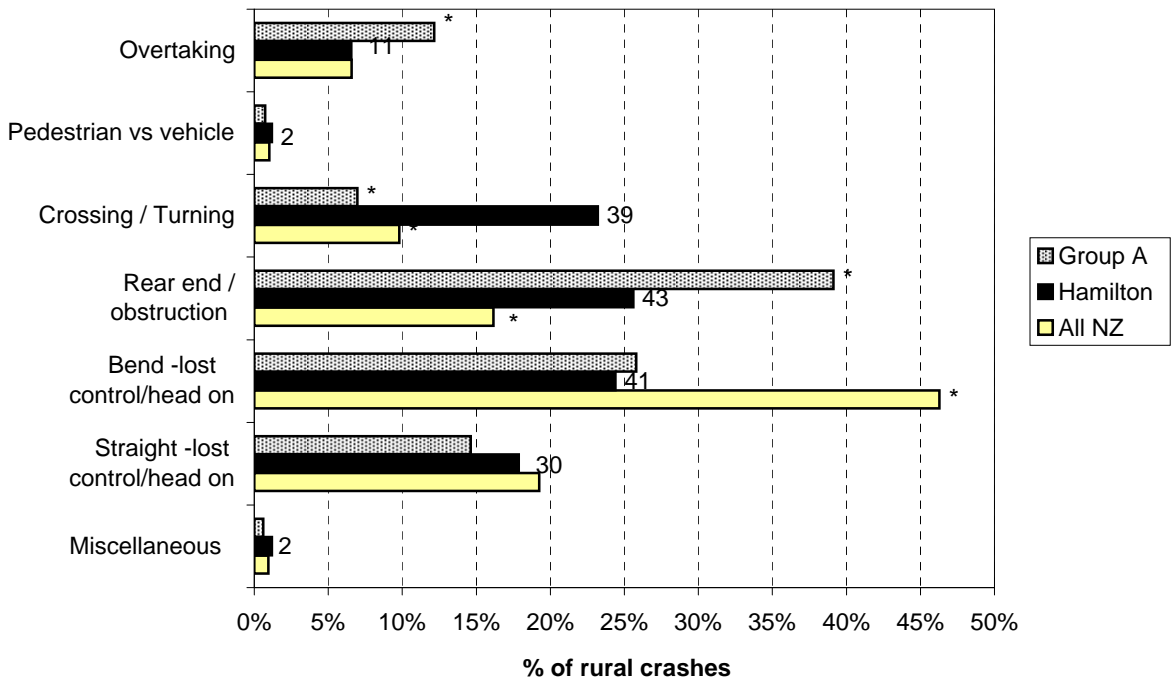


**Figure 4.1 Crash movement type - urban  
Hamilton City (2005-2009)**



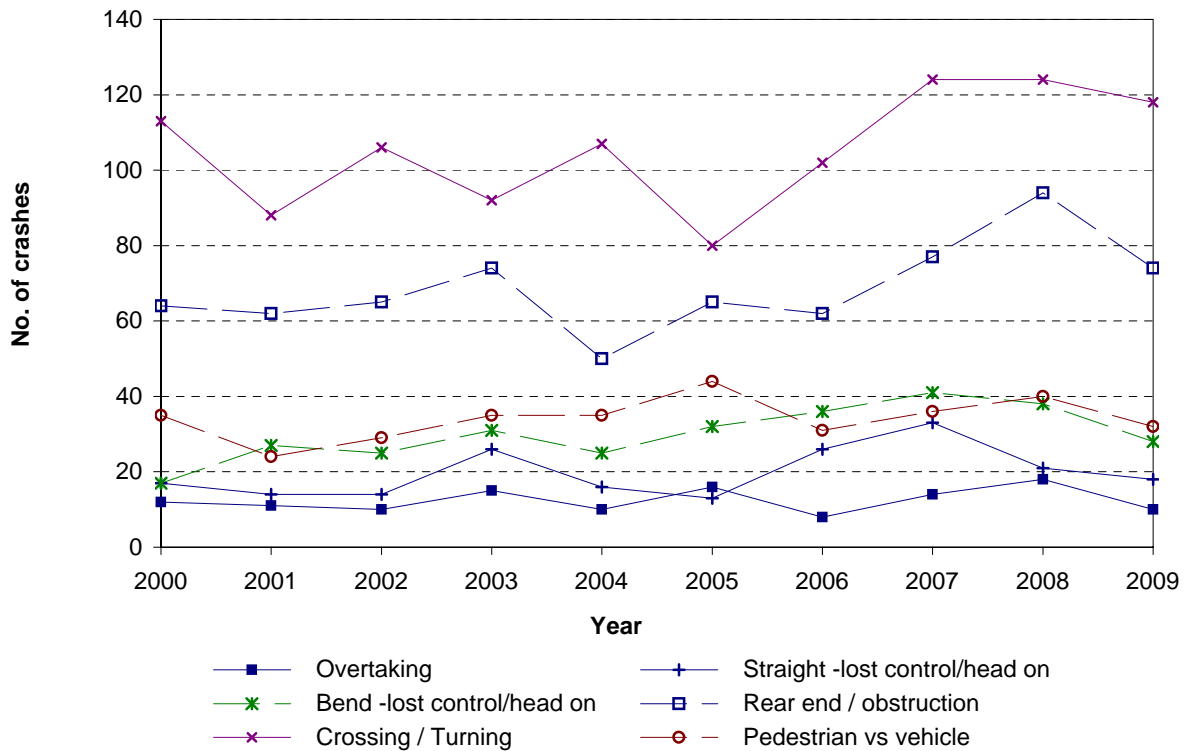
Note: While the graph plots percentages, the number of crashes is shown against the data points.  
\*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions

**Figure 4.2 Crash movement type - rural  
Hamilton City roads (2005-2009)**

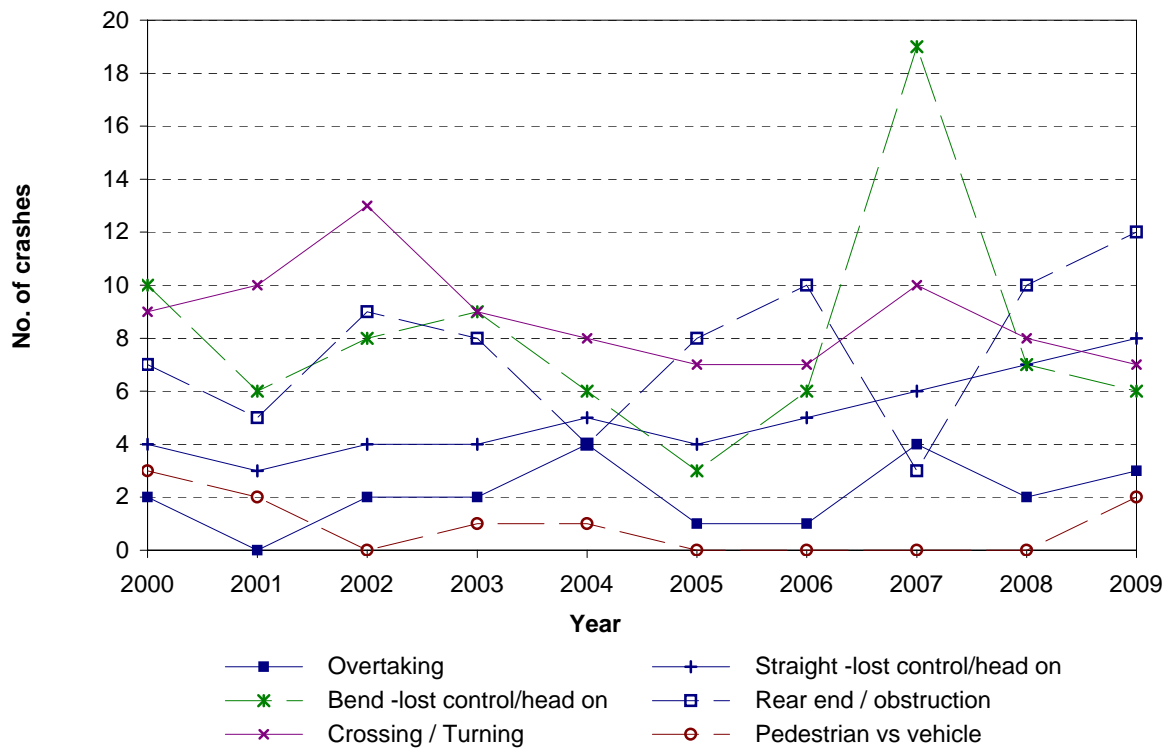


Note: While the graph plots percentages, the number of crashes is shown against the data points.  
\*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions

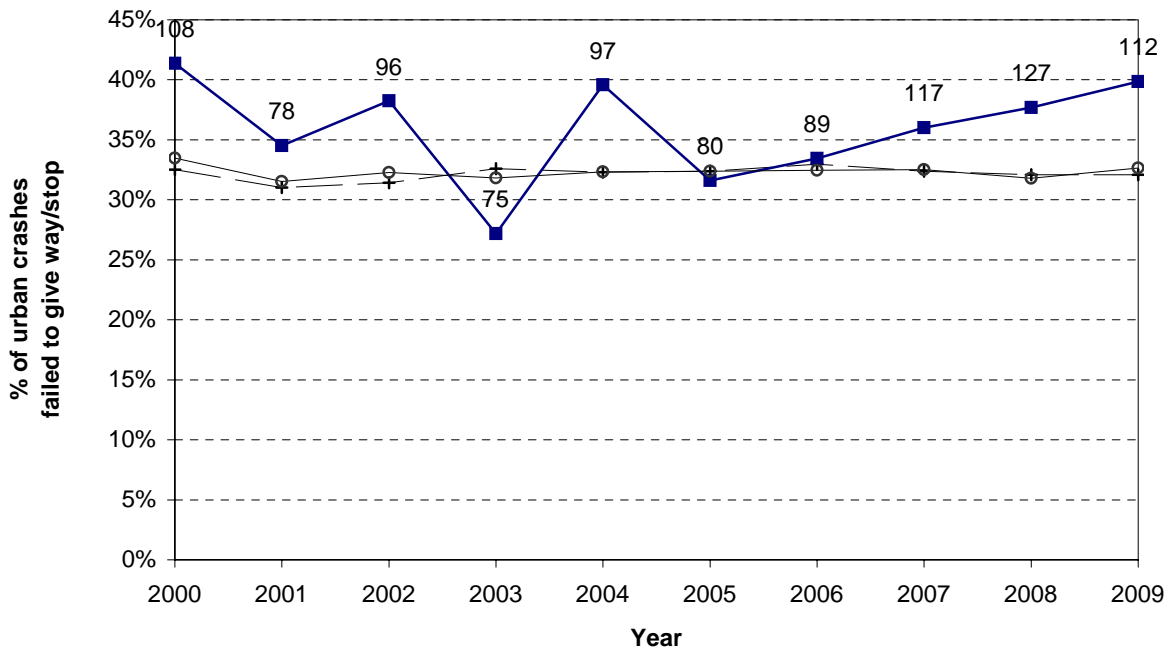
**Figure 4.3 Crash movement type - trends  
Hamilton City - urban roads**



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



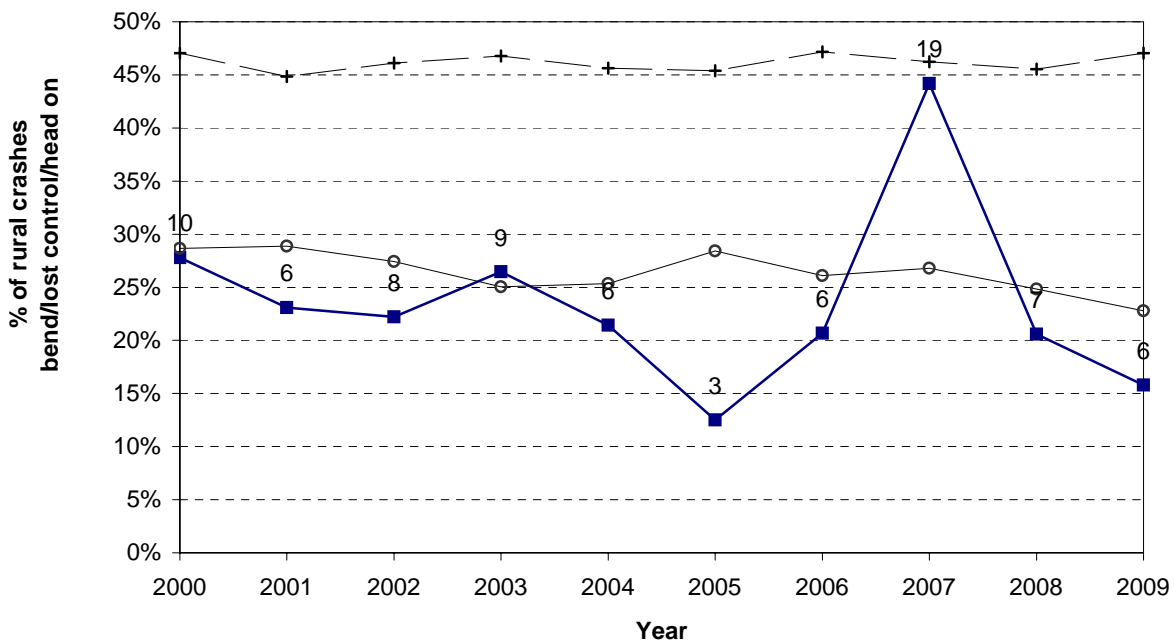
**Figure 4.5 Failed to give way / stop  
Hamilton City - urban roads**



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

—+— All NZ —■— Hamilton —○— Group A

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



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

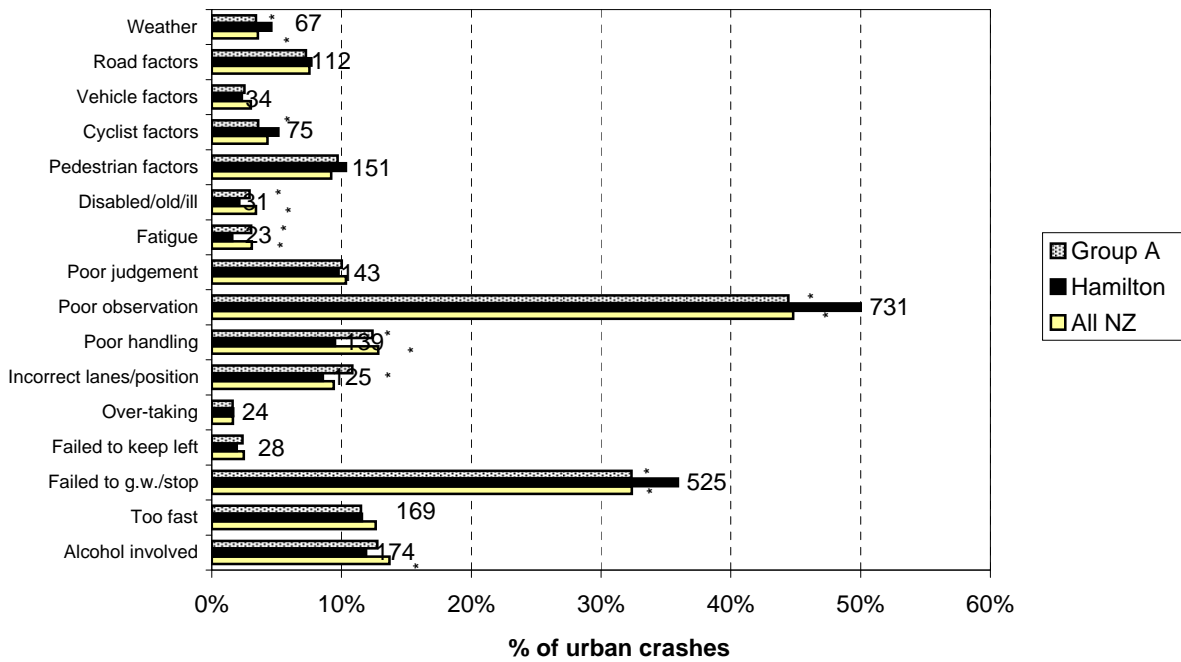
—+— All NZ —■— Hamilton —○— Group A



# *Crash Factor Statistics*

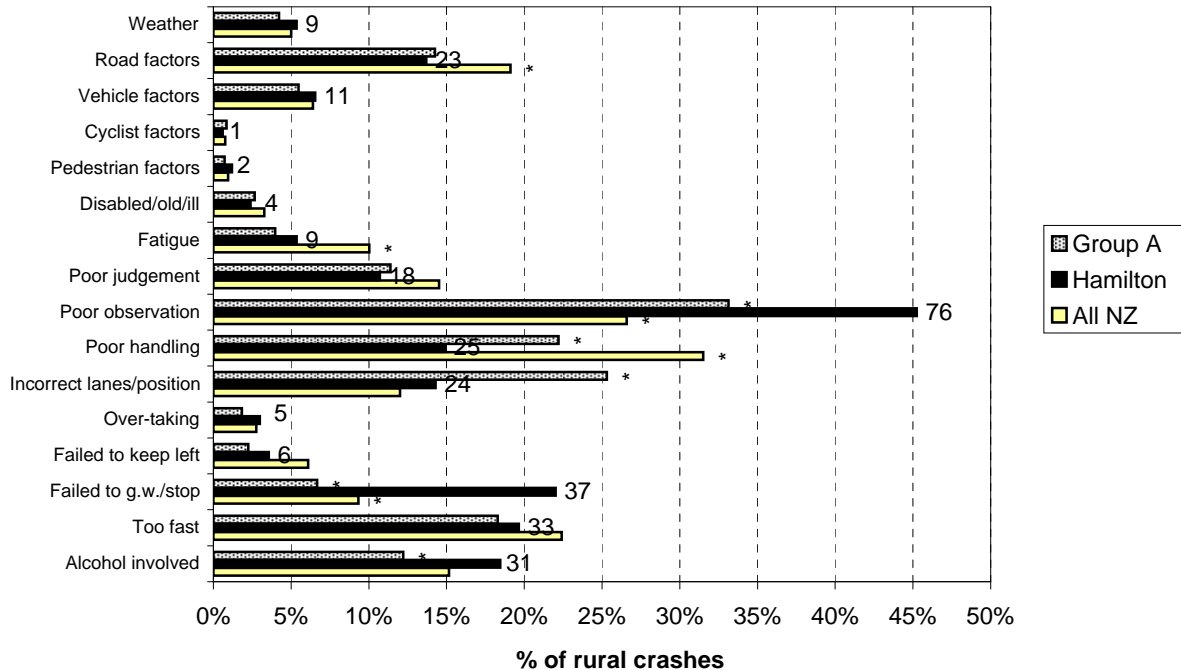


**Figure 5.1 Contributing factors - urban  
Hamilton City (2005-2009)**



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

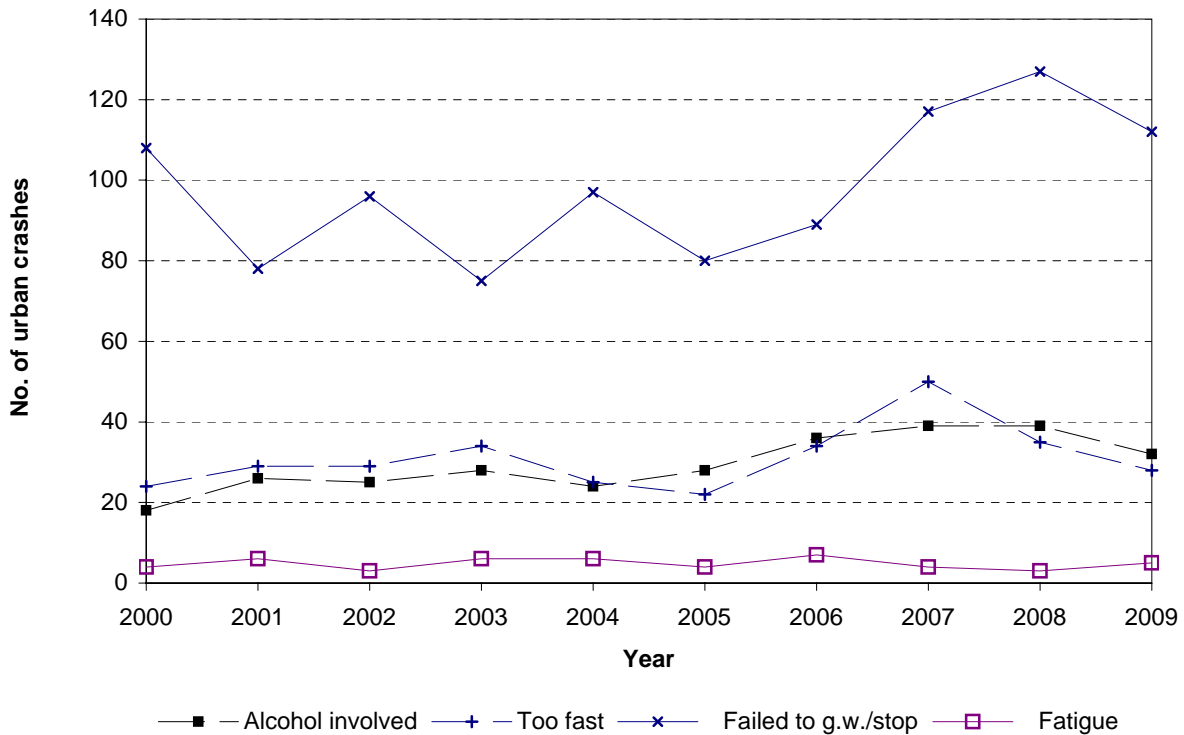
**Figure 5.2 Contributing factors - rural  
Hamilton City (2005-2009)**



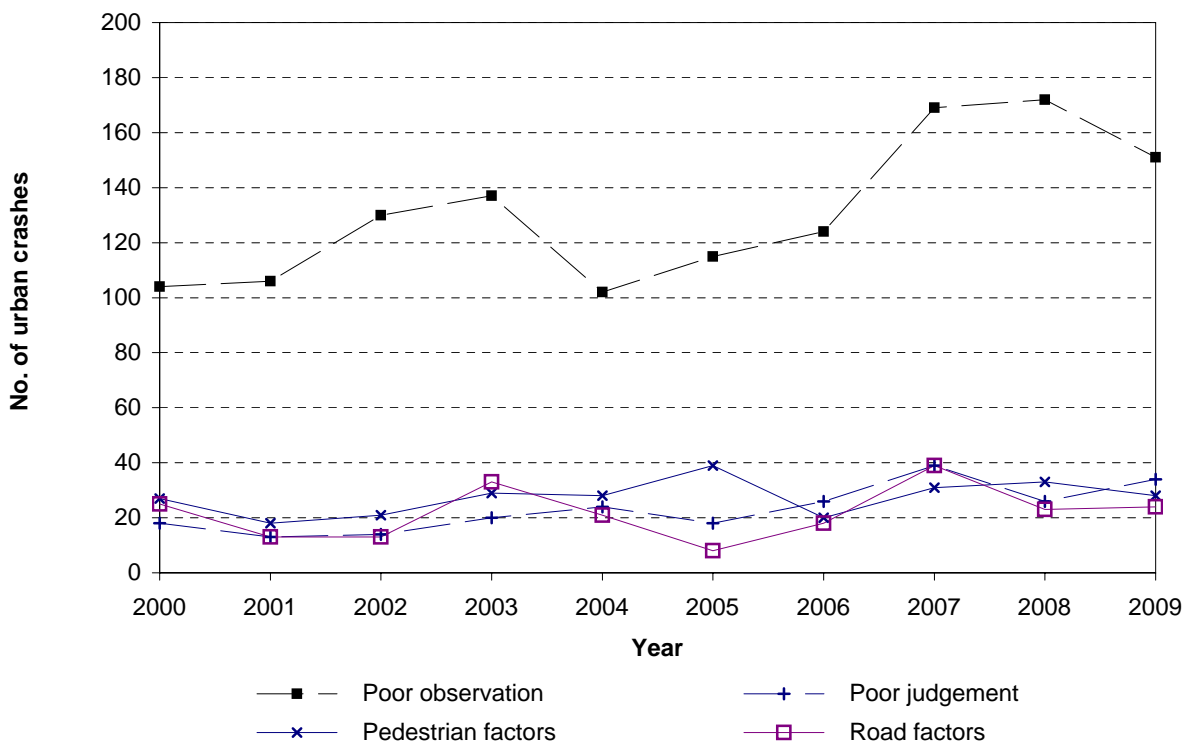
Note: While the graph plots percentages, the number of casualties is shown against the data points.  
\*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions



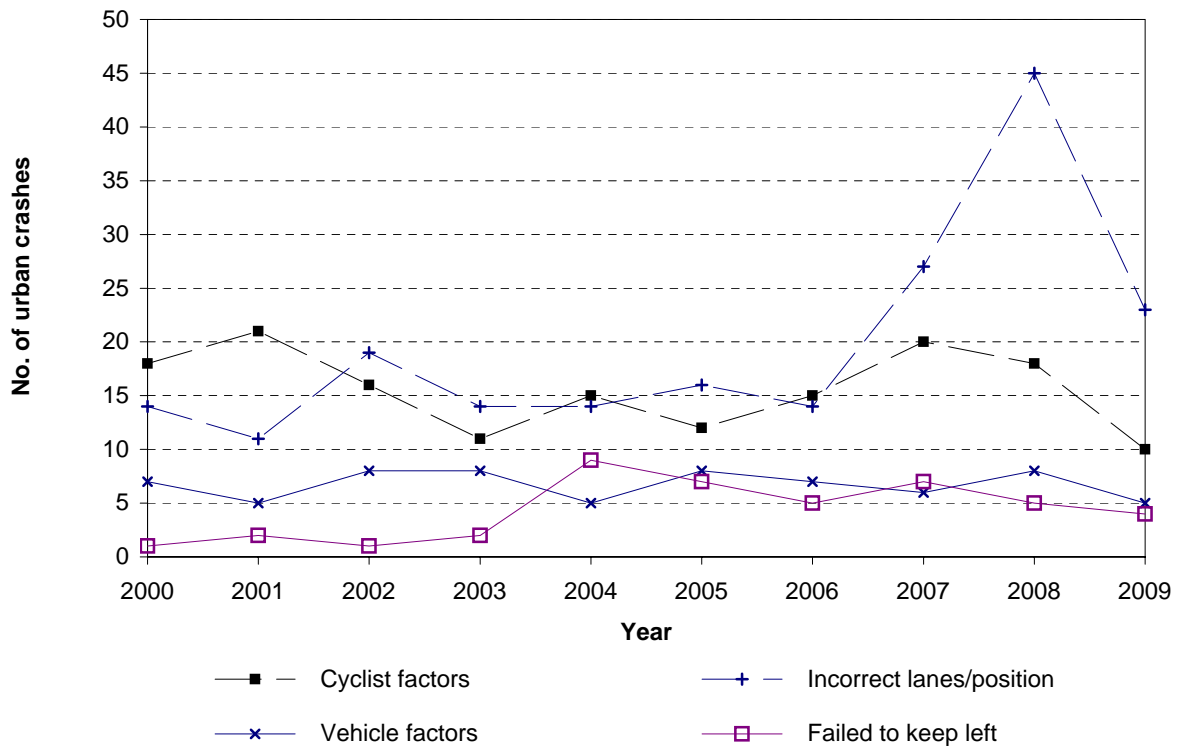
**Figure 5.3 Contributing factor trends  
Hamilton City - urban roads**



