

# 2009 Speed Survey Results Summary

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## **Background to the Annual Speed Surveys**

The speed surveys are designed to monitor changes in free speeds of vehicles in both 100km/h speed limit areas and main urban 50km/h areas. Free speeds are speeds attained when the vehicle is unimpeded by the presence of other vehicles (ie there is some distance between a vehicle travelling at a free speed and the vehicle in front of it) or by environmental features such as traffic lights, intersections, hills, corners or road works. By monitoring the speeds of unimpeded vehicles this survey measures driver choice of speed. This measure provides us with information on the effectiveness of speed management measures and provides valuable information for developing safety policies.

Speed surveys are conducted at randomly selected sites around New Zealand annually to provide an estimate of the national speed profile. There are about 65 open road and 65 urban sites surveyed each year. The current sites have been surveyed since 1995. The speed survey results can also be broken down to a regional level and into light and heavy vehicles. A smaller set of historical sites provided a more restricted profile (national estimates only) between 1991 and 2001.

The regional surveys are designed to track changes over time in driver speed choice within regions, they are not designed to provide valid comparisons between regions.

Vehicle speeds are measured by a surveyor, who surveys the site at the same time of day and day of the week as in previous years. For some sites, a laser is used to measure speeds; for other sites, cables are placed on the road surface to measure speeds. The surveys are carried out in an unobtrusive manner to ensure that the speeds measured are minimally affected by the survey procedures.

The national speed profile provides a measure of safety on New Zealand's roads. Research has shown a clear link between vehicle speeds and road crashes. This is because as speed increases, the stopping distance increases, there is greater probability of exceeding the critical speed on a curve, and there is greater chance other road users will misjudge how fast the speeding driver is travelling. Furthermore the severity of injuries resulting from a crash is directly related to the pre-crash speed of the vehicle, whether or not speeding was a factor in the crash.

