Government of **Western Australia**
Road Safety Commission

ROAD SAFETY COMMISSION
Saving Lives Together

Reported road crashes

in Western Australia 2015

Road safety council of Western Australia
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Title

Reported road crashes in Western Australia 2015

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Abstract

This report presents information on road crashes in Western Australia in 2015. During this time 82,438 were involved in police-reported road crashes in which 161 people were killed.

Keywords

Road crash statistics, Fatal crashes, Alcohol, Drink driving, Drugs, Fatality, Helmet use, Injury, Restraint use, Road environment, Metropolitan area, Regional area, Seat belt, Speeding, Vehicle type, Western Australia.

Note

This report is distributed in the interests of information exchange and is available on the Internet at the Road Safety Commission website http://rsc.wa.gov.au/.

Minister's foreword

Western Australia's preliminary road toll in 2015 was the equal lowest since records began in 1961.

It stands at 161 deaths in Western Australia, which is a decrease of 21 fatalities on the 2014 figure.

While a downward trend is statistically pleasing, there's no doubt that these deaths are tragic for families, friends and communities across our state.

It is a concern that the fatality rate in WA (6.2 per 100,000 people) is still behind the national average (5.1 per 100,000 people).

Despite mass media campaigns seeking to change drivers' behaviour, poor driving continued to feature in this year's road crash fatalities.

37% of those killed were found to have an illegal drug in their system and the number of fatalities in alcohol related crashes was 25%, about the same time as last year (26%).

Over a third of all fatalities (36%) were in a speed related crash, which was 6% higher than the previous year, reinforcing the fact that drivers need to adhere to legal speed limits and drive to the conditions on the road.

A total of 47% of the deaths arose from run-off-road crashes.

Most fatalities (57%) occurred in regional areas. Outside the Metropolitan area, the Wheatbelt and South West when combined, contributed to 50% of the fatalities in regional WA.

In line with previous years, data surrounding gender showed that male drivers are more likely to die on the roads than their female counterparts.

The State Government remains committed to its road safety strategy, *Towards Zero 2008-2020* and we support the distribution of these annual crash statistics to inform the planning and development of future road safety initiatives to further reduce road trauma in WA.

Liza Harvey
Hon. Liza Harvey MLA
Minister for Road Safety

Key road crash facts for 2015

Fatalities

- There were 161 road crash fatalities in Western Australia. This is 21 more than in 2014.
- The number of fatalities was 12% lower than the previous year.
- More fatalities occurred in Regional WA (92) than in the Metropolitan region (69).

Demographic

- The fatality rate per 100,000 population was 6.2 – compared to 5.1 for Australia as a whole.
- Around 76% of fatalities were male.
- The majority of fatalities were for drivers (43%), followed by passengers (32%) and motorcyclists (14%).

Speed

- 36% of fatalities were in a 'speed related crashes'. This percentage is higher than for the previous year (30%).

Alcohol

- 25% of fatalities were in an 'alcohol related crashes'. This was similar to the percentage for the previous year (26%).

Fatigue

- 11% of fatalities were in 'fatigue related crashes'. This is lower than the 2014 percentage (16%).

Inattention

- 8% of fatalities were in 'inattention related crashes'. This was similar to the percentage for the previous year (7%).

Illegal drugs

- 37% of fatalities had an illegal drug in their system.

Seatbelts

- Of motor vehicle occupants killed in a road crash, around a quarter (25%) were not wearing a seatbelt. In 2014 this percentage was higher (31%).

Crash nature

- The most common fatal crash types were hit object (30%) and non-collision crashes (18%).

Regional

- In regional WA, the Wheatbelt and South West regions had the highest number of fatalities (each had 23 fatalities).

Table of contents

Road safety council of Western Australia document retrieval information **2**
Minister's foreword **3**
Key road crash facts for 2015 ..... **4**
List of figures **6**
List of tables **6**
List of maps **7**
1. Introduction **8**
1.1. Data sources and acknowledgements 8
1.2. Reading and interpreting the report 9
2. Road crash and injury summaries **10**
2.1. Historical information 10
2.2. Comparison with other jurisdictions 12
2.3. Cost of crashes 13
2.4. Road crashes by demographics 15
3. Safe system **18**
3.1. Safe road use 18
3.2. Safe roads and roadsides 25
3.3. Safe speeds 28
3.4. Safe vehicles 29
4. Other factors **30**
4.1. Temporal factors 30
5. Regional **31**
Appendix A – Trends over time **40**
Appendix B - Road safety related legislation and other initiatives **44**
Glossary of terms **50**

List of figures

Figure 1 Fatalities by year, 1961 to 2015 10
Figure 2 Fatality rates per 100,000 population – Australian states and territories 12
Figure 3 Fatalities in behaviour related crashes (not mutually exclusive*) 20
Figure 4 Fatal crashes by crash nature, 2015 26
Figure 5 Fatalities by high priority crash type 27

List of tables

Table 1 Road crashes by year 10
Table 2 Road injuries by year 10
Table 3 Fatality rates per 100,000 population 11
Table 4 Fatality rates per 10,000 registered vehicles 11
Table 5 Fatality rates per 100 million kilometres travelled 11
Table 6 Fatality rates per 100,000 population by year – Australian states and territories 12
Table 7 Comparison with other Australian states and territories, fatality rates 2015 13
Table 8 Estimated cost per fatal crash to the Western Australian community, Human Capital Approach 14
Table 9 Estimated cost per fatal crashes to the Western Australian community, Willingness to Pay Approach 14
Table 10 Fatalities by road user group 15
Table 11 Fatalities by broad age group 15
Table 12 Fatalities by narrow age group 16
Table 13 Fatalities by gender and age group 17
Table 14 Fatalities by gender and broad age group 17
Table 15 Fatalities in 'speed related crashes' 18
Table 16 Fatalities in 'alcohol related crashes' 19
Table 17 Fatalities in 'fatigue related crashes' 19
Table 18 Fatalities in ' inattention related crashes' 20
Table 19 Fatalities by gender and drug use – 2015 21
Table 20 Fatalities by age group and drug use - 2015 21
Table 21 Fatalities by day of week and drug use - 2015 22
Table 22 Motor vehicle occupant fatalities 22
Table 23 Motor vehicle occupant fatalities that did not wear a seatbelt by gender and age group 23
Table 24 Motor vehicle occupant fatalities that did not wear a seatbelt by road user group 23
Table 25 Motorcyclist fatalities by helmet usage 24
Table 26 Bicyclist fatalities by helmet usage 24
Table 27 Fatal crashes by road factors 25
Table 28 Fatal crashes by crash nature 26
Table 29 Fatal crashes by high priority crash type 27
Table 30 Fatalities by speed limit 28
Table 31 Percentage of vehicles exceeding the speed limit by speed zone - Metropolitan 28
Table 32 Percentage of vehicles exceeding the speed limit by speed zone - Regional 29
Table 33 Fatalities by mode of transport 29
Table 34 Fatalities by month 30
Table 35 Fatalities by day of the week 30
Table 36 Fatalities by region and age group - 2015 31

Table 37 Fatality rate per 100,000 population by region and age group - 2015 31
Table 38 Fatalities by region by road user type - 2015 32
Table 39 Fatalities by region, gender and age group – 2015 33
Table 40 Motor vehicle occupant fatalities that did not wear a seatbelt 34
Table 41 Fatalities in 'speed related crashes' by region 34
Table 42 Fatalities in 'alcohol related crashes' by region 35

List of maps

Map 1 Fatality rates per 100,000 population by region 36
Map 2 'Speed related fatality' rates per 100,000 population by region 37
Map 3 'Alcohol related fatality' rates per 100,000 population by region 38
Map 4 Unrestrained motor vehicle occupant fatality rates per 100,000 population by region 39

1. Introduction

This report, published annually, provides road crash statistics for 2015 in Western Australia. Some historical data and road crash statistics for the rest of Australia are also included in the report to help readers to interpret the statistics in an appropriate context.

A crash is classified as a road crash if the following conditions hold: the crash resulted in bodily injury or property damage, the crash occurred on a road and the road was open to the public at the time of the crash, the crash involved at least one moving vehicle and the crash was not a result of a medical condition or a deliberate act (such as a suicide attempt). Crashes that do not meet these criteria have been excluded from the report.

The report focuses mainly on counting the number of road crash fatalities as well as the number of fatal crashes. For more detailed definitions of these and other terms, see the Glossary.

In previous years, this report has presented information on hospitalisations as recorded in the Integrated Road Information System (IRIS) by Main Roads Western Australia (MRWA). Changes in the collection methodology of road crashes mean that comparison before and after such variation are not reliable. This report focuses on counting road crash fatalities and fatal crashes for which the most accurate data is available.

1.1. Data sources and acknowledgements

Data used in this report was sourced from a variety of government and research organisations.

Main Roads Western Australia (MRWA)

Most of the statistics presented here were extracted from data on police-reported road crashes. These data were obtained from the IRIS maintained by MRWA. The dataset used was extracted from IRIS on 22 June 2016 and changes made to the dataset after this date are not reflected in this report.

Australian Bureau of Statistics

Fatality rates were calculated from the police-reported data using estimated resident population, vehicle registrations and estimated kilometres travelled data obtained from the Australian Bureau of Statistics (ABS).

Bureau of Infrastructure, Transport Regional Economics

Comparisons across Australian states and territories were derived from data provided by the Bureau of Infrastructure, Transport and Regional Economics (BITRE).

Western Australia Police

Information on whether speed, alcohol, inattention or fatigue were contributors to a crash was obtained from the Road Crash Casualty Database maintained by Western Australia Police. This database records information on crashes that were attended by police.

Chemistry Centre of Western Australia

Information on road crash fatalities with drugs detected in their system was provided by the Chemistry Centre of Western Australia.

Western Australian Department of Transport

The number of Western Australian motor driver licences on record for each year from 1974 onwards is provided in the Appendix A(ii). This information was obtained from the Western Australian Department of Transport.

Acknowledgments

The Road Safety Commission would like to thank the following people and organisations for their assistance in providing data:

Chemistry Centre of Western Australia – Bianca Douglas

Main Roads Western Australia - Thandar Lim

Western Australian Police - Stephen Temby and Nicola Ruprecht

1.2. Reading and interpreting the report

The statistics in this report should be read in conjunction with the glossary, which provides definitions of terms used in the report.

All tables and figures in this report refer to road crashes that occurred in Western Australia from 2010 to 2015.

Tables and graphs are provided with varying levels of detail, and care must be taken when interpreting percentage changes where the overall numbers are small. Also, in some cases percentages may not add to exactly 100%, due to rounding.

Rates in the tables presented in this report are rounded to one decimal place.

Western Australian legislation requires that traffic crashes are reported to police if:

- the incident results in bodily harm to any person
- the total value of property damage exceeds $3,000
- the owner or representative of any damaged property is not present

Throughout the report, overall table totals will vary because separate tables are provided for different categories, including the following:

- number of crashes
- number of road users
- number of drivers/riders
- number of motor vehicle occupants
- number of vehicles

Within these categories, tables and graphs are provided for subsets by crash severity, injury severity and road user group. All captions for tables and figures describe the particular subset of data included in that table or figure.

