# *Greater Wellington Region State Highways Road Safety Report 2005 to 2009*





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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 Greater Wellington Region State Highways area ('the region') 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 Greater Wellington Region State Highways. 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 is compared with a peer group of similar authorities (Group Y) along with data for all New Zealand.

The peer group used for comparison with Greater Wellington Region State Highways is Group Y which consists of a major urban area with rural hinterland and provincial towns. (Population 350000-400000 and/or rural crashes less than 30 percent). Council authorities included in this group are listed in Figure 1.4a, however this may not be the most appropriate comparison for the state highways and should be considered with caution.



#### Definitions of urban and rural

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

#### Definition of statistically significant

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

#### Road user compliance data

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

The appropriate web addresses are as follows:

Speed Surveys	http://www.transport.govt.nz/research/SpeedSurveys/
Safety belts	http://www.transport.govt.nz/research/safetybeltstatistics/
Cycle helmets	http://www.transport.govt.nz/research/cyclehelmets2009/

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

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



The results of these surveys are available from:

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

#### General explanatory notes

- 1. Crash and casualty information in this report generally includes data for both roads and state highways.
- 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.

- 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 Figure 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 listed in Figure 9.5 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.



Greater Wellington Region State Highways Road Safety Report 2005



# 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%
New Zealand	36%	35%	37%	35%	33%

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

	<b>Council roads</b>		State Highways	
	Urban	Rural	Urban	Rural
Greater Wellington Region S.H.	41	37	32	14
Group Y	35	30	27	18
All NZ	37	29	27	18

# Figure 1.3 Casualties per 100 million vehicle kilometres travelled

	Counci	l roads	State Hi	ghways
	Urban	Rural	Urban	Rural
Greater Wellington Region S.H.	49	50	43	20
Group Y	44	43	37	29
All NZ	46	42	36	26



# Figure 1.4 Peer group crash and casualty rates

### Regions

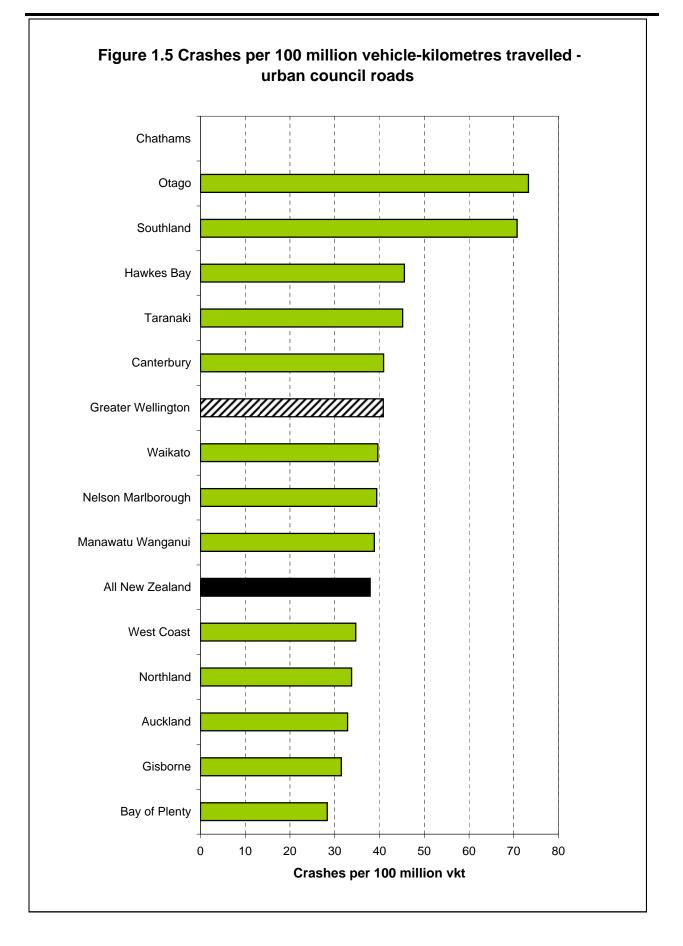
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	ц			ion veh		u			on veh		5	les
	latic ge)	kilometres t Council		s trave Sta		latic ge)	kilometres Council		State		atic	crashes
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	,000 P year a	L.	_	L	_		L.	_			9 Pc	of rural
Region name	1 0,000 (5 year a	Urban	Rural	Urban	Rural	10,000 (5 year	Urban	Rural	Urban	Rural	2009	% of
Auckland	23	33	29	40	14	29	42	41	53	19	1454200	28
Bay of Plenty	16	28	29	17	17	22	35	43	24	27	371020	48
Gisborne	27	31	21	28	28	38	41	31	38	44	46200	47
Hawkes Bay	32	46	30	37	24	44	57	45	48	38	153270	47
Manawatu Wanganui	27	39	25	31	18	38	47	37	42	28	230000	54
Nelson Marlborough	25	39	23	22	20	33	47	35	27	29	136800	52
Southland	91	71	32	57	24	138	102	50	77	39	45330	50
Greater Wellington	27	41	37	32	14	34	49	50	43	20	386480	27
Canterbury	51	41	22	24	14	67	51	31	31	21	278450	30
Chathams	1109	n/a	n/a	n/a	n/a	91	n/a	n/a	n/a	n/a	640	n/a
Northland	26	34	34	20	22	39	43	49	32	39	185900	71
Otago	47	73	43	47	21	69	103	65	65	33	186150	45
Taranaki	28	45	31	30	22	39	58	45	38	33	108240	53
Waikato	32	40	29	22	19	45	50	39	31	30	384870	58
West Coast	38	35	24	20	22	55	48	34	30	33	32590	77
	1	1				1	1					1
All New Zealand	26	38	29	28	18	36	48	42	38	26	4331000	41

N/A : Denotes that data for vehicle kilometres travelled (VKT) is not available or inappropriate for some categories.

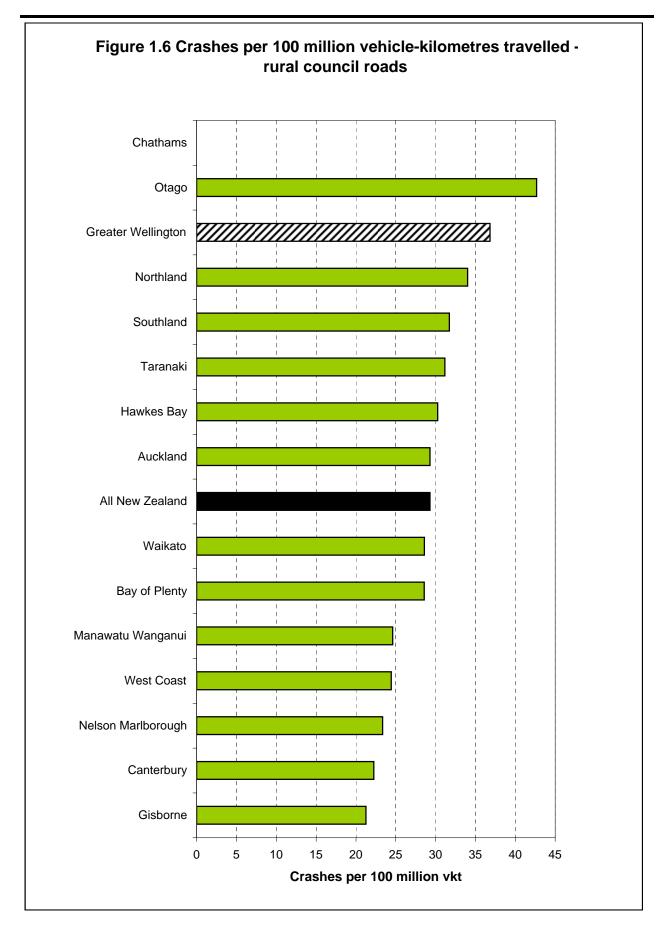
Crashes and casualties per 100 million VKT are based on five years of reported injury on-road crash data (2005-2009) and December 2009 VKT estimates.

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

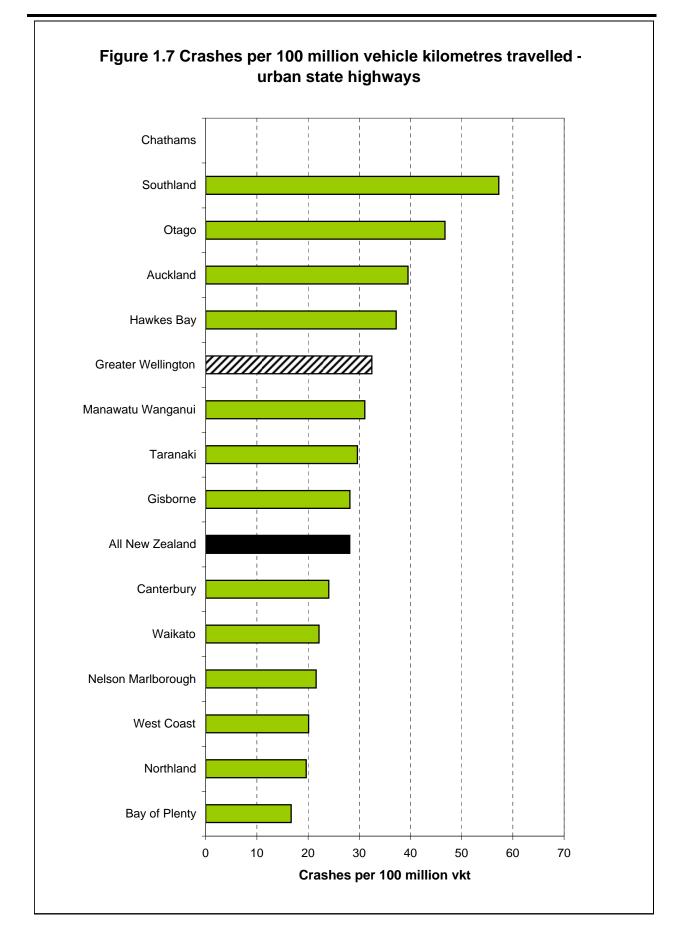




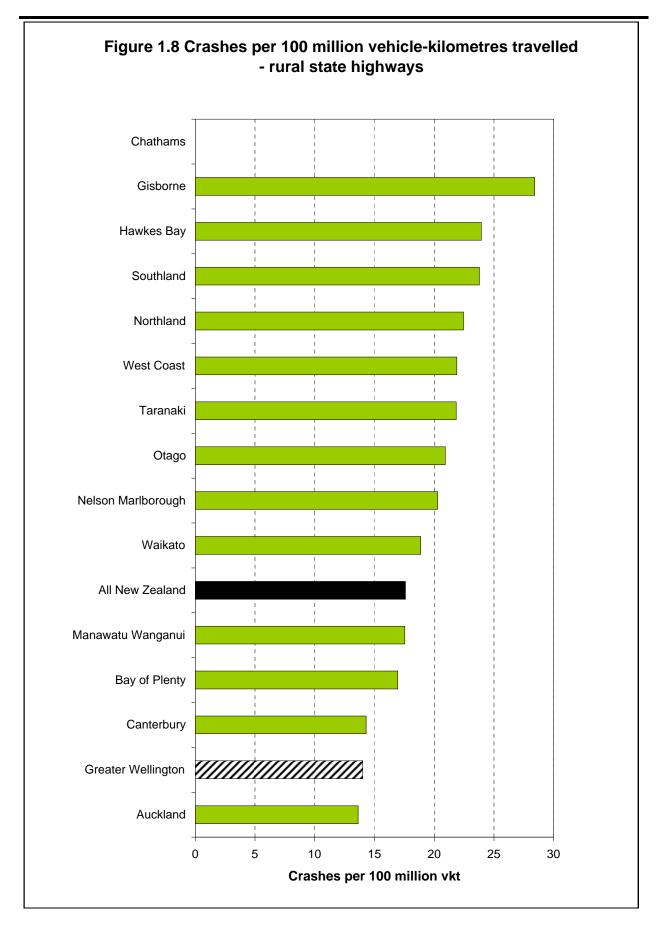














# Figure 1.4 Peer group crash and casualty rates

## Group Y

	Crashes per							ualtie			S	
	ୁ ପ୍ରତି kilometres travelled					ion e)		) millio metre:			uo	of rural crashes
	Population average)		uncil		ate	Population average)	-	uncil		ate	ılati	l crä
			ads		ways	000 Populatio year average)		ads		ways	Population	rura
	10,000 P (5 year	Urban	ral	Urban	ral	10,000 (5 year	Urban	ral	Urban	ral	2009 F	
City or District name	10 (5	Urk	Rural	Urk	Rural	10	Urk	Rural	Urk	Rural	20	%
Gisborne	27	31	21	28	28	38	41	31	38	44	46200	47
Gore	32	47	24	36	17	46	55	39	50	25	12250	59
Grey	29	41	33	18	26	40	50	48	26	36	13750	61
Hastings	35	48	34	45	24	50	59	50	59	40	74300	54
Kapiti Coast	17	29	44	17	12	25	36	67	21	20	48900	46
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
New Plymouth	28	45	39	36	23	38	58	53	44	35	72300	42
Porirua	19	35	42	19	8	25	44	63	29	11	51500	28
Rotorua	25	40	33	24	18	36	48	48	35	30	68200	45
Thames Coromandel	30	32	27	27	25	44	47	35	45	34	26800	63
Timaru	23	43	25	25	11	31	53	38	33	15	44100	42
Upper Hutt	19	33	30	23	24	23	39	37	30	34	40600	48
Whangarei	23	35	30	13	12	36	43	40	28	29	79000	51
Group Y	26	39	30	26	18	36	49	43	36	29	646200	48
All New Zealand	26	38	29	28	18	36	48	42	38	26	4331000	41

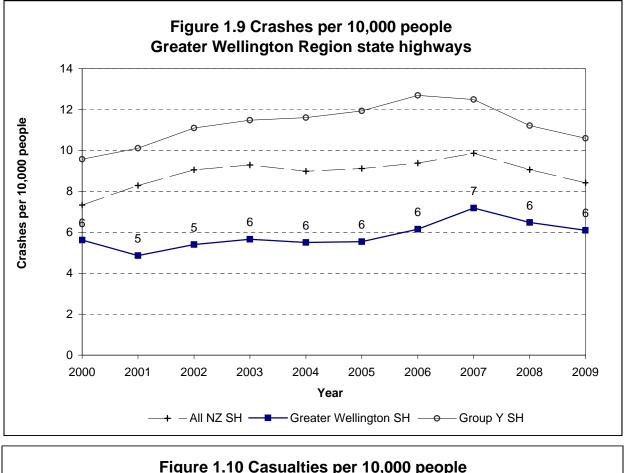
Group Y : Cities and dstricts where the percentage of vehicle kilometres travelled in urban areas is between 30 and 50 percent.

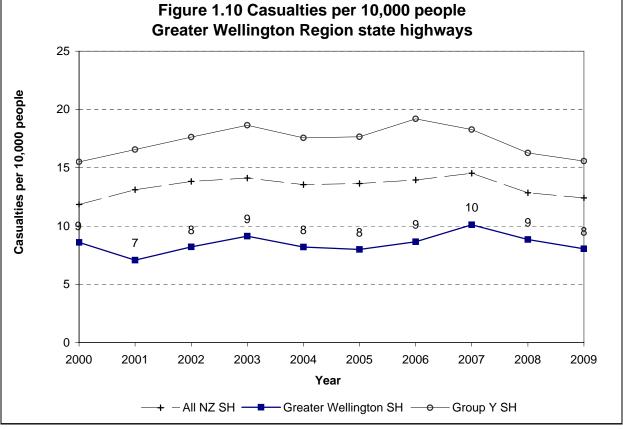
N/A : Denotes that data for vehicle kilometres travelled (VKT) is not available or inappropriate for some categories.