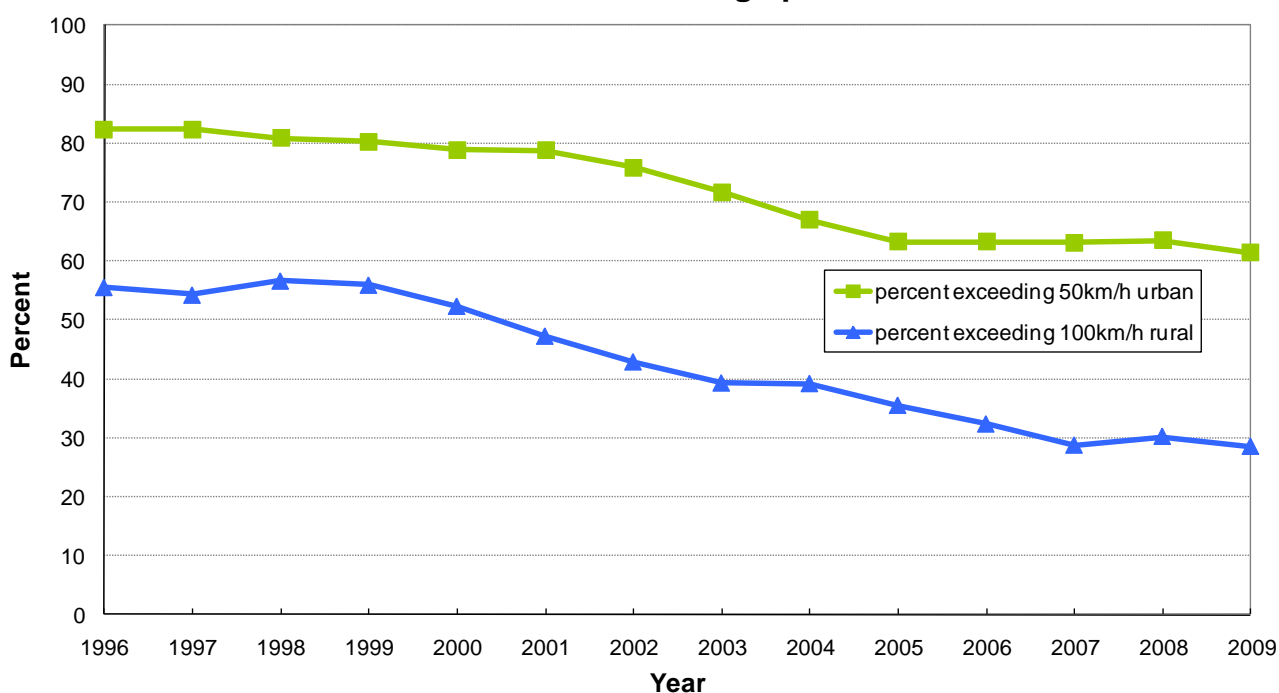
## Car Speeds

In 2009, speeds were surveyed for 13705 cars on the open road (speed limit 100 km/h) and 16131 cars on urban roads (speed limit 50 km/h). Surveys were spread over 71 open road and 65 urban sites, of which 64 and 63 respectively were the same sites as in 2008. (The remainder were either new sites added in 2009, or had to be moved due to changes to the road environment).

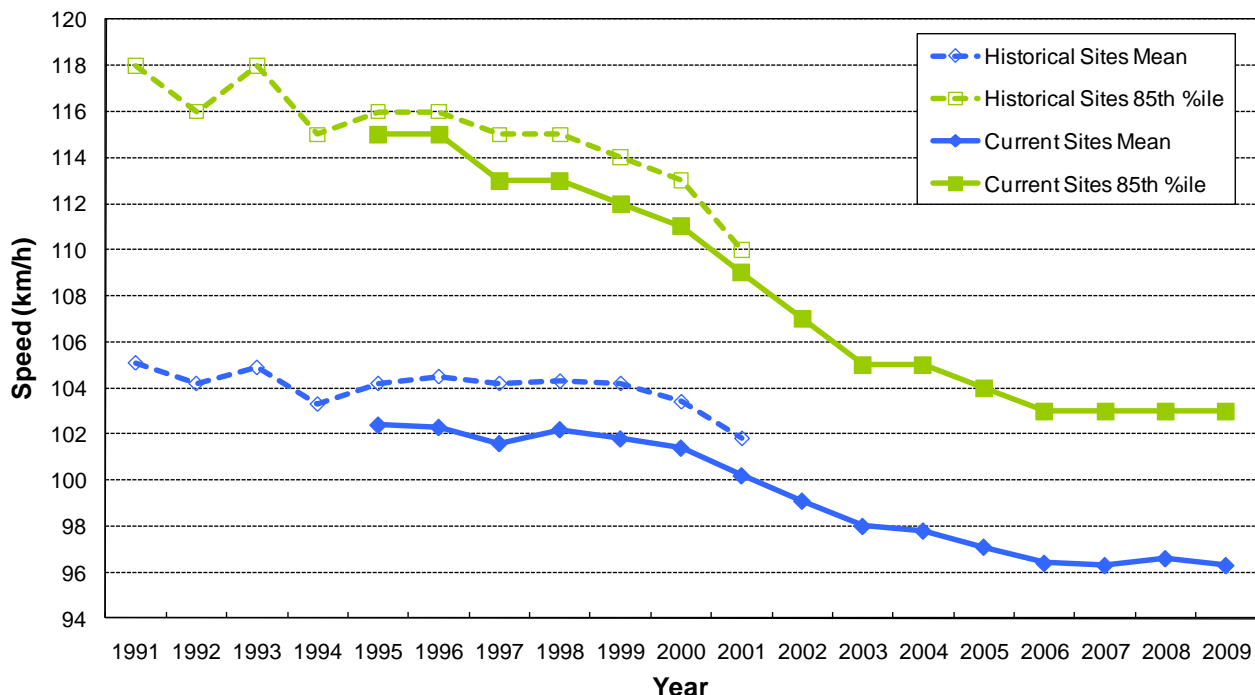
Year	Open Road Car Speeds			Urban Car Speeds		
	Mean speed (km/h)	85th * percentile (km/h)	Percent travelling over 100 km/h	Mean speed (km/h)	85th * percentile (km/h)	Percent travelling over 50 km/h
1996	102.3	115	56%	56.5	64	82%
1997	101.6	113	54%	56.3	63	82%
1998	102.2	113	57%	55.9	63	81%
1999	101.8	112	56%	55.8	63	80%
2000	101.4	111	52%	55.3	62	79%
2001	100.2	109	47%	55.2	62	79%
2002	99.1	107	43%	54.3	61	76%
2003	98.0	105	39%	53.7	60	72%
2004	97.8	105	39%	52.9	58	67%
2005	97.1	104	36%	52.4	58	63%
2006	96.4	103	32%	52.6	58	63%
2007	96.3	103	29%	52.5	58	63%
2008	96.6	103	30%	52.6	58	64%
2009	96.3	103	29%	52.3	57	61%

\* 85<sup>th</sup> percentile speed means 15% of the vehicles surveyed were travelling faster than this speed.