2. Road crash and injury summaries

2.1. Historical information

Table 1 Road crashes by year

	Average 2010-2014	2010	2011	2012	2013	2014	2015	Change 2014-2015
	avg. n	n	n	n	n	n	n	%
Fatal crashes	167	175	167	171	148	172	142	-17.4
Total crashes	**38,005**	**39,634**	**39,466**	**39,159**	**37,004**	**34,764**	**32,392**	**-6.9**

Table 2 Road injuries by year

	Average 2010-2014	2010	2011	2012	2013	2014	2015	Change 2014-2015
	avg. n	n	n	n	n	n	n	%
Fatalities	179	192	179	183	161	182	161	-11.5
Total persons involved	**91,049**	**91,379**	**92,237**	**94,564**	**89,574**	**87,492**	**82,438**	**-5.8**

Figure 1 Fatalities by year, 1961 to 2015

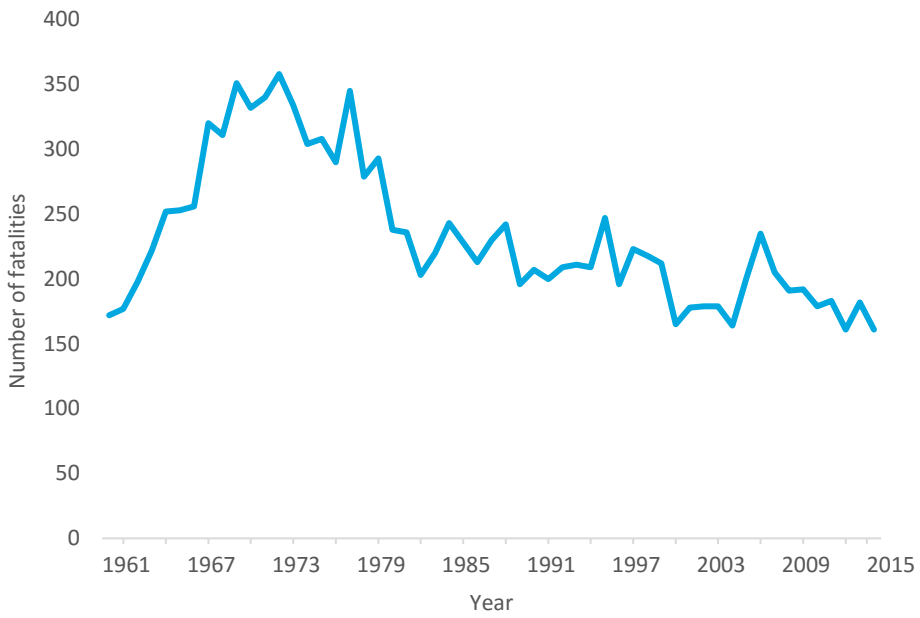


Table 3 Fatality rates per 100,000 population

	Average 2010-2014	2010	2011	2012	2013	2014	2015	Change 2014-2015
Fatality rate	**7.4**	**8.4**	**7.6**	**7.5**	**6.4**	**7.1**	**6.2**	**-12.7**
Estimated population[1]	2,430,936	2,290,845	2,353,409	2,437,994	2,515,387	2,557,046	2,590,259	1.3

[1]Source: Derived from Australian Bureau of Statistics, Regional Population Growth, Australia 2014-15. Cat. No. 3218.0. Estimates are final for 2010 and 2011, may be subject to revision for 2012-2014 and are preliminary for 2015.

Table 4 Fatality rates per 10,000 registered vehicles

	Average 2010-2014	2010	2011	2012	2013	2014	2015	Change 2014-2015
Fatality rate	**0.9**	**1.0**	**0.9**	**0.9**	**0.8**	**0.8**	**0.7**	**-13.3**
Registered vehicles[1]	1,990,252	1,870,068	1,912,739	1,977,756	2,048,388	2,142,307	2,185,409	2.0

[1]Source: Derived from Australian Bureau of Statistics, Motor Vehicle Census, Cat. No. 9309.0.

Table 5 Fatality rates per 100 million kilometres travelled

	Average 2010-2014	2010	2011	2012	2013	2014	2015	Change 2014-2015
Fatality rate	**0.7**	**0.7**	**0.7**	**0.7**	**0.6**	**0.7**	**0.6**	**-12.2**
Vehicle kilometres travelled (millions)[1]	26,988	26,285	26,740	27,500	26,835	27,581	27,794	0.8

[1]Source: Derived from Australian Bureau of Statistics, Survey of Motor Vehicle Use, Cat. No. 9208.0.

Due to direct estimates being unavailable for 2008, 2009 and 2011, figures for those years were obtained by interpolating between the published average kilometres travelled per vehicle values for 2007, 2010 and 2012 and then multiplying by the number of registered vehicles in the respective years. The 2013 figure is an estimate based on the 2012 average kilometres travelled per vehicle and the 2013 number of vehicles registered. The 2015 figure is estimated using a 5 year linear regression trend equation.

2.2. Comparison with other jurisdictions

Table 6 Fatality rates per 100,000 population by year – Australian states and territories

State / Territory	2010		2011		2012		2013		2014		2015	
	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate
WA	**192**	**8.4**	**179**	**7.6**	**183**	**7.5**	**161**	**6.4**	**182**	**7.1**	**161**	**6.2**
NSW	405	5.7	364	5.0	369	5.0	333	4.5	307	4.1	350	4.6
Vic.	288	5.3	287	5.2	282	5.0	243	4.2	248	4.2	252	4.3
Qld.	249	5.7	269	6.0	280	6.1	271	5.8	223	4.7	243	5.1
SA	118	7.3	103	6.3	94	5.7	98	5.9	107	6.3	102	6.0
Tas.	31	6.1	24	4.7	31	6.1	36	7.0	33	6.4	34	6.6
NT	50	21.8	45	19.5	49	20.8	37	15.3	39	16.0	49	20.0
ACT	19	5.3	6	1.6	12	3.2	7	1.8	10	2.6	15	3.8
Australia	**1,352**	**6.1**	**1,277**	**5.7**	**1,300**	**5.7**	**1,186**	**5.1**	**1,149**	**4.9**	**1,206**	**5.1**

Source: Bureau of Infrastructure, Transport and Regional Economics (BITRE) (2016), Road trauma Australia, 2015 statistical summary BITRE, Canberra ACT. For Western Australia figure calculated using MRWA crash data and ABS population counts. Western Australian rates calculated with most recent population estimates.

Figure 2 Fatality rates per 100,000 population – Australian states and territories

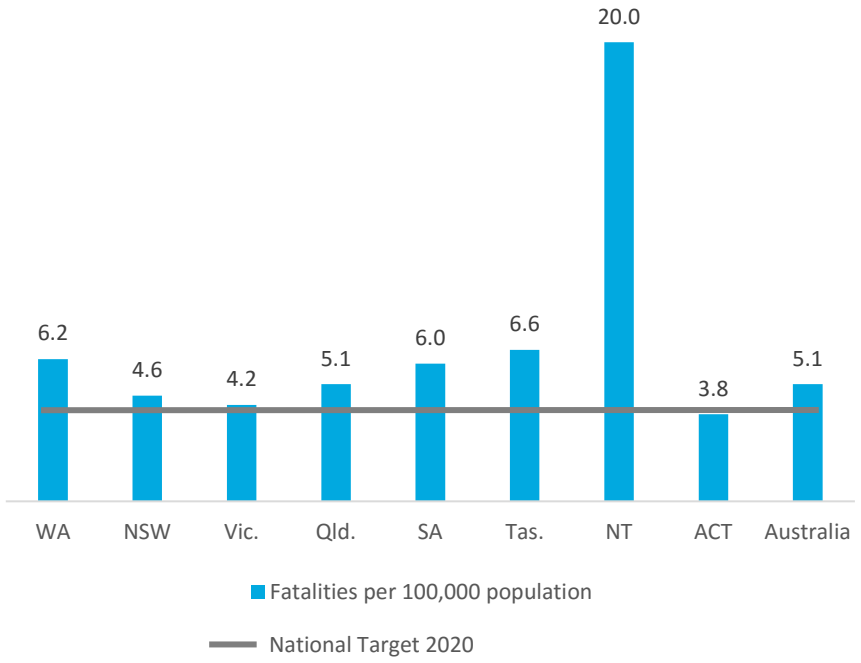


Table 7 Comparison with other Australian states and territories, fatality rates 2015

State/Territory	Fatalities n	Fatalities per 100,000 population Rate	Fatalities per 10,000 registered vehicles Rate	Fatalities per 100 million km travelled Rate
WA	**161**	**6.2**	**0.6**	**0.6**
NSW	350	4.6	0.4	0.5
Vic.	252	4.2	0.4	0.4
Qld.	243	5.1	0.5	0.5
SA	102	6.0	0.5	0.6
Tas.	34	6.6	0.5	0.6
NT	49	20	2.0	2.2
ACT	15	3.8	0.4	0.4
Australia	**1,206**	**5.1**	**0.5**	**0.5**

Source: Bureau of Infrastructure, Transport and Regional Economics (BITRE) (2016), Road trauma Australia, 2015 statistical summary BITRE, Canberra ACT. For Western Australia figures were calculated using MRWA crash data and ABS population counts.

2.3. Cost of crashes

Estimates of the financial cost of road traffic injuries and crashes in Western Australia have been calculated using two different methods, both are shown in tables 8 and 9.

The human capital approach evaluates the benefit of avoiding death and injury as the present value of income flow the economy could lose if a crash occurs. It is an "after the fact" valuation. That is, it focuses on the value lost to the economy after the event has occurred. The cost calculation is based on various identifiable costs associated with the crash and its aftermath. These include, but are not restricted to, the cost of ambulance, hospital inpatient and other medical costs, long term care, funeral costs, loss of income by the casualty and the repair or replacement costs to the vehicles and property involved in the crash. The value of the injury is then measured as the sum of the discounted present value of these component costs.

The willingness-to-pay approach is based on subjective preferences and is usually defined as the amount of money that individuals are willing to pay to reduce their risk of premature death or injury, while performing certain risky activities such as using the road network. When people spend extra time or money to avoid potentially fatal risks, or accept money to take such risks, they are making a trade-off between their wealth and the probability of death or injury. In this sense, road safety is not valued on the basis of the cost of crashes or the loss of income by crash victims, but it is the value placed on a reduction in risk of death or injury due to a crash. So instead of deriving an "after the fact" value of the costs associated with a road crash, the willingness-to-pay approach captures the value individuals place on avoiding death and injury.

Table 8 Estimated cost per fatal crash to the Western Australian community, Human Capital Approach

Region	2010	2011	2012	2013	2014	2015
Metropolitan	$2,911,355	$2,902,303	$2,873,251	$2,873,321	$2,801,571	$2,847,977
Non-Metropolitan	$3,177,754	$3,139,075	$3,137,904	$3,070,255	$3,035,778	$2,997,122
Western Australia	**$3,065,544**	**$3,039,978**	**$3,024,603**	**$2,984,554**	**$2,933,061**	**$2,929,864**

Table 9 Estimated cost per fatal crashes to the Western Australian community, Willingness to Pay Approach

Region	2010	2011	2012	2013	2014	2015
Metropolitan	$8,591,316	$8,518,899	$8,506,220	$8,391,377	$8,378,649	$8,334,731
Non-Metropolitan	$7,425,771	$7,422,152	$7,349,446	$7,374,089	$7,269,336	$7,384,463
Western Australia	**$8,049,286**	**$8,009,304**	**$7,966,189**	**$7,915,083**	**$7,860,919**	**$7,890,490**

1. Human capital costs per crash were provided by the Road Safety Commission and were derived using:

- Austroads "Guide to Project Evaluation Part 4: Project Evaluation Data" (2008).

- Average weekly earnings for Western Australia, for the May quarter, Australian Bureau of Statistics, Catalogue No. 6302 (August 2015 release).

- The consumer price index for Perth, for the June quarter, Australian Bureau of Statistics, Catalogue No. 6401 (January 2016 release)

2. Willingness-to-pay costs per crash were provided by the Road Safety Commission and were derived using:

- Costs per injury from NSW RTA "Economic Valuation of Safety Benefits: Serious injuries – Final Report".

- Consumer price index (CPI) categories: CPI – All Groups, CPI – Motor Vehicle Repair and Servicing and CPI – Health, for the June quarter, Australian Bureau of Statistics, Catalogue No. 6401 (January 2016 release).

3. "Other" refers to crashes that resulted in property damage only.

4. Excludes one medical attention and three property damage only crashes for which the region was unknown.

2.4. Road crashes by demographics

Summaries of the number of persons killed are provided by age group, gender and road user type.

