

Link	Length (km)	Serious Injury Crashes 2002 to 2006	Fatal Crashes 2002 to 2006	Collective Risk Annual average fatal and serious injury crashes per km	Collective Risk Band	Personal Risk Annual average fatal and serious injury crashes per 100 million vehicle-km	Personal Risk Band
SH 1 Northern Motorway	35.5	22	3	0.14	Medium-high	0.7	Low
SH 1 from Albany to Orewa and SH 1A	34.5	4	0	0.02	Low	0.4	Low
SH 1 from Auckland to Takanini	50.7	54	14	0.27	High	1.2	Low
SH 1 from Cape Reinga to Kaitaia	109.8	9	7	0.03	Low	7.6	Medium-high
SH 1 from Kaitaia to Ohaeawai	80.1	11	2	0.03	Low	6.4	Medium
SH 1 from Orewa to Warkworth	26	24	10	0.3	High	5.2	Medium
SH 1 from Ruakaka to Wellsford	53.9	41	12	0.21	High	6.3	Medium
SH 1 from Marsden Point (SH 15A) to Whangarei	24.6	19	8	0.22	High	4.9	Low-medium
SH 1 from Takanini to Pokeno*	48.3	17	6	0.1	Medium	1.1	Low
SH 1 from Warkworth to Wellsford	18.7	18	10	0.31	High	7.7	Medium-high
SH 1 from Whangarei to Ohaeawai	70.6	30	16	0.14	Medium-high	5.6	Medium
SH 1A and SH 1 through Orewa	7.4	5	1	0.28	High	4.8	Low-medium
SH 10 from Awanui to SH 1 South (Pakaraka)	103.8	41	9	0.1	Medium	9.8	High
SH 11 from Kawakawa to Puketona (SH 10)	29.6	14	2	0.13	Medium-high	11.8	High
SH 12 from Dargaville to Ohaeawai	147.6	25	8	0.05	Low-medium	11.1	High
SH 12 from Dargaville to SH 1	69.7	11	6	0.06	Low-medium	7.9	Medium-high
SH 14 from Whangarei to Dargaville	49.6	15	3	0.07	Medium	8.8	Medium-high
SH 15A Marsden Point	8.6	0	1	0.02	Low	4.2	Low-medium
SH 16 from Helensville to West Harbour (SH 18)	30.5	21	7	0.22	High	4.6	Low-medium
SH 16 from Parnell to Hobsonville	37.9	35	7	0.23	High	1.6	Low
SH 16 from Wellsford to Helensville	57.7	12	6	0.07	Medium	5.7	Medium
SH 17 Albany to Silverdale	19.7	15	3	0.2	High	5.5	Medium
SH 18 Upper Harbour Highway	16.4	9	1	0.31	High	5.4	Medium
SH 20 and SH 20A and SH 20B	47.1	35	3	0.19	High	2.2	Low
SH 22 from Drury to Pukekohe	13	17	4	0.33	High	6.3	Medium

* This link crosses map boundaries, so will appear in more than one regional list



WHAT IS KIWIRAP?

The New Zealand Road Assessment Programme, KiwiRAP, falls under the umbrella of the International Road Assessment Programme, iRAP. Similar programmes have been implemented in Europe (EuroRAP), Australia (AusRAP) and the United States of America (usRAP) and developments are underway for a programme in Africa.

KiwiRAP has been initiated in New Zealand as a partnership between the government transport agencies (Ministry of Transport, Transit New Zealand, Land Transport New Zealand, Accident Compensation Corporation, New Zealand Police) and The New Zealand Automobile Association.

The objectives of KiwiRAP are:
 > To reduce deaths and injuries on New Zealand roads by systematically

assessing risk and identifying safety shortcomings that can be addressed with practical road improvement measures.

> To have risk assessment as a key factor in strategic decisions on road improvements, crash protection and standards of road management.

> To provide meaningful information on where the greatest levels of risk are faced and in turn to influence behaviour.

HOW DOES A ROAD ASSESSMENT PROGRAMME WORK?

Road Assessment Programmes internationally consist of three 'protocols':

> **RISK MAPPING**
 Uses historical traffic and crash data to produce colour-coded maps which illustrate the relative level of risk on sections of the road network.

> **PERFORMANCE TRACKING**
 Involves a comparison of crash rates overtime to establish whether fewer - or more - people are being killed or injured and determine if countermeasures have been effective.

> **STAR RATING**
 Road inspections assess the engineering features of a road (such as lane and shoulder width or presence of safety barriers). Between 1 and 5 stars are awarded to road links depending on the level of safety which is 'built-in' to the road.

RISK MAPS

Risk Mapping currently focuses on the state highway network. In the future this may extend to tourist routes or key regional non state highway routes.