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 1.11 Social cost of crashes in Greater Wellington Region in 2009

		Greater Wellington Region	New Zealand
Council roads	urban	\$171.38	\$1,607.40
Council roads	rural	\$54.39	\$909.43
State Highways	urban	\$26.56	\$299.76
State Highways	rural	\$79.93	\$1,487.35
Total		\$332.26	\$4,303.94

#### 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





	2005	2006	2007	2008	2009	Total	%	Group Y
Fatal crashes	8	16	8	5	5	42	3%	5%
Serious crashes	49	43	50	45	47	234	16%	20%
Minor crashes	199	228	280	257	240	1204	81%	75%
Total injury crashes	256	287	338	307	292	1480	100%	100%
Non-injury crashes	688	805	883	837	823	4036		

#### Figure 2.1: Crash numbers and severity 2005 to 2009 - whole Region

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

	2005	2006	2007	2008	2009	Total	%	Group Y
Fatal crashes	1	4	1	3	1	10	2%	2%
Serious crashes	11	11	16	8	12	58	12%	15%
Minor crashes	68	71	100	86	82	407	86%	83%
Total injury crashes	80	86	117	97	95	475	100%	100%
Non-injury crashes	257	299	388	372	343	1659		

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

	2005	2006	2007	2008	2009	Total	%	Group Y
Fatal crashes	7	12	7	2	4	32	3%	7%
Serious crashes	38	32	34	37	35	176	18%	22%
Minor crashes	131	157	180	171	158	797	79%	72%
Total injury crashes	176	201	221	210	197	1005	100%	100%
Non-injury crashes	431	506	495	465	480	2377		

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

	2005	2006	2007	2008	2009	Total	%	Group Y
Fatal casualties	10	20	8	6	7	51	2%	4%
Serious casualties	61	58	66	51	51	287	14%	18%
Minor casualties	298	325	401	362	327	1713	84%	78%
Total casualties	369	403	475	419	385	2051	100%	100%

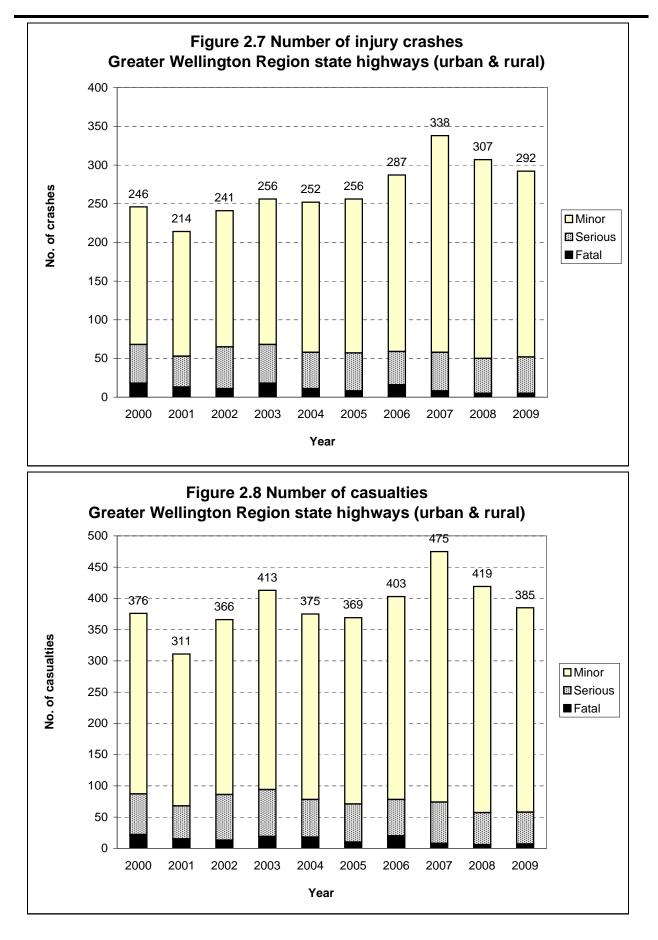
#### Figure 2.5: Casualty numbers and severity 2005 to 2009 - urban roads

	2005	2006	2007	2008	2009	Total	%	Group Y
Fatal casualties	1	4	1	3	1	10	2%	2%
Serious casualties	11	11	20	11	13	66	10%	13%
Minor casualties	111	90	138	111	105	555	88%	86%
Total casualties	123	105	159	125	119	631	100%	100%

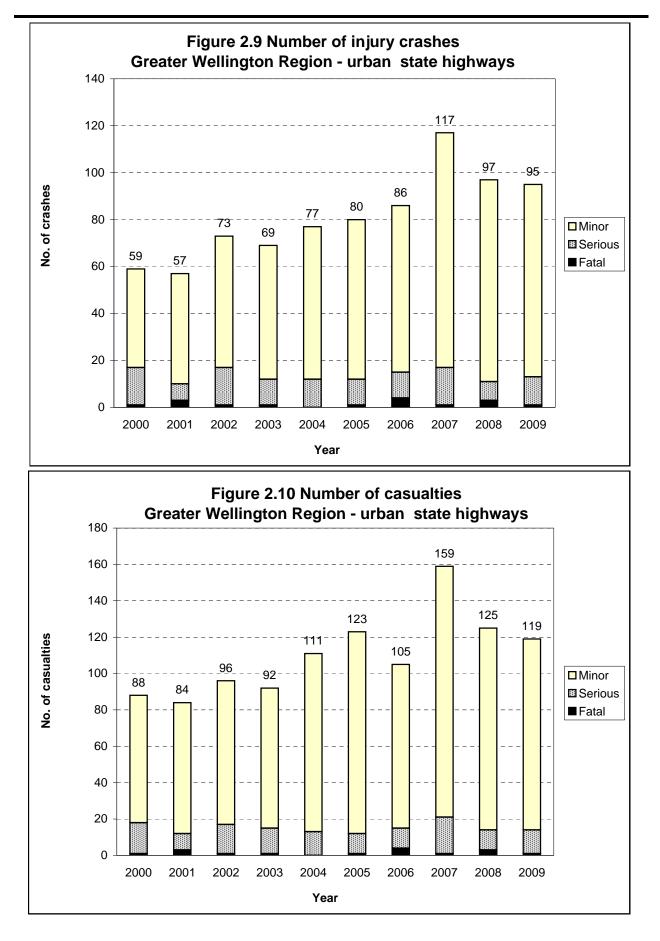
#### Figure 2.6: Casualty numbers and severity 2005 to 2009 - rural roads

	2005	2006	2007	2008	2009	Total	%	Group Y
Fatal casualties	9	16	7	3	6	41	3%	5%
Serious casualties	50	47	46	40	38	221	16%	20%
Minor casualties	187	235	263	251	222	1158	82%	75%
Total casualties	246	298	316	294	266	1420	100%	100%

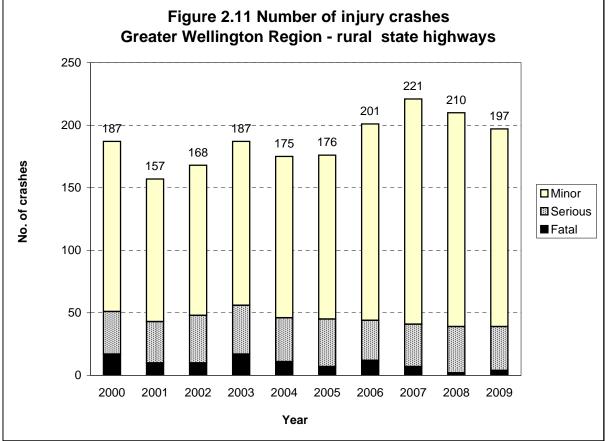


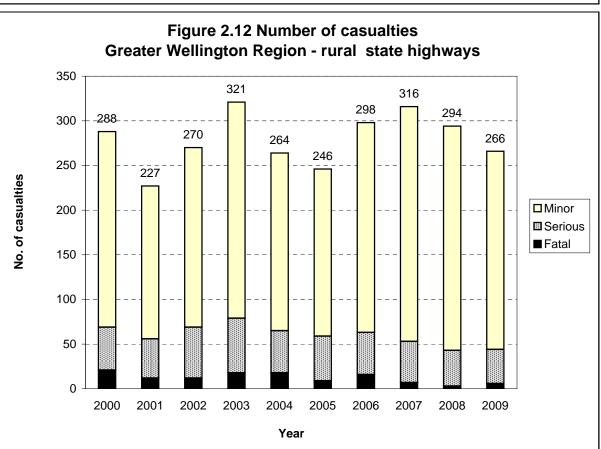




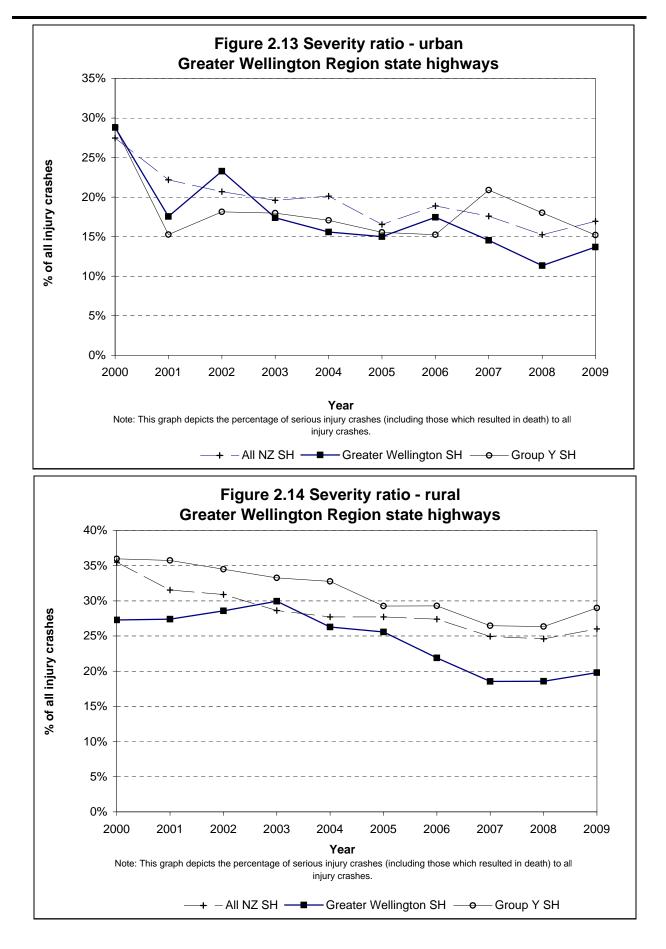














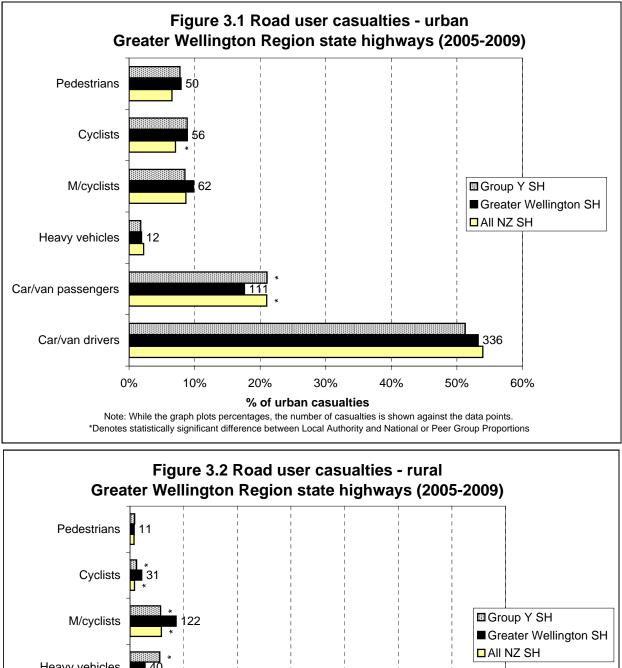


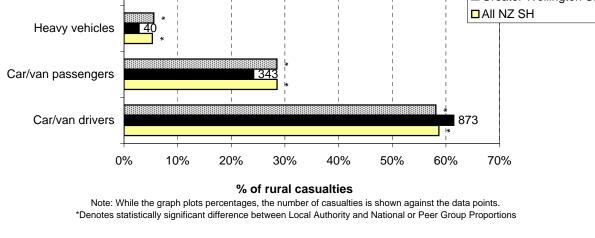
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# Road User Statistics