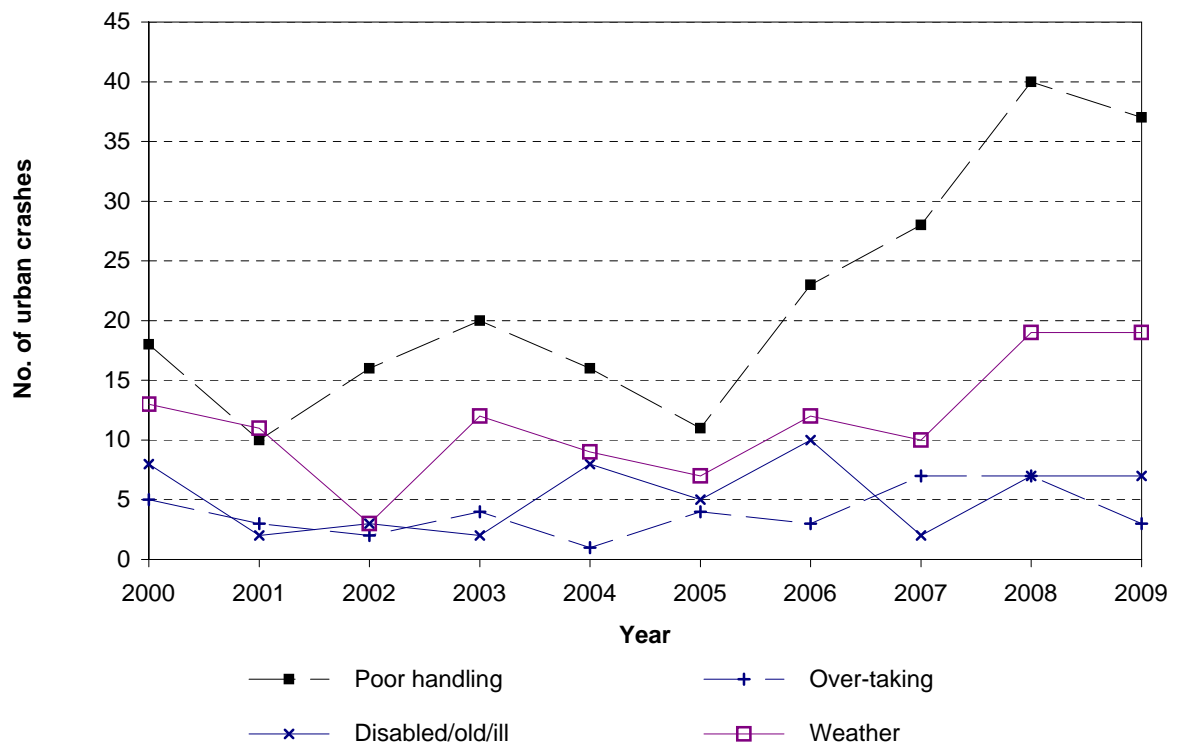
**Figure 5.4 Contributing factor trends  
Hamilton City - urban roads**



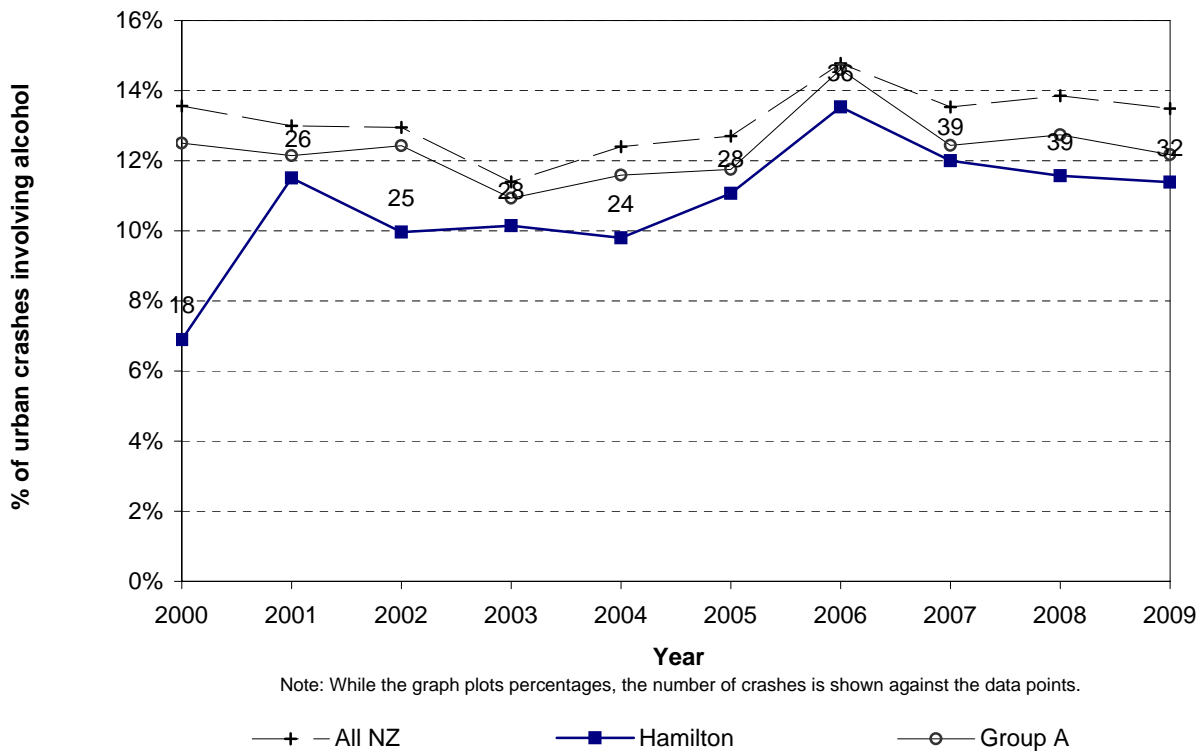
**Figure 5.5 Contributing factor trends  
Hamilton City - urban roads**



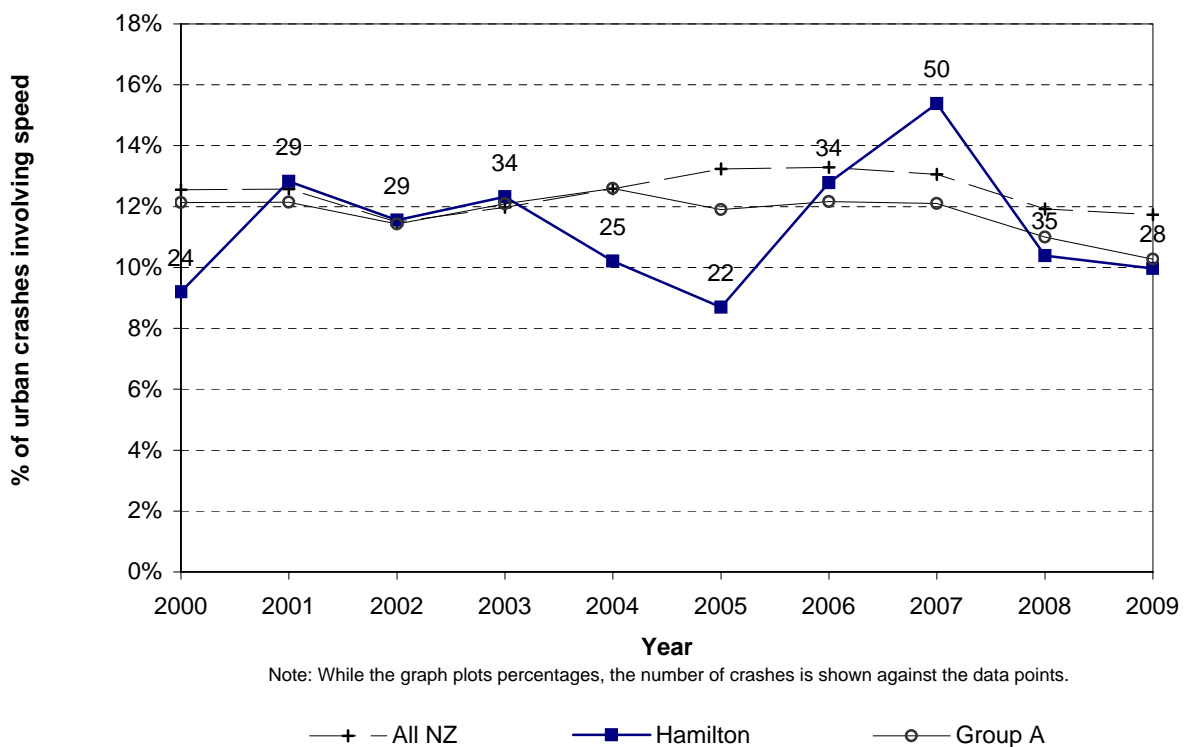
**Figure 5.6 Contributing factor trends  
Hamilton City - urban roads**



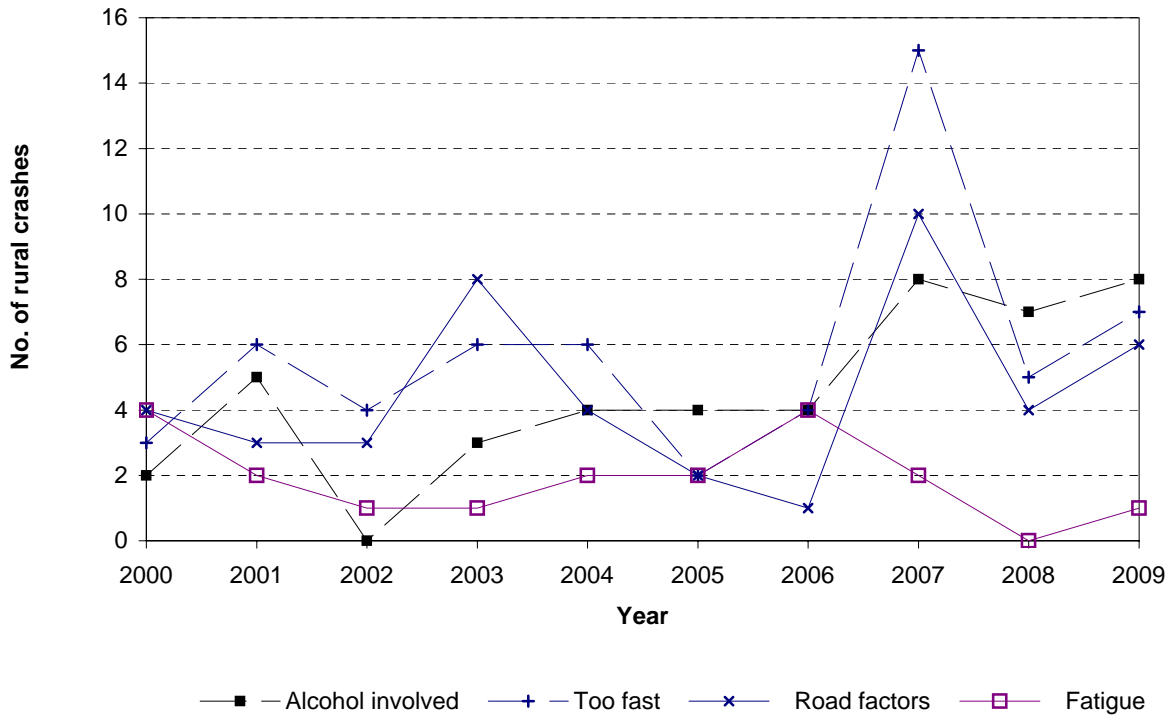
**Figure 5.7 Alcohol involved trend  
Hamilton City - urban roads**



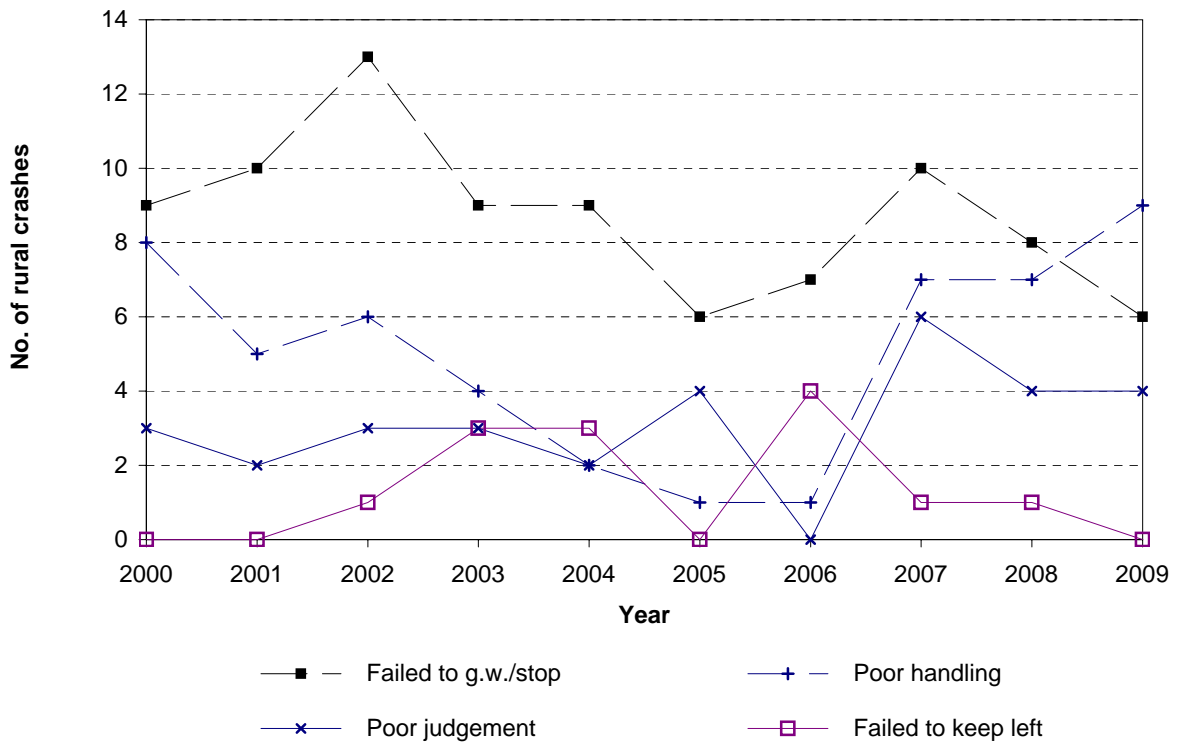
**Figure 5.8 Speed involved trend  
Hamilton City - urban roads**



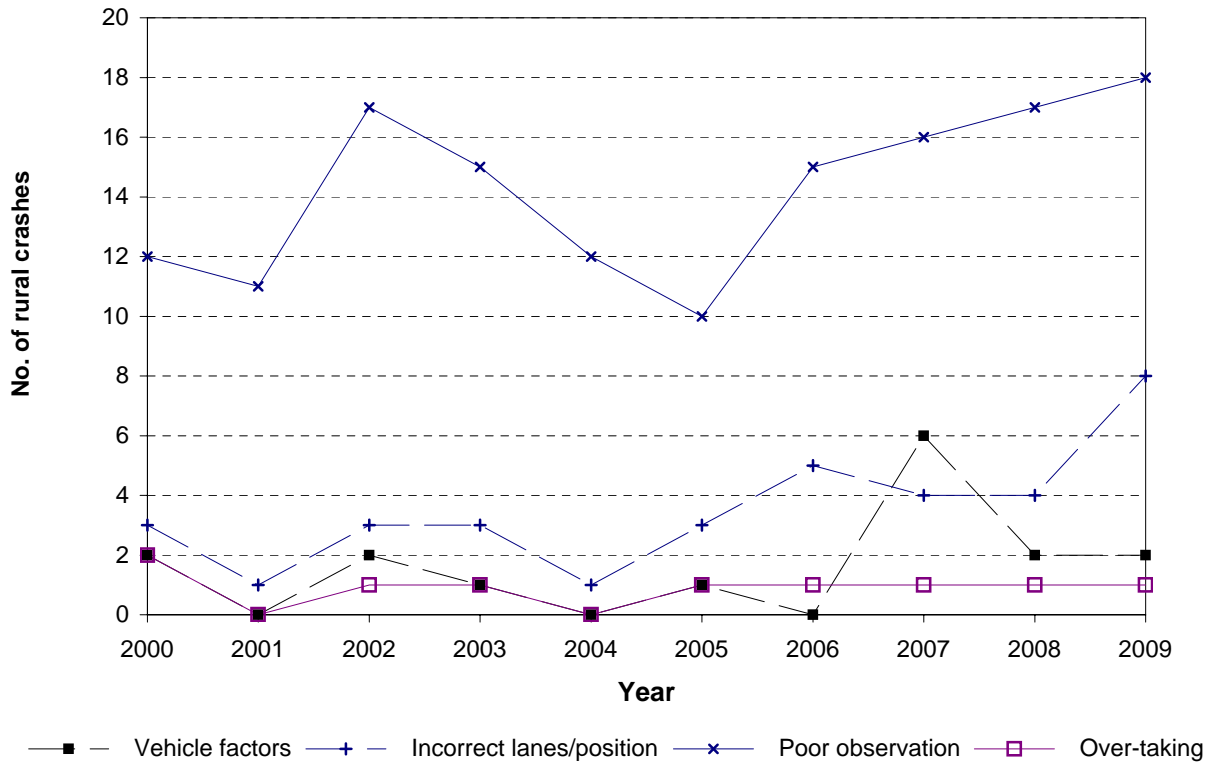
**Figure 5.9 Contributing factor trends  
Hamilton City - rural roads**



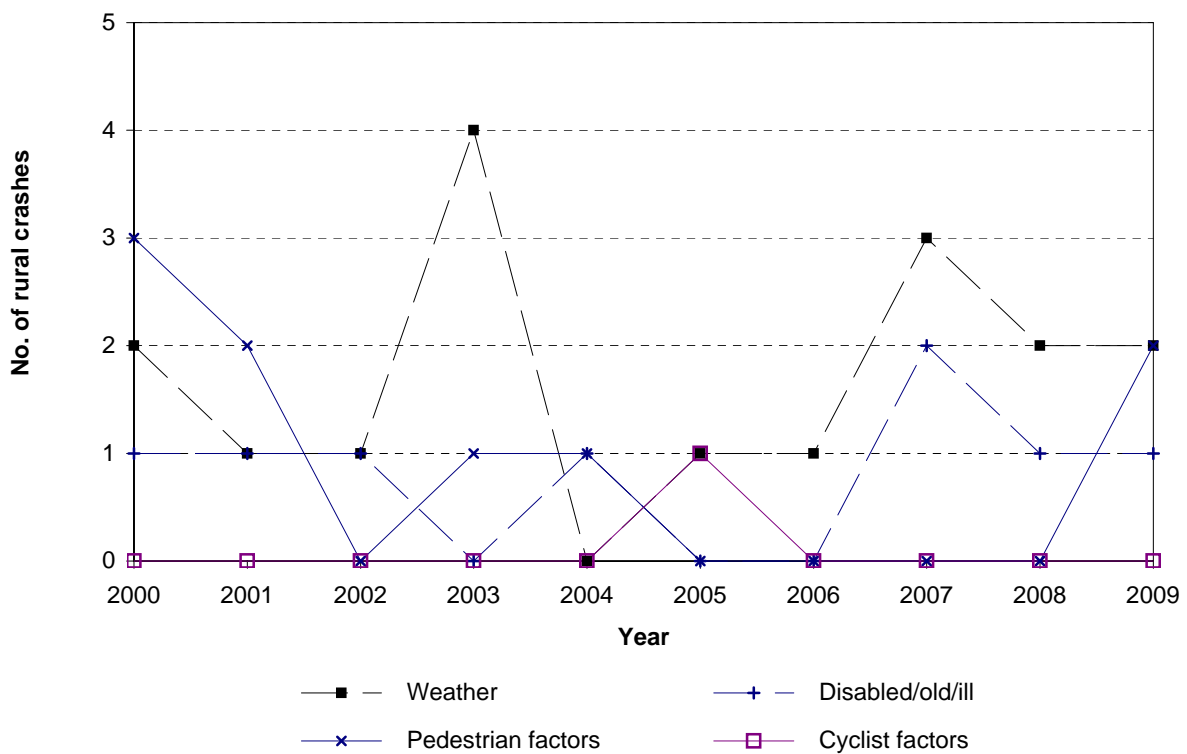
**Figure 5.10 Contributing factor trends  
Hamilton City - rural roads**



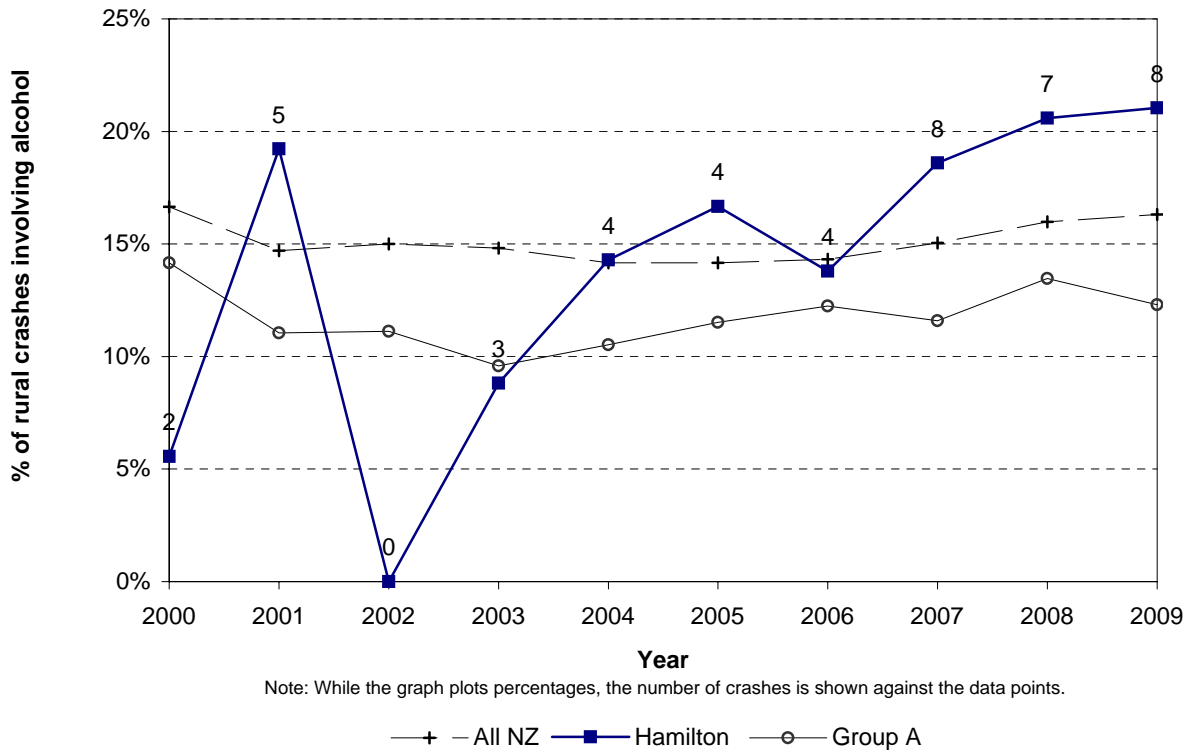
**Figure 5.11 Contributing factor trends  
Hamilton City - rural roads**



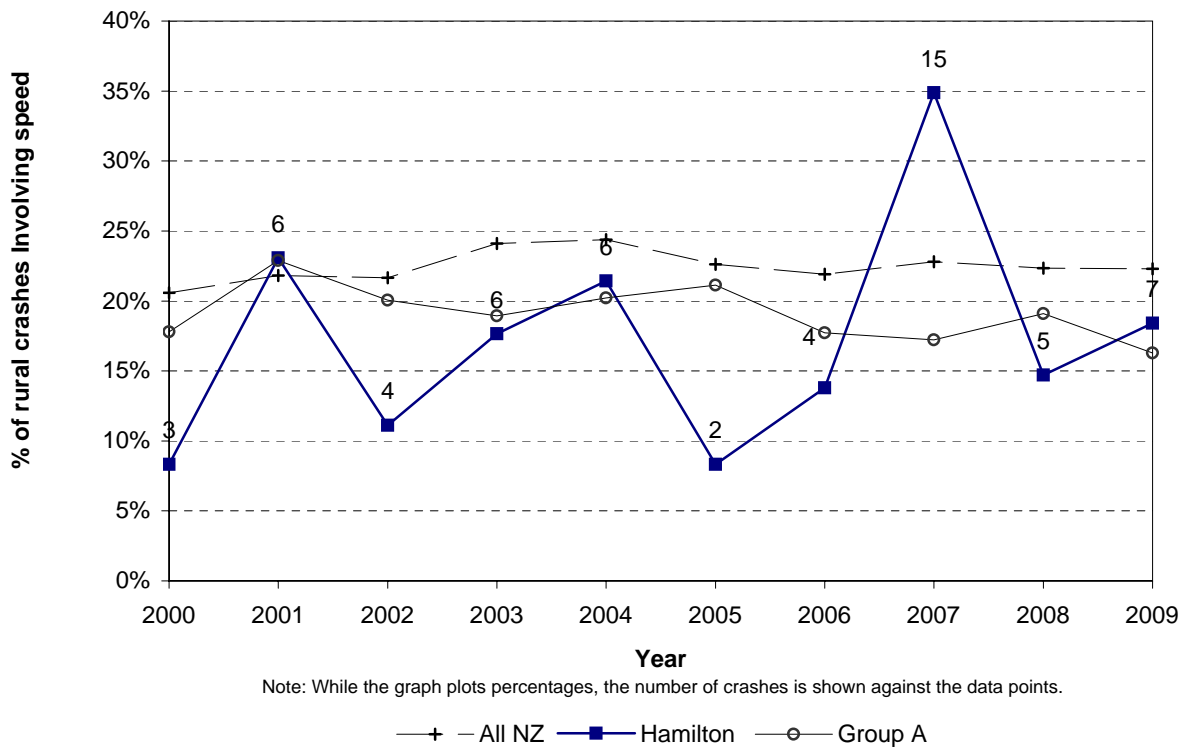
**Figure 5.12 Contributing factor trends  
Hamilton City - rural roads**