Table 10 Fatalities by road user group

	Average 2010-2014	2010	2011	2012	2013	2014	2015	Change 2014-2015
	avg. n	n	n	n	n	n	n	%
Driver	81	96	86	83	65	77	69	-10.4
Passenger	36	40	38	39	29	36	52	44.4
Motorcyclist	33	35	26	32	27	44	22	-50.0
Bicyclist	5	4	4	3	6	8	3	n.p.
Pedestrian	24	17	25	26	33	17	15	-11.8
Other/Unknown	0	0	0	0	1	0	0	n.p.
Total fatalities	**179**	**192**	**179**	**183**	**161**	**182**	**161**	**-11.5**

Table 11 Fatalities by broad age group

	Average 2010-2014	2010	2011	2012	2013	2014	2015	Change 2014-2015
	avg. n	n	n	n	n	n	n	%
0 to 6	5	8	3	4	4	6	3	n.p.
7 to 16	6	5	8	5	8	5	11	120.0
17 to 18	9	9	12	10	8	8	10	n.p.
19 to 24	28	35	32	23	20	30	22	-26.7
25 to 59	94	106	83	112	81	87	82	-5.7
60 to 84	31	26	35	25	34	36	27	-25.0
85 and over	6	3	6	3	6	10	5	n.p.
Unknown age	0	0	0	1	0	0	1	n.p.
Total fatalities	**179**	**192**	**179**	**183**	**161**	**182**	**161**	**-11.5**

Table 12 Fatalities by narrow age group

	Average 2010-2014	2010	2011	2012	2013	2014	2015	Change 2014-2015
	avg. n	n	n	n	n	n	n	%
0 to 5	4	7	2	3	3	6	3	n.p.
6 to 11	3	2	5	1	3	2	3	n.p.
12 to 16	4	4	4	5	6	3	8	n.p.
17 to 20	19	19	22	16	16	20	20	0.0
21 to 24	19	25	22	17	12	18	12	-33.3
25 to 29	20	23	16	23	18	18	25	38.9
30 to 34	18	17	16	24	18	14	15	7.1
35 to 39	12	15	11	15	9	11	6	n.p.
40 to 44	15	18	15	15	12	16	13	-18.8
45 to 49	12	9	9	15	12	14	8	n.p.
50 to 54	9	13	7	13	5	8	10	n.p.
55 to 59	8	11	9	7	7	6	5	n.p.
60 to 64	8	6	8	6	8	13	11	-15.4
65 to 69	6	7	4	5	9	5	4	n.p.
70 to 74	8	5	10	5	10	10	5	n.p.
75 to 79	3	4	4	4	4	1	6	n.p.
80 to 84	6	4	9	5	3	7	1	n.p.
85 plus	6	3	6	3	6	10	5	n.p.
Unknown Age	0	0	0	1	0	0	1	n.p.
Total fatalities	**179**	**192**	**179**	**183**	**161**	**182**	**161**	**-11.5**

Table 13 Fatalities by gender and age group

	Gender			Percentage of fatalities	Percentage of population[1]	Age-specific fatality rate[1,2]
	Male	Female	Total			
	n	n	n	%	%	rate
0 to 6	2	1	3	1.9	9.3	1.2
7 to 16	7	4	11	6.8	12.3	3.4
17 to 18	9	1	10	6.2	2.5	15.7
19 to 24	14	8	22	13.7	8.2	10.3
25 to 59	67	15	82	50.9	49.4	6.4
60 to 84	19	8	27	16.8	16.7	6.3
85 and over	4	1	5	3.1	1.6	11.9
Total fatalities*	**122**	**38**	**161**	**100.0**	**100.0**	**6.2**

*Includes an unknown age/gender.

[1] Source: Population data from the Australian Bureau of Statistics. [2] Age specific fatality rates per 100,000 population.

Table 14 Fatalities by gender and broad age group

	Average 2010-2014	2010	2011	2012	2013	2014	2015	Change 2014-2015
	avg. n	n	n	n	n	n	n	%
Male								
0 to 6	3	4	3	3	4	2	2	n.p.
7 to 16	4	3	6	3	5	3	7	133.3
17 to 18	8	6	10	7	8	8	9	n.p.
19 to 24	20	26	21	15	17	20	14	-30.0
25 to 59	73	79	66	80	68	72	67	-6.9
60 to 84	19	13	22	13	26	23	19	-17.4
85 and over	3	1	2	3	3	6	4	n.p.
Unknown age	0	0	0	1	0	0	0	n.p.
Total male	**130**	**132**	**130**	**125**	**131**	**134**	**122**	**-9.0**
Female								
0 to 6	1	2	0	1	0	3	1	n.p.
7 to 16	2	2	2	2	3	2	4	n.p.
17 to 18	2	3	2	3	0	0	1	n.p.
19 to 24	8	9	11	8	3	10	8	-20.0
25 to 59	21	27	17	31	13	15	15	0.0
60 to 84	12	13	13	12	8	13	8	n.p.
85 and over	3	2	4	0	3	4	1	n.p.
Unknown age	1	2	0	1	0	1	1	n.p.
Total female	**48**	**58**	**49**	**57**	**30**	**47**	**38**	**-19.1**
Total fatalities	**179**	**192**	**179**	**183**	**161**	**182**	**161**	**-11.5**

3. Safe system

3.1. Safe road use

Speeding

Speed is a contributing factor in the occurrence and severity of crashes by reducing an individual's response time and increasing the amount of energy in a crash. It is not just driving faster than the posted speed limit. Speed can be a factor in the crash if the vehicle is being driven too fast for the prevailing weather, visibility, traffic and road conditions without full regard for the condition of the vehicle, driver skills and experience.

'Speed related crashes' are those crashes where police recorded speed as a primary crash factor, either alone or in combination with other factors, and/or where police record speed as a contributing factor. Police may record speed as a contributing factor where at least one vehicle is travelling in excess of the speed limit or at an inappropriate speed for the prevailing conditions.

Table 15 Fatalities in 'speed related crashes'

	Average 2010-2014	2010	2011	2012	2013	2014	2015	% change 2014-2015
	avg. n	n	n	n	n	n	n	%
Speed related	52	54	57	52	41	54	58	7.4
Not speed related	128	138	122	131	120	128	103	-19.5
Total fatalities	**179**	**192**	**179**	**183**	**161**	**182**	**161**	**-11.5**

Source: WA Police Road Crash Casualty Database. This information should be considered with the following caveat: (1) These statistics have been derived from WA Police data but the calculations have not been endorsed by WA Police. (2) The information was sourced from the WA Police via the WA Police Traffic Enforcement and Crash Executive Information System (3) The information is provisional and may be subject to revision.

Alcohol

Previously this section has given statistics on the blood alcohol content in drivers and riders of motorcycles. This data is currently unavailable and as an alternative 'alcohol related crashes' has been used.

'Alcohol related crashes' are where the attending police officer suspected alcohol as a primary cause either alone or in combination other factors, and/or where police suspected that at least one driver or rider in control of a vehicle had consumed alcohol.

Table 16 Fatalities in 'alcohol related crashes'

	Average 2010-2014	2010	2011	2012	2013	2014	2015	Change 2014-2015
	avg. n	n	n	n	n	n	n	%
Alcohol related	49	58	50	46	43	47	40	-14.9
Not alcohol related	131	134	129	137	118	135	121	-10.4
Total fatalities	**179**	**192**	**179**	**183**	**161**	**182**	**161**	**-11.5**

Source: WA Police Road Crash Casualty Database. This information should be considered with the following caveat: (1) These statistics have been derived from WA Police data but the calculations have not been endorsed by WA Police. (2) The information was sourced from the WA Police via the WA Police Traffic Enforcement and Crash Executive Information System (3) The information is provisional and may be subject to revision.

Fatigue

'Fatigue related crashes' are where police suspected fatigue as a contributing factor and/or the primary crash factor.

Table 17 Fatalities in 'fatigue related crashes'

	Average 2010-2014	2010	2011	2012	2013	2014	2015	Change 2014-2015
	avg. n	n	n	n	n	n	n	%
Fatigue related	18	19	13	17	10	30	17	-43.3
Not fatigue related	162	173	166	166	151	152	144	-5.3
Total fatalities	**179**	**192**	**179**	**183**	**161**	**182**	**161**	**-11.5**

Source: WA Police Road Crash Casualty Database. This information should be considered with the following caveat: (1) These statistics have been derived from WA Police data but the calculations have not been endorsed by WA Police. (2) The information was sourced from the WA Police via the WA Police Traffic Enforcement and Crash Executive Information System (3) The information is provisional and may be subject to revision.

Inattention

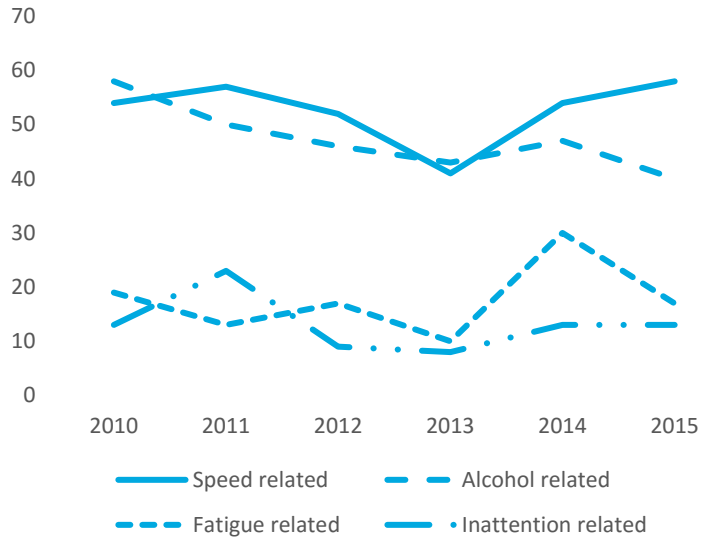
'Inattention related crashes' are where police suspected inattention as the primary crash factor.

Table 18 Fatalities in ' inattention related crashes'

	Average 2010-2014	2010	2011	2012	2013	2014	2015	Change 2014-2015
	avg. n	n	n	n	n	n	n	%
Inattention related	13	13	23	9	8	13	13	0.0
Not inattention related	166	179	156	174	153	169	148	-12.4
Total fatalities	**179**	**192**	**179**	**183**	**161**	**182**	**161**	**-11.5**

Source: WA Police Road Crash Casualty Database. This information should be considered with the following caveat: (1) These statistics have been derived from WA Police data but the calculations have not been endorsed by WA Police. (2) The information was sourced from the WA Police via the WA Police Traffic Enforcement and Crash Executive Information System (3) The information is provisional and may be subject to revision.

Figure 3 Fatalities in behaviour related crashes (not mutually exclusive*)



*These categories should not be summed, as they are not mutually exclusive.

Illegal drugs

Data regarding the number of road crash fatalities with drugs detected in their system was provided by the Forensic Science Laboratory of the Chemistry Centre of Western Australia. The drugs tested for included prescription drugs, illegal drugs and alcohol. Data was also provided for persons for whom no drugs (prescription or illegal) or alcohol were detected. It should be noted that the testing only detects the presence of a drug, and it cannot be determined from these results whether the person killed was under the influence of the detected drug(s) at the time of the crash.

The data supplied by the Chemistry Centre of Western Australia may also include data for fatalities that were out of scope, such as those killed in off-road crashes. Therefore, the data supplied by the Chemistry Centre was matched to the crash data to identify those killed as a result of "in-scope" crashes. This process resulted in 154 of 161 fatalities from the crash data being matched to a record

within the drug dataset. There were also 19 records of fatalities from the drug data that could not to be matched to records in the crash data. Of these 19 fatalities, one had amphetamines and cannabis detected in their system. The remaining 18 did not have any illegal drugs detected in their systems.

It is likely that many of the 7 fatalities from the crash data who could not be matched to the drug data did not have illegal drugs in their system, but it is likely that some did. All tables in this section focus on the 154 crash fatalities who were matched to the drug data.

Table 19 Fatalities by gender and drug use – 2015

	Gender			
	Male	Female	Unknown	Total fatalities
Drugs Detected	n	n	n	n
Amphetamines	8	1	0	9
No illegal drugs detected	73	28	1	102
Alcohol & Cannabis	8	1	0	9
Cannabis	9	4	0	13
Alcohol & Amphetamines	6	1	0	7
Alcohol & Amphetamines & Cannabis	6	2	0	8
Amphetamines & Cannabis	6	0	0	6
No match to ChemCentre data	6	1	0	7
Total fatalities	**122**	**38**	**1**	**161**

Source: Forensic Science Laboratory, Chemistry Centre of Western Australia. Where alcohol is indicated, the drivers' blood alcohol content was greater than or equal to 0.05g/100ml.

