

# *Sustainable and safe land transport trends and indicators*

## **Trend #2: Development of towns and cities, design of networks, and operating rules provide a safe and convenient environment for walking, cycling and other personal travel options**

This is one of 13 trends identified by Land Transport NZ to represent progress towards land transport sustainability, and safer transport on land.

### **Approach taken**

Providing a safe and convenient environment for walking, cycling and other personal travel options involves (1) the formulation and implementation of strategies, and (2) providing appropriate and safe facilities.

Walking and cycling environments are local environments. While there is a national strategy that gives guidance, actual initiatives to create or improve environments are local. Environments for walking and cycling are therefore many and varied throughout New Zealand.

The only way to quickly gain an impression of whether local environments, in aggregate, are becoming safer and more convenient has been to look at actual use and actual safety performance - the approach taken in this report. The graphs in the body of the report look at overall NZ performance. Where appropriate, tables have been added in an Appendix to provide a perspective on use and safety in each region.

This report:

- briefly discusses **strategies**
- looks at how much walking and cycling is **actually occurring** (as a way of understanding whether users consider facilities to be safe and convenient enough to actually use them)
- looks at **safety** of walkers and cyclists (Poor safety perceptions have been identified as a significant barrier to increased uptake of walking and cycling for day-to-day transport. Improving pedestrian and cyclist safety is a government priority.)

### **Walking and cycling strategies**

New Zealand's first **national** walking and cycling strategy *Getting there – on foot, by cycle* was released in February 2005 to

- improve environments for walking and cycling
- improve safety for pedestrians and cyclists
- address the factors that influence the choice that individuals make to walk or cycle.

Many **local** authorities around the country have also developed their own walking and cycling strategies, which range from outlines of broad objectives to plans of comprehensive networks and individual walking and cycling projects.

## 'Occurrence' of walking and cycling



walking	1989-1990	1997-1998	2003-2006
# trip legs	1080M	1151M	996M
hours spent	191M	215M	199M
km travelled	840M	950M	880M

cycling	1989-1990	1997-1998	2003-2006
# trip legs	181M	111M	89M
hours spent	39M	26M	22M
km travelled	350M	290M	250M

*Note:* a walk speed of 4.4 km/hr has been assumed, to convert walk hours to km

Source: Ministry of Transport, New Zealand Household Travel Survey

this mode as % of all modes	bicycle		walked or jogged	
	1996	2001	1996	2001
NZ average	3.1%	2.4%	5.7%	5.4%

Source: Statistics NZ, Census

The graph and tables show, for the period 1989 to 2006:

### Walking

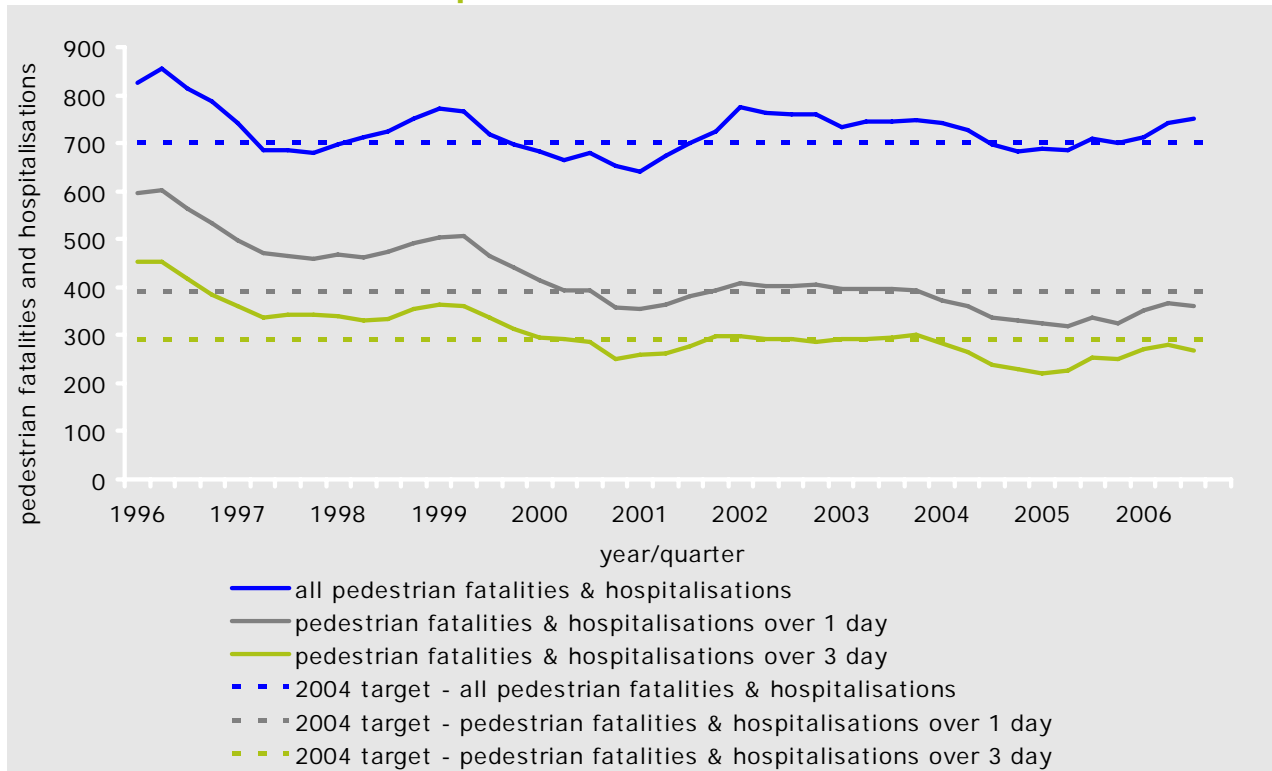
- the number of walking trips decreased by 8%, from 1080 to 996 million trips
- the **total distance walked increased by 5%**, from 8.4 to 8.8 hundred-million km
- the average distance walked rose by about 12%, from 0.8 to 0.9 km per trip
- walking remained at about 5.5% of main means of travel to work (1996-2001)