**New Zealand free vehicle speeds  
Percent of cars exceeding speed limit**

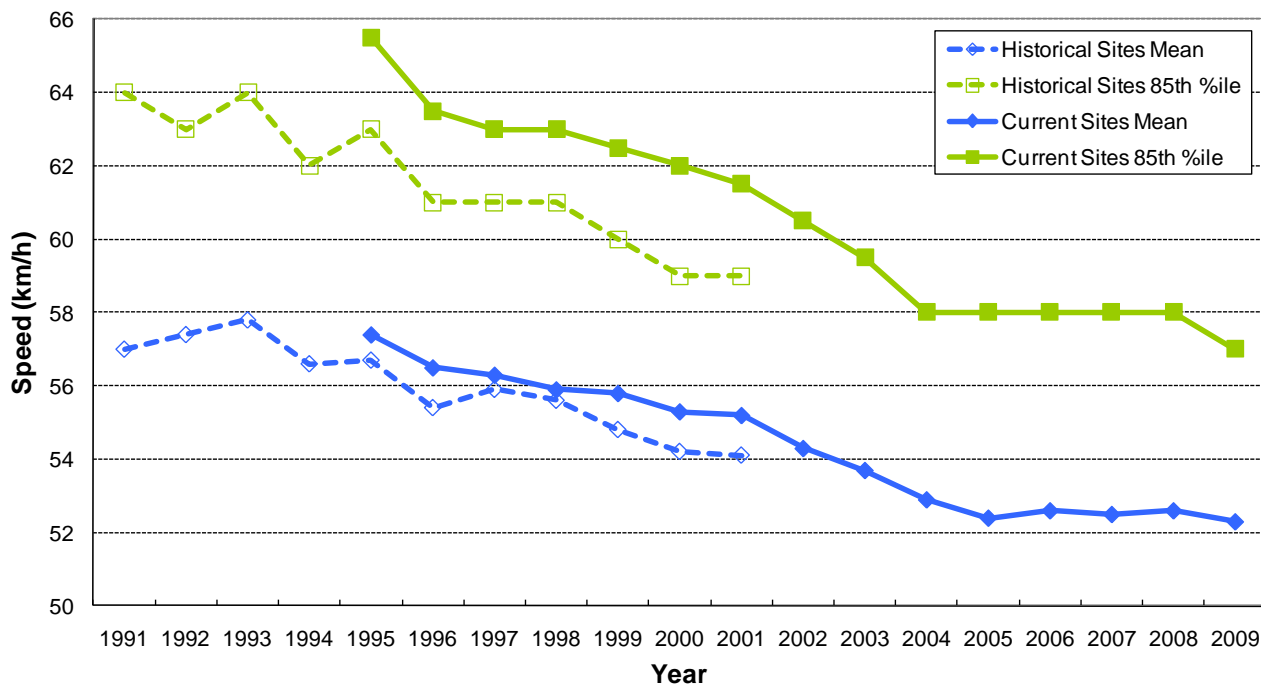


## New Zealand Open Road Speeds



The rural 'Historical Sites' are a set of about 34 sites around New Zealand that have been used to monitor vehicle speeds since 1987. The rural 'Current Sites' are a more comprehensive set of approximately 65 sites which has been surveyed annually since 1995.

