

# *Rodney District* *Road Safety Report* *2005 to 2009*



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*June 2010*

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## 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 Rodney District area ('the district') 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 Rodney District. 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 D) along with data for all New Zealand.

The peer group used for comparison with Rodney District is Group D which consists of provincial towns and hinterland. (Population 20000 - 75000 and/or rural crashes greater than 55 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 1.2 Crashes per 100 million vehicle kilometres travelled**

	Council roads		State Highways	
	Urban	Rural	Urban	Rural
Rodney District	27	28	24	14
Group D	35	27	24	17
All NZ	37	29	27	18

**Figure 1.3 Casualties per 100 million vehicle kilometres travelled**

	Council roads		State Highways	
	Urban	Rural	Urban	Rural
Rodney District	36	38	36	21
Group D	45	40	34	27
All NZ	46	42	36	26

**Figure 1.4 Peer group crash and casualty rates**
**Group D**

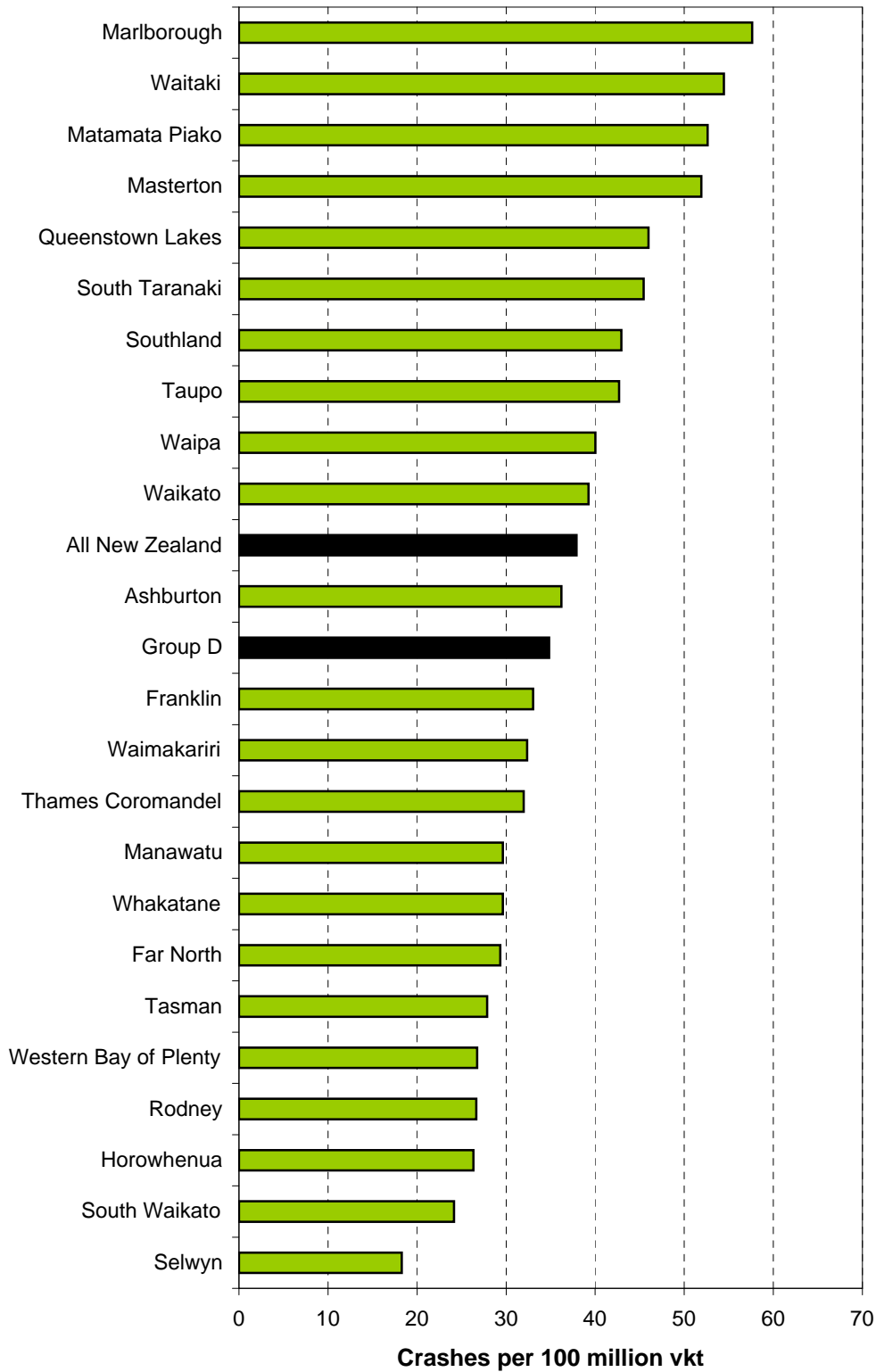
City or District name	Crashes per					Casualties per					2009 Population	% of rural crashes
	10,000 Population (5 year average)	100 million vehicle kilometres travelled				10,000 Population (5 year average)	100 million vehicle kilometres travelled					
		Council roads		State Highways			Council roads		State Highways			
		Urban	Rural	Urban	Rural		Urban	Rural	Urban	Rural		
Ashburton	21	36	16	17	7	29	47	23	24	10	29100	56
Far North	35	29	34	26	26	54	44	52	35	42	58000	84
Franklin	31	33	35	0	7	44	43	51	0	11	64200	77
Horowhenua	30	26	14	35	20	43	30	22	47	31	30600	63
Manawatu	31	30	24	34	15	45	38	36	46	23	29500	79
Marlborough	27	58	25	32	19	37	71	41	41	27	45000	57
Masterton	30	52	26	44	25	39	66	35	58	31	23300	37
Matamata Piako	44	53	32	24	14	64	68	44	31	22	23300	79
Queenstown Lakes	22	46	37	18	24	33	67	60	23	36	51500	65
Rodney	28	27	28	24	14	39	36	38	36	21	98100	69
Selwyn	25	18	19	7	12	35	21	27	9	19	38600	90
South Taranaki	26	45	25	16	19	39	55	39	26	28	26800	73
South Waikato	31	24	28	19	19	49	31	42	34	32	22800	80
Southland	57	43	32	41	25	90	62	48	60	42	29300	90
Tasman	25	28	21	21	23	35	34	30	26	34	46800	76
Taupo	42	43	26	21	18	62	53	38	27	30	33600	69
Thames Coromandel	30	32	27	27	25	44	47	35	45	34	26800	63
Waikato	42	39	28	16	17	61	46	37	24	26	47600	83
Waimakariri	17	32	30	9	10	24	44	43	11	14	46900	71
Waipa	28	40	27	27	15	39	52	37	35	23	45100	67
Waitaki	45	54	31	51	17	64	67	42	62	29	20700	60
Western Bay of Plenty	26	27	25	21	16	39	32	34	33	25	44800	84
Whakatane	26	30	26	24	18	40	40	44	33	29	34300	69
<b>Group D</b>	<b>30</b>	<b>35</b>	<b>27</b>	<b>24</b>	<b>17</b>	<b>44</b>	<b>45</b>	<b>40</b>	<b>33</b>	<b>27</b>	<b>916700</b>	<b>73</b>
<b>All New Zealand</b>	<b>26</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>

Group D : Provincial towns and hinterland. (Population 20000-75000 and/or rural crashes greater than 55 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.

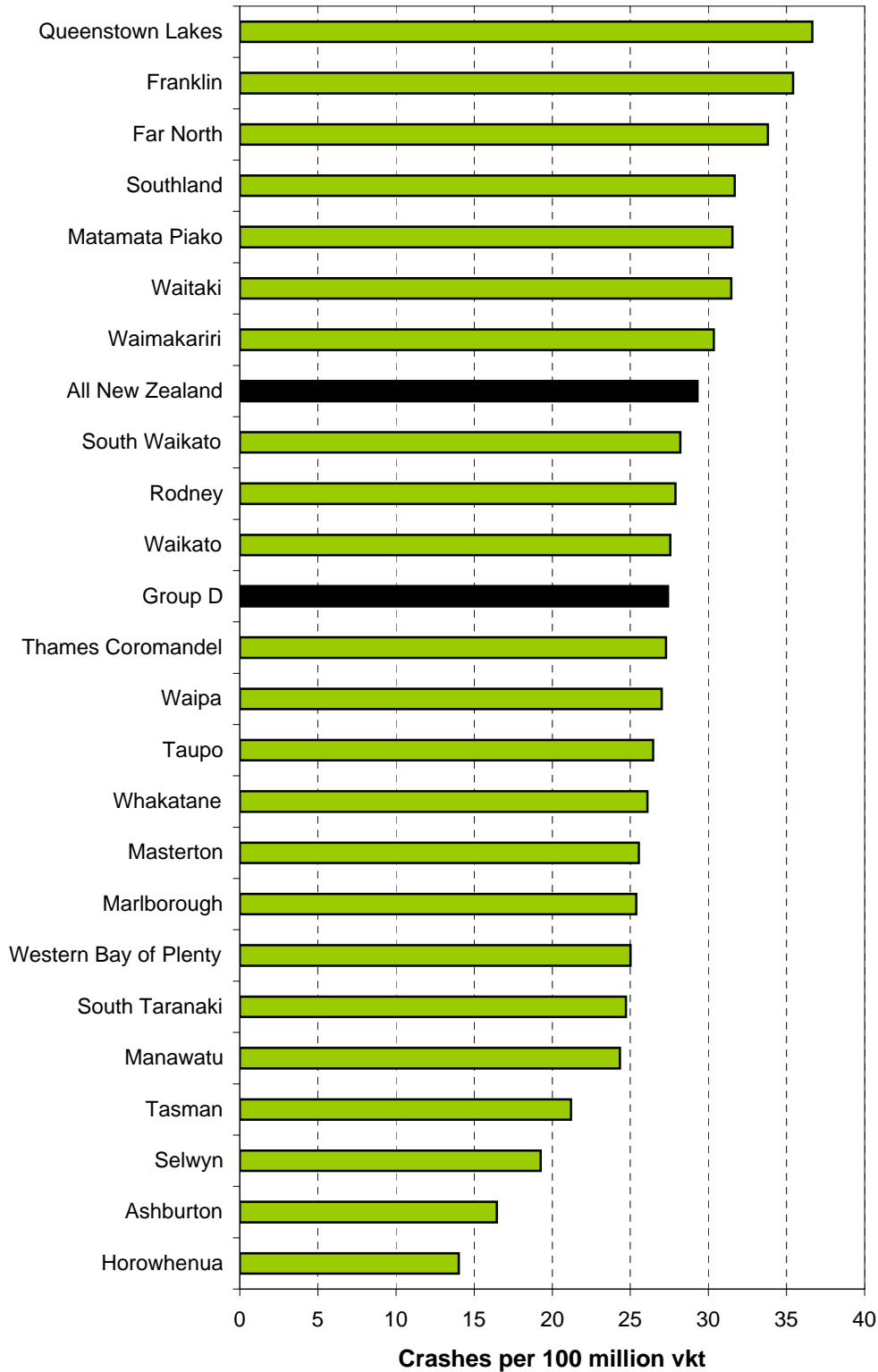
Crashes and casualties per 10,000 population are based on five year average crash data (2005-2009) and Statistics NZ 2009 population estimates.

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

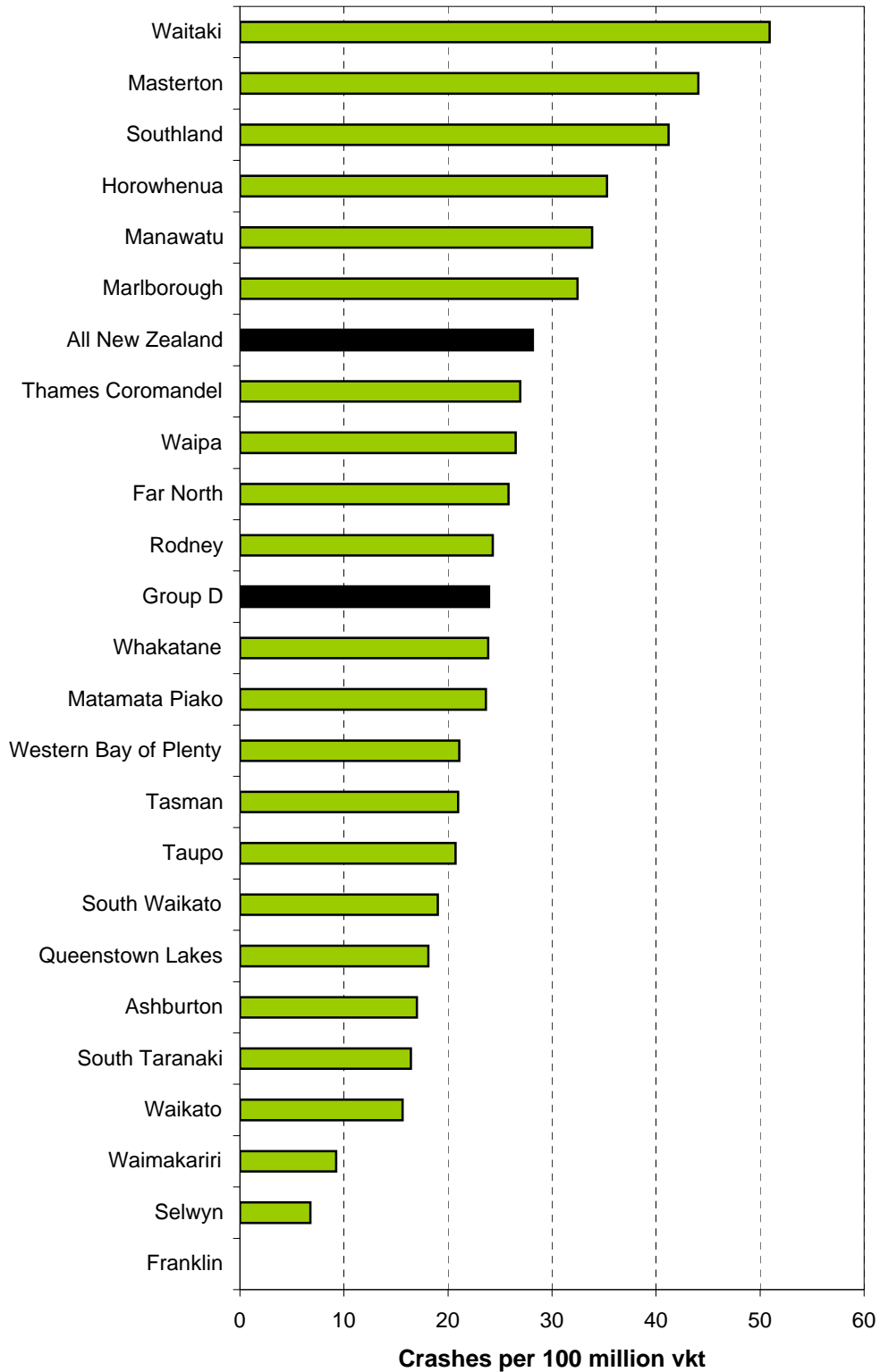




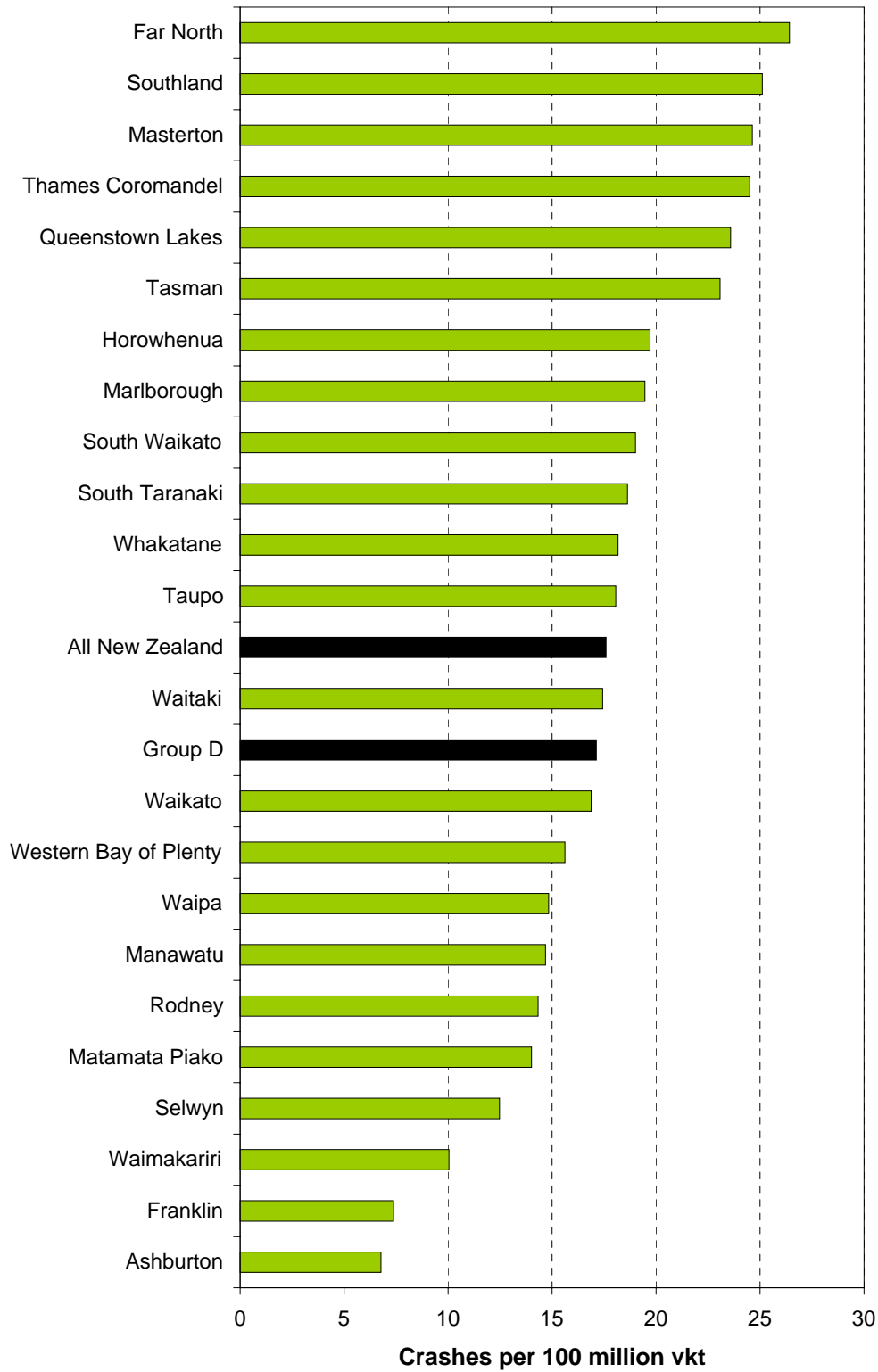
**Figure 1.6 Crashes per 100 million vehicle-kilometres travelled - rural council roads**



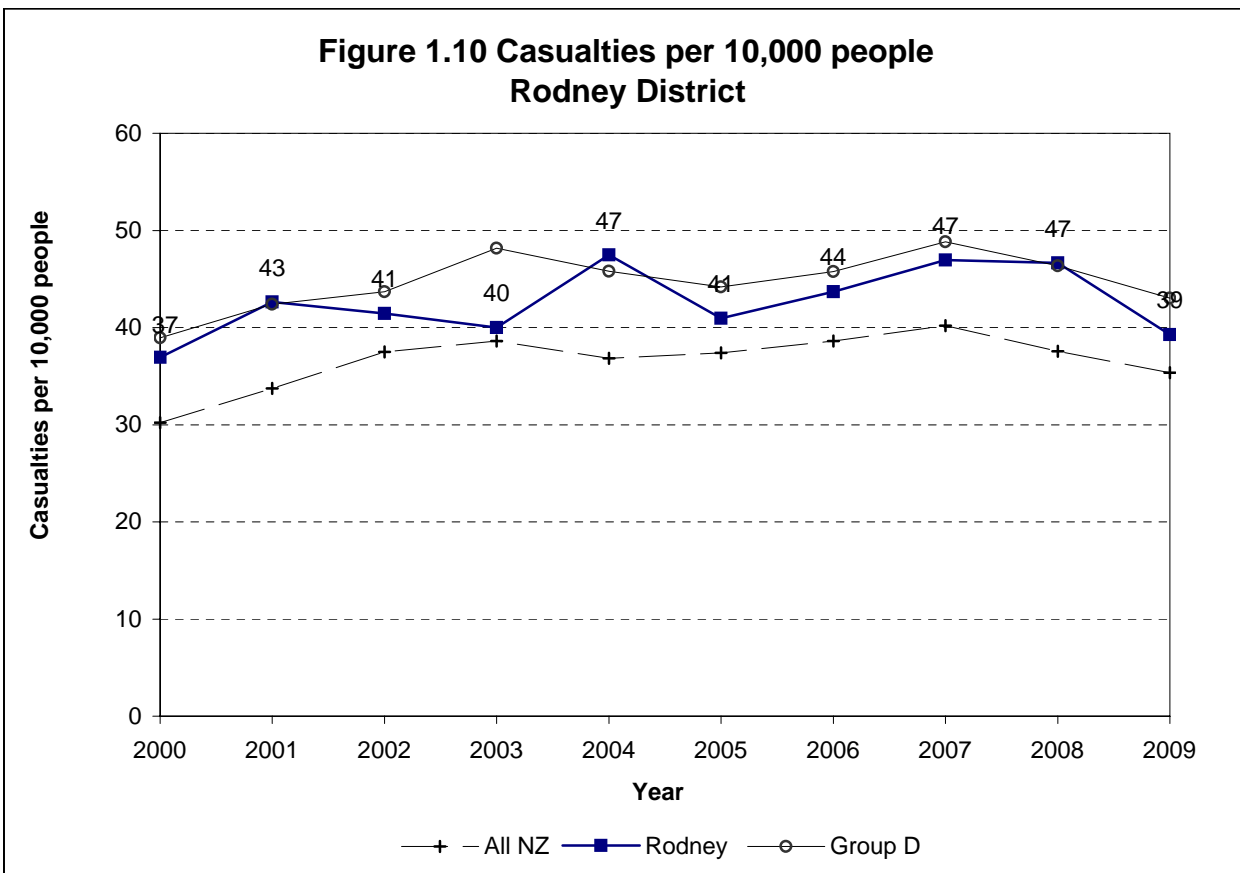
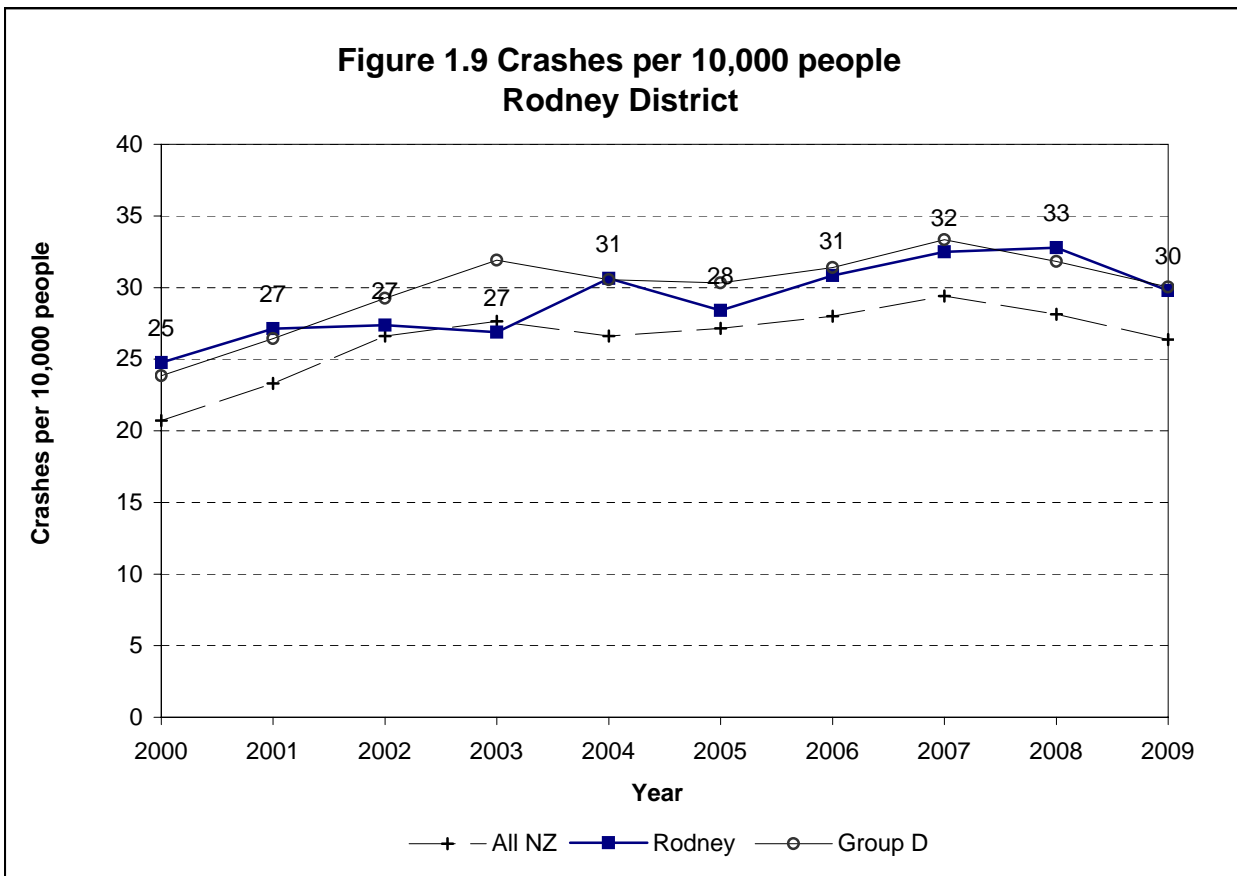
**Figure 1.7 Crashes per 100 million vehicle kilometres travelled - urban state highways**



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







**Figure 1.11 Social cost of crashes in Rodney District in 2009**

		Rodney District	New Zealand
Council roads	urban	\$20.61	\$1,607.40
	rural	\$37.62	\$909.43
State Highways	urban	\$12.49	\$299.76
	rural	\$55.82	\$1,487.35
<b>Total</b>		<b>\$126.55</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 District

	2005	2006	2007	2008	2009	Total	%	Group D
Fatal crashes	19	16	11	9	15	70	5%	5%
Serious crashes	47	59	56	63	46	271	20%	22%
Minor crashes	174	194	225	231	221	1045	75%	72%
Total injury crashes	240	269	292	303	282	1386	100%	100%
Non-injury crashes	509	549	580	543	500	2681		

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

	2005	2006	2007	2008	2009	Total	%	Group D
Fatal crashes	3	5	3	2	4	17	4%	3%
Serious crashes	16	19	16	17	12	80	18%	17%
Minor crashes	60	69	70	63	76	338	78%	80%
Total injury crashes	79	93	89	82	92	435	100%	100%
Non-injury crashes	230	225	242	245	223	1165		

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

	2005	2006	2007	2008	2009	Total	%	Group D
Fatal crashes	16	11	8	7	11	53	6%	6%
Serious crashes	31	40	40	46	34	191	20%	24%
Minor crashes	114	125	155	168	145	707	74%	70%
Total injury crashes	161	176	203	221	190	951	100%	100%
Non-injury crashes	279	324	338	298	277	1516		

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

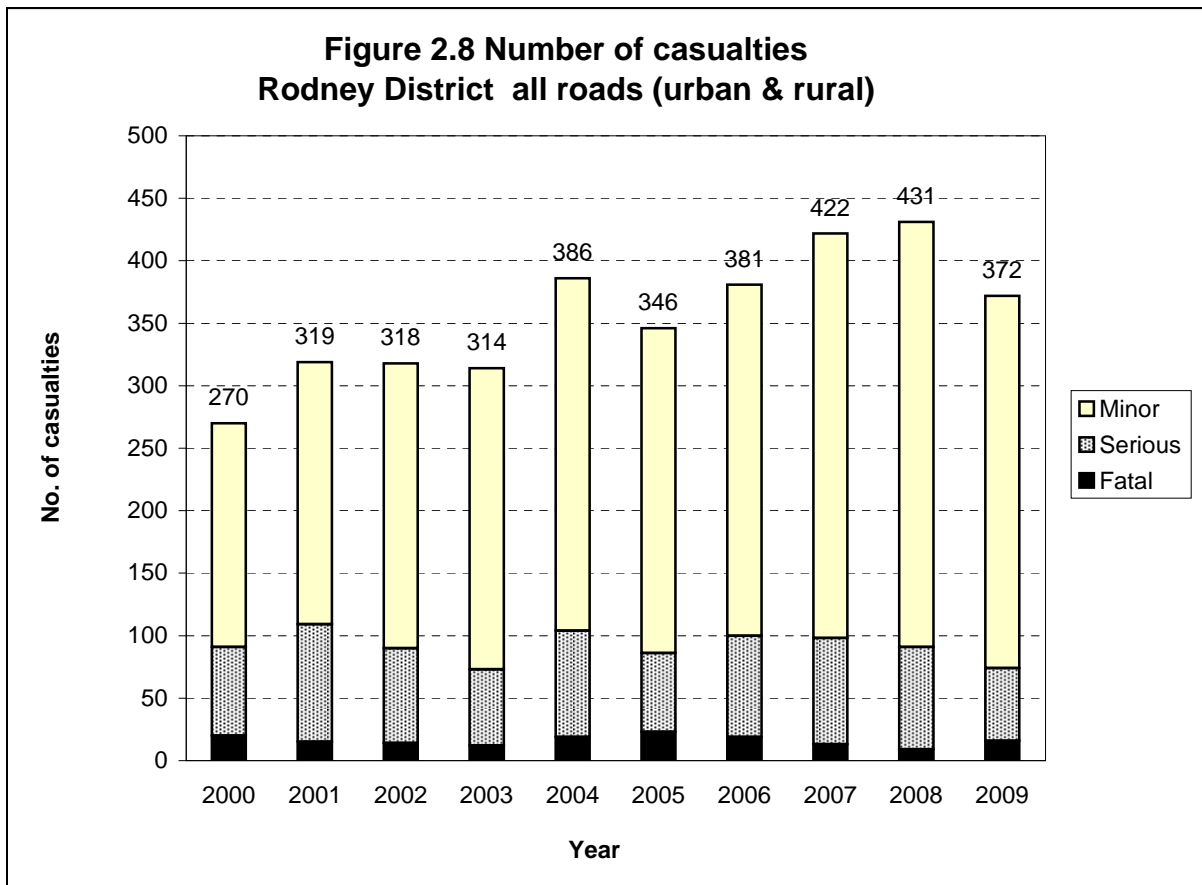
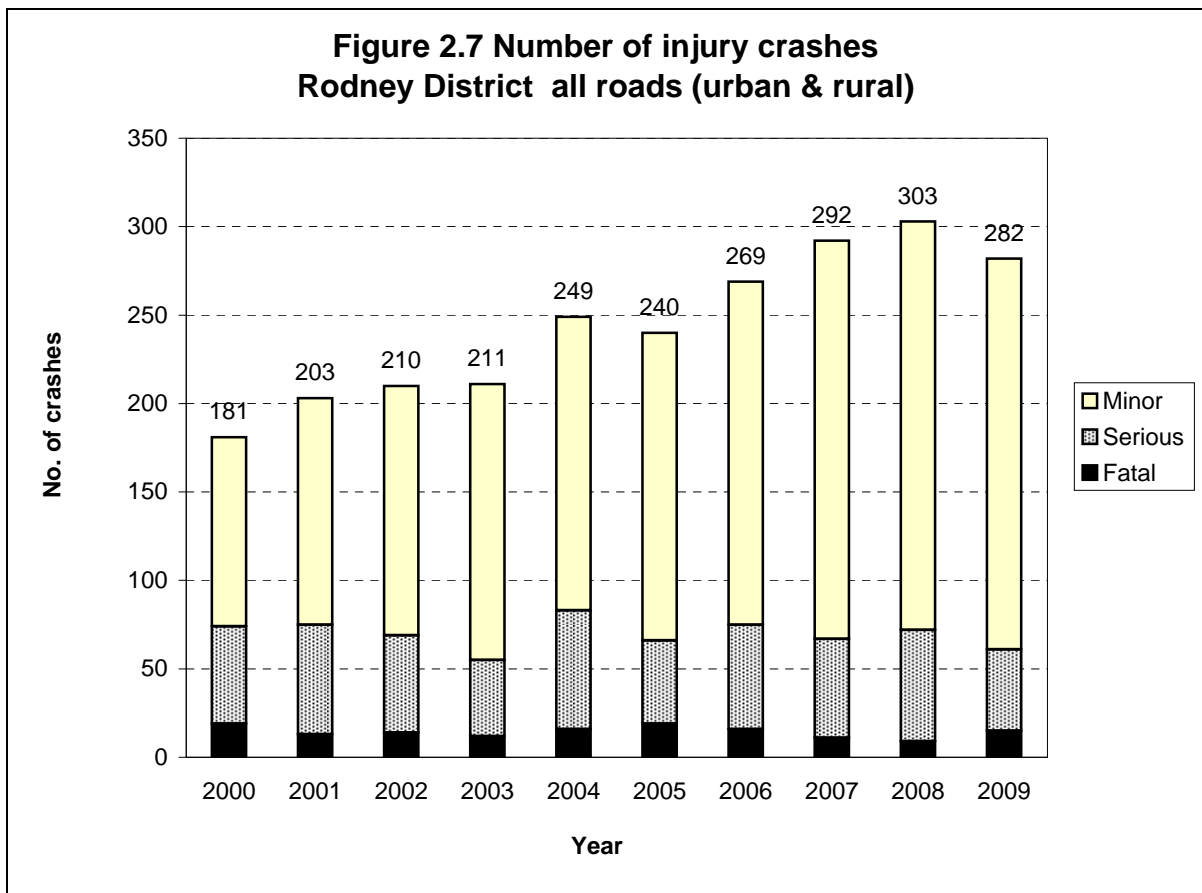
	2005	2006	2007	2008	2009	Total	%	Group D
Fatal casualties	23	19	13	9	16	80	4%	4%
Serious casualties	63	81	85	82	58	369	19%	20%
Minor casualties	260	281	324	340	298	1503	77%	76%
Total casualties	346	381	422	431	372	1952	100%	100%

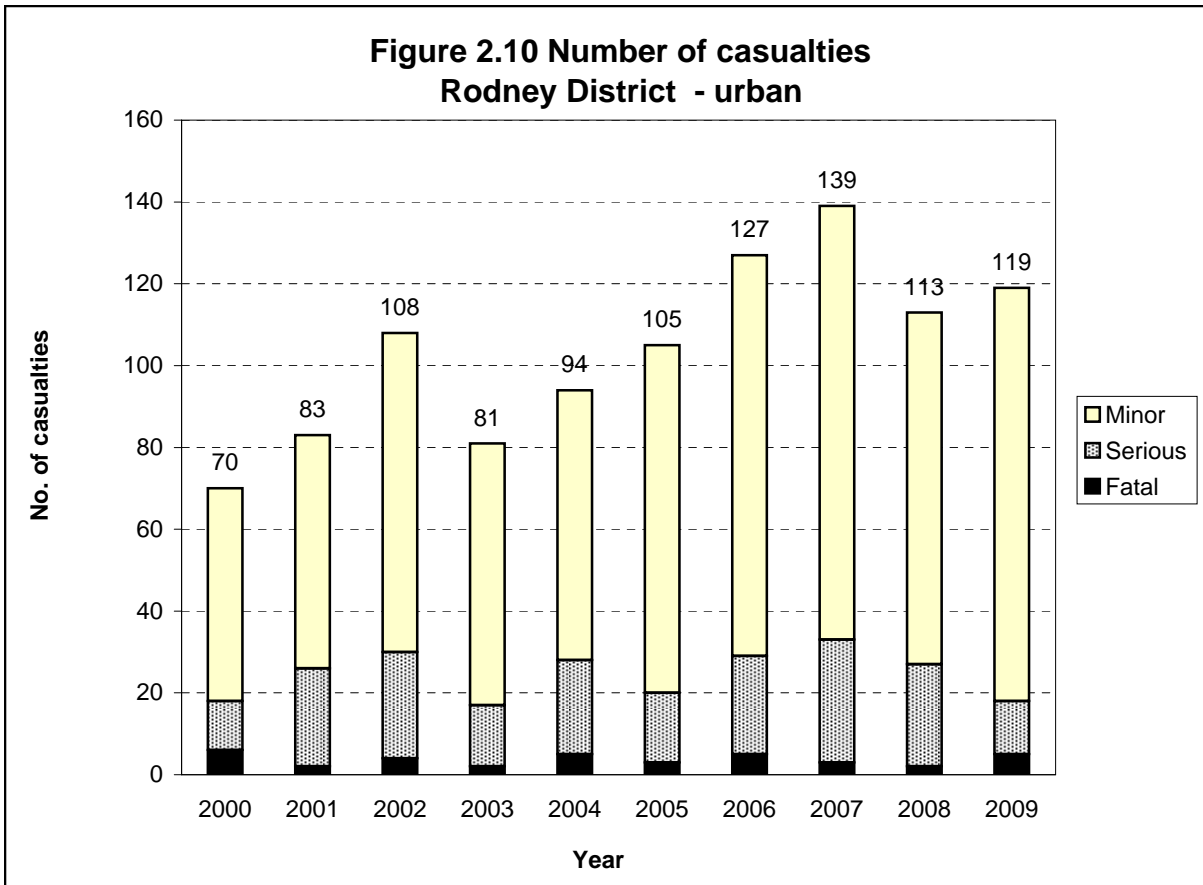
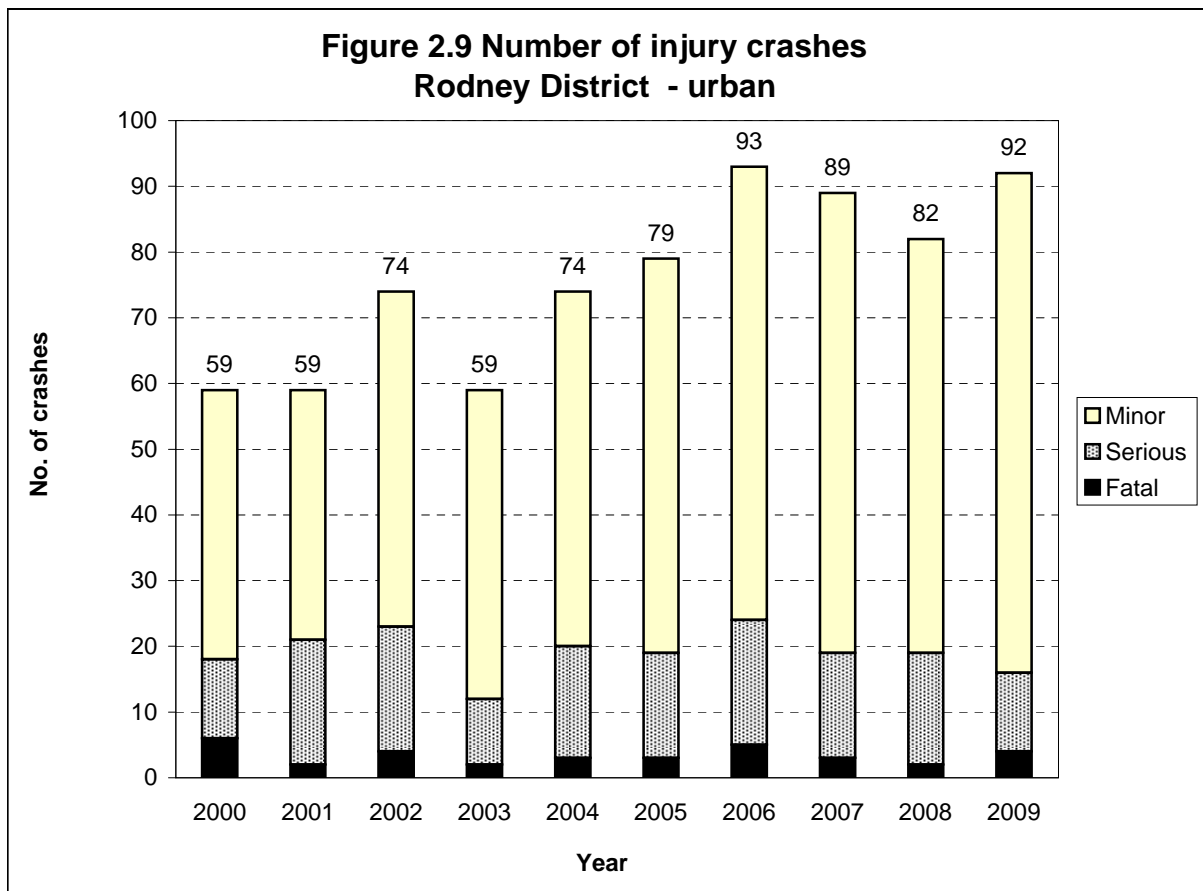
Figure 2.5: Casualty numbers and severity 2005 to 2009 - urban roads