Table 20 Fatalities by age group and drug use – 2015

	Age Group					
	0 to 16	7 to 24	25 to 59	60 & over	Unknown	Total fatalities
Drugs Detected	n	n	n	n	n	n
No match to ChemCentre data	1	1	1	4	0	7
No illegal drugs detected	11	14	48	28	1	102
Amphetamines	1	3	5	0	0	9
Cannabis	0	7	6	0	0	13
Alcohol & Amphetamines	0	0	7	0	0	7
Alcohol & Cannabis	1	1	7	0	0	9
Amphetamines & Cannabis	0	3	3	0	0	6
Alcohol & Amphetamines & Cannabis	0	3	5	0	0	8
Total fatalities	**14**	**32**	**82**	**32**	**1**	**161**

Source: Forensic Science Laboratory, Chemistry Centre of Western Australia. Where alcohol is indicated, the drivers' blood alcohol content was greater than or equal to 0.05g/100ml.

Table 21 Fatalities by day of week and drug use – 2015

	Day of Week							
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Total fatalities
Drugs Detected	n	n	n	n	n	n	n	n
No match to ChemCentre data	3	0	0	1	1	1	1	7
No illegal drugs detected	22	11	9	10	16	15	19	102
Amphetamines	1	0	1	3	0	3	1	9
Cannabis	5	1	0	1	0	4	2	13
Alcohol & Amphetamines	1	0	3	0	1	1	1	7
Alcohol & Cannabis	0	2	1	1	1	3	1	9
Amphetamines & Cannabis	1	2	0	0	0	3	0	6
Alcohol & Amphetamines & Cannabis	3	0	2	1	2	0	0	8
Total fatalities	**36**	**16**	**16**	**17**	**21**	**30**	**25**	**161**

Source: Forensic Science Laboratory, Chemistry Centre of Western Australia. Where alcohol is indicated, the drivers' blood alcohol content was greater than or equal to 0.05g/100ml.

Seat belts

The use of seat belts is only reported for occupants of motor vehicles that are likely to have seat belts fitted.

Table 22 Motor vehicle occupant fatalities

	Average 2010-2014	2010	2011	2012	2013	2014	2015	Change 2014-2015
	avg. n	n	n	n	n	n	n	%
Worn	66	84	72	76	47	53	54	1.9
Not worn	30	33	32	27	24	35	30	-14.3
Unknown	21	19	20	19	23	25	37	48.0
Total motor vehicle occupant fatalities	**117**	**136**	**124**	**122**	**94**	**113**	**121**	**7.1**

Table 23 Motor vehicle occupant fatalities that did not wear a seatbelt by gender and age group

Gender/Age	Average 2010-2014 avg. n	2010 n	2011 n	2012 n	2013 n	2014 n	2015 n	Change 2014-2015 %
Male								
0 to 6	1	1	2	0	0	0	1	n.p.
7 to 16	1	0	0	1	1	1	1	n.p.
17 to 18	2	1	1	1	3	2	1	n.p.
19 to 24	3	5	2	3	2	1	2	n.p.
25 to 59	15	16	17	14	14	16	14	-12.5
60 to 84	2	1	4	0	2	4	0	n.p.
85 and over	0	0	0	0	0	1	0	n.p.
Total male	23	24	26	19	22	25	19	-24.0
Female								
0 to 6	0	0	0	0	0	1	0	n.p.
7 to 16	0	1	0	1	0	0	3	n.p.
17 to 18	0	1	0	0	0	0	1	n.p.
19 to 24	2	2	3	2	1	3	0	n.p.
25 to 59	3	4	3	4	1	3	5	n.p.
60 to 84	1	1	0	1	0	3	2	n.p.
85 and over	0	0	0	0	0	0	0	n.p.
Total female	7	9	6	8	2	10	11	10.0
Total motor vehicle occupants not worn	**30**	**33**	**32**	**27**	**24**	**35**	**30**	**-14.3**

Table 24 Motor vehicle occupant fatalities that did not wear a seatbelt by road user group

	Average 2010-2014 avg. n	2010 n	2011 n	2012 n	2013 n	2014 n	2015 n	Change 2014-2015 %
Driver	20	22	19	19	19	19	10	-47.4
Passenger	11	11	13	8	5	16	20	25.0
Total motor vehicle occupants not worn	**30**	**33**	**32**	**27**	**24**	**35**	**30**	**-14.3**

Helmets

This section shows statistics for the use of helmets by motorcyclists and bicyclists killed in crashes reported to police.

Table 25 Motorcyclist fatalities by helmet usage

	Average 2010-2014	2010	2011	2012	2013	2014	2015	Change 2014-2015
	avg. n	n	n	n	n	n	n	%
Worn	28	32	25	27	22	35	19	-45.7
Not worn	3	3	1	4	4	3	1	n.p.
Unknown	2	0	0	1	1	6	2	n.p.
Total	**33**	**35**	**26**	**32**	**27**	**44**	**22**	**-50.0**

Table 26 Bicyclist fatalities by helmet usage

	Average 2010-2014	2010	2011	2012	2013	2014	2015	Change 2014-2015
	avg. n	n	n	n	n	n	n	%
Worn	3	3	1	1	4	4	2	n.p.
Not worn	2	1	3	2	2	3	1	n.p.
Total	**5**	**4**	**4**	**3**	**6**	**8**	**3**	**n.p.**

3.2. Safe roads and roadsides

Road factors

Information on various road factors and environmental conditions are provided in this section. Levels of exposure to different road and environmental conditions will vary and this should be considered when interpreting these figures.

Table 27 Fatal crashes by road factors

	Average 2010-2014	2010	2011	2012	2013	2014	2015	Change 2014-2015
	avg. n	n	n	n	n	n	n	%
Road classification								
Highway/Main	75	77	83	73	64	80	74	-7.5
Local road	83	90	73	88	78	86	68	-20.9
Other road	8	8	11	10	6	6	0	n.p.
Road surface								
Sealed	151	162	147	154	136	158	135	-14.6
Unsealed	15	11	20	17	12	14	7	n.p.
Road alignment								
Curve	50	64	46	52	38	50	45	-10.0
Straight	117	111	121	119	110	122	97	-20.5
Road gradient								
Level	114	110	109	123	109	117	110	-6.0
Crest of Hill	3	5	1	2	5	4	0	n.p.
Slope	50	60	57	46	34	51	32	-37.3
Road Conditions								
Wet	15	13	14	25	14	11	14	27.3
Dry	151	162	153	146	134	161	128	-20.5
Lighting conditions								
Light								
Daylight	91	98	95	87	78	95	85	-10.5
Dawn or dusk	5	12	3	5	3	4	6	n.p.
Night								
Dark -street lights On	30	26	26	33	29	34	18	-47.1
Dark - street lights off	2	1	4	3	3	0	0	n.p.
No street lights	37	38	37	42	32	36	33	-8.3
Total fatal crashes*	**167**	**175**	**167**	**171**	**148**	**172**	**142**	**-17.4**

*Includes unknown road factors.

Crash nature

The crash nature describes the type of crash in terms of the initial collision, regardless of subsequent collisions with other vehicles and/or road users. For example, if the front of one vehicle squarely strikes the side of another vehicle and pushes it off the road where it hits a pedestrian, the crash nature would be considered a "Right Angle" crash. Or, if a vehicle hits a pedestrian who is crossing the road and the first vehicle is then hit from behind by a second vehicle, the crash would be classified as a "Hit Pedestrian" crash. The categories of crash nature included in this report have been aggregated based on the most commonly occurring categories.

Table 28 Fatal crashes by crash nature

	Average 2010-2014	2010	2011	2012	2013	2014	2015	Change 2014-2015
	avg. n	n	n	n	n	n	n	%
Multi-vehicle								
Rear end	6	9	4	5	6	6	8	n.p.
Head on	20	23	20	21	15	19	25	31.6
Sideswipe same dir.	4	2	5	4	2	5	4	n.p.
Right angle	16	20	11	19	14	17	10	-41.2
Right turn through	7	9	6	8	4	8	4	n.p.
Other/unknown	7	4	12	9	4	6	7	n.p.
Single-vehicle								
Hit pedestrian	20	14	20	22	27	15	10	-33.3
Hit animal	0	0	1	0	1	0	2	n.p.
Hit object	59	67	60	56	46	67	43	-35.8
Non Collision	23	26	23	21	23	23	26	13.0
Other/unknown	5	1	5	6	6	6	3	n.p.
Total fatal crashes	**167**	**175**	**167**	**171**	**148**	**172**	**142**	**-17.4**

Figure 4 Fatal crashes by crash nature, 2015

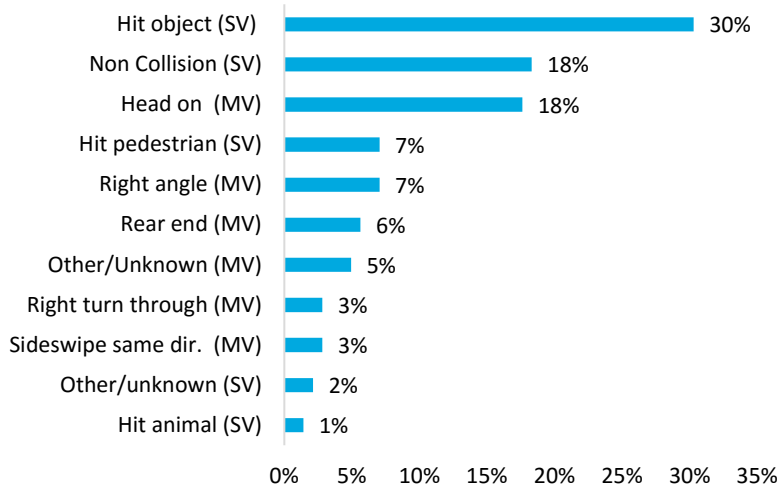
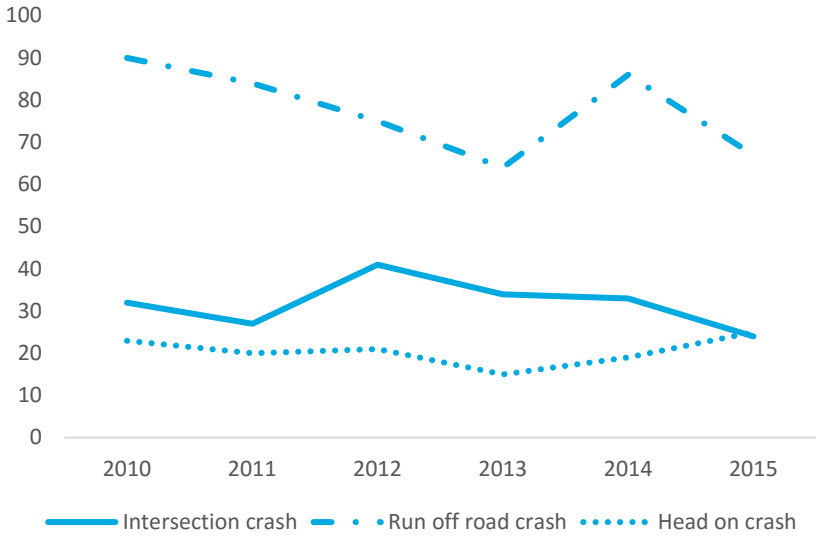


Table 29 Fatal crashes by high priority crash type

	Average 2010-2014	2010	2011	2012	2013	2014	2015	Change 2014-2015
	avg. n	n	n	n	n	n	n	%
Intersection crash	33	32	27	41	34	33	24	-27.3
Run off road crash	80	90	84	75	64	86	67	-22.1
Head on crash	20	23	20	21	15	19	25	31.6
Other crash	38	31	42	40	40	38	30	-21.1
Total fatal crashes	**167**	**175**	**167**	**171**	**148**	**172**	**142**	**-17.4**

Note: High Priority Crash Types are not mutually exclusive and therefore some crashes may be counted more than once and percentages will sum to greater than 100%.