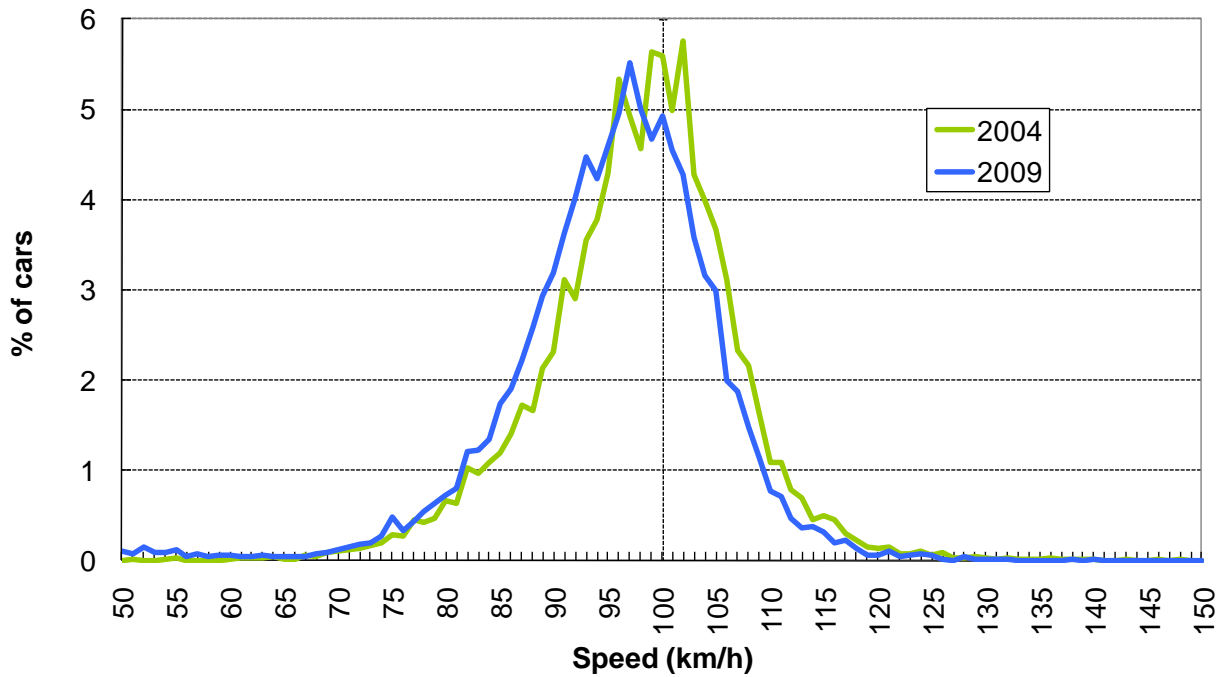
## New Zealand Urban Speeds



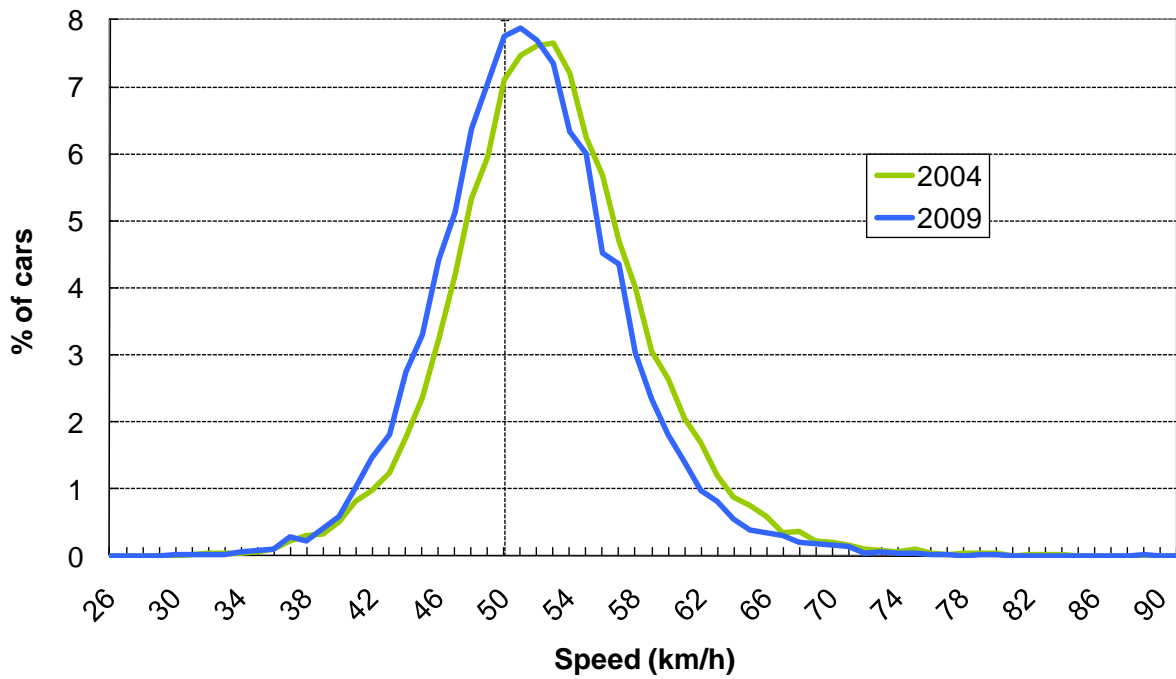
The urban 'Historical Sites' are a historical set of 9 sites in Auckland, Wellington and Christchurch that have been used to monitor vehicle speeds since 1987. The urban 'Current Sites' are a more comprehensive set of approximately 65 sites which has been surveyed annually since 1995.