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



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



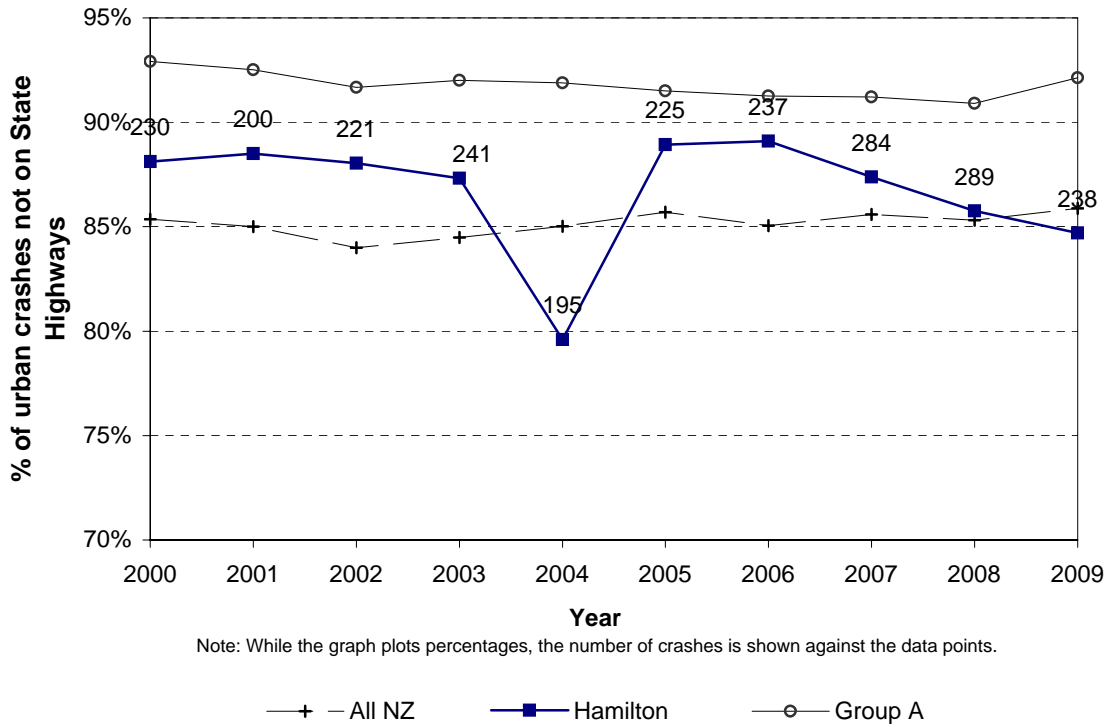


# *Environmental Statistics*

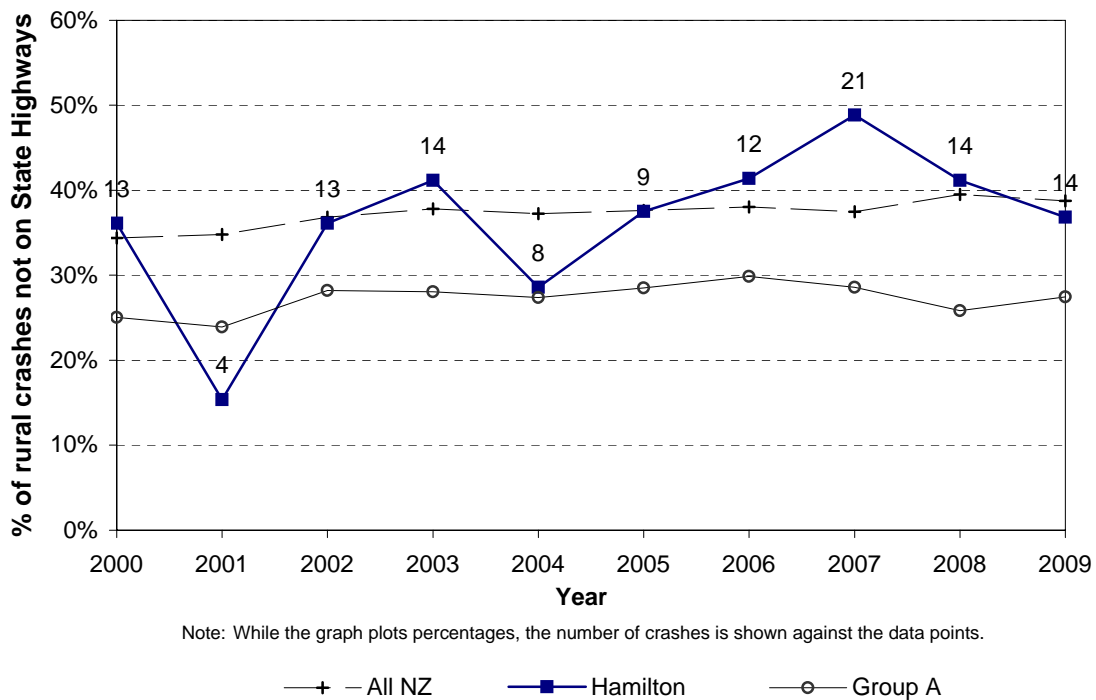




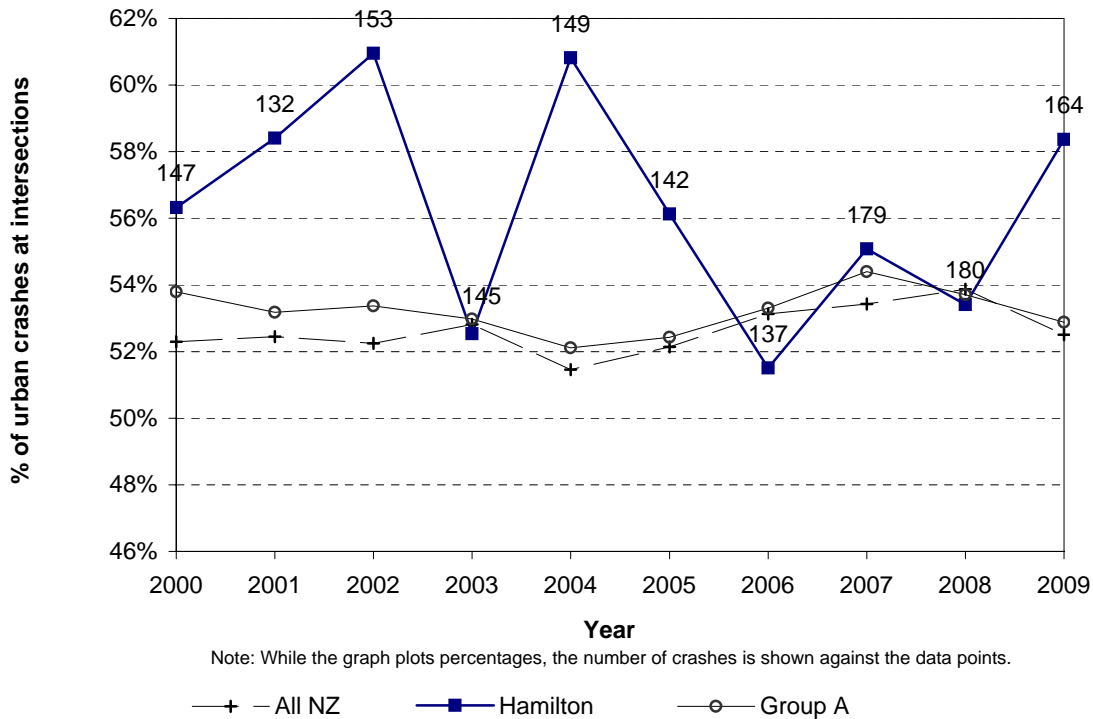
**Figure 6.1 Crashes not on state highways  
Hamilton City - urban roads**



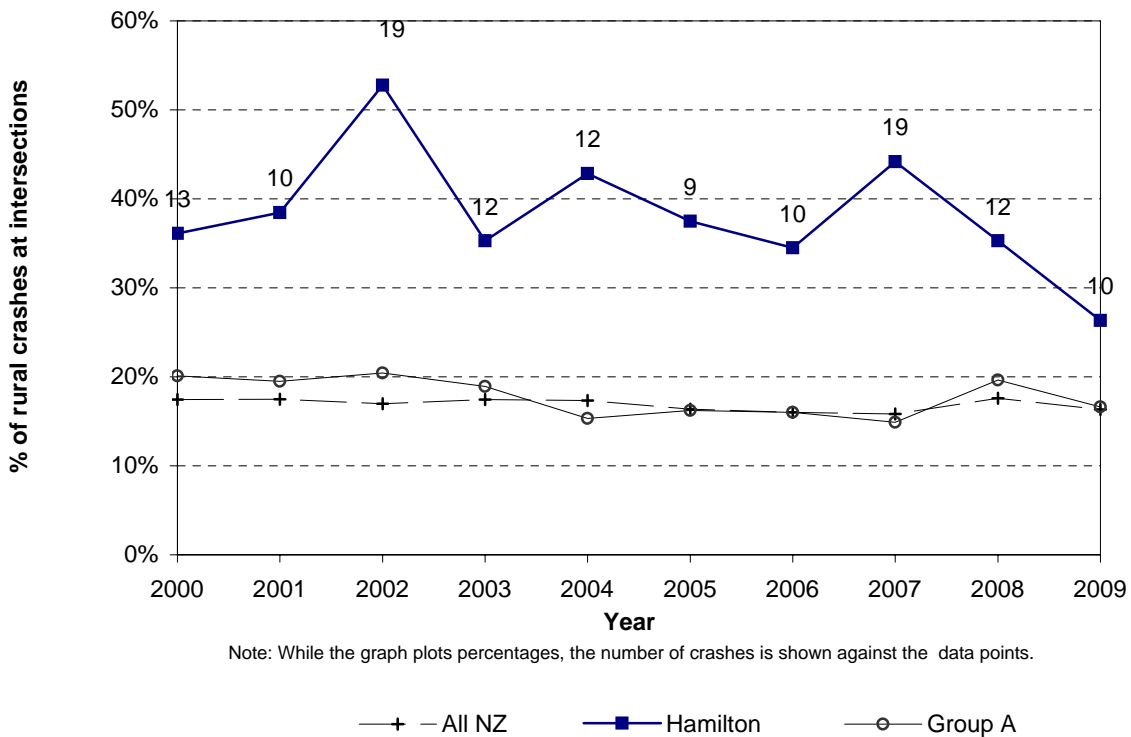
**Figure 6.2 Crashes not on state highways  
Hamilton City - rural roads**



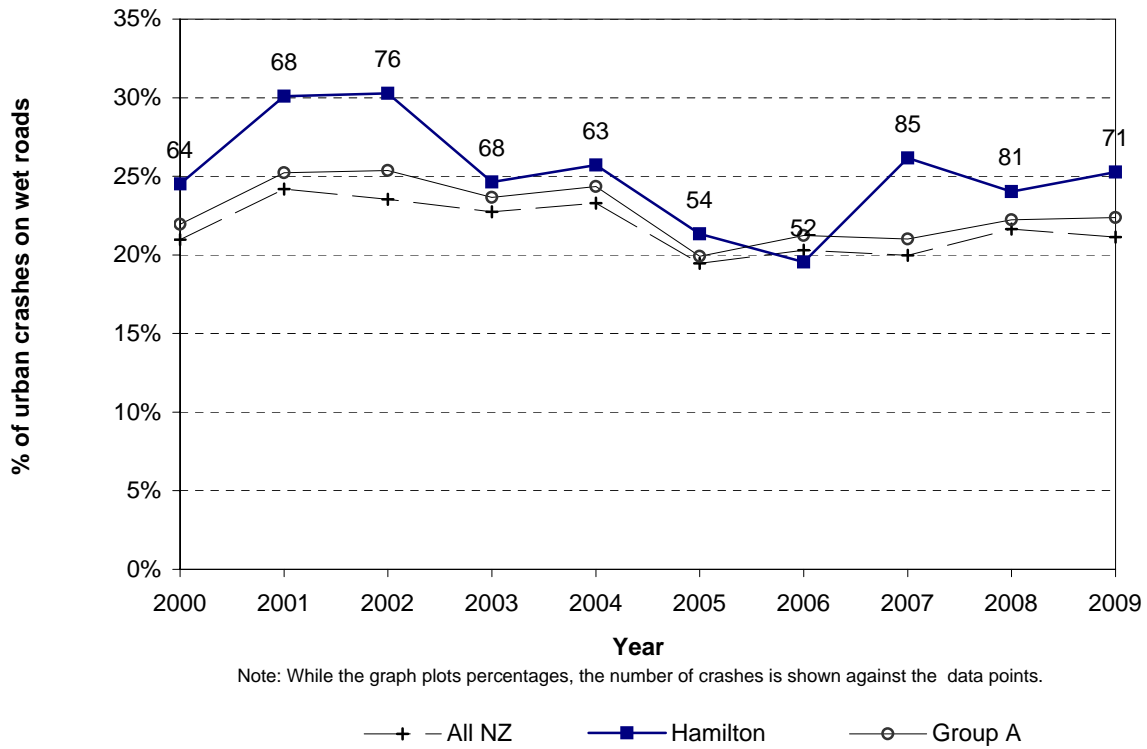
**Figure 6.3 Intersection crashes  
Hamilton City - urban roads**



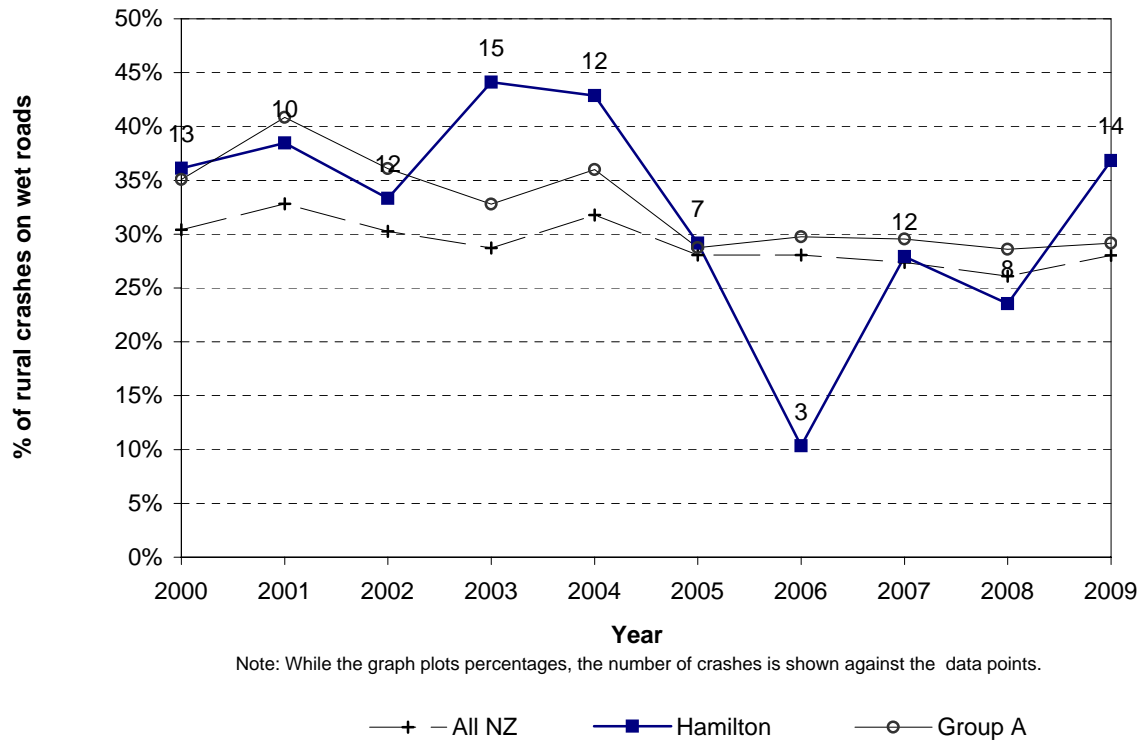
**Figure 6.4 Intersection crashes  
Hamilton City - rural roads**



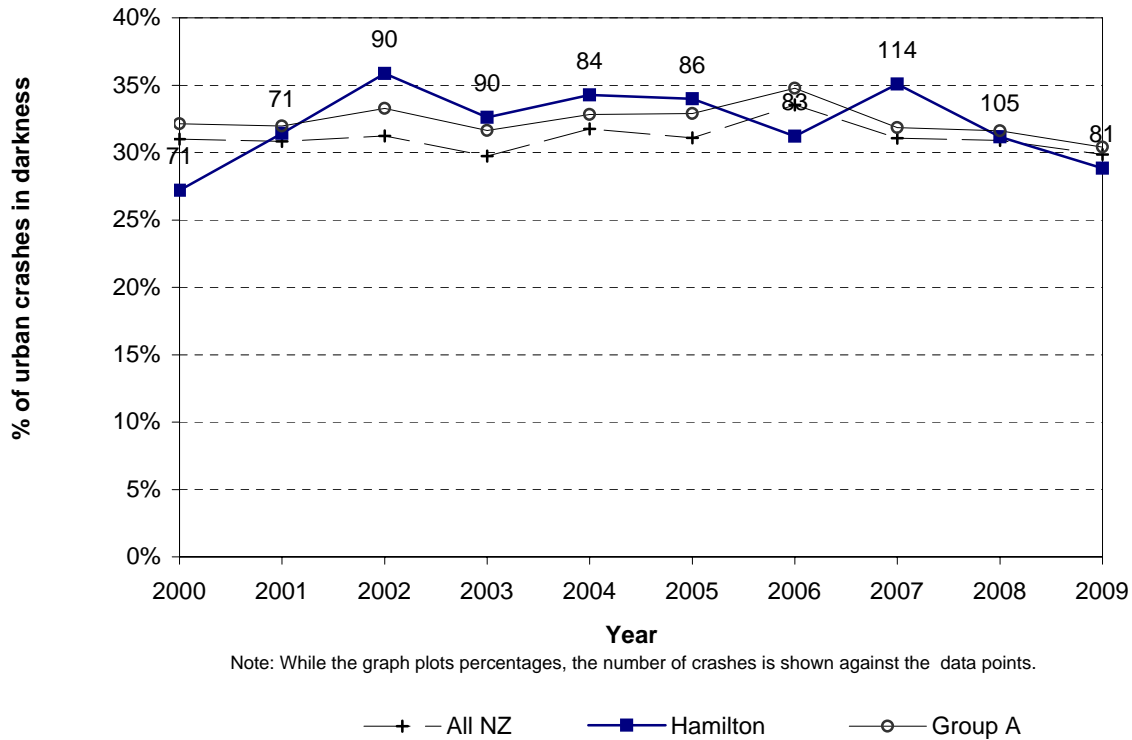
**Figure 6.5 Wet road crashes  
Hamilton City - urban roads**



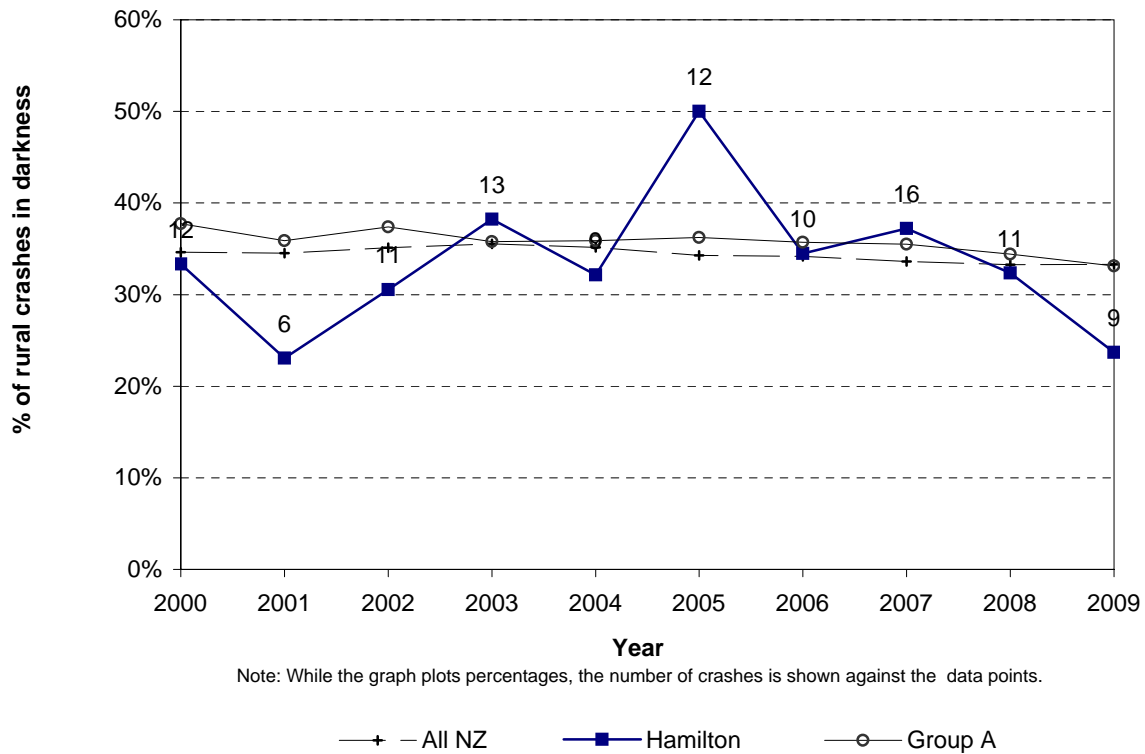
**Figure 6.6 Wet road crashes  
Hamilton City - rural roads**



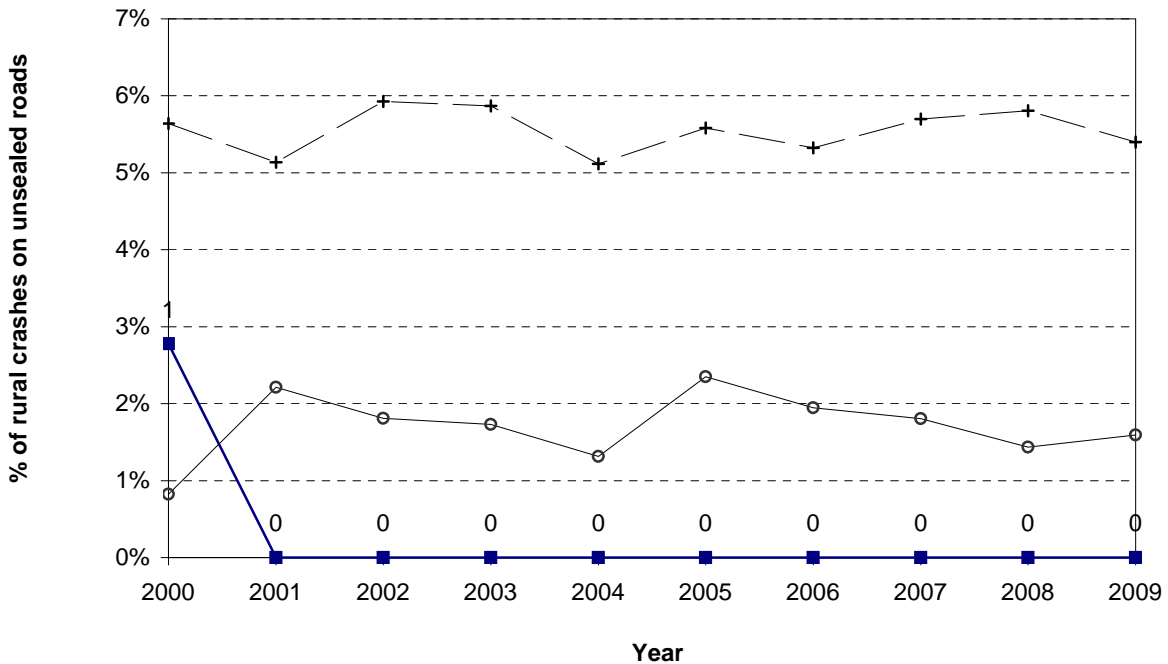
**Figure 6.7 Crashes in darkness  
Hamilton City - urban roads**



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



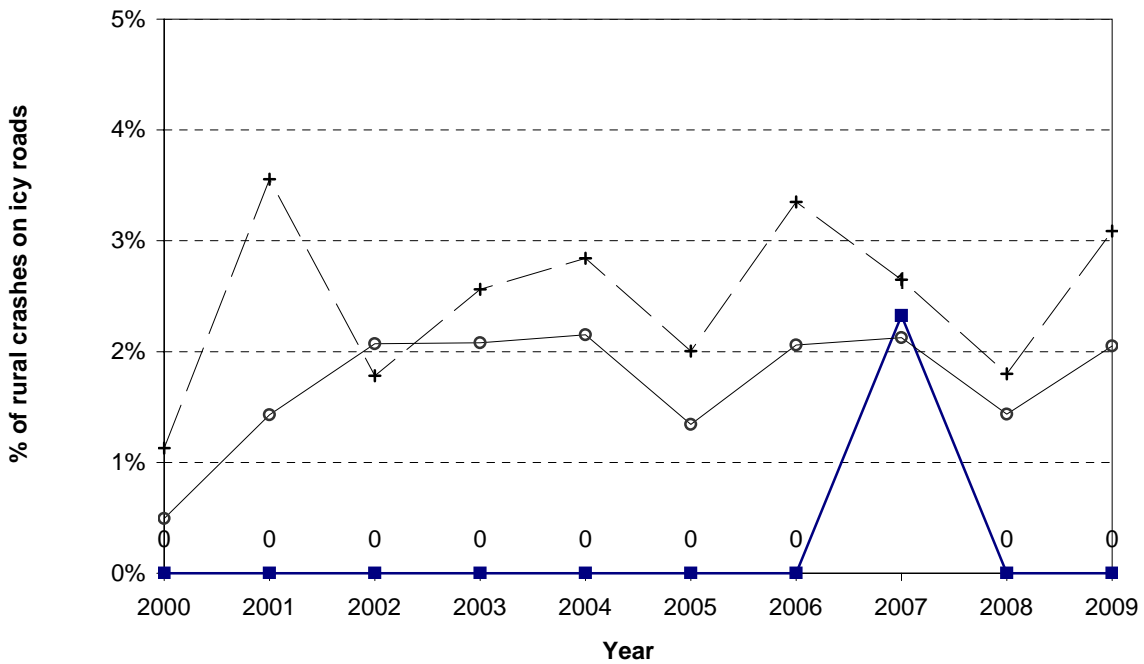
**Figure 6.9 Unsealed road crashes  
Hamilton City - rural roads**