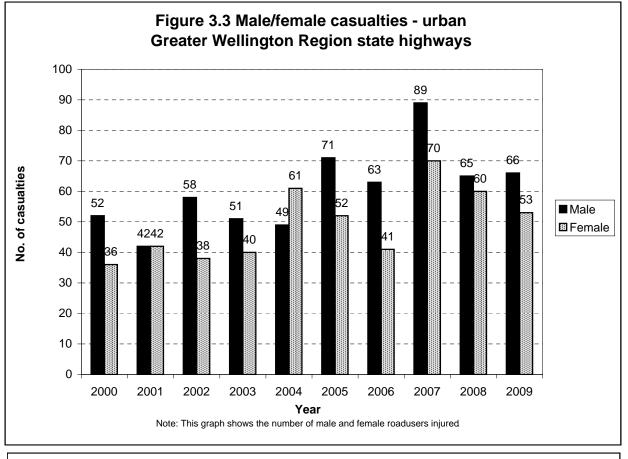


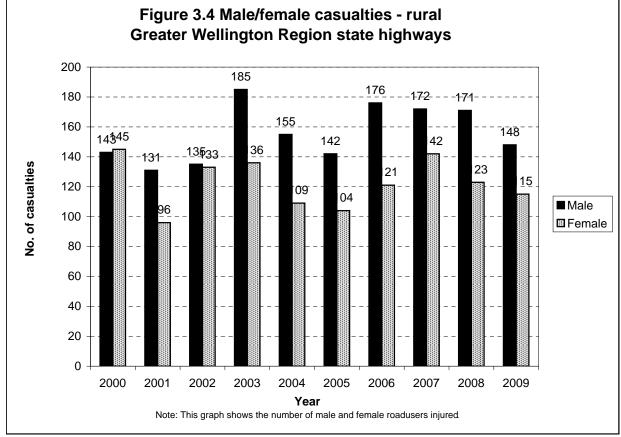


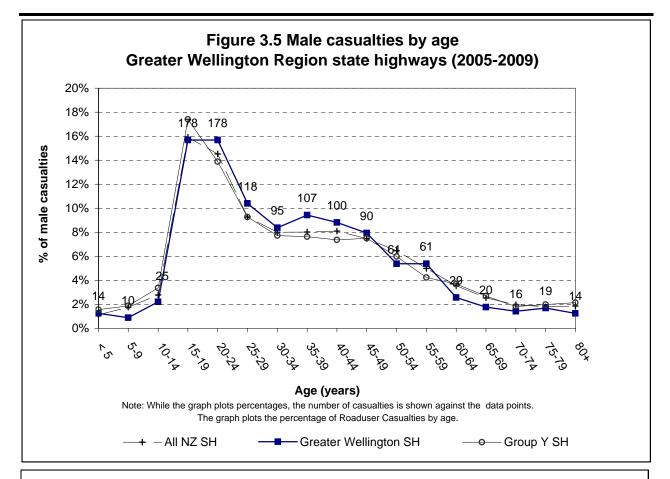


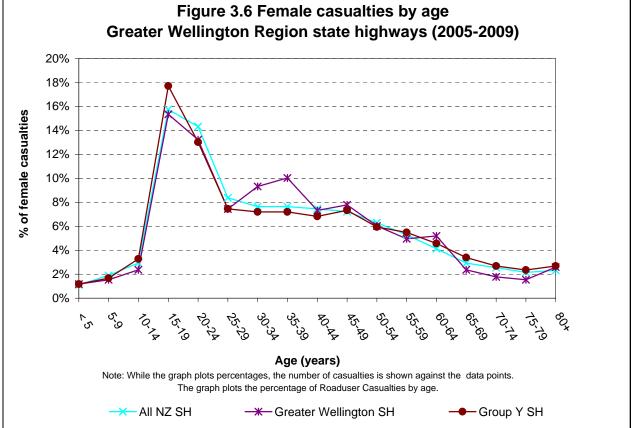




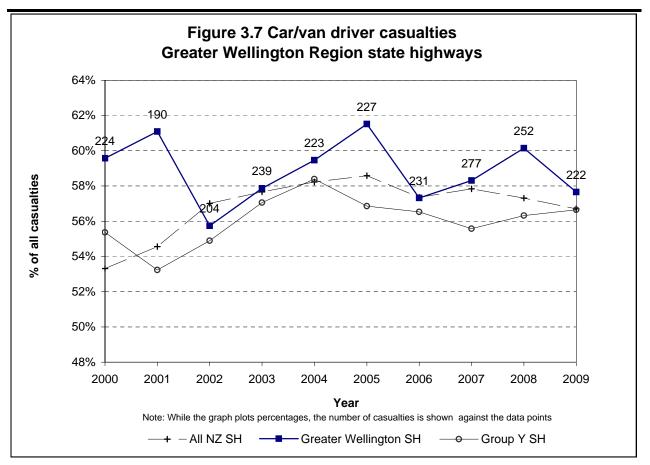


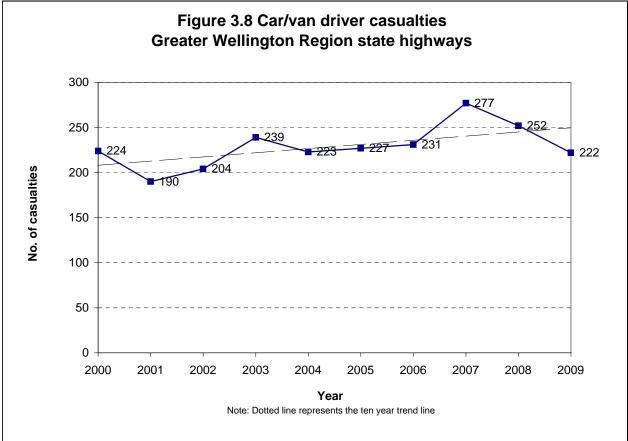




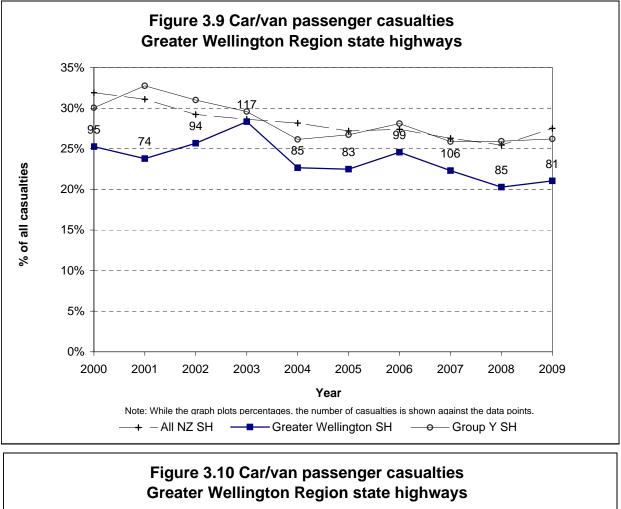


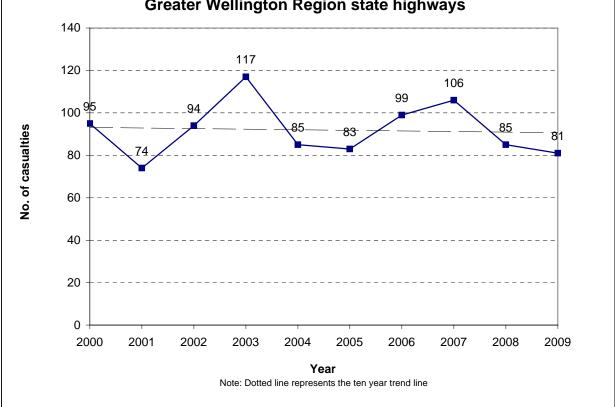




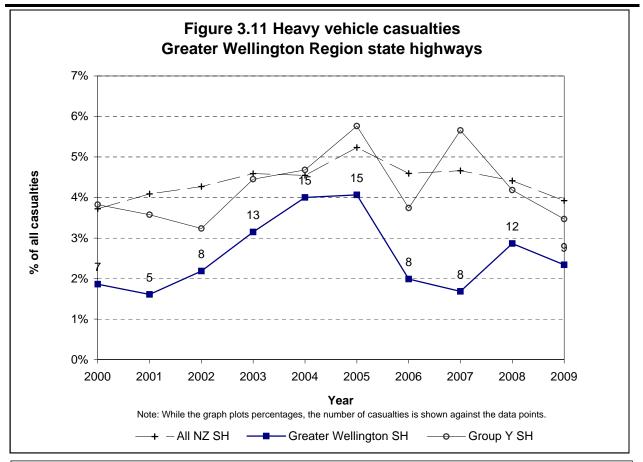


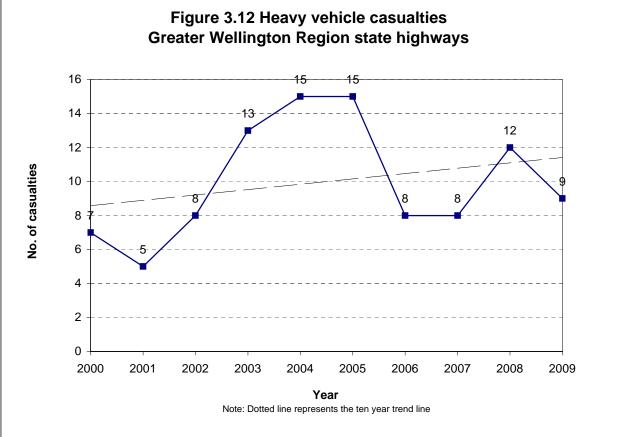




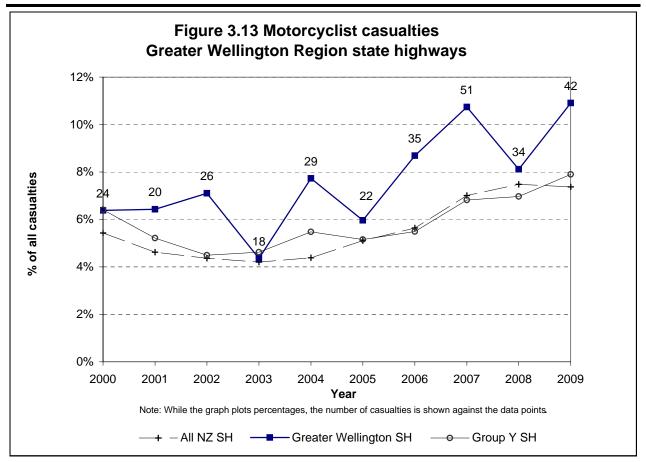


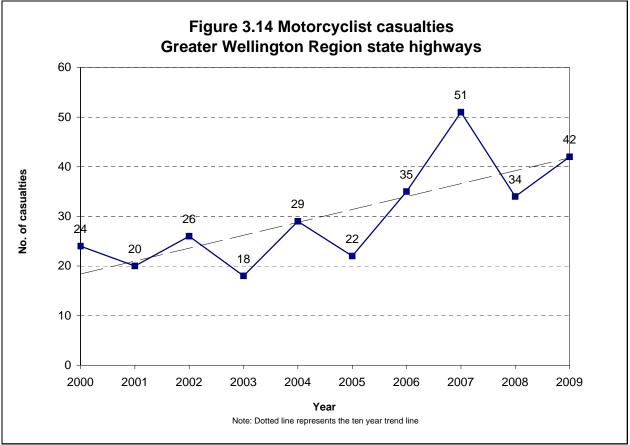




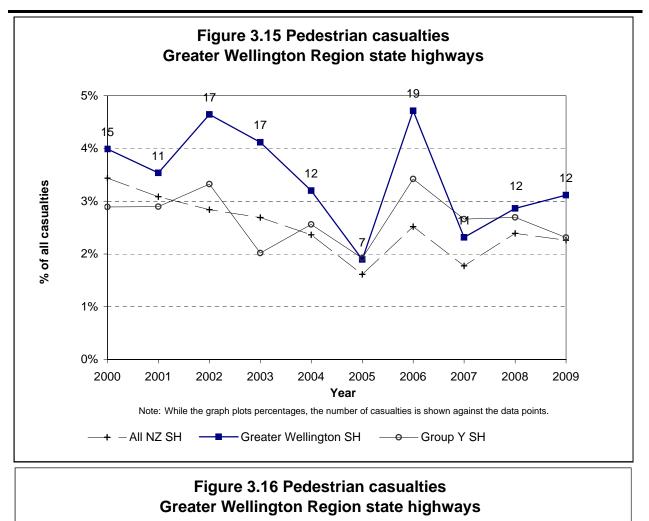


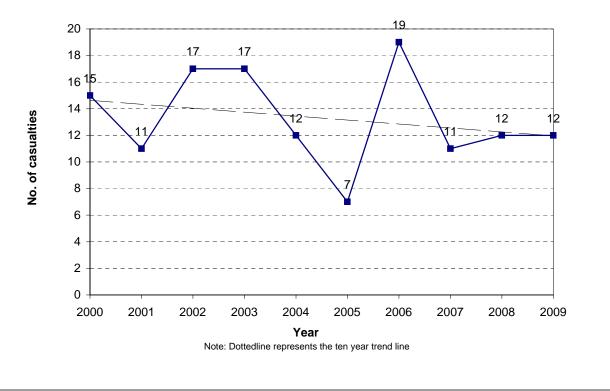




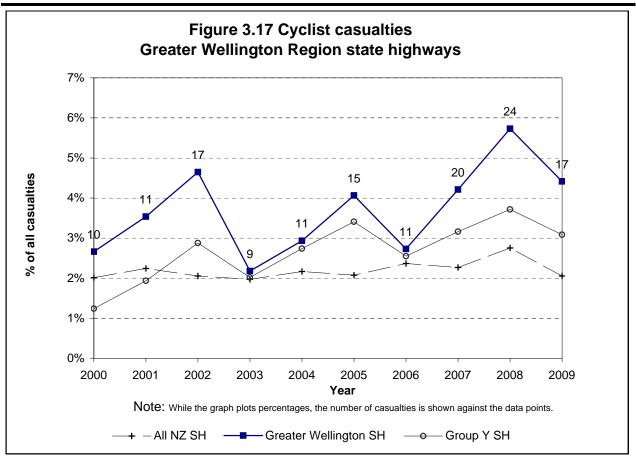


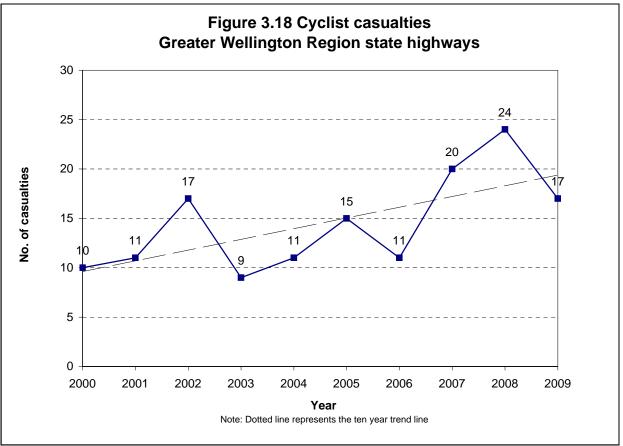




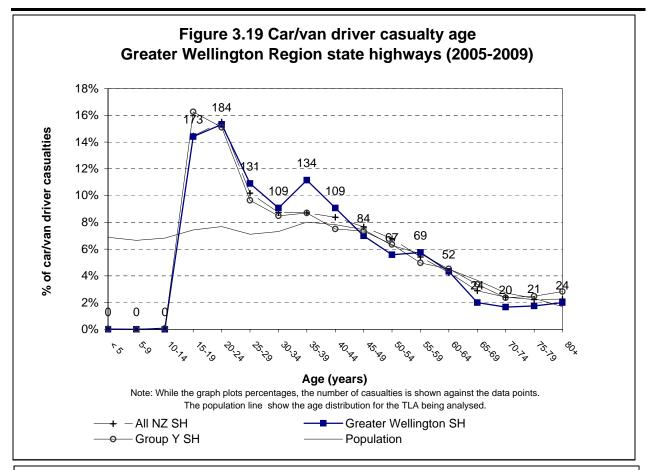


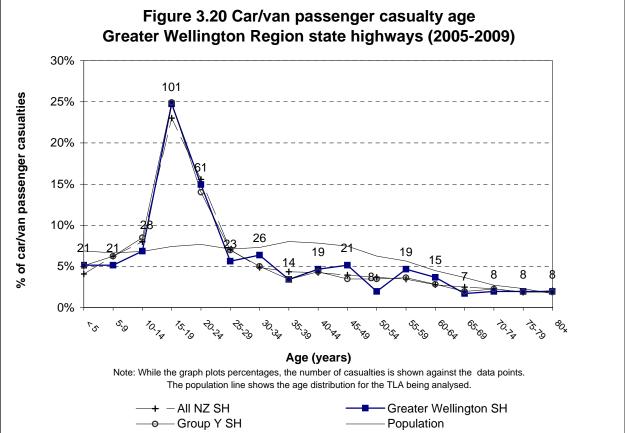