Figure 5 Fatalities by high priority crash type



3.3. Safe speeds

Speed zones

Table 30 Fatalities by speed limit

	Average 2010-2014	2010	2011	2012	2013	2014	2015	Change 2014-2015
	avg. n	n	n	n	n	n	n	%
<50 km/h	3	1	2	3	3	5	1	n.p.
50 km/h	18	14	19	18	20	17	11	3.8
60 km/h	29	32	23	33	27	30	21	2.3
70 km/h	17	12	17	16	21	21	16	3.6
80 km/h	15	13	12	21	17	14	19	9.7
90 km/h	9	12	6	11	6	11	17	14.0
100 km/h	13	14	15	7	13	14	11	5.6
110 km/h	72	90	79	70	53	66	65	1.5
Unknown	4	4	6	4	1	4	0	n.p.
Total fatalities	**179**	**192**	**179**	**183**	**161**	**182**	**161**	**0.5**

Speed Compliance

General road user compliance with speed limits is shown in this section. The percentages of vehicles exceeding the speed limit are calculated from surveys conducted by collecting two days of speed data from a subset of selected sites.

The findings of the studies were based solely on data obtained on vehicles travelling under "free flowing" conditions, defined as situations where there is a gap of more than four seconds between vehicles.

Table 31 Percentage of vehicles exceeding the speed limit by speed zone - Metropolitan

	Average 2010-2014	2010	2011	2012	2013	2014	2015	Change 2014-2015
	avg. n	n	n	n	n	n	n	%
60 km/h	43.7	46.6	48.2	44.3	41.3	38.3	41	2.8
70 km/h	34.8	37.4	37	33.6	34	32	35.5	3.5
80 km/h	33.7	39.9	34	34.8	32	27.6	33.1	4.3
90 km/h	27.5	26.6	27.8	31.6	27.6	24	24.4	4.2
100 km/h	27.9	20.2	32.3	20.6	31.3	35	26.1	2.1
All speed limits	**37.3**	**39.8**	**40.2**	**36.9**	**35.7**	**33.9**	**35.9**	**3.1**

Source: Trends in Driver Speed Behaviours on Perth Metropolitan Road Network 2000 to 2015, MRWA.

Table 32 Percentage of vehicles exceeding the speed limit by speed zone - Regional

	Average 2010-2014	2010	2011	2012	2013	2014	2015	Change 2014-2015
	avg. n	n	n	n	n	n	n	%
60 km/h	35.6	38.2	32	38.1	34.9	34.9	36	3.0
70 km/h	26.4	21.3	24.1	31.8	29.4	25.6	29.2	4.5
80 km/h	22.9	23.5	23.6	22	22.2	23.4	36.8	6.7
90 km/h	31.6	33.7	40.1	27.4	28.7	28	35.1	4.5
100 km/h	34.5	43.3	38	17.1	42	32.3	38.1	3.7
110 km/h	31.6	30.3	28	33.7	28.7	37.2	35.9	2.6
All speed limits	**29.8**	**28.9**	**29.6**	**31.2**	**29.2**	**30.1**	**33.9**	**3.7**

Source: Trends in Driver Speed Behaviours on Rural Road Network 2000 to 2015, MRWA.

3.4. Safe vehicles

Vehicle type

Table 33 Fatalities by mode of transport

	Average 2010-2014	2010	2011	2012	2013	2014	2015	Change 2014-2015
	avg. n	n	n	n	n	n	n	%
Car	63	75	62	72	48	57	62	8.8
Station Wagon	16	24	16	18	8	13	13	0.0
Utility	18	20	22	13	16	19	25	31.6
Panel Van, 4WD	14	12	20	10	15	13	18	38.5
Rigid Truck	2	3	0	0	2	5	1	n.p.
Articulated truck	3	2	2	6	4	3	2	n.p.
Bus (>= 12 seats)	1	0	0	2	0	1	0	n.p.
Multi Seater Van	1	0	2	1	1	0	0	n.p.
Motor Cycle	33	35	26	32	27	44	22	-50.0
Bicycle	5	4	4	3	6	8	3	n.p.
Other	0	0	0	0	1	1	0	n.p.
Pedestrian	24	17	25	26	33	17	15	-11.8
Unknown	0	0	0	0	0	1	0	n.p.
Total fatalities	**179**	**192**	**179**	**183**	**161**	**182**	**161**	**-11.5**

4. Other factors

4.1. Temporal factors

This section provides crash and injury numbers by crash month and day of week for the whole state.

Table 34 Fatalities by month

	Average 2010-2014	2010	2011	2012	2013	2014	2015	Change 2014-2015
	avg. n	n	n	n	n	n	n	%
January	11	11	10	9	20	7	10	42.9
February	14	5	20	18	13	15	14	-6.7
March	14	17	11	16	8	19	21	10.5
April	14	17	19	11	6	15	14	-6.7
May	17	21	13	17	25	9	8	n.p.
June	15	13	17	17	12	17	12	-29.4
July	13	14	5	16	13	17	5	n.p.
August	14	17	17	12	11	13	21	61.5
September	15	16	17	13	13	16	15	-6.3
October	16	12	17	19	12	22	12	-45.5
November	18	25	18	19	13	16	12	-25.0
December	17	24	15	16	15	16	17	6.3
Total fatalities	**179**	**192**	**179**	**183**	**161**	**182**	**161**	**-11.5**

Table 35 Fatalities by day of the week

	Average 2010-2014	2010	2011	2012	2013	2014	2015	Change 2014-2015
	avg. n	n	n	n	n	n	n	%
Monday	19	24	18	18	16	20	36	80.0
Tuesday	23	24	24	24	18	24	16	-33.3
Wednesday	20	18	17	24	26	13	16	23.1
Thursday	26	28	26	20	20	36	17	-52.8
Friday	27	24	34	33	20	23	21	-8.7
Saturday	35	40	32	45	29	28	30	7.1
Sunday	30	34	28	19	32	38	25	-34.2
Total fatalities	**179**	**192**	**179**	**183**	**161**	**182**	**161**	**-11.5**

5. Regional

This section contains information on road crashes that occurred in individual regions of Western Australia. Comparison tables are provided containing information for each region, and several maps are included that compare fatality rates.

The population of a region should be considered when comparing numbers of crashes across the different regions, as a region with a higher population is likely to have a higher number of road crash fatalities.

Table 36 Fatalities by region and age group - 2015

	Age group (years)								
MRWA Region	0 to 6	7 to 16	17 to 18	19 to 24	25 to 59	60 to 84	85 and over	Unknown	Total
Total Metropolitan	**2**	**4**	**5**	**7**	**34**	**13**	**4**	**0**	**69**
Total Regional	**1**	**7**	**5**	**15**	**48**	**14**	**1**	**1**	**92**
Goldfields-Esperance	0	2	0	0	1	0	0	0	3
Great Southern	0	0	0	0	4	0	0	0	4
Kimberley	1	2	0	1	5	1	0	0	10
Mid West-Gascoyne	0	0	2	4	11	2	0	1	20
Pilbara	0	1	0	1	6	1	0	0	9
South West	0	1	2	7	9	3	1	0	23
Wheatbelt	0	1	1	2	12	7	0	0	23
Total fatalities	**3**	**11**	**10**	**22**	**82**	**27**	**5**	**1**	**161**

Table 37 Fatality rate per 100,000 population by region and age group - 2015

	Age group (years)							
MRWA Region	0 to 6	7 to 16	17 to 18	19 to 24	25 to 59	60 to 84	85 and over	Total
Total Metropolitan	**1.1**	**1.7**	**10.2**	**4.1**	**3.5**	**4.2**	**12.6**	**3.6**
Total Regional	**1.6**	**8.2**	**33.4**	**35.2**	**15.2**	**11.7**	**9.8**	**14.1**
Goldfields-Esperance	0.0	1.0	2.0	3.0	4.0	5.0	6.0	6.0
Great Southern	0.0	0.0	0.0	0.0	14.4	0.0	0.0	6.4
Kimberley	24.4	34.6	0.0	31.7	23.5	29.2	0.0	25.8
Mid West-Gascoyne	0.0	0.0	122.5	96.4	34.3	16.3	0.0	30.0
Pilbara	0.0	15.6	0.0	19.9	13.8	27.4	0.0	13.7
South West	0.0	2.6	28.6	39.3	7.1	4.9	18.2	8.1
Wheatbelt	0.0	10.4	66.8	48.8	35.9	39.8	0.0	30.9
Total fatalities	**1.2**	**3.4**	**15.7**	**10.3**	**6.4**	**6.3**	**11.9**	**6.2**

Source: Population data from the Australian Bureau of Statistics

Table 38 Fatalities by region by road user type - 2015

	Road user type					
	Driver	Passenger	Motorcyclist	Bicyclist	Pedestrian	Total
Total Metropolitan	**24**	**17**	**15**	**3**	**10**	**69**
Total Regional	**45**	**35**	**7**	**0**	**5**	**92**
Goldfields-Esperance	0	2	1	0	0	3
Great Southern	3	1	0	0	0	4
Kimberley	2	7	0	0	1	10
Mid West-Gascoyne	7	12	1	0	0	20
Pilbara	3	3	2	0	1	9
South West	11	7	2	0	3	23
Wheatbelt	19	3	1	0	0	23
Total fatalities	**69**	**52**	**22**	**3**	**15**	**161**

Table 39 Fatalities by region, gender and age group – 2015

	Age group (years)							
	0 to 6	7 to 16	17 to 18	19 to 24	25 to 59	60 to 84	85 and over	Total fatalities*
				Male				
Metropolitan	1	3	5	6	26	8	3	52
Goldfields - Esperance	0	1	0	0	1	0	0	2
Great Southern	0	0	0	0	2	0	0	2
Kimberley	1	0	0	0	4	0	0	5
Mid West-Gascoyne	0	0	1	1	10	1	0	13
Pilbara	0	1	0	1	5	1	0	8
South West	0	1	2	4	7	2	1	17
Wheatbelt	0	1	1	2	12	7	0	23
Total fatalities	**2**	**7**	**9**	**14**	**67**	**19**	**4**	**122**
				Female				
Metropolitan	1	1	0	1	8	5	1	17
Goldfields - Esperance	0	1	0	0	0	0	0	1
Great Southern	0	0	0	0	2	0	0	2
Kimberley	0	2	0	1	1	1	0	5
Mid West-Gascoyne	0	0	1	3	1	1	0	6
Pilbara	0	0	0	0	1	0	0	1
South West	0	0	0	3	2	1	0	6
Wheatbelt	0	0	0	0	0	0	0	0
Total fatalities	**1**	**4**	**1**	**8**	**15**	**8**	**1**	**38**
				All genders*				
Metropolitan	2	4	5	7	34	13	4	69
Goldfields - Esperance	0	2	0	0	1	0	0	3
Great Southern	0	0	0	0	4	0	0	4
Kimberley	1	2	0	1	5	1	0	10
Mid West-Gascoyne	0	0	2	4	11	2	0	20
Pilbara	0	1	0	1	6	1	0	9
South West	0	1	2	7	9	3	1	23
Wheatbelt	0	1	1	2	12	7	0	23
Total fatalities*	**3**	**11**	**10**	**22**	**82**	**27**	**5**	**161**

*Includes unknown gender.