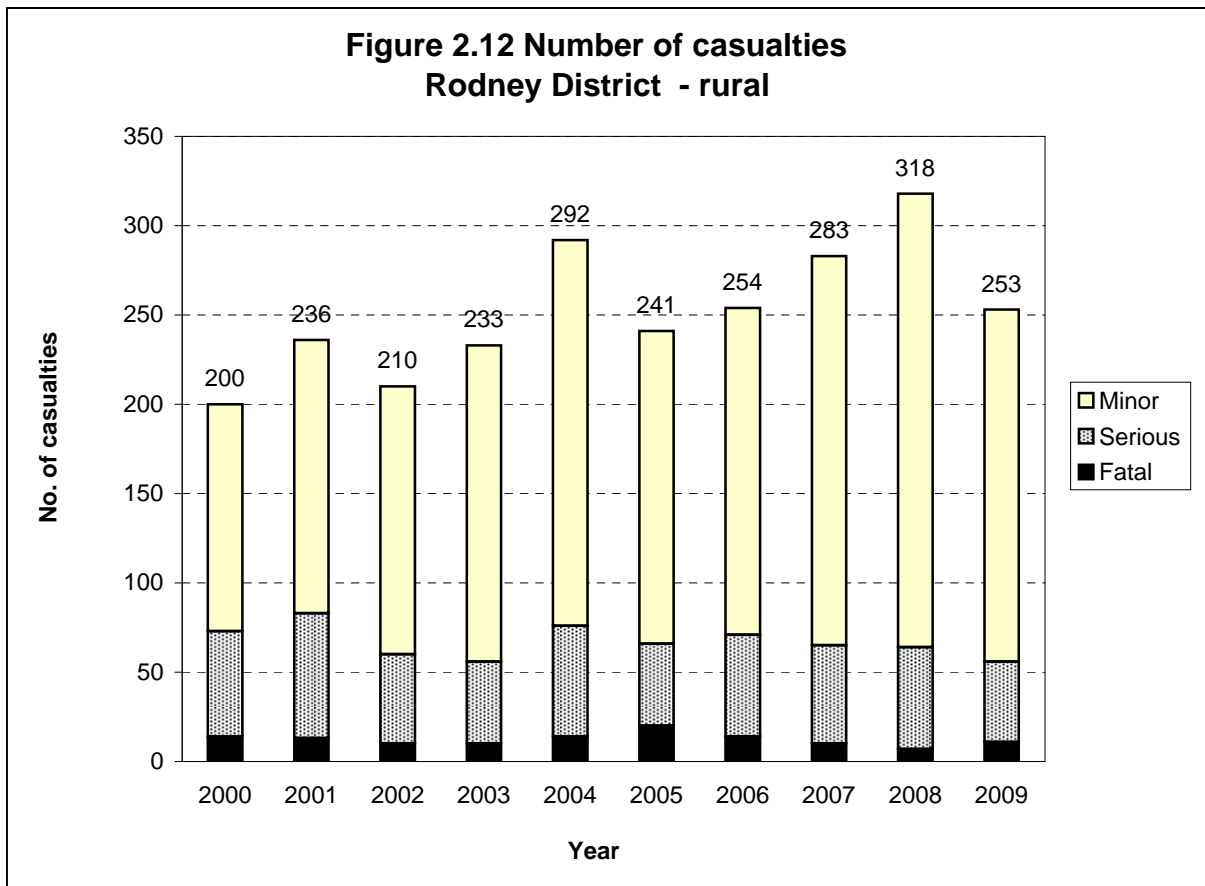
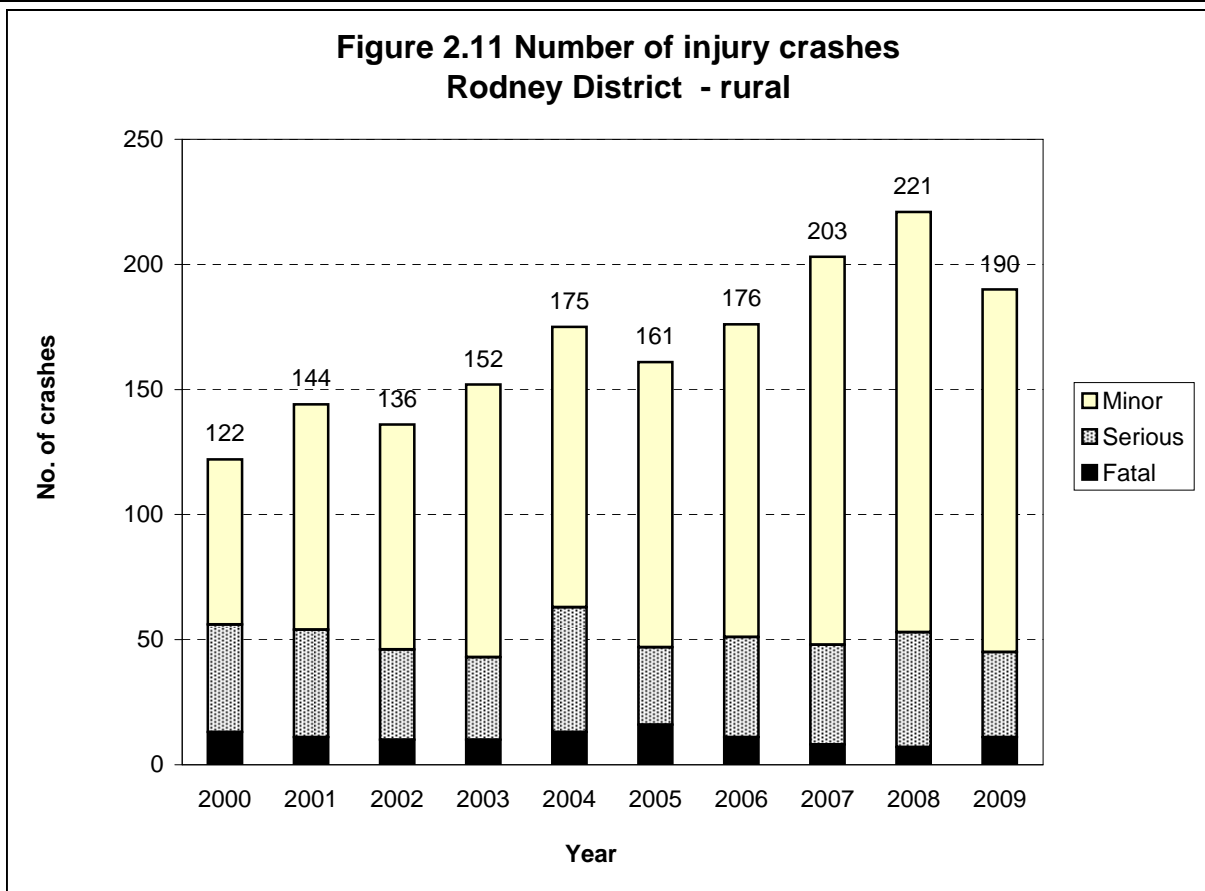
	2005	2006	2007	2008	2009	Total	%	Group D
Fatal casualties	3	5	3	2	5	18	3%	2%
Serious casualties	17	24	30	25	13	109	18%	16%
Minor casualties	85	98	106	86	101	476	79%	82%
Total casualties	105	127	139	113	119	603	100%	100%

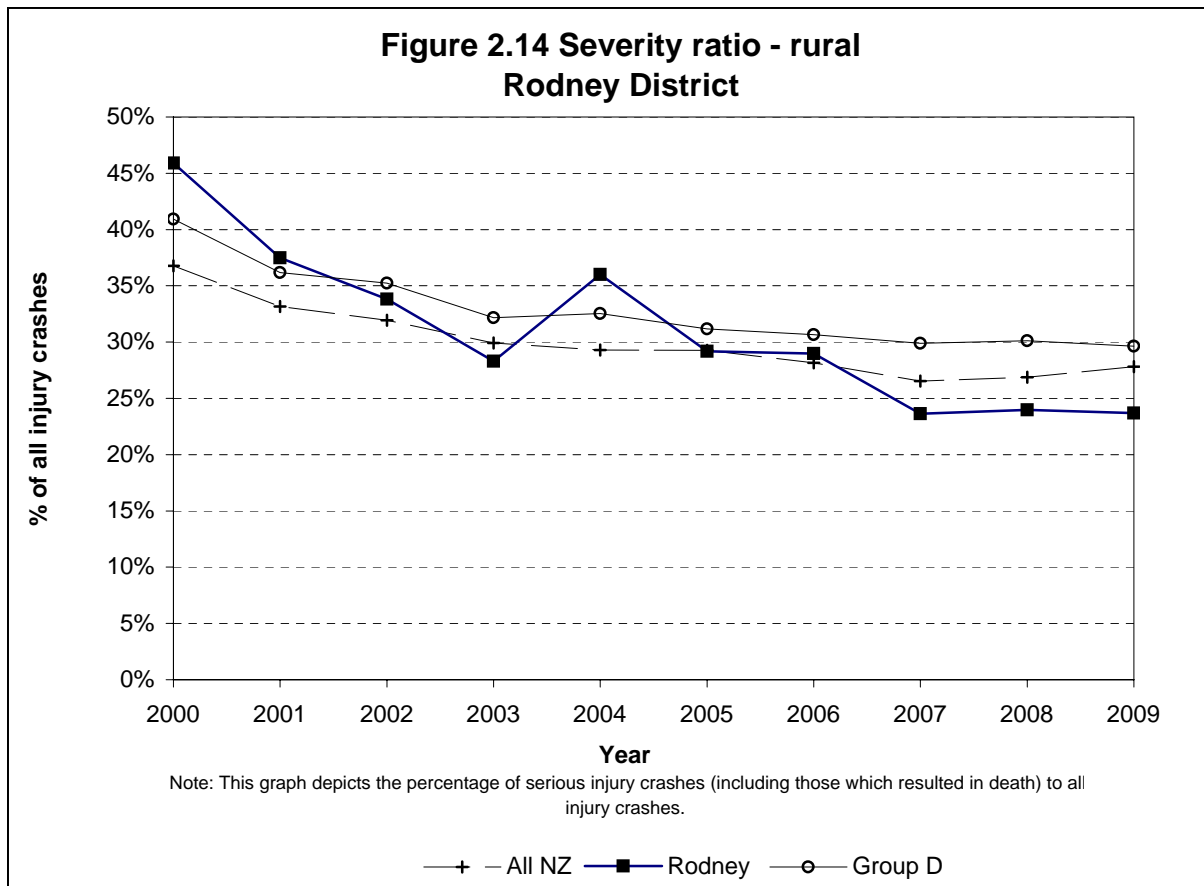
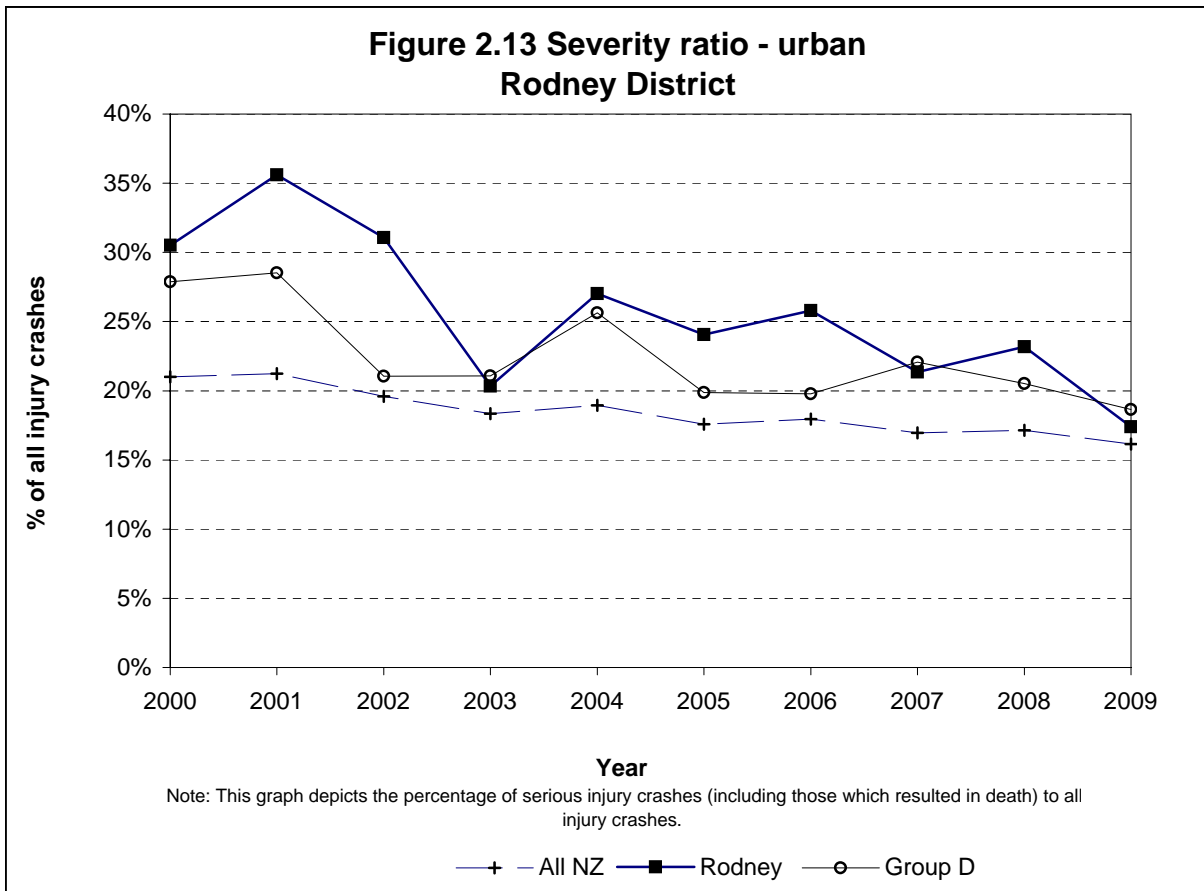
Figure 2.6: Casualty numbers and severity 2005 to 2009 - rural roads

	2005	2006	2007	2008	2009	Total	%	Group D
Fatal casualties	20	14	10	7	11	62	5%	5%
Serious casualties	46	57	55	57	45	260	19%	21%
Minor casualties	175	183	218	254	197	1027	76%	74%
Total casualties	241	254	283	318	253	1349	100%	100%









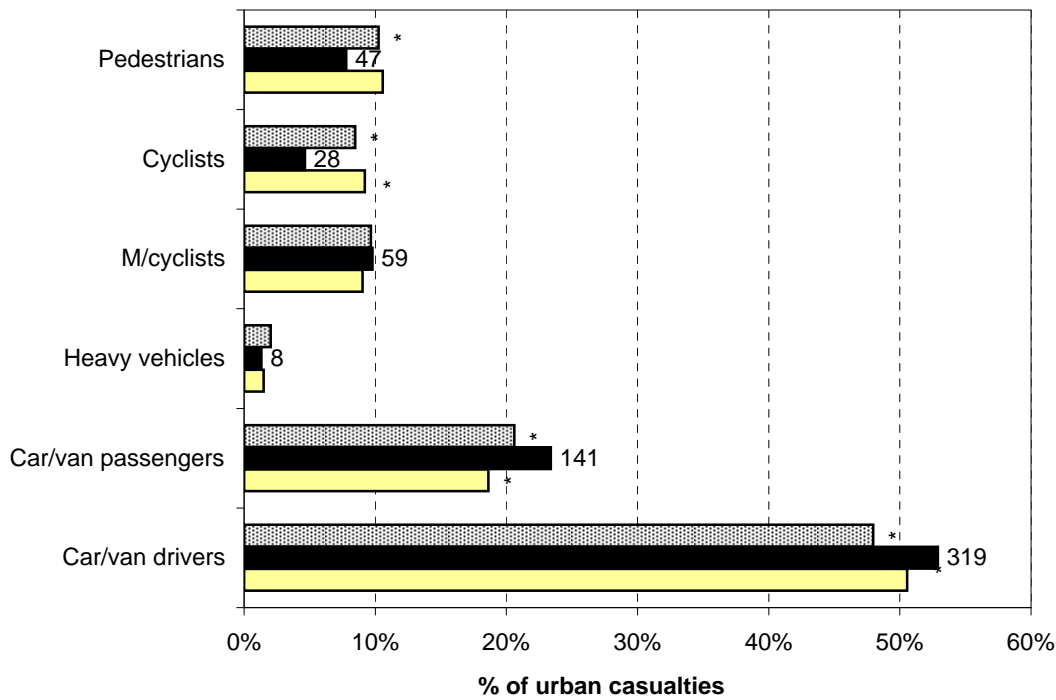


# *Road User Statistics*



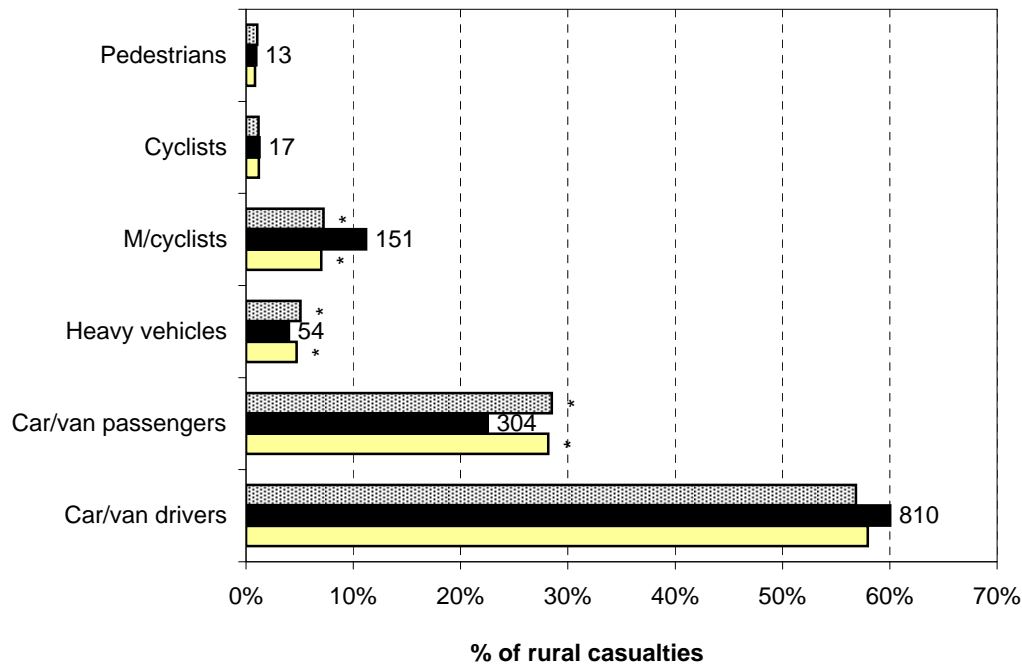


**Figure 3.1 Road user casualties - urban  
Rodney District (2005-2009)**



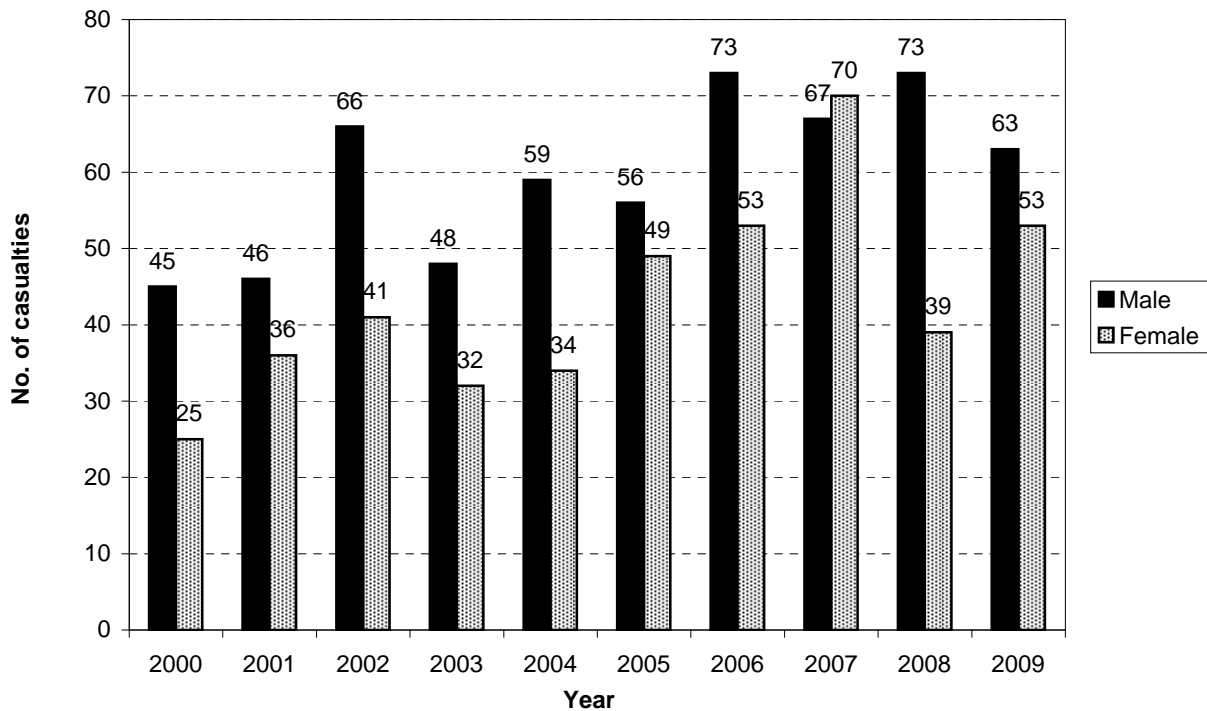
Note: While the graph plots percentages, the number of casualties is shown against the data points.  
\*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions

**Figure 3.2 Road user casualties - rural  
Rodney District (2005-2009)**



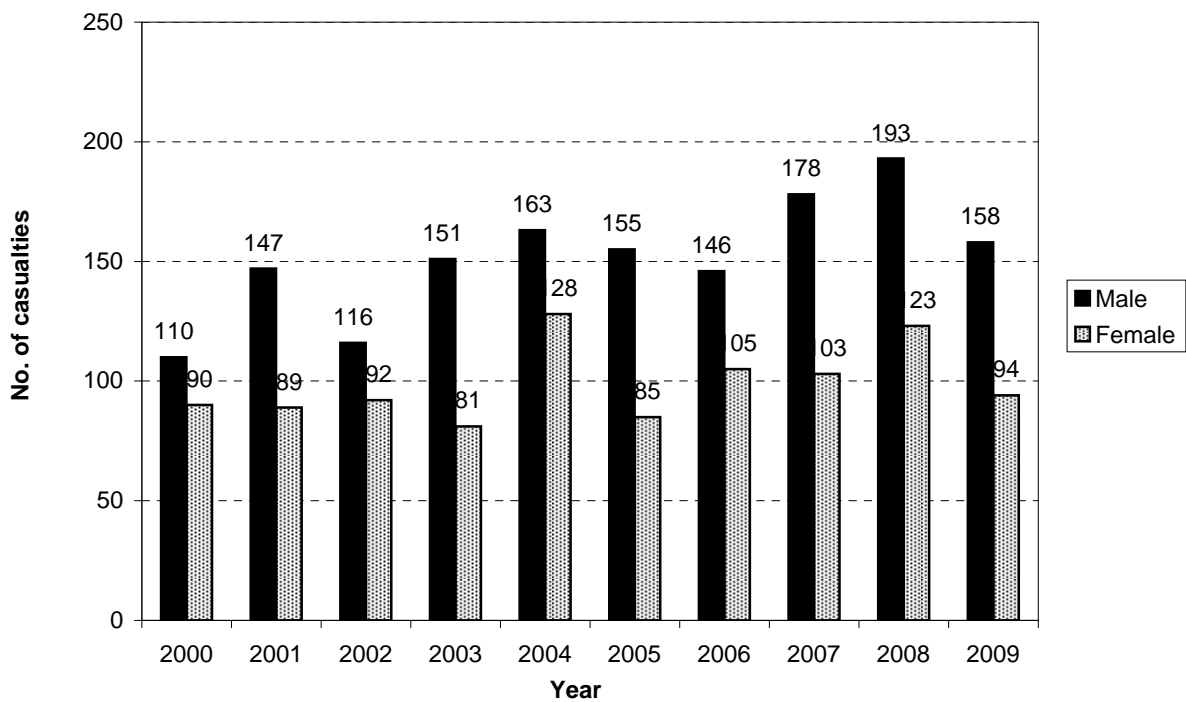
Note: While the graph plots percentages, the number of casualties is shown against the data points.  
\*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions

**Figure 3.3 Male/female casualties - urban  
Rodney District**



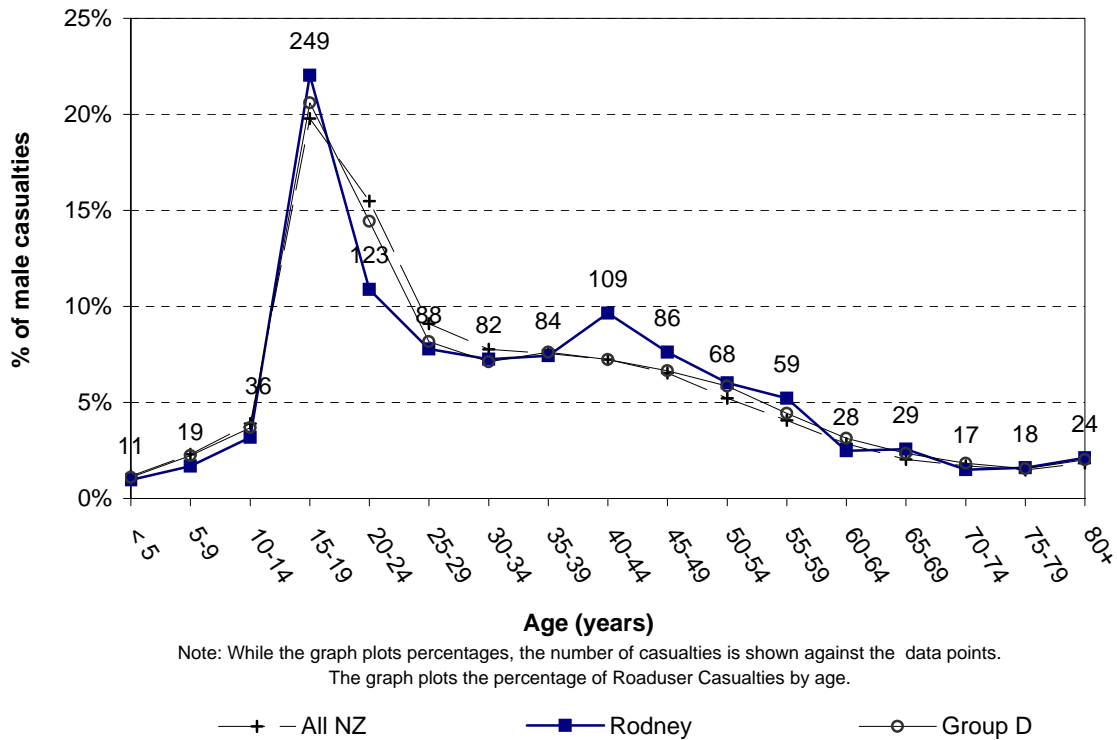
Note: This graph shows the number of male and female roadusers injured

**Figure 3.4 Male/female casualties - rural  
Rodney District**

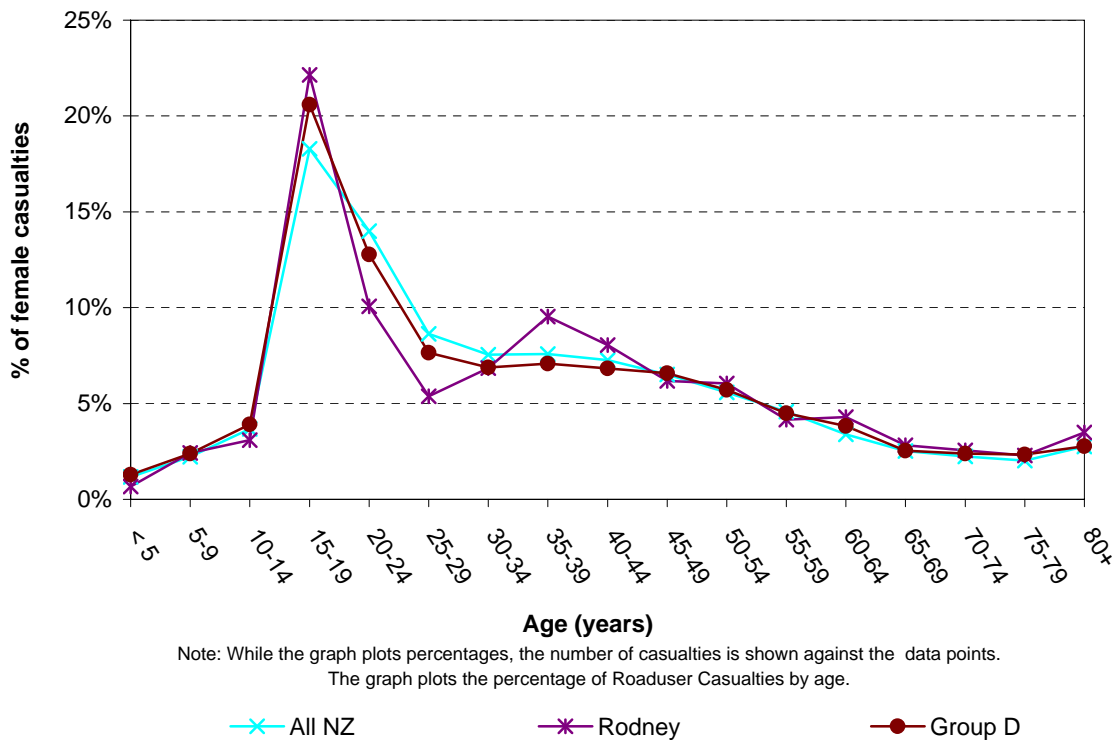


Note: This graph shows the number of male and female roadusers injured

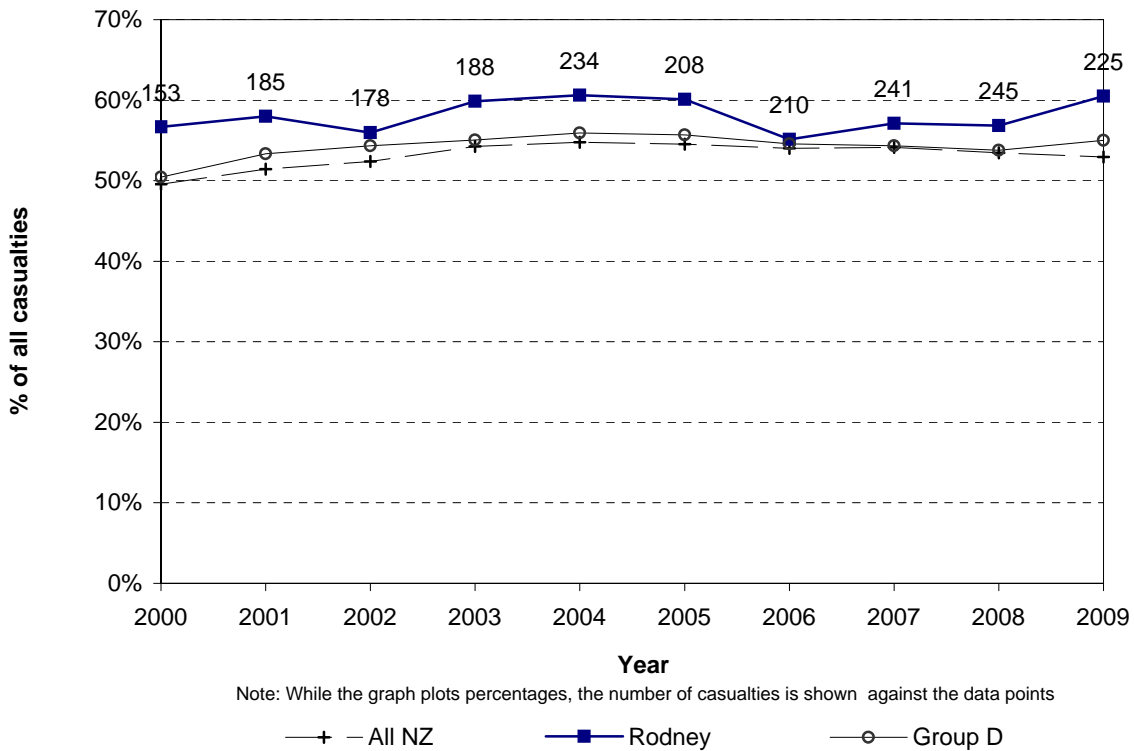
**Figure 3.5 Male casualties by age  
Rodney District (2005-2009)**



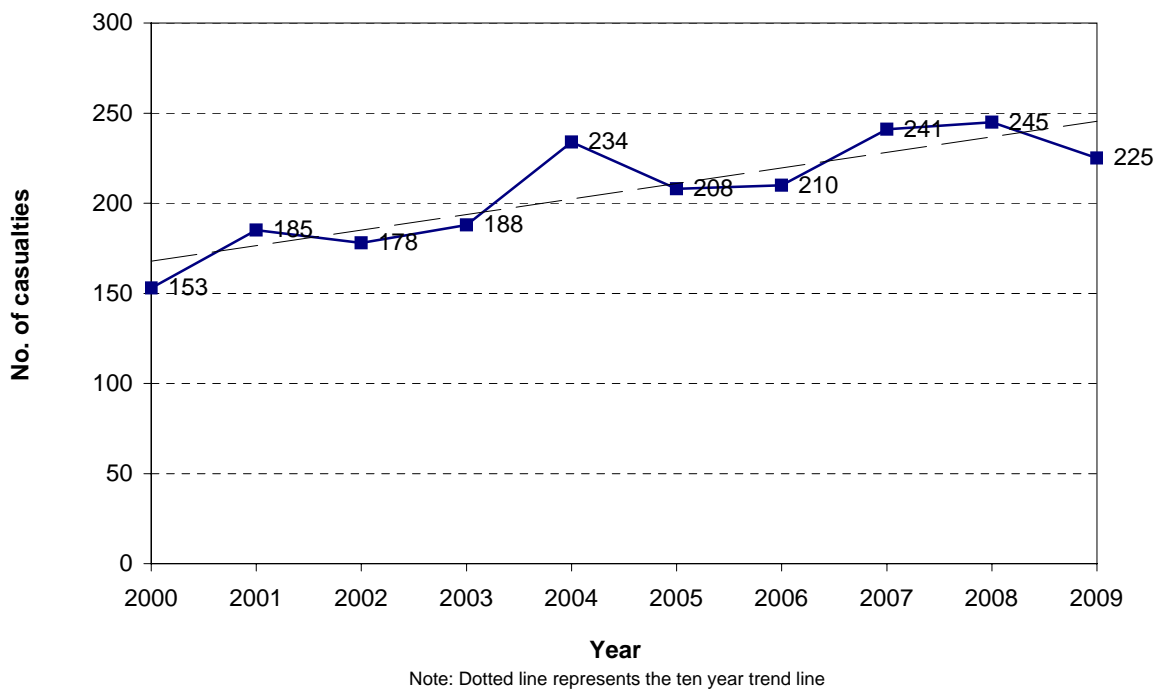
**Figure 3.6 Female casualties by age  
Rodney District (2005-2009)**



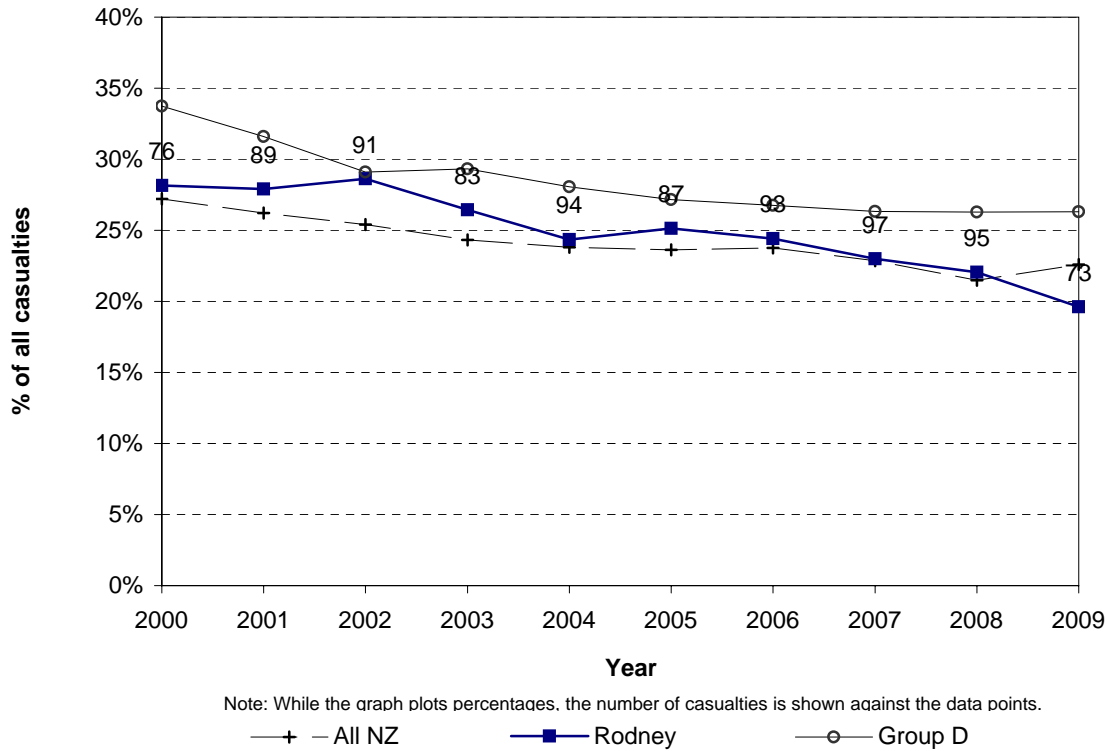
**Figure 3.7 Car/van driver casualties  
Rodney District**



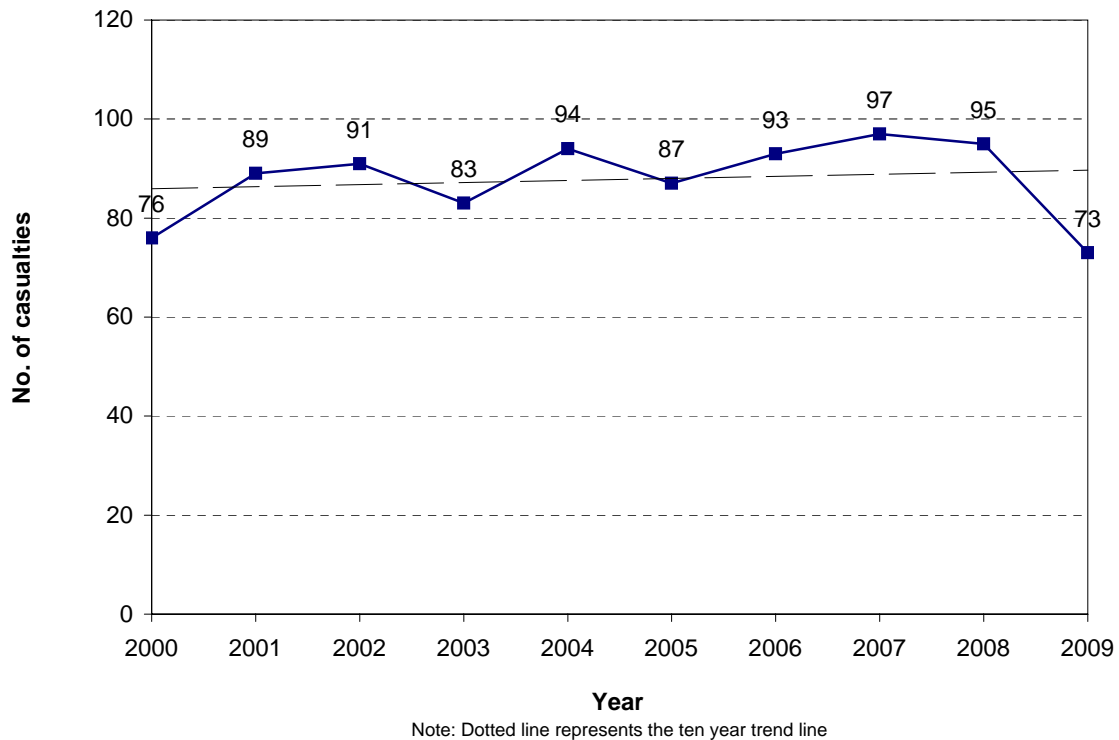
**Figure 3.8 Car/van driver casualties  
Rodney District**



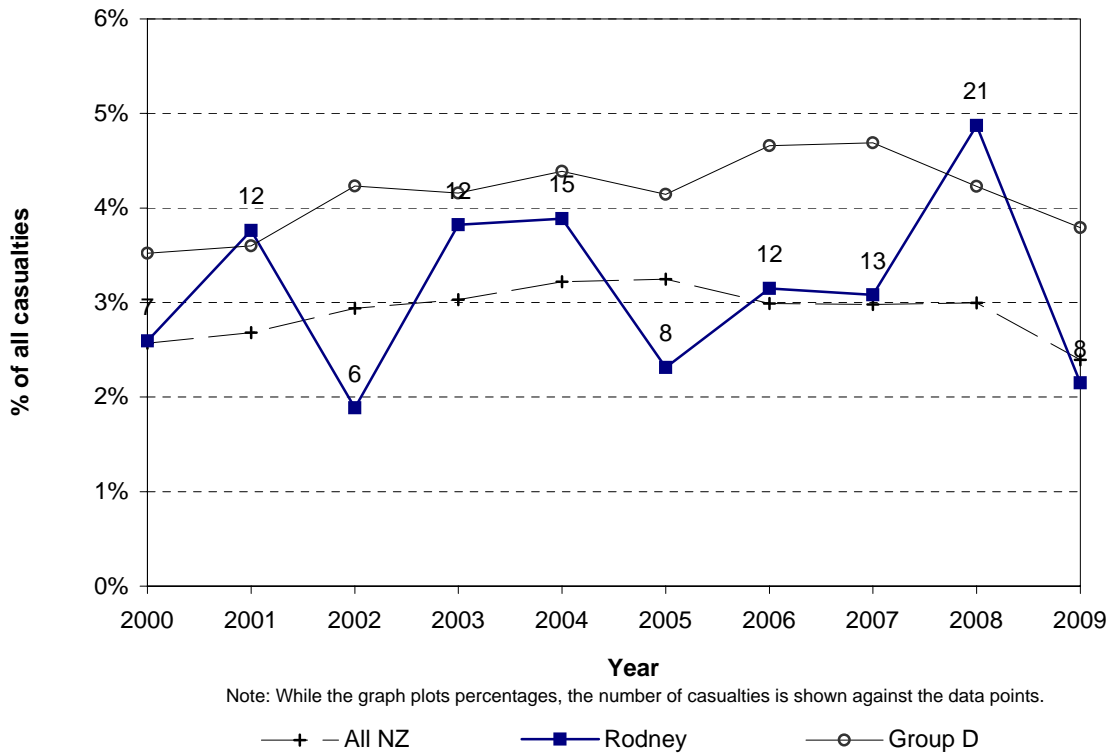
**Figure 3.9 Car/van passenger casualties  
Rodney District**



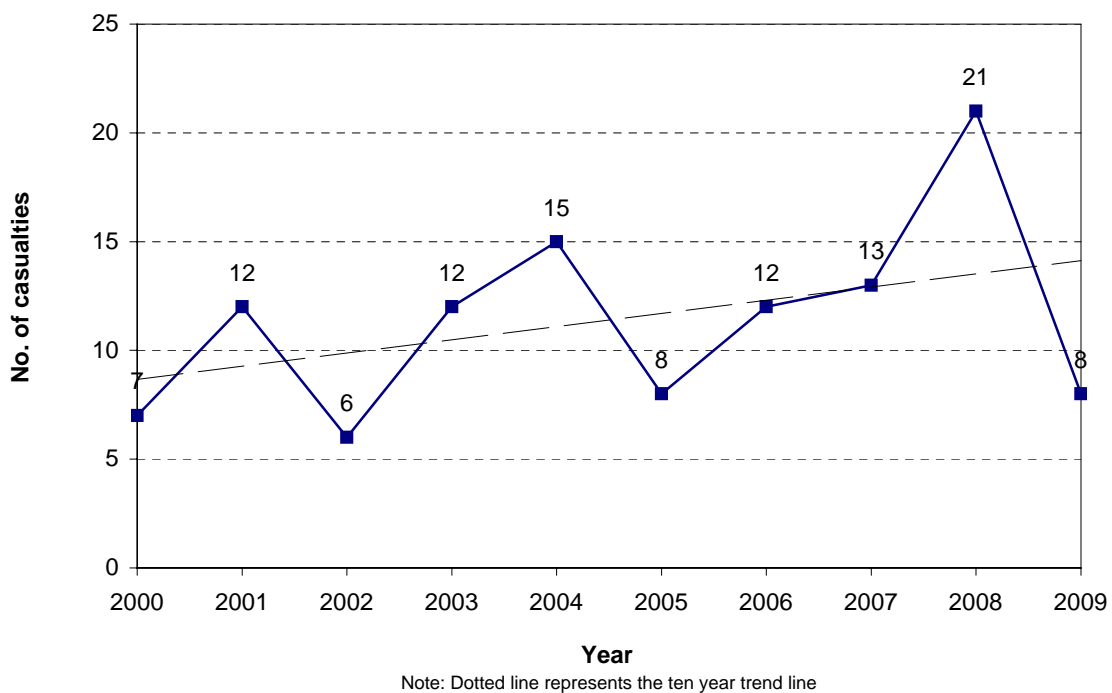
**Figure 3.10 Car/van passenger casualties  
Rodney District**