### Cycling

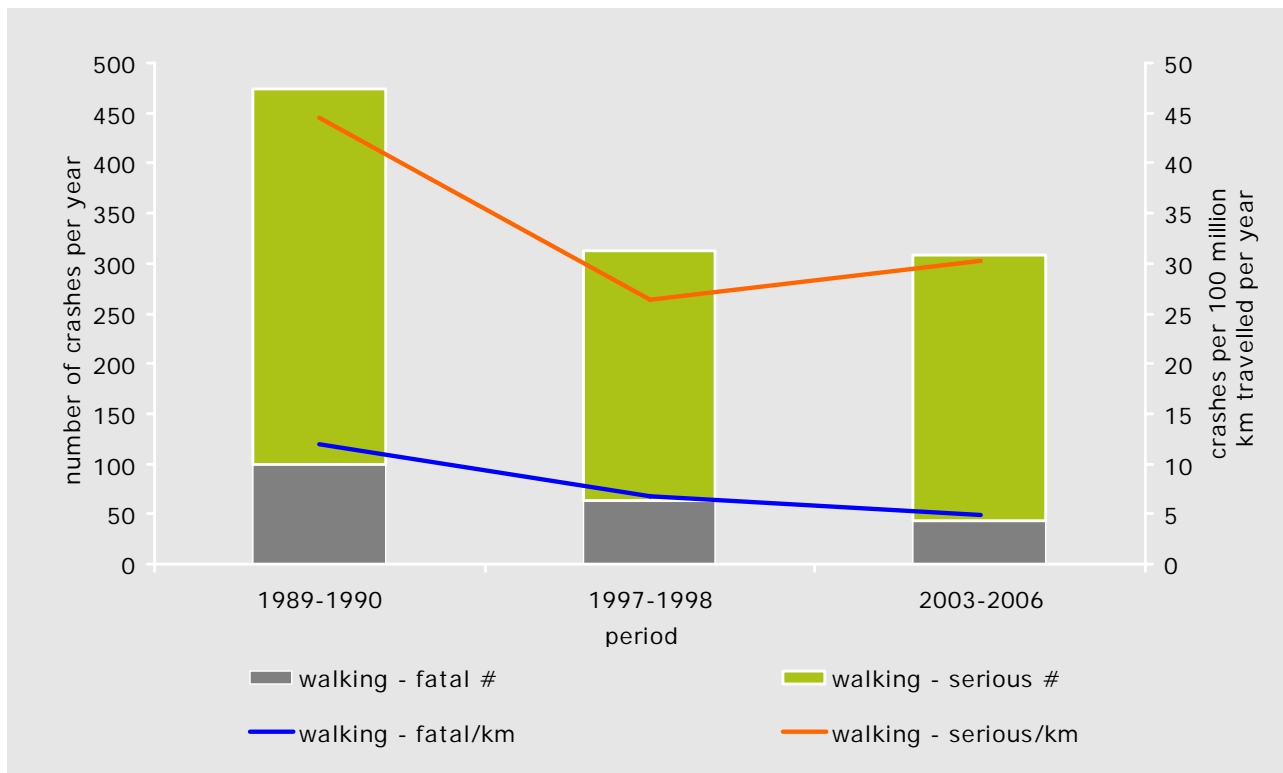
- the number of cycling trips decreased by 51% from 181 to 89 million trips
- the **total distance cycled decreased by 29%**, from 3.5 to 2.5 hundred-million km
- the average distance cycled rose by about 47%, from 1.9 to 2.8 km per trip
- cycling declined significantly to about 2.4% of main means of travel to work (1996-2001)

## Walking and cycling safety

### Pedestrian fatalities/hospitalisations from motor vehicle crashes<sup>4</sup>



Source: Ministry of Transport, Hospitalisations - rolling 12 month totals



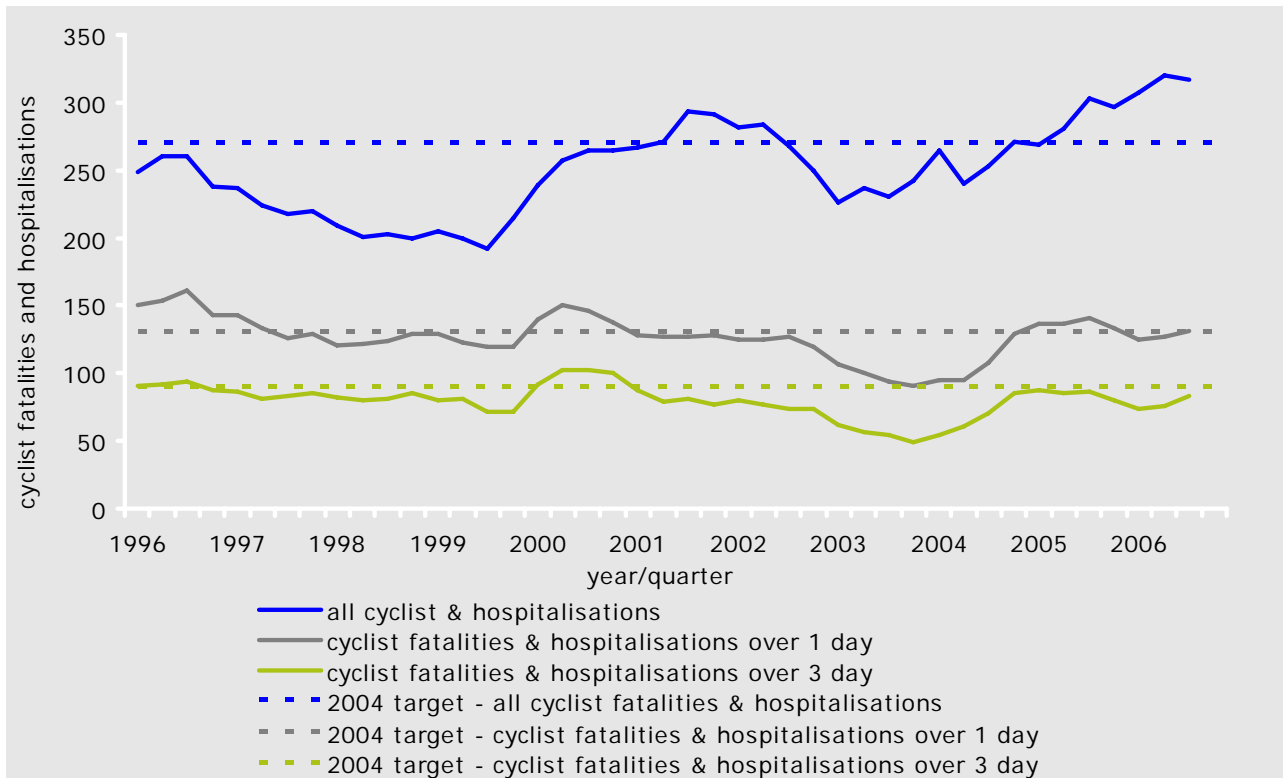
Source: Land Transport NZ, Ministry of Transport, Crash Analysis System (CAS)