The following two charts show how the open road and urban speed distributions have changed over the last five years.

### Open road speed distribution



### Urban speed distribution



## Regional results

The regional surveys are designed to track driver speed choice within regions. They are **not** designed to provide valid comparisons between regions.

### Open road car speeds

#### Mean speeds (km/h)

Region	2003	2004	2005	2006	2007	2008	2009	N <sup>#</sup>
Northland	95.7	96.5	95.9	96.0	95.0	96.3	95.8	781
Auckland	98.5	97.0	97.0	96.5	96.2	95.3	95.9	1271
Waikato	97.0	97.0	96.2	96.6	95.2	94.6	94.6	1571
Bay of Plenty	95.1	96.4	95.5	91.2	91.5	95.4	96.4	628
Gisborne	97.7	97.3	96.2	97.3	97.8	95.8	96.7	1252
Hawkes Bay	100.0	99.0	98.0	96.1	96.3	99.8	99.3	903
Taranaki	97.7	98.1	96.2	94.2	94.4	94.3	93.0	670
Manawatu-Wanganui	100.8	101.1	101.2	97.3	97.7	97.0	97.4	908
Wellington	97.4	96.2	96.6	92.1	93.2	94.0	95.6	1891
Nelson-Marlborough	-	-	-	-	-	-	* note	303
West Coast	-	-	-	-	-	-	* note	251
Canterbury	100.0	99.3	99.1	100.2	99.3	98.5	98.9	1571
Otago	97.4	97.9	98.0	97.3	99.8	100.9	99.7	1359
Southland	99.2	98.3	-	*note	99.4	100.1	99.9	769
<b>New Zealand</b>	<b>98.0</b>	<b>97.8</b>	<b>97.1</b>	<b>96.4</b>	<b>96.3</b>	<b>96.6</b>	<b>96.3</b>	<b>13705</b>

# N = number of cars surveyed in latest year

#### 85<sup>th</sup> percentile speeds (km/h)

(85<sup>th</sup> percentile speed means 15% of the vehicles surveyed were travelling faster than this speed.)

Region	2003	2004	2005	2006	2007	2008	2009
Northland	105	105	105	104	102	104	103
Auckland	112	110	110	109	109	108	110
Waikato	103	103	102	102	101	101	100
Bay of Plenty	105	107	105	101	101	106	107
Gisborne	108	108	106	107	107	105	106
Hawkes Bay	106	106	104	101	101	105	104
Taranaki	105	105	103	102	102	102	100
Manawatu-Wanganui	107	108	108	104	103	103	103
Wellington	106	104	105	101	102	102	104
Nelson-Marlborough	-	-	-	-	-	-	* note
West Coast	-	-	-	-	-	-	* note
Canterbury	106	105	104	105	104	103	103
Otago	105	105	104	104	105	105	104
Southland	107	104	-	-	105	106	105
<b>New Zealand</b>	<b>105</b>	<b>105</b>	<b>104</b>	<b>103</b>	<b>103</b>	<b>103</b>	<b>103</b>

\* Note: Too few sites in this area to provide regional estimates.