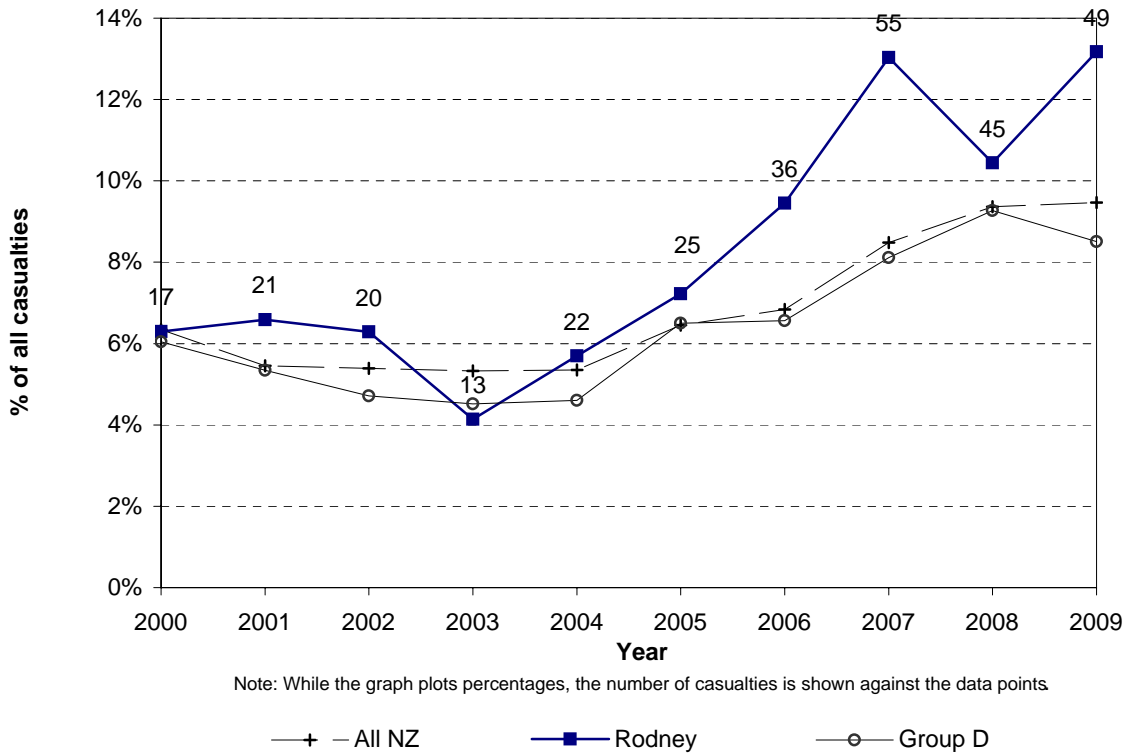
**Figure 3.11 Heavy vehicle casualties  
Rodney District**



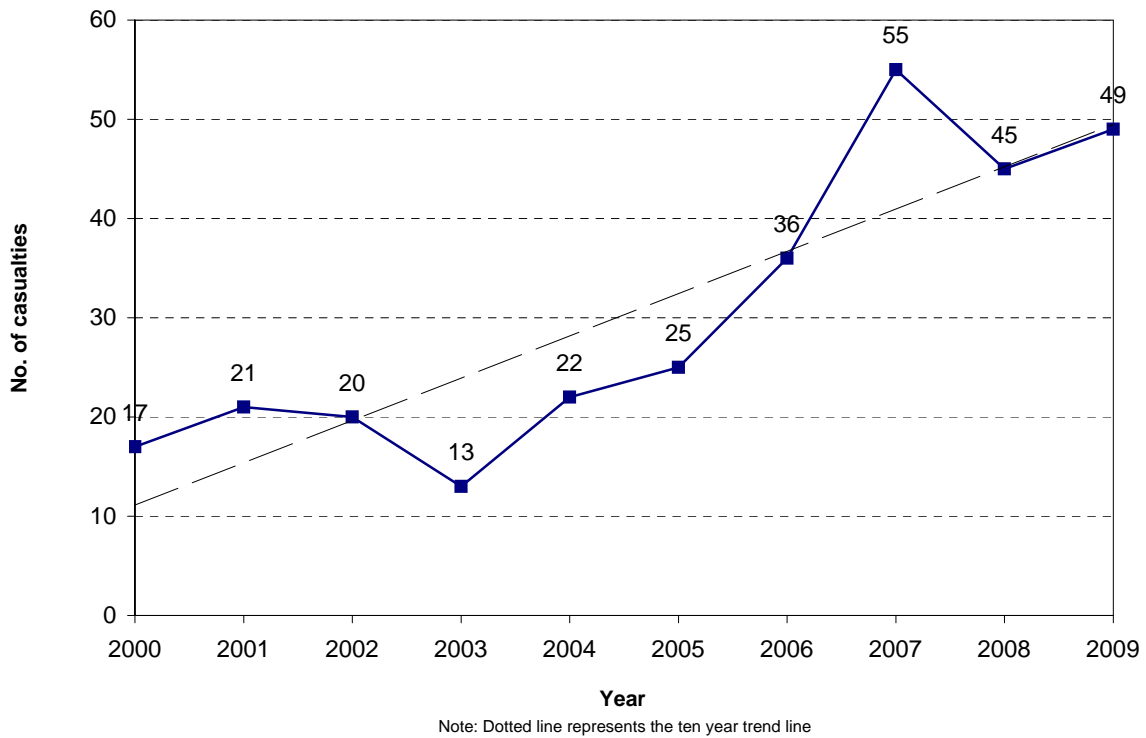
**Figure 3.12 Heavy vehicle casualties  
Rodney District**



**Figure 3.13 Motorcyclist casualties  
Rodney District**

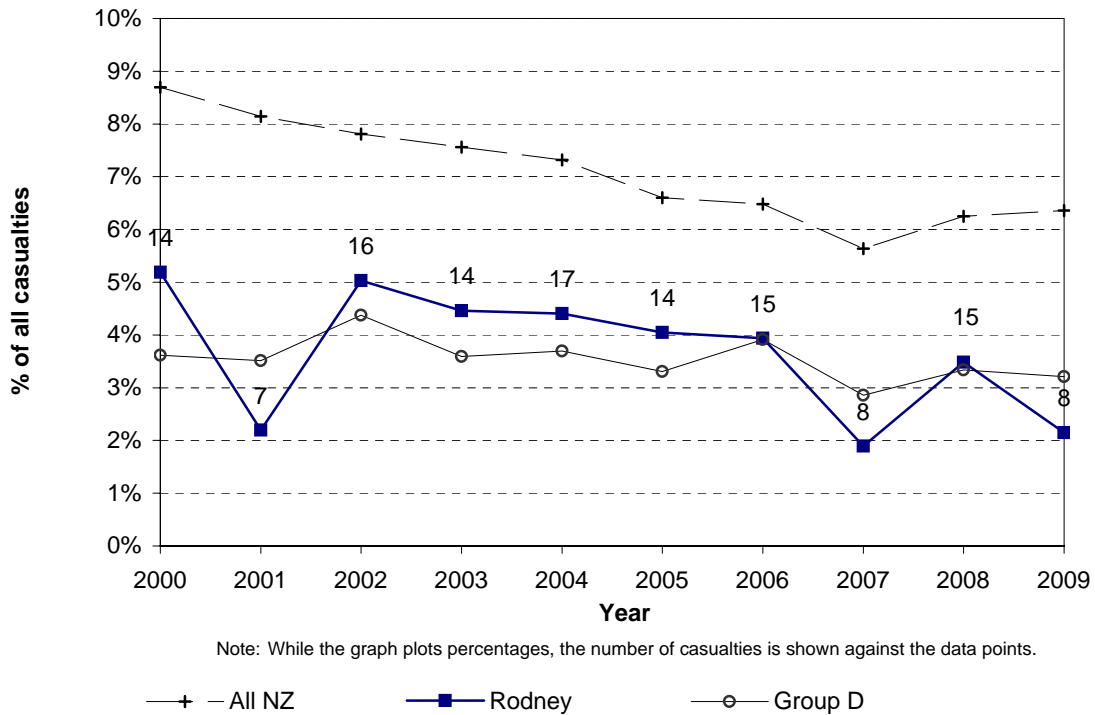


**Figure 3.14 Motorcyclist casualties  
Rodney District**

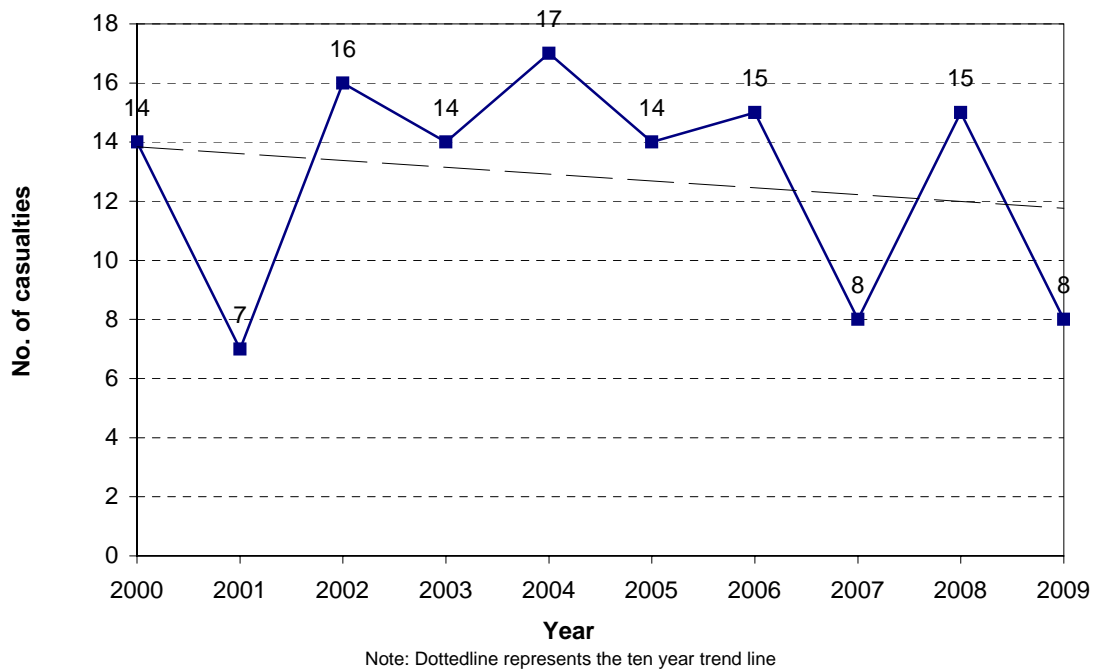




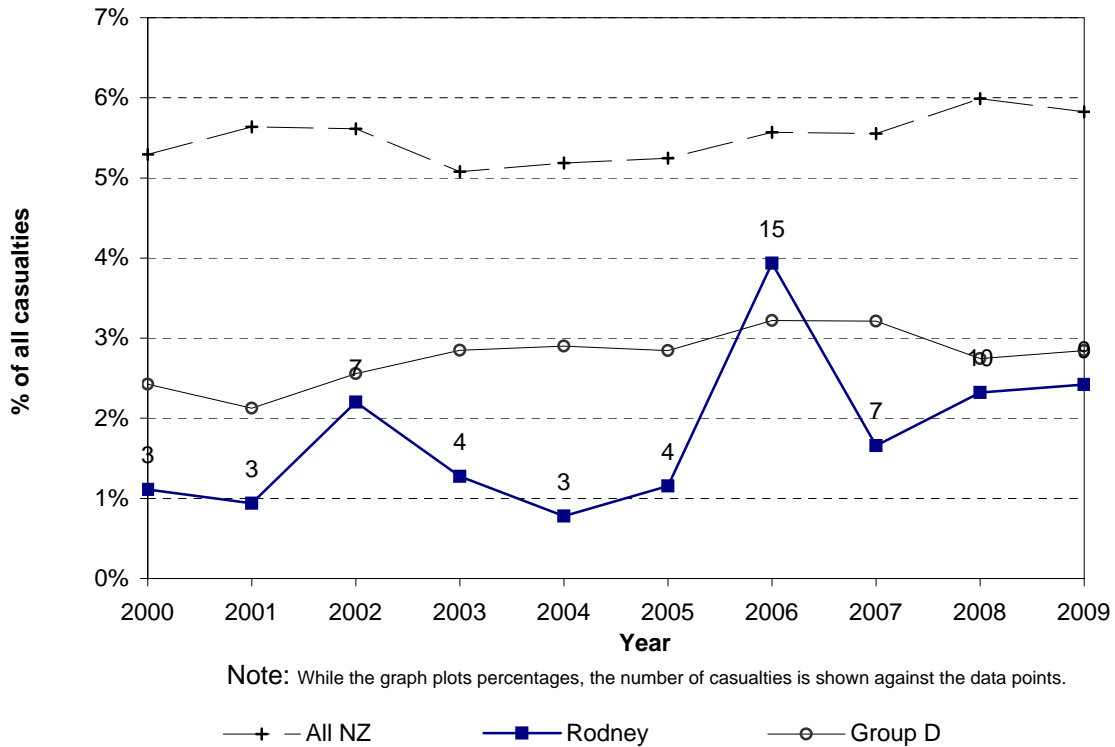
**Figure 3.15 Pedestrian casualties  
Rodney District**



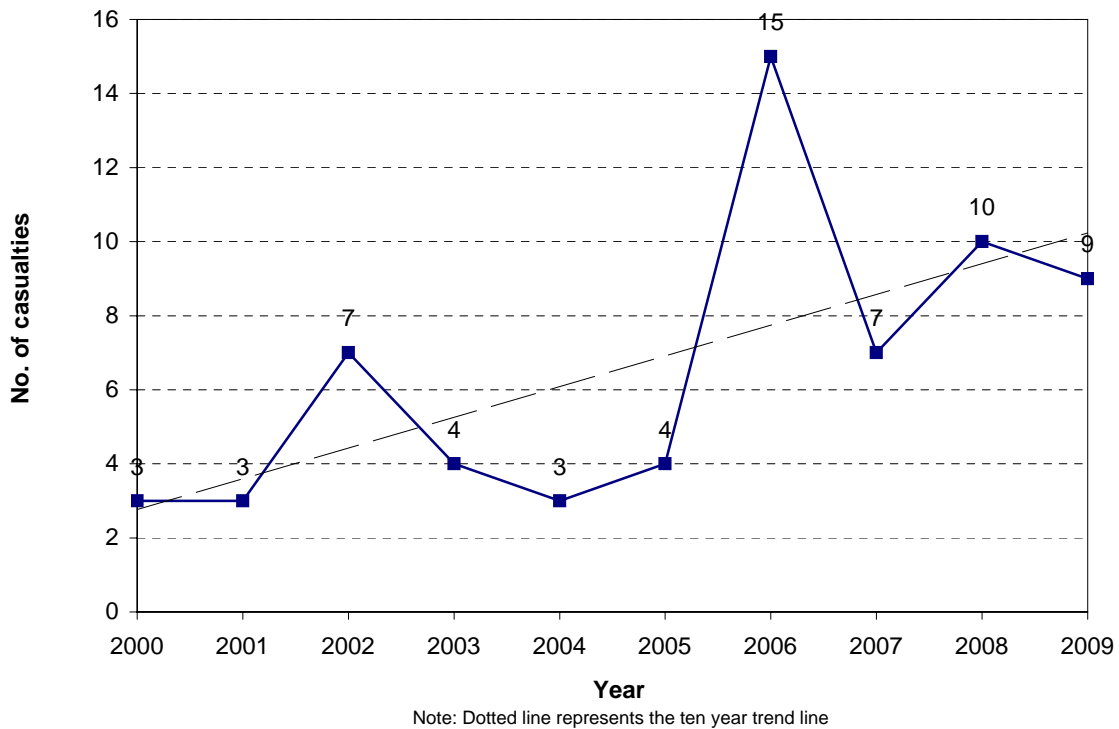
**Figure 3.16 Pedestrian casualties  
Rodney District**



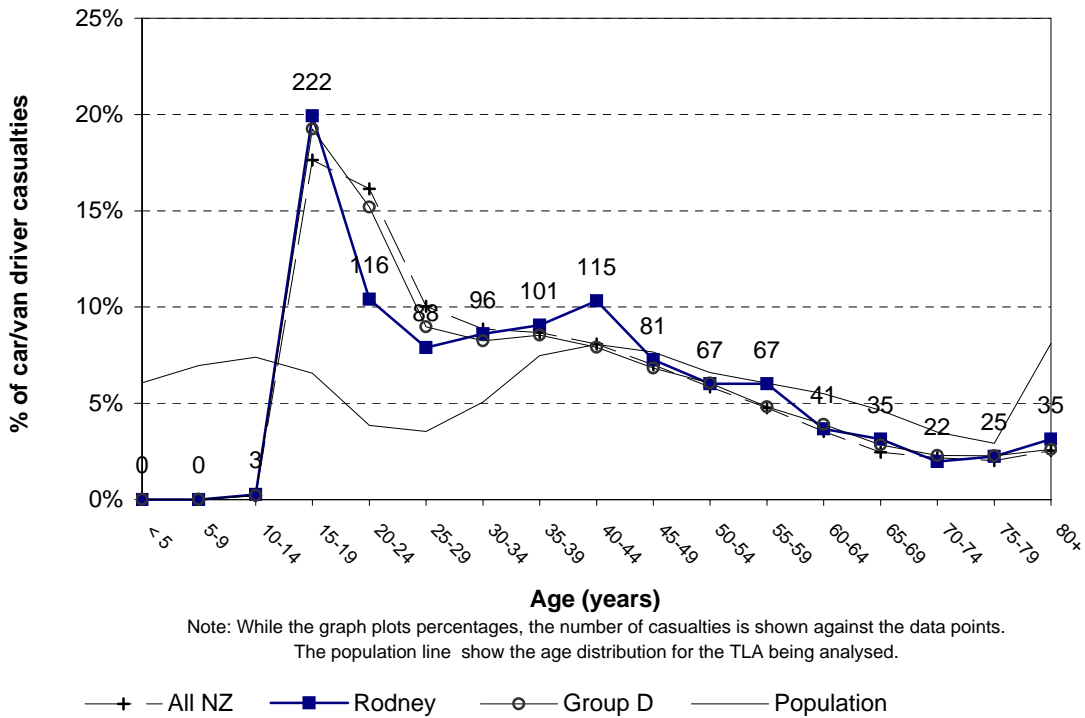
**Figure 3.17 Cyclist casualties  
Rodney District**



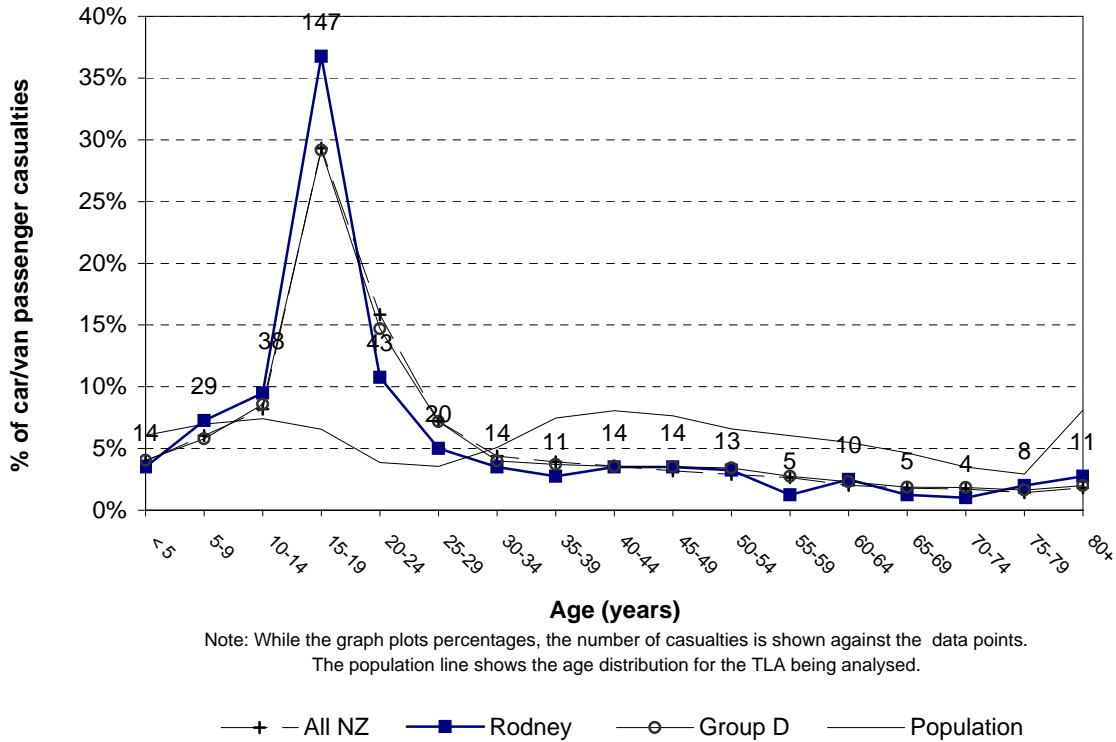
**Figure 3.18 Cyclist casualties  
Rodney District**



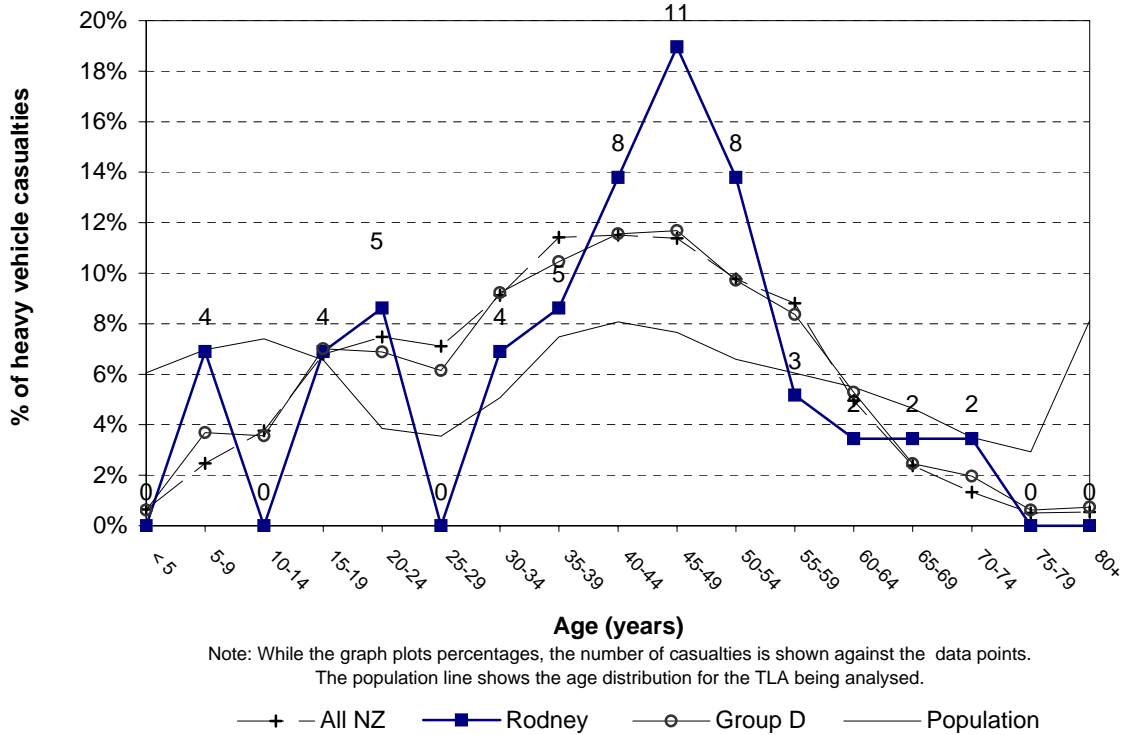
**Figure 3.19 Car/van driver casualty age  
Rodney District (2005-2009)**



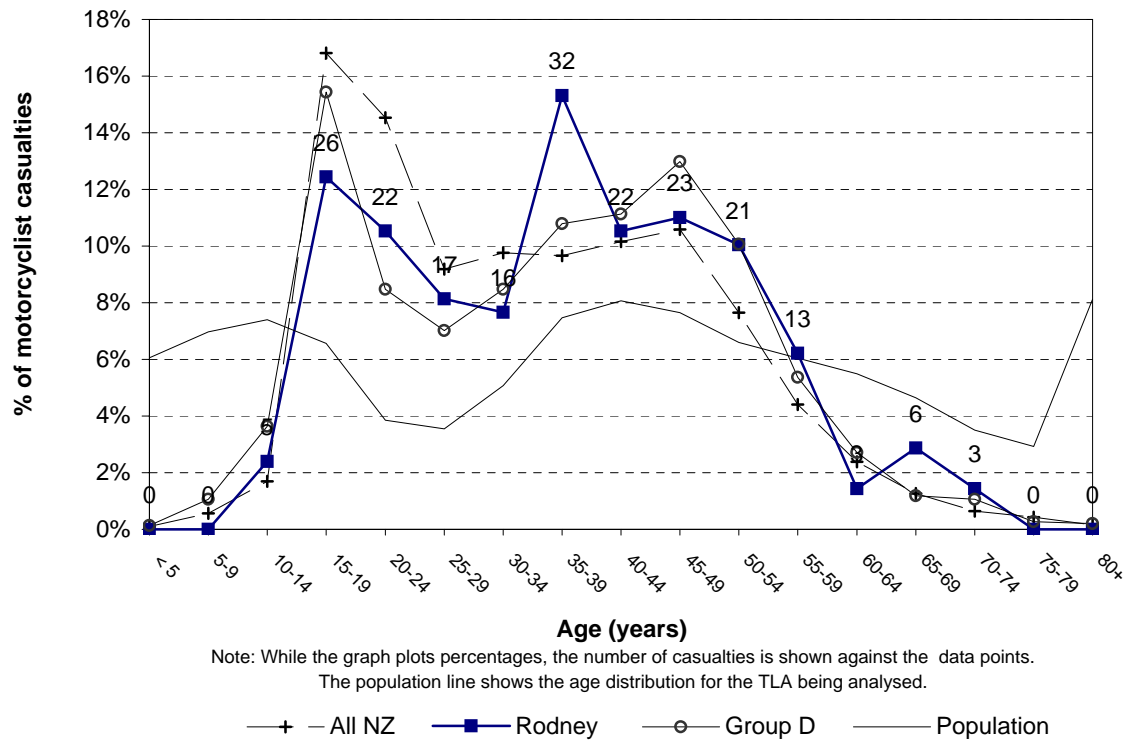
**Figure 3.20 Car/van passenger casualty age  
Rodney District (2005-2009)**



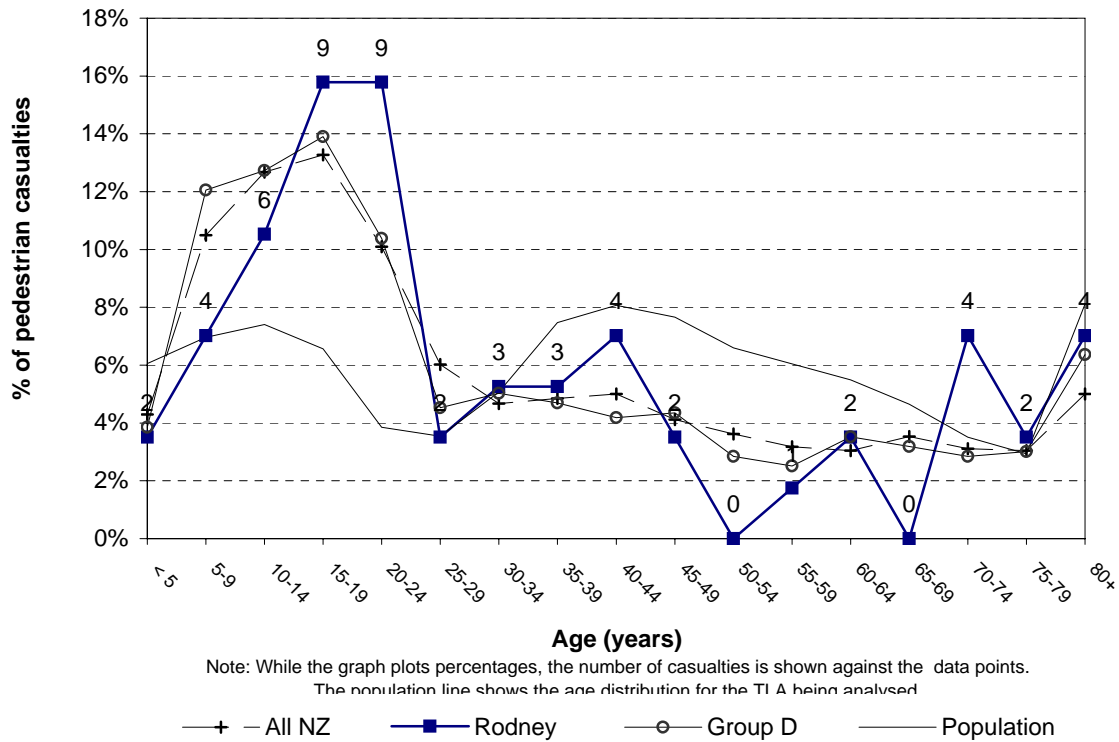
**Figure 3.21 Heavy vehicle casualty age  
Rodney District (2005-2009)**



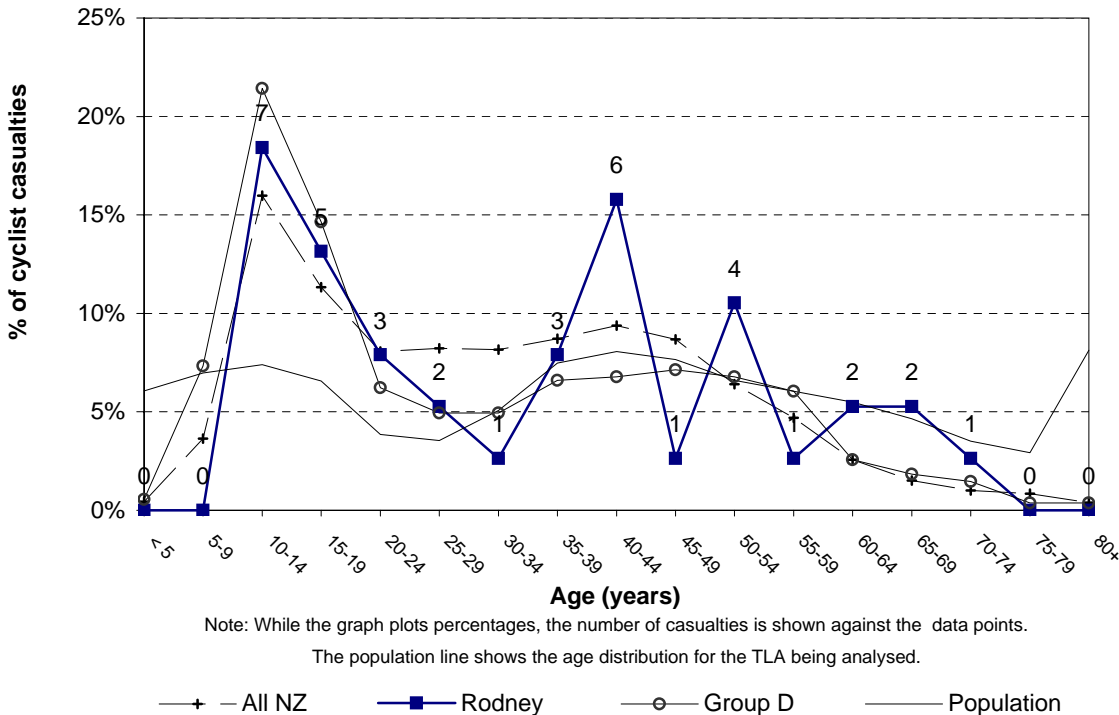
**Figure 3.22 Motorcyclist casualty age  
Rodney District (2005-2009)**



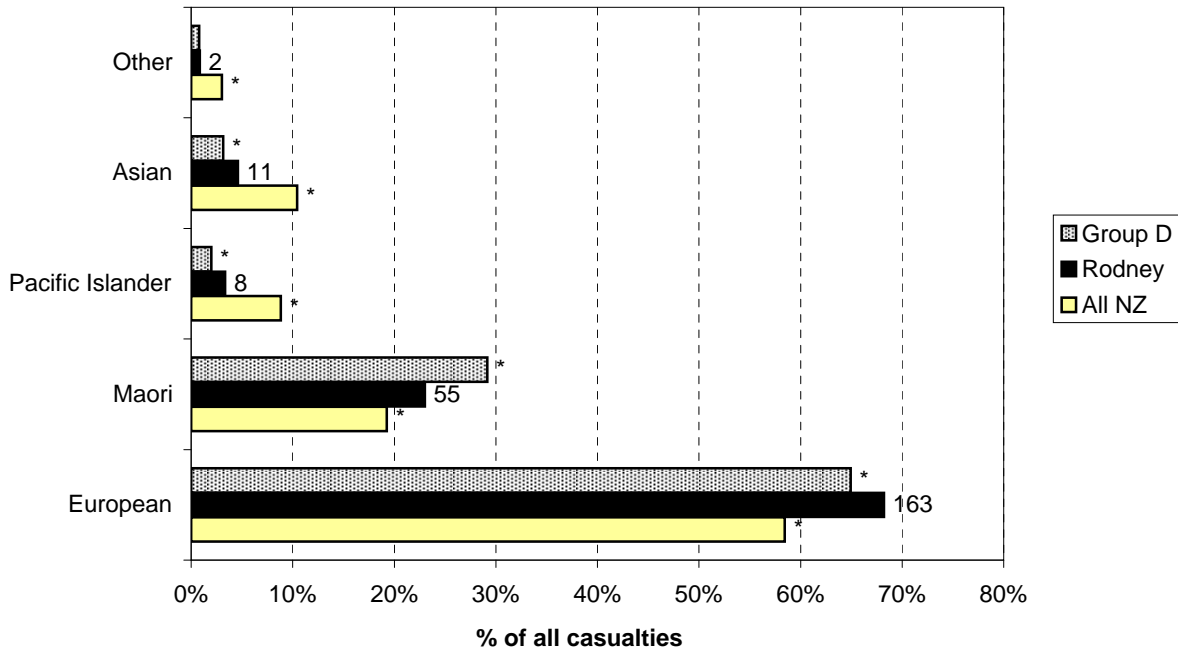
**Figure 3.23 Pedestrian casualty age  
Rodney District (2005-2009)**



**Figure 3.24 Cyclist casualty age  
Rodney District (2005-2009)**

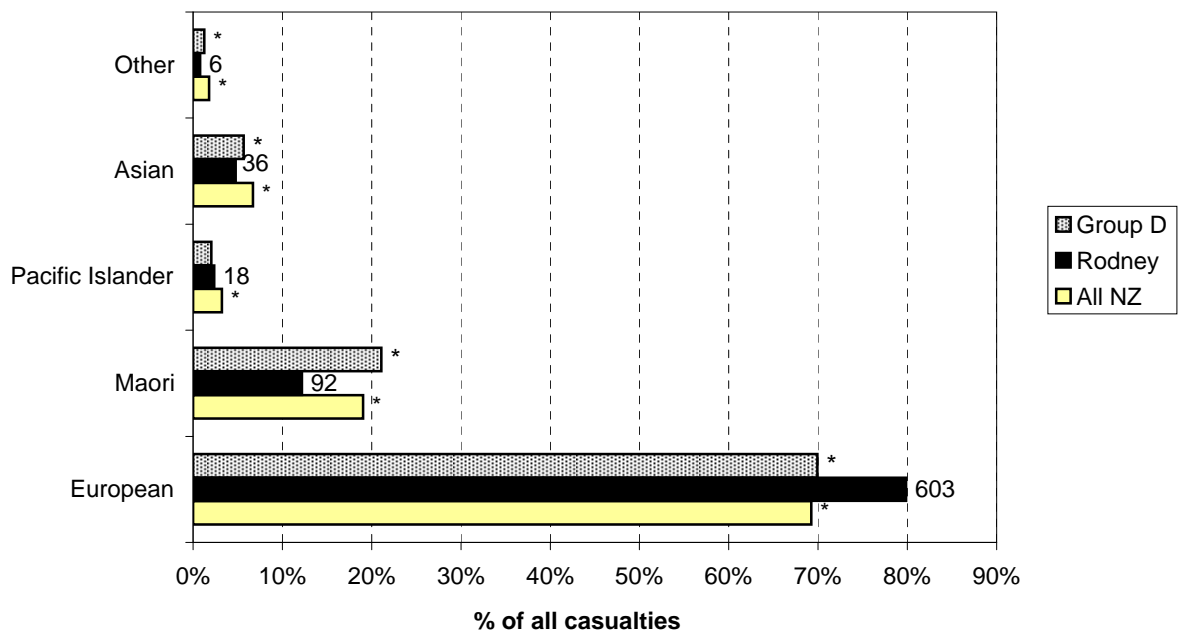


**Figure 3.25 Casualty ethnicity - urban  
Rodney District (2005-2009)**



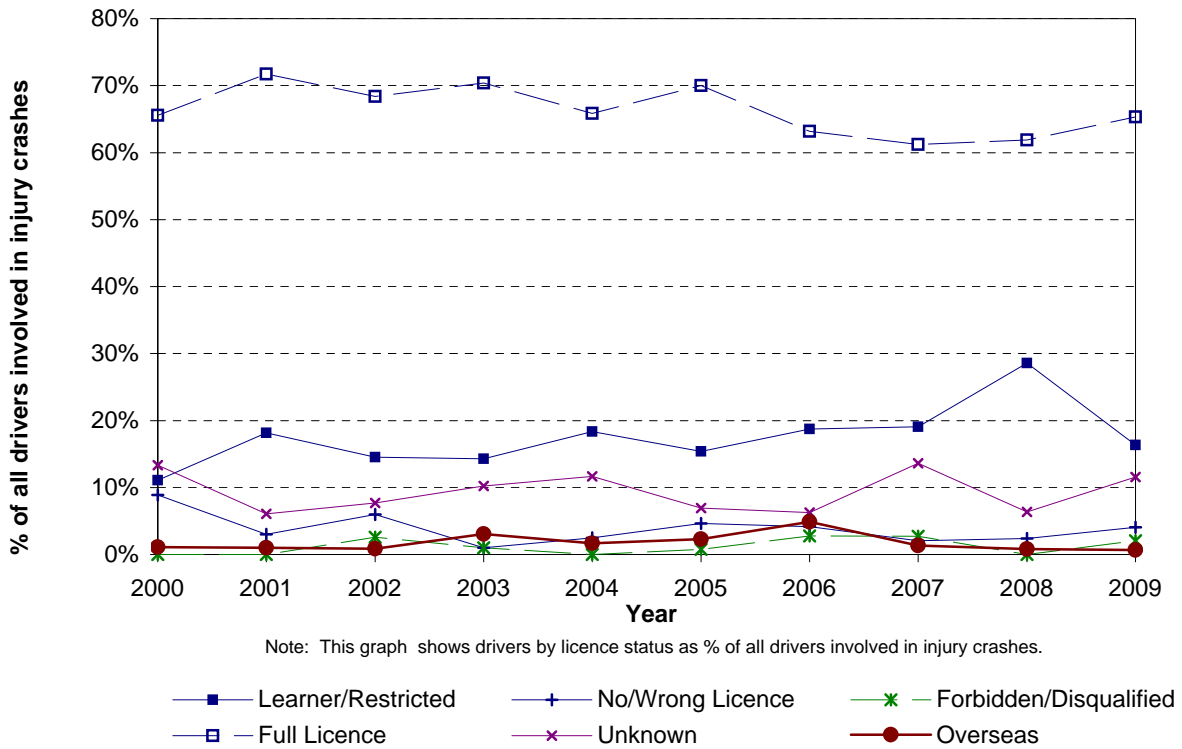
Note: While the graph plots percentages, the number of crashes is shown against the data points.  
\*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions

**Figure 3.26 Casualty ethnicity - rural  
Rodney District (2005-2009)**

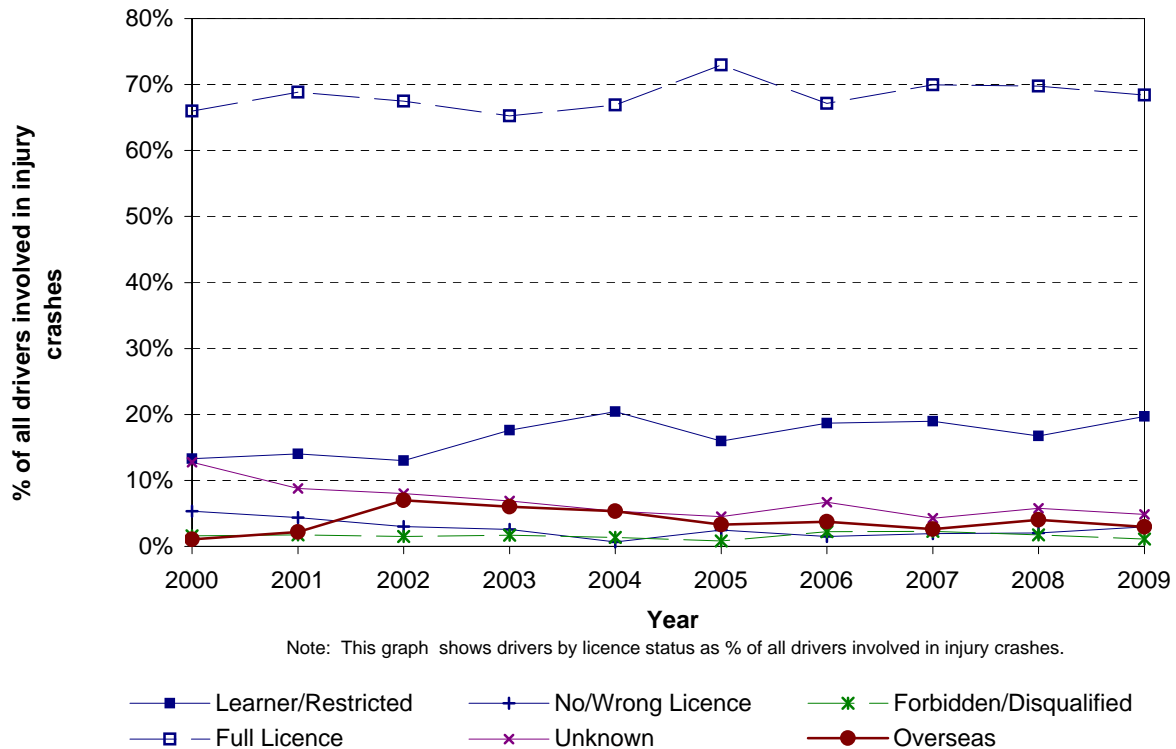


Note: While the graph plots percentages, the number of crashes is shown against the data points.  
\*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions