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

+ All NZ    ■ Hamilton    ○ Group A

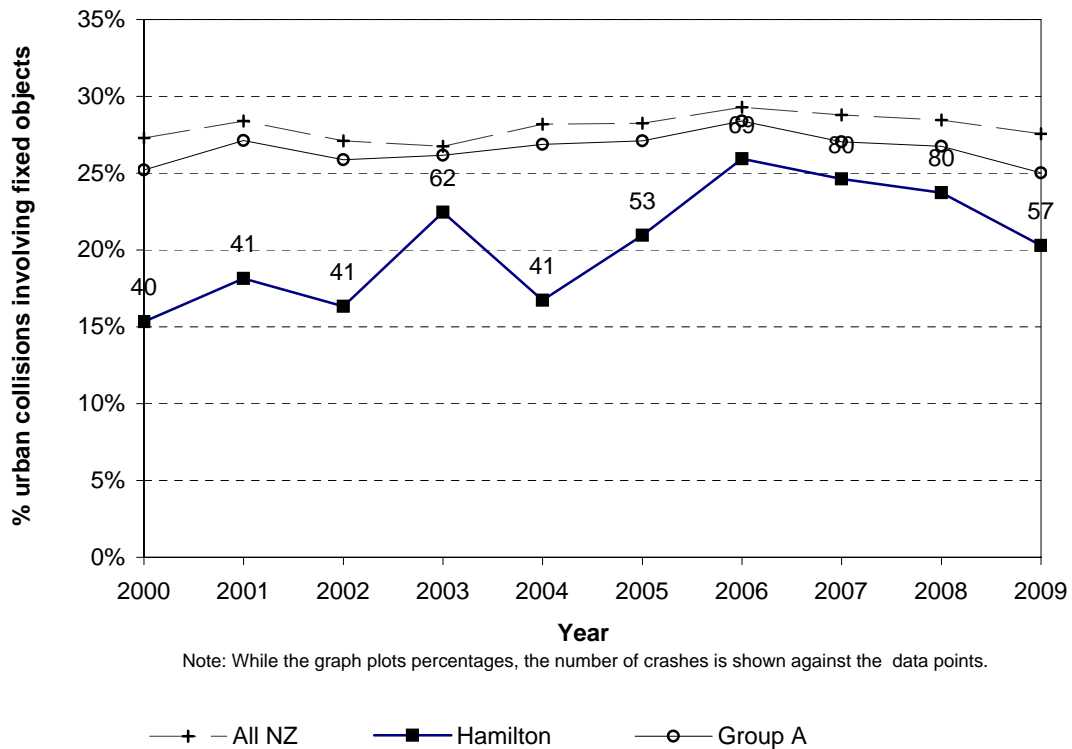
**Figure 6.10 Icy road crashes  
Hamilton City - rural roads**



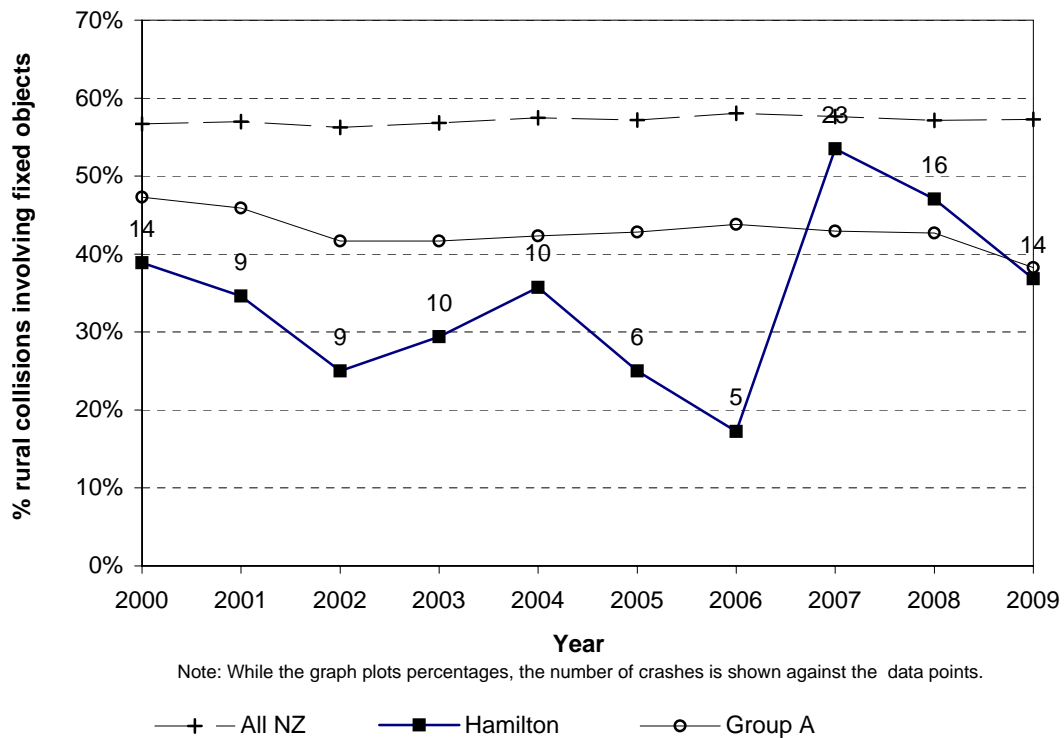
Note: While the graph plots percentages, the number of crashes is shown against the data points.

+ All NZ    ■ Hamilton    ○ Group A

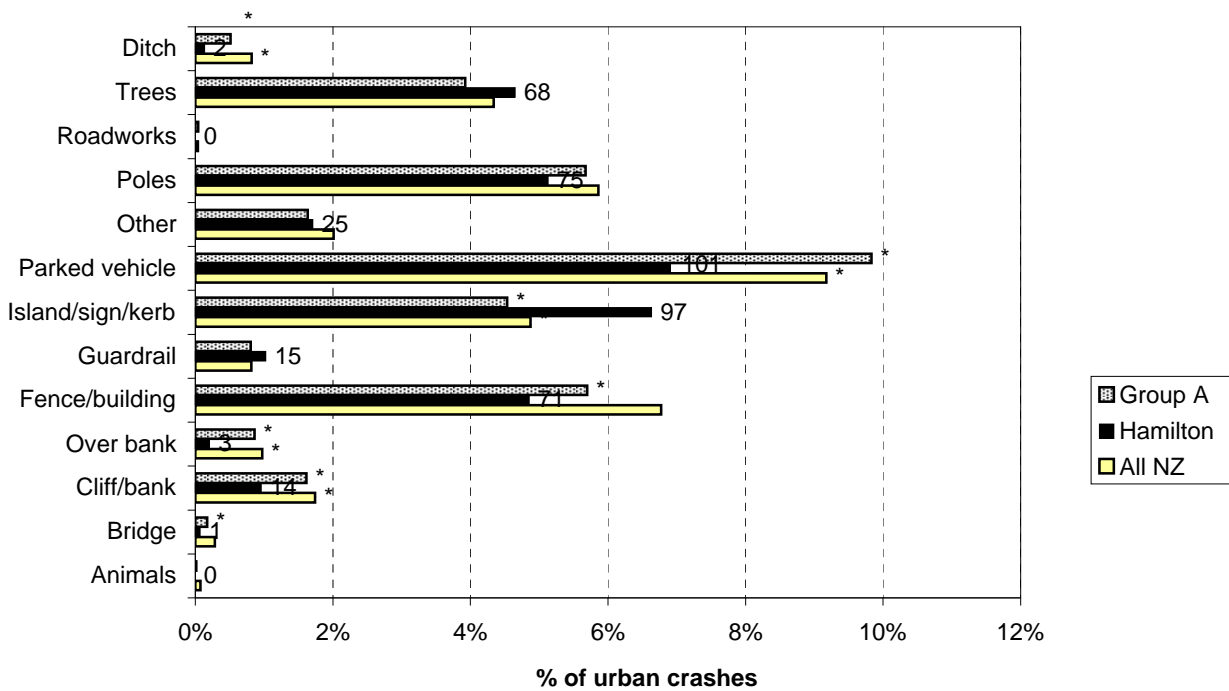
**Figure 6.11 Collisions with objects  
Hamilton City - urban roads**



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

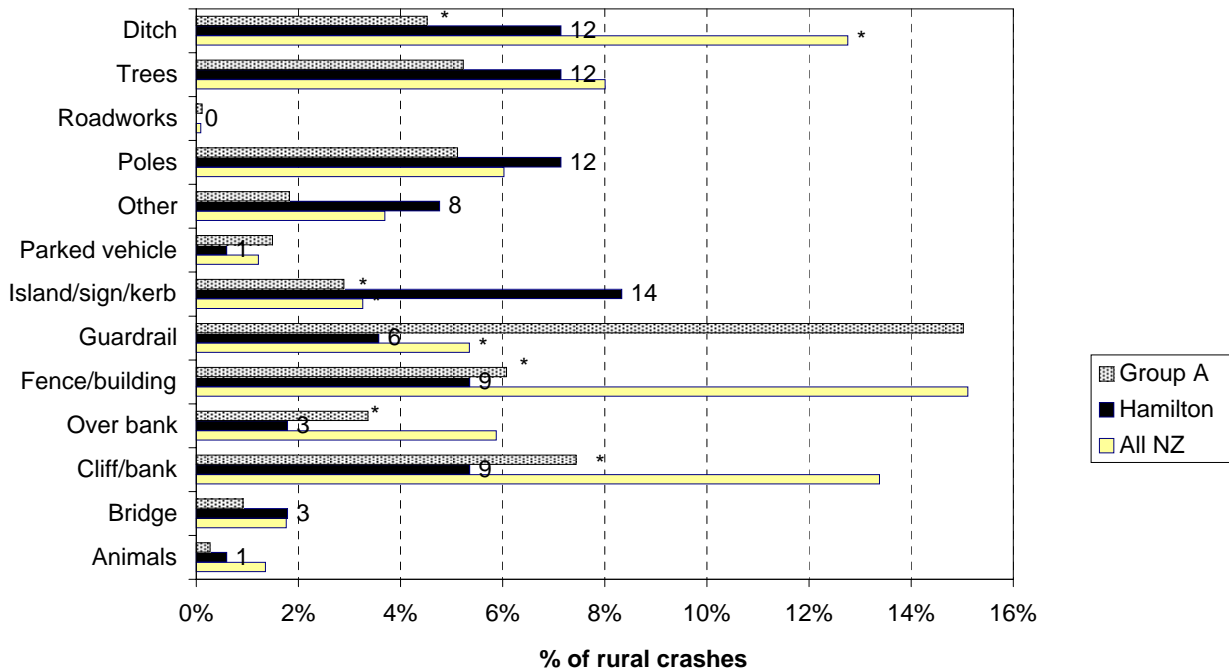


**Figure 6.13 Objects struck - urban  
Hamilton City (2005-2009)**



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  
Hamilton City (2005-2009)**



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

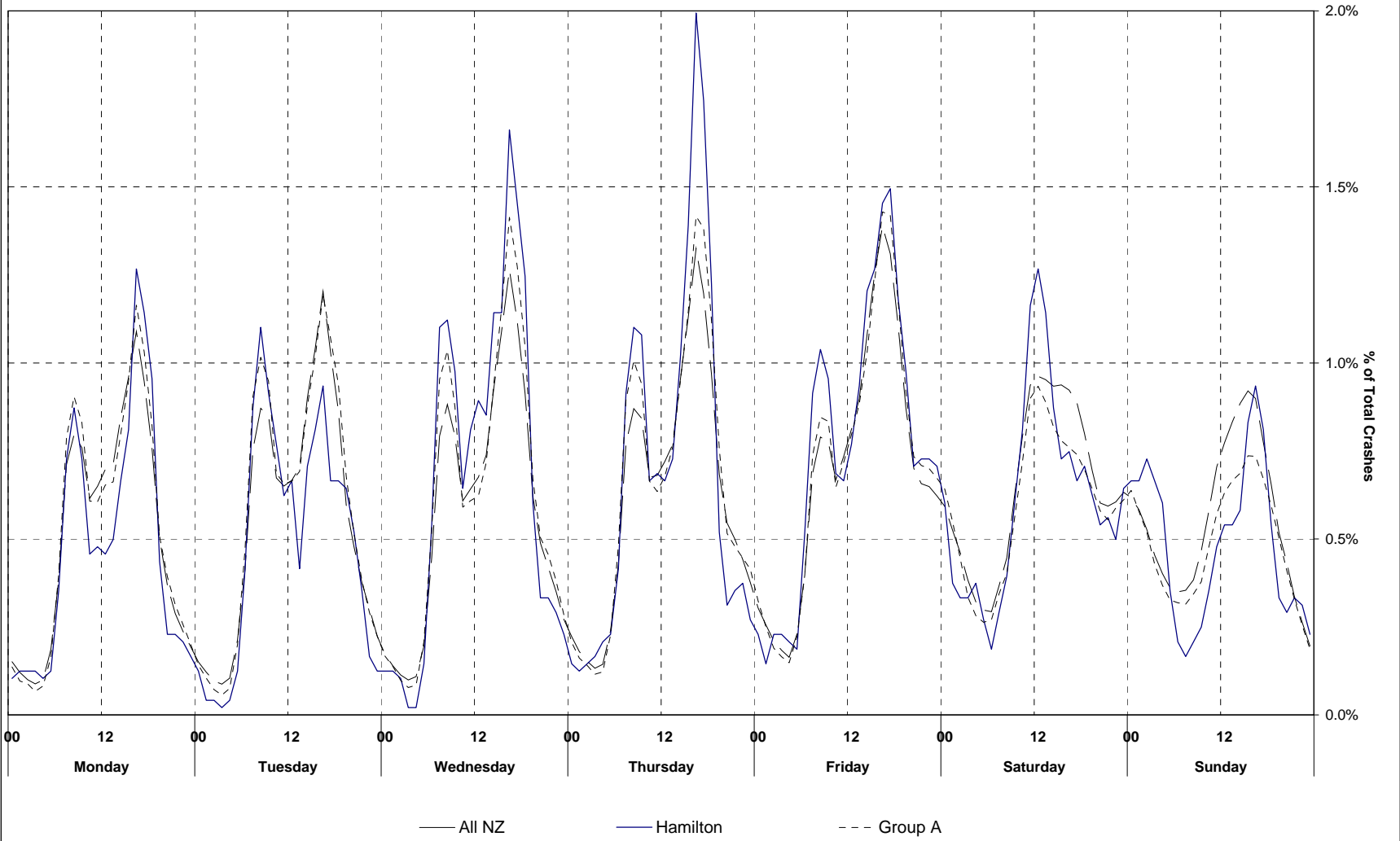




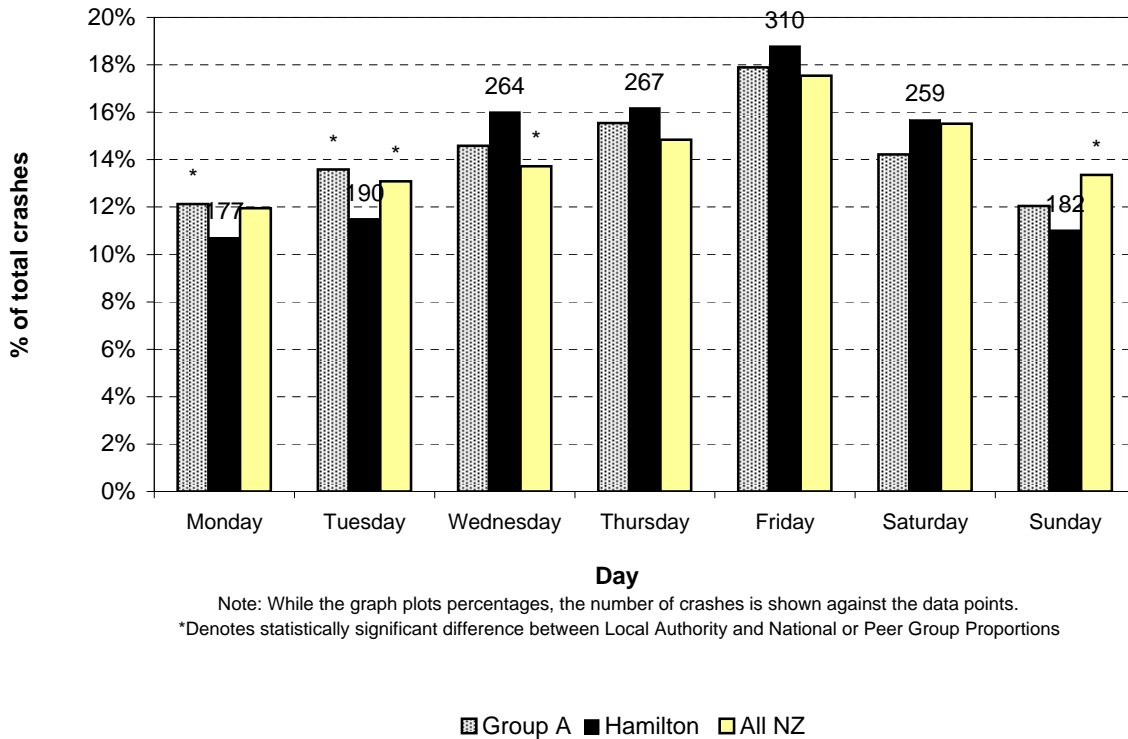
# *Date and Time Statistics*



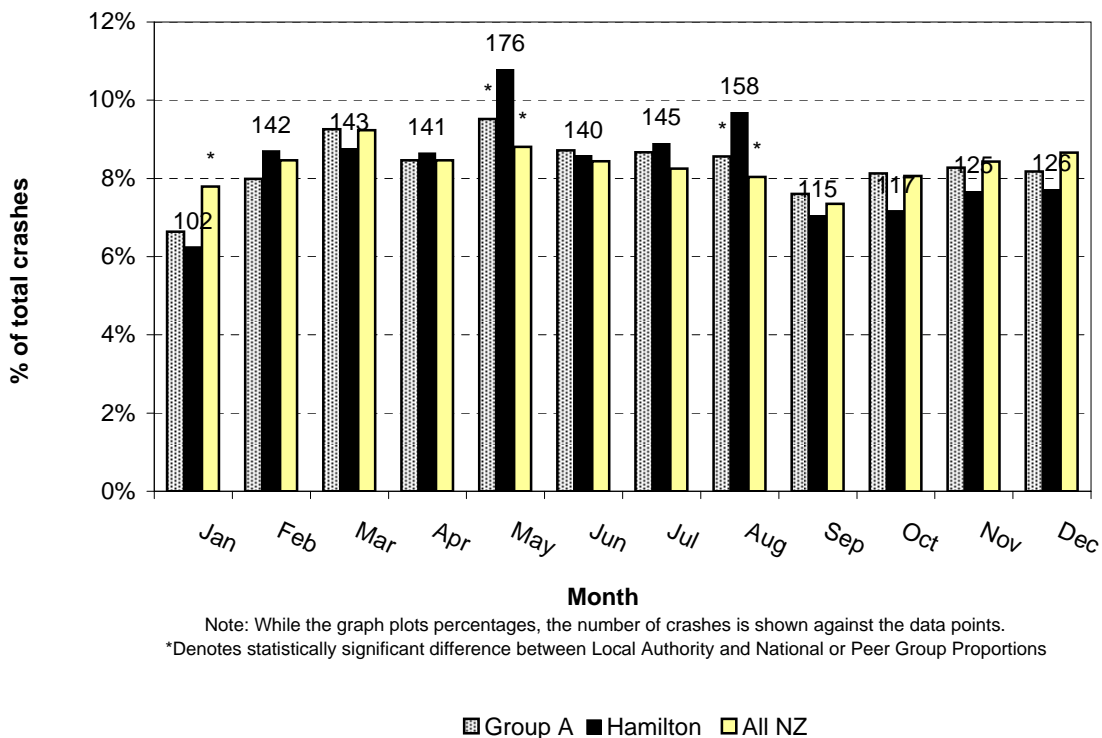
Figure 7.1 Time pattern over average week  
Hamilton City (2005-2009)



**Figure 7.2 Day of week (6 a.m. to 6 a.m.)  
Hamilton City (2005-2009)**



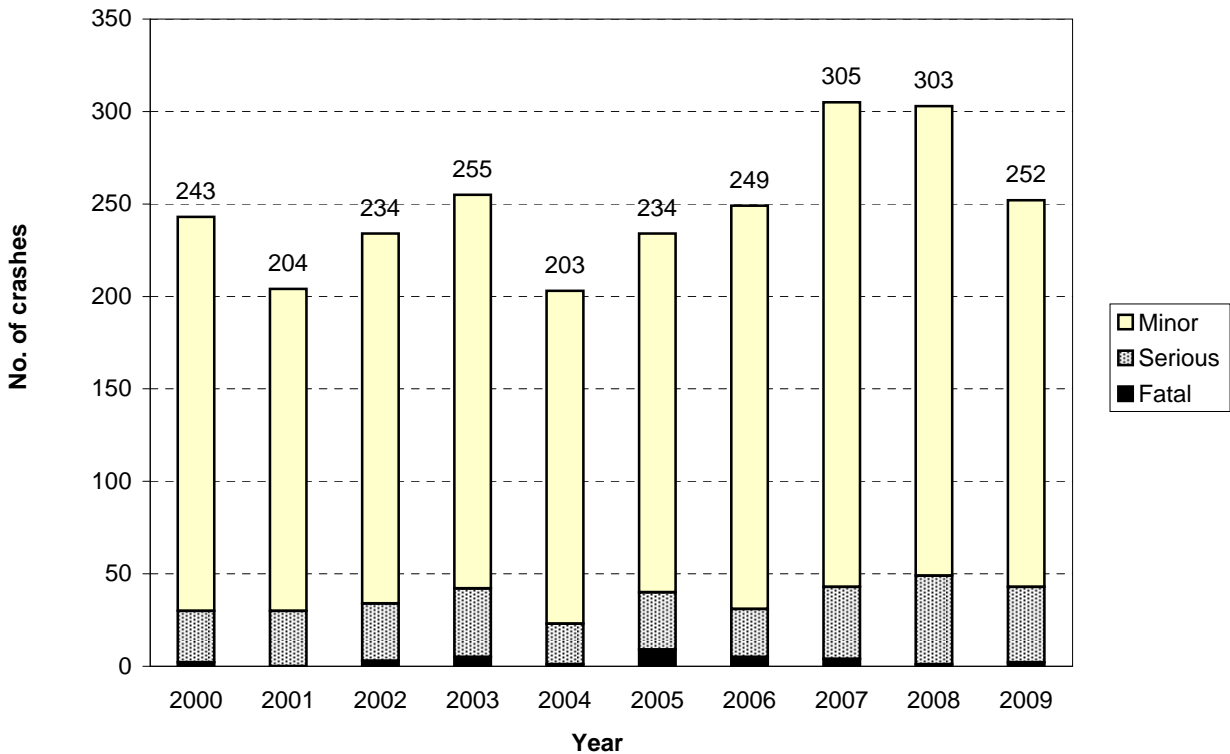
**Figure 7.3 Month of year  
Hamilton City (2005-2009)**