## Urban car speeds

### Mean speeds (km/h)

Region	2003	2004	2005	2006	2007	2008	2009	N <sup>#</sup>
Northland	53.1	51.8	51.6	53.0	53.0	52.4	51.8	642
Auckland	55.9	54.5	54.5	55.4	55.3	55.1	54.8	2795
Waikato	55.8	54.4	53.7	53.9	52.2	52.5	51.5	1374
Bay of Plenty	49.5	49.6	49.6	47.4	48.2	49.5	49.2	831
Gisborne	56.6	56.0	55.6	55.7	55.2	55.8	55.0	1492
Hawkes Bay	53.7	53.3	51.3	52.3	51.7	52.2	52.7	914
Taranaki	51.2	50.3	49.5	48.4	48.9	48.2	48.7	1357
Manawatu-Wanganui	51.9	51.5	51.8	50.3	50.2	51.6	51.2	1358
Wellington	51.5	50.8	49.9	49.1	49.4	49.7	49.3	1446
Nelson-Marlborough	50.1	50.4	49.7	49.0	49.0	50.4	48.9	971
West Coast	-	-	-	-	-	-	* note	-
Canterbury	53.2	52.1	52.3	52.5	52.5	52.1	52.5	1049
Otago	52.7	52.3	*note	53.1	52.4	51.4	51.4	1143
Southland	54.2	54.4	-	* note	55.1	54.4	54.3	759
<b>New Zealand</b>	<b>53.7</b>	<b>52.9</b>	<b>52.4</b>	<b>52.6</b>	<b>52.5</b>	<b>52.6</b>	<b>52.3</b>	<b>16131</b>

# N = number of cars surveyed in latest year

### 85<sup>th</sup> percentile speeds (km/h)

(85<sup>th</sup> percentile speed means 15% of the vehicles surveyed were travelling faster than this speed.)

Region	2003	2004	2005	2006	2007	2008	2009
Northland	58.5	57.0	57.0	57.5	58.0	57.0	56
Auckland	61.0	59.5	59.0	60.0	60.0	60.0	59
Waikato	61.5	60.0	59.5	59.5	58.0	58.0	57
Bay of Plenty	55.5	55.0	54.5	53.0	53.5	54.0	54
Gisborne	63.5	62.5	62.5	61.5	61.5	62.5	62
Hawkes Bay	59.0	58.5	56.5	57.0	57.0	57.0	57
Taranaki	56.5	55.0	55.0	54.0	54.0	53.0	54
Manawatu-Wanganui	57.0	56.5	56.5	55.0	55.0	56.0	56
Wellington	56.0	55.0	54.0	53.0	53.0	53.5	53
Nelson-Marlborough	55.5	55.0	54.5	53.5	53.5	54.5	53.5
West Coast	-	-	-	-	-	-	*note
Canterbury	59.0	58.0	58.0	58.0	59.0	58.0	58
Otago	58.0	57.0	*note	57.0	57.0	56.5	56.5
Southland	59.0	60.0	-	*note	60.5	59.5	58.5
<b>New Zealand</b>	<b>59.5</b>	<b>58.0</b>	<b>58.0</b>	<b>58.0</b>	<b>58.0</b>	<b>58.0</b>	<b>57</b>

\* Note: Too few sites in this area to provide regional estimates.

## Heavy Vehicle Speeds

From 3 May 2004 the open road speed limit for all heavy vehicles is 90 km/h. Prior to that heavy vehicles towing trailers, other than articulated trailers, were subject to an 80 km/h limit.

### All Heavy vehicles

Year	Open Road HV Speeds				Urban HV Speeds			
	Mean speed (km/h)	85 <sup>th</sup> * percentile (km/h)	Percent travelling over 90 km/h	N #	Mean speed (km/h)	85 <sup>th</sup> * percentile (km/h)	Percent travelling over 50 km/h	N #
1996	91.4	100	59%	3313	53.8	61	69%	1875
1997	91.6	100	60%	3414	54.5	61	74%	1744
1998	92.1	101	62%	3336	54.1	61	72%	1736
1999	92.1	100	63%	2946	53.4	60	67%	1711
2000	91.5	100	60%	3483	53.3	60	67%	1890
2001	90.6	98	55%	3279	53.4	60	70%	1482
2002	89.5	97	49%	2849	52.8	60	64%	1312
2003	89.3	96	46%	3084	52.1	59	62%	1334
2004	88.9	96	46%	3032	51.5	57	59%	1251
2005	88.9	95	46%	2951	51.0	57	53%	1139
2006	89.3	95	44%	2560	51.0	57	51%	960
2007	88.6	94	40%	2676	50.5	56	49%	1028
2008	89.2	95	46%	2939	50.9	56	55%	903
2009	87.8	95	42%	2964	50.0	55	47%	868