**Figure 3.27 Licence status - urban  
Rodney District**



**Figure 3.28 Licence status - rural  
Rodney District**

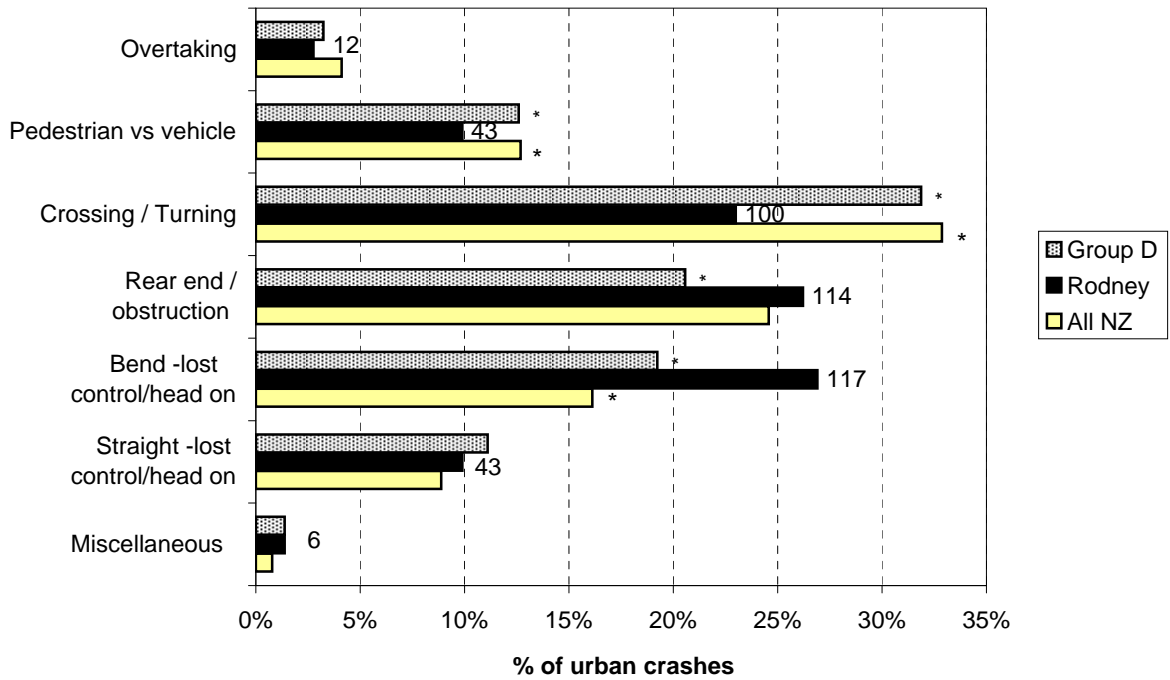


# *Crash Type Statistics*



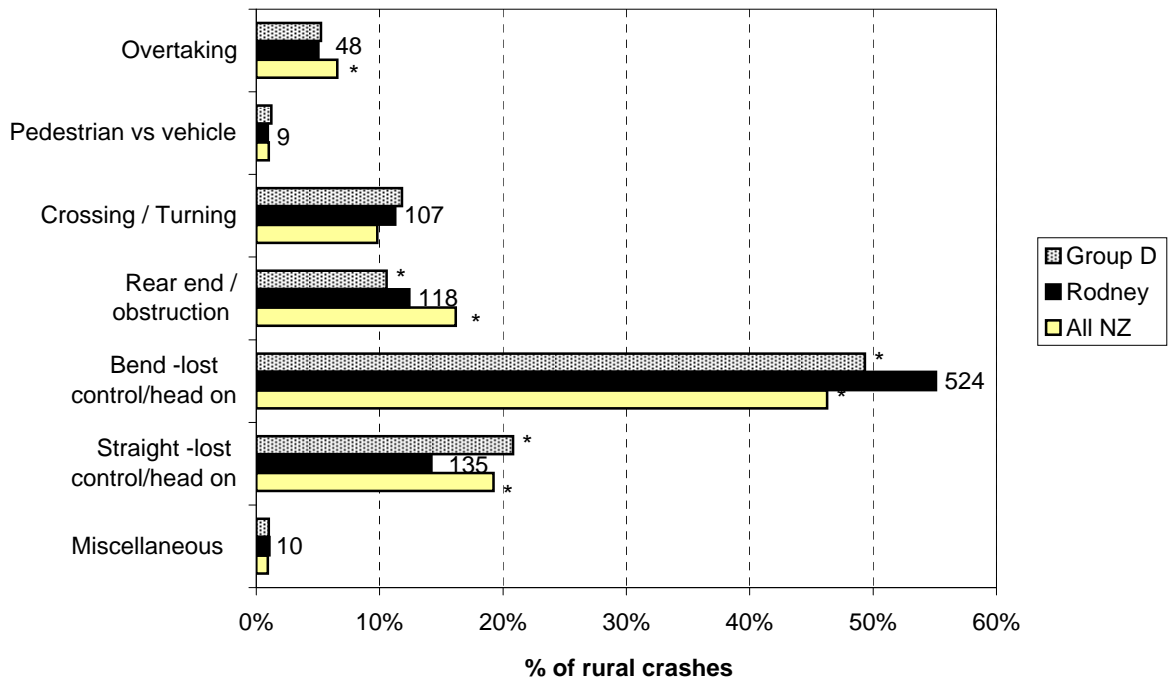


**Figure 4.1 Crash movement type - urban  
Rodney District (2005-2009)**



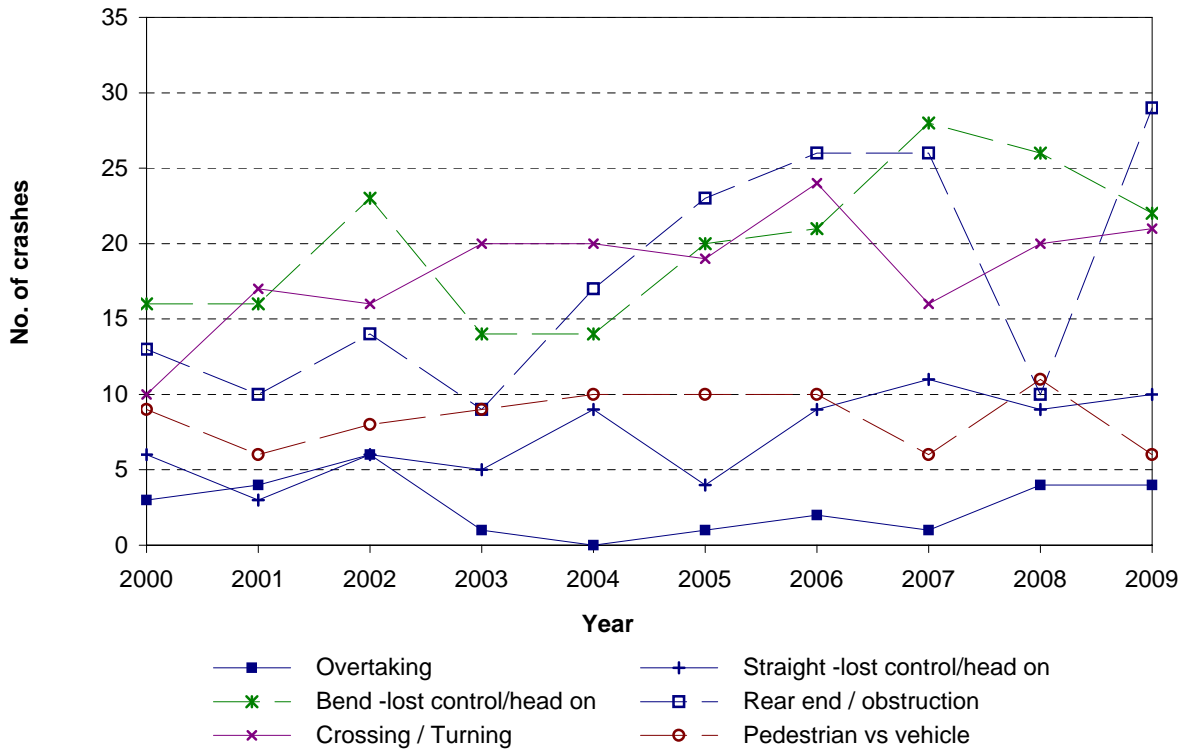
Note: While the graph plots percentages, the number of crashes is shown against the data points.  
\*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions

**Figure 4.2 Crash movement type - rural  
Rodney District roads (2005-2009)**

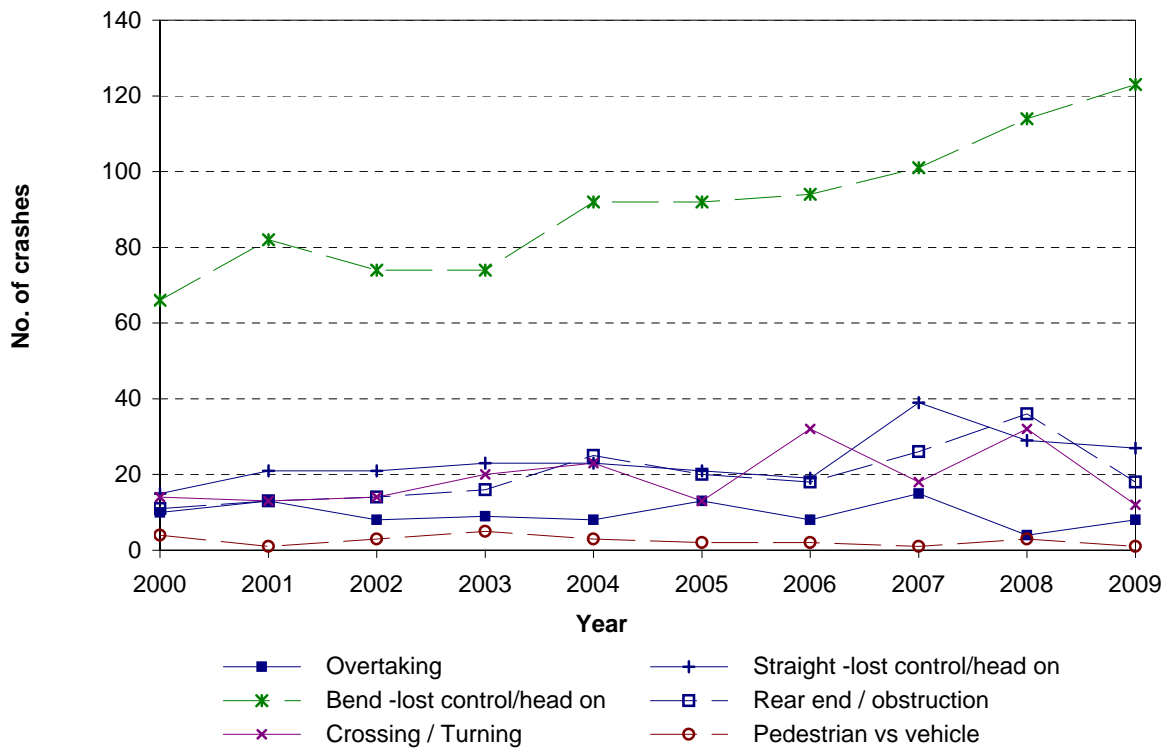


Note: While the graph plots percentages, the number of crashes is shown against the data points.  
\*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions

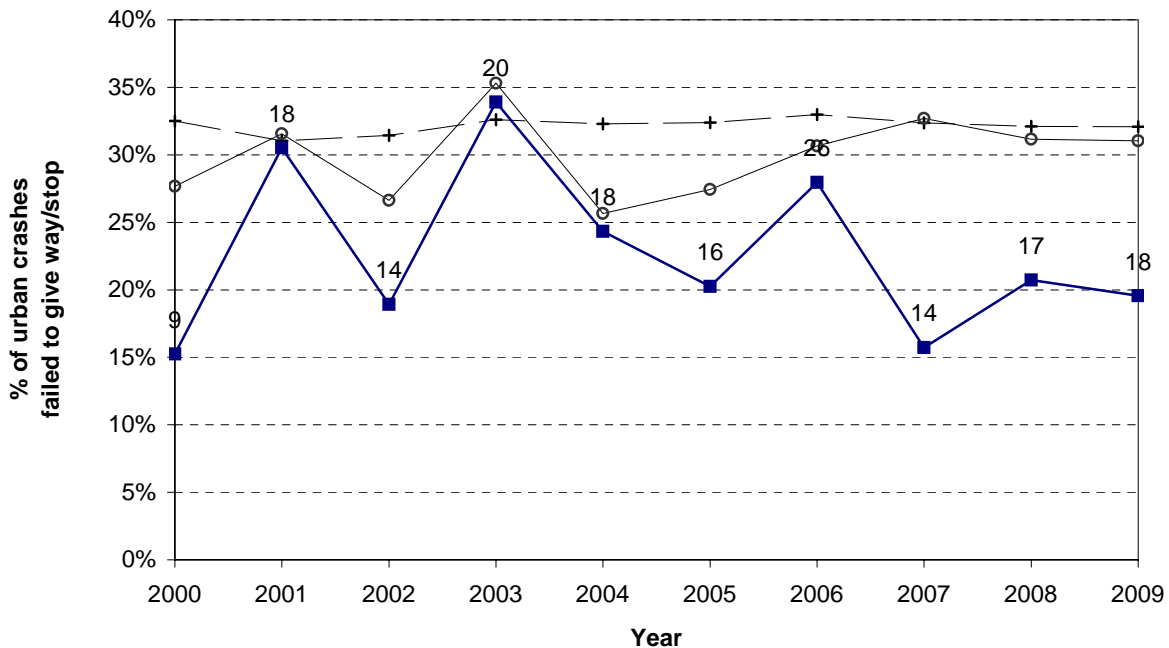
**Figure 4.3 Crash movement type - trends  
Rodney District - urban roads**



**Figure 4.4 Crash movement type - trends  
Rodney District - rural roads**



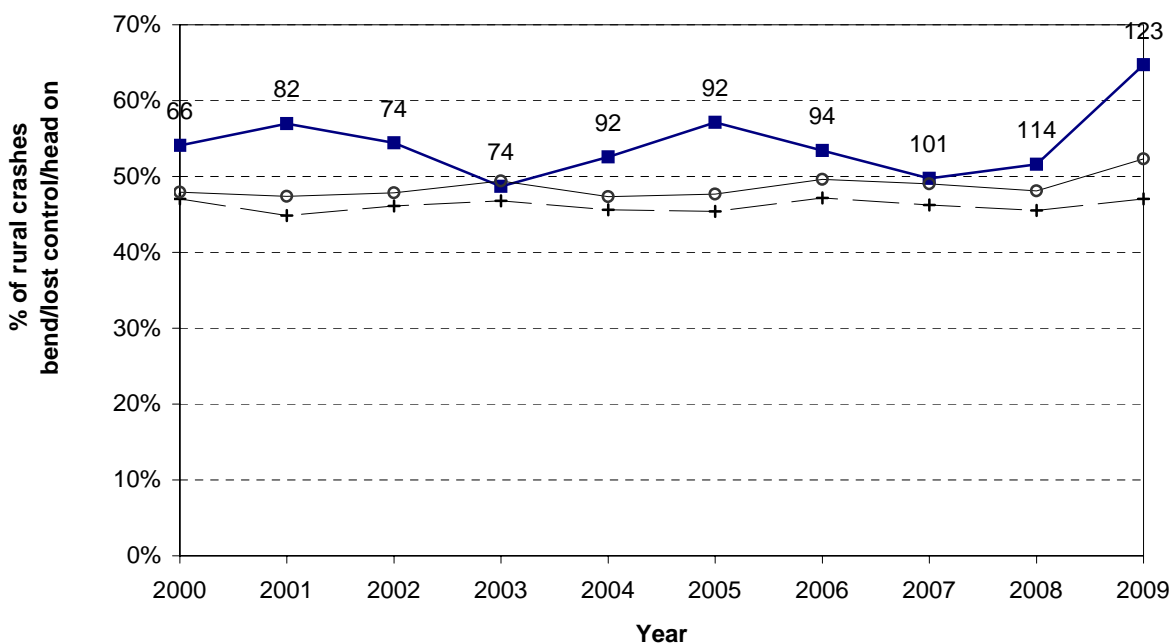
**Figure 4.5 Failed to give way / stop  
Rodney District - urban roads**



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

—+— All NZ —■— Rodney —○— Group D

**Figure 4.6 Bend - lost control / head - on  
Rodney District - rural roads**



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

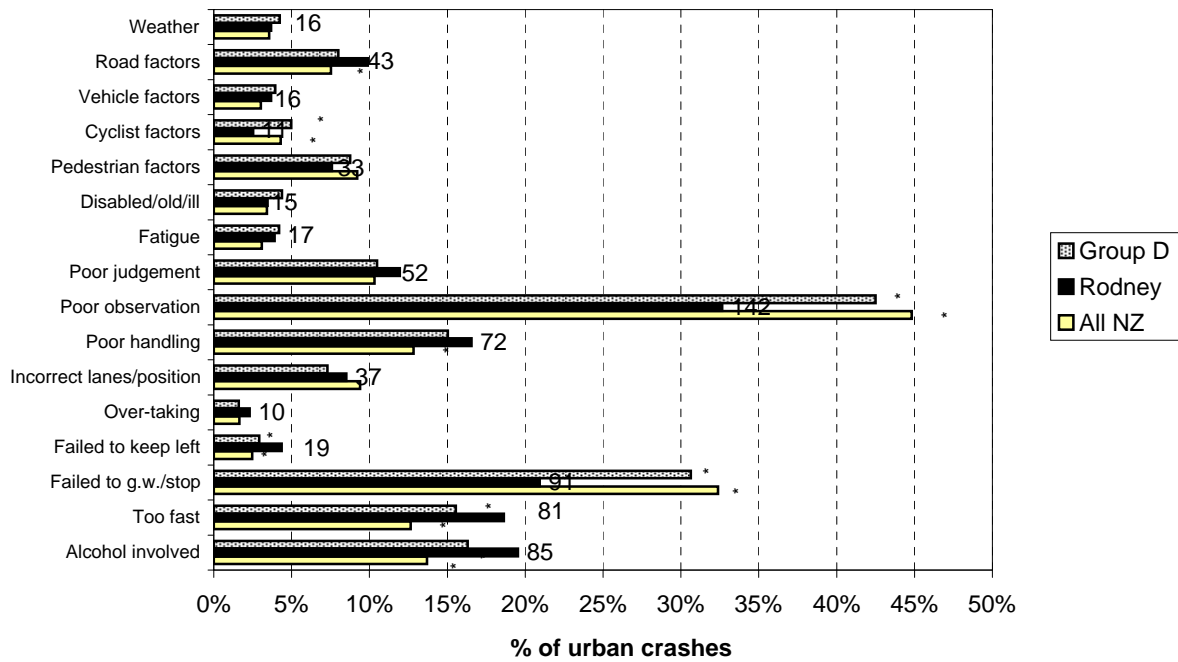
—+— All NZ —■— Rodney —○— Group D



# *Crash Factor Statistics*

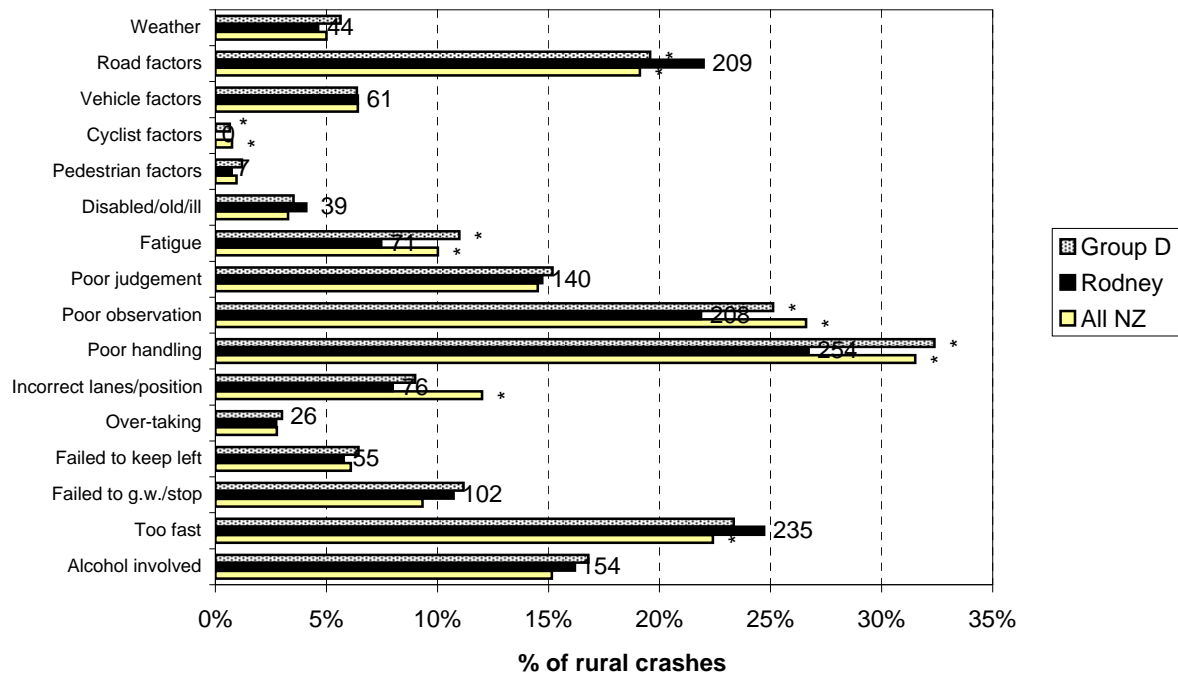


**Figure 5.1 Contributing factors - urban  
Rodney District (2005-2009)**



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

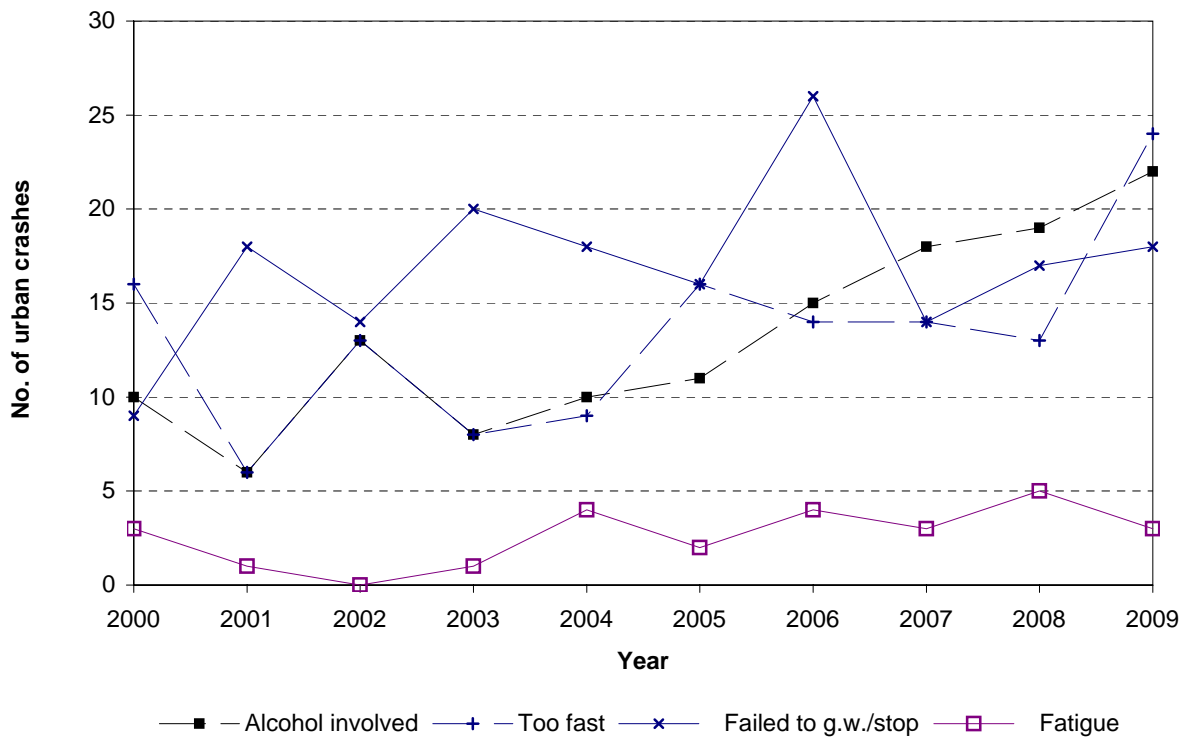
**Figure 5.2 Contributing factors - rural  
Rodney District (2005-2009)**



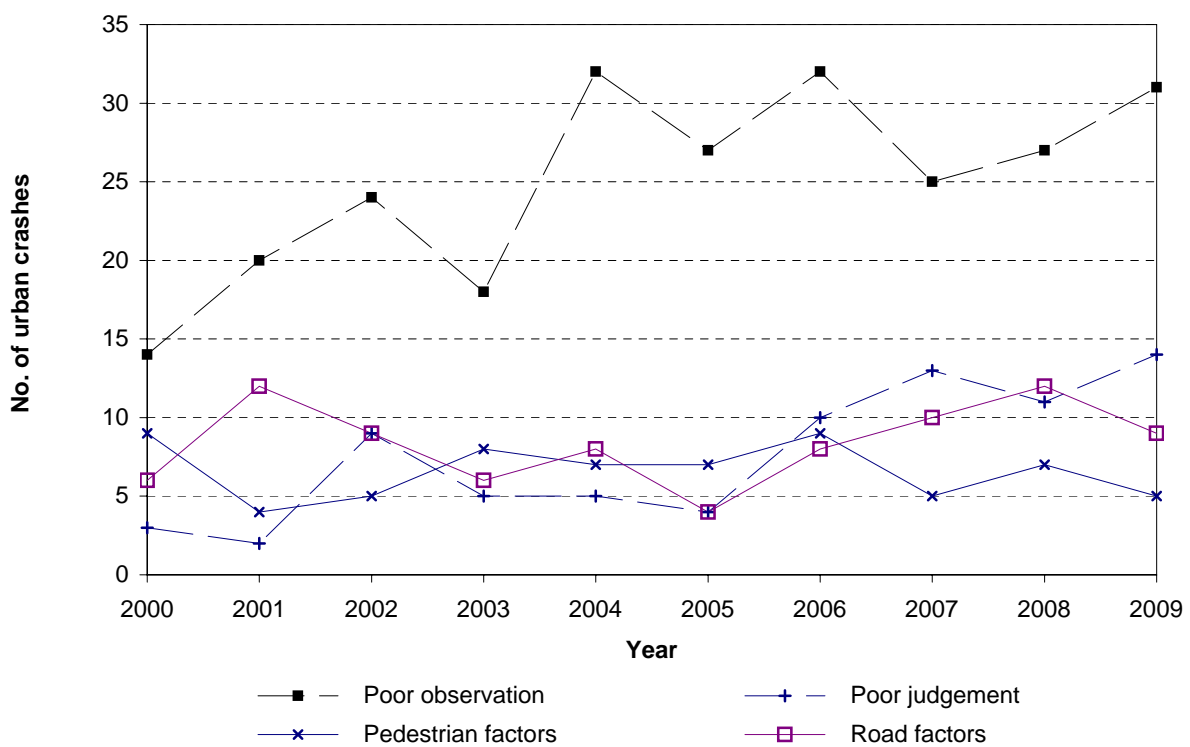
Note: While the graph plots percentages, the number of casualties is shown against the data points.  
\*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions



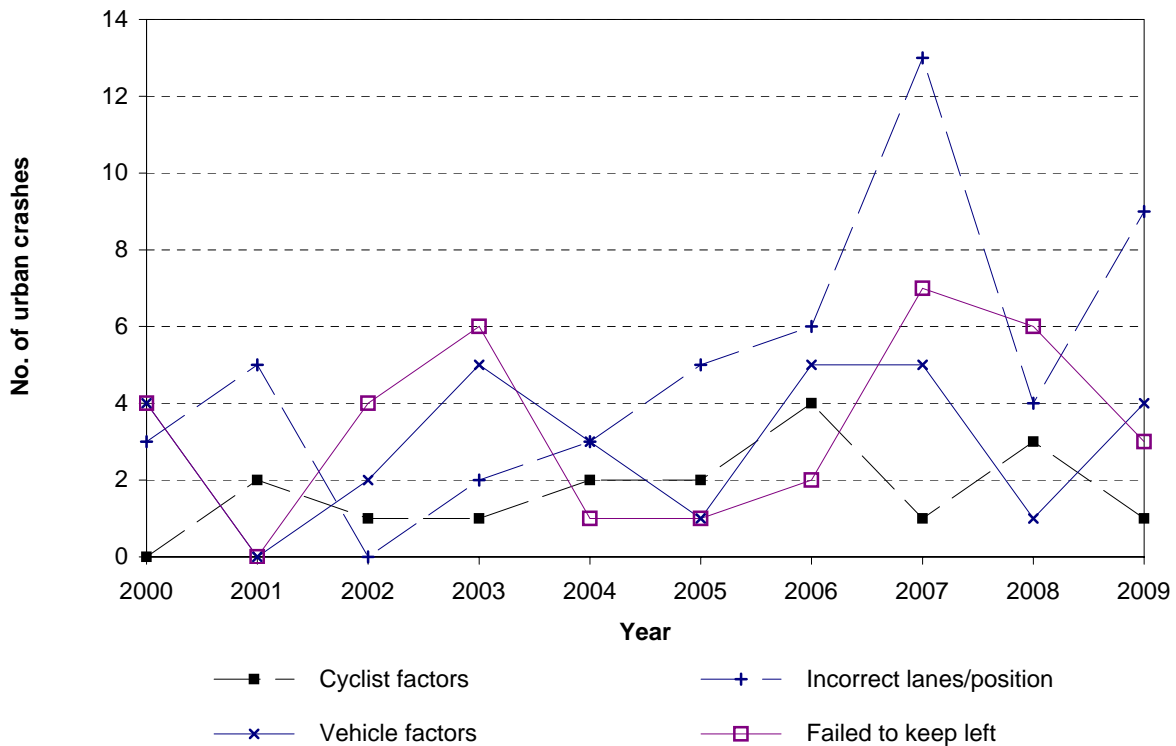
**Figure 5.3 Contributing factor trends  
Rodney District - urban roads**



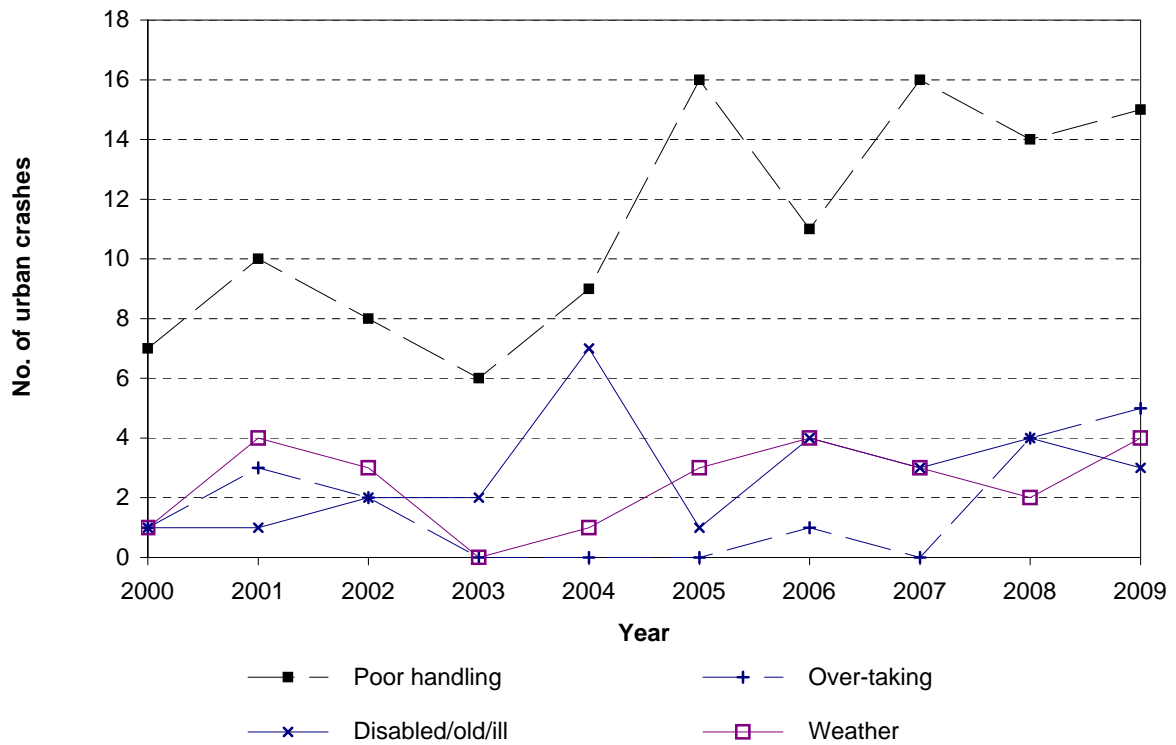
**Figure 5.4 Contributing factor trends  
Rodney District - urban roads**



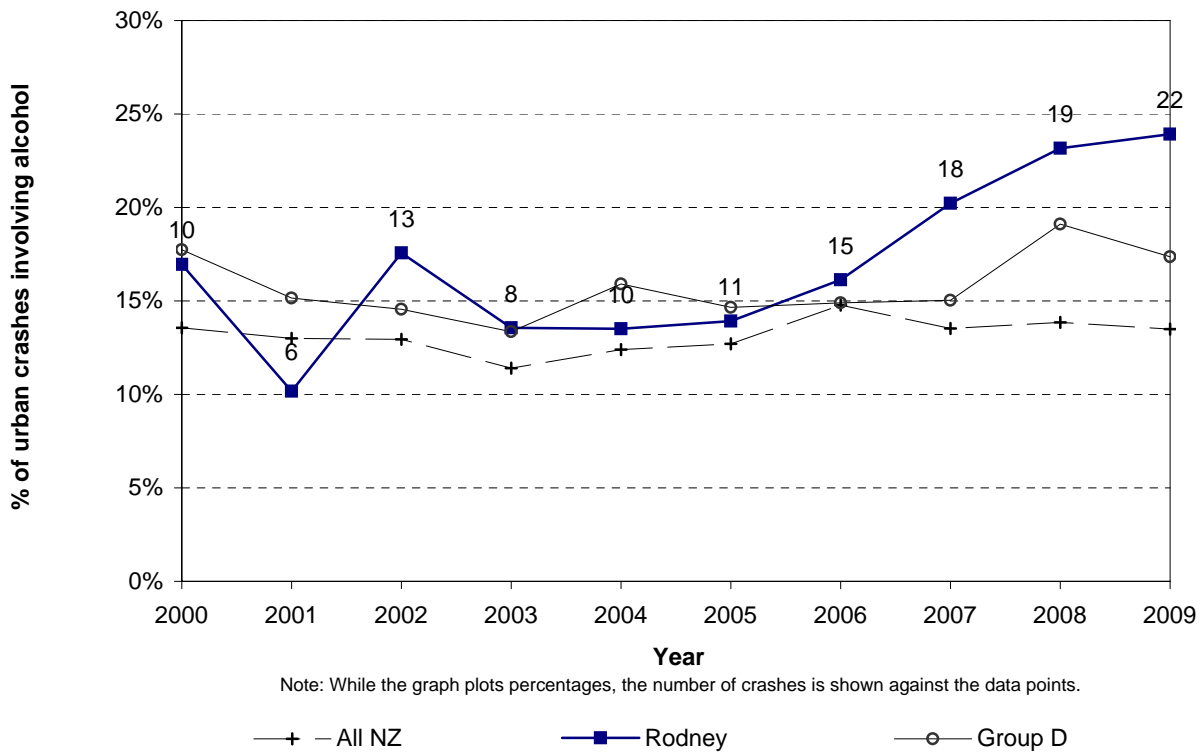
**Figure 5.5 Contributing factor trends  
Rodney District - urban roads**



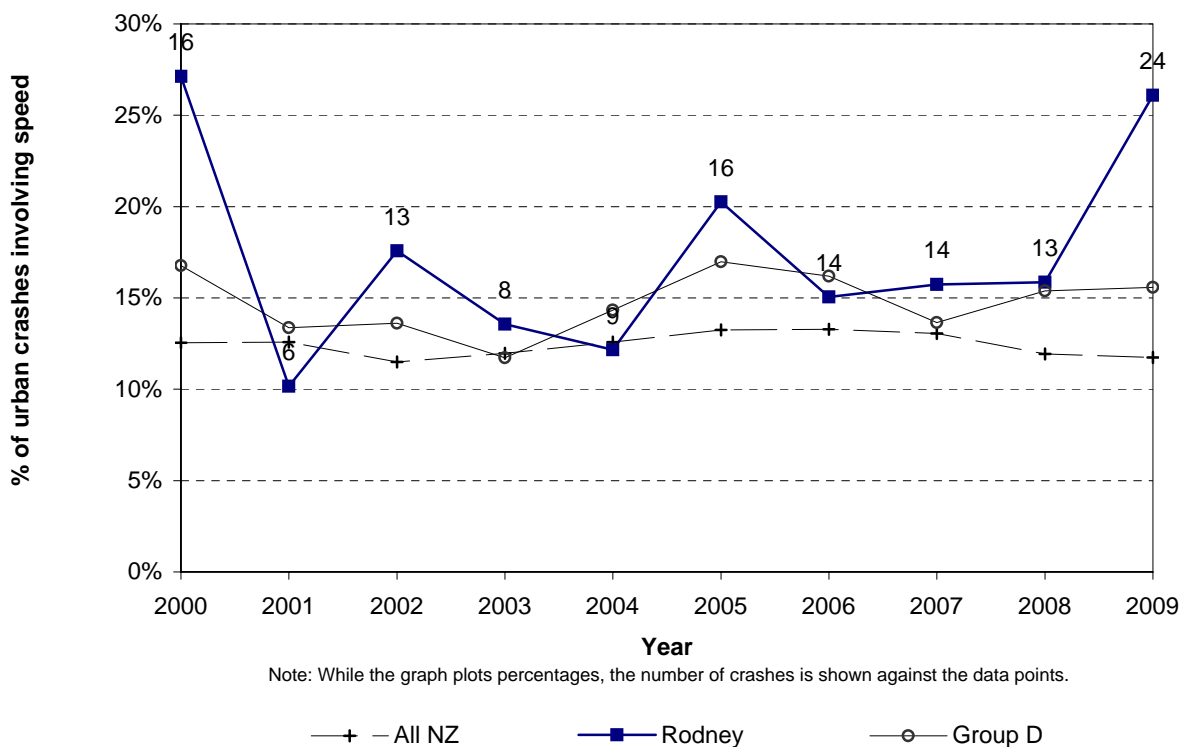
**Figure 5.6 Contributing factor trends  
Rodney District - urban roads**



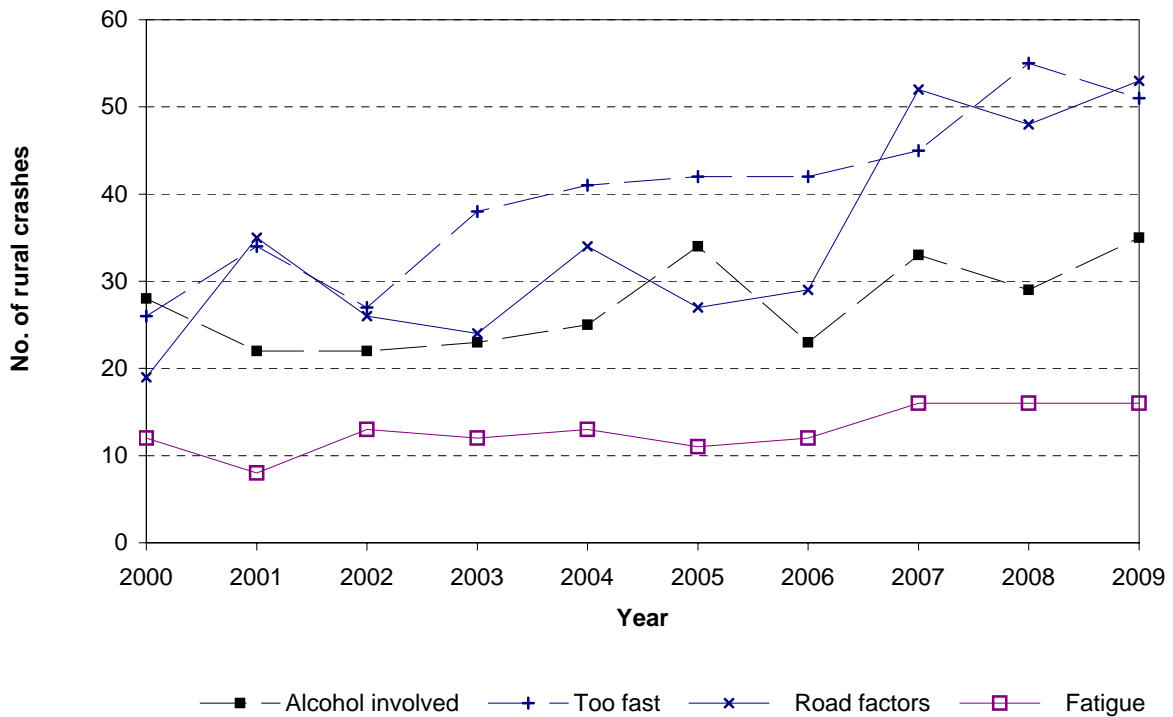
**Figure 5.7 Alcohol involved trend  
Rodney District - urban roads**



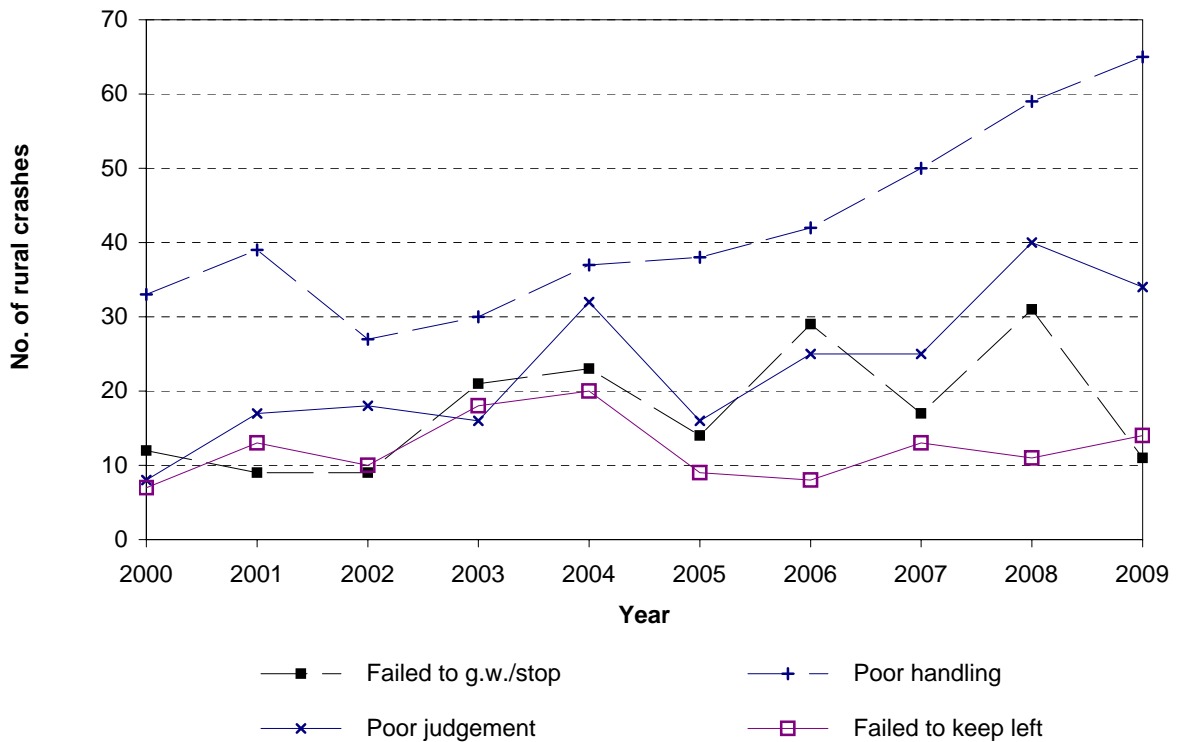
**Figure 5.8 Speed involved trend  
Rodney District - urban roads**