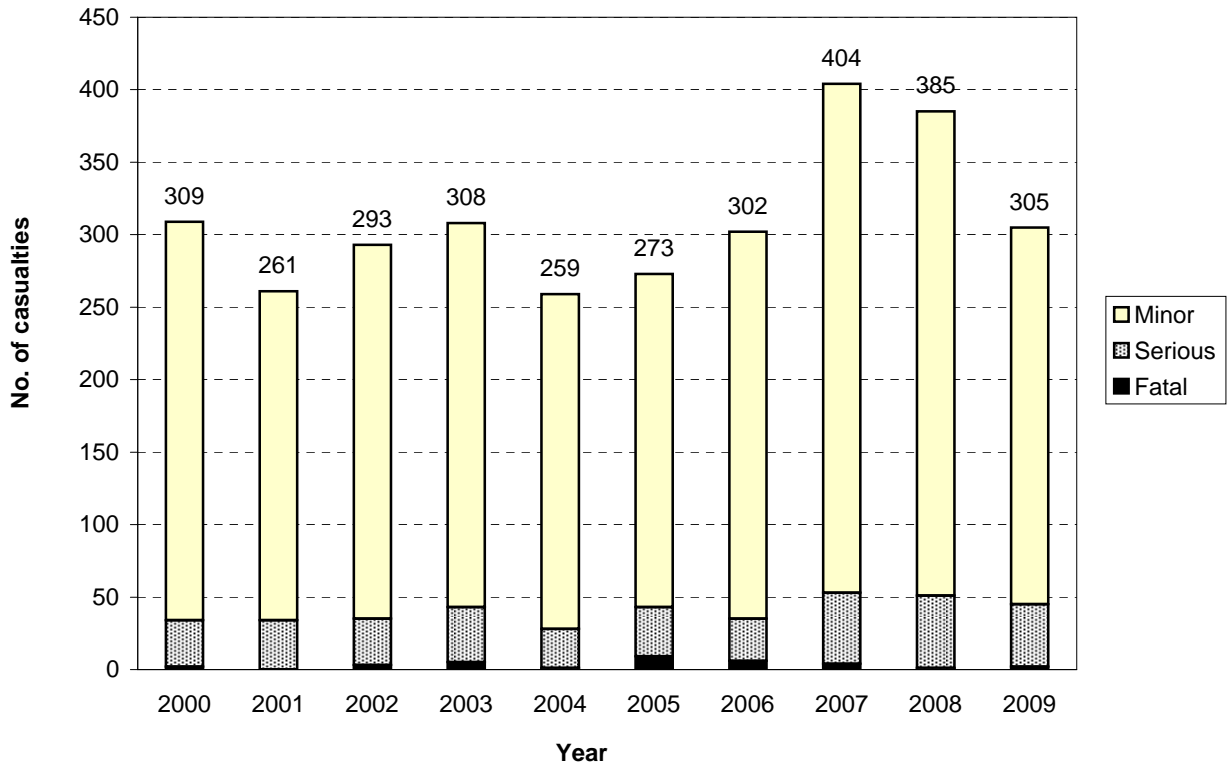
# *Local Road Statistics*



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

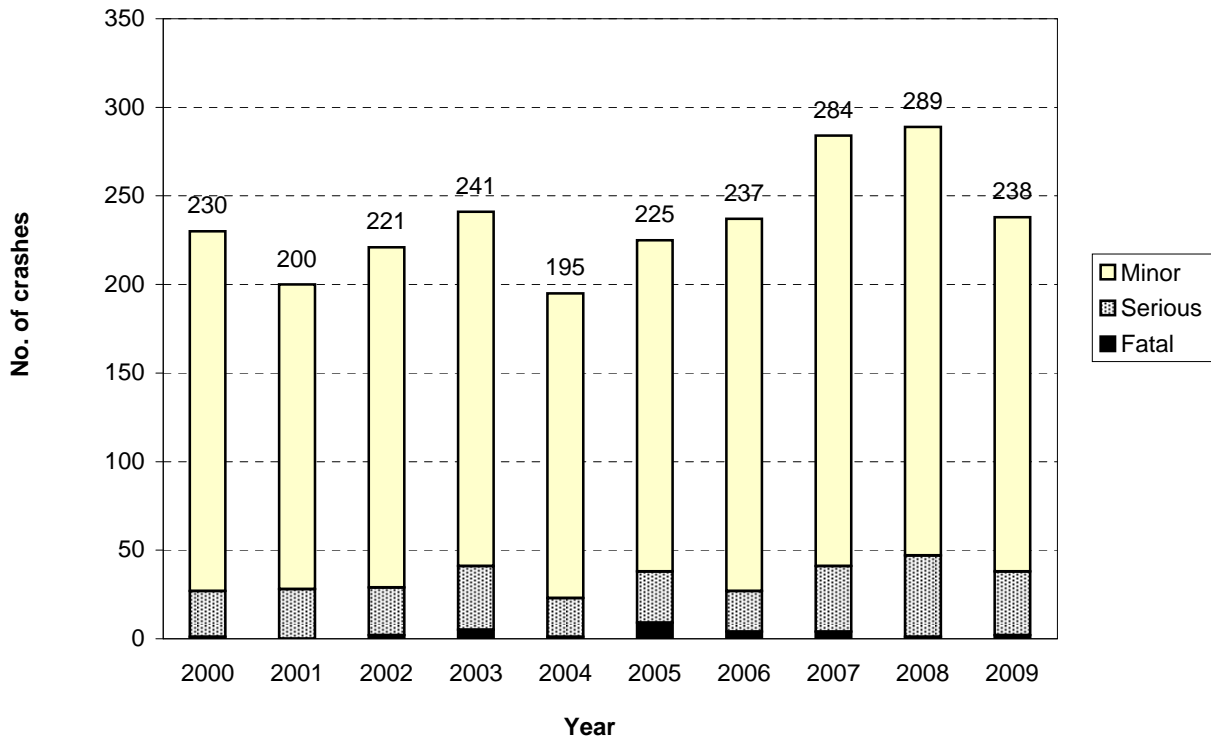


**Figure 8.2 Number of casualties**  
Hamilton City - council roads (urban & rural)

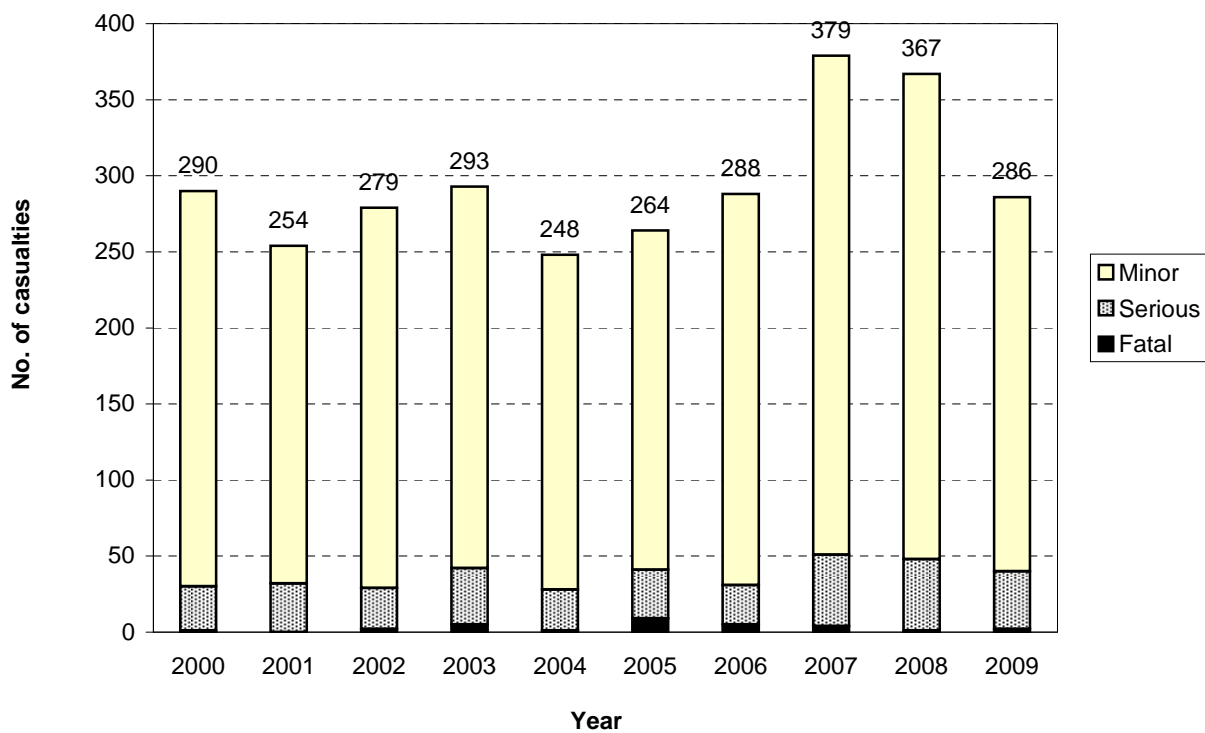




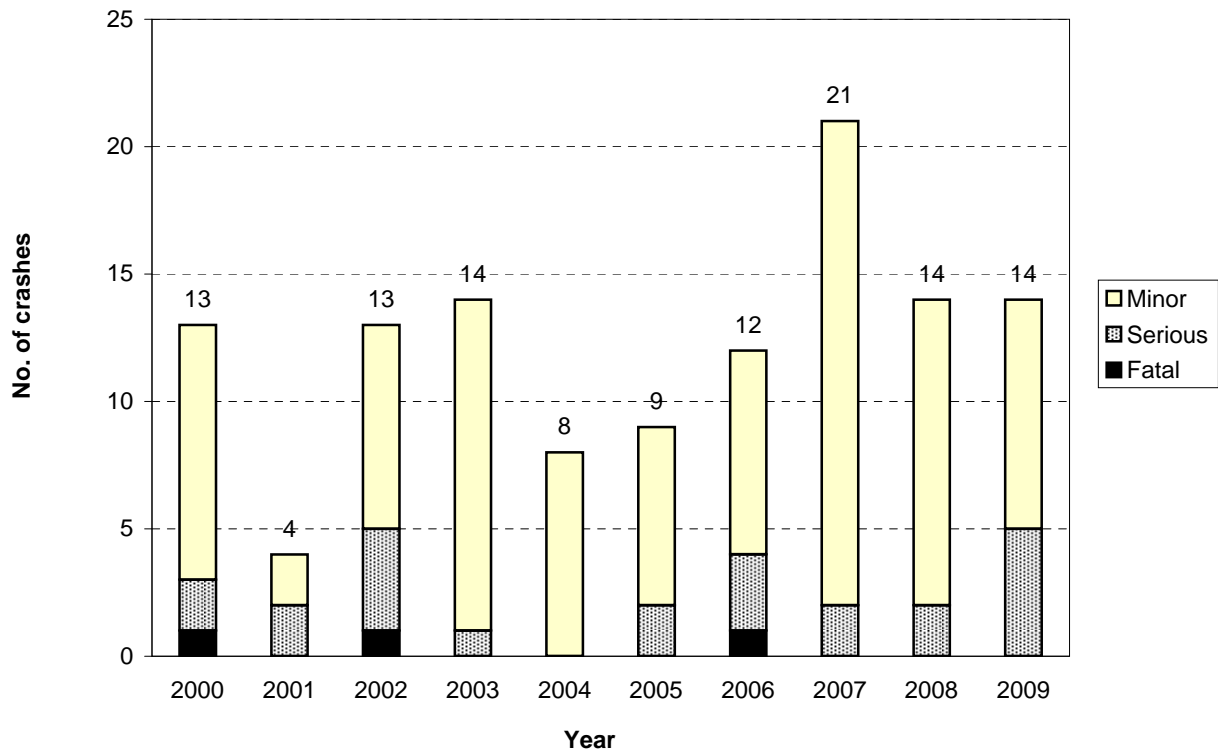
**Figure 8.3 Number of injury crashes  
Hamilton City - urban council roads**



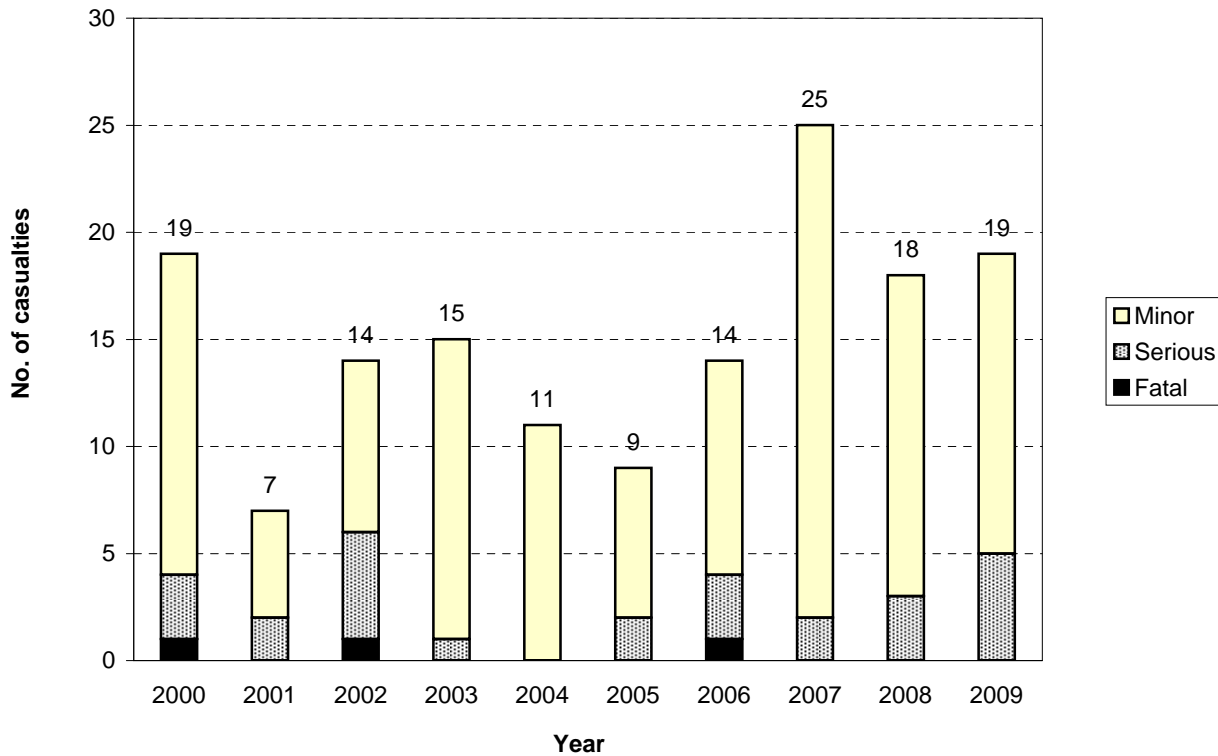
**Figure 8.4 Number of casualties  
Hamilton City - urban council roads**



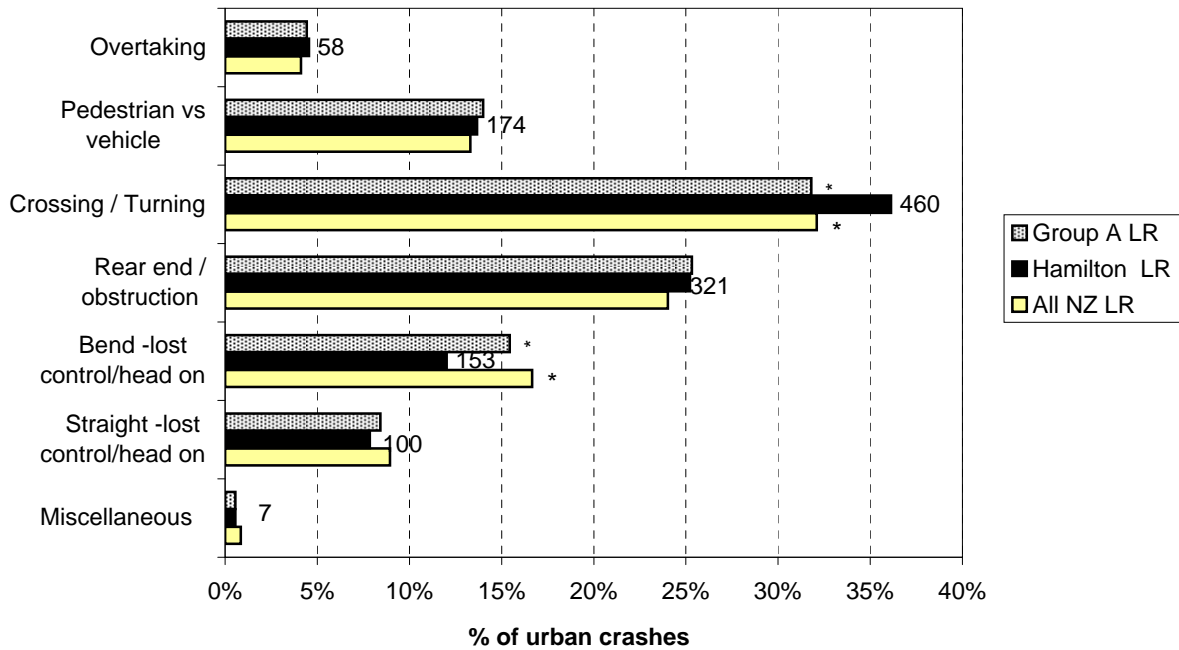
**Figure 8.5 Number of injury crashes  
Hamilton City - rural council roads**



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

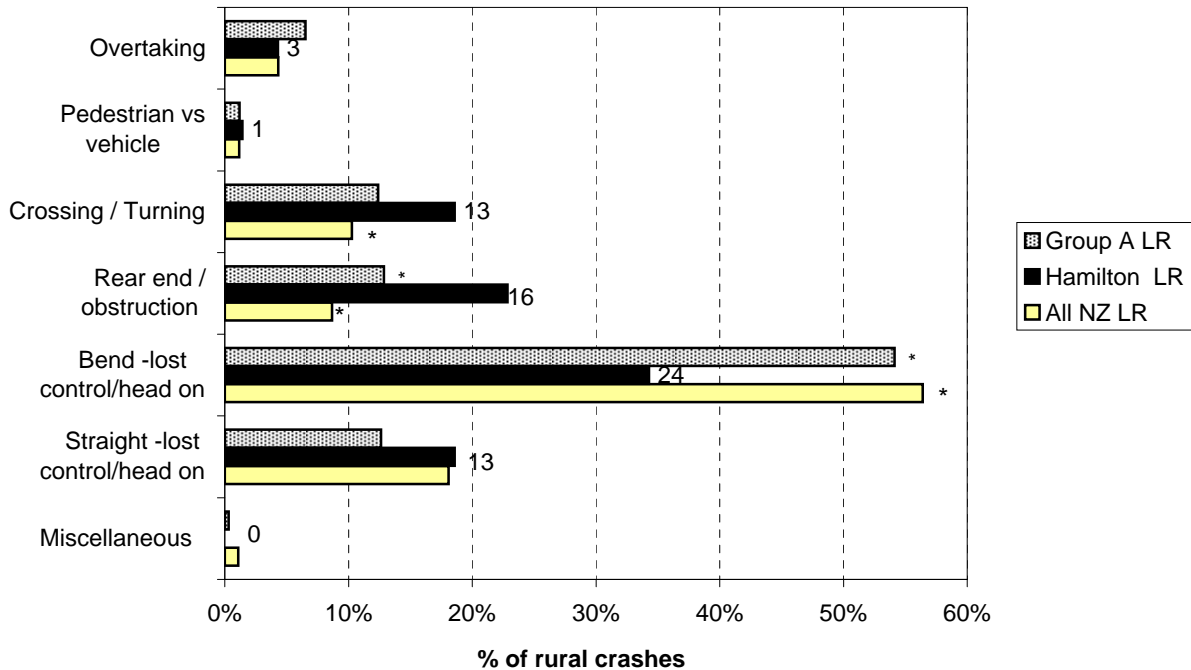


**Figure 8.7 Crash movement type - urban  
Hamilton City council roads (2005-2009)**



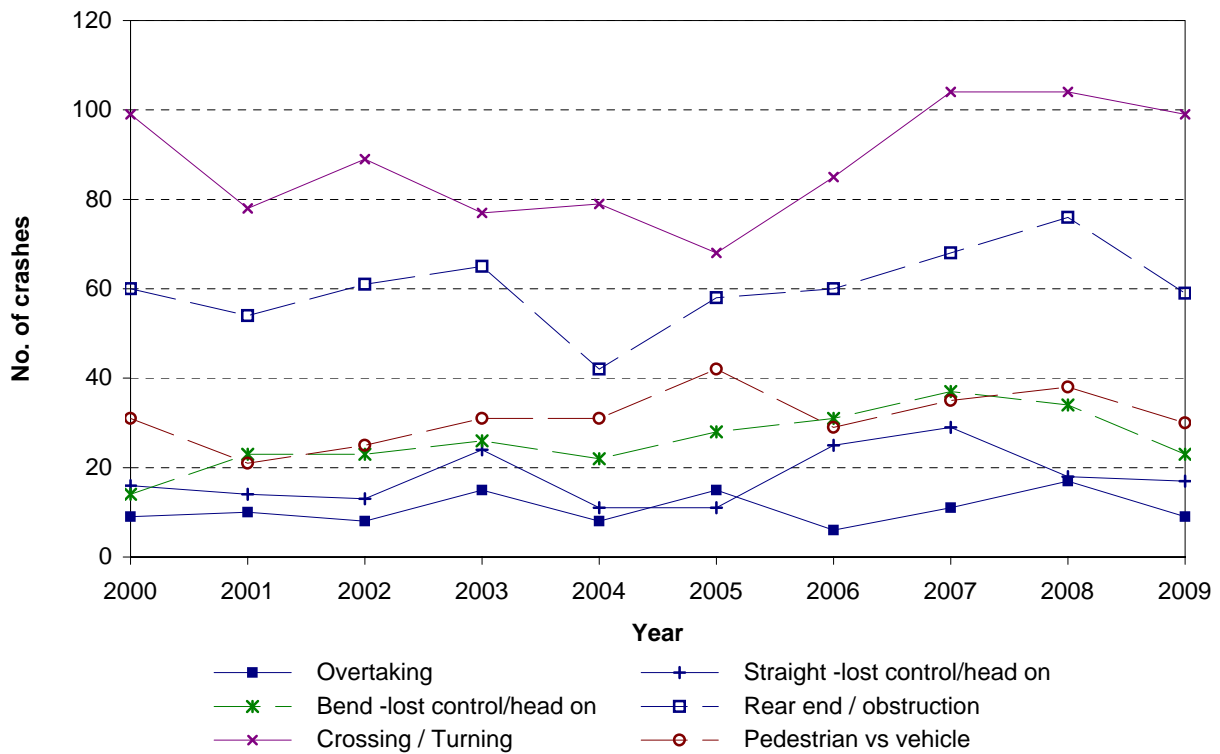
Note: While the graph plots percentages, the number of crashes is shown against the data points.  
\*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions

**Figure 8.8 Crash movement type - rural  
Hamilton City council roads (2005-2009)**

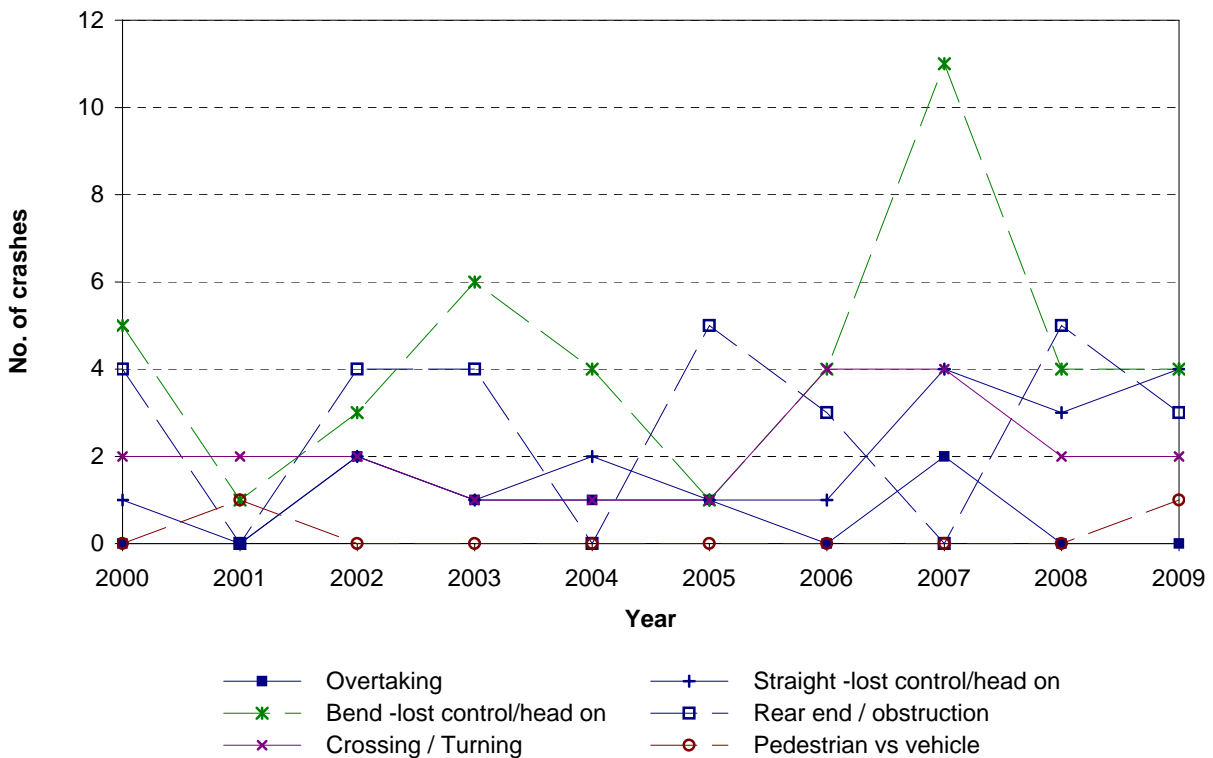


Note: While the graph plots percentages, the number of crashes is shown against the data points.  
\*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions

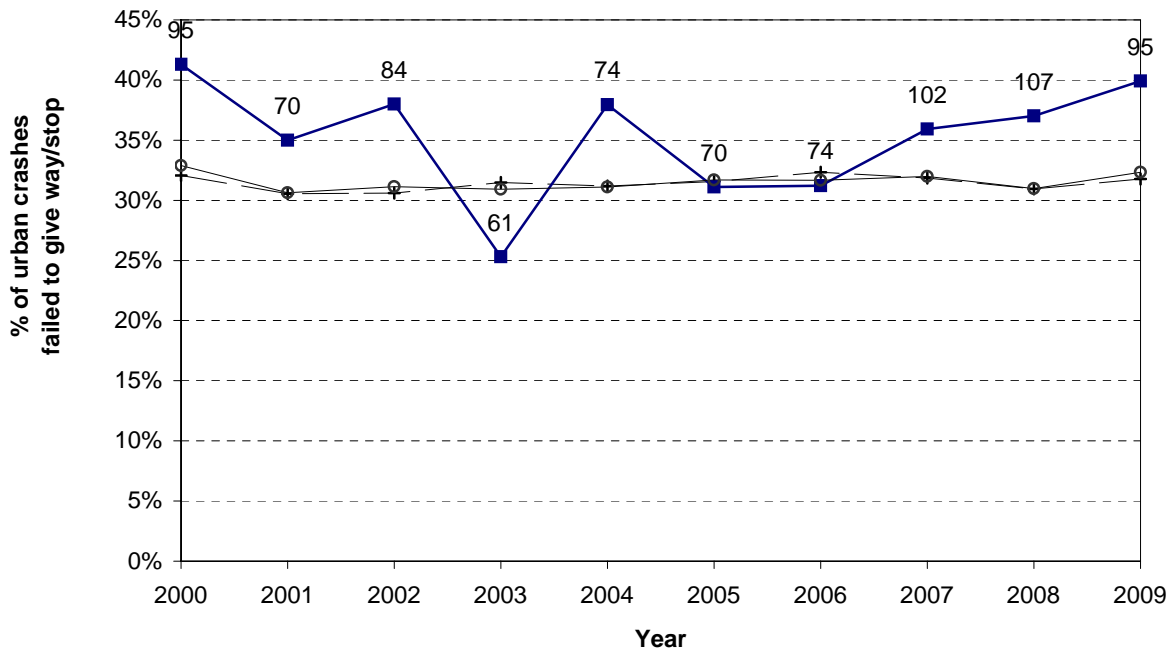
**Figure 8.9 Crash movement type - Trends  
Hamilton City - urban council roads**