Table 40 Motor vehicle occupant fatalities that did not wear a seatbelt

	Average 2010-2014	2010	2011	2012	2013	2014	2015	Change 2014-2015
	avg. n	n	n	n	n	n	n	%
Total Metropolitan	**6.4**	**6**	**6**	**9**	**2**	**9**	**7**	**n.p.**
Total Regional	**23.8**	**27**	**26**	**18**	**22**	**26**	**23**	**-11.5**
Goldfields-Esperance	2.2	3	1	3	1	3	1	n.p.
Great Southern	0.8	0	1	0	1	2	1	n.p.
Kimberley	3.8	4	7	2	4	2	5	n.p.
Mid West-Gascoyne	4	4	3	4	6	3	8	n.p.
Pilbara	3.4	6	2	3	1	5	2	n.p.
South West	4.4	4	7	3	3	5	4	n.p.
Wheatbelt	5.2	6	5	3	6	6	2	n.p.
Total motor vehicle occupant fatalities	**30.2**	**33**	**32**	**27**	**24**	**35**	**30**	**-14.3**

Table 41 Fatalities in 'speed related crashes' by region

	Average 2010-2014	2010	2011	2012	2013	2014	2015	Change 2014-2015
	avg. n	n	n	n	n	n	n	%
Total Metropolitan	**23.0**	**16**	**27**	**24**	**23**	**25**	**27**	**8.0**
Total Regional	**28.6**	**38**	**30**	**28**	**18**	**29**	**31**	**6.9**
Goldfields-Esperance	2.4	2	2	5	0	3	2	n.p.
Great Southern	2.4	1	2	4	0	5	2	n.p.
Kimberley	2.6	3	3	3	3	1	4	n.p.
Mid West-Gascoyne	3.0	2	3	5	4	1	5	n.p.
Pilbara	1.6	4	1	0	1	2	3	n.p.
South West	9.2	18	7	4	6	11	6	n.p.
Wheatbelt	7.4	8	12	7	4	6	9	n.p.
Total fatalities	**51.6**	**54**	**57**	**52**	**41**	**54**	**58**	**7.4**

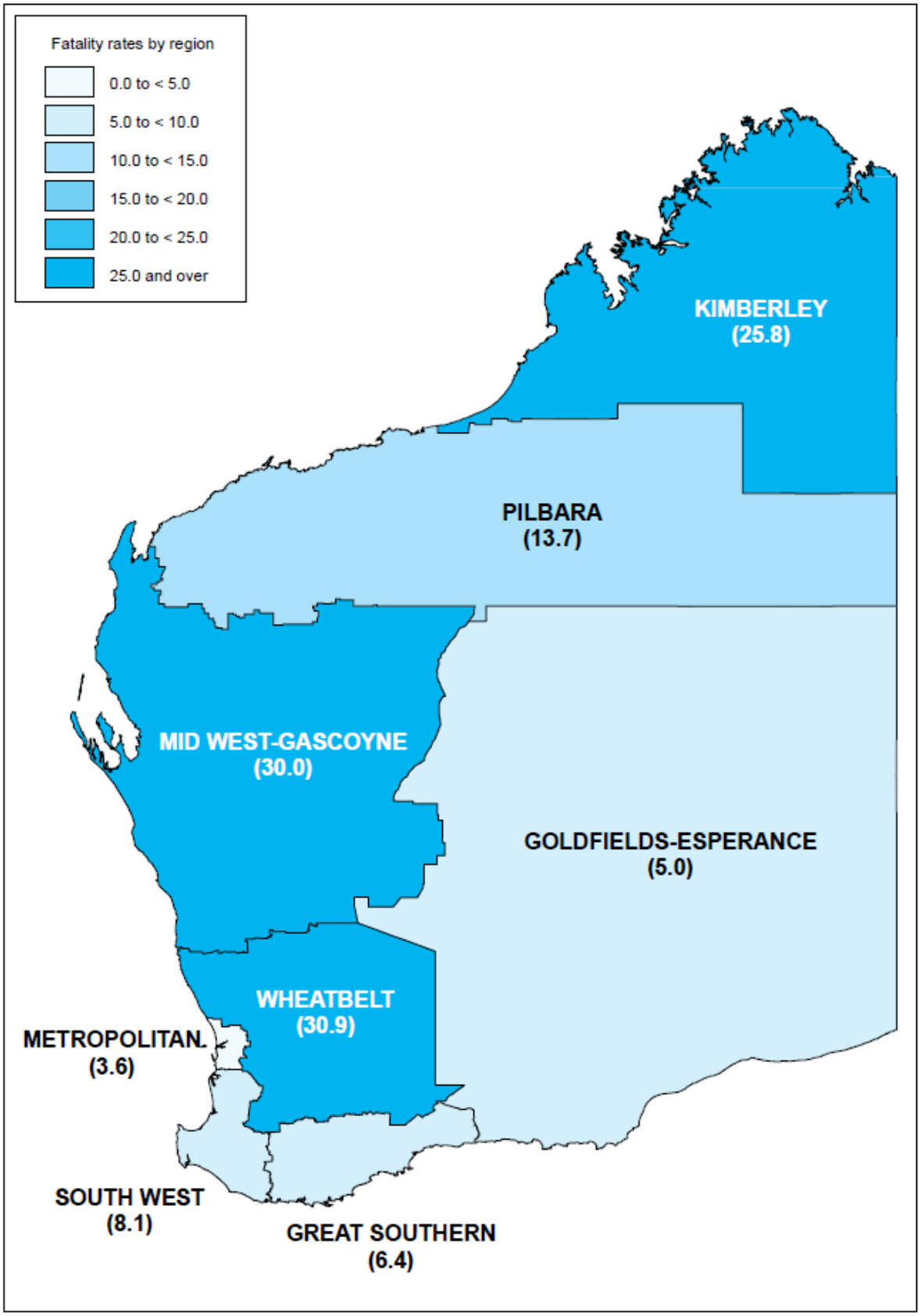
Source: WA Police Road Crash Casualty Database. This information should be considered with the following caveat: (1) These statistics have been derived from WA Police data but the calculations have not been endorsed by WA Police. (2) The information was sourced from the WA Police via the WA Police Traffic Enforcement and Crash Executive Information System (3) The information is provisional and may be subject to revision.

Table 42 Fatalities in 'alcohol related crashes' by region

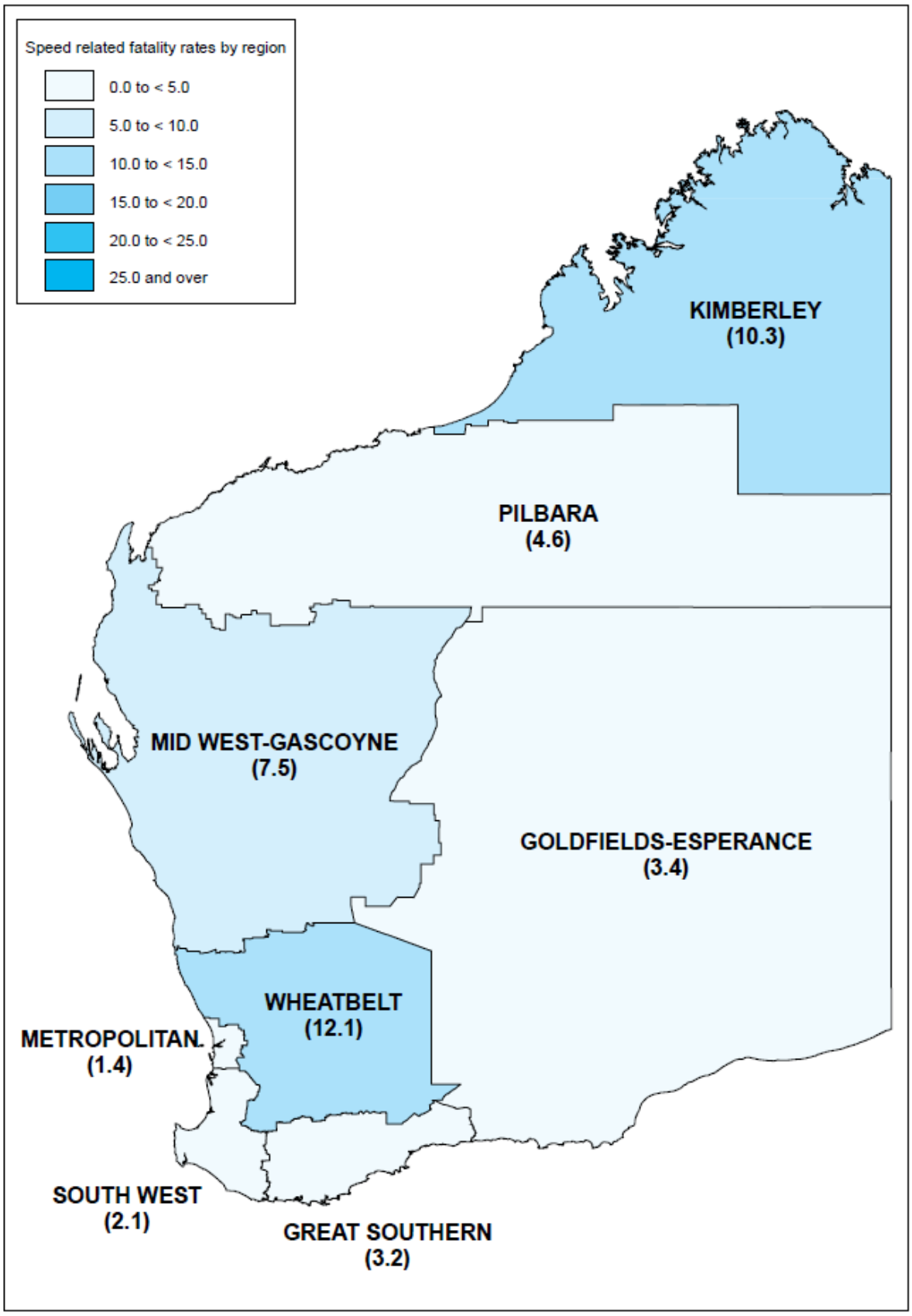
	Average 2010-2014	2010	2011	2012	2013	2014	2015	Change 2014-2015
	avg. n	n	n	n	n	n	n	%
Total Metropolitan	**18.8**	20	18	22	20	14	16	14.3
Total Regional	30.0	38	32	24	23	33	24	-27.3
Goldfields-Esperance	2.8	2	2	3	2	5	1	n.p.
Great Southern	1.6	1	0	1	1	5	1	n.p.
Kimberley	3.8	6	6	3	2	2	2	n.p.
Mid West-Gascoyne	3.6	5	4	4	4	1	7	n.p.
Pilbara	2.8	4	4	1	1	4	1	n.p.
South West	6.8	12	7	2	4	9	5	n.p.
Wheatbelt	8.6	8	9	10	9	7	7	n.p.
Total fatalities	**48.8**	**58**	**50**	**46**	**43**	**47**	**40**	**-14.9**

Source: WA Police Road Crash Casualty Database. This information should be considered with the following caveat: (1) These statistics have been derived from WA Police data but the calculations have not been endorsed by WA Police. (2) The information was sourced from the WA Police via the WA Police Traffic Enforcement and Crash Executive Information System (3) The information is provisional and may be subject to revision.

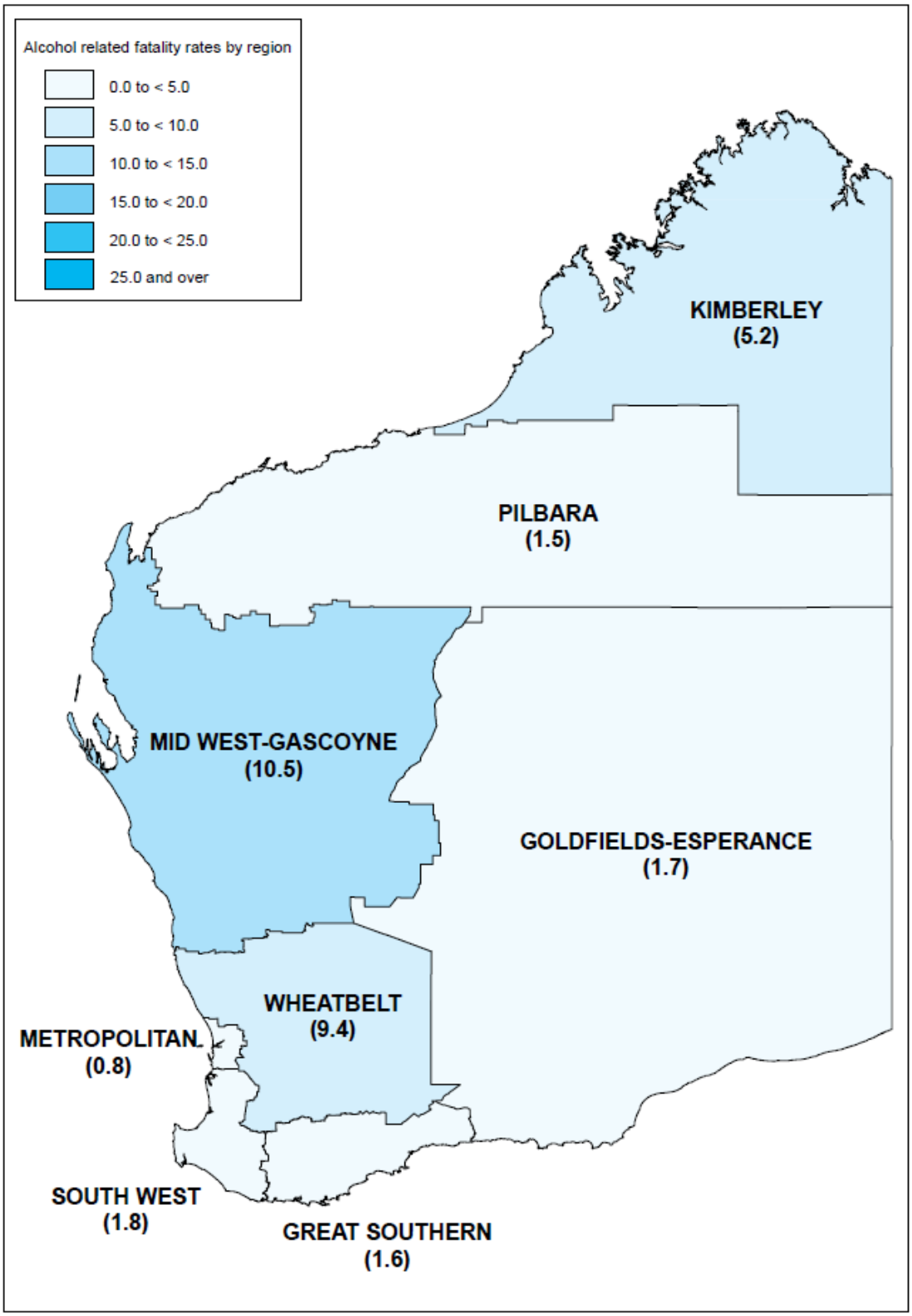
Map 1 Fatality rates per 100,000 population by region