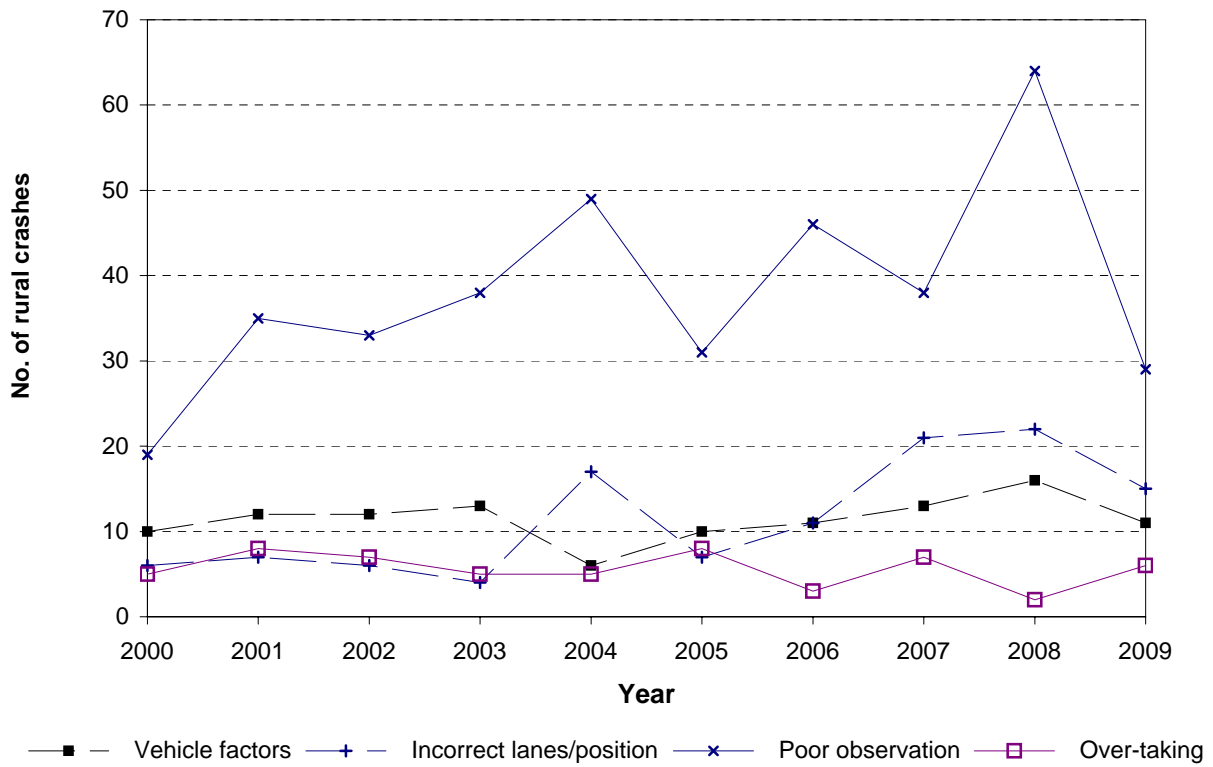
**Figure 5.9 Contributing factor trends  
Rodney District - rural roads**



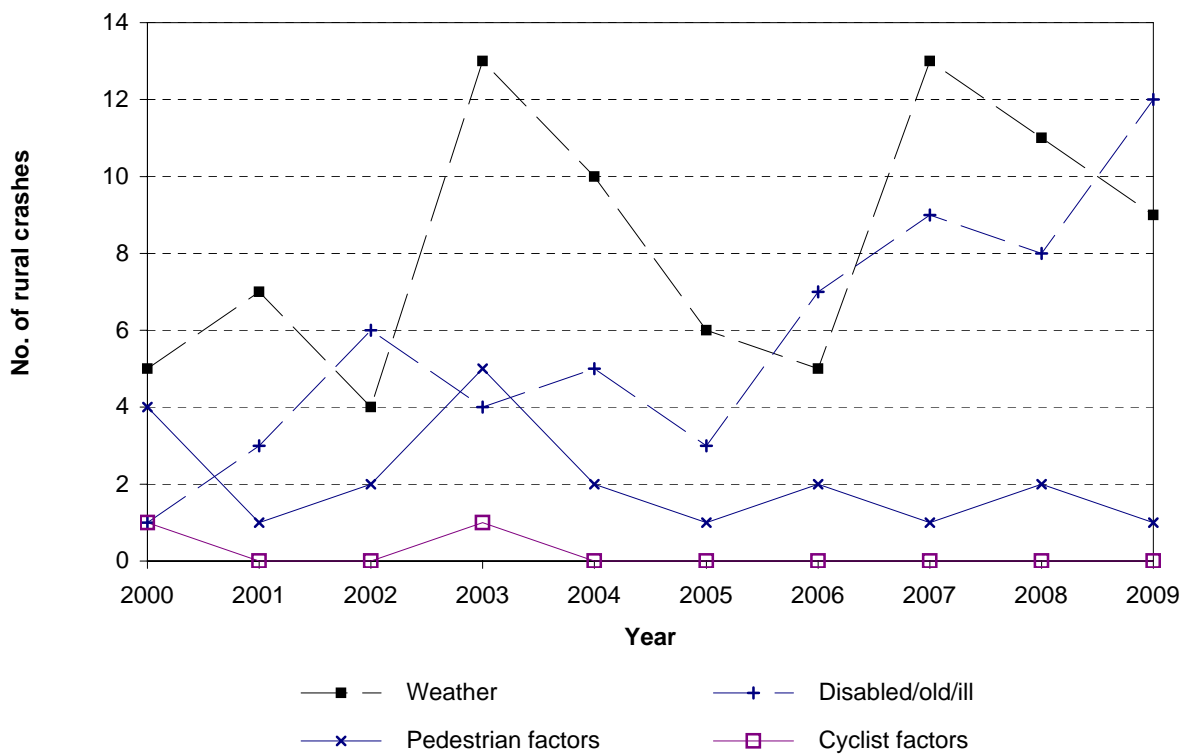
**Figure 5.10 Contributing factor trends  
Rodney District - rural roads**



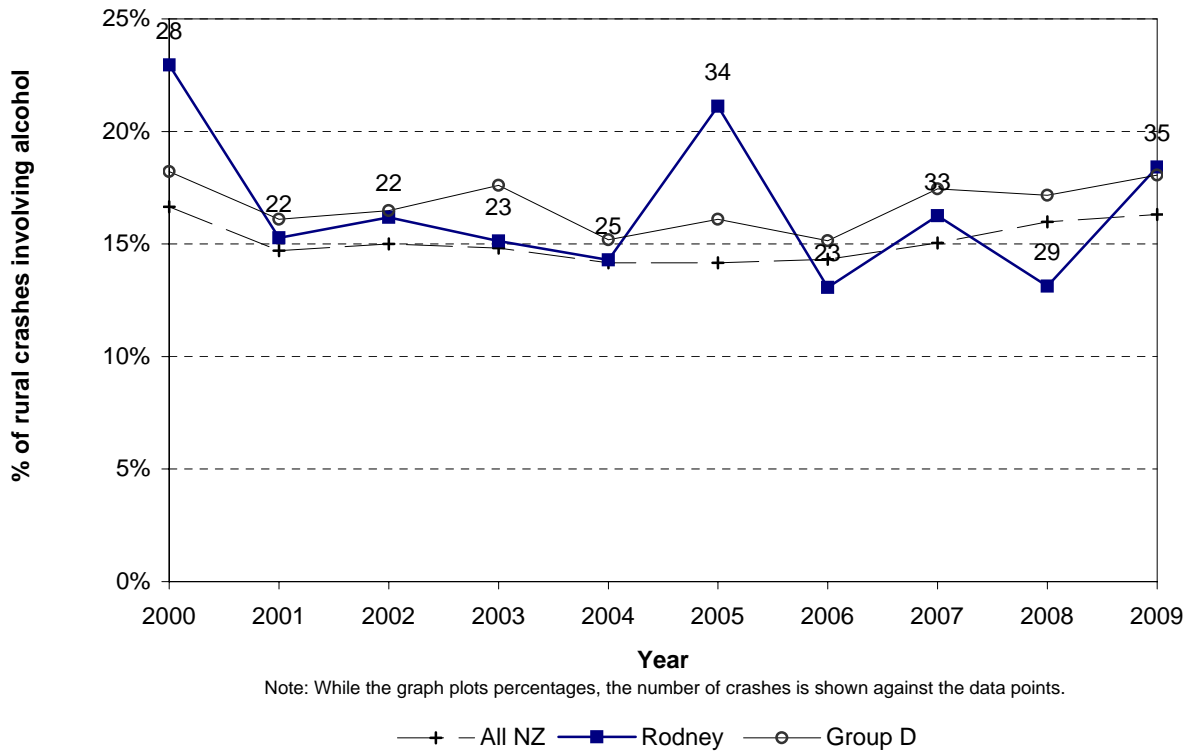
**Figure 5.11 Contributing factor trends  
Rodney District - rural roads**



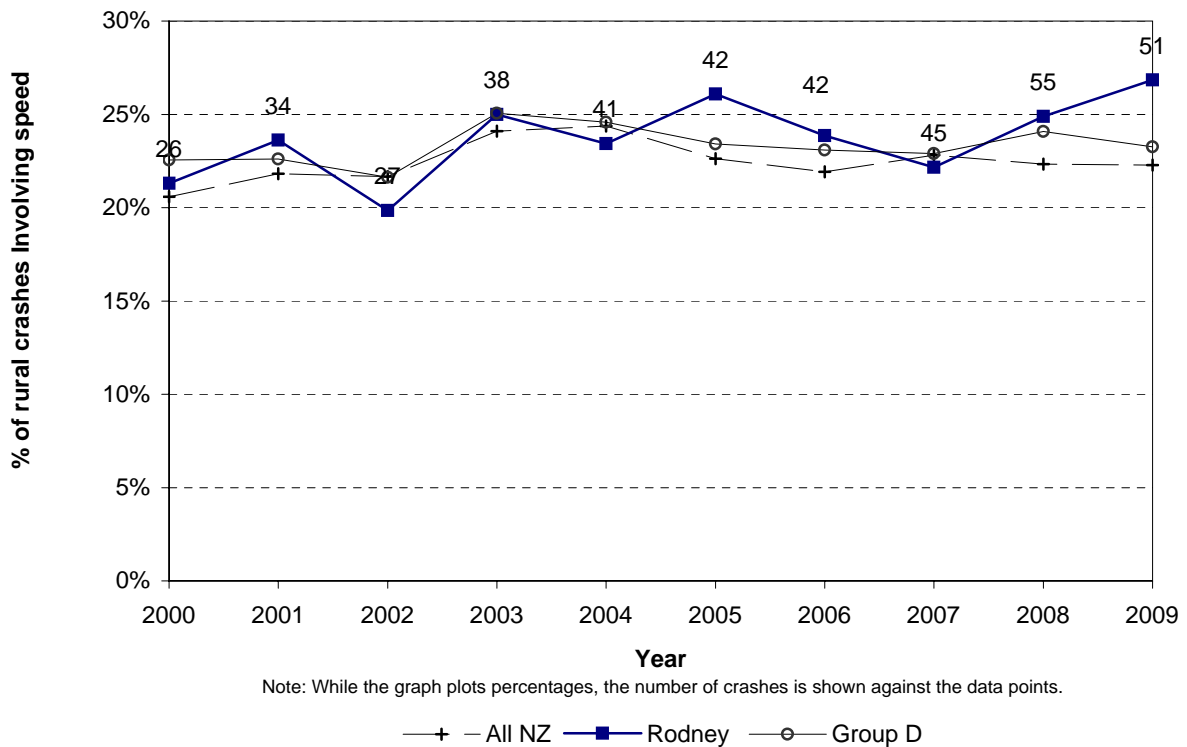
**Figure 5.12 Contributing factor trends  
Rodney District - rural roads**



**Figure 5.13 Alcohol involved trend  
Rodney District - rural roads**



**Figure 5.14 Speed involved trend  
Rodney District - rural roads**



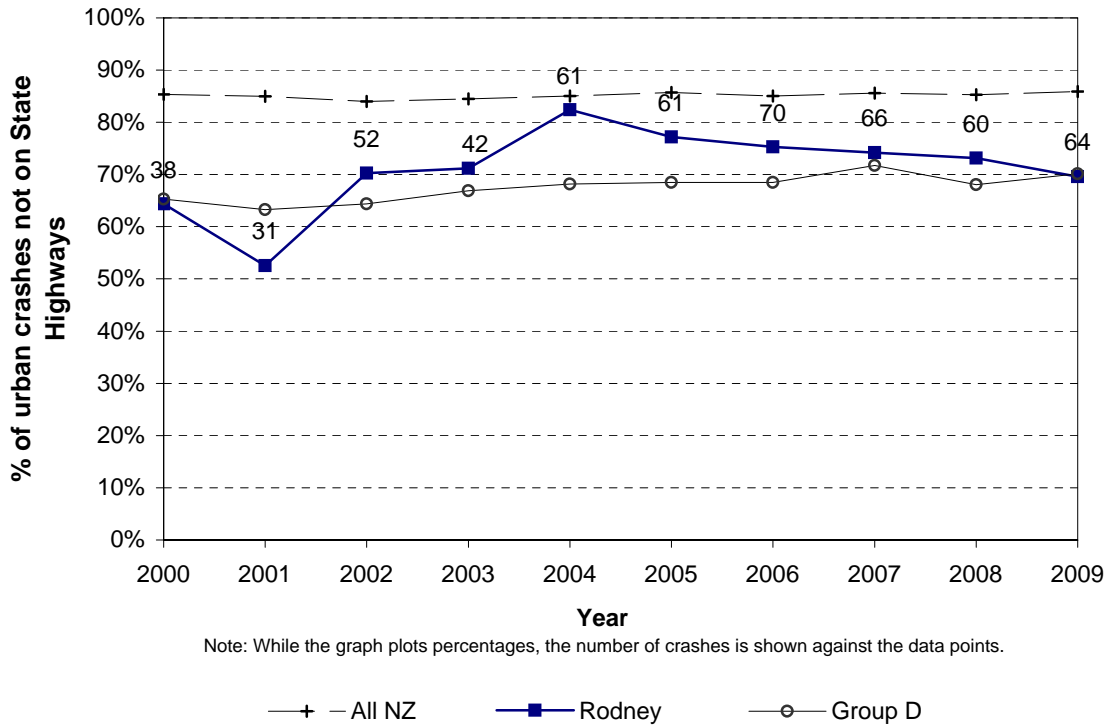


# *Environmental Statistics*

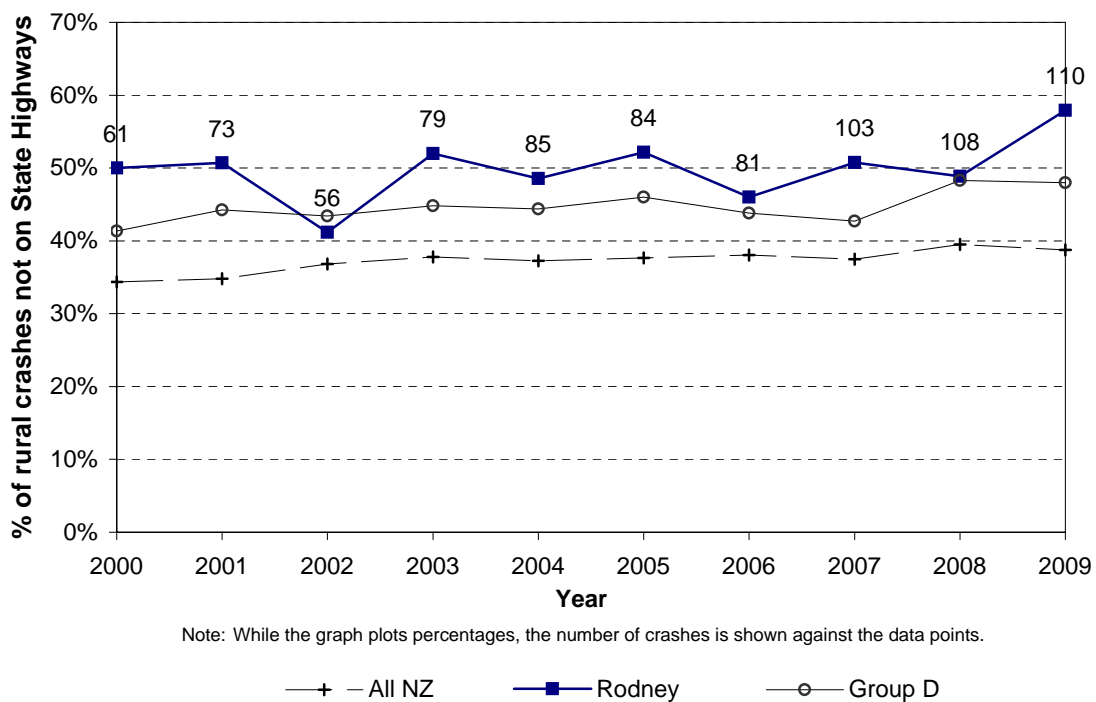




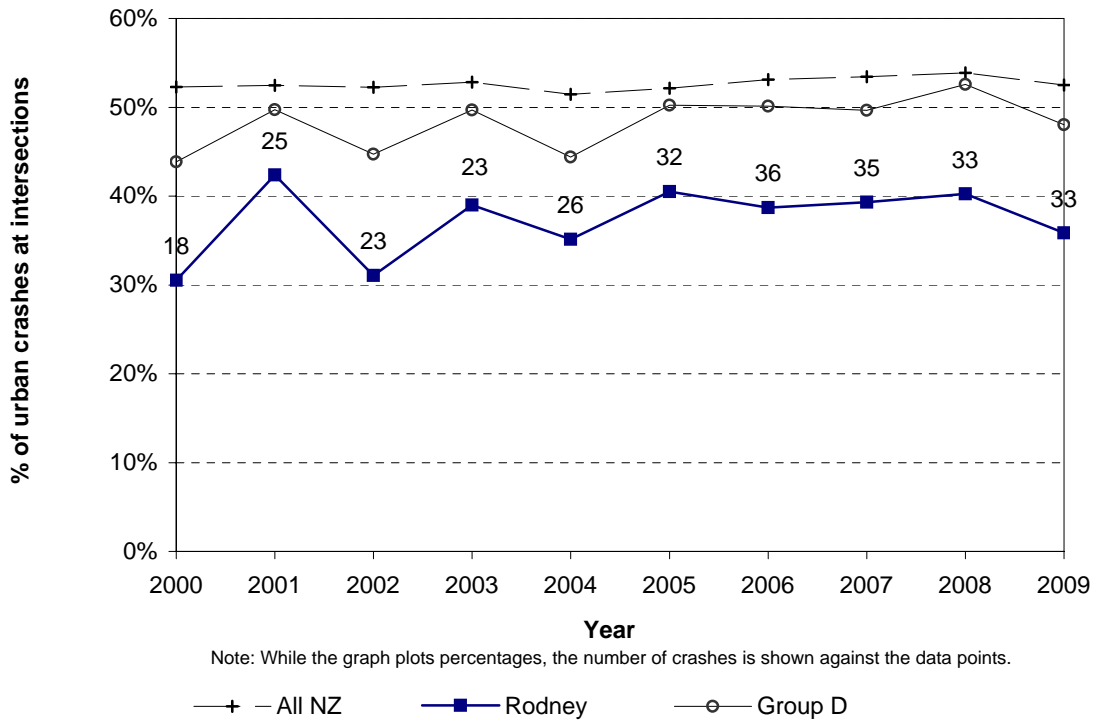
**Figure 6.1 Crashes not on state highways  
Rodney District - urban roads**



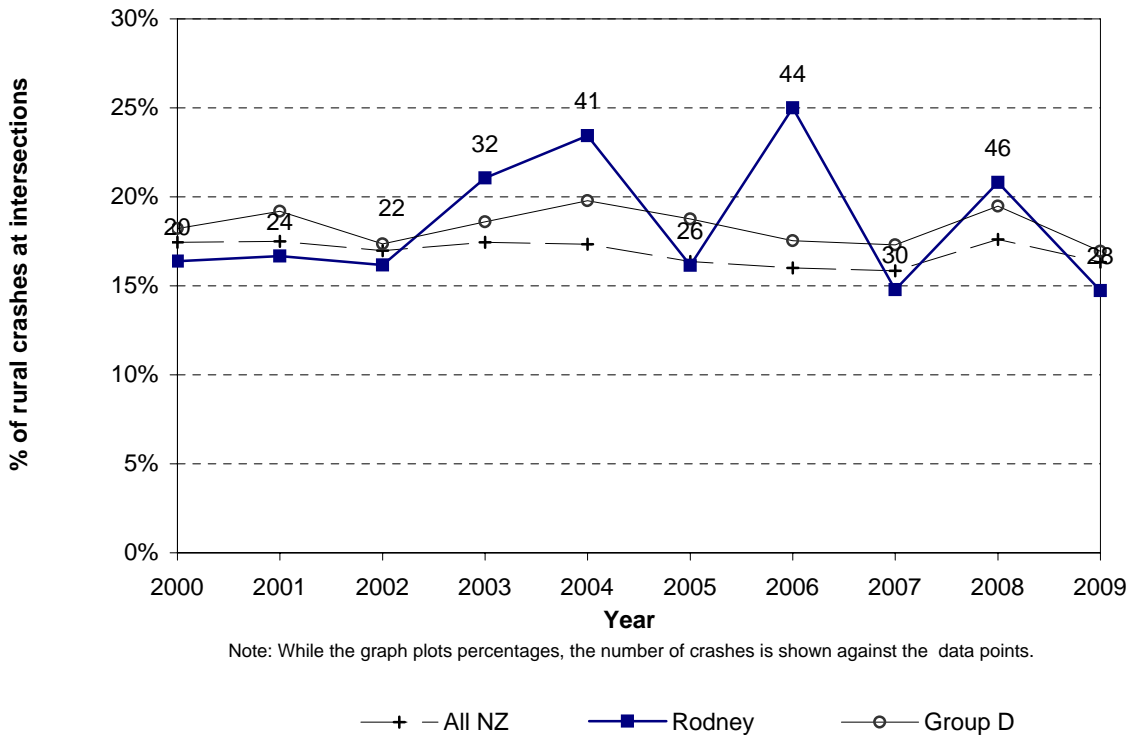
**Figure 6.2 Crashes not on state highways  
Rodney District - rural roads**



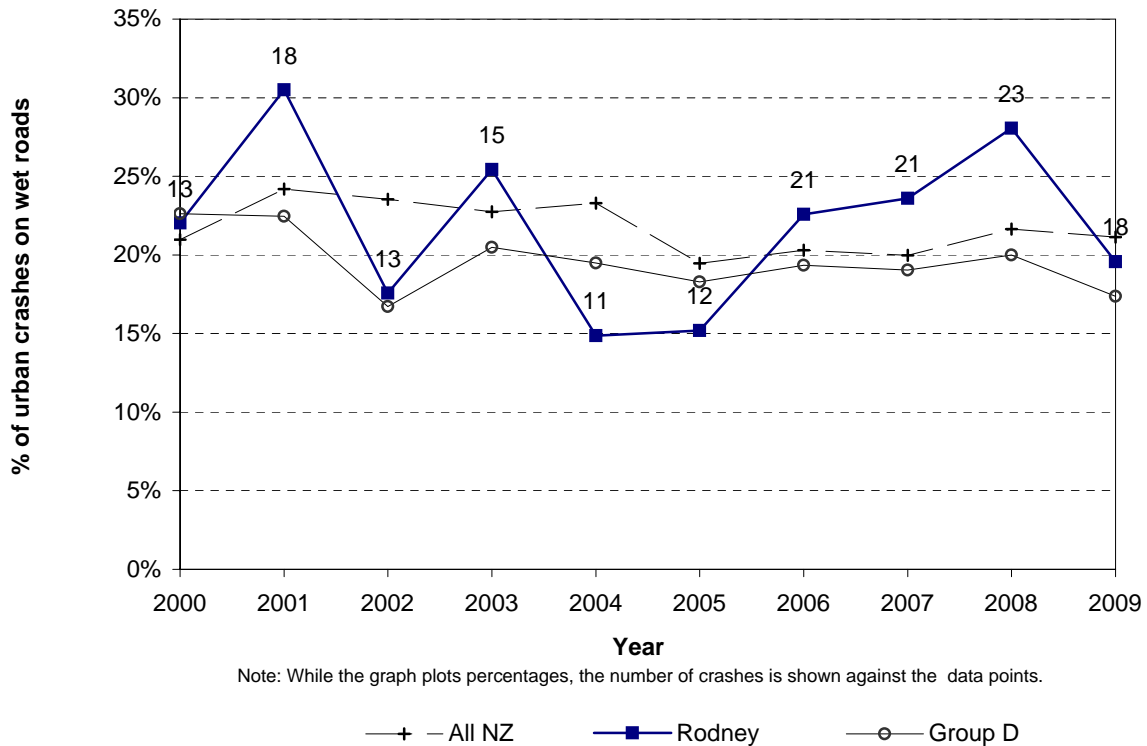
**Figure 6.3 Intersection crashes  
Rodney District - urban roads**



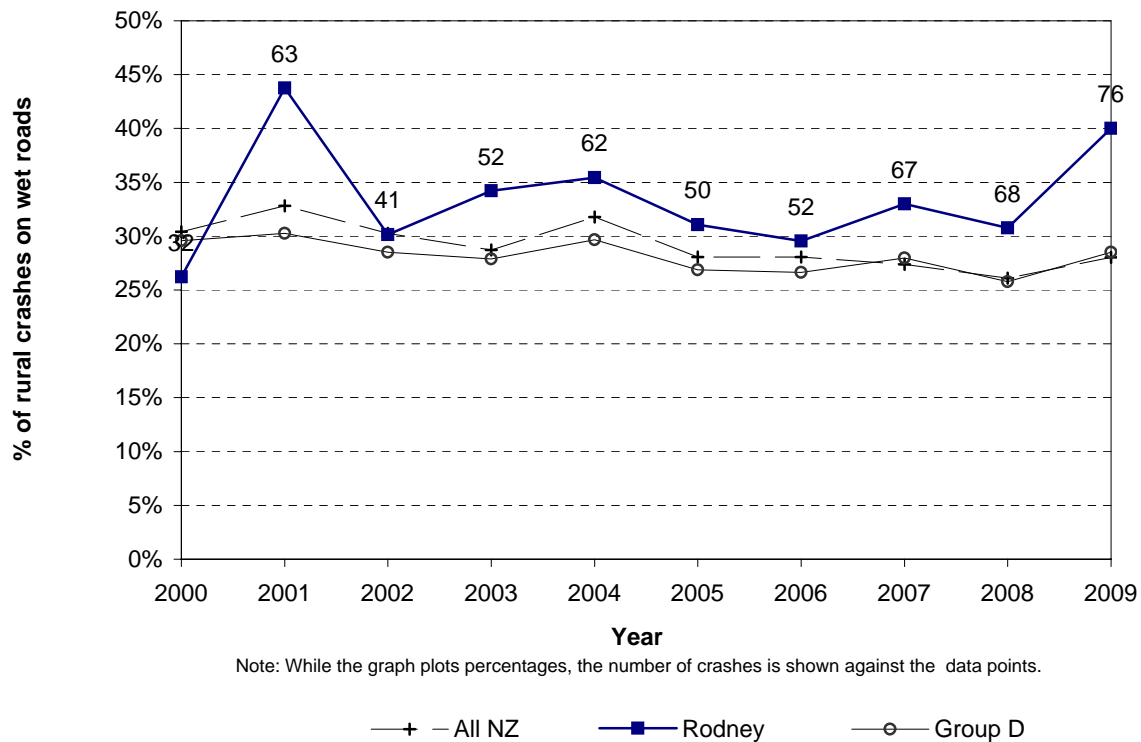
**Figure 6.4 Intersection crashes  
Rodney District - rural roads**



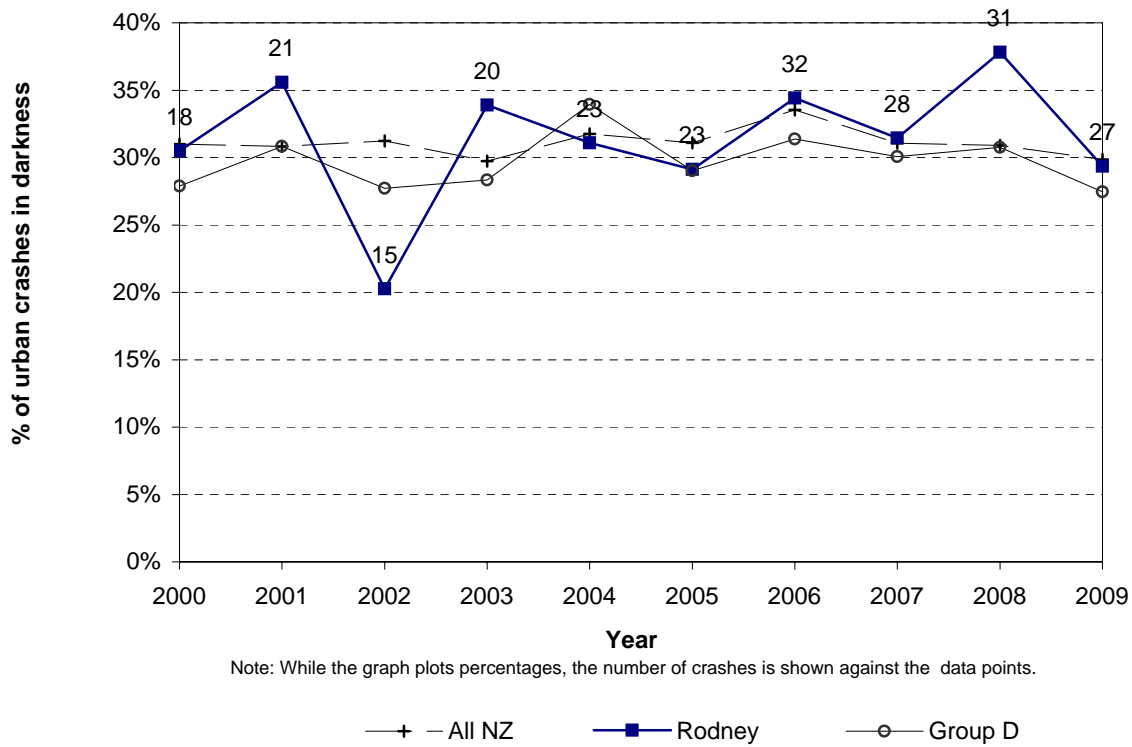
**Figure 6.5 Wet road crashes  
Rodney District - urban roads**



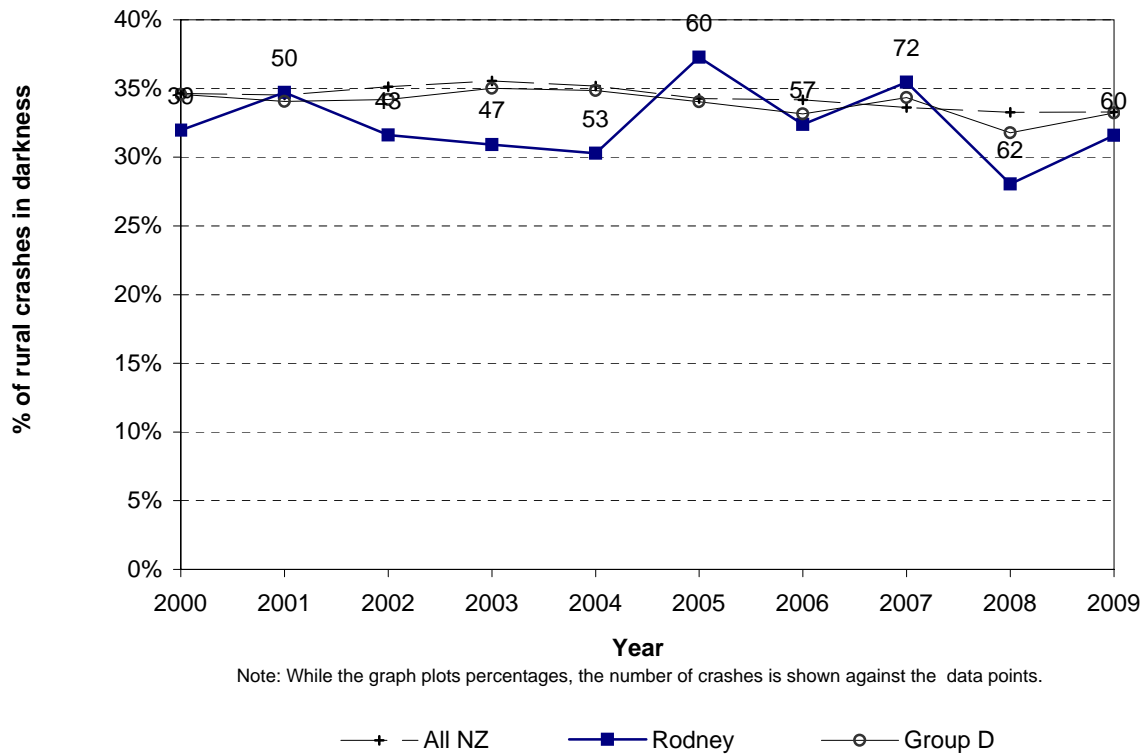
**Figure 6.6 Wet road crashes  
Rodney District - rural roads**



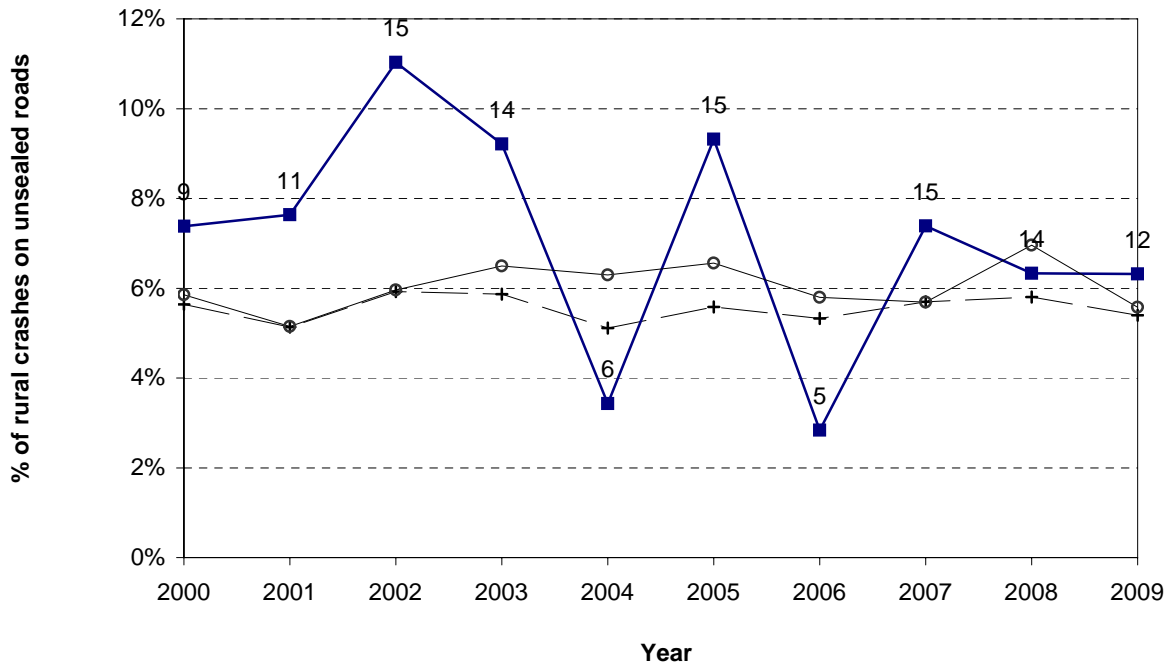
**Figure 6.7 Crashes in darkness  
Rodney District - urban roads**



**Figure 6.8 Crashes in darkness  
Rodney District - rural roads**



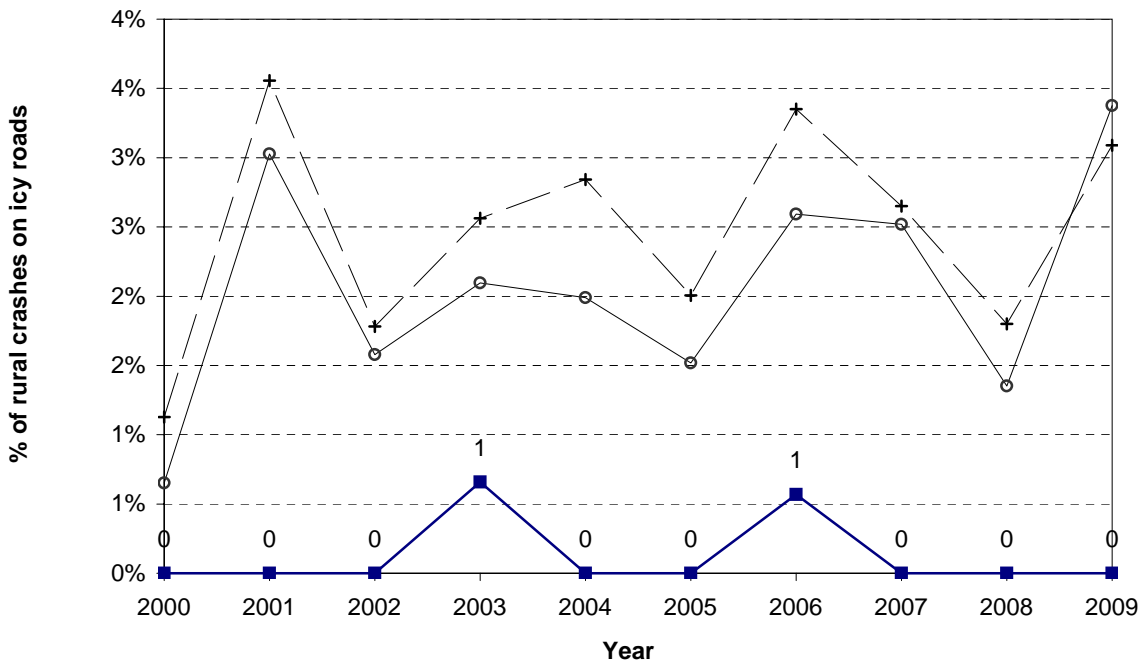
**Figure 6.9 Unsealed road crashes  
Rodney District - rural roads**



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

+ All NZ    ■ Rodney    ○ Group D

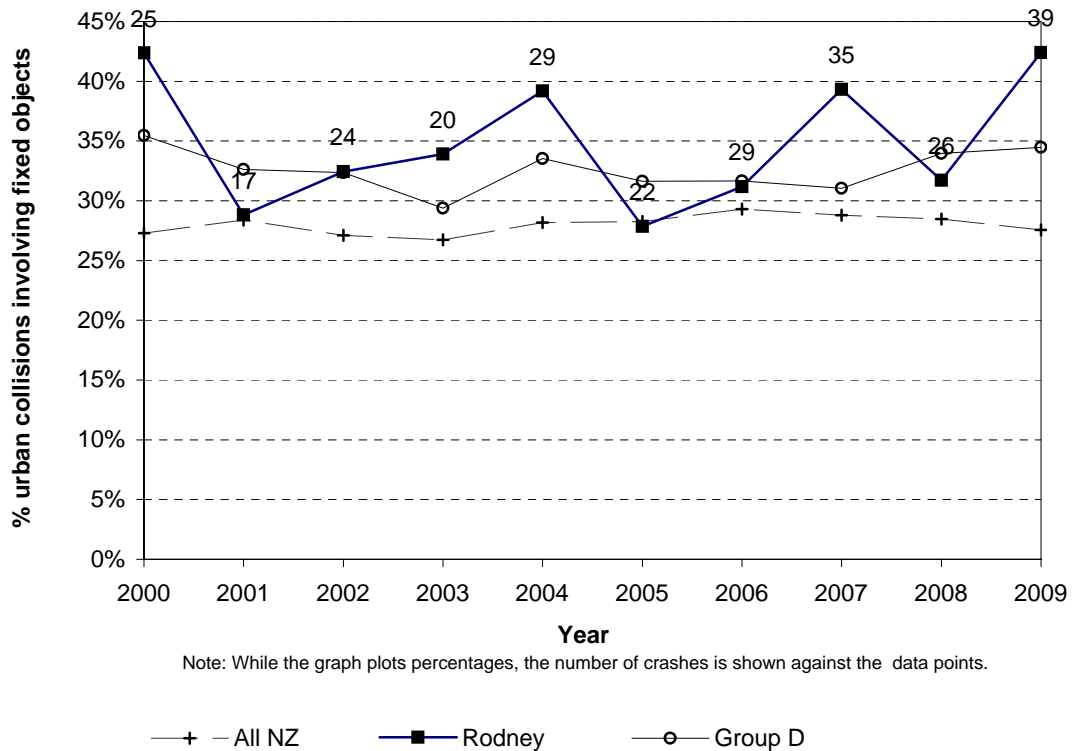
**Figure 6.10 Icy road crashes  
Rodney District - rural roads**



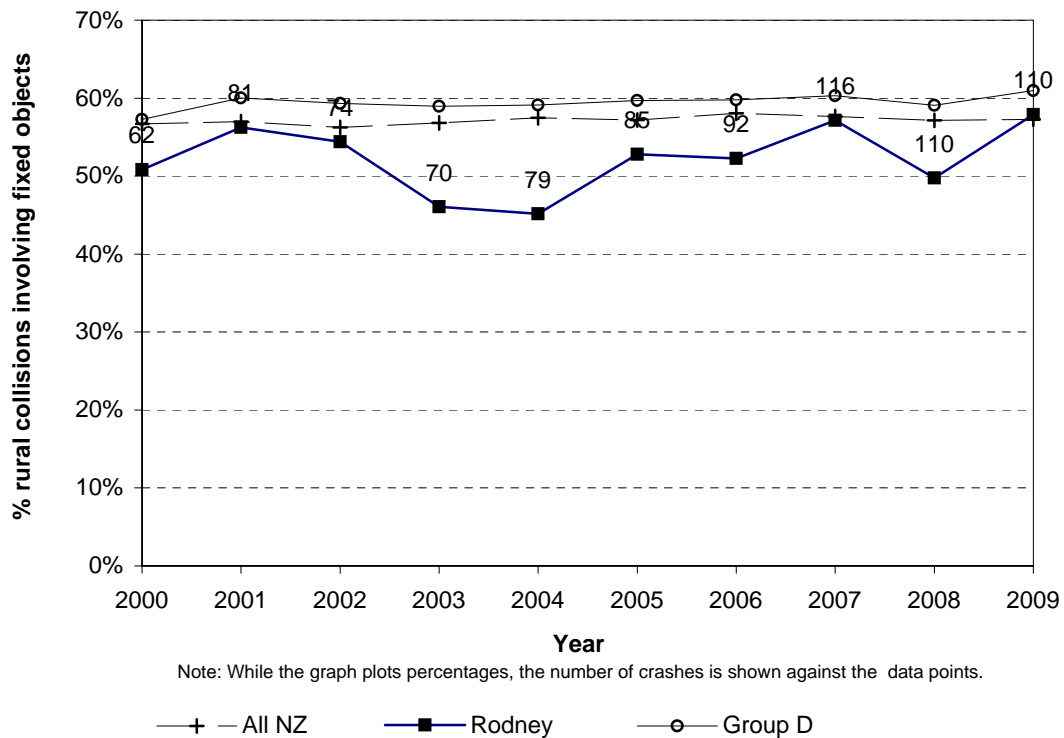
Note: While the graph plots percentages, the number of crashes is shown against the data points.