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



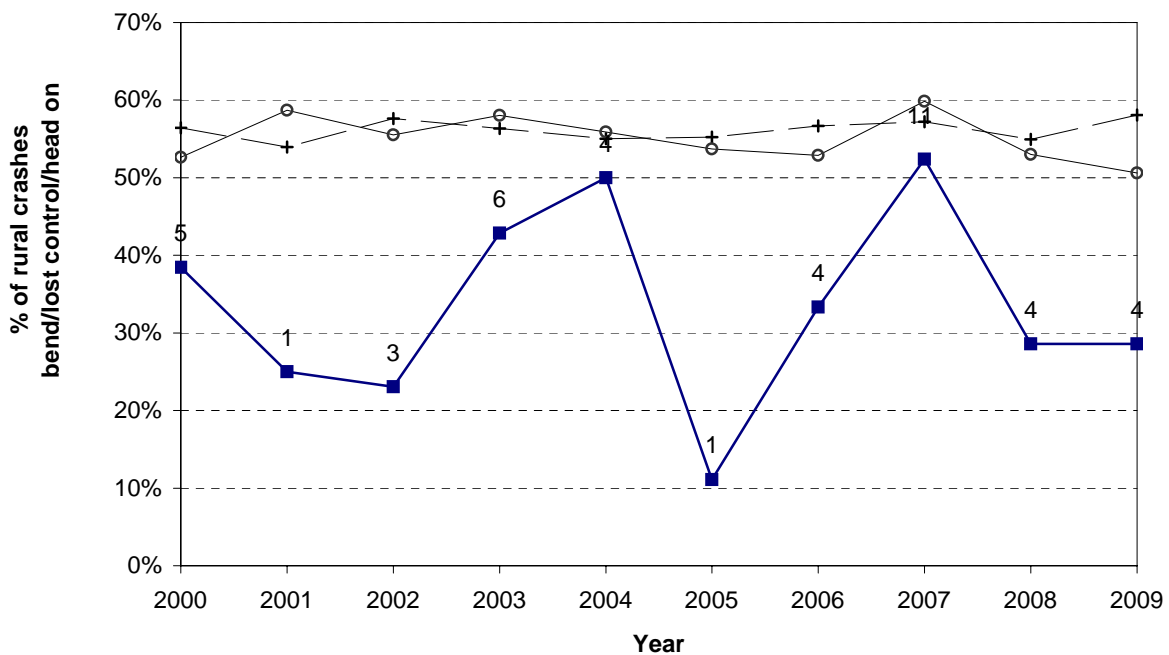
**Figure 8.11 Failed to give way/stop  
Hamilton City - urban council roads**



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

—+— All NZ LR —■— Hamilton LR —○— Group A LR

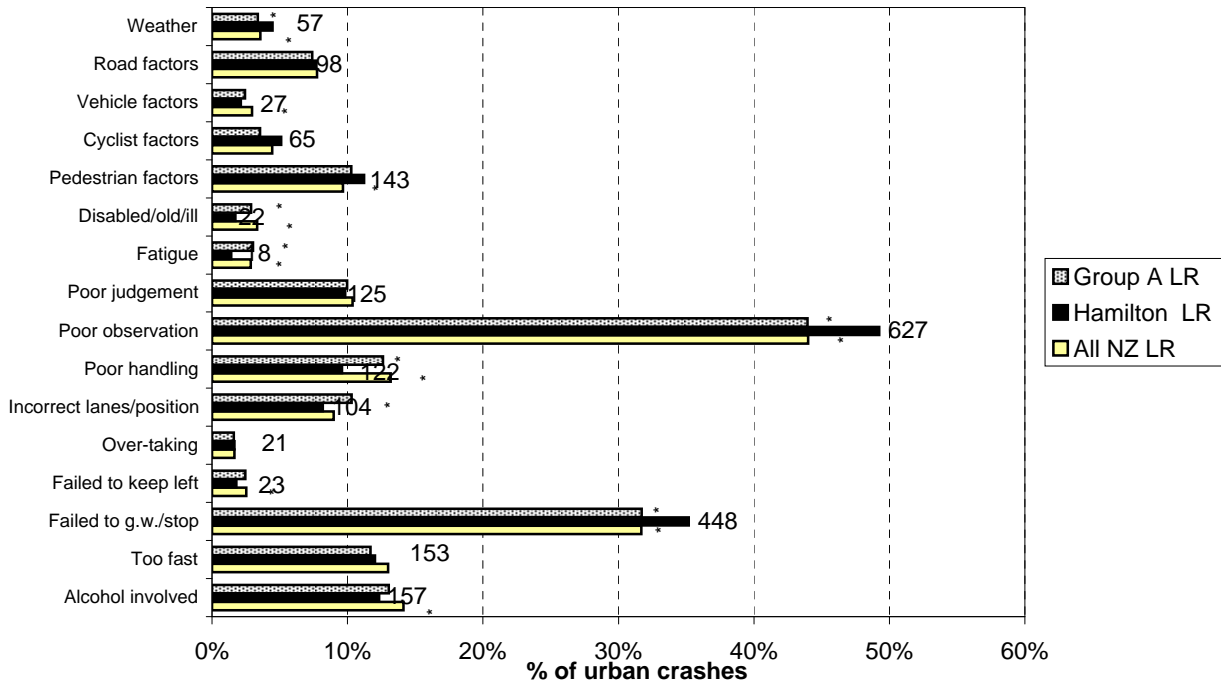
**Figure 8.12 Bend - lost control / head - on  
Hamilton City - rural council roads**



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

—+— All NZ LR —■— Hamilton LR —○— Group A LR

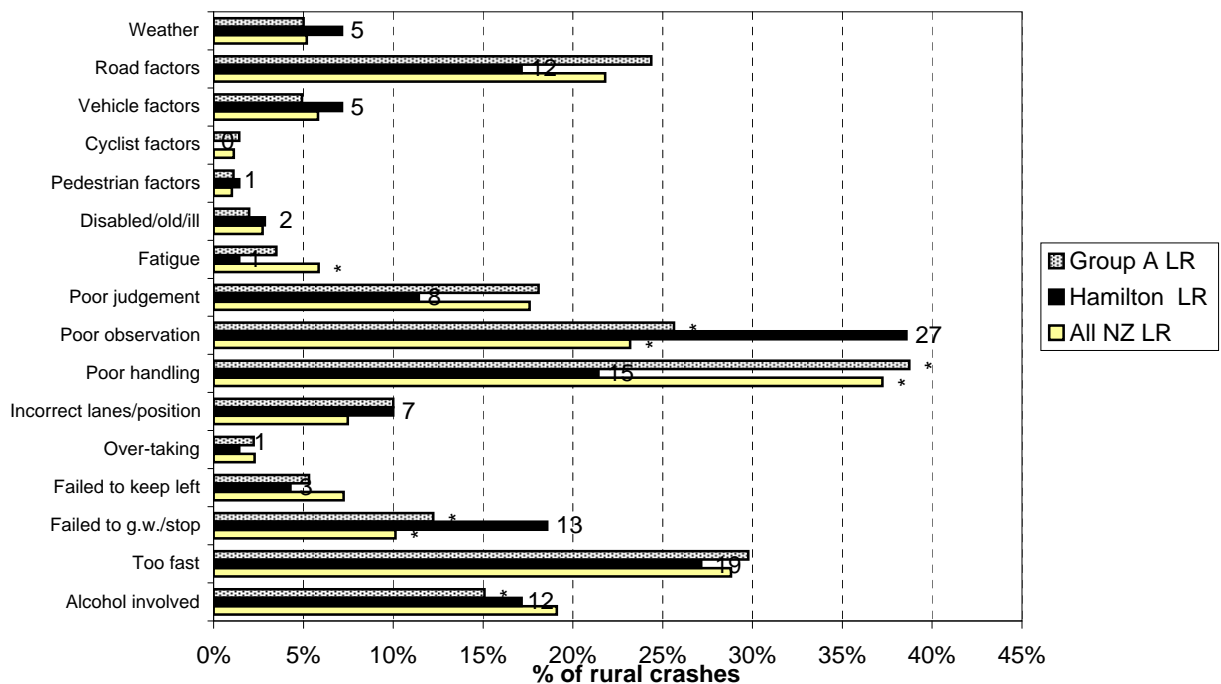
**Figure 8.13 Contributing factors - urban  
Hamilton City council roads (2005-2009)**



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

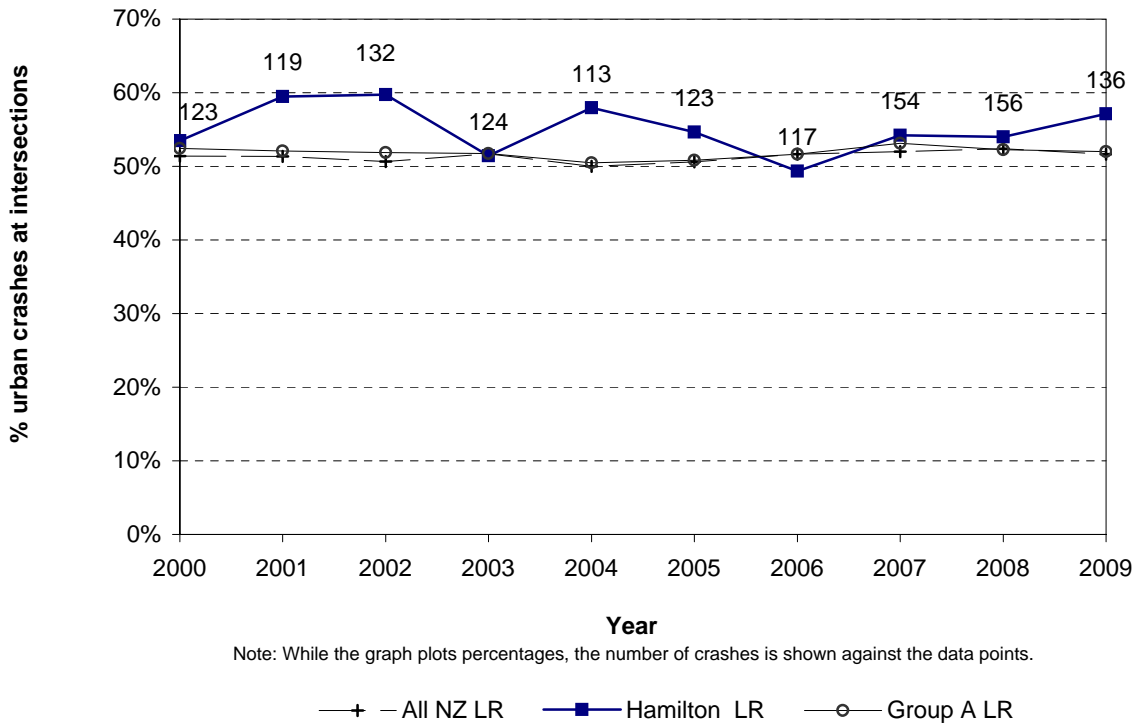
**Figure 8.14 Contributing factors - rural  
Hamilton City council roads (2005-2009)**



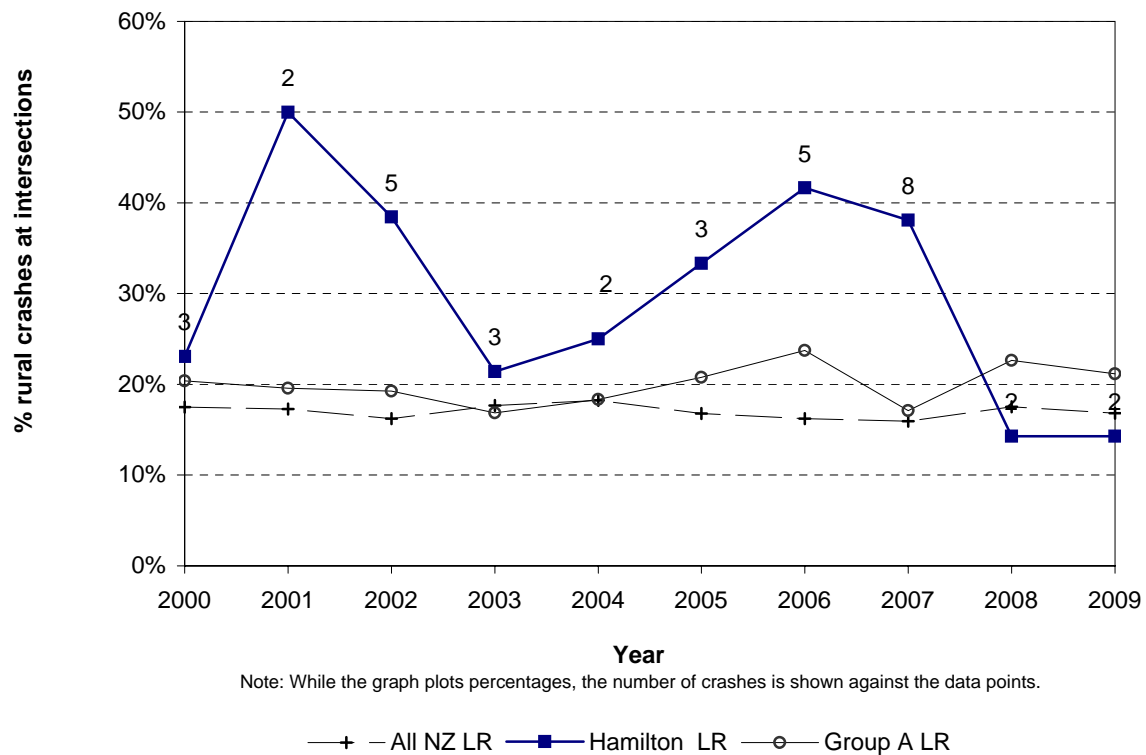
Note: While the graph plots percentages, the number of casualties is shown against the data points.

\*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions

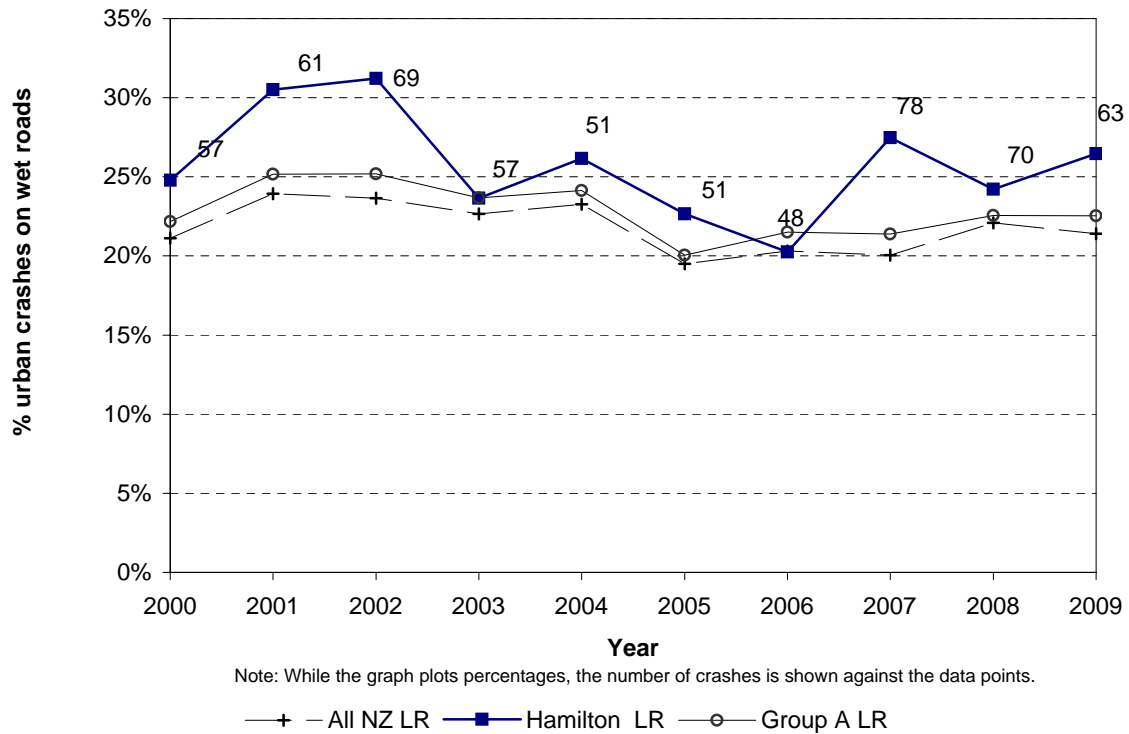
**Figure 8.15 Intersection crashes  
Hamilton City - urban council roads**



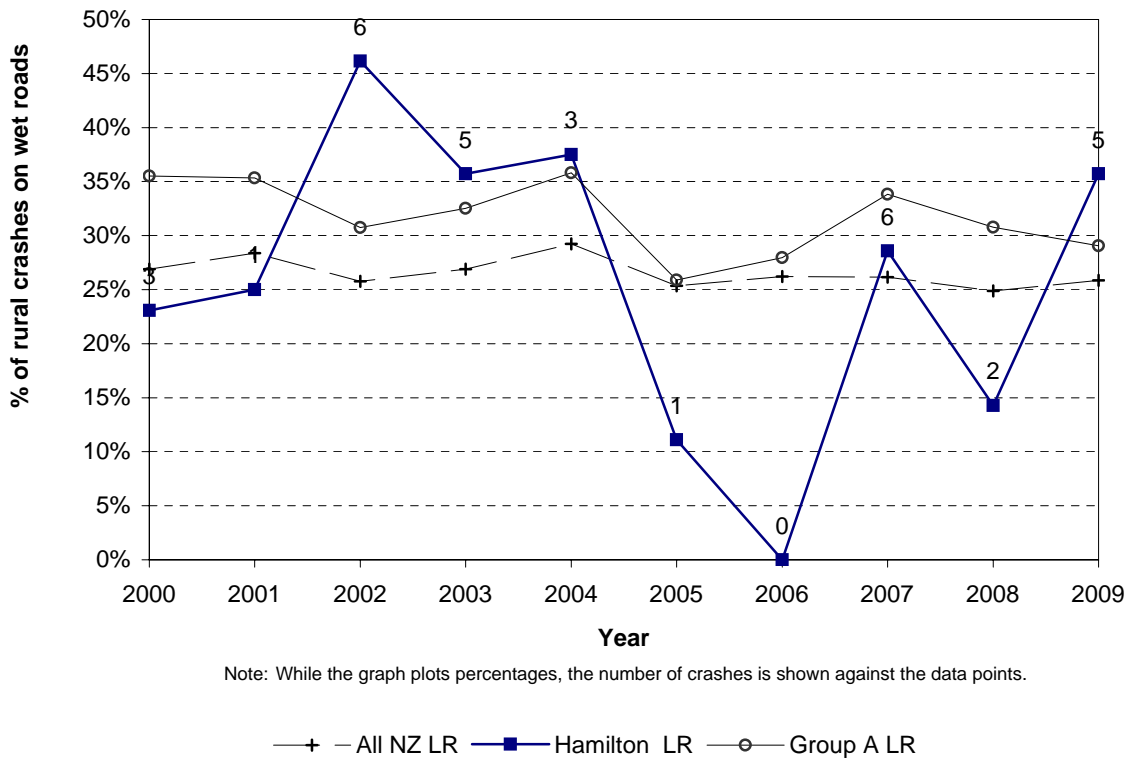
**Figure 8.16 Intersection crashes  
Hamilton City - rural council roads**



**Figure 8.17 Wet road crashes  
Hamilton City - urban council roads**

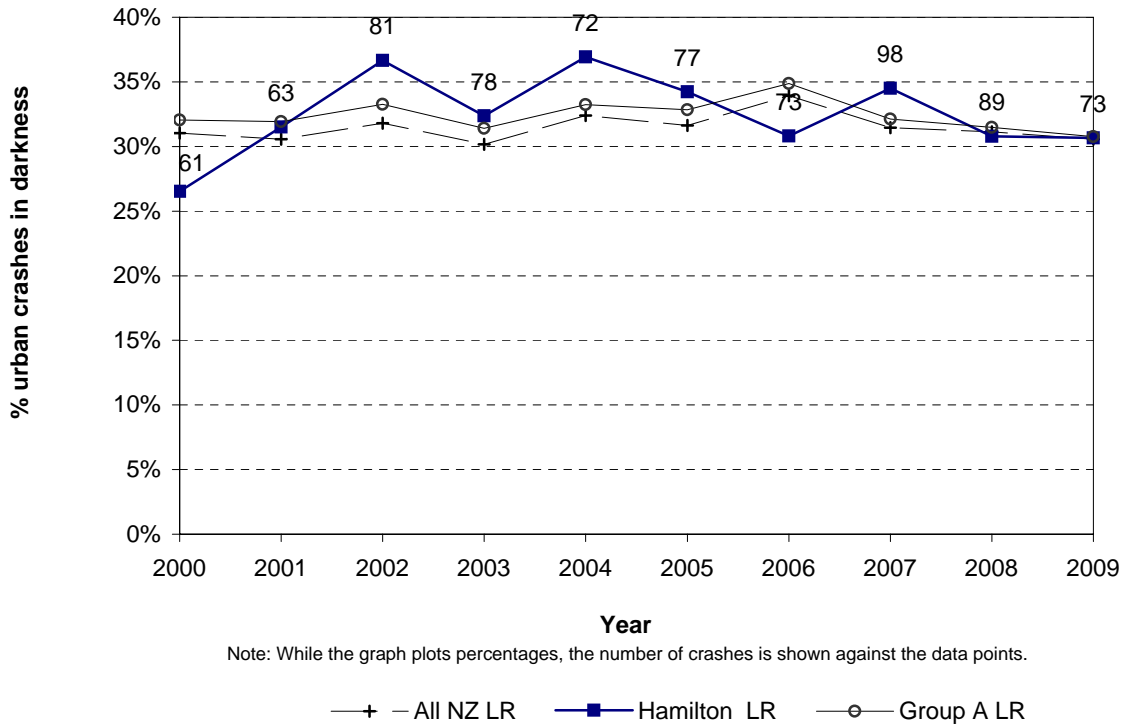


**Figure 8.18 Wet road crashes  
Hamilton City - rural council roads**

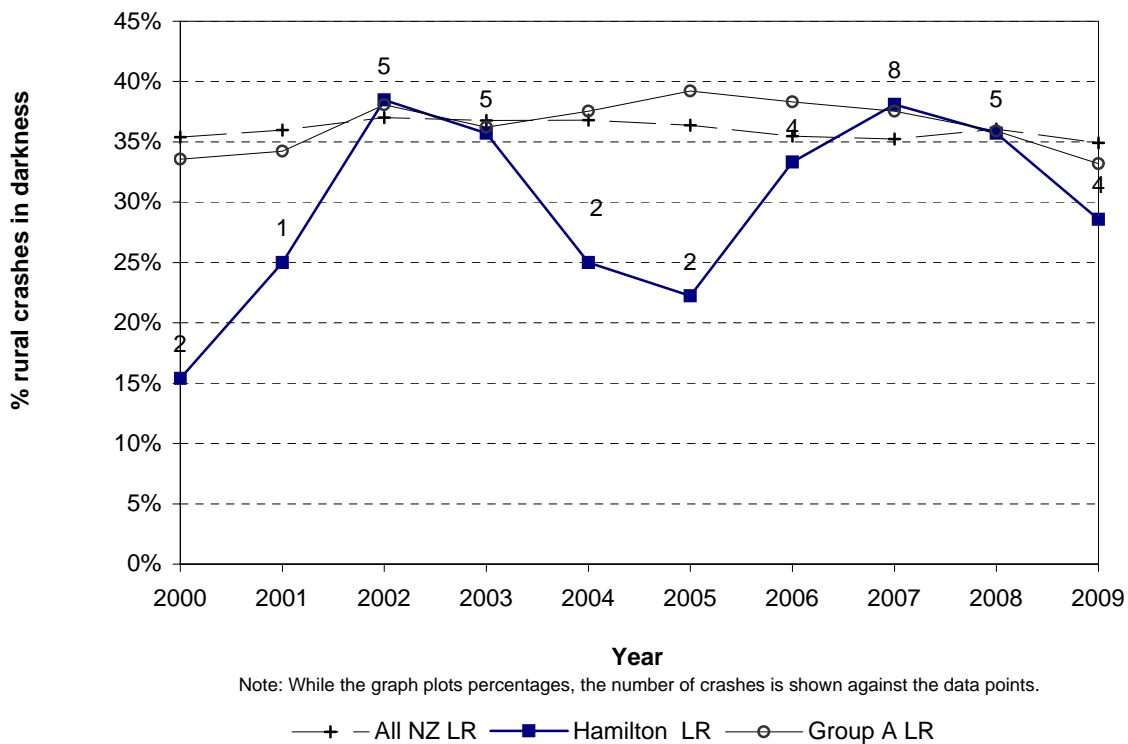




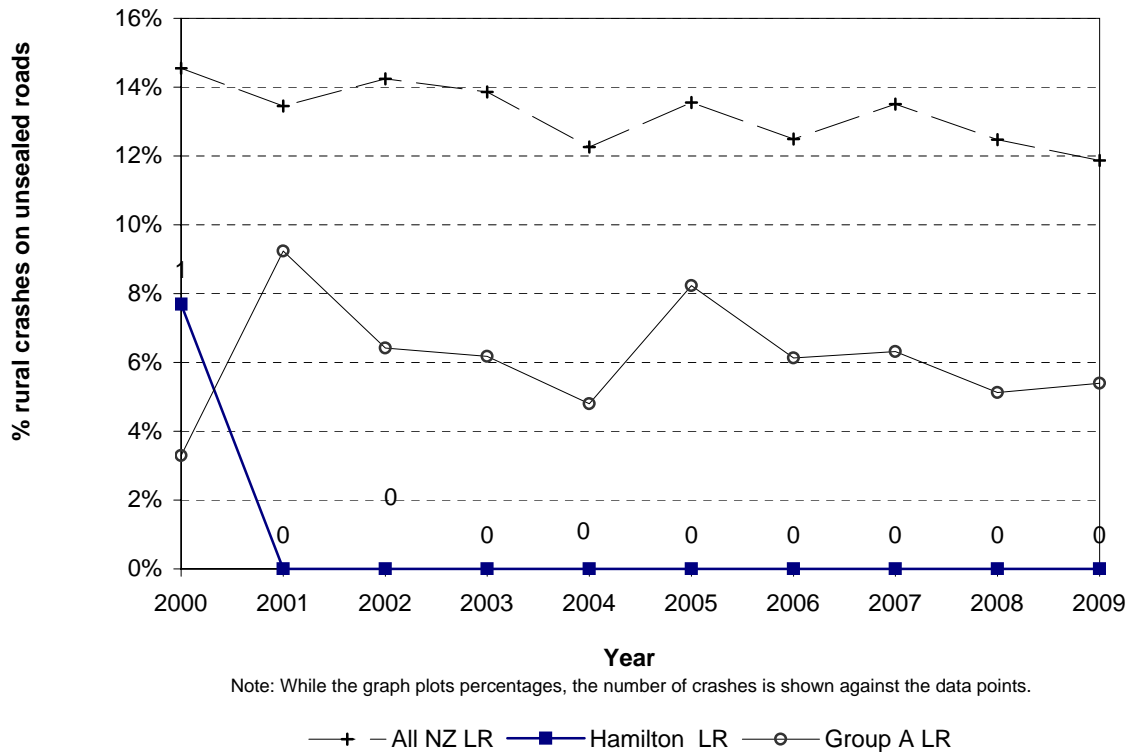
**Figure 8.19 Crashes in darkness  
Hamilton City - urban council roads**