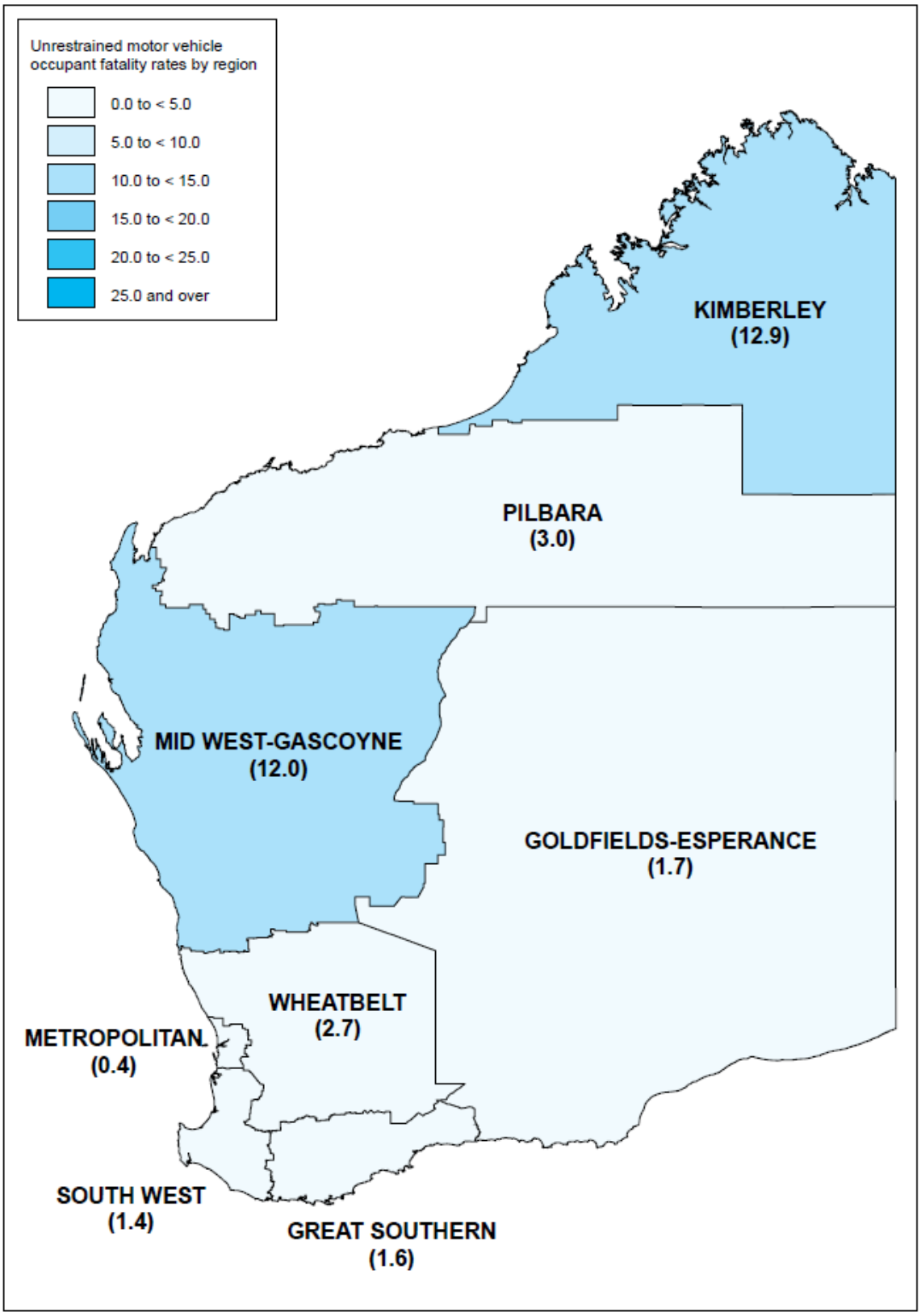
Map 2 'Speed related fatality' rates per 100,000 population by region



Map 3 'Alcohol related fatality' rates per 100,000 population by region



Map 4 Unrestrained motor vehicle occupant fatality rates per 100,000 population by region



Appendix A – Trends over time

Appendix A (i) – Western Australia road crash trends 1961 to 2015

Year	Fatal crashes	Fatalities	per Vehicle [1]	per Population [2]	per Km [3]
1961		172		22.8	
1962		177		22.8	
1963		198		24.8	
1964		222		27.1	
1965		252		30.1	
1966		253	8.0	29.3	
1967		256	7.5	28.5	
1968		320	8.7	34.1	
1969		311	7.8	31.8	
1970		351	8.3	35.4	
1971		332	7.3	32.2	
1972	305	340	7.1	32.3	
1973	332	358	7.1	33.5	
1974	303	334	6.2	29.9	
1975	259	304	5.2	26.5	
1976	255	308	4.9	26.1	3.2
1977	259	290	4.3	24.2	2.8
1978	304	345	5.0	28.1	3.2
1979	259	279	3.9	22.4	2.4
1980	268	293	3.9	23.2	2.5
1981	217	238	3.1	18.3	2.0
1982	203	236	2.9	17.6	1.9
1983	191	203	2.5	14.8	1.6
1984	203	220	2.7	15.8	1.6
1985	220	243	2.8	17.1	1.7
1986	208	228	2.6	15.6	1.6
1987	193	213	2.4	14.2	1.4
1988	199	230	2.5	15.0	1.5
1989	214	242	2.5	15.3	1.5
1990	181	196	1.9	12.2	1.2
1991	185	207	1.9	12.7	1.3
1992	171	200	1.8	12.1	1.2
1993	190	209	1.9	12.5	1.2
1994	195	211	1.8	12.4	1.2
1995	194	209	1.8	12.1	1.2
1996	220	247	2.0	14.0	1.4
1997	183	196	1.5	10.9	1.1
1998	199	223	1.7	12.2	1.2

Year	Fatal crashes	Fatalities	per Vehicle [1]	per Population [2]	per Km [3]
1999	189	218	1.6	11.8	1.2
2000	184	212	1.6	11.3	1.1
2001	151	165	1.2	8.7	0.9
2002	159	178	1.3	9.2	0.9
2003	154	179	1.2	9.2	0.9
2004	163	179	1.2	9.0	0.8
2005	151	164	1.1	8.1	0.8
2006	182	201	1.3	9.8	0.9
2007	213	235	1.4	11.2	1.0
2008	185	205	1.2	9.4	0.8
2009	176	191	1.0	8.5	0.7
2010	175	192	1.0	8.4	0.7
2011	167	179	0.9	7.6	0.7
2012	171	183	0.9	7.5	0.7
2013	148	161	0.8	6.4	0.6
2014	172	182	0.8	7.1	0.7
2015	**142**	**161**	**0.7**	**6.2**	**0.6**

N/A - Denotes information not available.
1. Rate is per 10,000 motor vehicles registered (see Appendix A (ii)).
2. Rate is per 100,000 estimated resident population (see Appendix A (ii)).
3. Rate is per 100 million estimated kilometres travelled (see Appendix A (ii)).

Appendix A (ii) – Western Australia demographics, 1961 to 2015

Year	Vehicles [1]	Population [2]	Travel [3]	MDLs [4]
1961		755,213		
1962		777,248		
1963		798,895		
1964		818,121		
1965		838,248		
1966	317,400	864,093		
1967	339,400	896,988		
1968	366,100	937,800		
1969	398,100	976,620		
1970	423,200	991,400		
1971	453,000	1,030,500		
1972	476,900	1,053,200		
1973	506,800	1,068,500		
1974	537,900	1,117,400		536,794
1975	587,800	1,146,700		562,764
1976	631,500	1,178,340	9,586	561,264
1977	675,800	1,197,100	10,197*	621,288
1978	695,500	1,227,900	10,809*	654,949
1979	719,700	1,246,600	11,420*	675,033
1980	745,000	1,265,100	11,725*	700,398
1981	773,200	1,300,056	12,030*	731,000
1982	806,000	1,338,899	12,336*	757,000
1983	809,300	1,369,050	12,911*	781,000
1984	830,000	1,391,237	13,485*	800,000
1985	866,300	1,418,564	14,059*	819,200
1986	887,357	1,459,019	14,506*	846,135
1987	906,051	1,496,248	14,954*	879,614
1988	935,761	1,535,167	15,401*	918,290
1989	986,245	1,578,434	15,624*	953,857
1990	1,037,655	1,613,049	15,847*	997,719
1991	1,061,643	1,636,067	16,070*	1,014,738
1992	1,081,710	1,658,045	16,487*	1,066,548
1993	1,111,030	1,677,669	16,916*	1,100,478
1994	1,142,381	1,703,009	17,356*	1,106,096
1995	1,186,742	1,733,787	17,735*	1,141,064
1996	1,210,991	1,765,256	17,531*	1,154,165
1997	1,269,581	1,794,992	17,328*	1,199,053
1998	1,327,203	1,822,668	17,873	1,260,196

Year	Vehicles [1]	Population [2]	Travel [3]	MDLs [4]
1999	1,344,809	1,849,733	17,702	1,258,896
2000	1,358,075	1,874,459	19,875	1,273,234
2001	1,371,341	1,901,159	18,610	1,288,492
2002	1,405,676	1,926,111	19,160	1,270,966
2003	1,438,441	1,953,070	20,810	1,320,777
2004	1,480,206	1,982,637	21,324	1,341,116
2005	1,529,615	2,017,088	21,647	1,360,598
2006	1,600,566	2,059,381	22,616	1,389,332
2007	1,676,495	2,106,139	24,289	1,480,873
2008	1,746,579	2,171,700	25,325	1,517,712
2009	1,828,346	2,240,250	25,902	1,551,694
2010	1,870,068	2,290,845	26,285	1,586,049
2011	1,912,739	2,353,409	26,740	1,617,417
2012	1,977,756	2,437,994	27,500	1,673,916
2013	2,048,388	2,515,387	26,835	1,728,107
2014	2,142,307	2,557,046	27,581	1,761,764
2,015	**2,185,409**	**2,590,259**	**27,794**	**1,793,464**

N/A - Denotes information not available.
* - Denotes an estimated figure.
1. Motor vehicles registered. From 1997 onwards, data taken from ABS, Motor Vehicle Census, Catalogue No. 9309.0.
2. Estimated resident population. From 1983 onwards, data taken from ABS, Catalogue No. 3101.0 for June.
3. Estimated kilometres travelled (million). Data taken from ABS, Survey of Motor Vehicle Use, Catalogue No. 9208.0. Estimates for 2008, 2009 and 2011 are based on the average kilometres travelled per vehicle (interpolated between 2007, 2010 and 2012 figures) and the number of registered vehicles. The 2015 figure is estimated using a 5-year linear regression trend equation.
4. Western Australian Motor Driver licences on record (Department of Transport).