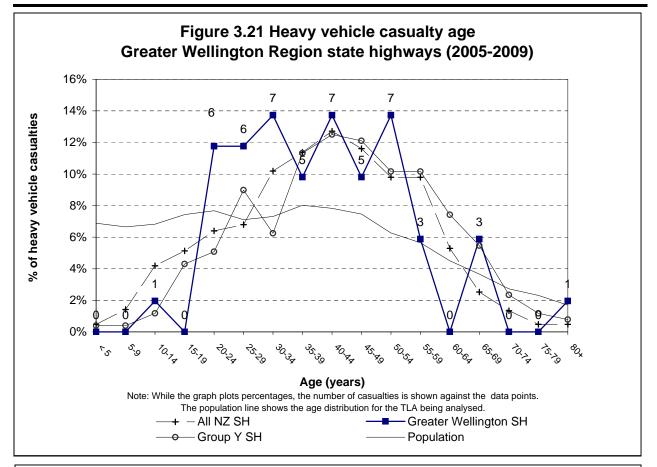


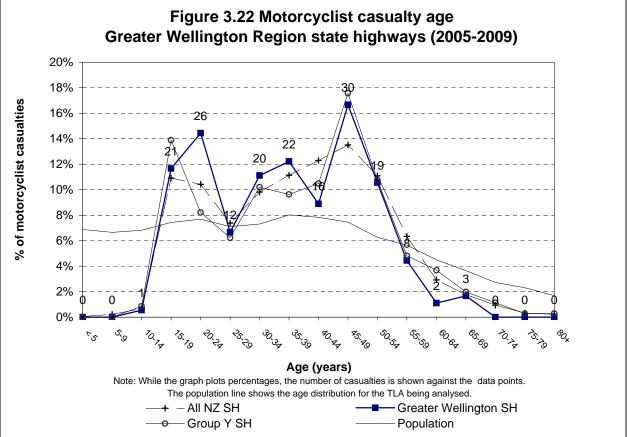


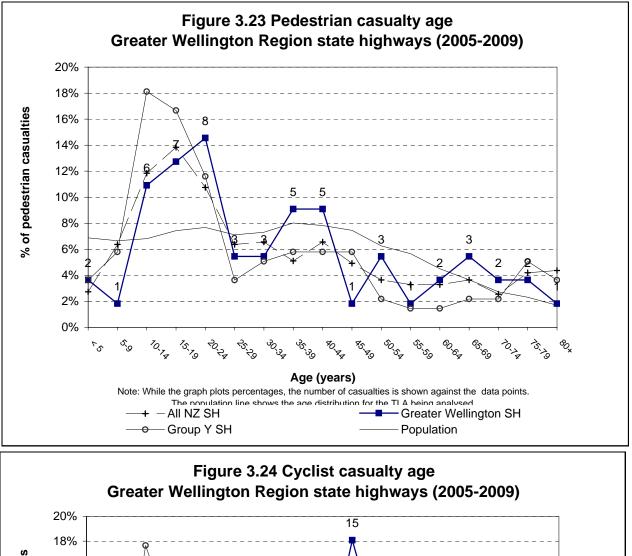


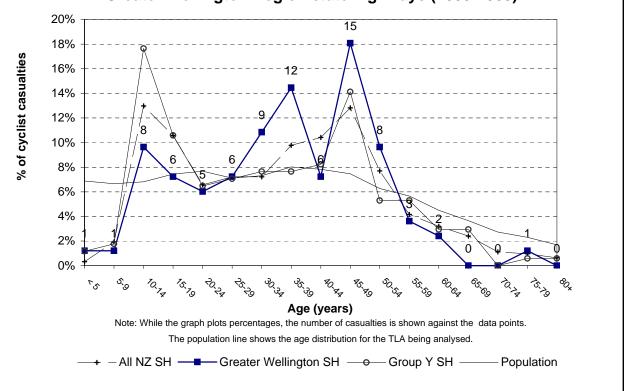




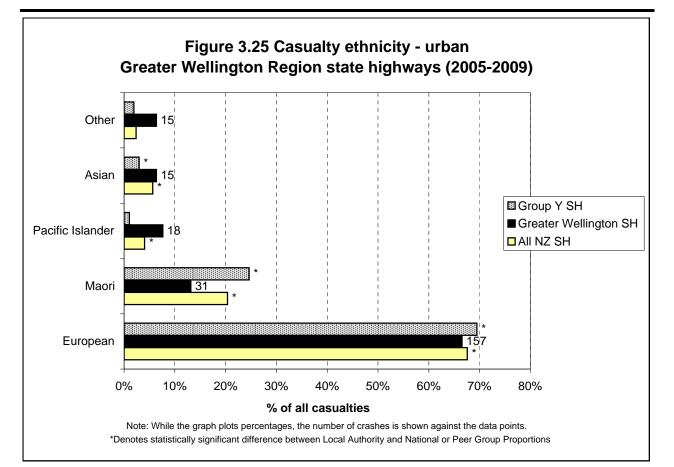


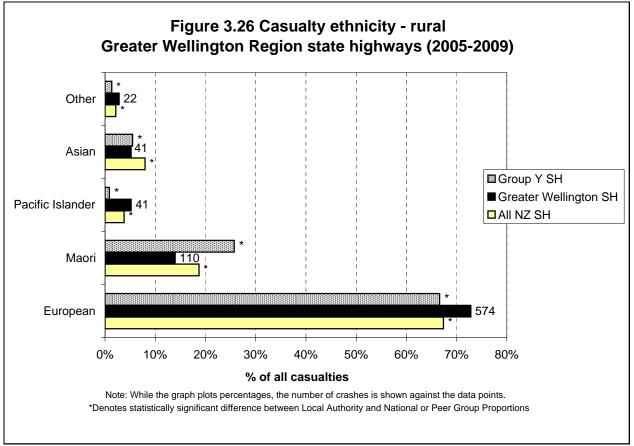




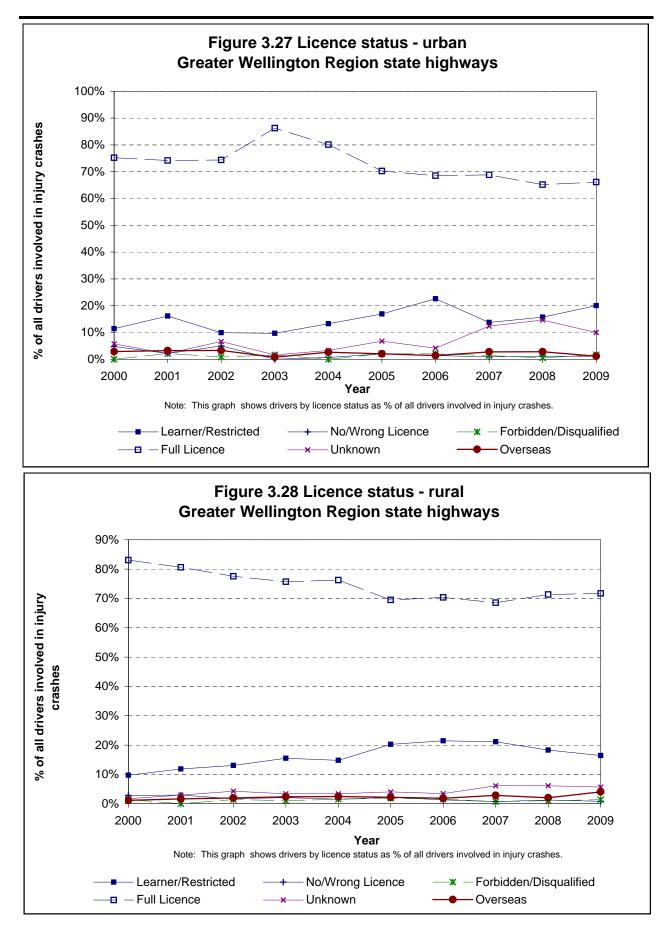












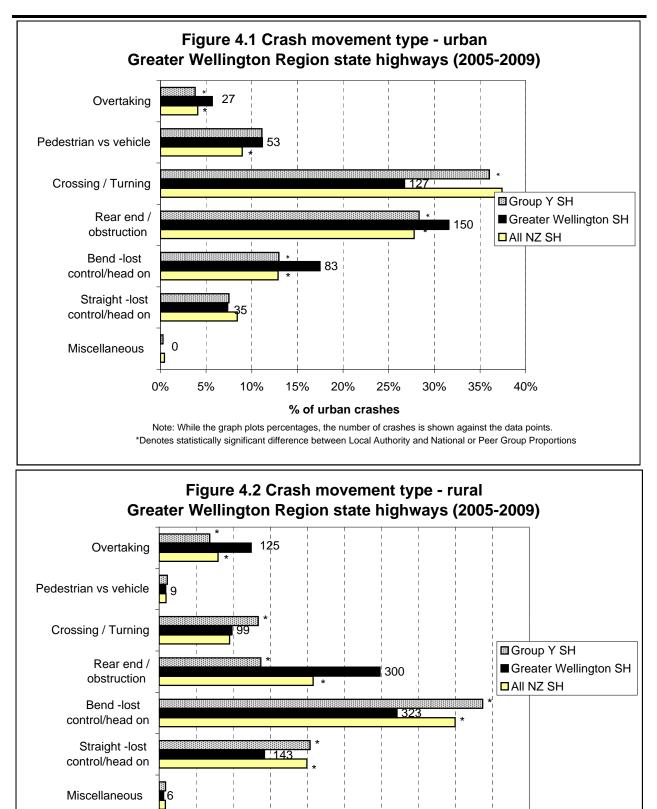


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## Crash Type Statistics







25% % of rural crashes

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

30%

35%

40%

45%

0%

5%

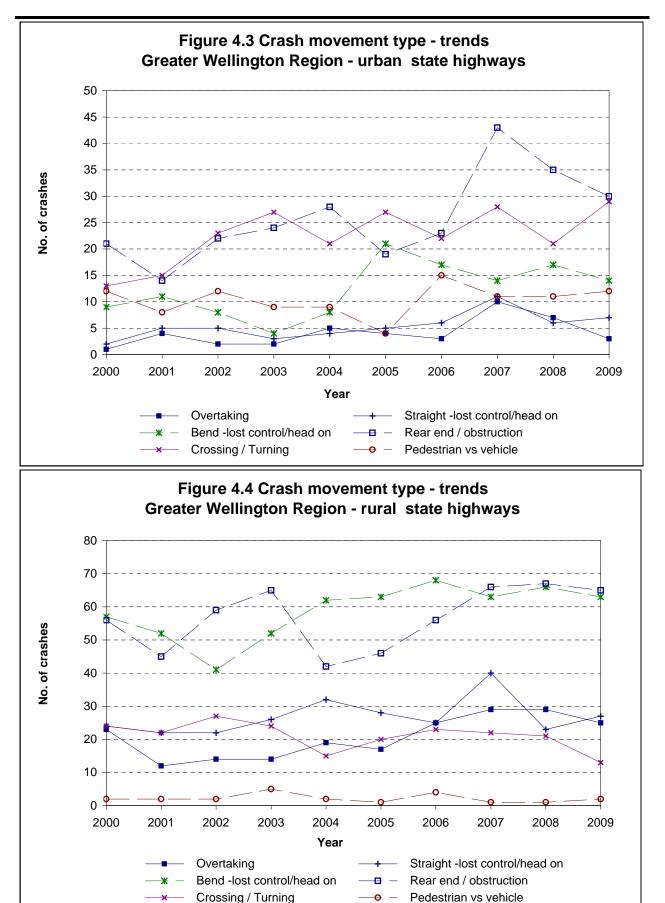
10%

15%

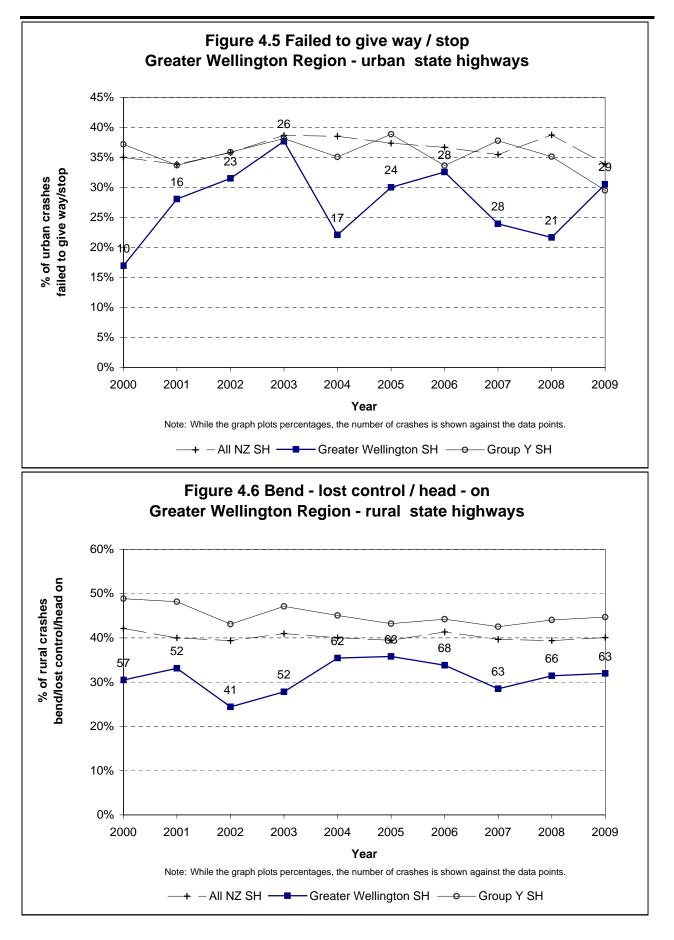
20%

50%











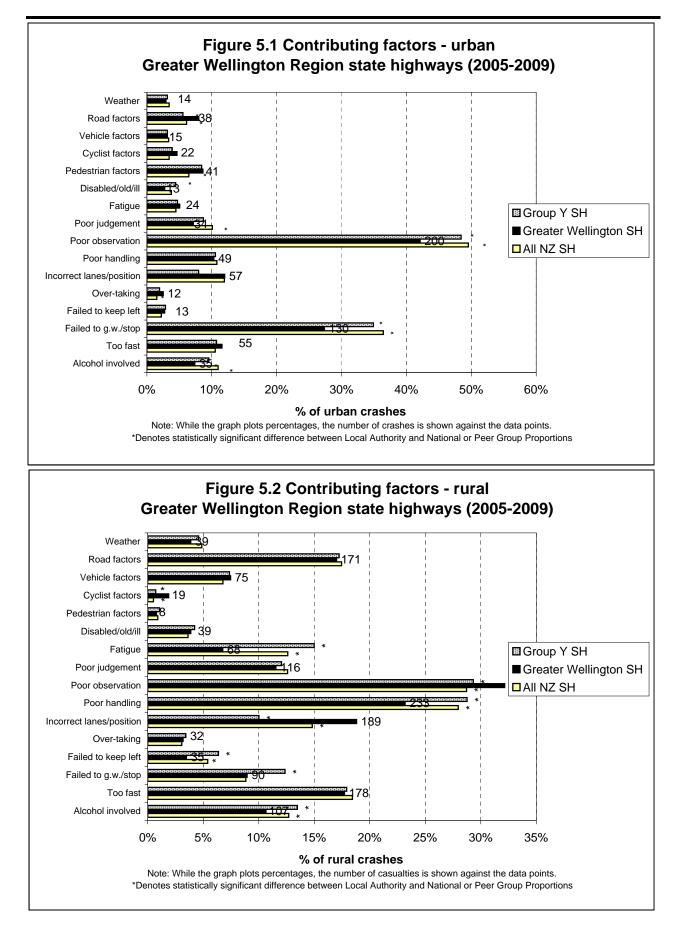


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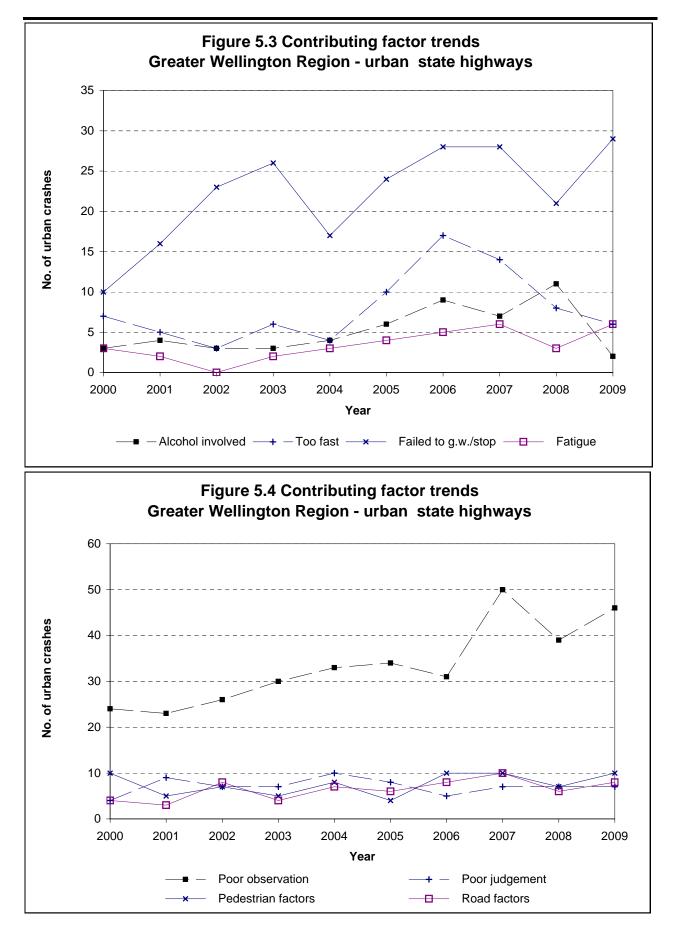
## Crash Factor Statistics