+ All NZ    ■ Rodney    ○ Group D

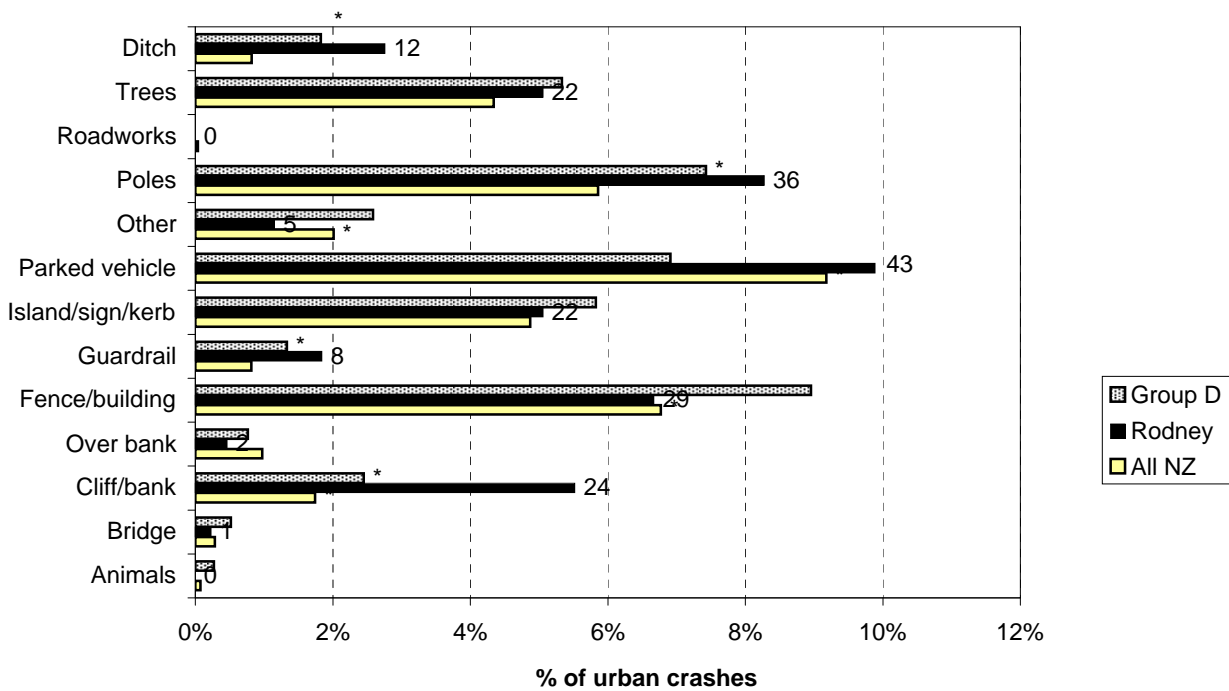
**Figure 6.11 Collisions with objects  
Rodney District - urban roads**



**Figure 6.12 Collisions with objects  
Rodney District - rural roads**

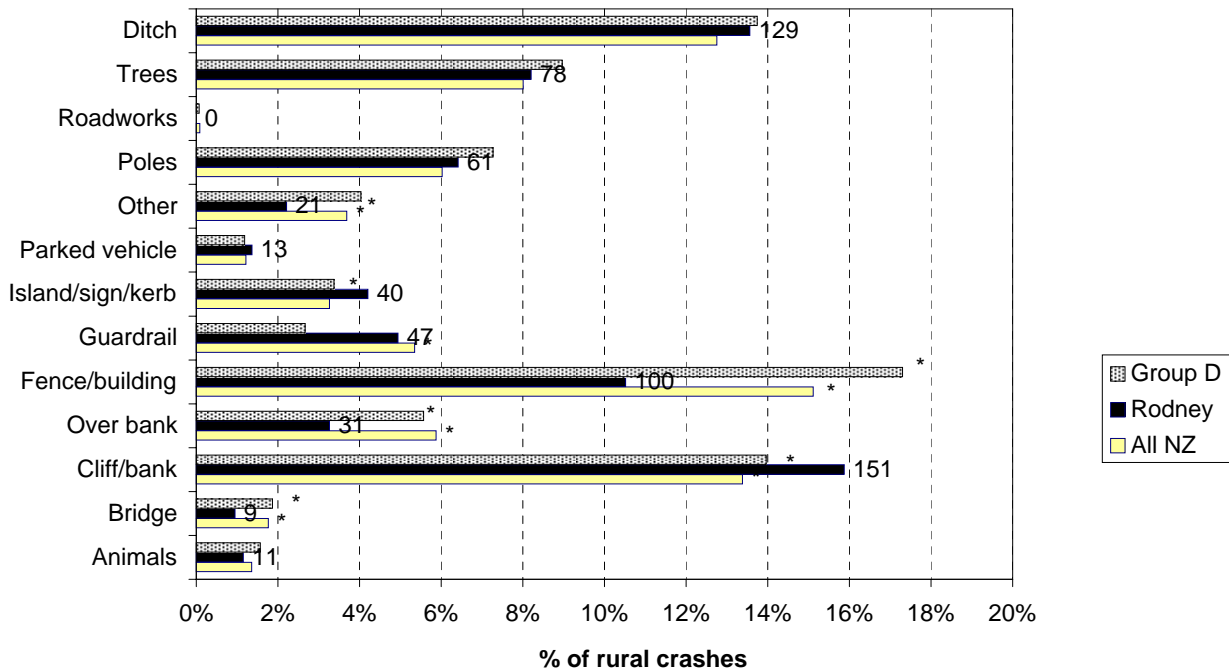


**Figure 6.13 Objects struck - urban  
Rodney District (2005-2009)**



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  
Rodney District (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

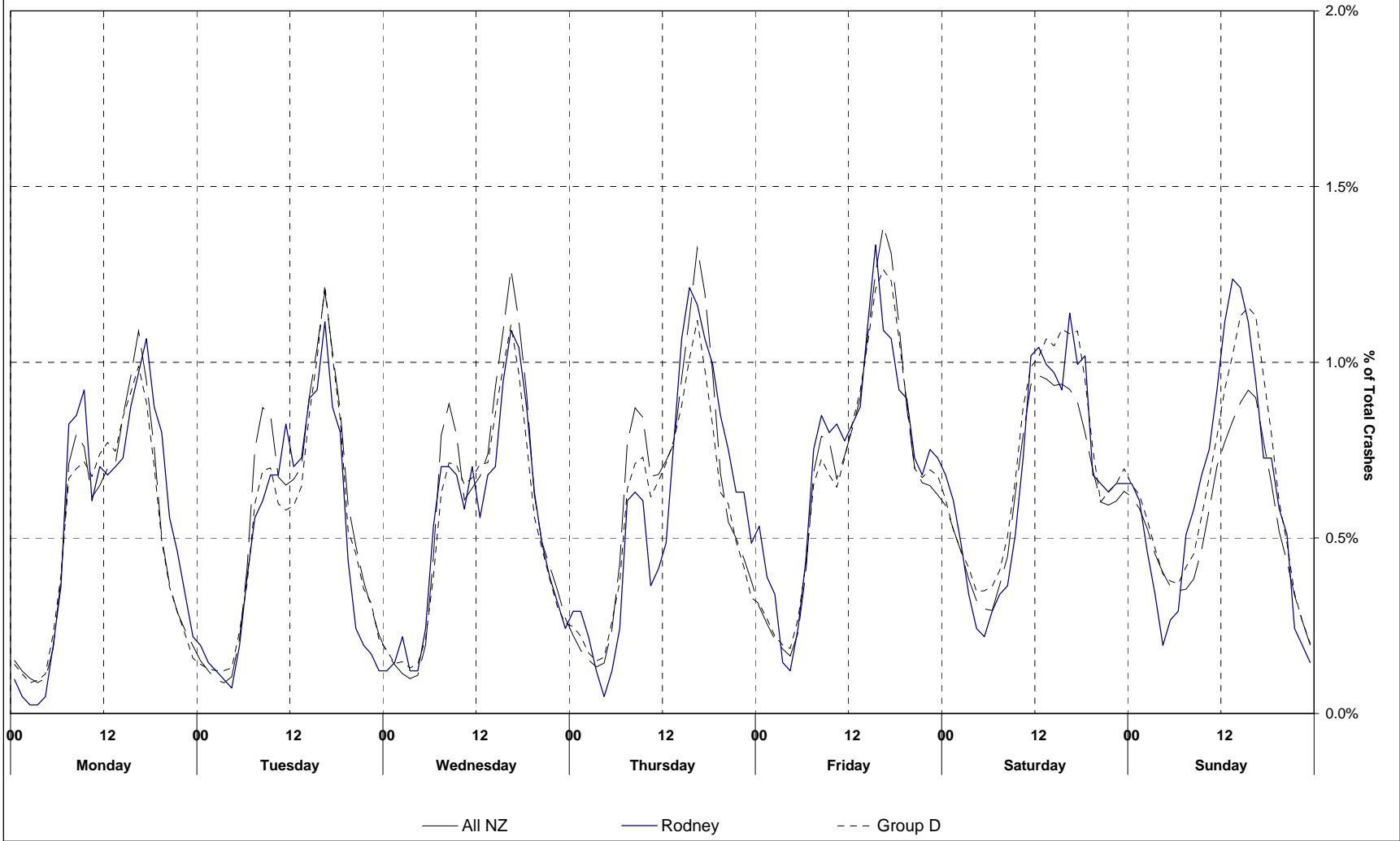




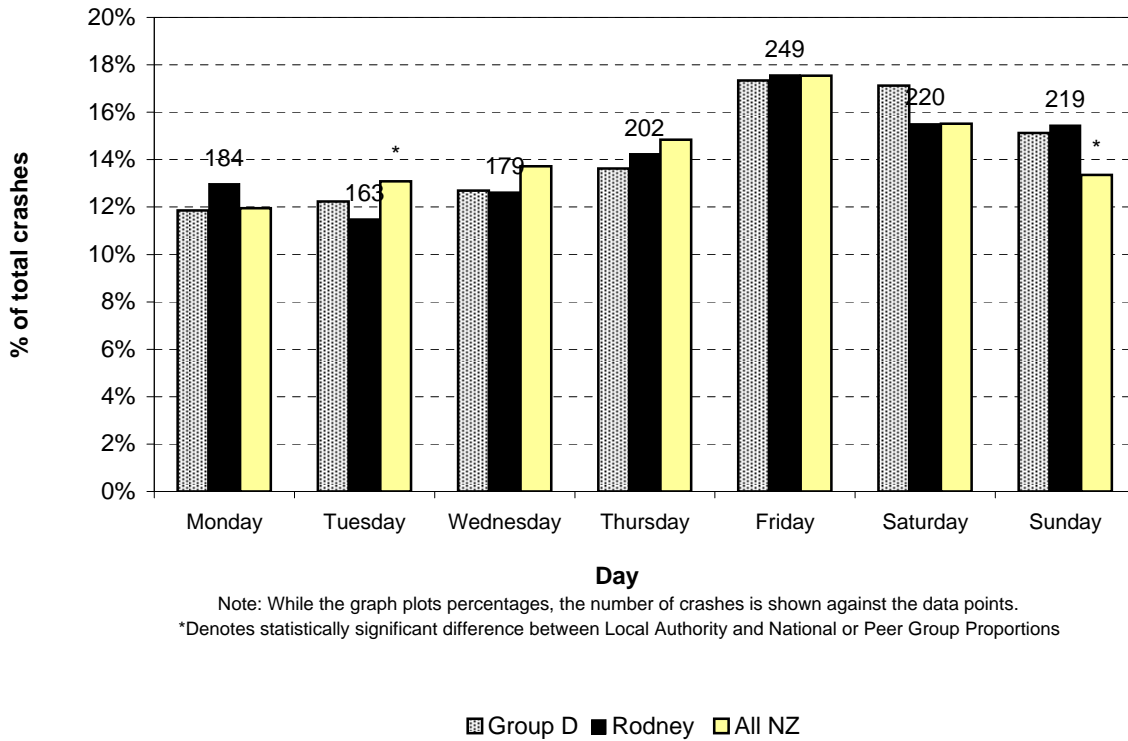
# *Date and Time Statistics*



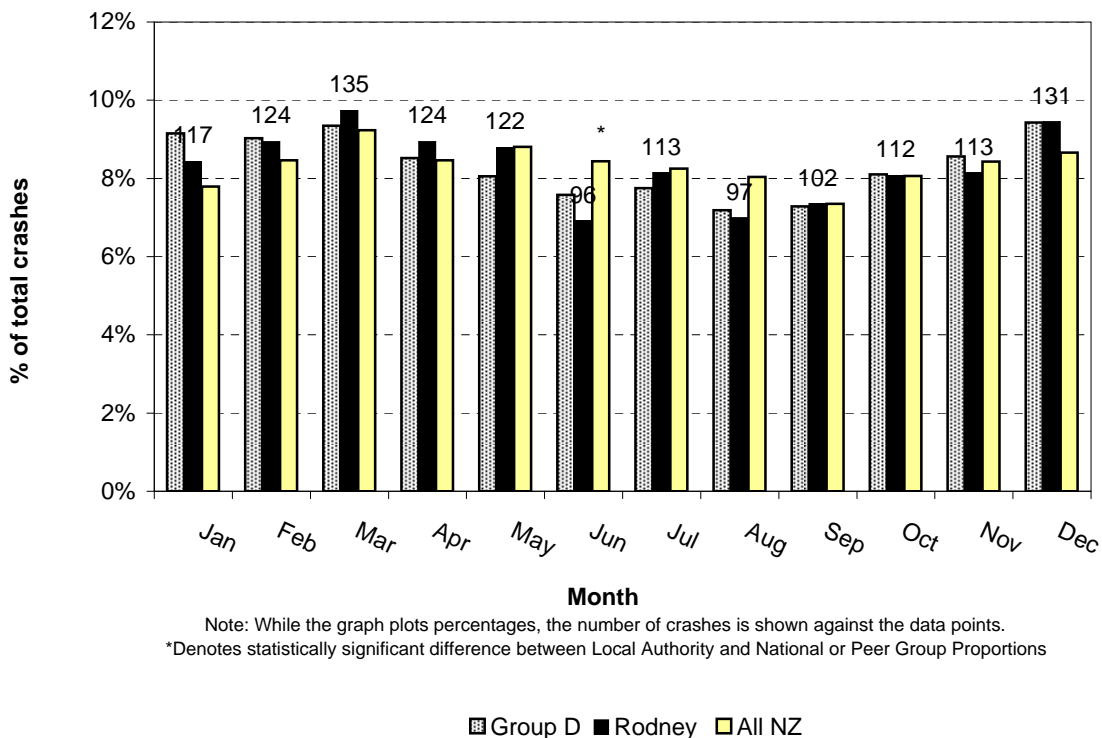
Figure 7.1 Time pattern over average week  
Rodney District (2005-2009)



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



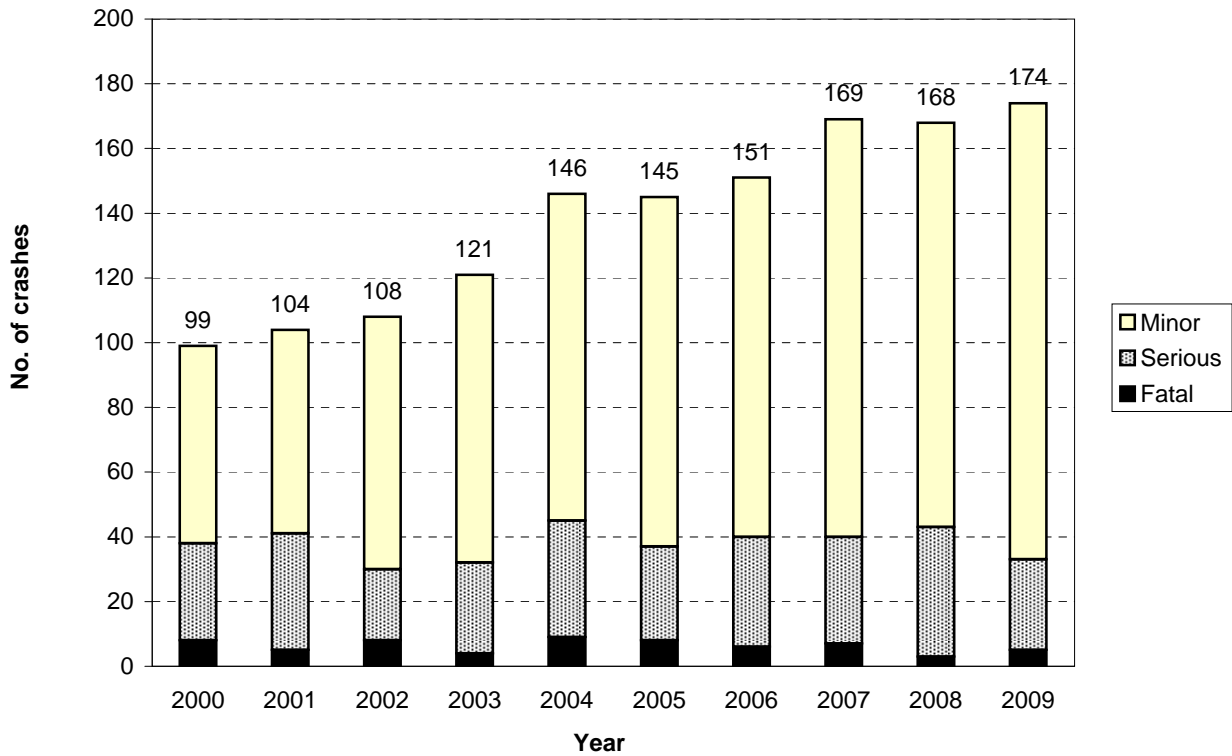
**Figure 7.3 Month of year  
Rodney District (2005-2009)**



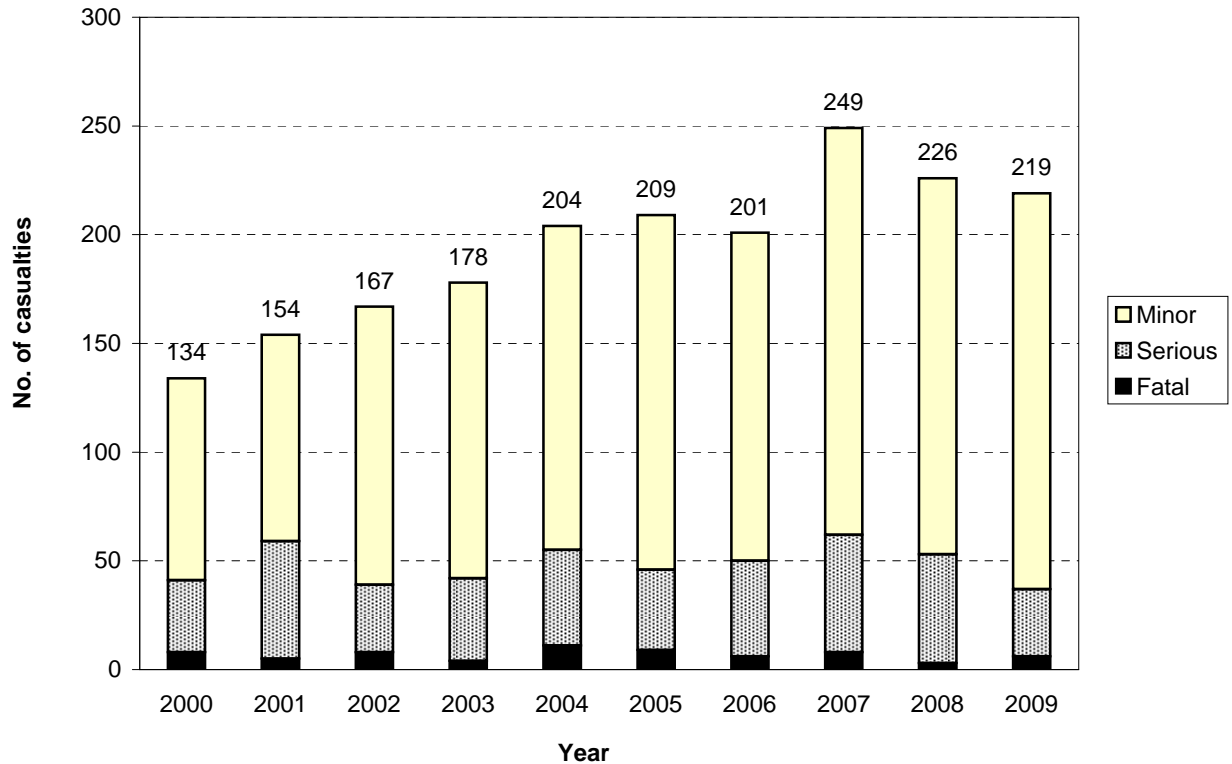
# *Local Road Statistics*



**Figure 8.1 Number of injury crashes**  
Rodney District - council roads (urban & rural)

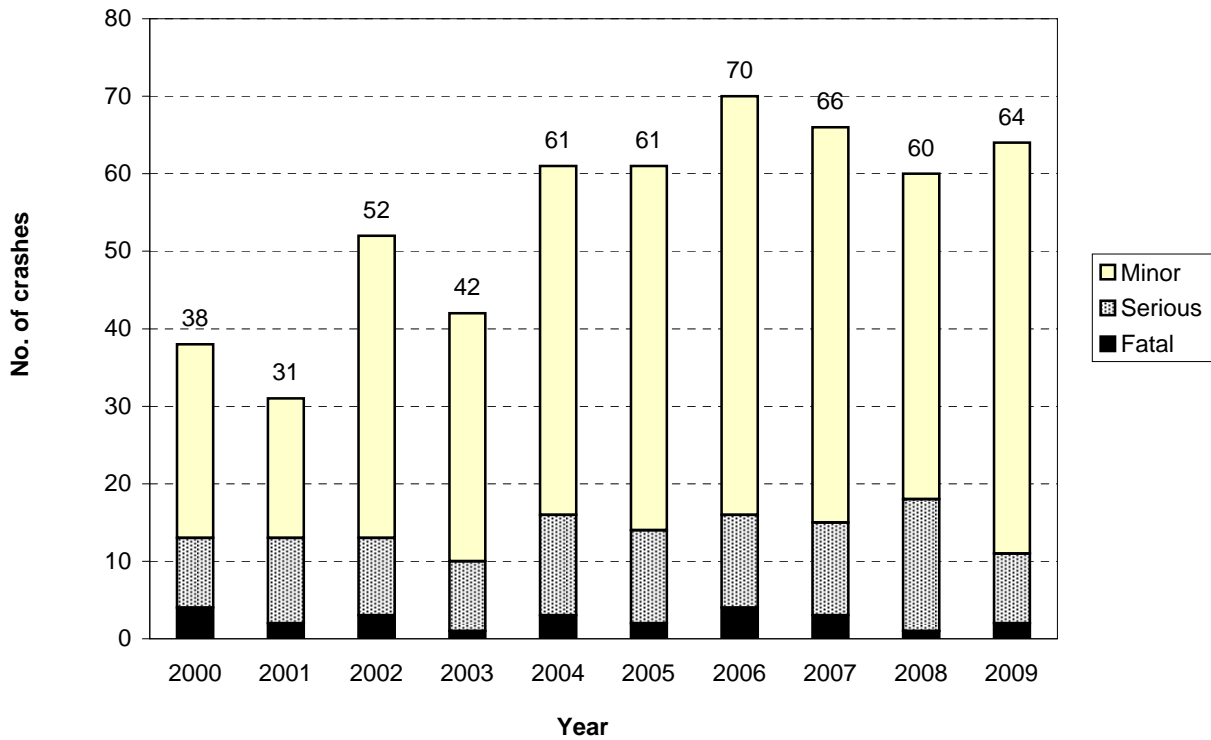


**Figure 8.2 Number of casualties**  
Rodney District - council roads (urban & rural)

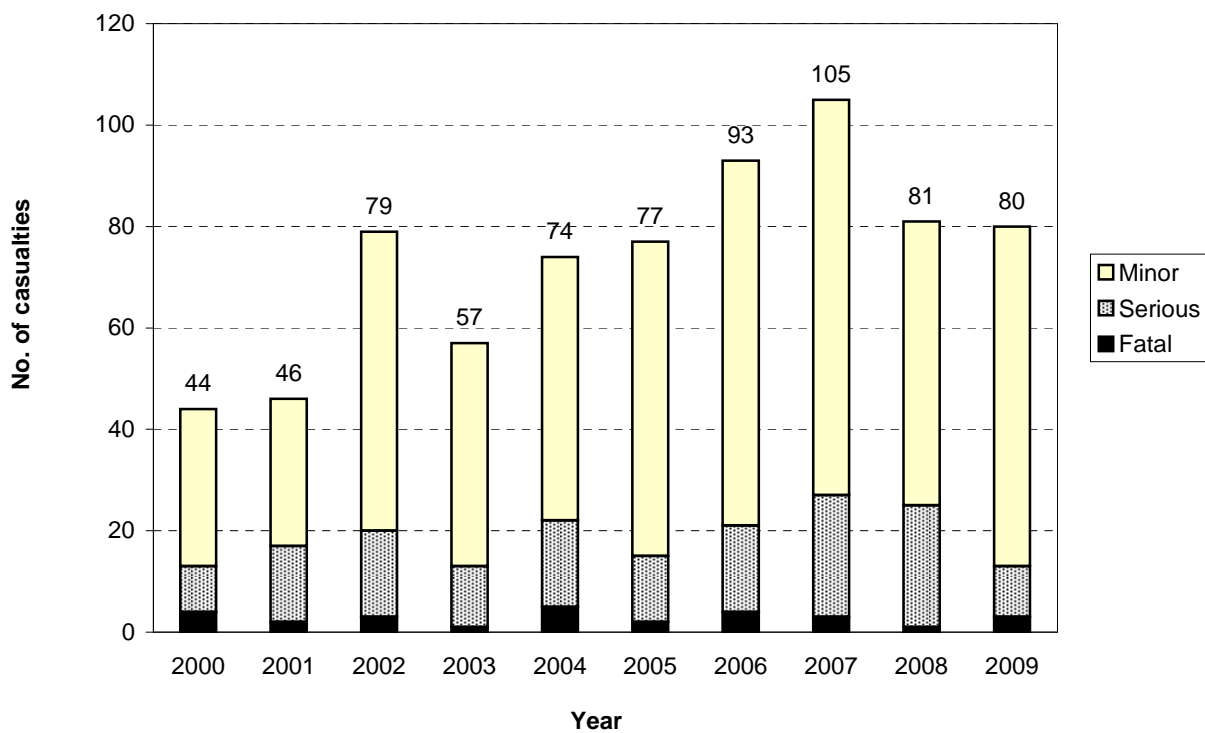




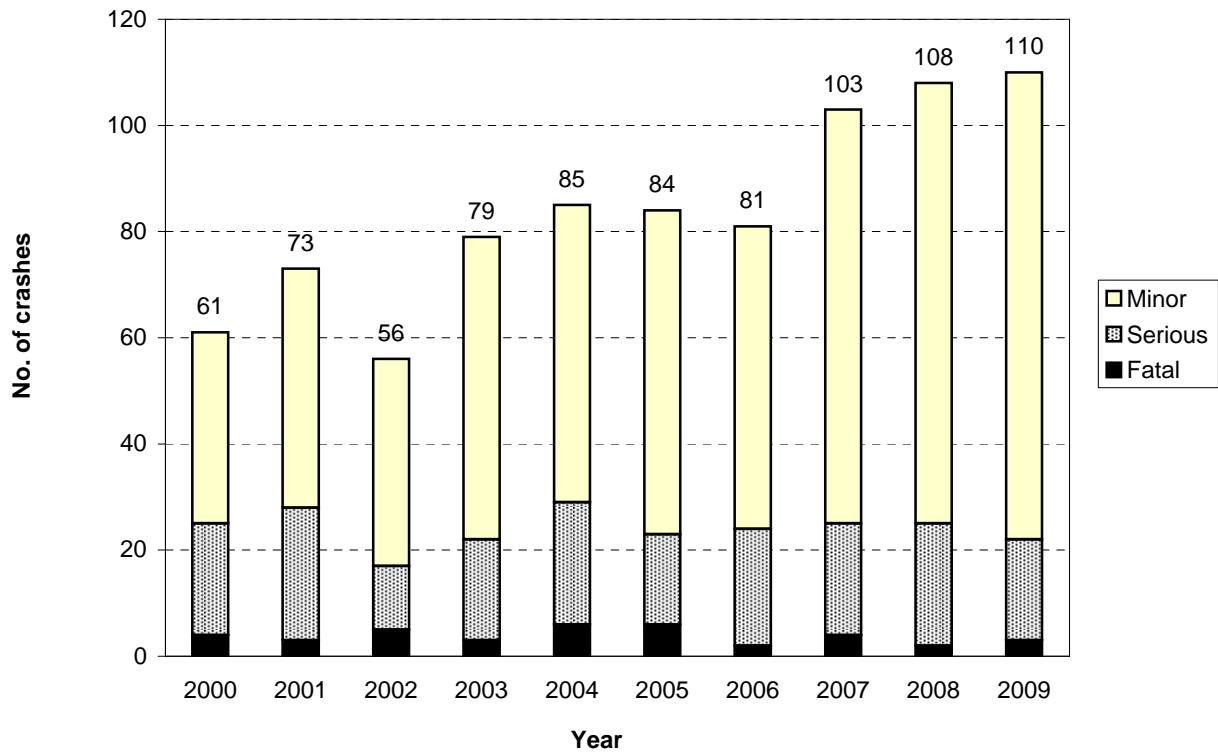
**Figure 8.3 Number of injury crashes  
Rodney District - urban council roads**



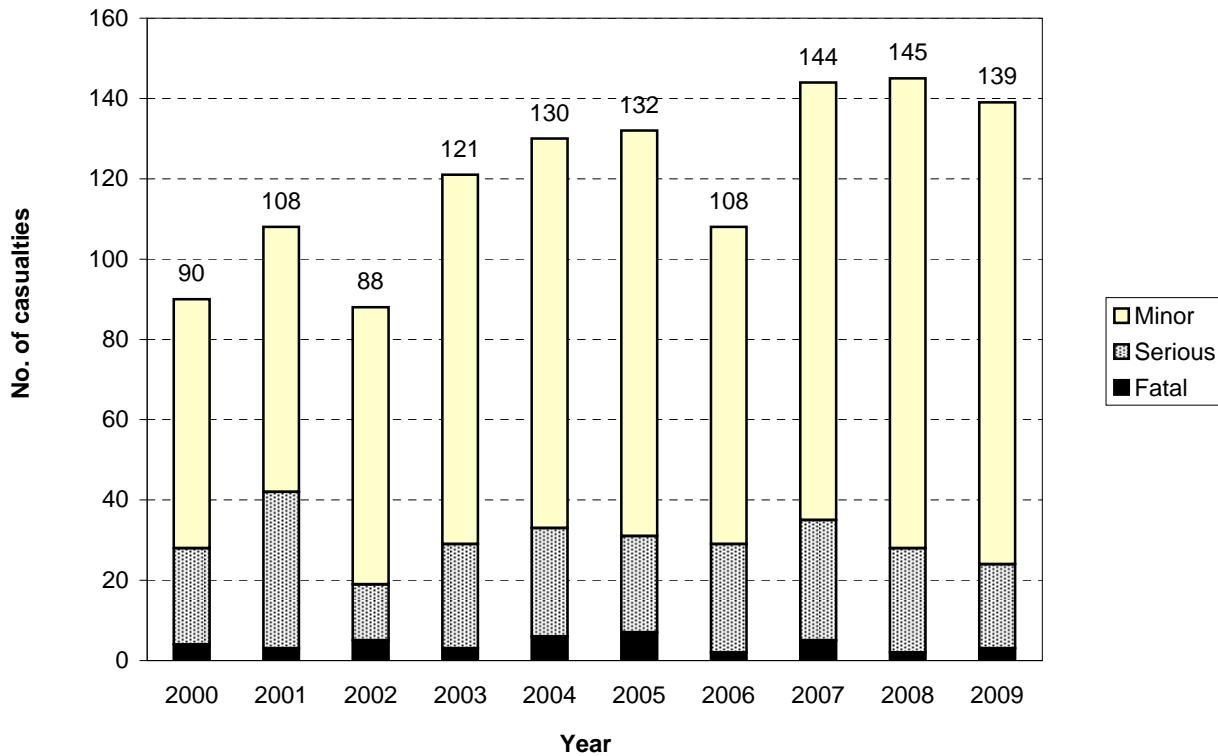
**Figure 8.4 Number of casualties  
Rodney District - urban council roads**



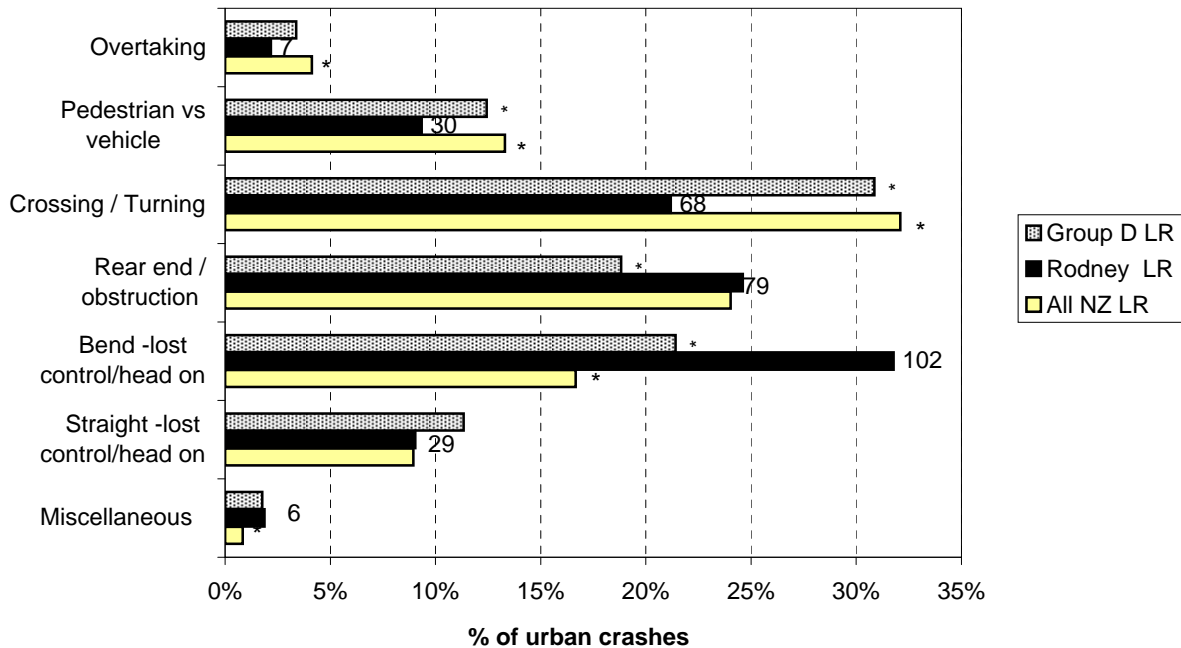
**Figure 8.5 Number of injury crashes  
Rodney District - rural council roads**



**Figure 8.6 Number of casualties  
Rodney District - rural council roads**

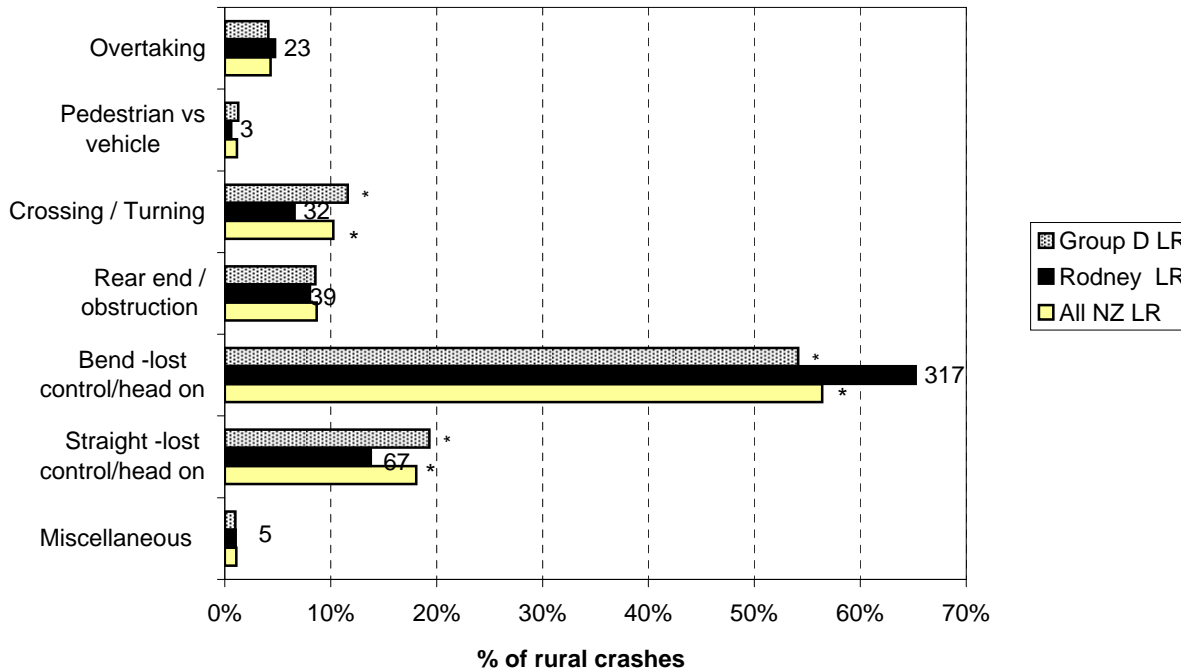


**Figure 8.7 Crash movement type - urban  
Rodney District council roads (2005-2009)**



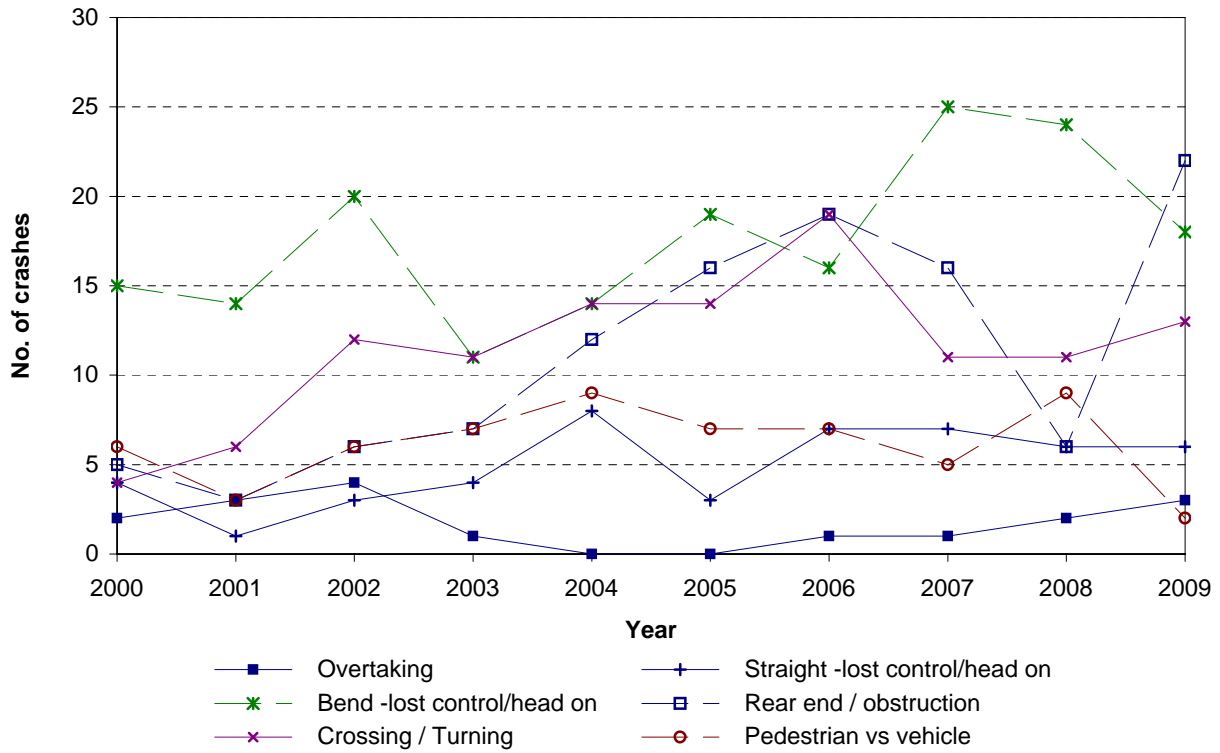
Note: While the graph plots percentages, the number of crashes is shown against the data points.  
\*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions

**Figure 8.8 Crash movement type - rural  
Rodney District council roads (2005-2009)**

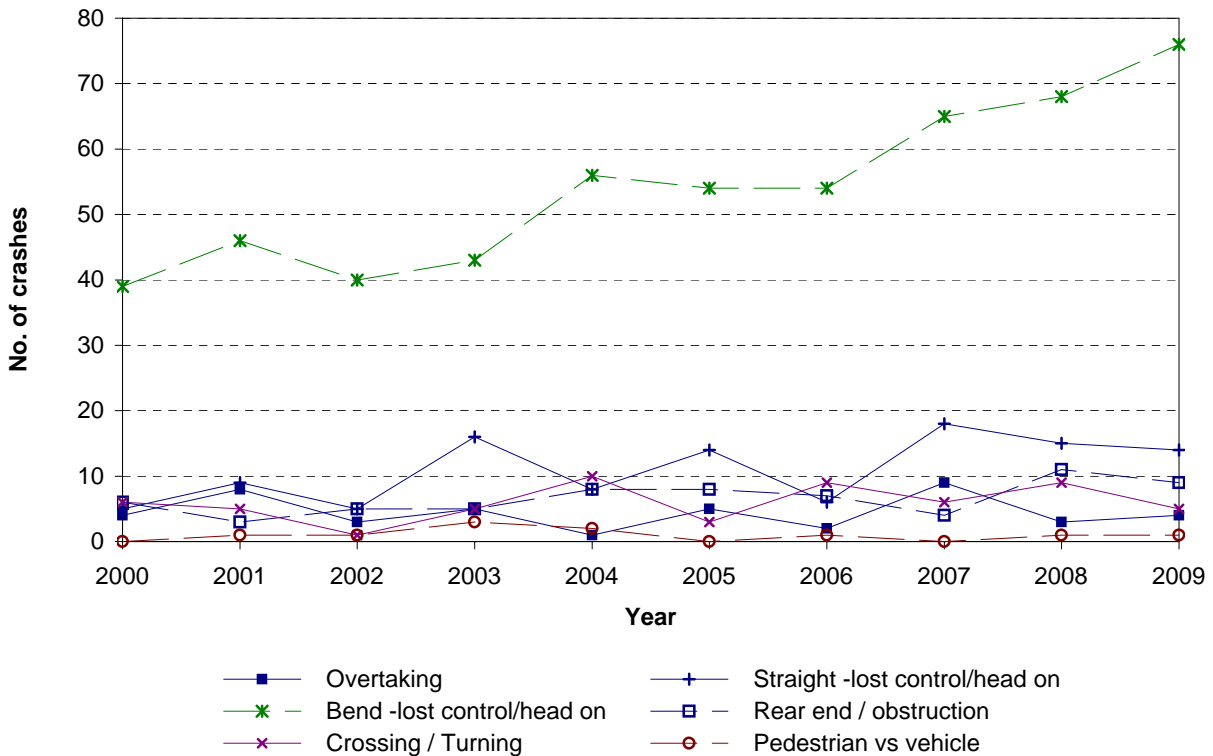


Note: While the graph plots percentages, the number of crashes is shown against the data points.  
\*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions