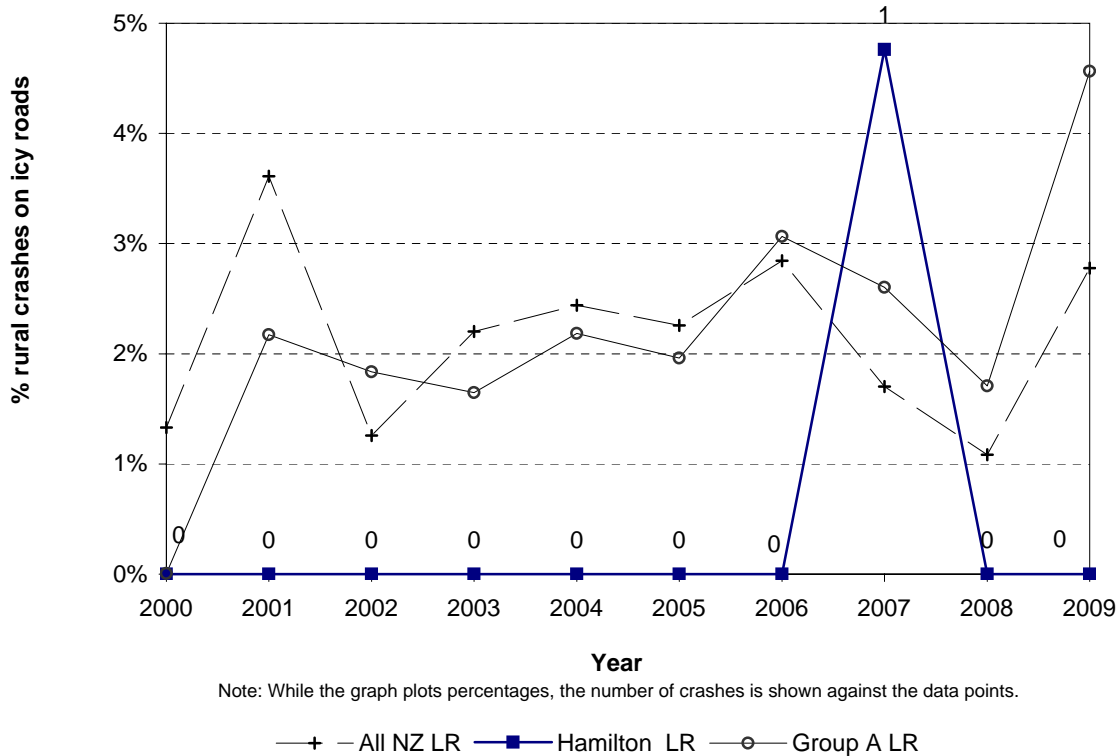
**Figure 8.20 Crashes in darkness  
Hamilton City - rural council roads**



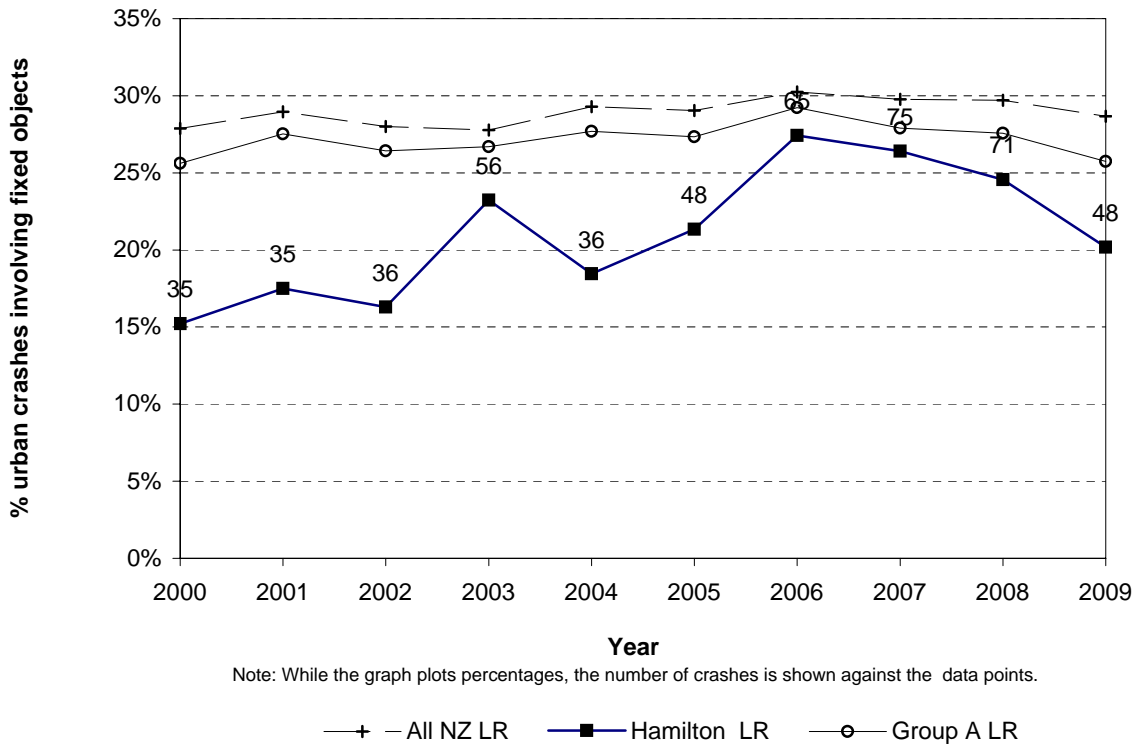
**Figure 8.21 Crashes on unsealed roads  
Hamilton City - rural council roads**



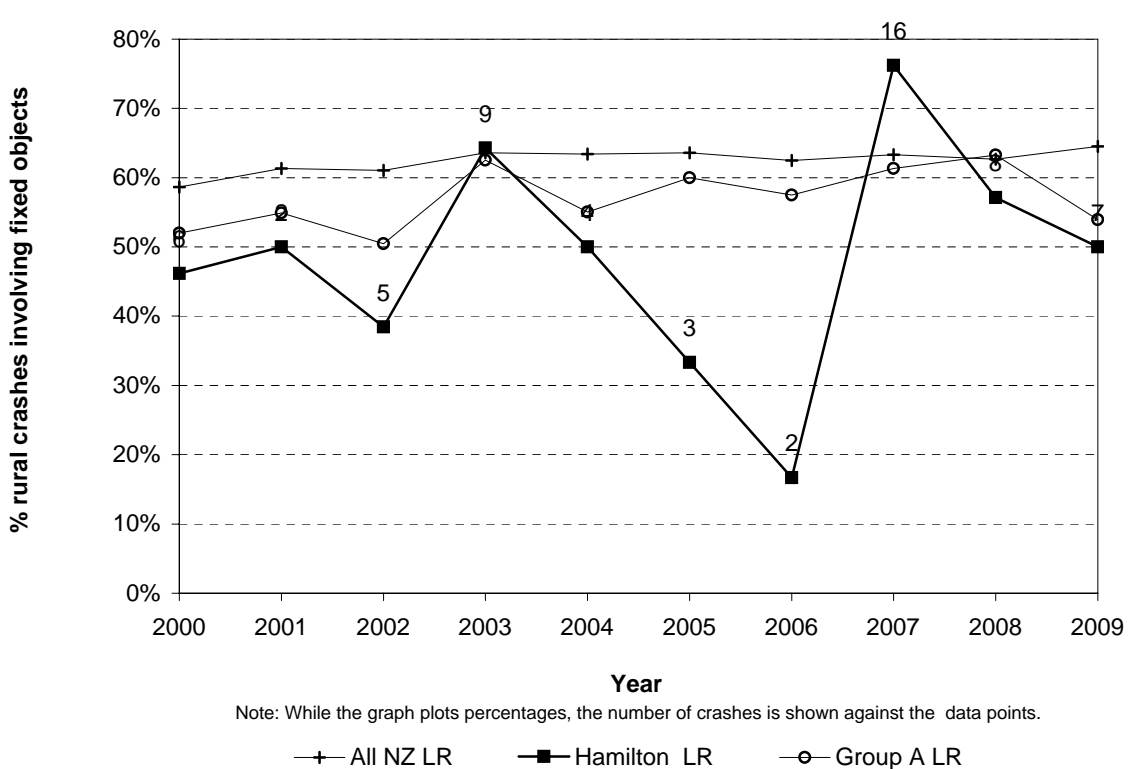
**Figure 8.22 Icy road crashes  
Hamilton City - rural council roads**



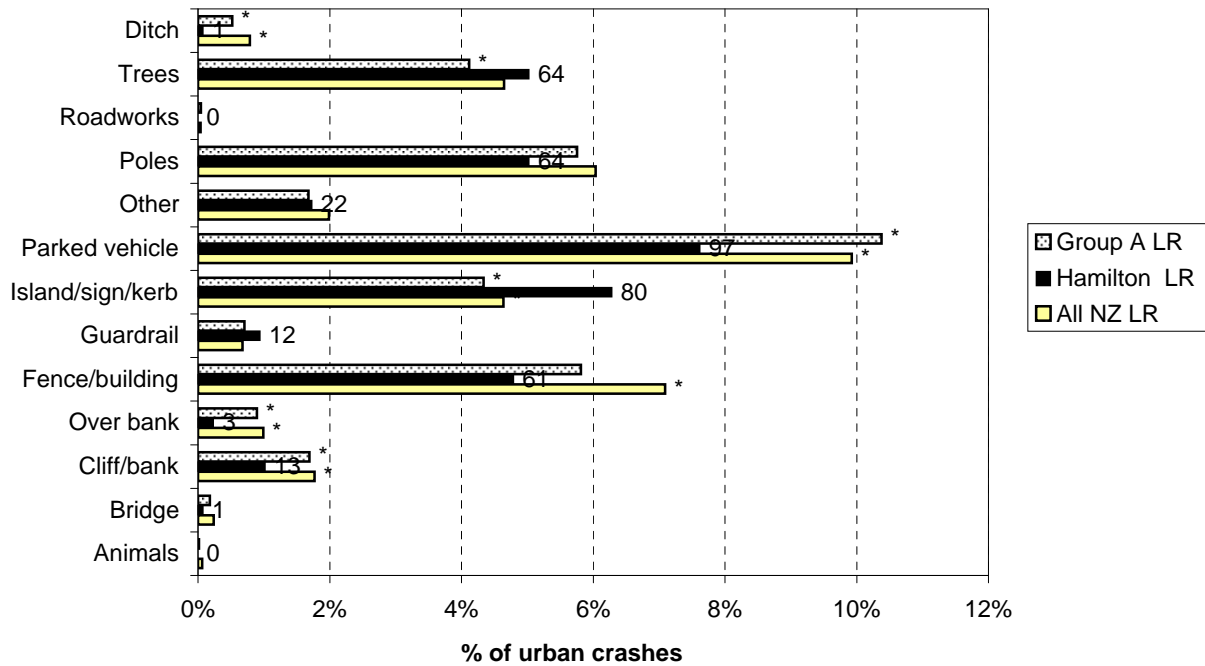
**Figure 8.23 Collisions with objects  
Hamilton City - urban council roads**



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

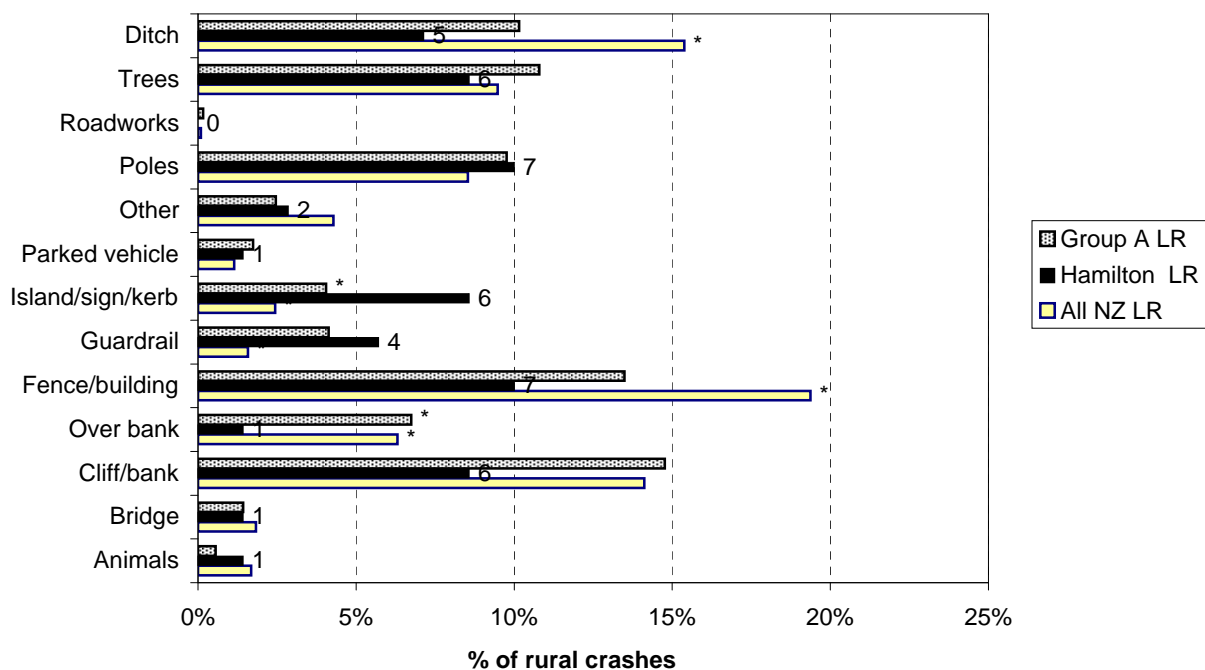


**Figure 8.25 Objects struck - urban  
Hamilton City council roads (2005-2009)**



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  
Hamilton City council roads (2005-2009)**



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 5 or more injury crashes or more than \$500000 in social costs**

CRASH ROAD		SIDE ROAD	2005	2006	2007	2008	2009	TOTAL	Non-Injury	Wet Crash %	Dark Crash %	Crash Costs
VICTORIA ST	I	BRIDGE ST	14	11	10	16	13	64	46	23	42	\$4,888,014
BROOKLYN ROAD	I	PEACHGROVE ROAD	17	15	7	10	8	57	51	23	37	\$4,651,828
BRYCE ST	I	ANGLESEA ST	11	8	8	8	10	45	36	11	36	\$4,604,720
VICTORIA ST	I	MARLBOROUGH PLACE	5	5	6	2	1	19	14	26	53	\$4,499,892
CLYDE ST	I	CAMERON ROAD	2	5	1	1	2	11	7	18	36	\$4,190,626
QUEENS AVENUE		25 S UPPER KENT ST	1		1		1	3	1			\$4,055,950
LIVERPOOL ST	I	ANGLESEA ST	9		4	3	2	18	16	33	33	\$3,667,447
AVALON DRIVE	I	DOMINION ROAD	2	3	1	4	1	11	7	18	18	\$3,658,168
BOUNDARY ROAD	I	VICTORIA ST	10	13	21	13	8	65	50	25	35	\$3,641,848
PEACHGROVE ROAD		50 N BAILEY AVENUE	1	1			2	4	2	50	50	\$3,509,180
ROKOKAURI ROAD	I	BRECKONS AVENUE	1	1		2		4	2		50	\$3,508,382
PEACHGROVE ROAD		80 N MARSHALL ST	1		2		2	5	4		40	\$3,471,720
RIFLE RANGE ROAD	I	WEKA ST	1	2	1	1		5	3		40	\$3,442,346
LIVERPOOL ST	I	VIALOU ST	1		1		1	3	2		33	\$3,436,940
GREY ST		50 S BRIDGE ST		1	1	2	1	5	3	20	60	\$3,413,050
CLYDE ST		140 E FIRTH ST		1	2	1		4	3	25	50	\$3,370,112
FIRTH ST		80 S WELLINGTON ST	1		1		1	3	2		33	\$3,352,654
MILL ST	I	ULSTER ST	15	3	7	8	5	38	30	39	53	\$2,706,209
ANGLESEA ST	I	LONDON ST	4	7	4	6	2	23	15	26	57	\$2,534,252
CLYDE ST	I	PEACHGROVE ROAD	15	12	12	8	3	50	41	34	38	\$2,499,889
PEACHGROVE ROAD	I	TE AROHA ST	13	6	17	7	9	52	39	25	35	\$2,181,804
QUEENS AVENUE	I	LAKE ROAD	5	1	6	1	1	14	9	29	7	\$2,038,234
VICTORIA ST	I	BRYCE ST	15	9	1	8	7	40	31	23	20	\$1,755,487
MILL ST	I	WILLOUGHBY ST	9	8	4	2	13	36	28	22	42	\$1,626,869
EAST ST	I	PEACHGROVE ROAD	2	1	4	1	5	13	10	23	31	\$1,518,130
FIRTH ST	I	WELLINGTON ST	3	1	1	3	5	13	9	38	23	\$1,490,426
AVALON DRIVE	I	FOREST LAKE ROAD	10	19	10	10	5	54	44	22	28	\$1,487,515
CLAUDELANDS ROAD	I	HEAPHY TERRACE	2	11	9	6	6	34	29	32	38	\$1,394,895
VICTORIA ST	I	EDGE CUMBE ST	3	1	2	5	5	16	7	19	44	\$1,332,660
TRISTRAM ST	I	ROSTREVOR ST	6	2	6	9	3	26	21	31	38	\$1,290,645
BRIDGE ST	I	MEMORIAL DRIVE	4	4	6	1	5	20	14	30	30	\$1,241,229
TRISTRAM ST	I	NORTON ROAD	5	6	3	7	4	25	21	20	20	\$1,216,073
CLYDE ST	I	GREY ST	9	3	9	4	2	27	24	30	41	\$1,200,897
VICTORIA ST	I	TE RAPA ROAD	10	3	7	4	5	29	25	24	55	\$1,200,283
GALLOWAY ST	I	NAYLOR ST	5	7	5	4	1	22	18	41	41	\$1,165,561
VICTORIA ST	I	FAIRFIELD BRIDGE	1	7	6	7	1	22	18	45	32	\$1,163,989
HUKANUI ROAD	I	COMRIES ROAD	4		7	7	2	20	14	30	25	\$1,151,603
ONEILL ST	I	HEAPHY TERRACE	6	2	3	1	5	17	12	35	41	\$1,134,134
KILLARNEY ROAD	I	QUEENS AVENUE	12	8	6	7	3	36	27	31	22	\$1,119,267
PEMBROKE ST	I	CLARENCE ST	4	7	4	2		17	12	24	18	\$1,101,652
MILL ST	I	TRISTRAM ST	4		4	7	6	21	18	24	29	\$1,092,157
BOUNDARY ROAD	I	OAKLEY AVENUE	1	2	5	4	2	14	9	36	21	\$1,078,548
COLLINGWOOD ST	I	VICTORIA ST	6	3	2	6	3	20	16	30	55	\$1,045,393
HALL ST	I	KENT ST	4		4	5	2	15	11	20	13	\$1,045,253
VICTORIA ST	I	KNOX ST	3	3	3	4	2	15	11	27	40	\$1,041,998
SILVERDALE ROAD	I	HILLCREST ROAD	2	2	5		2	11	7	45	45	\$1,014,977
ANGLESEA ST	I	WARD ST	4	3	5	2	2	16	13	19	25	\$1,008,838
NIXON ST	I	COOK ST	2	4			3	9	4	33	11	\$996,758
BRIDGE ST	I	VON TEMPSKY ST	3	2	3	3	3	14	10	29	29	\$994,390
ALBERT ST	I	GREY ST		3	4	1	2	10	6	50	30	\$955,864



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

Site Radius = 30 metres

**Sites with 5 or more injury crashes or more than \$500000 in social costs**

CRASH ROAD		SIDE ROAD	2005	2006	2007	2008	2009	TOTAL	Non-Injury	Wet Crash %	Dark Crash %	Crash Costs
GREY ST	I	NAYLOR ST	4	6	8	4	4	26	17	27	38	\$940,793
ALEXANDRA ST	I	COLLINGWOOD ST	1	3	4	4	3	15	13	20	60	\$934,031
RUAKIWI ROAD	I	COLLINGWOOD ST	3	4	2	1	1	11	8	18	36	\$918,510
NORTON ROAD	I	HALL ST	6		3	2	2	13	11	31	46	\$899,035
PEACHGROVE ROAD	I	HOLLAND ROAD	1	2	1	4		8	4	50	38	\$890,860
RIVER ROAD	I	COMRIES ROAD	6		1		2	9	6	22	33	\$890,356
TE AROHA ST	I	WHYTE ST	1	1		2	2	6	2	50	33	\$889,620
HEAPHY TERRACE	I	FAIRFIELD ROAD	3		1	3	2	9	6	44	22	\$883,482
VICTORIA ST	I	LONDON ST	7	5	5	7	7	31	25	23	23	\$867,543
BRIDGE ST	I	GREY ST	7	10	6	2	9	34	29	32	35	\$864,183
GREY ST		5 S TE AROHA ST	4	2	3	1	4	14	13	21	36	\$862,571
VICTORIA ST	I	WARD ST	3		1	3	3	10	8	10	30	\$850,328
WAIRERE DRIVE	I	RIVER ROAD	6	2	3	3	1	15	13	33	33	\$849,603
HEAPHY TERRACE	I	MARSHALL ST	2	1	2		2	7	4	29	71	\$848,770
FOREST LAKE ROAD	I	WALSH ST			1	3	2	6	3	33	50	\$831,330
RIRO ST	I	MEMORIAL DRIVE	1	2		1	1	5	2	40	20	\$818,302
PEMBROKE ST	I	SELWYN ST	6	7	4	6	5	28	22	32	29	\$818,151
VICTORIA ST	I	AWATERE AVENUE	1		1		3	5	2	20		\$817,380
RUAKURA ROAD	I	EMMADALE LANE	1	1	1	1	1	5	2	60	40	\$814,794
CLARKIN ROAD	I	RIVER ROAD	1	1		2	1	5	2	20	60	\$813,996
TE RAPA ROAD	I	SUNSHINE AVENUE	9	9	10	5	4	37	34	19	57	\$810,149
TRISTRAM ST	I	BRYCE ST	9	2	3	4	3	21	13	52	33	\$804,871
VICTORIA ST		50 N BRYCE ST			1	2	1	4	1		25	\$796,550
HUKANUI ROAD	I	KENSINGTON PLACE	3	1	1	2	1	8	5	25	38	\$784,466
THACKERAY ST	I	RUAKIWI ROAD	4		2	1	2	9	8	11	33	\$775,496
TE RAPA ROAD	I	EUCLID AVENUE	3	1	1	1	1	7	4	29	43	\$763,630
KILLARNEY ROAD	I	PRIMROSE ST	2		2		1	5	3		20	\$763,384
PEMBROKE ST	I	THACKERAY ST	2	1	2	2	3	10	8	30	20	\$761,816
MASTERS AVENUE	I	CARRINGTON AVENUE	2		1	1	1	5	3	40	20	\$759,938
KILLARNEY ROAD		50 E ELLIS ST		3			1	4	2			\$743,544
WARD ST	I	TRISTRAM ST	5	5	4	10	3	27	22	19	30	\$743,207
BRIDGE ST		50 W VICTORIA ST		1	1	1	1	4	2	25	25	\$742,622
KNIGHTON ROAD		20 N GREENSBORO ST		1		2	1	4	2			\$742,622
PATERSON ST	I	KILLARNEY ROAD		1		2	1	4	2		25	\$742,622
PEACHGROVE ROAD		40 N KINGSFORD MEWS	1	1		2		4	2	25	25	\$742,616
COOK ST	I	FIRTH ST		3	1		1	5	3	20	20	\$726,534
BARTON ST	I	BRYCE ST	1	3	1	1		6	5	17		\$723,530
TRISTRAM ST	I	COLLINGWOOD ST	2			3	1	6	5	33	33	\$723,338
RIFLE RANGE ROAD	I	SH 1N		3	3	1		7	6	14	57	\$707,324
NORTON ROAD	I	SEDDON ROAD	3	2		1	1	7	6	14	14	\$707,244
NAYLOR ST	I	FIRTH ST	2	1		2		5	4	20	20	\$706,010
GALLOWAY ST	I	COOK ST	1	2				3	1		67	\$695,132
GLENVIEW TERRACE	I	BRUCE AVENUE		2		1		3	1		67	\$692,490
VICTORIA ST		50 E MACDIARMID ROAD		1	1		1	3	1			\$691,630
VICTORIA ST		50 N BRIDGE ST	1	1		1		3	1	33	67	\$691,624
CAMBRIDGE ROAD		5 S SH 1N			3		1	4	3	25		\$688,570
FIRTH ST	I	COATES ST			4			4	3		25	\$688,570
BROOKFIELD ST	I	NIXON ST	2		2			4	3	25	25	\$688,558
HALL ST	I	LAKE ROAD	6	4	5	6	2	23	18	26	39	\$677,025
TRAMWAY ROAD		70 S INSOLL AVENUE	3			1	1	5	3	20	20	\$674,798
HYDE AVENUE		160 S LINDSAY CRESCENT		1	1		1	3	2	100	67	\$671,242