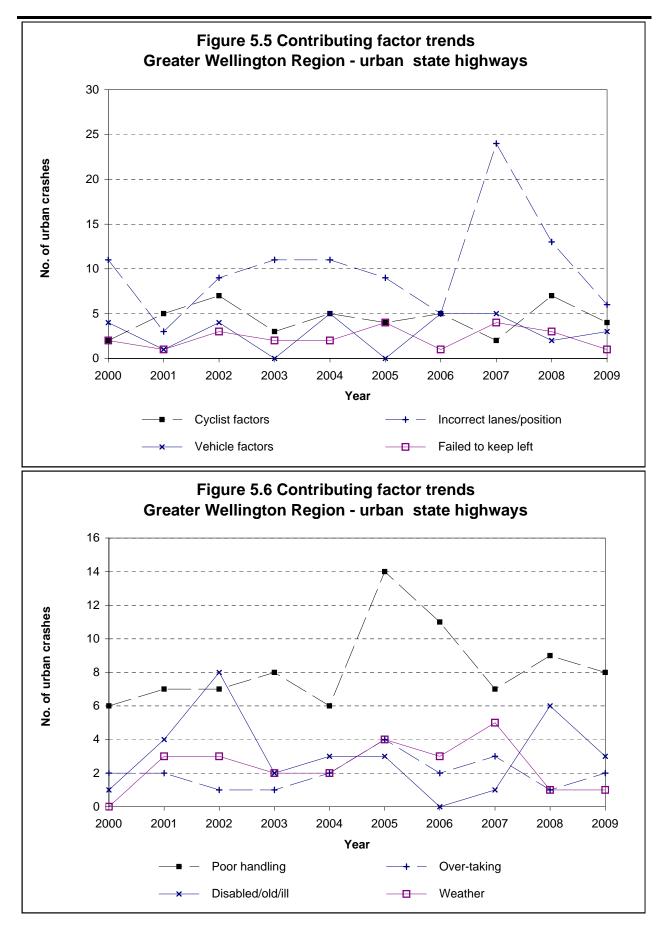




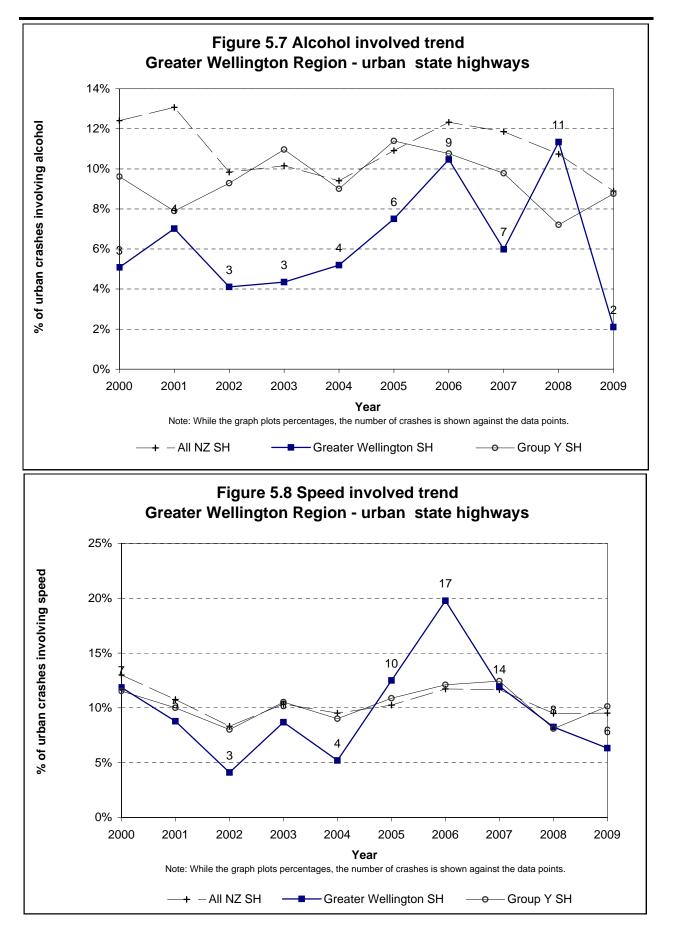




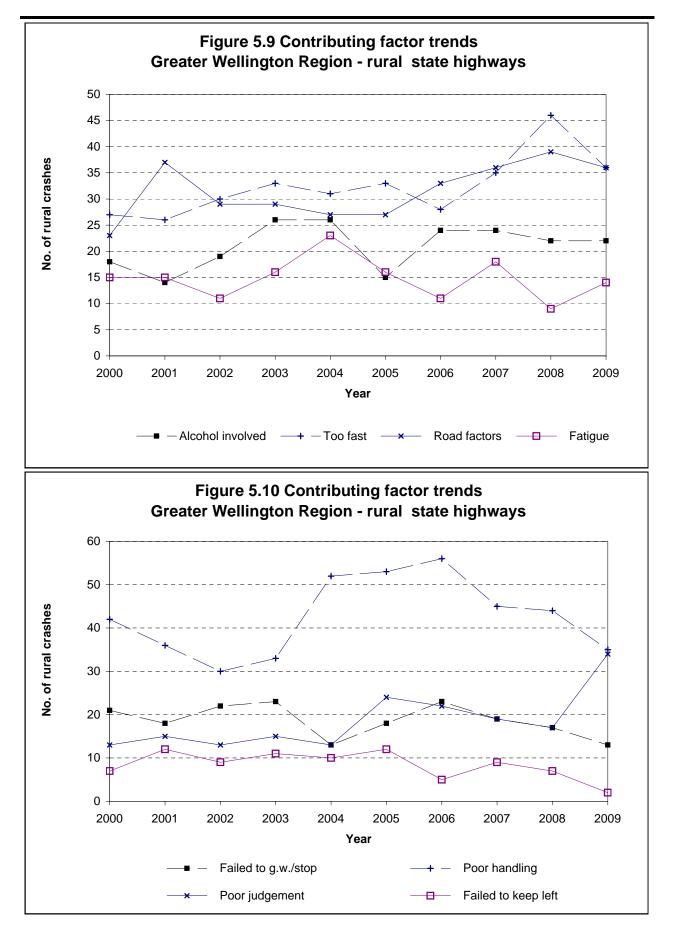




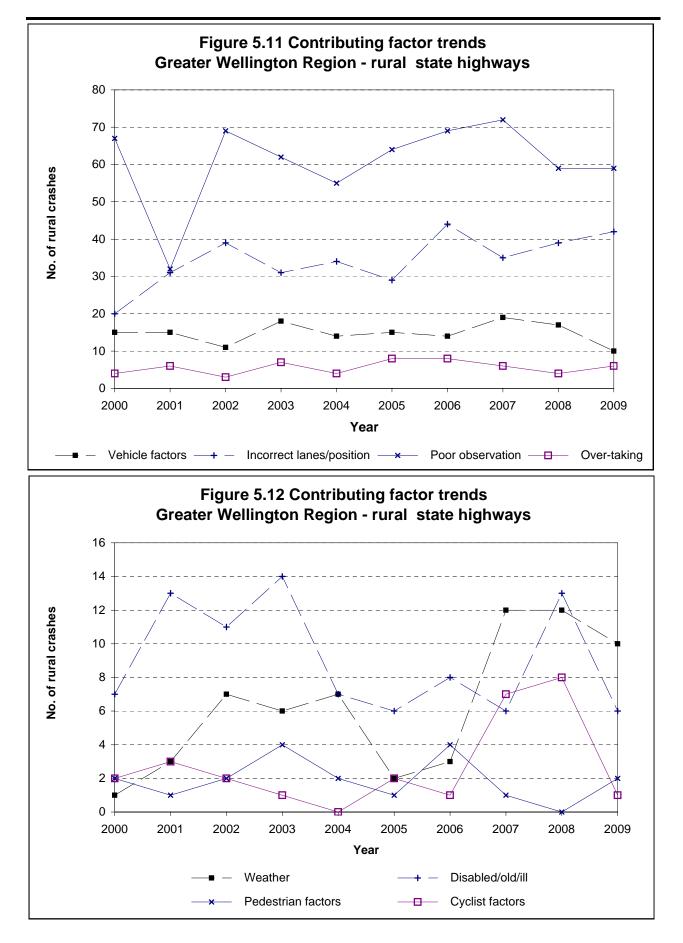






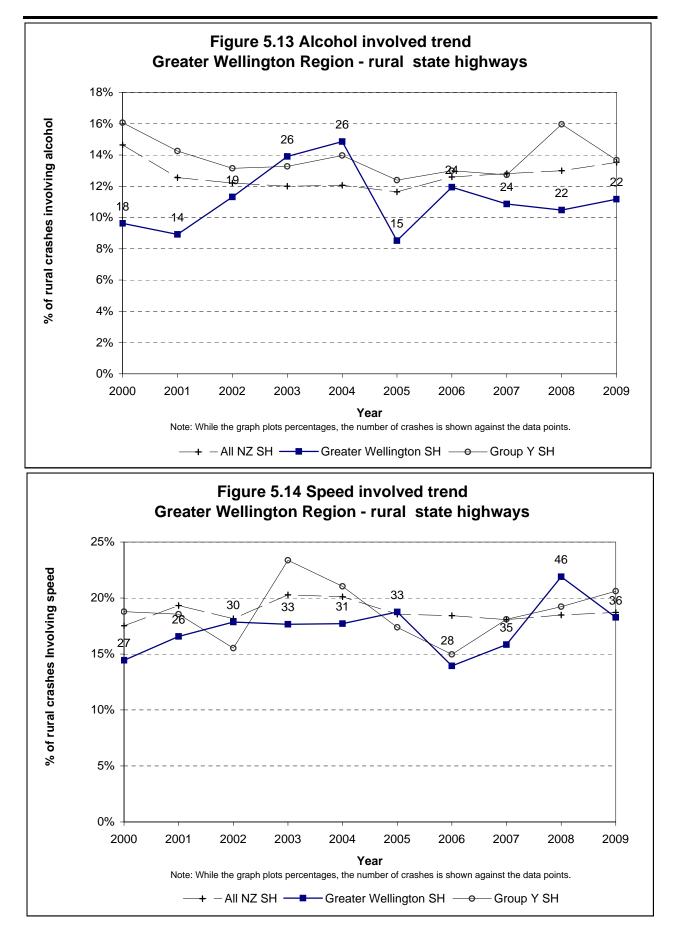






## New Zealand Government





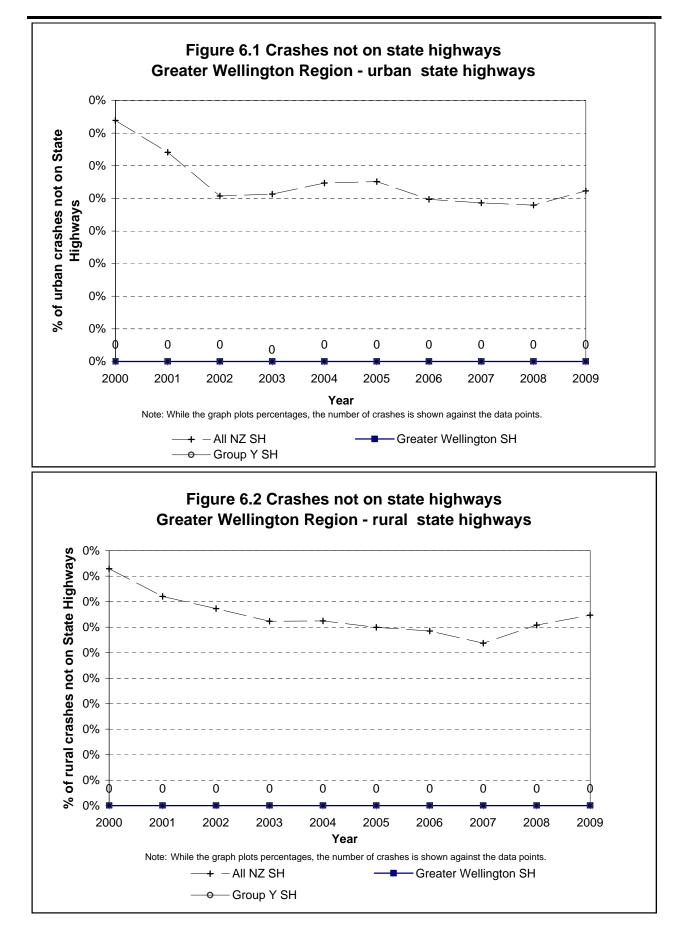




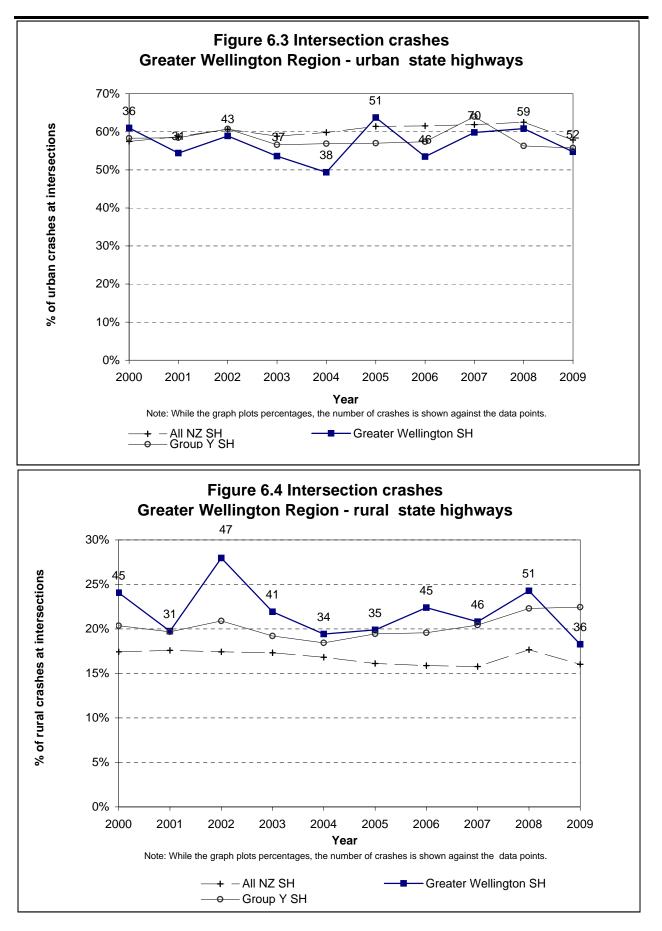
## Environmental Statistics



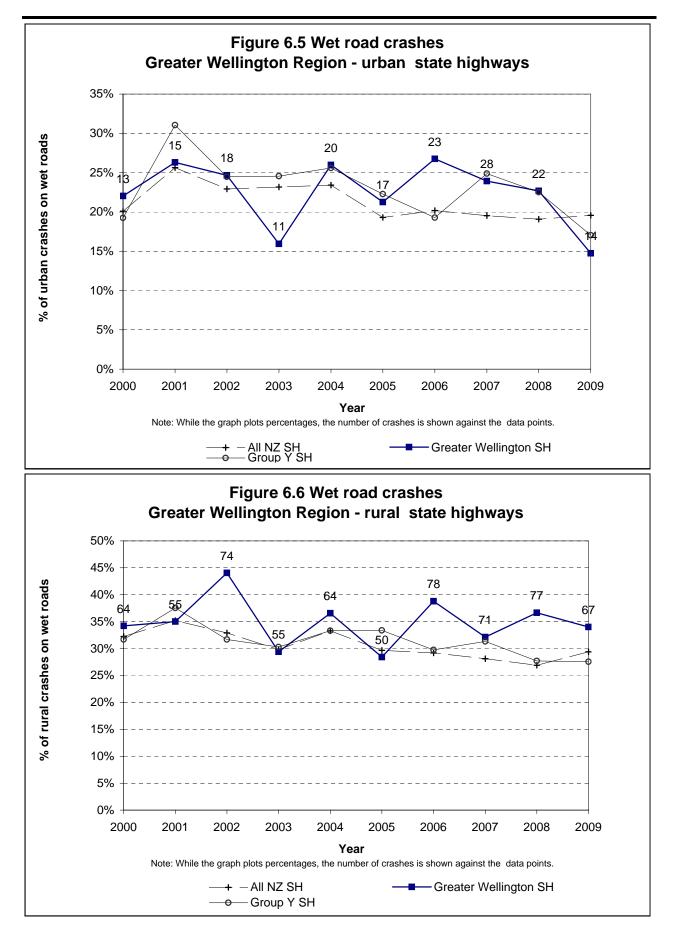




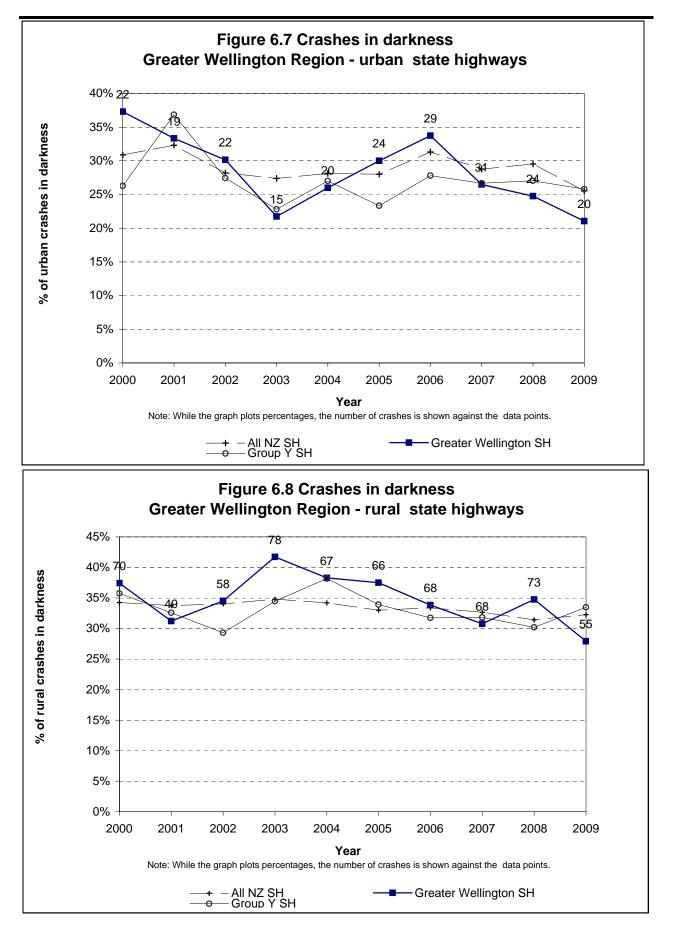




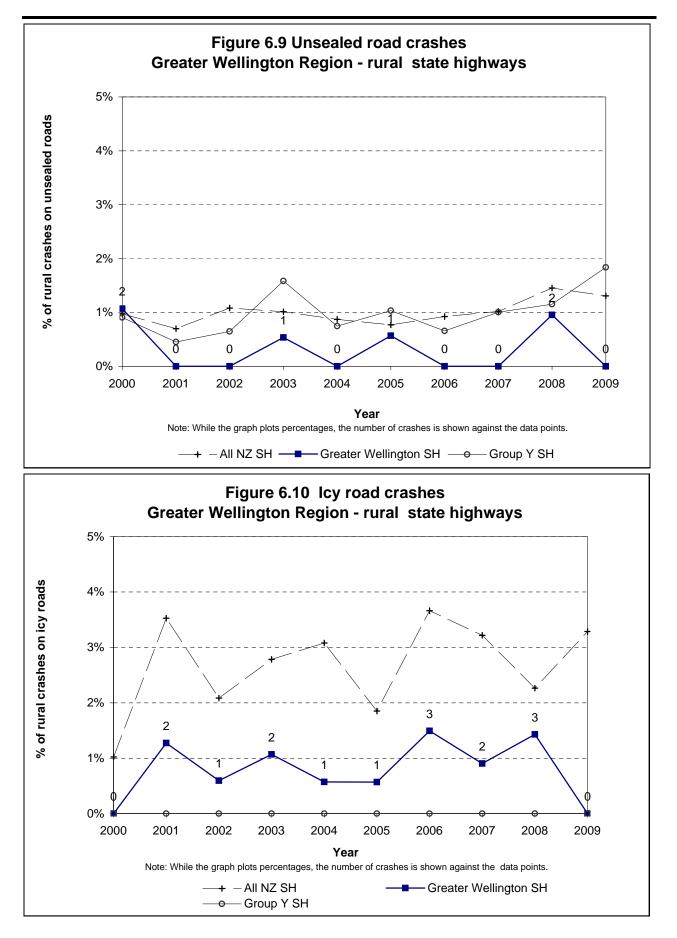




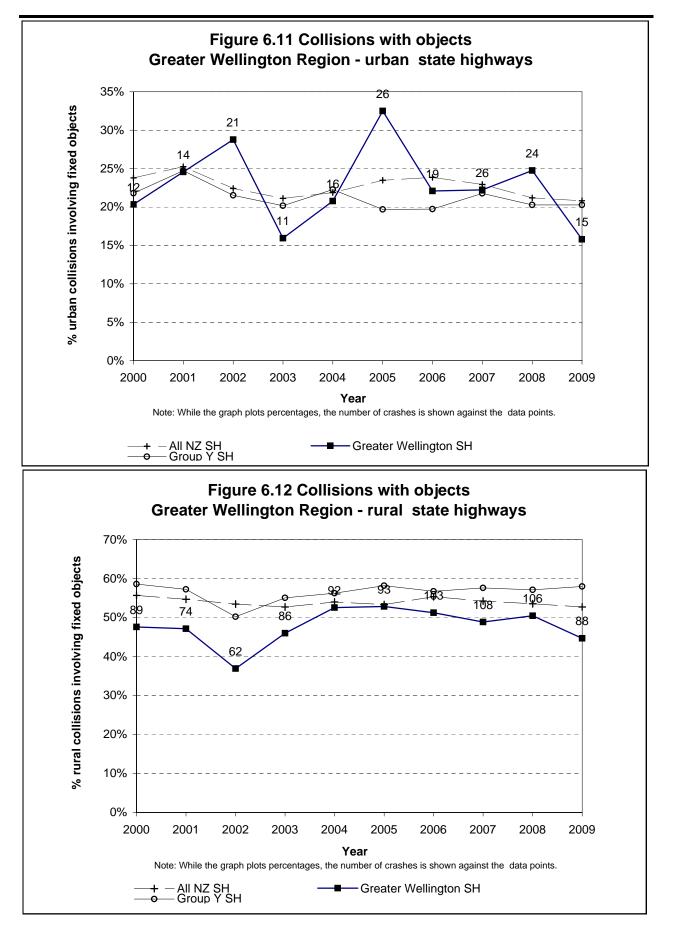




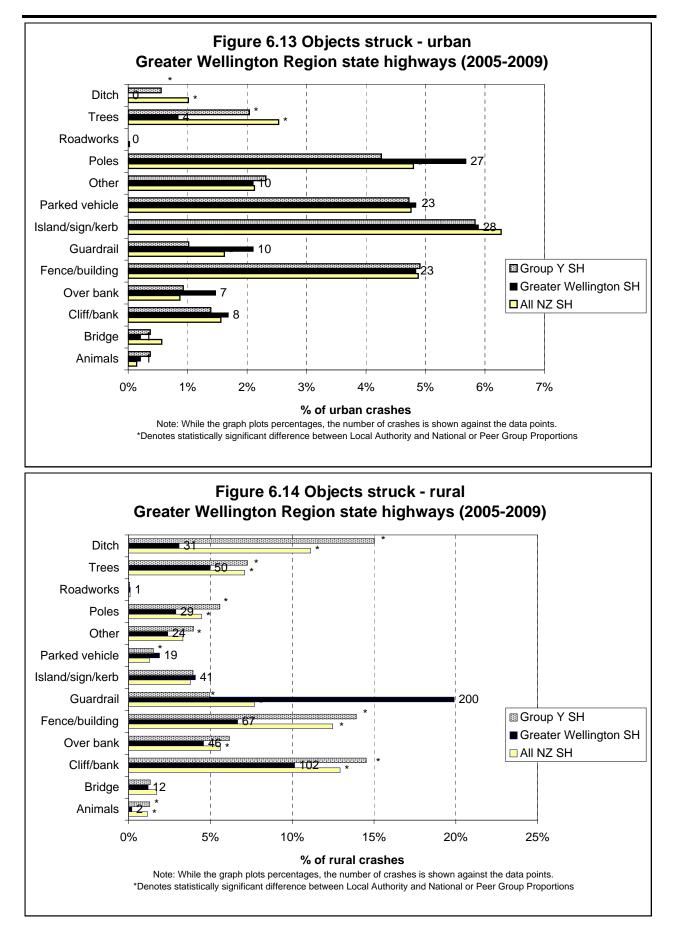












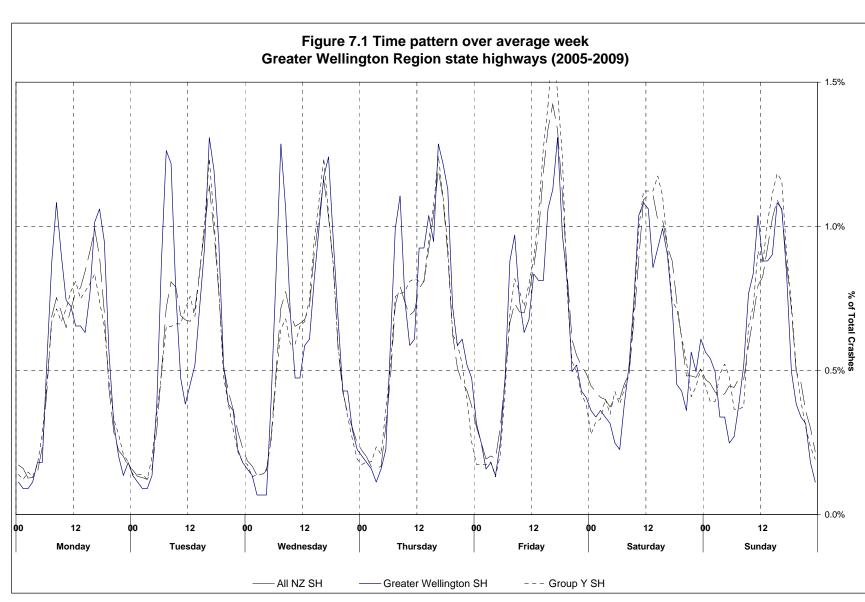




# Date and Time Statistics



New Zealand Government



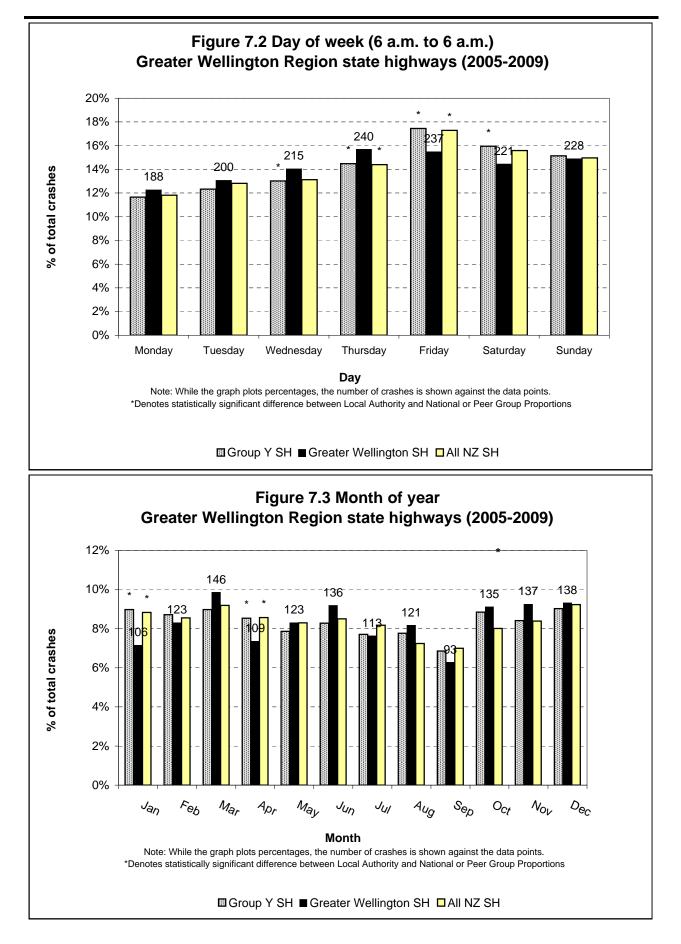
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NZ TRANSPORT AGENCY

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# Crash Location Statistics



New Zealand Government



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

CRASH ROAD			SIDE ROAD	2005	2006	2007	2008	2009	TOTAL	Non- I njury	Wet Crash %	Dark Crash %	Crash Costs
SH 1N	Т		CENTENNIAL NBD	18	20	22	21	22	103	64	53	37	\$11,431,445
SH 2	T		SH 58	14	9	9	16	18	66	50	41	26	\$10,908,281
SH 1N	T		PEKA PEKA ROAD	0	0	4	1	4	9	6	11	33	\$8,977,821
SH 1N		700 S	FOREST LAKES ROAD	1	1	0	0	1	3	0	67	33	\$8,612,240
SH 1N	Т		AOTEA OFF SBD	2	12	18	14	8	54	40	37	50	\$7,279,164
SH 2	Т		MOONSHINE ROAD	8	4	4	2	2	20	13	35	30	\$6,363,624
SH 2	Т		WESTERN HUTT OFF NBD	2	1	5	1	4	13	6	31	38	\$6,234,537
SH 2	Т		WILTONS ROAD	3	4	0	1	4	12	5	33	17	\$6,231,815
SH 2	Т		HOROKIWI ROAD	8	10	13	21	16	68	47	34	19	\$6,014,729
SH 2		200 E	WESTERN HUTT ON NBD	2	2	1	2	3	10	5	40	50	\$5,998,840
SH 1N		300 S	CHURTON PARK ON SBD	3	0	0	1	3	7	5	43	29	\$5,686,118
SH 1N	I.		OTAIHANGA ROAD	9	7	4	4	5	29	15	28	34	\$5,652,358
SH 1N	I.		THE RAMP OFF SBD	7	3	2	3	4	19	14	21	42	\$5,500,737
SH 2	А		RIMUTAKA NO5 BR	1	3	1	1	4	10	7	30	40	\$5,225,552
SH 2		800 S	MOONSHINE HILL ROAD	2	0	3	2	2	9	2	11	56	\$5,216,554
HUTT ON NBD	I		CENTENNIAL SLIP ROAD	10	19	24	13	18	84	60	43	35	\$5,166,681