The graphs above show:

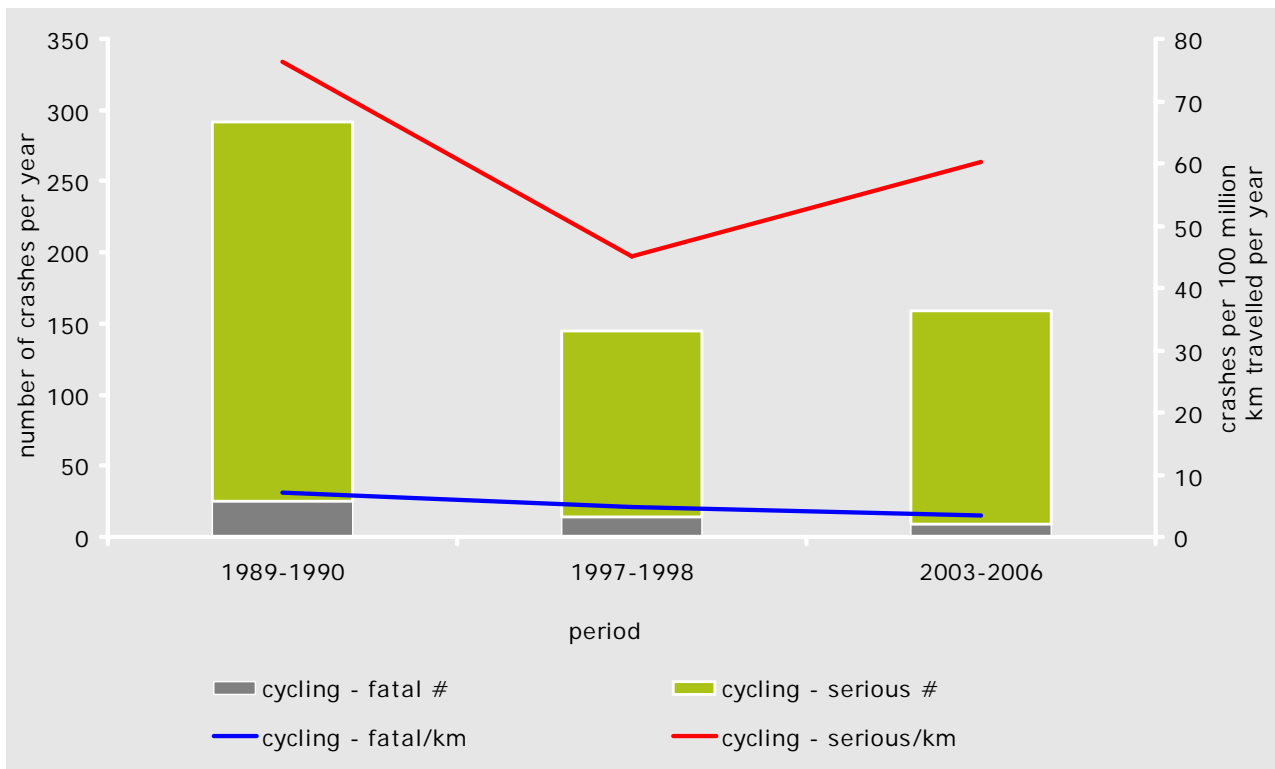
- Over the period 1989 to 2006 there were **improvements in crash rates** of 58% for fatalities and 32% for serious crashes
- While 2004 targets were achieved by 2004, the **achievements have not been maintained since 2004**. In particular, the total number of people killed or hospitalised in the third quarter of 2006 was well above the target .