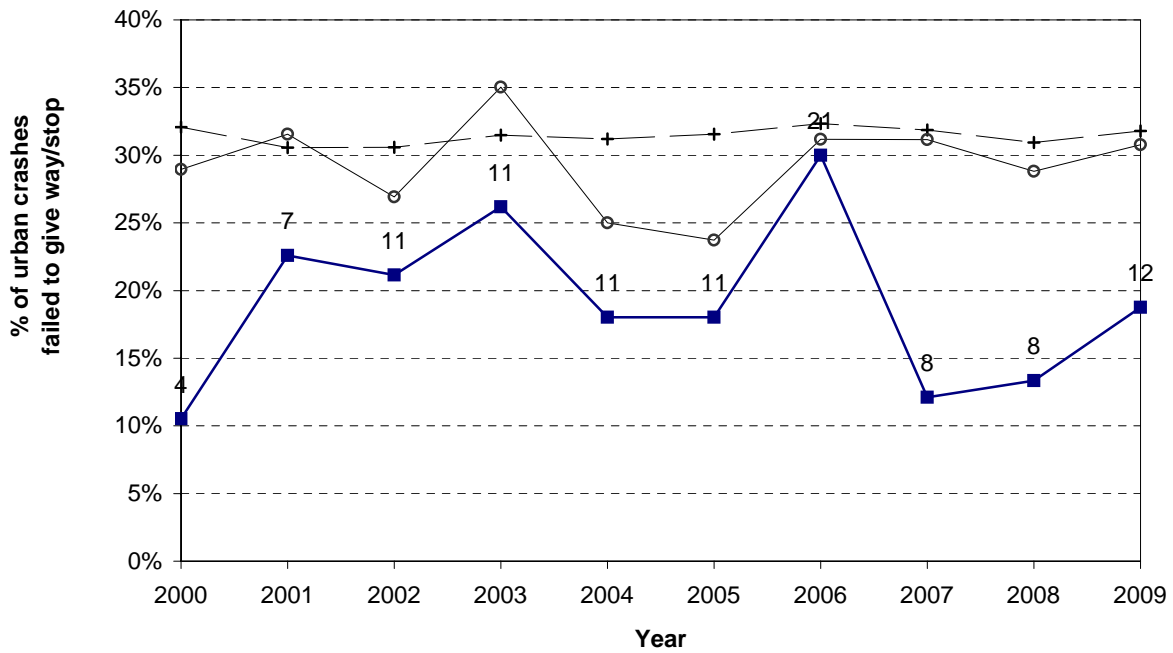
**Figure 8.9 Crash movement type - Trends  
Rodney District - urban council roads**



**Figure 8.10 Crash movement type - Trends  
Rodney District - rural council roads**



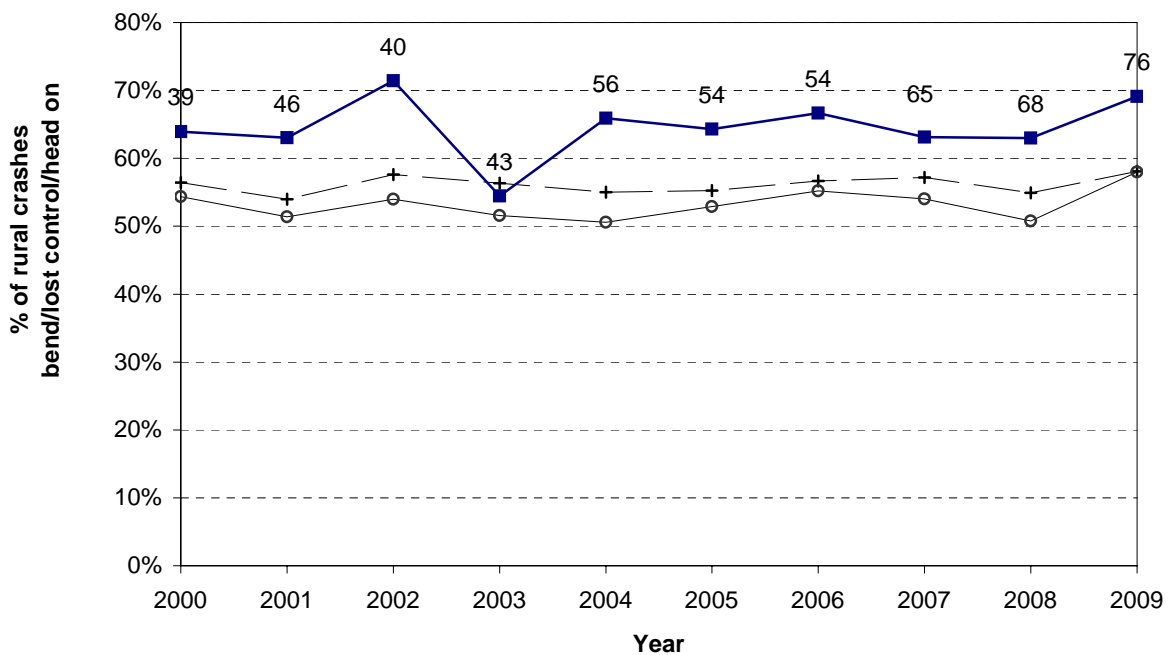
**Figure 8.11 Failed to give way/stop  
Rodney District - urban council roads**



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

—+— All NZ LR —■— Rodney LR —○— Group D LR

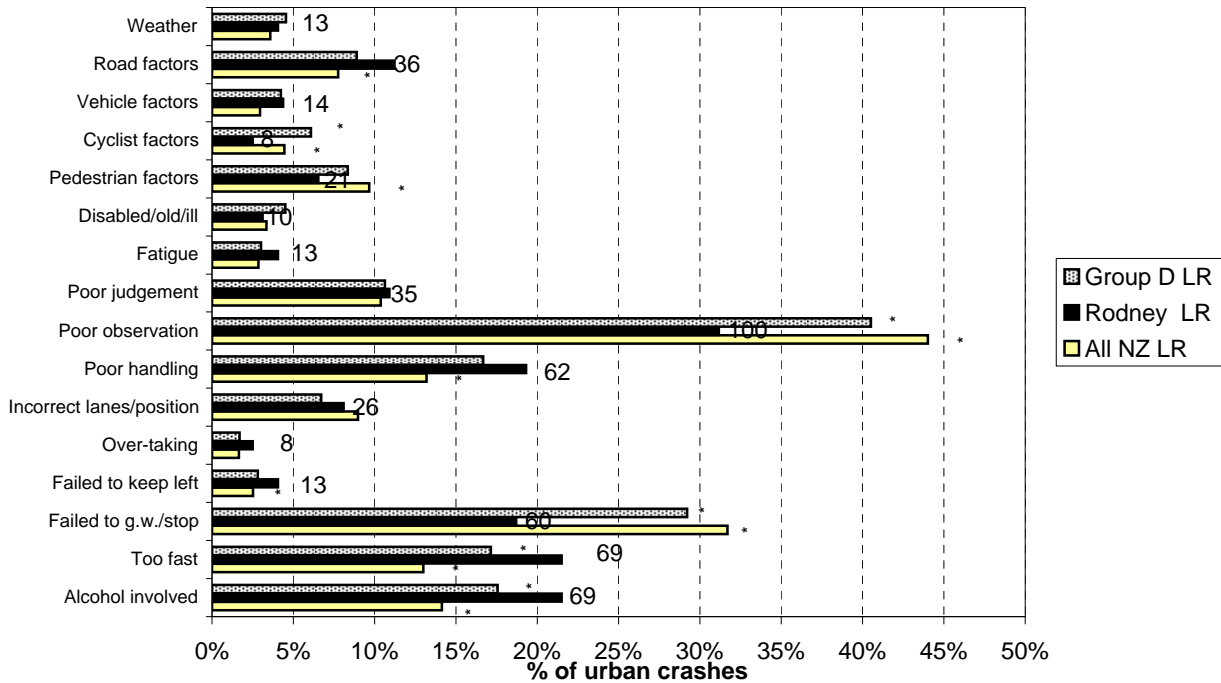
**Figure 8.12 Bend - lost control / head - on  
Rodney District - rural council roads**



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

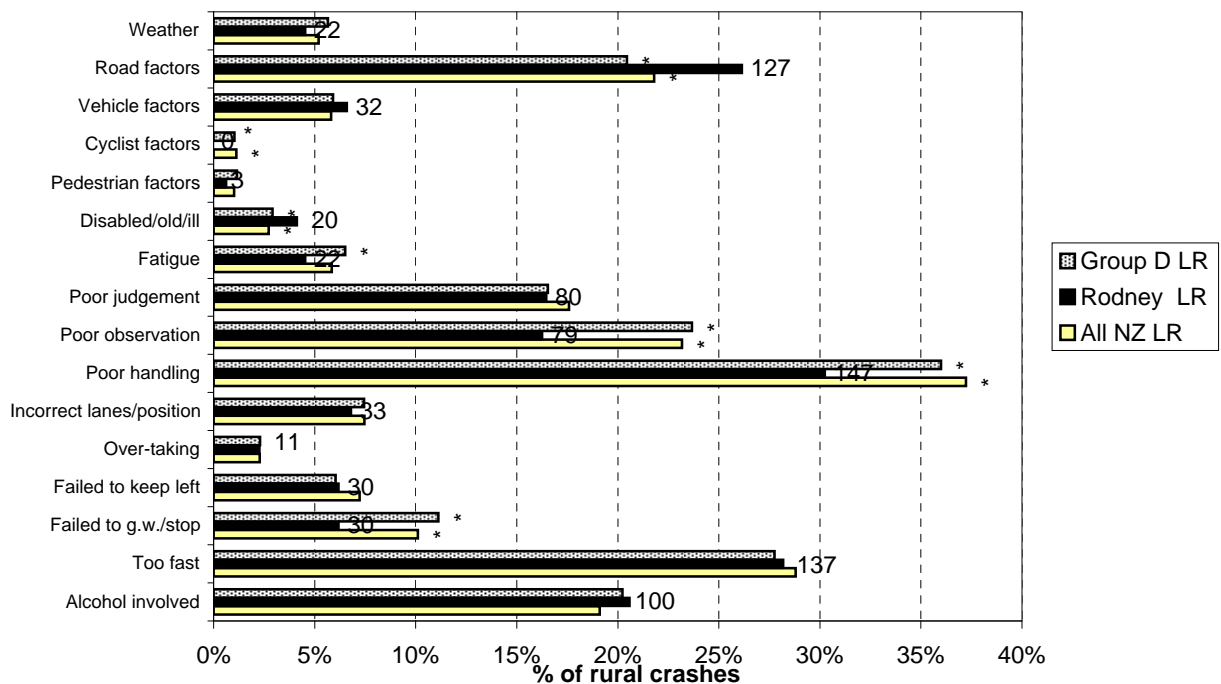
—+— All NZ LR —■— Rodney LR —○— Group D LR

**Figure 8.13 Contributing factors - urban  
Rodney District council roads (2005-2009)**



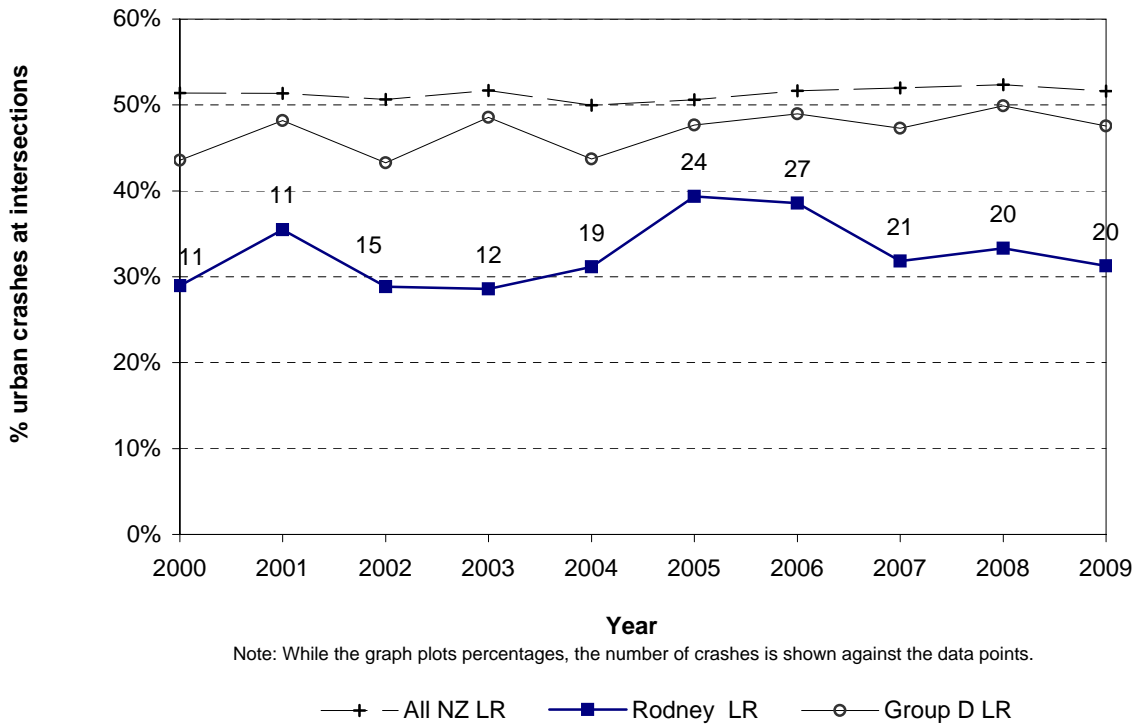
Note: While the graph plots percentages, the number of crashes is shown against the data points.  
\*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions

**Figure 8.14 Contributing factors - rural  
Rodney District council roads (2005-2009)**

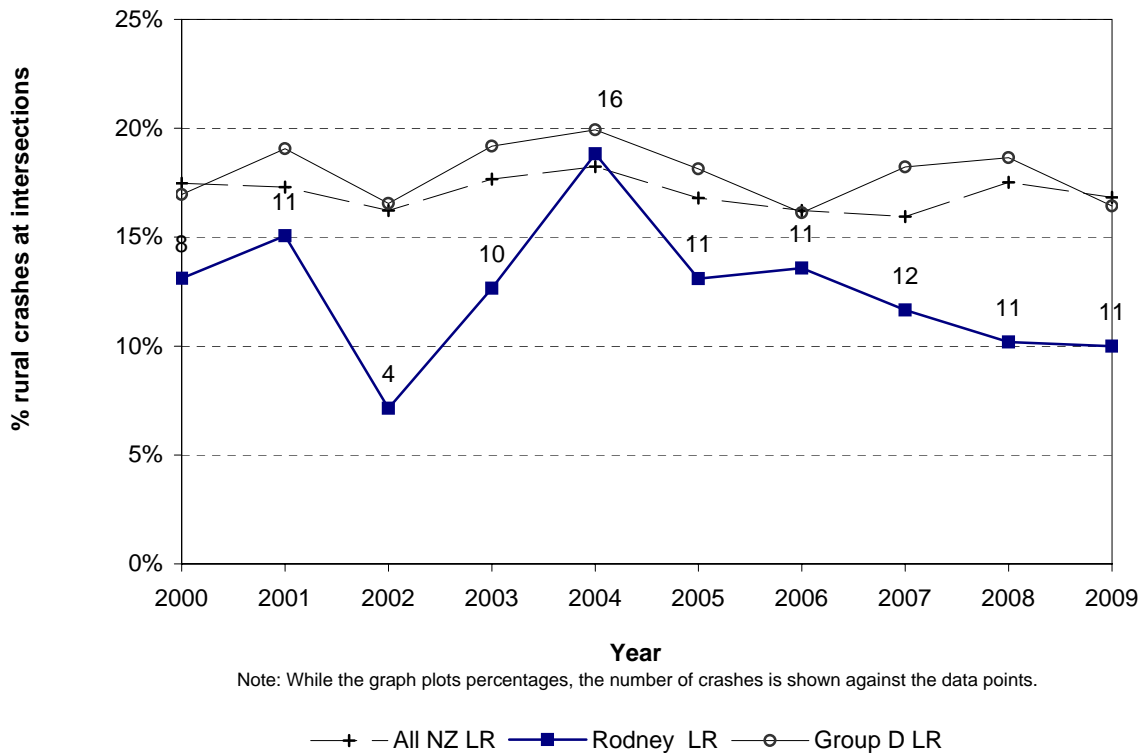


Note: While the graph plots percentages, the number of casualties is shown against the data points.  
\*Denotes statistically significant difference between Local Authority and National or Peer Group Proportions

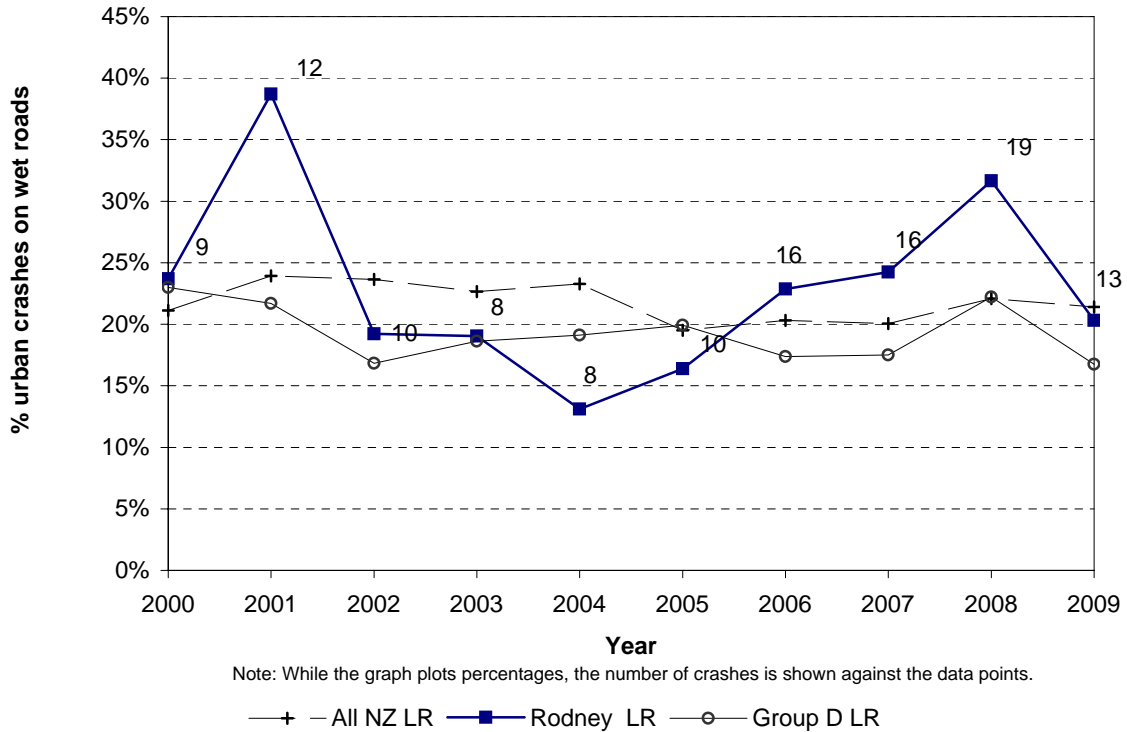
**Figure 8.15 Intersection crashes  
Rodney District - urban council roads**



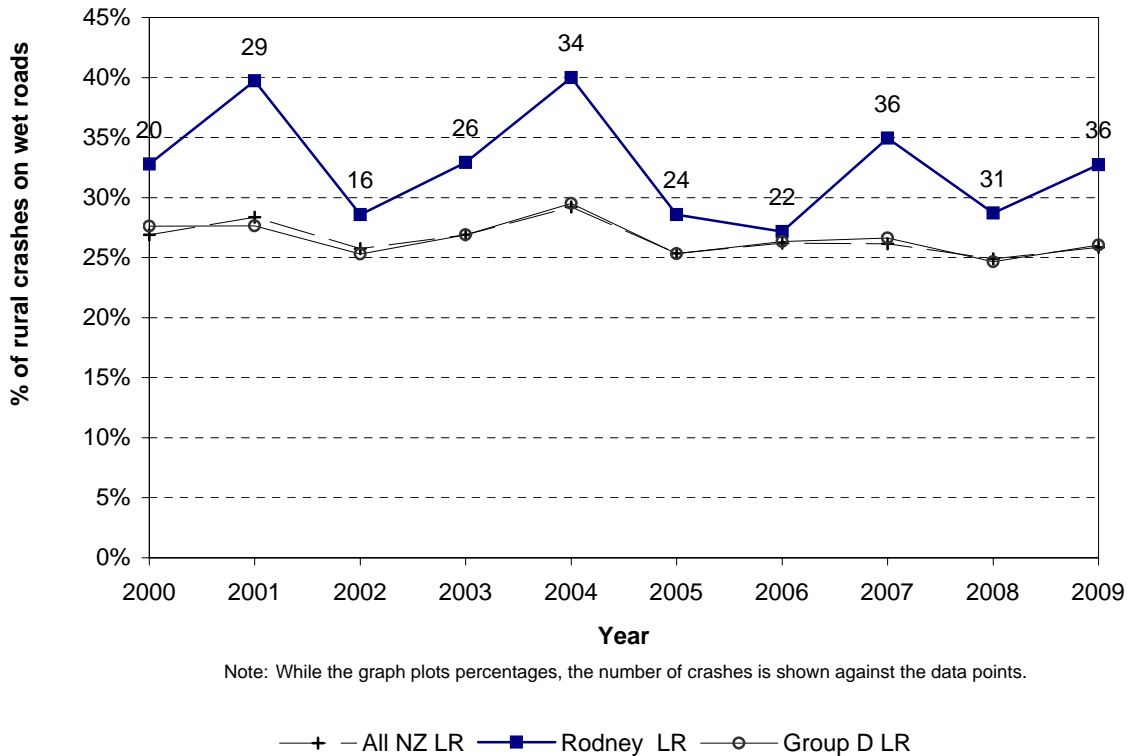
**Figure 8.16 Intersection crashes  
Rodney District - rural council roads**



**Figure 8.17 Wet road crashes  
Rodney District - urban council roads**

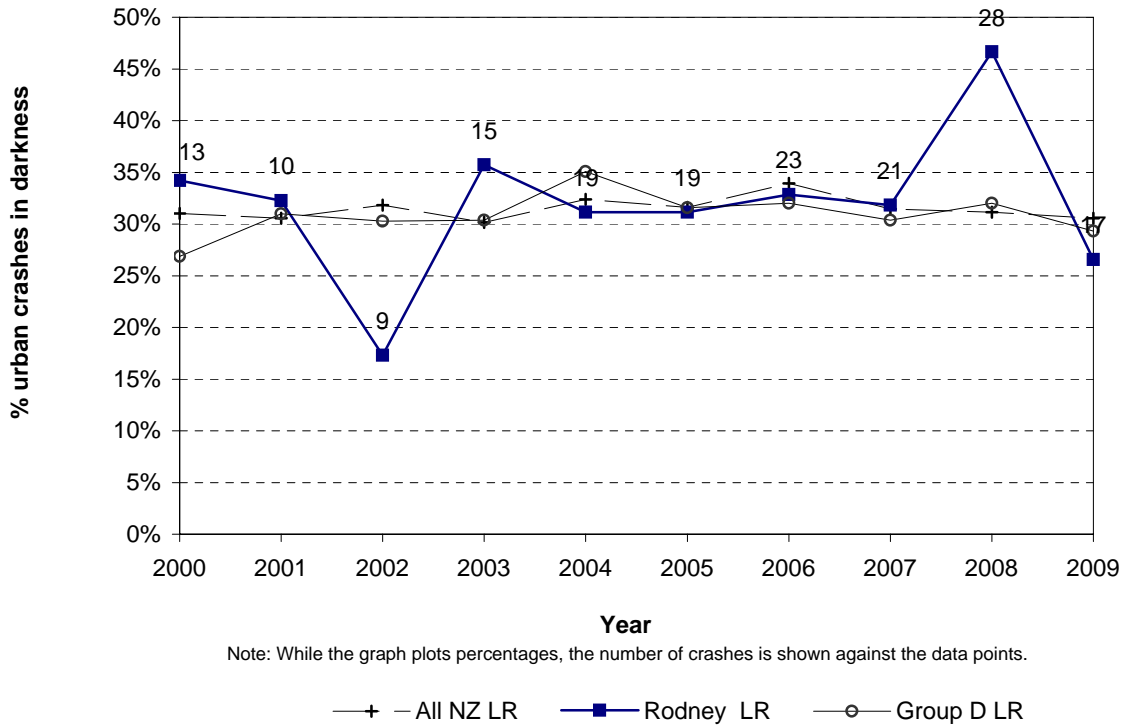


**Figure 8.18 Wet road crashes  
Rodney District - rural council roads**

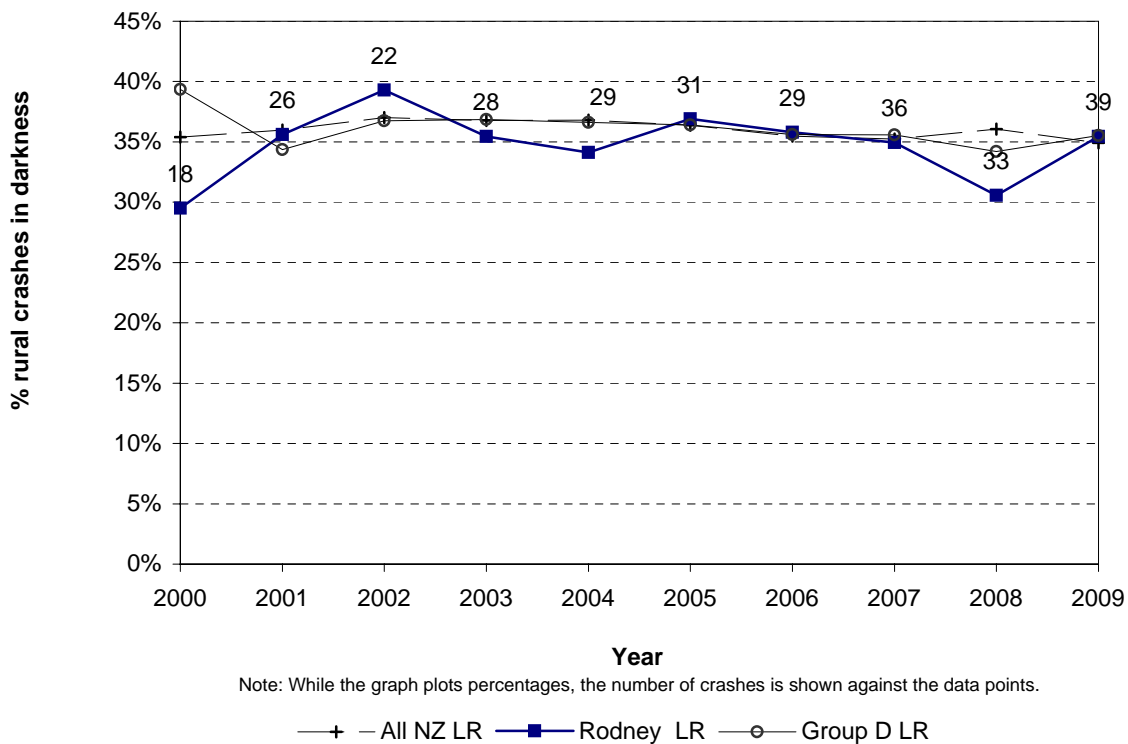




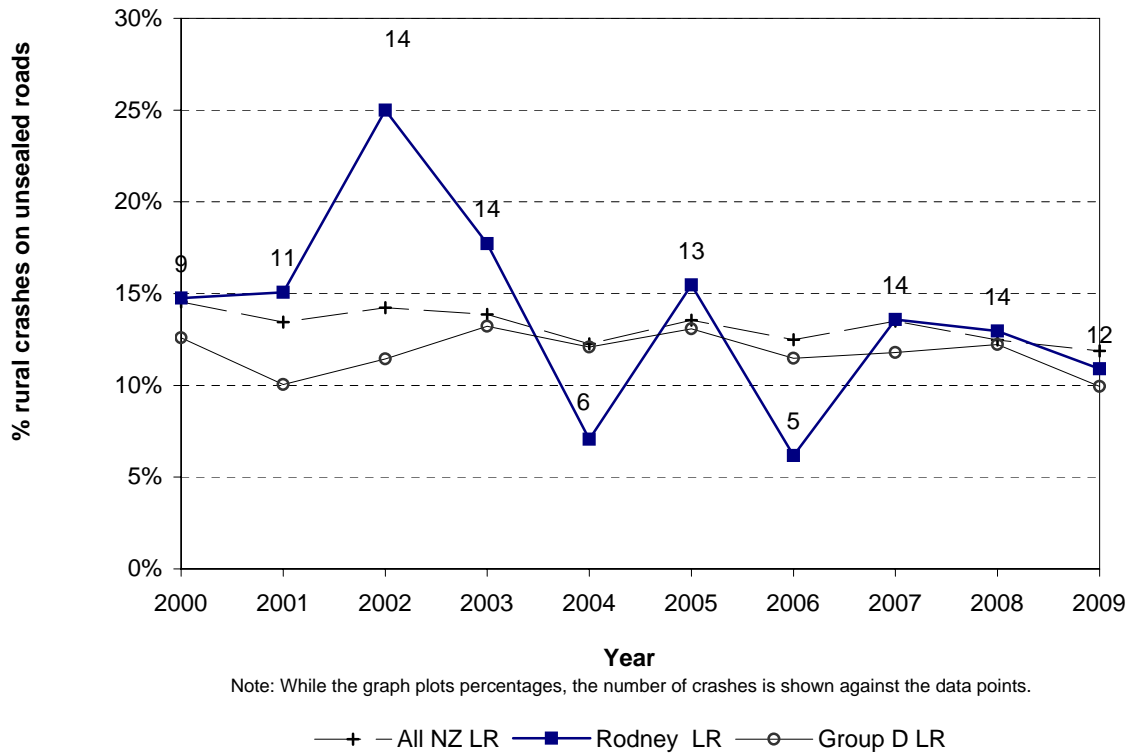
**Figure 8.19 Crashes in darkness  
Rodney District - urban council roads**



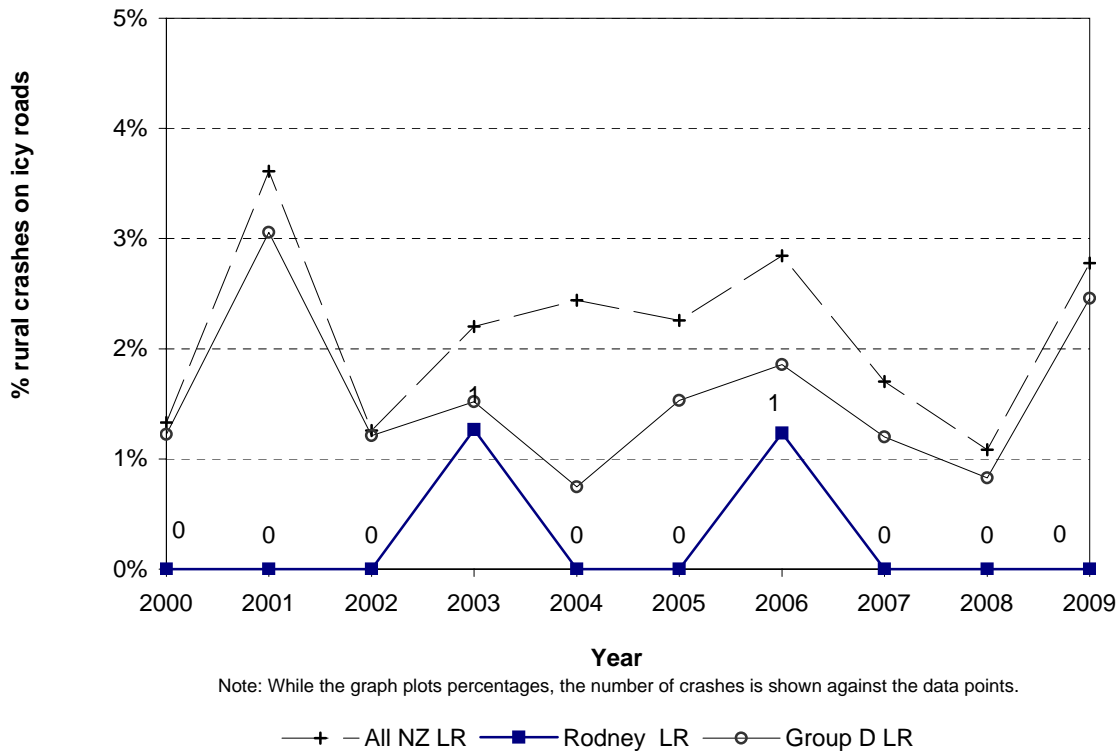
**Figure 8.20 Crashes in darkness  
Rodney District - rural council roads**



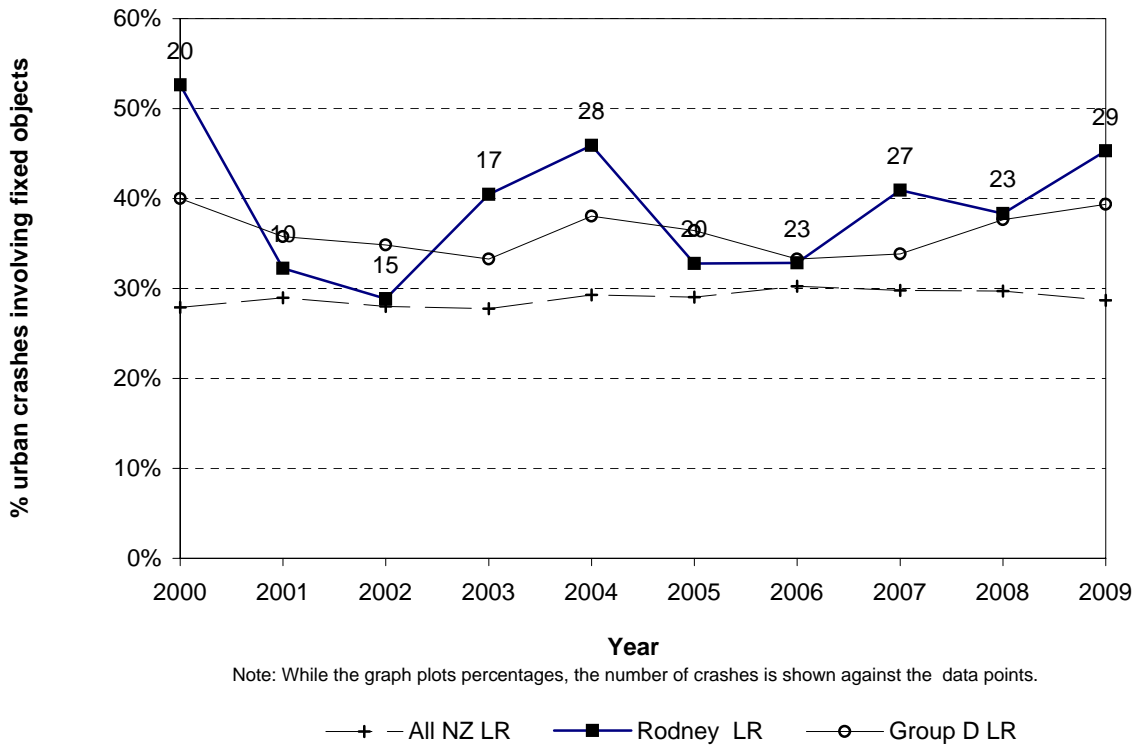
**Figure 8.21 Crashes on unsealed roads  
Rodney District - rural council roads**



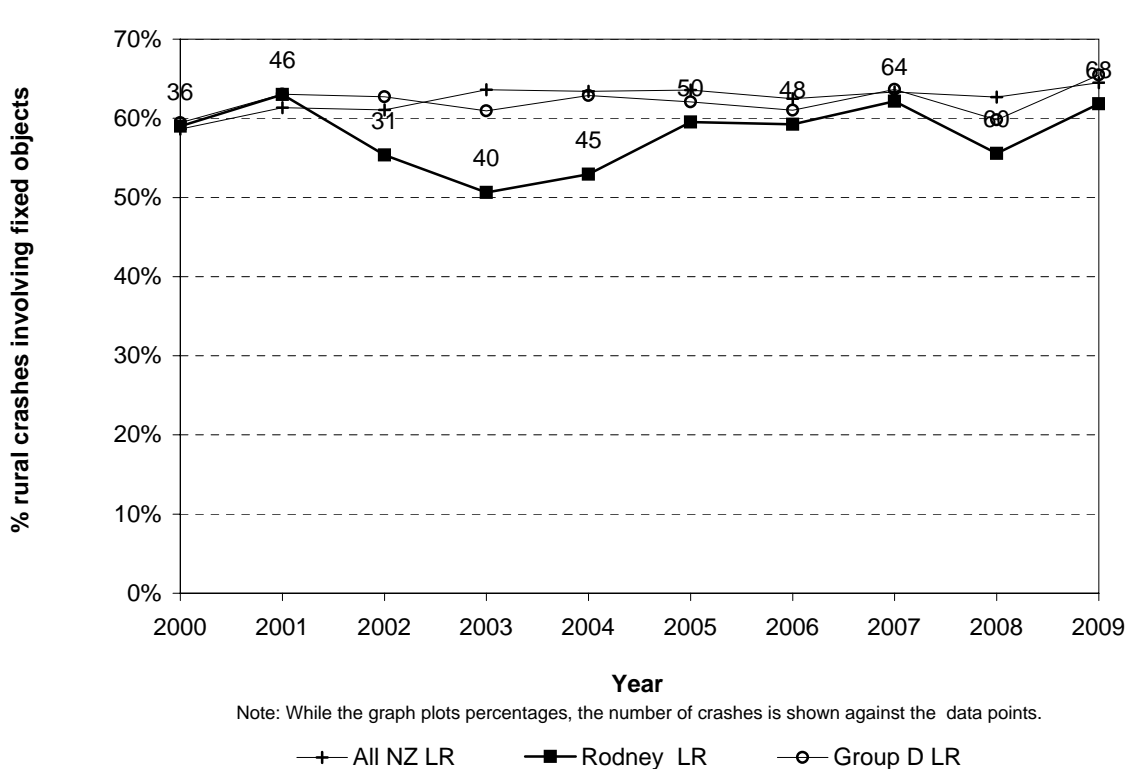
**Figure 8.22 Icy road crashes  
Rodney District - rural council roads**



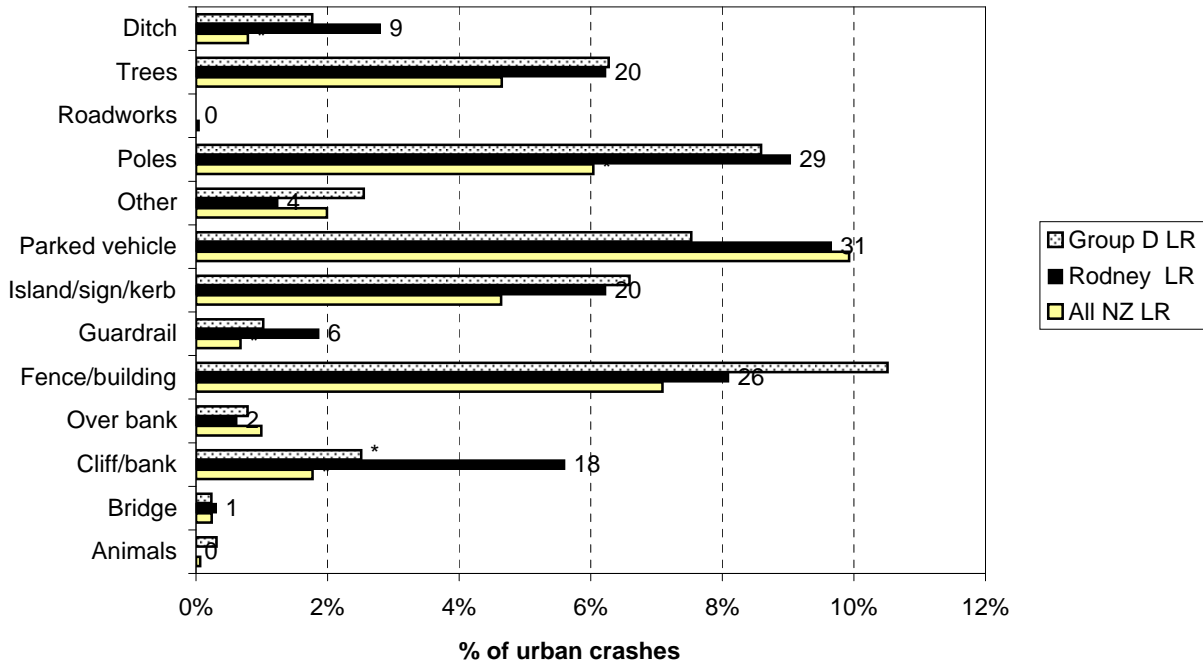
**Figure 8.23 Collisions with objects  
Rodney District - urban council roads**



**Figure 8.24 Collisions with objects  
Rodney District - rural council roads**

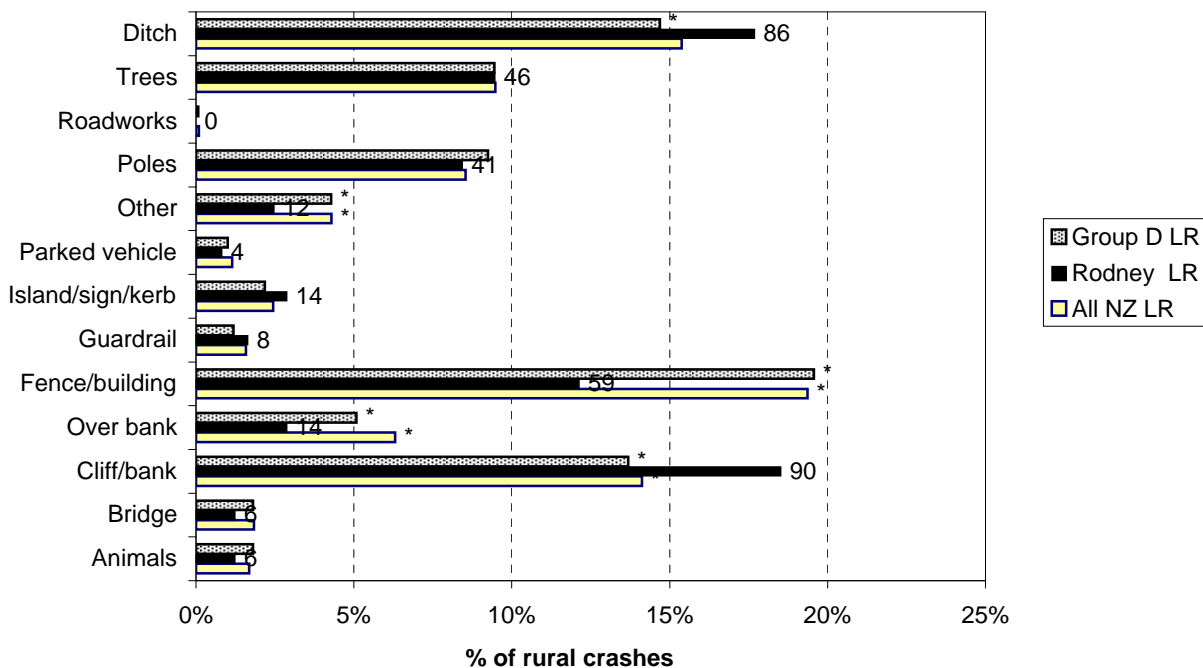


**Figure 8.25 Objects struck - urban  
Rodney District council roads (2005-2009)**



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  
Rodney District 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 3 or more injury crashes or more than \$150000 in social costs**