SH 2	1		MELLING LINK	4	13	17	8	13	55	48	25	33	\$4,926,642
SH 2	I		GIBBONS ST	0	4	5	5	6	20	14	30	25	\$4,898,953
SH 1N	•	450 N	BEACH ROAD	0	1	2	1	1	5	3	0	40	\$4,892,390
SH 1N	ī	400 11	AIRLIE OFF NBD	4	3	1	0	0	8	7	25	38	\$4,882,104
SH 1			MOROA ROAD	0	2	2	0	0	4	2	0	50	\$4,874,452
SH 2	•	2000 N	KIRIWHAKAPAPA ROAD	1	1	0	1	1	4	2	50	0	\$4,821,614
SH 2	А	2000 1	TRIG TRACK CNR	5	5	6	7	9	32	24	56	31	\$4,748,370
SH 1N	~	370 N	WATERFALL ROAD	1	0	1	1	0	3	24	0	33	\$4,684,414
SH 1N	ī	010 11	CHURTON PARK OFF NBD	1	3	4	5	6	19	17	47	37	\$4,657,139
SH 1	, I		POMARE ROAD	1	8	3	2	1	15	11	33	47	\$4,598,136
SH 1N	, T		AOTEA ON NBD	10	7	10	11	10	48	29	21	38	\$4,378,538
SH 1N	•	310 N	HEMI ST	2	4	1	4	1	12	10	33	8	\$4,361,493
SH 58		2000 N	SH 2	1	1	3	- 1	3	9	6	56	22	\$4,337,440
SH 1N	I	2000 1	SCHOOL ROAD	1	1	2	1	2	7	3	14	29	\$4,315,451
SH 2	•	1000 S	MELLING LINK	0	1	5	2	1	9	8	44	56	\$4,231,614
SH 1N		200 S	BEACH ROAD	3	2	2	0	1	8	7	25	38	\$4,188,065
SH 1N		500 S	TE MOANA ROAD	0	2	2	1	2	7	4	0	43	\$4,174,967
SH 58		400 E	MOONSHINE ROAD	1	1	0	0	2	4	1	25	50	\$4,129,054
SH 1N VIVIAN	I	400 L	WILLIS ST	13	7	7	2	5	34	25	12	47	\$4,128,825
SH 1N CALABAR	, I		WEXFORD ROAD	4	3	2	3	4	16	11	25	31	\$4,120,540
SH 2	'	950 N	NORTH ST	2	0	2	0	0	4	2	0	25	\$4,103,090
SH 1N	А	550 N	JOHNSONVILLE ON SBD	11	26	13	7	10		50	61	31	\$4,082,375
SH 1N	A	1400 N	TAWA ON NBD	1	20 1	13	0	0	67 3	2	100	0	
	ī	1400 N	WHAKATIKI ST	3	4	4							\$4,013,829
SH 2		800 W/					5	7	23	13	22	22	\$3,869,069
SH 2		800 W	RIMUTAKA SUMMIT	6	5	8	7 3	2 6	28	20	57	14	\$3,860,279
SH 2		3000 E		3	4	10			26	17	46	15	\$3,827,876
SH 2	I	1700 N	MAORIBANK GROVE	0	1	1	2	1	5	3	60 67	20	\$3,725,700
SH 2		1700 N	RIMUTAKA SUM	6	3	5	3	7	24	16	67	25	\$3,638,756
SH 1N		50 S	GOA ST	1	0	1	0	1	3	2	0	33	\$3,599,973
SH 1N	A	000 0	TAWA OFF NBD	5	5	6	4	3	23	16	35	35	\$3,568,395
SH 1N		200 S	SH 2	0	6	3	4	8	21	15	19	19	\$3,535,128
SH 2	I		BLOCK ROAD	9	16	14	16	12	67	50	43	22	\$3,392,458
SH 2		500 E	RIMUTAKA SUM	2	1	3	5	4	15	7	53	20	\$3,363,715
BUTE ST	I		SH 1N VIVIAN	2	2	1	0	1	6	3	0	17	\$3,310,766