<sup>4</sup> See Appendix for a tabulation of hospitalisation data by region

### Cyclist fatalities/hospitalisations from motor vehicle crashes<sup>4</sup>



Source: Ministry of Transport, Hospitalisations - rolling 12 month totals



Source: Land Transport NZ, Ministry of Transport, Crash Analysis System (CAS)

The graphs above show:

- Over the period 1989 to 2006 there were **improvements in crash rates** of 51% for fatalities and 21% for serious crashes
- While 2004 targets were achieved by 2004, the **achievements have not been maintained since 2004**. In particular, the total number of people killed or hospitalised in the third quarter of 2006 was well above the target .

<sup>5</sup> See Appendix for a tabulation of hospitalisation data by region

## Summary

**Safety** of walkers and cyclists over the period 1989 to 2006:

- Crash rates for walkers reduced by 58% for fatalities and 32% for serious crashes
- Crash rates for cyclists reduced by 51% for fatalities and 21% for serious crashes
- While 2004 targets were achieved, the achievements have not been maintained since that time. In particular, the total number of people killed or hospitalised in the third quarter of 2006 was above the targets for both walkers and cyclists.

Overall, over the period 1989 to 2006, there were significant reductions in the rate of fatal and serious crashes, suggesting that the environment for walking and cycling was becoming safer.

It should be noted, however, that since 2004, walking and cycling have experienced a worsening of fatal and serious crash rates.

The **occurrence of walking and cycling** over the period 1989 to 2006, based on the household travel survey for all trips:

- Walking trip numbers have reduced by 8% and cycling trip numbers have reduced by 51%
- There has been a small increase (4%) in the total distance walked
- There has been a significant decrease (51%) in the total distance cycled
- The duration and distance of the average walking and cycling trip has increased

Based on the census results in 1996 and 2001:

- walking remained at about 5.5% of main means of travel to work
- cycling declined significantly to about 2.4% of main means of travel to work

## The observed trends

Overall, over the period 1989 to 2006, walking trips reduced by 8% and cycling trips reduced by 51%, suggesting that (although safety may actually have improved) **perceptions were that the environment for walking and cycling is less safe and less convenient.**