The state highway network is broken up into road sections (known as 'links'), for the purpose of comparing the level of risk of crashes between different parts of the network. The Risk Maps focus on state highway links that are typically outside the urban area - that is, state highway links that have speed limits of 80km/h or more.

For the purposes of displaying the safety

risk of the state highway network, KiwiRAP looks at two different measures of risk - Collective Risk (or Crash Density) and Personal Risk. The focus of both is on crashes where people have been killed or seriously injured. The crash statistics used for the calculations are for the five-year period 2002-2006.

Collective Risk (or Crash Density)
 Collective Risk is a measure of the total number of fatal and serious injury crashes per kilometre over a section of road. Collective Risk can also be described as the Crash Density. Because Collective

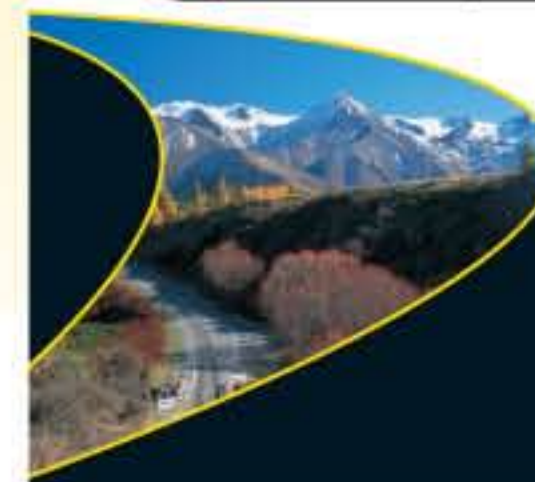
Risk is measured in terms of the number of crashes per kilometre of state highway, links with higher traffic volumes tend to have a higher Collective Risk.

Personal Risk
 Personal Risk is a measure of the danger to each individual using the state highway being assessed. Unlike Collective Risk, Personal Risk takes into account the traffic volumes on each section of state highway.

This brochure contains the Northland and Auckland regional Risk Map data.

RISK RATING	COLLECTIVE RISK Average annual fatal and serious injury crashes per km	PERSONAL RISK Average annual fatal and serious injury crashes per 100 million vehicle-km	COLOUR
Low	≤0.039	<4	Green
Low-medium	0.04 ≤ 0.069	4 ≤ 4.9	Yellow
Medium	0.07 ≤ 0.10	5 ≤ 6.9	Orange
Medium-high	0.11 ≤ 0.189	7 ≤ 8.9	Red
High	0.19+	9+	Black

KiwiRAP is a road safety partnership between the Automobile Association and New Zealand's main transport agencies: Transit New Zealand, Ministry of Transport, ACC, Land Transport New Zealand, and New Zealand Police.



HOW SAFE ARE OUR ROADS?

Rating New Zealand's State Highways for Risk

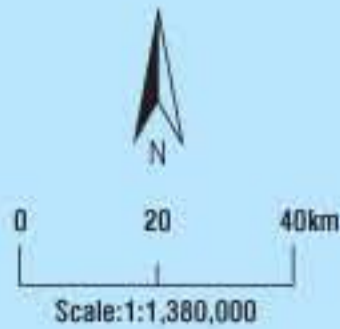
NORTHLAND and AUCKLAND REGION



COLLECTIVE RISK

- High ———
- Medium-High ———
- Medium ———
- Low-Medium ———
- Low ———

Collective Risk
Annual average fatal and serious injury crashes per km



COLLECTIVE RISK MAP

Collective Risk	High	Medium-high	Medium	Low-medium	Low
Northland and Auckland	29%	11%	21%	18%	20%
	346 km	136 km	254 km	217 km	233 km

Percentages may not add to 100% due to rounding

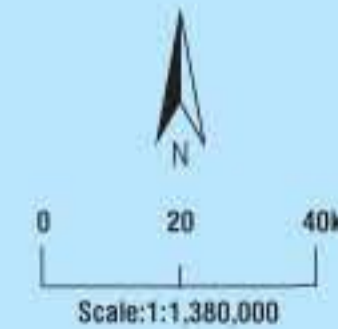
NORTHLAND and AUCKLAND REGION



PERSONAL RISK

- High ———
- Medium-High ———
- Medium ———
- Low-Medium ———
- Low ———

Personal Risk
Annual average fatal and serious injury crashes per 100 million vehicle-km



PERSONAL RISK MAP

Personal Risk	High	Medium-high	Medium	Low-medium	Low
Northland and Auckland	24%	21%	28%	6%	21%
	281 km	248 km	337 km	71 km	249 km

Percentages may not add to 100% due to rounding