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

CRASH ROAD			SIDE ROAD	2005	2006	2007	2008	2009	TOTAL	Non- I njury	Wet Crash %	Dark Crash %	Crash Costs
SH 2	I		FREDERICK ST	1	0	0	1	2	4	2	0	0	\$3,256,340
SH 1N		300 W	TAURIMA ST	0	1	1	1	0	3	2	0	33	\$3,156,580
SH 1N	I		ABATTOIRS ROAD	14	11	14	9	16	64	50	50	27	\$3,116,041
SH 1N	T		EVANS BAY PARADE	7	8	11	8	12	46	38	11	24	\$3,075,308
SH 2		500 S	HOROKIWI ROAD	5	9	6	12	8	40	26	35	35	\$3,019,419
SH 1N	А		CLIFTON ON NBD	8	12	4	12	6	42	33	38	36	\$2,899,420
SH 58		50 W	JAMES COOK DRIVE	3	12	5	3	4	27	21	59	37	\$2,873,875
SH 1N	1		RAUMATI ROAD	1	6	0	4	9	20	10	25	20	\$2,838,767
SH 1N		420 N	TE HAPUA ROAD	0	1	0	3	1	5	1	0	20	\$2,784,677
SH 1N		300 N	WILLIS ST	12	9	5	7	11	44	37	27	16	\$2,774,536
SH 1N		100 S	NEWLANDS OFF NBD	5	3	12	7	9	36	28	47	22	\$2,535,439
SH 1N		600 W	SH 2	5	6	6	1	1	19	15	26	21	\$2,521,075
SH 2	I		OWEN ST	5	0	3	2	5	15	9	40	47	\$2,469,602
SH 1N		1000 N	PAEKAKARIKI HILL ROAD	2	4	0	2	0	8	1	38	13	\$2,259,214
SH 1N	1		FOREST LAKES ROAD	1	2	0	2	5	10	5	50	30	\$2,226,820
SH 1N	1		TAYLORS ROAD	2	1	3	2	3	11	8	18	36	\$2,211,548
SH 1N			JOHNSONVILLE ON NBD	- 11	4	5	5	6	31	26	45	45	\$2,178,704
HEBDEN CRESCENT	1		SH 58	1	0	1	4	3	9	4	22	11	\$2,173,484
SH 1N	-	200 N	NORTH PORTAL	5	2	1	2	1	11	6	27	9	\$2,167,170
SH 2		700 S	GILBERT ROAD	1	-	1	3	2	8	3	50	50	\$2,151,427
SH 1N		50 W	CAR HAULAWAYS ENT	3	3	0	1	0	7	4	14	0	\$2,121,280
SH 1N	1	00 11	WHITFORD BROWN AVENU		8	8	6	3	31	27	29	29	\$2,120,808
SH 2	•	3000 S	RIMUTAKA SUMMIT	2	1	1	2	2	8	4	50	50	\$2,103,026
SH 1N	А	0000 0	FISHERMANS TABLE	3	2	1	1	2	9	6	22	33	\$2,092,792
SH 2		6000 W	RENALL ST	1	2	1	1	2	7	4	86	14	\$2,063,643
SH 58		700 W	JOSEPH BANKS DRIVE	2	3	2	1	3	11	9	45	45	\$2,060,084
SH 1N	T	100 11	KAPITI ROAD	9	7	7	9	15	47	35	11	19	\$2,056,238
SH 1N	•	400 E	AOTEA ON NBD	6	6	7	2	2	23	16	30	22	\$2,031,551
TARANAKI ST	T	100 2	VIVIAN ST	2	8	6	5	2	23	16	17	39	\$2,011,439
SH 1N			ADELAIDE ROAD	5	9	12	17	10	53	45	19	32	\$1,959,312
CENTENNIAL SBD			GLOVER SLIP ROAD	0	0	2	2	1	5	2	20	0	\$1,920,814
SH 2	•	200 S	PETONE ON SBD	2	3	5	6	9	25	- 22	32	20	\$1,865,180
SH 2	1		MAJOR DRIVE	3	5	7	6	1	22	17	41	64	\$1,864,574
SH 1N WELLINGTON	1		RUAHINE ST	6	5	9	11	6	37	25	38	32	\$1,863,497
SH 2	1		AKATARAWA ROAD	1	1	3	3	4	12	9	8	17	\$1,845,322
SH 53	-	1000 W	TE MARIE ROAD	1	0	1	1	0	3	1	0	33	\$1,811,354
SH 2	1		DOWSE DRIVE	3	3	10	14	1	31	19	45	32	\$1,736,806
SH 1N	•	1000 S	TAWA OFF NBD	4	1	2	2	6	15	10	40	47	\$1,669,805
SH 2		1200 W	SERVICE STN STH	2	3	3	6	2	16	11	25	25	\$1,654,276
SH 58	T	1200 11	POSTGATE DRIVE	4	3	1	2	2	12	7	8	25	\$1,650,124
SH 1N			TROY ST	4	1	0	2	-	8	6	38	13	\$1,629,129
SH 1N		150 S	NORTH PORTAL	8	10	1	3	10	32	24	28	22	\$1,629,032
SH 2		150 S	RIMUTAKA SUMMIT	1	6	3	2	1	13	8	62	23	\$1,597,028
SH 2	А		HUTT ON NBD	4	3	8	4	7	26	15	23	38	\$1,538,664
SH 58	~	800 N	SPINNAKER DRIVE	2	7	3	2	0	14	9	23 64	29	\$1,534,642
SH 1N	I	000 11	HANIA ST	4	4	4	1	1	14	12	21	29	\$1,534,042
SH 1N	'	50 W	COBHAM DRIVE	4	4	4	0	0	3	1	33	100	\$1,529,997
SH 1N	ī	30 99	RUGBY ST	3	9	2 7	9	6	3 34	28	35 35	71	
	1					7 8		8					\$1,528,005 \$1,525,387
SH 2	1		GROUNSELL CRESCENT	5	4		4		29 15	20 12	34 53	24 13	\$1,525,387 \$1,500,572
SH 1N	I		SH 2	1	6	6	1	1	15	12	53	13	\$1,500,572



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

CRASH ROAD			SIDE ROAD	2005	2006	2007	2008	2009	TOTAL	Non- Injury	Wet Crash %	Dark Crash %	Crash Costs
SH 1N		800 N	GREENHILL ROAD	2	0	3	4	1	10	4	30	50	\$1,479,644
SH 1N	ī	000 11	VICTORIA ST	0	0	9	3	7	19	9	26	47	\$1,443,931
SH 2		400 S	MAJOR DRIVE	4	6	8	3	5	26	17	27	35	\$1,441,393
SH 2	I.	100 0	SLIP ROAD	2	2	3	2	3	12	8	25	8	\$1,441,187
SH 1N		1200 S	OTAIHANGA ROAD	4	2	1	3	2	12	9	8	50	\$1,438,457
SH 1N		600 N	MCKAYS XING	2	5	2	1	0	10	6	30	70	\$1,424,432
SH 1N	ī	000 11	TINAKORI ON NBD	3	3	1	2	3	12	9	25	25	\$1,407,221
SH 2		50 S	SERVICE STN STH	2	6	11	5	5	29	23	31	34	\$1,391,393
SH 1N	I.	000	MAY ON NBD	5	7	6	6	6	30	25	53	33	\$1,386,856
SH 2	-	2000 E	MARCHANT ROAD	0	3	2	5	1	11	8	55	36	\$1,362,011
SH 2		300 N	WESTERN HUTT ROAD	2	3	-	3	1	10	6	60	40	\$1,345,648
SH 2	1		MOONSHINE HILL ROAD	2	2	7	7	4	22	12	23	27	\$1,332,801
SH 58	I		MULHERN ROAD	2	-	2	1	2	8	4	25	63	\$1,305,123
SH 2		2000 E	RIMUTAKA SUM	-	2	-	2	2	8	4	63	13	\$1,304,062
SH 1N		1000 S	FISHERMANS TABLE	2	0	1	3	2	8	4	0	13	\$1,303,244
SH 58		150 N	SPINNAKER DRIVE	6	3	4	3	6	22	12	55	36	\$1,286,604
SH 1N		500 S	WATERFALL ROAD	2	2	1	1	0	6	2	33	67	\$1,283,732
SH 2 WESTERN HUTT		200 S	PRIESTS AVENUE	0	2	1	5	3	11	8	36	36	\$1,259,075
SH 2	I	200 0	RENALL ST	6	2	6	8	5	27	24	11	22	\$1,257,782
SH 2		120 W	CORNISH ST	7	8	6	7	3	31	27	90	45	\$1,246,696
SH 1N	I.	120 11	TAURIMA ST	3	5	4	4	5	21	16	33	43	\$1,239,159
SH 2	· I		FAIRWAY DRIVE	3	2	7	6	8	26	20	50	31	\$1,230,806
SH 58	T		ATIAMURI CRESCENT	1	2	0	0	3	6	3	50	33	\$1,229,349
SH 1N	· I		TROY ST	2	5	7	1	2	17	14	18	47	\$1,219,481
SH 2	· I		NORFOLK ROAD	2	0	1	3	2	8	5	25	13	\$1,197,901
SH 1N		1000 S	SH 2	2	7	1	8	4	22	15	27	32	\$1,187,580
SH 2		300 E	NORANA ROAD	0	3	0	2	0	5	2	40	60	\$1,174,672
SH 1N	I.	000 2	AIRLIE ROAD	1	2	0	3	1	7	4	14	29	\$1,162,145
SH 2		1400 E	MARCHANT ROAD	0	2	0	0	2	4	1	0	0	\$1,152,977
SH 1N		400 N	GREENHILL ROAD	0	0	2	1	1	4	0	50	25	\$1,150,520
SH 2		500 S	SH 58	0	1	-	2	1	5	2	20	60	\$1,137,712
SH 2	I	000 0	NGAUMUTAWA ROAD	3	0	0	-	3	7	2	29	14	\$1,134,279
SH 2	-	2000 N	HUTT ON NBD	3	7	5	9	2	26	23	31	46	\$1,131,510
SH 2	1		DOWSE ON SBD	1	1	1	1	3	7	4	14	29	\$1,116,166
SH 2	А		OPAKI OBR	2	1	0	1	0	4	0	25	25	\$1,104,460
SH 2		1000 N	PLATEAU ROAD	0	0	1	2	1	4	1	25	75	\$1,099,077
SH 1N	I		CHURTON PARK ON NBD	4	1	8	5	5	23	18	43	26	\$1,098,772
SH 1N	1		TE HORO BEACH ROAD	1	0	0	2	2	5	2	20	0	\$1,084,874
SH 1N	1		TROY ST	5	6	7	4	2	24	14	25	25	\$1,057,788
SH 1N VIVIAN	1		TORY ST	2	2	2	4	0	10	5	10	30	\$1,057,080
SH 1N	1		VIVIAN ST	1	2	5	2	1	11	7	36	73	\$1,055,285
SH 2	1		ESSEX ST	4	2	2	1	0	9	4	33	11	\$1,050,808
SH 1N COBHAM	1		CALABAR ROAD	0	1	3	0	4	8	5	38	25	\$1,037,993
SH 2	I		TOTARA PARK ROAD	4	1	7	5	7	24	19	21	46	\$1,028,177
SH 1N VIVIAN	I		CUBA ST	2	2	3	3	1	11	7	27	45	\$1,018,766
SH 2	I		CORNISH ST	0	1	2	1	1	5	2	0	20	\$1,008,224
SH 1N	I		PASCOE AVENUE	1	2	5	1	2	11	8	9	9	\$976,816
	I		SH 1N	2	4	6	6	4	22	18	55	27	\$974,823
SH 1N BUCKLE	I		TARANAKI ST	2	9	11	9	4	35	28	29	31	\$962,867
SH 2	I		BUCHANAN PLACE	2	0	1	0	0	3	0	33	67	\$948,640
					-		-	-	-	-		-	