## Appendix

### Main means of travel to work by region

Regional Council	bicycle		walked or jogged	
	1996	2001	1996	2001
Northland Region	1.5%	1.1%	6.4%	5.2%
Auckland Region	1.2%	0.9%	3.7%	3.5%
Waikato Region	3.5%	2.4%	6.4%	5.5%
Bay of Plenty Region	3.5%	2.4%	5.0%	4.3%
Gisborne Region	4.9%	3.3%	5.8%	5.2%
Hawkes Bay Region	4.6%	3.1%	5.2%	4.7%
Taranaki Region	3.2%	2.3%	7.1%	6.6%
Manawatu-Wanganui Region	5.8%	4.1%	7.2%	6.7%
Wellington Region	2.1%	1.9%	7.5%	8.1%
Tasman Region	4.4%	3.9%	7.3%	6.2%
Nelson Region	6.1%	5.8%	7.3%	7.7%
Marlborough Region	7.0%	4.5%	7.7%	7.5%
Canterbury Region	5.6%	4.6%	4.9%	4.8%
West Coast Region	5.4%	3.9%	9.1%	9.3%
Otago Region	2.8%	2.2%	9.4%	8.7%
Southland Region	3.3%	2.3%	6.4%	6.1%
Total, Regional Councils	3.1%	2.4%	5.7%	5.4%
Area Outside Region	0.8%	0.8%	18.0%	12.5%
Total, New Zealand	3.1%	2.4%	5.7%	5.4%

Source: Statistics New Zealand

Census; usually resident population aged 15 years and over

## Fatal vehicle crashes involving cyclists, by region

Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Auckland	3	1	3	1	2	2	3	1	0	1
Bay of Plenty	1	2	1	0	3	1	0	0	2	0
Canterbury	0	0	2	3	1	1	5	0	2	1
Gisborne	0	0	0	0	0	0	0	0	0	0
Hawkes Bay	0	0	2	0	4	0	1	1	1	1
Manawatu/Wanganui	3	2	0	1	2	1	1	0	0	1
Nelson/ Marlborough	2	0	0	0	0	0	1	2	0	0
Northland	1	0	0	0	0	0	0	0	0	0
Otago	0	0	2	0	2	1	0	1	0	1
Southland	0	1	1	0	0	1	0	0	0	0
Taranaki	0	2	1	1	0	1	1	1	0	1
Waikato	1	2	2	2	3	2	1	1	1	1
Wellington	2	1	2	1	1	0	0	0	1	4
West Coast	0	0	0	0	0	1	1	0	0	1

Source: Land Transport NZ, CAS database

The Crash Analysis System (CAS) stores detailed crash data reported by the Police to Land Transport New Zealand

## Serious vehicle crashes involving cyclists, by region

Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Auckland	29	24	19	24	23	37	38	32	41	34
Bay of Plenty	4	4	4	6	6	4	6	8	11	6
Canterbury	38	32	30	24	17	34	32	27	24	30
Gisborne	2	2	0	1	2	1	1	2	3	0
Hawkes Bay	3	11	8	7	7	6	4	7	9	4
Manawatu/Wanganui	8	13	18	12	5	9	8	14	4	8
Nelson/ Marlborough	12	15	5	13	5	9	5	10	16	10
Northland	4	2	2	3	0	1	1	0	5	2
Otago	3	3	4	8	4	7	16	10	10	9
Southland	4	7	3	4	1	8	5	4	6	2
Taranaki	5	6	7	3	3	3	4	4	4	4
Waikato	14	13	7	7	8	8	11	8	10	8
Wellington	18	23	15	16	17	19	9	16	21	14
West Coast	2	2	4	1	3	1	0	3	0	1

Source: Land Transport NZ, CAS database

## Fatal vehicle crashes involving pedestrians by region

Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Auckland	23	19	27	25	13	20	17	18	13	9
Bay of Plenty	6	6	10	8	5	4	4	4	6	1
Canterbury	7	8	7	8	3	11	12	8	5	4
Gisborne	1	0	1	0	1	0	0	0	0	0
Hawkes Bay	2	3	5	2	9	3	2	2	3	3
Manawatu/Wanganui	9	6	2	4	4	1	3	2	2	2
Nelson/ Marlborough	2	2	0	2	0	0	2	3	2	1
Northland	4	2	5	1	0	0	2	6	4	2
Otago	2	1	6	2	3	4	2	6	2	1
Southland	4	1	3	1	2	2	1	0	1	0
Taranaki	2	3	2	5	2	3	2	1	0	2
Waikato	9	8	13	6	5	6	7	9	3	9
Wellington	5	5	5	7	3	5	4	6	3	9
West Coast	0	0	1	0	1	4	2	1	1	1