CRASH ROAD		SIDE ROAD	2005	2006	2007	2008	2009	TOTAL	Non-Injury	Wet Crash %	Dark Crash %	Crash Costs
FLORENCE AVENUE	I	ALICE AVENUE	2	1				3	1			\$3,474,584
COAST ROAD		1000 N MOTUTARA ROAD			1	1	1	3	1		67	\$3,358,490
WHANGAPARAOA ROAD		50 S DOYLY DRIVE					3	3	1	67	67	\$3,358,490
VIPOND ROAD	I	DUNCANSBY ROAD		1	1	1	1	4	3	25	50	\$3,295,230
PARKHURST ROAD	I	FORDYCE ROAD	1		5		1	7	4	29	57	\$1,165,194
CENTREWAY ROAD	I	RIVERSIDE ROAD		1	1	2	3	7	3		14	\$776,352
STANMORE BAY ROAD	I	WHANGAPARAOA ROAD	1	1	2	1	4	9	8	22	33	\$651,736
WHANGAPARAOA ROAD	I	LINK CRESCENT	1		1	2	1	5	3	20		\$638,690
PARKHURST ROAD		5 N PARAKAI AVENUE	1	1	1		1	4	2			\$621,362
CENTREWAY ROAD		150 S WEITI ROAD		1	1		1	3	1	67	67	\$608,210
BAY ST	I	ROSARIO CRESCENT	1	1			1	3	1			\$603,972
RAUTAWHIRI ROAD	I	CABELEIGH DRIVE		1	1		1	3	1	67	67	\$602,190
HAURAKI ROAD	I	SEATOUN AVENUE				3		3	1	67	33	\$600,470
RED BEACH ROAD	I	WHANGAPARAOA ROAD	8	4	5	3	2	22	18	18	41	\$598,617
GARFIELD ROAD	I	RAUTAWHIRI ROAD	1	3		1		5	4	20	60	\$589,978
WHANGAPARAOA ROAD		70 W PALMGREEN COURT		2	1	1		4	3	25	25	\$572,532
WHANGAPARAOA ROAD		40 N CEDAR TERRACE	1	2				3	2	33		\$555,136
RED BEACH ROAD		10 E SH 17	1	2				3	2			\$549,184
COATESVILLE-RIVERHEAD I		QUEEN ST		1	1		1	3	2		100	\$547,402
STANMORE BAY ROAD		50 N GRANDVIEW ROAD	1		2			3	2		67	\$547,334
WHANGAPARAOA ROAD	I	VIPOND ROAD	2	1	7	4	2	16	13	25	31	\$441,127
BRIGHTSIDE ROAD	I	KAURI ROAD	1	3	4	1		9	4	33	44	\$427,444
WHANGAPARAOA ROAD	I	WADE RIVER ROAD	2	1	2	1	5	11	7		18	\$410,752
WHANGAPARAOA ROAD	I	LADIES MILE	2	2	1	2	3	10	7	10	30	\$336,848
WHANGAPARAOA ROAD	I	RAWHITI ROAD			4	1	3	2	10	8	20	\$282,066
MOTUTARA ROAD		300 N MURIWAI ROAD	1			1	4	6	3	100	33	\$267,170
WHANGAPARAOA ROAD	I	MARELLEN DRIVE	3	2	1			6	4	33	33	\$215,810
WHANGAPARAOA ROAD	I	POPLAR ROAD		2		3		5	3	20	40	\$194,992
KAREPIRO DRIVE	I	WHANGAPARAOA ROAD		1		3	1	5	3			\$193,272
WHANGAPARAOA ROAD	I	TOWER HILL	1		3	1		5	3	20	60	\$193,204
KAHIKATEA FLAT ROAD	I	WAITOKI ROAD		2			1	3	1	33	33	\$182,567
WHANGAPARAOA ROAD	I	BEVERLEY ROAD		1		2	1	4	2	50	50	\$175,882
WHANGAPARAOA ROAD	I	MATAI ROAD		1	1		2	4	2		25	\$175,882
VIPOND ROAD	I	BRIAN CRESCENT	1	1		1	1	4	2	25	50	\$175,876
OZONE ROAD	I	BRIGHTSIDE ROAD	2	1	2		2	7	6	14	14	\$174,910
GRAND DRIVE		100 E MAIRE ROAD	1	1		1		3	1		67	\$163,590
RED BEACH ROAD		150 N ALBERT HALL DRIVE	2	1				3	1			\$163,584
BAKEHOUSE LANE		20 S MOANA AVENUE	2	1	1	1	1	6	5		17	\$160,966
GRAND DRIVE	I	WEST HOE ROAD	2		2	2		6	5	17	17	\$160,904
GULF HARBOUR DRIVE	I	CLAYDEN DRIVE		1		1	1	3	1		33	\$160,150
WAIORA ROAD	I	ELLISTON CRESCENT E		1			2	3	1			\$160,150
WHANGAPARAOA ROAD		120 W WIRIANA PLACE		1	1		1	3	1		67	\$160,150
WHANGAPARAOA ROAD		50 E WADE RIVER ROAD N	1	3			2	6	5		17	\$159,308
WHANGAPARAOA ROAD		350 N VIPOND ROAD		1	1		1	3	1		33	\$158,492



**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 \$150000 in social costs**

CRASH ROAD	SIDE ROAD	2005	2006	2007	2008	2009	TOTAL	Non-Injury	Wet Crash %	Dark Crash %	Crash Costs
OLD NORTH ROAD	500 E ARARIMU VALLEY ROAD	1		2	3	4	10	3	30	20	\$5,929,511
OLD NORTH ROAD	I DEACON ROAD	1	2	1	5	2	11	5	45	18	\$5,488,443
KAHIKATEA FLAT ROAD	900 W SH 17	1	2	2	1		6	2		83	\$5,209,694
EAST COAST ROAD	I BAWDEN ROAD	1	2	1		4	8	3	25	25	\$4,647,589
OLD NORTH ROAD	800 N ARARIMU VALLEY ROAD		2	2	1	2	7	5	14	57	\$4,561,282
MAHURANGI EAST ROAD	I JAMES ST	2		1	1		4	1	25	50	\$4,509,477
BANKSIDE ROAD	I WAINUI ROAD	1		2		1	4	3	50	25	\$4,401,507
EAST COAST ROAD	I SPUR ROAD	3	3	1	4	2	13	7	46	46	\$2,464,709
LEIGH ROAD	250 N TI POINT ROAD	2		1		2	5	1	20	20	\$2,082,997
COATESVILLE-RIVERHEAD	380 N LEWIS LANE	1	1	3	1	3	9	4	56	44	\$1,695,163
OLD NORTH ROAD	30 S PINETONE ROAD	1	1	2	3	1	8	3	25	38	\$1,660,447
COATESVILLE-RIVERHEAD	I SCREEN ROAD	2	3	11	1	2	19	12	89	21	\$1,607,652
COATESVILLE-RIVERHEAD	I LEWIS LANE	3	1	1	2	1	8	5		13	\$1,587,575
MURIWAI ROAD	I FLETCHER ROAD	1		1	1	2	5	1	20		\$1,497,754
EAST COAST ROAD	880 N OKURA RIVER ROAD	1	1	1		2	5	3	80	60	\$1,423,287
EAST COAST ROAD	600 W HAIGH ACCESS ROAD		1		1	1	3		33	33	\$1,395,520
SPUR ROAD	I NEWMAN ROAD	1	1		1	1	4	2	25		\$1,386,530
MAHURANGI EAST ROAD	I SANDSPIT ROAD	2	4	7	1	1	15	13	47	13	\$1,219,987
MANGAWHAI ROAD	500 S CARTER ROAD	2	1	3	3		9	3	22	11	\$1,189,864
EAST COAST ROAD	I FORGE ROAD		3	2	2	3	10	6	20	50	\$1,127,858
COATESVILLE-RIVERHEAD	370 S SUNNYSIDE ROAD	3	2	5		1	11	8	36	18	\$1,122,504
COATESVILLE-RIVERHEAD	1200 W OBRIEN ROAD		3	2	1		6	1	83	33	\$1,033,417
EAST COAST ROAD	I OKURA RIVER ROAD	3	1	2	2		8	5	63	75	\$1,008,313
RIVERHEAD ROAD	I DEACON ROAD	3		1	1	1	6	3	50		\$956,807
DUCK CREEK ROAD	100 N PINESTEAD REACH			3	1	1	5	2	100	20	\$887,894
COATESVILLE-RIVERHEAD	40 E BARRETT ROAD	1	1		2		4	1	75	25	\$859,876
MATAKANA ROAD	I WRIGHT ROAD	1	1	1		1	4	1	50	25	\$859,876
COATESVILLE-RIVERHEAD	I MILL FLAT ROAD	3	1				4	2			\$836,669
SOUTH HEAD ROAD	1000 N EVANS ROAD		1		2	1	4	2	50	75	\$825,174
OLD NORTH ROAD	230 N BROADWOOD RISE	1			2		3		67	33	\$821,240
KAHIKATEA FLAT ROAD	270 W FROST ROAD	1		1	1	2	5	4		40	\$813,427
MURIWAI ROAD	I VALLEY ROAD			2	2		4	2		50	\$802,634
PEAK ROAD	I CHATHAM ROAD	1	1			1	3	1	67	100	\$791,174
KAHIKATEA FLAT ROAD	70 S SELMAN ROAD	1		1	1		3	1	33	67	\$788,417
NEWMAN ROAD	I EAST COAST ROAD	1		1		1	3	1		67	\$788,417
BLACKBRIDGE ROAD	620 W JEAN MACKAY PLACE	1		1		1	3	1	33	67	\$768,634
FARRAND ROAD	I WAITAKERE ROAD				2	1	3	1	67		\$765,877
MATAKANA ROAD	550 W SHARP ROAD			1	1	1	3	1		33	\$765,877
TAWA ROAD	50 N AWA ROAD	1			3		4	3	50	50	\$756,887
SOUTH HEAD ROAD	940 E EVANS ROAD		1	1	1	1	4	3	25		\$756,009
OLD NORTH ROAD	I OLD NORTH ROAD W	3	3	3	2	5	16	13	19	31	\$749,567
WERANUI ROAD	1890 W WAIWERA ROAD		2			1	3	2	33	33	\$741,792
KAHIKATEA FLAT ROAD	40 W SH 16	1		1		1	3	2	67	33	\$720,130
MATAKANA ROAD	500 S GOLF ROAD				1	2	3	2		67	\$717,374
SANDSPIT ROAD	1300 E MATAKANA ROAD				1	2	3	2	67	67	\$717,374
COATESVILLE-RIVERHEAD	I WAKE ROAD		2	4	2	4	12	7	67	17	\$689,397
MATAKANA ROAD	200 N MELWOOD DRIVE	4	2		1	4	11	6	55	82	\$669,832
EAST COAST ROAD	I AWANOHI ROAD	3	3	2	1	1	10	6	30	40	\$581,632
DEACON ROAD	200 W FORESTRY ROAD	1		3		5	9	4	100	44	\$580,187
COATESVILLE-RIVERHEAD	170 N RIDGE ROAD	1	1	3	4		9	5	56	44	\$529,460

**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 \$150000 in social costs**

CRASH ROAD	SIDE ROAD	2005	2006	2007	2008	2009	TOTAL	Non-Injury	Wet Crash %	Dark Crash %	Crash Costs
MURIWAI ROAD	I HAMILTON ROAD	2	2		2		6	2	33	17	\$432,010
OLD NORTH ROAD	500 S PEAK ROAD	1		1		3	5	1	60		\$384,657
WOODCOCKS ROAD	I FALLS ROAD	1	1	4	2	1	9	8	44		\$383,950
MATAKANA ROAD	100 S ANDERSON ROAD	2	3		1		6	3	17	17	\$383,345
LEIGH ROAD	I TAKATU ROAD	1	1	1	1	2	6	3	67	17	\$370,686
OLD NORTH ROAD	40 S WAIKOUKOU VALLEY ROAD		2	1	1	1	5	2	40	60	\$335,092
OLD NORTH ROAD	I OLD RAILWAY ROAD		2		1	2	5	2	40		\$335,092
OLD NORTH ROAD	1090 E KIWITAHĪ ROAD	2		1		2	5	2	40	20	\$334,807
PEAK ROAD	2000 N OLD NORTH ROAD	2		1	1		4	1	25		\$302,154
COATESVILLE-RIVERHEAD	280 S SHORT ROAD		2	1	1		4	1			\$298,336
COATESVILLE-RIVERHEAD	2620 N MILL FLAT ROAD		1	1	2		4	1	25	50	\$296,457
OLD NORTH ROAD	420 N KIWITAHĪ ROAD			2	1	1	4	1	25		\$292,537
PINE VALLEY ROAD	400 W OLD PINE VALLEY ROAD				1	3	4	1	50	75	\$292,537
WAIKOUKOU VALLEY ROAD	1610 S OLD NORTH ROAD			3	1		4	1	25	25	\$292,537
PEAK ROAD	I OLD NORTH ROAD		4		1		5	3		20	\$290,347
EAST COAST ROAD	450 S WORSNOP WAY	1	1	1		2	5	3		60	\$289,529
KAHIKATEA FLAT ROAD	I RAPSON ROAD	1	1		3		5	3		40	\$285,426
EAST COAST ROAD	I WILKS ROAD		1		3	1	5	3		40	\$282,669
COATESVILLE-RIVERHEAD	1000 W SH 17			3	1	1	5	3	40	60	\$280,791
KAHIKATEA FLAT ROAD	I WHITEHILLS ROAD		2	1	3		6	5	17	17	\$272,802
MATAKANA ROAD	I OAK RIVER DRIVE		1		1	4	6	5	50	83	\$270,923
COATESVILLE-RIVERHEAD	I OLD RAILWAY ROAD	1		1	1	1	4	2			\$246,790
OLD NORTH ROAD	250 N SH 16	1		1	1	1	4	2	25	25	\$246,790
KAHIKATEA FLAT ROAD	700 W RAPSON ROAD		2	2	1		5	4	20	60	\$238,086
EAST COAST ROAD	I JOHN BRIAN DRIVE	2	1	3			6	6	33	33	\$227,933
BROWNS ROAD	I OLD NORTH ROAD	1	1		1		3	1		33	\$218,057
EAST COAST ROAD	800 N BAWDEN ROAD	1	1			1	3	1	67		\$218,057
KAHIKATEA FLAT ROAD	500 W HULL ROAD	1	1		1		3	1	33		\$216,016
WAITEITEI ROAD	530 N POOL ROAD	1	1		1		3	1			\$216,016
EAST COAST ROAD	440 S JOHN BRIAN DRIVE	1		1	1		3	1		33	\$214,137
MURIWAI ROAD	I TAHA ROAD	1			1	1	3	1	67		\$214,137
OLD NORTH ROAD	620 S KIWITAHĪ ROAD	1			1	1	3	1	33	33	\$214,137
PARKHURST ROAD	350 S FORDYCE ROAD	1		1		1	3	1	33	33	\$214,137
SUNNYSIDE ROAD	1500 N COATESVILLE-RIVERHEAD	1			2		3	1	67		\$214,137
WAINUI ROAD	I KOWHAI ROAD	1		1	1		3	1	33		\$214,137
DUCK CREEK ROAD	900 E SPUR ROAD		1	1	1		3	1	67	33	\$211,197
OMAHA FLATS ROAD	400 E TAKATU ROAD	1			1	1	3	1			\$210,034
OLD NORTH ROAD	2000 N DEACON ROAD			1	1	1	3	1	67		\$207,277
TAKATU ROAD	200 S OMAHA FLATS ROAD			1	1	1	3	1	33	33	\$207,277
MATAKANA ROAD	100 W SHARP ROAD	2		1	1		4	3	50	75	\$205,147
TROTTER COURSE DRIVE	I WAITAKERE ROAD	2				2	4	3	50	25	\$205,147
SHARP ROAD	700 S MATAKANA ROAD		2	3			5	5	60	60	\$187,542
COATESVILLE-RIVERHEAD	I NEWTON ROAD	1		2			3	2	33		\$165,634
DAIRY STREAM ROAD	100 N BAWDEN ROAD		2			1	3	2	67		\$164,572
SUNNYSIDE ROAD	560 W GREEN ROAD		2		1		3	2		67	\$164,572
MANGAWHAI ROAD	I TE ARAI POINT ROAD	2			1		3	2	67	33	\$164,287
MURIWAI ROAD	I SCHOOL ROAD N	1	1			1	3	2		67	\$163,409
PEAK ROAD	100 E SH 16	1	1		1		3	2		33	\$163,409
SOUTH HEAD ROAD	25 N EVANS ROAD		1	1		1	3	2	33	33	\$162,694
KAHIKATEA FLAT ROAD	210 W FIELD LANE	1			1	1	3	2		67	\$161,530
WOODCOCKS ROAD	50 E OLD KAIPARA ROAD	1		1		1	3	2	33	67	\$161,530

**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 \$150000 in social costs**

CRASH ROAD	SIDE ROAD	2005	2006	2007	2008	2009	TOTAL	Non-Injury	Wet Crash %	Dark Crash %	Crash Costs
KAHIKATEA FLAT ROAD	1500 W PINE VALLEY ROAD		1	1	1		3	2		67	\$160,652
PEAK ROAD	200 S SINCLAIR ROAD		1	1	1		3	2	67	67	\$160,652
POTTER ROAD	200 E SUNNYSIDE ROAD		1	1	1		3	2	33	33	\$160,652
SHARP ROAD	I MONARCH DOWNS WAY		1	1	1		3	2	33	33	\$160,652
MATAKANA VALLEY ROAD	600 N SMITH ROAD				1	2	3	2	33	33	\$158,774
MURIWAI ROAD	1000 W VALLEY ROAD			2	1		3	2			\$158,774
NIXON ROAD	530 N NELSON ROAD				3		3	2	33	33	\$158,774
NIXON ROAD	I RED HILLS ROAD			1	1	1	3	2	67		\$158,774
TAKATU ROAD	40 E WHITMORE ROAD				2	1	3	2		33	\$158,774
WAITAKERE ROAD	500 S FARRAND ROAD			2	1		3	2		67	\$158,774
WEST COAST ROAD	430 W KOMOKORIKI HILL ROAD			2	1		3	2	33	33	\$158,774
WILSON ROAD	500 S BAWDEN ROAD				2	1	3	2		67	\$158,774

**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 \$150000 in social costs

CRASH ROAD		SIDE ROAD	2005	2006	2007	2008	2009	TOTAL	Non-Injury	Wet Crash %	Dark Crash %	Crash Costs
SH 1N	I	SCHOLLUM ACCESS ROAD	6	5	5	3	6	25	18	64	36	\$10,152,845
SH 1N		300 N WAIWHIU ROAD	3	2	3	2	0	10	5	60	30	\$9,032,818
SH 16		400 S KIWITAHU ROAD	2	1	2	0	0	5	1	40	60	\$8,695,057
SH 17	I	SILVERDALE ST	5	6	9	8	9	37	28	16	16	\$6,570,550
SH 1N	A	FALLS BR	5	3	6	5	5	24	19	79	29	\$6,365,805
SH 1N	I	WAYBY VALLEY ROAD	2	1	1	5	3	12	5	17	17	\$6,112,520
SH 1N		500 N SAUNDERS ROAD	4	4	6	0	4	18	13	83	50	\$5,587,847
SILVERDALE OFF SBD	I	SH 17	1	0	3	2	2	8	4	0	25	\$5,230,804
SH 16		500 S OLD RAILWAY ROAD	3	1	2	1	3	10	7	10	50	\$5,204,073
SH 1N	I	MOIRS HILL ROAD	1	2	2	0	2	7	4	57	0	\$5,091,046
SH 1N		80 N TOOVEY ROAD	0	0	2	2	1	5	3	0	40	\$5,042,611
SH 1N	I	VIPOND ROAD	1	1	0	0	1	3	1	33	0	\$4,993,516
SH 1N		3430 S FALLS BR	2	5	3	2	2	14	10	86	36	\$4,932,880
SH 1N		1800 S CENTENNIAL PARK ROAD	1	5	1	1	1	9	6	56	44	\$4,691,691
SH 1N		300 N WHAKAPIRAU ROAD	2	4	3	1	0	10	7	80	20	\$4,673,293
SH 1N		500 N KAIPARA FLATS ROAD	1	2	1	1	1	6	2	50	17	\$4,628,472
SH 1N		120 N BAWDEN OBR	1	1	4	1	0	7	5	29	57	\$4,566,263
SH 16		580 E MATUA ROAD	0	3	0	0	2	5	2	40	80	\$4,540,272
SH 1N		670 N BOSHER ROAD	2	2	0	0	0	4	1	50	25	\$4,513,316
SH 1N		1000 S MAHURANGI WEST ROAD	1	2	1	0	1	5	3	20	0	\$4,490,525
SH 16	I	RIMMER ROAD	2	1	0	1	0	4	2	25	50	\$4,456,687
SH 1N		300 N FOWLER ACCESS ROAD	4	1	1	0	1	7	5	14	29	\$4,455,028
SH 1N		800 S SILVER HILL ROAD	0	0	2	0	1	3	1	67	67	\$4,410,497
SH 1N		200 N VALERIE CLOSE N	1	1	0	1	1	4	3	50	50	\$4,403,386
SH 1N	I	L PHILLIPS ROAD	1	1	0	1	1	4	3	25	25	\$4,403,386
SH 16		100 N STONEY CREEK ROAD	0	1	2	1	0	4	3	75	75	\$4,400,629
SH 1N	I	BOSHER ROAD	0	0	0	1	3	4	3	0	50	\$4,398,751
SH 17	I	FOLEY QUARRY ROAD	1	0	0	2	1	4	1	25	25	\$4,397,757
SH 16		20 S KANOHI ROAD	0	2	1	0	0	3	2	0	67	\$4,365,832
SH 1N		3000 S WAYBY VALLEY ROAD	0	0	2	0	1	3	2	100	100	\$4,361,994
SH 17	I	RED BEACH ROAD	8	3	5	1	2	19	15	0	37	\$4,304,727
SH 17		300 N ACCESS ROAD	1	0	2	0	1	4	3	75	50	\$4,300,751
SH 16		960 S PRICTOR ROAD	1	0	0	0	2	3	2	33	33	\$3,766,566
OLD NORTH ROAD	I	SH 17	1	3	1	2	1	8	5	38	25	\$3,500,408
SH 1N		50 S SH 16	0	1	1	1	0	3	1	0	0	\$3,330,970
SH 16	I	TAUPAKI ROAD	5	8	8	9	7	37	21	8	5	\$2,749,456
SH 17		100 W SCHISCHKA ROAD	3	2	9	17	11	42	30	86	24	\$2,696,453
SH 17	I	WAINUI ROAD	9	10	6	9	2	36	22	33	31	\$2,651,769
SH 17	I	COATESVILLE-RIVERHEAD	8	4	5	4	5	26	16	35	31	\$2,603,871
SH 17		150 S EAST COAST ROAD	4	1	1	2	2	10	5	10	10	\$2,318,653
SH 1N		500 N MAHURANGI WEST ROAD	5	4	6	5	3	23	17	57	35	\$2,285,974
SH 1N	I	TWIN STREAM ROAD	6	1	0	2	1	10	7	30	0	\$2,247,742
SH 16	I	KAHIKATEA FLAT ROAD	2	0	1	1	3	7	3	29	14	\$2,132,624
KRAACK ROAD	I	SH 1N	3	4	6	5	3	21	9	67	14	\$1,944,709
SH 16		200 W OLD NORTH ROAD	2	3	3	4	1	13	7	38	23	\$1,899,249
SH 17	I	WAIWERA ROAD	5	9	5	5	1	25	18	24	48	\$1,832,114
SH 17		1600 S WAIWERA ROAD	2	1	5	4	5	17	8	65	29	\$1,649,212
SH 1N		180 S WILKS OBR	1	4	1	1	0	7	3	43	43	\$1,600,607
SH 17	I	KAHIKATEA FLAT ROAD	1	2	3	1	1	8	6	0	13	\$1,535,437
SH 1N		900 N WAIWHIU ROAD	1	3	2	0	0	6	3	100	67	\$1,532,966

**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 \$150000 in social costs

CRASH ROAD		SIDE ROAD	2005	2006	2007	2008	2009	TOTAL	Non- Injury	Wet Crash %	Dark Crash %	Crash Costs
SH 17	I	SILVERDALE PARKWAY	5	3	2	6	3	19	13	21	26	\$1,529,079
SH 16		190 E TAUPAKI ROAD	2	0	4	0	0	6	3	33	50	\$1,512,651
SH 16		1700 S OGLE ROAD	0	1	0	1	2	4	0	25	50	\$1,462,160
SH 16		100 W JOYCE ADAMS PLACE	2	0	2	0	0	4	2	25	75	\$1,366,747
SH 17		1200 S WAIWERA ROAD	4	3	1	3	3	14	11	36	29	\$1,206,078
SH 16	I	TRIGG ROAD	0	1	2	0	3	6	3	33	50	\$1,200,332
SH 1N		530 S SCHOLLUM ACCESS ROAD	0	0	3	1	6	10	5	30	40	\$1,168,684
SH 1N	I	MCKINNEY ROAD	1	3	4	0	1	9	4	22	0	\$1,163,023
SH 17	I	GREEN ROAD	2	1	2	2	2	9	4	33	33	\$1,159,103
SH 17		380 N RICHARDS ROAD	1	2	0	3	3	9	5	33	44	\$1,114,703
SH 1N	I	COWAN BAY ROAD	3	2	3	1	0	9	5	44	22	\$1,099,555
SH 1N	I	VALERIE CLOSE S	2	4	1	2	4	13	12	31	38	\$1,097,970
SH 1N		100 N MANGAWHAI ROAD	1	0	2	4	1	8	3	50	50	\$1,097,927
SH 16	I	RIVERHEAD ROAD	1	3	4	0	2	10	4	10	30	\$1,092,930
SH 17	I	POSTMAN ROAD	1	0	2	4	3	10	7	50	40	\$1,074,435
SH 17	I	SILVERDALE ON NBD	2	4	2	2	1	11	8	18	18	\$1,070,153
SH 16	I	OLD RAILWAY ROAD	3	2	1	2	1	9	4	22	22	\$1,069,724
SH 1N		370 S KRAACK ROAD	1	4	1	3	1	10	8	70	50	\$1,056,149
SH 1N		500 N WAYBY STATION ROAD	1	0	2	3	0	6	1	67	33	\$1,028,517
SH 1N	I	WHITAKER ROAD	6	5	1	4	3	19	15	16	16	\$999,815
SH 16		1500 S TUHIRANGI ROAD	0	2	1	0	1	4	0	50	0	\$926,100
SH 16		300 E COATESVILLE-RIVERHEAD	0	2	2	2	1	7	5	29	14	\$916,662
SH 1N		2000 S WAYBY STATION ROAD	1	3	0	1	0	5	2	40	60	\$914,170
SH 1N	I	TOLL BOOTH ENT STH	1	0	3	0	2	6	4	33	33	\$878,904
SH 16		1600 W DAVIES ROAD	1	1	0	2	0	4	1	25	25	\$861,917
SH 17		600 S HORSESHOE BUSH ROAD	0	0	2	0	2	4	1	50	75	\$851,137
SH 16		250 N MAKARAU ROAD	0	2	1	1	1	5	3	40	60	\$843,148
SH 17	I	PINE VALLEY ROAD	2	2	0	2	0	6	5	0	50	\$836,915
SH 1N		150 S ROSS ROAD	1	1	1	0	1	4	2	50	50	\$827,052
SH 17	I	WEST HOE ROAD	4	2	1	2	0	9	5	0	0	\$822,294
SH 16		1200 E MCPIKE ROAD	2	1	1	0	1	5	4	20	40	\$818,063
SH 1N		10 S WECH DRIVE N	0	0	1	1	1	3	0	0	33	\$814,380
SH 16		2280 N WEST COAST ROAD	0	1	0	1	2	4	2	25	0	\$804,512
SH 1N		1000 S MANGAWHAI ROAD	1	2	1	1	0	5	4	0	20	\$798,359
SH 1N		1630 S WILKS OBR	0	2	1	2	0	5	4	60	20	\$794,645
SH 17		500 N POTTER ROAD	0	2	0	1	0	3	1	33	67	\$790,296
SH 1N		500 S CENTENNIAL PARK ROAD	0	0	2	1	1	4	2	25	0	\$785,693
SH 16		630 N BRIGHAM CREEK ROAD	2	0	0	0	1	3	2	0	33	\$742,670
SH 17	I	VERONICA CLOSE	0	2	1	1	2	6	5	50	17	\$727,742
SH 16		300 W MCPIKE ROAD	0	0	1	1	1	3	2	67	67	\$717,374
SH 17	I	SMALL ROAD	2	4	6	3	3	18	17	33	50	\$706,214
SH 16	I	MURIWAI ROAD	6	0	0	5	4	15	9	7	20	\$693,102
SH 17	I	EAST COAST ROAD	2	3	4	3	2	14	11	14	29	\$649,415
SH 1N	I	DAVIES ROAD	0	1	1	1	2	5	3	20	20	\$642,990
SH 1N	I	PUHOI ROAD	0	3	3	2	2	10	5	40	50	\$619,803
SH 17	I	BEACH ROAD	0	0	1	3	0	4	2	25	0	\$617,860
SH 17		500 S WAIWERA ROAD	2	4	3	3	0	12	9	42	50	\$588,824
SH 1N	I	SILVERDALE OFF NBD	3	2	1	2	2	10	6	30	30	\$581,795
SH 17	I	TOTARA VIEWS DRIVE	4	4	1	1	1	11	8	18	18	\$574,521
SH 17		80 N FLORENCE AVENUE	2	0	1	1	0	4	3	0	50	\$566,444

**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 \$150000 in social costs

CRASH ROAD		SIDE ROAD	2005	2006	2007	2008	2009	TOTAL	Non- Injury	Wet Crash %	Dark Crash %	Crash Costs
SH 16	I	TAPU ROAD	1	1	0	0	1	3	2	33	0	\$549,122
SH 16	I	FOSTER ROAD	1	2	4	2	0	9	5	11	22	\$535,421
SH 16		1680 W ABEL ROAD	0	1	2	2	4	9	5	56	11	\$526,703
SH 17		50 E FOWLER ACCESS ROAD	3	3	5	2	1	14	13	21	7	\$526,185
SH 1N		1200 S WAYBY STATION ROAD	4	0	1	1	3	9	6	78	11	\$474,511
SH 17	I	POTTER ROAD	2	2	4	0	0	8	5	13	50	\$450,876
MATUA ROAD W	I	SH 16	2	1	2	3	0	8	5	38	50	\$448,998
SH 1N		1200 S SILVERDALE OBR	0	2	2	2	2	8	5	50	50	\$445,363
SH 1N		750 S ROSS ROAD	1	0	1	1	2	5	0	60	20	\$433,160
SH 1N		300 N LONELY TRACK OBR	0	1	3	4	2	10	9	30	50	\$417,950
SH 1N		1800 N OTEHA VALLEY OBR	1	5	1	3	1	11	11	36	45	\$416,476
SH 1N		1000 N WAYBY VALLEY ROAD	1	1	3	2	0	7	4	43	57	\$409,484
SH 16	I	MCLACHLAN ROAD	0	3	1	1	0	5	1	40	20	\$387,516
SH 17		1300 N SCHISCHKA ROAD	2	1	2	3	0	8	6	25	25	\$381,513
SH 16	I	ANDERSON ROAD	2	2	0	1	1	6	3	67	0	\$381,466
SH 17	I	BAWDEN ROAD	1	2	1	2	0	6	3	0	33	\$376,668
SH 16	I	COATESVILLE-RIVERHEAD	1	0	1	5	2	9	8	22	44	\$365,131
SH 17		2000 S WAIWERA ROAD	1	2	1	2	2	8	7	50	13	\$349,072
SH 16	I	ORAHA ROAD	2	3	2	3	0	10	7	0	10	\$335,122
SH 1N		500 S BAWDEN OBR	1	3	2	0	0	6	4	33	33	\$332,085
SH 16		500 S RIMMER ROAD	1	2	2	0	1	6	4	83	33	\$328,165
SH 17		80 S SILVERDALE ST	2	3	2	0	0	7	6	43	14	\$316,951
SH 1N		1240 S CENTENNIAL PARK ROAD	1	0	1	1	1	4	1	50	50	\$299,397
SH 1N		1790 S PERRY ROAD	2	2	0	1	0	5	3	20	20	\$294,144
SH 16		1780 N HUTCHINSON ROAD	1	1	1	1	1	5	3	20	40	\$285,426
SH 1N	A	AWANOHI OBR	0	2	2	0	1	5	3	0	60	\$284,548
SH 17	I	CENTREWAY ROAD	1	2	3	2	2	10	8	10	50	\$281,936
SH 1N		1000 N LONELY TRACK OBR	0	0	3	1	1	5	3	60	80	\$280,791
SH 16	I	ACCESS ROAD	3	1	2	2	2	10	8	30	50	\$280,204
SH 1N		2200 S SILVERDALE ON SBD S	1	0	3	1	1	6	5	33	83	\$271,801
SH 1N		400 S VALERIE CLOSE	2	0	0	1	0	3	0	33	100	\$269,500
SH 17	I	WILKS ROAD	1	2	0	1	0	4	2	50	0	\$254,651
SH 1N	I	MANGAWHAI ROAD	0	0	0	1	2	3	0	67	67	\$250,880
SH 17	I	FLORENCE AVENUE	0	2	2	2	2	8	6	13	25	\$245,504
SH 1N		730 S WRIGHT OBR	3	0	0	2	0	5	4	40	60	\$244,661
SH 1N		1300 N WAYBY VALLEY ROAD	0	0	3	0	1	4	2	50	25	\$244,034
SH 16		500 N KANOHI ROAD	2	2	0	0	1	5	4	20	40	\$241,558
SH 1N	I	WAIMANU ROAD	1	2	0	0	2	5	4	20	20	\$238,802
SH 1N		300 S PERRY ROAD	1	0	2	1	1	5	4	20	0	\$235,044
SH 16	I	RESTAL ROAD	0	1	3	0	1	5	4	60	20	\$234,166
RIVER ROAD	I	HIBISCUS COAST HIGHWA'	1	0	2	0	1	4	1	25	25	\$232,390
SH 1N		1370 N LONELY TRACK OBR	0	5	0	1	0	6	6	33	50	\$229,934
SH 1N		3400 S WAYBY VALLEY ROAD	1	3	1	0	1	6	6	83	33	\$228,934
SH 1N		2600 S WAYBY STATION ROAD	2	0	1	2	1	6	6	17	33	\$226,055
SH 1N		1600 N PUHOI ROAD	2	1	0	0	0	3	1	33	33	\$220,814
SH 1N		1000 N SCHOOL ROAD	0	0	1	1	3	5	4	40	0	\$215,347
SH 17		150 S WHANGAPARAOA ROAD	0	2	0	1	0	3	1	0	0	\$215,117
SH 1N	A	WAINUI OBR	0	1	1	1	0	3	1	0	33	\$209,156
SH 16	I	WOODHILL PARK ROAD	1	0	1	1	1	4	3	25	50	\$202,391
SH 17		500 N HATFIELDS BR	0	2	1	0	1	4	3	50	50	\$201,329
SH 1N		150 N MAHURANGI WEST ROAD	1	0	1	2	0	4	3	25	50	\$198,287
SH 16	I	DAVIES ROAD	0	2	0	2	1	5	3	20	0	\$194,992
SH 1N		2000 N WAIWHIU ROAD	1	3	0	0	1	5	5	40	20	\$192,177

**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 \$150000 in social costs

CRASH ROAD		SIDE ROAD	2005	2006	2007	2008	2009	TOTAL	Non- Injury	Wet Crash %	Dark Crash %	Crash Costs
SH 1N	I	SILVERDALE OFF SBD	0	3	1	0	1	5	5	40	20	\$189,420
SH 1N		980 S WILKS OBR	1	1	0	3	0	5	5	40	60	\$188,420
SH 17	I	OCEAN VIEW ROAD	1	1	0	1	0	3	1	0	0	\$187,390
SH 1N		700 S PERRY ROAD	1	0	2	2	0	5	5	20	20	\$186,541
SH 1N	I	HUDSON ROAD	0	1	3	0	1	5	5	20	0	\$185,663
OREWA ON SBD		10 S GRAND DRIVE	1	0	2	0	1	4	3	50	75	\$176,447
SH 1N		70 S BILLING ROAD	1	1	0	0	1	3	2	0	0	\$167,512
SH 16		1200 N WHAREHINE ROAD	0	1	1	0	1	3	2	0	67	\$162,694
SH 1N		570 N KOWHAI OBR	0	1	0	0	2	3	2	0	33	\$162,694
SH 17		400 S POTTER ROAD	0	2	0	1	0	3	2	0	67	\$162,531
SH 16		1080 S RIMMER ROAD	0	1	1	0	1	3	2	67	100	\$160,652
SH 1N	A	KAIPARA FLATS ROAD	0	1	1	1	0	3	2	67	0	\$160,652
SH 16		80 S HUTCHINSON ROAD	0	0	0	0	3	3	2	33	33	\$158,774
SH 17	I	GOODLAND DRIVE	0	0	0	3	0	3	2	0	0	\$158,774
SH 17		800 N HAMMOND AVENUE	4	0	0	0	0	4	4	25	50	\$158,054
SH 1N	I	SANDSPIT ROAD	3	2	0	1	3	9	9	22	22	\$156,616
SH 16		600 S RESTAL ROAD	1	1	1	1	0	4	4	50	75	\$151,663

**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 %
WHANGAPARAOA ROAD	I	WADE RIVER ROAD	0	2	1	2	1	5	11	7	0	18
STANMORE BAY ROAD	I	WHANGAPARAOA ROAD	0	1	1	2	1	4	9	8	22	33
CENTREWAY ROAD	I	MOENUI AVENUE	2	0	0	1	1	4	8	7	13	13
VIPOND ROAD	I	DOYLY DRIVE	0	1	0	2	1	3	7	7	43	71
MOTUTARA ROAD		300 N MURIWAI ROAD	1	1	0	0	1	4	7	4	86	43
WHANGAPARAOA ROAD	I	TIRI ROAD S	1	0	0	0	1	3	5	4	60	40
WHANGAPARAOA ROAD		70 W JOHN DEE CRESCENT	0	0	0	0	0	3	3	2	33	33
WHANGAPARAOA ROAD		50 S DOYLY DRIVE	0	0	0	0	0	3	3	1	67	67
HILLCREST ROAD		100 W SH 17	0	1	0	0	0	2	3	3	0	33
WAIORA ROAD	I	ELLISTON CRESCENT E	0	0	1	0	0	2	3	1	0	0
WHANGAPARAOA ROAD	I	BLUE HERON RISE	0	1	0	0	0	2	3	3	67	33

**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 %
DEACON ROAD		200 W FORESTRY ROAD	2	1	0	3	0	5	11	5	100	45
OLD NORTH ROAD		500 E ARARIMU VALLEY ROAD	1	1	0	2	3	4	11	4	27	18
EAST COAST ROAD	I	BAWDEN ROAD	1	1	2	1	0	4	9	4	22	22
OLD NORTH ROAD		500 S PEAK ROAD	1	1	0	1	0	3	6	1	50	0
MATAKANA ROAD	I	OAK RIVER DRIVE	0	0	1	0	1	4	6	5	50	83
PINE VALLEY ROAD		400 W OLD PINE VALLEY ROAD	0	0	0	0	1	3	4	1	50	75
MATAKANA ROAD		500 S GOLF ROAD	0	0	0	0	1	2	3	2	0	67
MATAKANA VALLEY ROAD		600 N SMITH ROAD	0	0	0	0	1	2	3	2	33	33



**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	530 S SCHOLLUM ACCESS ROAD	2	0	0	3	1	6	12	6	33	42
SH 16	1680 W ABEL ROAD	0	0	1	2	2	4	9	5	56	11
SH 1N	1000 N SCHOOL ROAD	1	0	0	1	1	3	6	5	50	0
SH 16	I TRIGG ROAD	0	0	1	2	0	3	6	3	33	50
SH 1N	I BOSHER ROAD	1	0	0	0	1	3	5	3	20	40
SLIP ROAD	I SH 1N	0	0	1	0	0	2	3	3	33	33
SH 16	80 E ACCESS ROAD	0	1	0	0	0	2	3	2	33	0
SH 16	100 E MATUA ROAD E	1	0	0	0	0	2	3	1	33	33
SH 16	960 S PRICTOR ROAD	0	1	0	0	0	2	3	2	33	33
SH 1N	I MANGAWHAI ROAD	0	0	0	0	1	2	3	0	67	67

# appendix

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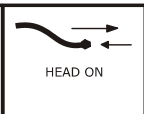


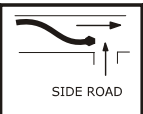


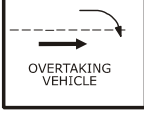
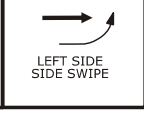







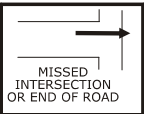
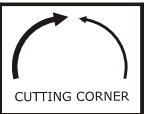
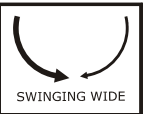
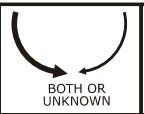
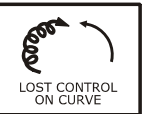
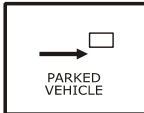


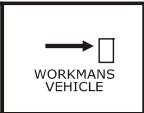
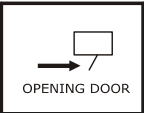
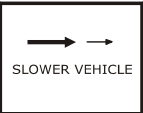

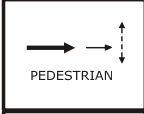
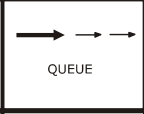
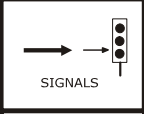
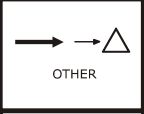

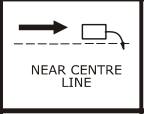

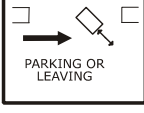
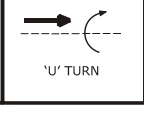
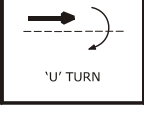

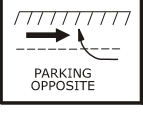


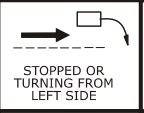
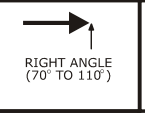
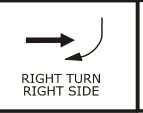
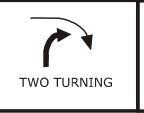
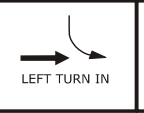
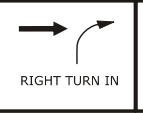

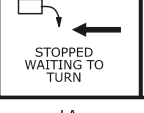
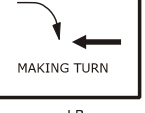
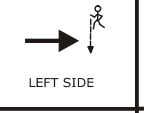
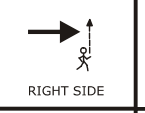
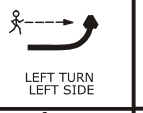
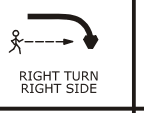
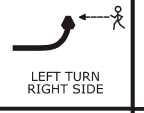
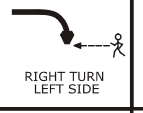


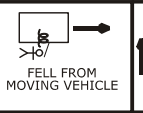
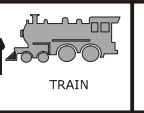
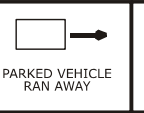
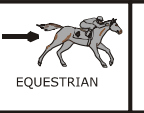
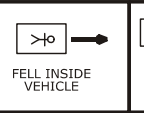
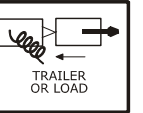
- Groupings of crash types
- Grouping of contributing factors
- General factor list
- General movement types



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

## Groupings of contributing factors








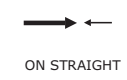
















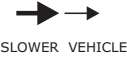











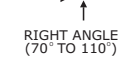









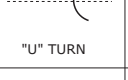
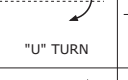

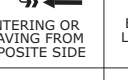
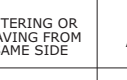






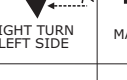





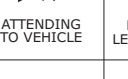
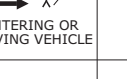
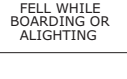


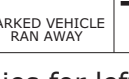

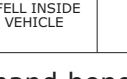
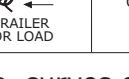
Factor group	Factor codes included
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<b>Too fast</b>	110 – 119 430 – 432
<b>Failed to give way or stop</b>	300 – 314 320 – 328
<b>Failed to keep left</b>	120 – 128 205
<b>Overtaking</b>	150 – 161
<b>Incorrect lanes or position</b>	129 170 – 183 200 – 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**