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

CRASH ROAD			SIDE ROAD	2005	2006	2007	2008	2009	TOTAL	Non- Injury	Wet Crash %	Dark Crash %	Crash Costs
SH 1N	I.		PAREMATA LINK S	5	6	13	8	5	37	34	35	19	\$897,499
SH 2		50 S	MAJOR DRIVE	7	4	5	2	1	19	16	37	32	\$879,786
SH 2	1	00 0	MICHAEL ST	1	1	1	0	2	5	2	0	20	\$863,022
SH 1N		700 S	MUNGAVIN OFF NBD	4	3	1	1	7	16	- 11	31	38	\$862,232
SH 1N	А		TAWA OFF SBD	7	2	3	3	2	17	13	41	29	\$853,877
SH 1N	1		HAMILTON ROAD	4	5	9	8	7	33	28	24	27	\$818,307
SH 1N		200 N	TYERS ROAD	1	5	2	5	3	16	12	56	25	\$806,114
SH 2		2000 E	SH 1N	2	2	3	3	2	12	5	42	42	\$793,779
SH 1N		300 N	JOHNSONVILLE ON NBD	-	5	3	3	2	14	9	57	36	\$784,206
TAKAPU ROAD	1	000 11	TAWA OFF SBD	4	7	2	1	-	15	10	60	47	\$739,129
SH 58	·		PAEKAKARIKI HILL ROAD	2	5	2	2	3	14	10	21	57	\$718,498
SH 1N	, i		GOA ST	4	3	1	6	1	15	9	53	20	\$641,107
SH 1N	, i		PIRIE ST	1	2	9	9	7	28	25	18	39	\$636,047
SH 1N SUSSEX	i		BUCKLE ST	4	5	7	5	, 5	26	23	27	50	\$598,917
SH 1N BUCKLE	, i		TASMAN ST	4	1	4	7	1	17	11	24	18	\$595,473
SH 2	·	1500 S	RIMUTAKA SUM	1	1	0	3	4	9	4	67	11	\$592,744
SH 2	1	1000 0	TOPAZ ST	2	4	1	1	0	8	3	25	50	\$564,645
SH 1N	·	30 E	WEST PORTAL	0	4	4	3	1	12	5	17	58	\$558,292
SH 1N		800 E	AOTEA ON NBD	3	1	2	2	1	9	5	33	56	\$546,916
CENTENNIAL NBD	I	000 L	JARDEN MILE	0	2	3	3	2	10	6	20	30	\$543,218
SH 1N	·	100 N	WILLIS ST	3	3	0	2	3	11	8	55	36	\$538,945
SH 1N	1	100 14	KEBBELL DRIVE	4	1	2	2	1	10	7	30	10	\$534,987
SH 1N		2000 S	MUNGAVIN ON SBD	3	2	2	2	0	9	6	56	11	\$497,331
SH 58		1000 N	MOUNT CECIL ROAD	1	2	3	1	2	9	6	22	44	\$491,737
SH 1N	I	1000 14	WATERFALL ROAD	2	0	6	1	0	9	6	33	22	\$491,021
SH 2	·	4000 E	MARCHANT ROAD	1	1	3	2	2	9	6	33	44	\$490,041
SH 2	I	4000 L	KOROKORO ROAD	3	2	4	3	1	13	9	23	8	\$488,086
SH 58	, I		FLIGHTYS ROAD	2	0	2	3	0	7	3	43	43	\$468,767
SH 1N	·	450 S	TE MOANA ROAD	4	2	3	1	1	11	8	0	0	\$467,038
SH 11		2500 E	RIMUTAKA SUMMIT	1	3	1	0	3	8	5	63	0	\$456,858
SH 1N		300 E	PAREMATA LINK STH	1	2	1	2	2	8	5	13	13	\$454,980
SH 1N	1	300 0	PAREMATA LINK NTH	4	4	1	2	4	15	12	27	27	\$414,388
SH 1N		500 N	TAYLORS ROAD	1	2	0	1	1	5	1	20	20	\$396,336
SH 11	А	300 1	RIMUTAKA NO7 BR	2	0	0	2	2	6	3	83	17	\$380,567
SH 58	А	1000 N	SH 2	1	0	1	1	3	6	3	33	33	\$377,811
SH 1N		500 S		0	1	3	2	0	6	3	17	33	\$376,831
SH 11		400 N	BLOCK ROAD	0	1	1	4	0	6	3	0	0	\$376,749
SH 2	I	400 14	PERRY ST	1	2	4	1	4	12	9	25	17	\$357,806
SH 1N	·	20 E	EAST PORTAL	1	2	3	2	1	9	5	33	22	\$356,254
SH 11	I.	20 L	COCKBURN ST	0	1	2	4	2	9	5	22	11	\$351,892
SH 2		1240 N	RUAMAHANGA BR	0	4	0	4 0	2 1	5	2	80	20	\$345,872
SH 2		20 S	NEICHES LANE	2	4	0	2	1	5	2	20	20	\$343,812 \$343,810
SH 1N KARO	I	20 3	CUBA ST	2	1	1	2	3	8	4	20 25	20 25	\$343,810 \$334,502
SH 2		800 N	FOURTH ST	1	2	1	0	0	4	4	23 50	25	\$308,136
SH 1N	I	000 1	DOLLY VARDEN CRESCEN		4	0	0	1	8	5	13	13	\$296,970
SH 1N	'	800 N	WHITFORD BROWN AVENU		4	0	0	1	3	0	0	33	\$290,970 \$269,500
on m		000 1	WITH ONE BROWN AVENU		,	0	0	1	5	0	0	55	Ψ203,000



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

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

CRASH ROAD			SIDE ROAD	2004	2005	2006	2007	2008	2009	TOTAL	Non- Injury	Wet Crash %	Dark Crash %
SH 1N	I		KAPITI ROAD	∾ 10	<b>N</b> 9	7	7	9	<b>N</b> 15	57	43	11	21
SH 1N		150 S	NORTH PORTAL	5	8	10	1	3	10	37	29	27	19
SH 2	А	100 0	TRIG TRACK CNR	0	5	5	6	7	9	32	24	56	31
SH 2		200 S	PETONE ON SBD	5	2	3	5	6	9	30	26	33	20
SH 1N	I		RAUMATI ROAD	4	1	6	0	4	9	24	12	29	25
SH 1N		250 S		3	0	6	3	4	8	24	18	25	17
SH 1N	I	200 0	VICTORIA ST	0	0	0	9	3	7	19	9	26	47
SH 1N			ELIZABETH ST	0	3	1	4	4	6	18	16	17	11
SH 1N		700 S	MUNGAVIN OFF NBD	2	3	3	1	1	6	16	11	38	44
SH 1N			TAWA OFF NBD	1	4	1	2	2	6	16	10	38	44
SH 2			WESTERN HUTT ON NBD	0	2	2	2	2	5	13	8	31	46
SH 1N	I.	200 2	MILL ROAD	2	1	1	0	3	5	12	11	17	25
SH 1N			FOREST LAKES ROAD	- 1	1	2	0	2	5	11	6	45	27
SH 1N COBHAM	I.		CALABAR ROAD	2	0	1	3	0	4	10	7	30	20
SH 1N	•	3800 S	AMES ST	- 1	1	1	0	2	4	9	9	22	33
SH 2			RIMUTAKA SUM	0	1	1	0	3	4	9	4	67	11
MUNGAVIN AVENUE	I		MUNGAVIN OFF SBD	0	2	0	1	2	4	9	7	33	89
SH 2	-	200 S		0	2	1	0	2	4	9	8	11	11
SH 58		1000 N		1	1	0	1	-	3	7	4	29	43
SH 1N				0	3	0	0	1	3	7	5	43	29
SH 1N			PASCOE AVENUE	0	1	1	1	1	3	7	7	0	0
SH 2	I	200 11	NORANA ROAD	2	0	0	1	1	3	7	7	43	14
SH 1N RUAHINE		50 N	WELLINGTON ROAD	0	1	1	1	1	3	7	6	29	14
SH 58			BRADEY ROAD	2	0	0	1	0	3	6	3	50	17
SH 1N			PASCOE AVENUE	0	0	0	1	2	3	6	5	0	17
SH 1N			GRAY ST	1	0	1	1	0	3	6	6	33	33
SH 1N			WEST PORTAL	0	0	0	1	1	4	6	4	0	50
SH 58	I		ATIAMURI CRESCENT	0	1	2	0	0	3	6	3	50	33
SH 2		40 E	CORNISH ST	0	1	2	0	0	3	6	4	17	50
SH 1N	I.		ULRIC ST	0	0	2	0	0	4	6	4	50	33
SH 58	I.		JAMES COOK DRIVE	1	0	1	0	1	3	6	6	0	33
SH 1N	-	100 N	NGAIO ROAD	0	0	1	1	1	3	6	5	0	33
SH 2	I.		PARK ROAD	1	0	0	1	0	3	5	3	20	0
SH 2		600 W	RIMUTAKA NO6 BR	0	1	0	1	0	3	5	3	40	0
SH 1N			MILL ROAD	0	0	0	0	1	4	5	3	0	0
SH 1N	I.		SERVICE LANE	0	1	0	0	1	3	5	5	40	20
SH 2		50 W	INTERMEDIATE ST	0	0	0	0	1	3	4	3	0	25
SH 2	I.		BOUNDARY ROAD	0	0	0	0	1	3	4	4	50	0
SH 2	I.		CORNWALL ST	0	0	0	1	0	3	4	2	0	75
SH 58		300 W	BAYVIEW ROAD	0	0	1	0	0	2	3	2	0	0
SH 2	I.		PAPAWAI ROAD	0	0	0	0	1	2	3	2	33	67
SH 1N		700 S	CHURTON PARK ON SBD	1	0	0	0	0	2	3	2	100	0
SH 58			HARRIS ROAD	0	0	0	0	0	3	3	2	67	100
SH 1N			TEIHANA ROAD	1	0	0	0	0	2	3	2	0	33
SH 1N			WEST PORTAL	0	0	0	1	0	2	3	3	0	67
SH 1N			KEBBELL DRIVE	0	0	0	1	0	2	3	2	33	67
SH 2			RENALL ST	1	0	0	0	0	2	3	2	33	0

## appendix

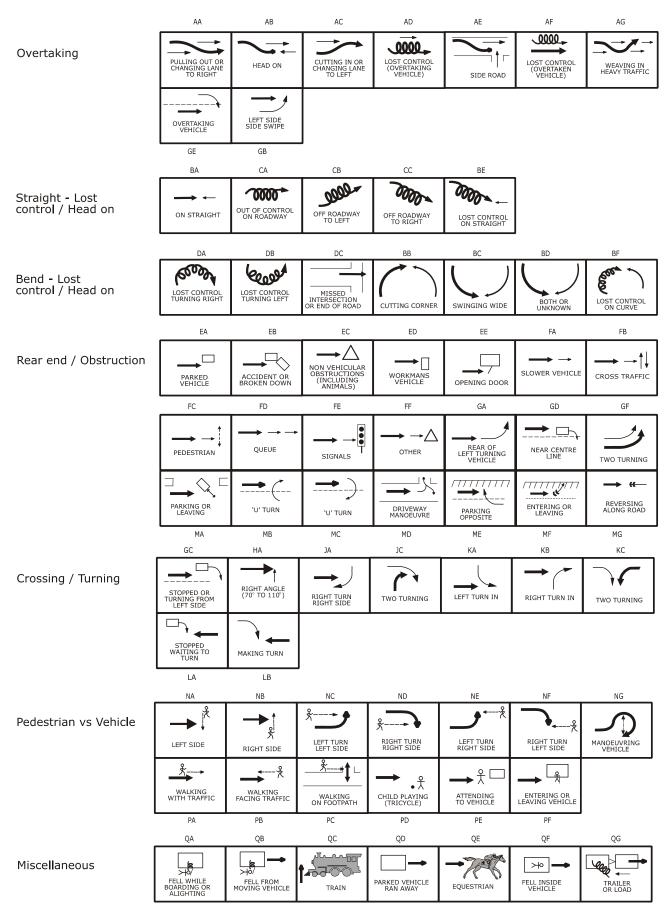
- Groupings of crash types
- Grouping of contributing factors
- General factor list
- General movement types

Appendix

### Explanatory notes for the appendix

- 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.
- 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



## Groupings of contributing factors

Factor group	Factor codes included
Alcohol involved	100 – 101
	103 – 109
Too fast	110 – 119
	430 – 432
Failed to give way or stop	300 – 314
	320 – 328
Failed to keep left	120 – 128
Failed to keep left	205
	203
Overtaking	150 – 161
	100
Incorrect lanes or position	129 170 – 183
	200 - 204
	200 – 204 206 – 209
	440 - 448
	440 - 448
Poor handling	130 – 134
5	137 – 149
	420 – 429
Poor observation	330 – 360
	370 – 379
Poor judgement	380 – 387
roor judgement	400 - 407
Fatigue	410 – 415
<b></b>	500 507
Disabled, old age or illness	500 – 507
Pedestrian factors	700 – 731
Cyclist factors	Any factor coded against a
	cyclist
	10/ /00 /00
Vehicle factors	136, 600 – 699
Road factors	135, 800 – 899
	100,000 - 077
Weather	900 – 909

Note:

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



## NZ TRANSPORT AGENCY VEHICLE MOVEMENT CODING SHEET

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

	TYPE	Α	В	С	D	Е	F	G	0
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
В	HEAD ON	ON STRAIGHT	CUTTING CORNER	SWINGING WIDE	BOTH OR UNKNOWN	LOST CONTROL ON STRAIGHT	LOST CONTROL ON CURVE		OTHER
С	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
Е	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		QUEUE				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
Н	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
Μ	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
Ν	PEDESTRIANS CROSSING ROAD		RIGHT SIDE	LEFT TURN LEFT SIDE	RIGHT TURN RIGHT SIDE	LEFT TURN RIGHT SIDE	RIGHT TURN LEFT SIDE	MANOEUVRING VEHICLE	OTHER
Ρ	PEDESTRIANS OTHER	WALKING WITH TRAFFIC	WALKING FACING TRAFFIC	WALKING ON FOOTPATH	CHILD PLAYING (INCLUDING TRICYCLE)		ENTERING OR LEAVING VEHICLE		OTHER
Q	MISCELLANEOUS	FELL WHILE BOARDING OR ALIGHTING	₩ →Ho/ FELL FROM MOVING VEHICLE		PARKED VEHICLE RAN AWAY		FELL INSIDE VEHICLE	TRAILER OR LOAD	OTHER

New Zealand Government

\* = 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 acceleration134 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 turn161 Without care at a pedestrian crossing

#### 170 Wrong lane or turned from wrong position

- 171 Turned left 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

380 Misjudged speed, distance, size or position of: 381 Other vehicle coming from behind or alongside

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

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

387 Misjudged intentions of another party

road rules and road conditions 405 Driver under instruction

406 At towing trailer / other vehicle 407 Driver over-reacted

410 Fatigue (drowsy, tired, fell asleep)

414 Worked long hours before driving 415 Exceeded driving hours

422 Static 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

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

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)

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 urbited (abot 1

520 Driver or passenger, boarding, leaving , in vehicle

507 Impaired ability due to old age

vehicle / shot at 516 Object thrown from vehicle 517 Stolen vehicle

523 Riding in insecure position 524 Interfered with driver

527 Child playing in parked vehicle

521 Boarding moving vehicle 522 Intentionally leaving moving vehicle

525 Opened door inadvertently 526 Overloaded vehicle (with passengers)

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

510 Intentional or criminal

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** 

420 Incorrect use of vehicle controls

408 Unsupervised cyclist

411 Long trip 412 Lack of sleep 413 Exhaust fumes

421 Started in gear 422 Stalled engine

430 Showing off

431 Racing 432 Playing chicken

**GENERAL DRIVER** 

382 Other vehicle coming from another direction with

- 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

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

etc) 327 For police or flag-person

330 Inattentive: failed to notice

333 Indication of vehicle in front 334 Traffic lights

341 Obstructions on Roadway

350 Attention diverted by: 351 Passengers

destination

361 Navigation device

363 Driver dazzled

too late

liaht

353 Other traffic

359 Cell phone 360

362

332 Bend in road

328 For school patrol / kea crossing

- 301 At Stop sign 302 At Give Way sign 303 When turning to non-turning traffic 304 When deemed turning by markings, not aeometry
- 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

326 At flashing red lights (Rail Xing, Fire Stn

331 Vehicle slowing, stopping or stationary in front

335 Intersection or its Stop / Give Way control336 Other regulatory sign / markings

337 Warning sign 338 Direction, information signs / markings 339 Road-works signs 340 Lane use arrows / markings?

352 Scenery or persons outside vehicle

354 Animal or insect in vehicle 355 Trying to find intersection, house number,

astination 356 Advertising or signs 357 Emotionally upset /road rage 358 Cigarette, radio, heater, AC, glove box, obj under drivers feet/pedals etc

CB radio/ non cell comms device

370 Did not see or look for another party until

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

#### 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 windscreen642 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 of 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 locipath 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

840 Signs and signals 841 Damaged, removed or malfunction

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

864 Pedestrian crossing not adequately lighted

872 Traffic island(s) Ineffective, badly located or

842 Badly located 843 Ineffective or inadequate 844 Necessary 845 Signals turned off

850 Markings

860 Street lighting

862 Inadequate

designed

902 Dazzling sun 903 Strong wind

904 Fog or mist 905 Snow, sleet or hail

unexpected

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 hulding (area

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

915 Wild animal

**MISCELLANEOUS** 

900 Weather 901 Heavy rain

910 Animals

Glare on wet road

873 Cyclist squeeze point

870 Raised islands and roundabouts

871 Traffic island(s) difficult to see

911 Household pet rushed out or playing 912 Farm animal straying

914 Farm animal attended, but out of control

913 Farm animal attended, but inadequate warning or

861 Failed

- 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

815 Curve not well banked 816 Edge badly defined or gave way

817 Under construction or maintenance 818 Unusually narrow

823 Flood waters, large puddles, ford 824 Road works not adequately lighted 825 Road works not adequately signposted

838 Temporary obstruction, dust or smoke 839 Parked vehicle

826 Roadside object fell on vehicle 827 Object flicked up by vehicle

#### 810 Surface

- 811 Potholed 812 Uneven
- 813 Deep loose metal 814 High crown

819 Broken glass

830 Visibility limited 831 Curve 832 Crest 833 Building 834 Trees 835 Hedge or fence 836 Scrub or long grass

837 Bank

820 **Obstructed** 821 Fallen tree or branch

822 Slip or subsidence