Source: Land Transport NZ, CAS database

## Serious vehicle crashes involving pedestrians by region

Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Auckland	139	96	96	108	111	132	153	126	120	111
Bay of Plenty	18	11	11	22	16	19	21	19	20	24
Canterbury	75	73	68	49	49	60	60	68	53	62
Gisborne	6	6	3	1	9	2	3	6	10	1
Hawkes Bay	12	26	15	13	14	10	10	16	23	9
Manawatu/Wanganui	21	21	33	22	19	19	23	23	18	15
Nelson/ Marlborough	21	30	14	23	12	18	13	12	24	14
Northland	9	9	6	9	3	9	10	6	12	11
Otago	19	12	13	24	19	33	42	43	34	40
Southland	12	11	13	13	10	11	18	14	17	9
Taranaki	12	17	12	11	7	10	14	8	15	9
Waikato	33	31	31	25	38	32	30	30	25	22
Wellington	67	55	60	56	42	54	50	39	59	53
West Coast	4	4	6	1	3	2	2	5	3	3

Source: Land Transport NZ, CAS database



## Cyclist fatalities and hospitalisations (over one day) by region

Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Auckland	42	28	47	34	33	31	42	28	39	40
Bay of Plenty	6	6	4	5	7	8	7	4	11	9
Canterbury	21	19	18	14	17	24	17	14	18	24
Gisbourne	2	1	1	4	2	0	3	4	2	2
Hawkes Bay	5	10	9	5	10	7	4	5	5	2
Manawatu/Wanganui	13	5	4	12	7	9	4	7	6	10
Nelson/ Marlborough	7	5	2	4	4	3	2	4	2	7
Northland	2	3	4	3	3	6	1	1	2	3
Otago	3	3	4	2	6	1	9	3	4	1
Southland	3	4	2	3	3	6	3	1	3	1
Taranaki	3	6	4	1	2	0	3	3	2	3
Waikato	16	14	11	13	15	6	8	5	15	13
Wellington	7	15	7	10	8	15	2	6	12	6
West Coast	1	0	1	3	2	1	1	1	1	0

Source: Ministry of Transport

Hospitalisations are the number of hospital admissions reported by the New Zealand Health Information Service  
Only the first stay in hospital is used for this table.

## Pedestrian fatalities and hospitalisations (over one day) by region

Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Auckland	225	170	174	159	131	146	152	146	117	127
Bay of Plenty	23	19	21	30	13	21	22	26	14	16
Canterbury	46	52	51	36	37	40	49	44	42	35
Gisbourne	4	7	4	4	9	2	2	5	5	2
Hawkes Bay	12	16	10	9	10	9	6	7	8	7
Manawatu/Wanganui	19	18	16	11	16	23	19	9	10	15
Nelson/ Marlborough	7	15	13	7	4	7	2	4	5	2
Northland	14	17	11	15	11	11	14	8	14	9
Otago	17	16	13	20	17	15	16	21	9	22
Southland	7	5	7	6	6	6	6	3	8	6
Taranaki	7	6	11	12	7	8	5	5	9	9
Waikato	36	29	46	31	35	27	24	30	21	25
Wellington	60	46	49	46	33	29	47	33	33	23
West Coast	0	2	4	2	1	2	0	1	2	1

Source: Ministry of Transport

Hospitalisations are the number of hospital admissions reported by the New Zealand Health Information Service  
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