### Heavy vehicles with no trailer (Rigid trucks and Buses)

Year	Open Road HV Speeds HV - no trailer				Urban HV Speeds HV - no trailer			
	Mean speed (km/h)	85 <sup>th</sup> * percentile (km/h)	Percent travelling over 90 km/h	N #	Mean speed (km/h)	85 <sup>th</sup> * percentile (km/h)	Percent travelling over 50 km/h	N #
1996	91.2	101	59%	1741	53.8	60	69%	1590
1997	91.3	100	57%	1876	54.6	61	75%	1542
1998	91.6	101	59%	1837	54.1	61	72%	1509
1999	91.9	101	60%	1631	53.5	60	68%	1503
2000	91.5	100	60%	1832	53.2	60	68%	1636
2001	90.8	99	57%	1670	53.5	60	70%	1283
2002	90.1	98	54%	1409	53.0	59	64%	1136
2003	89.6	97	49%	1508	52.1	58	63%	1142
2004	88.6	96	44%	1440	51.6	57	59%	1070
2005	89.0	96	45%	1416	51.0	57	53%	1019
2006	89.0	96	42%	1177	51.0	57	51%	830
2007	88.1	94	37%	1232	50.5	56	49%	853
2008	88.4	95	40%	1295	50.9	56	55%	788
2009	87.1	95	39%	1364	50.0	55	47%	747

\* 85<sup>th</sup> percentile speed means 15% of the vehicles surveyed were travelling faster than this speed.

# N = number of Heavy Vehicles surveyed.

## Articulated heavy vehicles (Semi-trailers and B-Trains)

Open Road HV Speeds				
HV - articulated				
Year	Mean speed (km/h)	85th * percentile (km/h)	Percent travelling over 90 km/h	N #
1996	92.7	100	63%	681
1997	94.1	100	73%	640
1998	94.0	101	71%	606
1999	94.1	101	77%	496
2000	93.7	100	75%	592
2001	92.9	98	70%	566
2002	91.4	98	59%	489
2003	91.9	98	66%	510
2004	91.0	96	58%	537
2005	89.9	95	53%	479
2006	89.9	95	49%	470
2007	89.9	95	48%	528
2008	90.3	94	54%	602
2009	89.0	94	46%	524

In the latest year only 67 articulated rigs were surveyed in urban areas.

## Heavy vehicles towing trailers, other than articulated (Truck and trailer, A-Trains)

Open Road HV Speeds				
HV – towing trailers other than articulated				
Year	Mean speed (km/h)	85th * percentile (km/h)	Percent travelling over 90 km/h	N #
1996	91.0	100	57%	891
1997	91.1	99	60%	898
1998	91.9	99	62%	893
1999	91.6	99	62%	819
2000	90.4	98	53%	1059
2001	89.0	96	43%	1043
2002	88.2	94	36%	951
2003	87.7	94	32%	1066
2004	88.4	94	40%	1055
2005	88.5	94	43%	1056
2006	89.3	94	42%	913
2007	88.7	94	41%	916
2008	89.7	95	48%	1042
2009	88.2	94	43%	1076

In the latest year only 24 truck and trailer rigs were surveyed in urban areas.

\* 85<sup>th</sup> percentile speed means 15% of the vehicles surveyed were travelling faster than this speed.

# N = number of Heavy Vehicles surveyed.

Enquires relating to this speed survey data may be directed to the Ministry of Transport, PO Box 3175, Wellington, or by email on [info@transport.govt.nz](mailto:info@transport.govt.nz).

For more information about road safety, check out the Ministry of Transport website at [www.transport.govt.nz](http://www.transport.govt.nz).