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

Site Radius = 30 metres

Sites with 5 or more injury crashes or more than \$500000 in social costs

CRASH ROAD		SIDE ROAD	2005	2006	2007	2008	2009	TOTAL	Non-Injury	Wet Crash %	Dark Crash %	Crash Costs
MOORE ST		110 W FOREST LAKE ROAD		1	1		1	3	2	33	67	\$671,242
VICTORIA ST	I	DILICAR ST			1	1	1	3	2	33	33	\$671,180
POWELLS ROAD	I	ST KILDA PLACE	1		1		1	3	2	33		\$671,174
TE AROHA ST	I	PALMER ST	1		2			3	2	67	33	\$671,174
TE RAPA ROAD	I	PUKETE ROAD	4	7	4	6	5	26	22	35	15	\$669,309
AVALON DRIVE	I	GRANDVIEW ROAD	4	7	2	5	1	19	13	26	32	\$665,098
HOOD ST	I	VICTORIA ST	4	5	4	7	5	25	21	16	76	\$654,443
BRYANT ROAD	I	NORRIS AVENUE	1	2				3	1	33		\$640,952
TRAMWAY ROAD	I	CROSBY ROAD	1			2		3	1	33	33	\$640,030
ELLCOTT ROAD		150 E MAPLE AVENUE	2				1	3	1	33		\$640,024
KNIGHTON ROAD		100 N HELENA ROAD	3	1			2	6	5	33	50	\$638,260
AVALON DRIVE		100 S SUNNYSIDE ROAD	1	2				3	2		33	\$637,696
TE AROHA ST	I	NEW ST	1	1		1		3	2	33	67	\$637,634
ANGLESEA ST	I	CARO ST	7	1	1	1	5	15	9	33	13	\$592,500
BOUNDARY ROAD		50 W HEAPHY TERRACE	2			1		3	2	67	67	\$586,034
HEAPHY TERRACE	I	BOUNDARY ROAD	5	9	5	5	3	27	25	26	48	\$582,283
VARDON ROAD	I	TE RAPA ROAD	2	8	5	8	4	27	25	30	44	\$578,793
VICTORIA ST	I	LIVERPOOL ST	6	6	5	5	1	23	20	26	52	\$562,277
VICTORIA ST	I	CLAUDELANDS ROAD	7	13	5	2	2	29	28	14	41	\$559,863
HIGGINS ROAD	I	KAHIKATEA DRIVE	5	2	1	2	1	11	5	27	45	\$520,366
GREY ST	I	WELLINGTON ST	4	2	2	6	3	17	13	29	18	\$511,691
ULSTER ST	I	MAEROA ROAD	4	5	5	5	1	20	17	30	35	\$510,855

**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 \$250000 in social costs**

CRASH ROAD	SIDE ROAD	2005	2006	2007	2008	2009	TOTAL	Non-Injury	Wet Crash %	Dark Crash %	Crash Costs
GORDONTON ROAD I	THOMAS ROAD	1	4	2	2	4	13	9	23	23	\$5,805,644
HILLSBOROUGH TERRACE I	COBHAM DRIVE	3	7	10	6	4	30	23	37	53	\$3,508,193
PUKETE ROAD I	WAIRERE DRIVE	2		3	3	2	10	6	30	30	\$1,308,158
TRAMWAY ROAD I	CROSBY ROAD		3	4		2	9	5	22	33	\$1,269,462
TE KOWHAI ROAD	940 E EXELBY ROAD			2	2	2	6	3	67	17	\$1,102,031
GORDONTON ROAD I	PUKETAHA ROAD	3	1	2	2		8	5	38	38	\$1,070,318
TRAMWAY ROAD	350 N CARRS ROAD	1		2	1	1	5	2	20	60	\$1,068,030
WAIRERE DRIVE I	RIVER ROAD	7	2	5	4	2	20	15	20	45	\$1,019,775
RUAKURA ROAD	500 E PEACHGROVE ROAD		1	1		2	4	2	25	50	\$978,952
TE KOWHAI ROAD I	RUFFELL ROAD	1	1	7	3	1	13	8	38	23	\$739,690
WAIRERE DRIVE I	RESOLUTION DRIVE	2	2	3	4	3	14	13	64	64	\$575,310
RUAKURA ROAD I	KNIGHTON ROAD	3			4		7	5	43	14	\$370,598
COBHAM DRIVE	250 N SH 1N	2	1		1	1	5	3	20	20	\$294,144
WAIRERE DRIVE	300 W RIVER ROAD		1	1		3	5	3		20	\$288,631
PEACOCKES ROAD	200 S STUBBS ROAD			1	1	1	3		67		\$264,600
PUKETE ROAD	400 E MEADOW VIEW LANE		2	1	1		4	2	50	50	\$253,752

**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 \$250000 in social costs**

CRASH ROAD		SIDE ROAD	2005	2006	2007	2008	2009	TOTAL	Non- Injury	Wet Crash %	Dark Crash %	Crash Costs
SH 1N	I	DUKE ST	0	1	0	2	4	7	3	0	14	\$4,808,810
SH 23	I	WALLACE ROAD	3	2	2	3	0	10	2	20	50	\$4,412,561
SH 1N		550 W GREY ST	3	1	2	2	1	9	7	56	22	\$4,190,072
SH 1N	I	KAHIKATEA DRIVE	7	5	5	6	0	23	15	22	35	\$2,793,951
SH 3	I	RAYNES ROAD	3	2	3	1	6	15	5	60	40	\$2,421,043
SH 1N	I	KILLARNEY ROAD	8	5	10	4	3	30	25	17	33	\$2,229,759
SH 1N	I	OHAUPO ROAD	14	10	15	10	10	59	49	19	39	\$2,161,693
SH 1N		200 N CHURCH ROAD	2	1	2	3	1	9	5	44	22	\$1,939,298
SH 1N	I	SH 23	5	8	9	11	6	39	29	21	31	\$1,787,841
SH 1N	I	KAPUNI ST	1	3	0	0	1	5	2	20	40	\$1,758,849
SH 1N	I	SH 26	2	3	10	10	9	34	29	29	32	\$1,736,466
SH 1N		5 E GALLOWAY ST	3	7	10	2	4	26	20	38	42	\$1,685,671
SH3 ON RAMP	I	BADER ST	5	6	3	5	3	22	13	18	41	\$1,409,537
SH 1N		15 S COBHAM BR W	2	4	2	4	2	14	12	29	43	\$1,311,460
TE RAPA ROAD	I	THE BASE PARADE	1	1	3	3	3	11	7	18	18	\$1,284,669
SH 1N		150 N WAIRERE DRIVE	1	3	4	2	2	12	10	33	8	\$1,218,224
SH 1N	I	RIFLE RANGE ROAD	10	11	10	2	15	48	41	21	25	\$1,213,273
SH 1N	I	TE RAPA ROAD	2	7	5	5	5	24	20	13	21	\$1,204,783
SH 1N		200 N WAIRERE DRIVE	0	5	3	2	4	14	11	57	14	\$1,123,380
SH 1N	I	MCKEE ST	1	2	1	1	1	6	3	0	17	\$1,108,626
SH 1N COBHAM NORMANDY	I	SH 1N NORMANDY COBHAI	6	7	5	4	5	27	23	26	26	\$1,037,404
SH 3		340 N RAYNES ROAD	1	0	2	1	0	4	1	50	50	\$1,031,274
SH 3	I	SH 3 ON RAMP	4	5	4	1	2	16	12	0	19	\$1,030,148
SH 1N	I	CHURCH ROAD	3	8	4	7	4	26	21	31	46	\$1,010,642
SH 1N	I	BANDON ST	4	3	4	2	2	15	12	13	13	\$988,002
SH 23	I	TUHIKARAMEA ROAD	3	3	4	3	4	17	16	29	12	\$914,809
SH 1N		100 S COBHAM DRIVE	1	4	0	1	1	7	3	43	29	\$909,912
SH 1N		400 S FOREMAN ROAD	1	1	1	0	1	4	2	0	0	\$866,252
SH3 ON RAMP		70 E ODETTE ST	1	0	0	1	2	4	0	50	75	\$853,980
SH 23	I	LEONG AVENUE	1	0	0	3	1	5	2	20	40	\$813,934
SH 1N	I	GREY ST	9	2	5	1	4	21	17	19	29	\$791,815
SH 3	I	SAXBYS ROAD	6	9	0	3	5	23	16	30	43	\$786,910
SH 23		100 E POAKA AVENUE	0	0	0	2	2	4	2	25	25	\$742,560
SH 1N	I	TASMAN ROAD W	0	3	3	2	5	13	8	15	46	\$740,772
SH 23		50 W TUHIKARAMEA ROAD	2	2	0	1	0	5	4	20	80	\$706,072
SH 1N	I	NORMANDY AVENUE	2	5	6	6	1	20	17	30	55	\$680,572
SH 1N	I	CAMBRIDGE ROAD	6	6	4	4	4	24	20	29	25	\$658,638
SH 1N		100 N FOREMAN ROAD	1	3	5	0	4	13	10	8	23	\$621,894
SH 23	I	RIFLE RANGE ROAD	3	1	0	0	1	5	4	0	20	\$620,870
SH 26	I	SILVERDALE ROAD	3	5	2	5	0	15	13	40	27	\$615,555
SH 1N	I	TE RAPA ROAD	7	6	9	2	4	28	27	21	14	\$557,694
SH 1N		100 S THE BASE PARADE	2	2	1	5	5	15	11	53	20	\$552,438
SH 1N	A	TASMAN OBR	0	6	3	1	2	12	10	33	17	\$538,382
SH 1N		80 W GREY ST	0	2	2	3	2	9	6	44	44	\$488,898
SH 3	I	COLLINS ROAD	1	3	1	4	4	13	9	38	8	\$443,008
SH 3	I	URLICH AVENUE	5	4	1	4	1	15	12	27	20	\$423,836
SH 1N		200 S COBHAM DRIVE	0	6	0	0	2	8	5	25	13	\$408,521
SH 1N	I	TE KOWHAI ROAD	3	1	3	1	1	9	7	0	22	\$368,750
SH 3	I	HOUCHENS ROAD	0	0	4	0	1	5	1	0	20	\$345,177
SH 1N TE RAPA		100 N SH 1N AVALON	3	2	1	2	1	9	7	22	0	\$338,942

**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 \$250000 in social costs

CRASH ROAD		SIDE ROAD	2005	2006	2007	2008	2009	TOTAL	Non- Injury	Wet Crash %	Dark Crash %	Crash Costs
SH 1N		50 N DUKE ST	1	0	2	3	0	6	4	0	33	\$328,327
SH 1N	I	ROTKAURI ROAD	3	2	2	1	1	9	7	11	11	\$295,659
SH 3	I	HALL ROAD	0	2	1	2	0	5	3	60	40	\$290,509
SH 1N	I	FOREMAN ROAD	3	0	1	0	3	7	6	29	14	\$282,510
SH 23	I	KILLARNEY ROAD	1	2	3	1	3	10	8	10	50	\$281,998
SH 1N	I	ALISON ST	4	5	1	1	2	13	12	23	23	\$280,346
SH3 ON RAMP	I	ODETTE ST	3	4	2	0	1	10	9	20	30	\$278,699
SH 1N	I	CRAWFORD ST	2	0	1	3	2	8	7	25	13	\$276,390
SH 1N	I	GRASSLANDS PLACE	0	0	1	3	2	6	3	17	33	\$266,310

**Table 9.4 : Urban Council Road Crash Sites  
with a Significant Increase in Crashes in 2009  
(Injury and Non-Injury Crashes)**
**Site Radius =  
30 metres**

CRASH ROAD		SIDE ROAD	2004	2005	2006	2007	2008	2009	TOTAL	Non-Injury	Wet Crash %	Dark Crash %
MILL ST	I	WILLOUGHBY ST	12	9	8	4	2	13	48	38	25	40
ROSTREVOR ST	I	ANGLESEA ST	0	4	3	2	3	8	20	18	15	45
COBHAM DRIVE	I	TRISTRAM ST	1	4	2	3	2	6	18	16	33	22
FIRTH ST	I	WELLINGTON ST	2	3	1	1	3	5	15	10	33	20
TRISTRAM ST	I	THACKERAY ST	1	1	3	2	0	6	13	13	38	23
GREY ST	I	BEALE ST	2	2	1	0	2	5	12	9	25	8
OLD FARM ROAD	I	CAMERON ROAD	1	0	0	2	1	3	7	4	57	29
VICTORIA ST	I	AWATERE AVENUE	0	1	0	1	0	3	5	2	20	0
RIVER ROAD	I	BRAITHWAITE AVENUE	0	1	1	0	0	3	5	4	60	40
VICTORIA ST	I	ABBOTSFORD ST N	0	0	0	2	0	3	5	2	20	20
KILLARNEY ROAD		60 W PATERSON ST	0	0	0	0	1	3	4	4	50	75
VESTY AVENUE	I	AURORA TERRACE	1	0	0	0	0	3	4	2	50	50
CLARKIN ROAD	I	HAULTAIN ST	1	0	0	0	0	2	3	3	33	0
PEACHGROVE ROAD		50 E DAISY ST	0	0	1	0	0	2	3	0	33	0
NORTON ROAD		100 W KING ST	0	1	0	0	0	2	3	2	0	0
LAKE DOMAIN DRIVE		50 W FOWLERS AVENUE	0	0	1	0	0	2	3	3	67	0
WATERLOO ST	A	ELLIS ST	0	0	1	0	0	2	3	2	67	67
FIFTH AVENUE		50 E PEACHGROVE ROAD	0	1	0	0	0	2	3	3	67	67
TE AROHA ST	I	ST WINIFREDS AVENUE	0	0	0	1	0	2	3	3	0	0
HILLCREST ROAD		150 S ODOGHOUE ST	0	0	0	0	1	2	3	1	0	0

**Table 9.4a : Rural Council Road Crash Sites  
with a Significant Increase in Crashes in 2009  
(Injury and Non-Injury Crashes)**
**Site Radius =  
250 metres**

CRASH ROAD		SIDE ROAD	2004	2005	2006	2007	2008	2009	TOTAL	Non-Injury	Wet Crash %	Dark Crash %
WAIRERE DRIVE		300 W RIVER ROAD	1	0	1	1	0	3	6	4	17	17
WAIRERE DRIVE		300 E PUKETE ROAD	0	1	0	1	1	3	6	6	33	67
PEACOCKES ROAD		310 S WESTON LEA DRIVE	0	0	0	0	0	3	3	2	33	0

**Table 9.5 : State Highway Crash Sites  
with a Significant Increase in Crashes in 2009  
(Injury and Non-Injury Crashes)**

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

CRASH ROAD		SIDE ROAD	2004	2005	2006	2007	2008	2009	TOTAL	Non-Injury	Wet Crash %	Dark Crash %
SH 1N	I	NORTON ROAD	7	10	11	10	2	15	55	45	24	24
SH 1N CAMBRIDGE		100 E SH 1N COBHAM	4	0	1	0	0	4	9	9	44	22
SH 1N	I	DUKE ST	1	0	1	0	2	4	8	4	13	25
SH 1N		40 E OHAUPO ROAD	1	0	0	2	1	3	7	4	29	0
SH 1N	I	FOREMAN ROAD	0	3	0	1	0	3	7	6	29	14
SH 23		15 W HAWK ST	0	0	0	0	1	2	3	1	33	0
SH 1N	I	CRAWFORD ST	0	0	0	0	1	2	3	3	0	0
SH 1N		50 N WAIRERE DRIVE	0	0	0	0	1	2	3	2	33	33

# appendix

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- Groupings of crash types
- Grouping of contributing factors
- General factor list
- General movement types


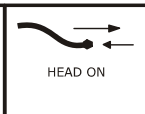


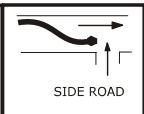


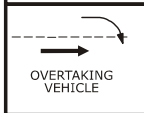
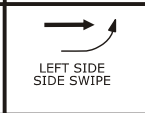







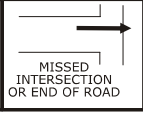
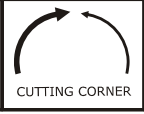
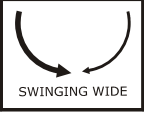
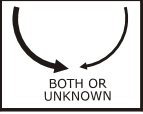

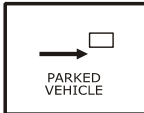


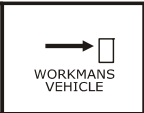
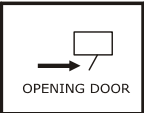
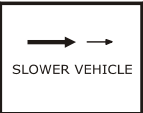

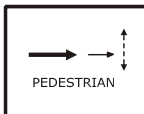
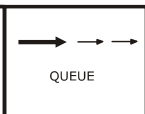
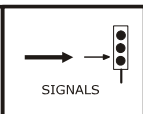
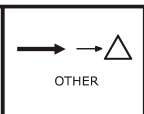
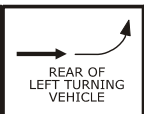
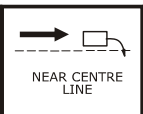


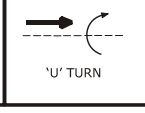
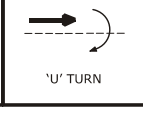

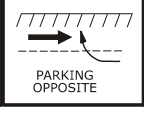


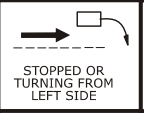
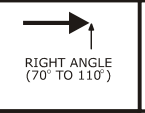
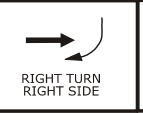
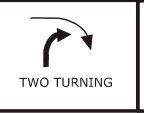
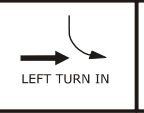
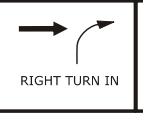

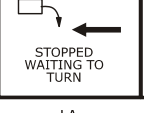
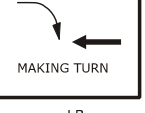
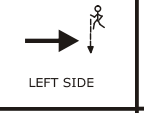
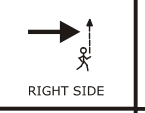
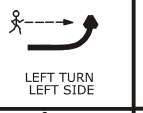
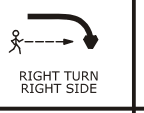
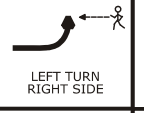
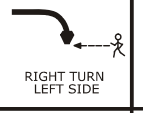



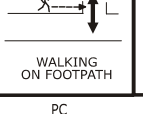
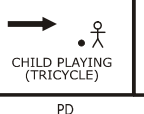
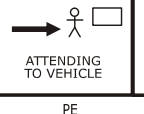
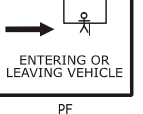

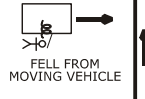
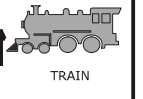
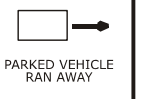

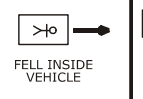
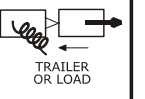




## Explanatory notes for the appendix

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
	GE	GB					
	 OVERTAKING VEHICLE	 LEFT SIDE SIDE SWIPE					
Straight - Lost control / Head on	BA	CA	CB	CC	BE		
	 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
	FC	FD	FE	FF	GA	GD	GF
	 PEDESTRIAN	 QUEUE	 SIGNALS	 OTHER	 REAR OF LEFT TURNING VEHICLE	 NEAR CENTRE LINE	 TWO TURNING
	 PARKING OR LEAVING	 'U' TURN	 'U' TURN	 DRIVEWAY MANOEUVRE	 PARKING OPPOSITE	 ENTERING OR LEAVING	 REVERSING ALONG ROAD
Crossing / Turning	MA	MB	MC	MD	ME	MF	MG
	 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
	GC	HA	JA	JC	KA	KB	KC
	 STOPPED WAITING TO TURN	 MAKING TURN					
Pedestrian vs Vehicle	NA	NB	NC	ND	NE	NF	NG
	 LEFT SIDE	 RIGHT SIDE	 LEFT TURN LEFT SIDE	 RIGHT TURN RIGHT SIDE	 LEFT TURN RIGHT SIDE	 RIGHT TURN LEFT SIDE	 MANOEUVRING VEHICLE
	 WALKING WITH TRAFFIC	 WALKING FACING TRAFFIC	 WALKING ON FOOTPATH	 CHILD PLAYING (TRICYCLE)	 ATTENDING TO VEHICLE	 ENTERING OR LEAVING VEHICLE	
Miscellaneous	PA	PB	PC	PD	PE	PF	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
<b>Alcohol involved</b>	100 – 101 103 – 109
<b>Too fast</b>	110 – 119 430 – 432
<b>Failed to give way or stop</b>	300 – 314 320 – 328
<b>Failed to keep left</b>	120 – 128 205
<b>Overtaking</b>	150 – 161
<b>Incorrect lanes or position</b>	129 170 – 183 200 – 204 206 – 209 440 – 448
<b>Poor handling</b>	130 – 134 137 – 149 420 – 429
<b>Poor observation</b>	330 – 360 370 – 379
<b>Poor judgement</b>	380 – 387 400 – 407
<b>Fatigue</b>	410 – 415
<b>Disabled, old age or illness</b>	500 – 507
<b>Pedestrian factors</b>	700 – 731
<b>Cyclist factors</b>	Any factor coded against a cyclist
<b>Vehicle factors</b>	136, 600 – 699
<b>Road factors</b>	135, 800 – 899
<b>Weather</b>	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.

# VEHICLE MOVEMENT CODING SHEET

For use with crash data from CAS (Version 2.8 May 2010)

	TYPE	A	B	C	D	E	F	G	O
A	OVERTAKING AND LANE CHANGE	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	OTHER
B	HEAD ON	ON STRAIGHT	CUTTING CORNER	SWINGING WIDE	BOTH OR UNKNOWN	LOST CONTROL ON STRAIGHT	LOST CONTROL ON CURVE		OTHER
C	LOST CONTROL OR OFF ROAD (STRAIGHT ROADS)	OUT OF CONTROL ON ROADWAY	OFF ROADWAY TO LEFT	OFF ROADWAY TO RIGHT					OTHER
D	CORNERING	LOST CONTROL TURNING RIGHT	LOST CONTROL TURNING LEFT	MISSED INTERSECTION OR END OF ROAD					OTHER
E	COLLISION WITH OBSTRUCTION	PARKED VEHICLE	CRASH OR BROKEN DOWN	NON VEHICULAR OBSTRUCTIONS (INCLUDING ANIMALS)	WORKMANS VEHICLE	OPENING DOOR			OTHER
F	REAR END	SLOWER VEHICLE	CROSS TRAFFIC	PEDESTRIAN	QUEUE	SIGNALS	OTHER		OTHER
G	TURNING VERSUS SAME DIRECTION	REAR OF LEFT TURNING VEHICLE	LEFT TURN SIDE SIDE SWIPE	STOPPED OR TURNING FROM LEFT SIDE	NEAR CENTRE LINE	OVERTAKING VEHICLE	TWO TURNING		OTHER
H	CROSSING (NO TURNS)	RIGHT ANGLE (70° TO 110°)							OTHER
J	CROSSING (VEHICLE TURNING)	RIGHT TURN RIGHT SIDE	OPPOSING RIGHT TURNS	TWO TURNING					OTHER
K	MERGING	LEFT TURN IN	RIGHT TURN IN	TWO TURNING					OTHER
L	RIGHT TURN AGAINST	STOPPED WAITING TO TURN	MAKING TURN						OTHER
M	MANOEUVRING	PARKING OR LEAVING	"U" TURN	"U" TURN	DRIVEWAY MANOEUVRE	ENTERING OR LEAVING FROM OPPOSITE SIDE	ENTERING OR LEAVING FROM SAME SIDE	REVERSING ALONG ROAD	OTHER
N	PEDESTRIANS CROSSING ROAD	LEFT SIDE	RIGHT SIDE	LEFT TURN LEFT SIDE	RIGHT TURN RIGHT SIDE	LEFT TURN RIGHT SIDE	RIGHT TURN LEFT SIDE	MANOEUVRING VEHICLE	OTHER
P	PEDESTRIANS OTHER	WALKING WITH TRAFFIC	WALKING FACING TRAFFIC	WALKING ON FOOTPATH	CHILD PLAYING (INCLUDING TRICYCLE)	ATTENDING TO VEHICLE	ENTERING OR LEAVING VEHICLE		OTHER
Q	MISCELLANEOUS	FELL WHILE BOARDING OR ALIGHTING	FELL FROM MOVING VEHICLE	TRAIN	PARKED VEHICLE RAN AWAY	EQUESTRIAN	FELL INSIDE VEHICLE	TRAILER OR LOAD	OTHER

\* = Movement applies for left and right hand bends, curves or turns

## FACTORS PROBABLY CONTRIBUTING TO CRASHES (Version 1.8- 2 November 2009)

### 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 Intoxicated non-driver (pedestrian / cyclist / passenger)
- 106 (MOT only) dead driver not suspect, tested neg
- 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
- 179 Long vehicle tracked outside lane

#### 180 In line of traffic

- 181 Following too closely
- 182 Travelling unreasonably slowly
- 183 Motorist crowded cyclist
- 184 Incorrect merging /diverging manoeuvre

#### 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
- 199 Avoiding approaching emergency vehicle

#### 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
- 210 Cyclist riding on ped-xing / ped signals

### 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 Vehicle slowing, stopping or stationary 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 /road rage
- 358 Cigarette, radio, heater, AC, glove box, obj under drivers feet/pedals etc
- 359 Cell phone
- 360
- 361 Navigation device
- 362 CB radio/ non cell comms device
- 363 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 unfamiliar vehicle
- 404 Overseas / migrant driver fails to adjust to NZ road rules and road 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 or caught under pedal
- 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 / drifting
- 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 blow-out
- 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 to /from school bus
- 730 Pedestrian behind reversing / manoeuvring vehicle
- 731 Overseas pedestrian
- 732 Pedestrian attention diverted eg cigarette, cell phone, music player

## 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**