Appendix B - Road safety related legislation and other initiatives

The following is a brief listing of road safety-related legislation and other initiatives, which could have contributed to reductions in road crashes and injury in WA.

1919 First Road Traffic Act introduced.

1953 First Traffic Control signals introduced (West Perth Subway).

1954 Stop sign regulation introduced.

1960 (circa) Amphometer Speed Detection Device introduced (Air pressure tapes).

1964 Probationary Licence Scheme introduced.

1968 First Breath Analysis Apparatus used.

1968 Preliminary Breath Testing introduced. (Aico Test - a tube with crystals that changed colour)

1968 Blood alcohol concentration (BAC) limits of:

- 0.08gm%; and
- 0.15gm% (driving under the influence - DUI).

1969 On-the-spot traffic infringement notices (TIN) introduced.

1969 Seat belts required to be fitted to motor car front seats.

1970 Legal drinking age changed from 21 years to 18 years.

1971 Seat belts required to be fitted to motor cars for all seats and wearing of seat belts made compulsory.

1971 Head Supports required to be fitted for all cars manufactured on or after 1 January 1972.

1974 Road Traffic Act 1974 and its regulations enacted bringing all traffic enforcement under police control. (Previously most rural and several Metropolitan Local Councils controlled traffic enforcement in their areas)

1974 Compulsory Wearing of Safety Helmets. Motorcycle riders required to wear an approved protective helmet. Pillion passengers of six years of age and older also required to wear an approved helmet.

1974 Motoring went Metric (Mph to Km/h)

1975 Demerit points introduced an accrual of 12 points results in a three month suspension of licence.

1977 Child restraints required to be used for children aged 1 to 7 years old (older must wear seat belts).

1977 Speed Gun JF 100 Mobile Radar Detection Device introduced (operated from within the patrol vehicle).

1978 Maximum speed of 60km/h introduced in built-up areas, except where zoned for a different speed limit.

1978 Maximum speed of 110 km/h introduced in areas other than those zoned otherwise, or in built-up areas.

1979 Preliminary breath testing apparatus "Liar" electronic introduced.

1979 Drivers responsible for children aged one to seven years wearing seat belt.

1979 Red light cameras introduced for use at traffic light controlled intersections.

1981 Road Traffic Board established to administer the Road Traffic Act.

1982 Infra Red (Digitector) high volume speed detection device introduced.

1982 BAC limit of 0.02gm% for probationary drivers introduced with a penalty of cancellation of probationary licence and a $100 fine.

1986 Fairy Slant Radar Speed Detection Devices introduced.

1987 Breath analysis evidentiary equipment improved – DRAGER 71 10 introduced.

1987 Motor Vehicle (Third Party Insurance) Act 1943 amended to limit cover to injury caused through "driving of a motor vehicle", following a High Court decision.

1988 Random breath testing (RBT) introduced.

1988 Speed camera radars introduced.

1989 Penalty for failing to wear a seat belt increased from $50 to $100.

1989 Seat belt exemption for passengers over 70 years of age repealed.

1989 Prime Minister's 10 point road safety package was devised.

1990 Penalties for most traffic offences increased.

1991 Speed limiting device legislation for heavy vehicles introduced.

1992 Compulsory bicycle helmet wearing legislation came into effect. From July 1, 1992 a rider had the opportunity to buy a helmet or be fined and from January 1, 1993 a rider was fined if found not to be wearing a correctly fastened helmet. Helmet subsidy scheme applied.

1992 Maximum speed limit for drivers of heavy vehicles increased to 100km/h.

1992 Penalties increased for speeding offences committed by drivers of heavy vehicles.

1993 BAC limit of 0.05gm% introduced. Penalties of $100 and three demerit points were applied.

1993 Local traffic area 40km/h legislation introduced.

1993 Threshold on general damages introduced to eliminate non-pecuniary loss for minor personal injury claims.

1994 Speed limits (max) increased for:

- probationary drivers from 80km/h to 90km/h where applicable; and
- freeways from 90km/h to 100km/h.

1995 Seat belt regulations repealed and new regulations became effective. From January 1 all children, regardless of age were to be correctly restrained.

1995 Revised Towed agricultural implements regulations introduced impacting on the use of agricultural implements being towed on the road.

1995 Suspension of motor driver's licence for non-payment of fines introduced.

1995 Young Offenders Act introduced.

1996 Restricted use of right lane regulation introduced regardless of speed limit - all vehicles to keep left unless overtaking, intending to turn right, or providing good reason for being in the right hand lane. (Note – changed to apply to 90km/h roads and higher in 2000).

1997 Alcohol preliminary testing units with electrical digital reading capabilities (LION SD 400) introduced.

1997 Road Safety Council (RSC) formed to replace the Traffic Board of Western Australia.

1998 Penalties for some traffic offences increased (and penalty units introduced).

1999 New practical driving assessment introduced as first component of the Graduated Driver Training and Licensing System (March).

2000 Road Traffic Code 2000 commenced (1 December 2000) with provisions similar to the Australian Road Rules (apart from a few exceptions).

2000 Restricted use of right lane regulation applied to roads where speed limit 90km/h or greater (all vehicles are required to keep left unless overtaking, intending to turn right, or providing good reason for being in the right hand lane).

2001 Regulation prohibiting passengers riding in the open load space of some vehicles (utilities) introduced on 1 January, 2001.

2001 Road Traffic Act 1974 amended to give effect to the Graduated Driver Training and Licensing system for novice drivers. Probation period extended from 1 to 2 years or until 19 years of age (whichever is the greater period).

2001 Probationary licences no longer cancelled for non-payment of fines (only suspension of licence).

2001 Using a hand-held mobile phone whilst driving banned from July 1, 2001.

2001 National driver licence classes and minimum standard assessment vehicles for testing of drivers introduced (7 May).

2001 Compulsory photographs and signatures on licence (7 May).

2001 Industry training and assessment for MC licence applications.

2001 Default built-up area speed limit reduced from 60km/h to 50km/h. Applied to all roads in a built-up area except within a speed zone in which another speed limit is signed (1 December).

2002 Speed limit of 90km/h for Probationary drivers removed (6 February).

2002 Hazard perception test introduced for learner drivers.

2002 A trial of Double Demerit points during holiday periods introduced for offences in relation to speeding, drink driving and failure to use restraints.

2002 Heavy Vehicle Accreditation Scheme implemented (requiring the introduction of a quality systems approach to the management of heavy vehicle maintenance and driver fatigue).

2002 Road Safety Council Act 2002 passed. Under the Act the functions of the Road Safety Council and administration of the Road Trauma Trust Fund were transferred from the *Road Traffic Act 1974*.

2002 Road Traffic (Vehicle Standards) Rules and Regulations 2002 introduced.

2004 Road Traffic Amendment (Impounding and Confiscation of Vehicles) Act 2004. This amendment allows police to impound vehicles and suspend driver's licences for reckless and dangerous driving.

2004 Automatic Number Plate Recognition devices introduced.

2004 Double demerit points for nominated offences (Drink Driving 0.05%<0.08%, Speeding, Not wearing a Seat Belt and Occupying Open Load Spaces) gazetted into legislation for nominated dates.

2004 Road Traffic Act amended to introduce hoon legislation, including inter alia, 48 hour impounding (December).

2004 Redefinition of "driving" by the High Court to exclude claims for personal injury arising from vehicles not in motion.

2005 Changes for converting overseas licences commenced 1 January. Testing of licence holders from non-recognised countries for all classes of licence. Licence holders from recognised countries tested for classes other than car and motorcycle.

2006 Final phase of the Open Load Space regulations came into effect prohibiting the carriage of passengers in the load space of utilities, panel vans and trucks (1 January).

2006 Owner-onus regulations came into effect requiring responsible persons (vehicle owners) to identify who was driving their vehicle at a particular time and introducing an offence for failing to take reasonable measures to ensure that if a request for the identity of a driver is made in relation to the vehicle, the responsible person will be able to comply (1 January).

2006 New regulations for push-type motorised scooters introduced. Electric motors with 200W or less power permitted and only to be used where wheeled recreational devices permitted (29 December).

2007 Penalties increased for speeding, seat belts and penalties for other offences amended (January) based on review by Road Safety Council. Fines for seat belt non-wearing increased further in April 2007.

2007 Indemnity for persons reporting unsafe or dangerous drivers (6 July).

2007 New drug driving laws introduced (12 October).

2008 Zero BAC for novice drivers introduced (previously 0.02% BAC).

2008 Night time driving restrictions for novices in their first 6 months on a probationary licence (p1) introduced (1 July).

2008 Fines increased for some speeding and seat belt offences (1 March)– light vehicles: 20km/h to 29km/h increased from 5PU ($250) to 6PU ($300), 30km/h-39km/h increased from 7PU ($350) to 14 PU ($700). Heavy vehicles 20km/h – 29km/h increased from 7PU to 8PU, 30km/h – 39km/h increased from 10PU to 17PU. Driver responsibility extended from passengers under 16 to all passengers (irrespective of age) with fines increasing depending on numbers of unrestrained passengers and whether driver restrained or not. If driver restrained but passengers not: 1 passenger=10PU, 2=12PU, 3=14PU, 4 or more 16PU. Penalties greater if driver also not wearing a seat belt.
2008 Driving in contravention of a driver's licence class condition constitute unlicensed driving (30 June).

2008 Licences with photographs and signatures valid for 10 years (30 June).

2008 Learners permit validity extended from 1 to 3 years (30 June).

2008 Compulsory surrender of all driver's licence documents (i.e. driver's licence cards) at commencement of a licence disqualification or cancellation. (30 June).

2008 Disqualification of a WA driver's licence in another Australian jurisdiction recognised in WA (30 June).

2008 Overseas visitor licence 12 month recognition replaced by allowance to drive while visitor (30 June).

2008 New demerit point disqualification period based on the number of demerit points accrued introduced with good behaviour option and double disqualification if re-offence in probationary period. No extraordinary licences able to be obtained in period (June 2008).

2008 Penalties increased for 'hoon' behaviour including roadside impounding for 1 week for first offence (July).

2009 Definition of unauthorised driving offences amended. Broaden circumstances where a vehicle could be impounded for unauthorised driving offences. Roadside impoundment unauthorised driving offences increased to 28 days. Hoon impounding offences increased to 3 months roadside impoundment for a second charge (1 July).

2009 Enhanced Speed Enforcement Program commenced to upgrade entire traffic camera fleet and processing systems to digital (July).

2010 Hoon legislation amended to remove the requirement of circumstances of aggravation. All s.60 Reckless driving offences are now impounding offences. (1 January).

2010 Novice Driver Graduated Demerit Point Scheme
From 1 December 2010 novice driverS who hold a licence up to 1 year are restricted to 3 demerit points in that year and 7 demerit points over 2 years. Any demerit points accumulated above these restrictions will result in a 3 month disqualification period.

2010 Immediate disqualification for drivers charged with drink driving offences.
Drivers who are charged with an offence of driving with a BAC 08 and above are served with a notice disqualifying the person from driving for a period of 2 months.

2010 Introduction of Redflex Red light/speed cameras and Vitronic PoliScan digital speed cameras into the speed camera fleet (July).

2010 Child car restraints regulations amended to ensure that children aged under seven years are restrained in an age-appropriate restraint. Children under four years are also restricted from being seated in the front seat of a vehicle with two or more rows (1 October).

2010 Restraints regulations amended to ensure all passengers are restrained in either a seat belt or child restraint. The total number of passengers must, therefore, not be greater than the total number of seat belts (1 October).

2011 Hands-free use of mobile phones whilst driving banned for all functions except making and receiving a phone call and use of the satellite navigation function (1 March).

2011 Last of the wet film Multanova radar speed cameras retired (April).

2011 Penalties increased for certain drink and drug driving offences (1 October).

2011 Zero Blood Alcohol Concentration (BAC) applicable to a prescribed class of drivers introduced. (1 October).

2011 LTI TruCam hand held speed cameras introduced into the speed camera fleet (August).

2011 First fixed site speed camera installed on Mitchell Freeway (December).

2012 Mandatory supervised learner driving hours increased from 25 hours over six months after the Practical Driving Assessment to 50 hours in total, with 25 hours now required before the Practical test (November).

2012 Mandatory medical assessments for drivers aged 75 and 78 cease as there is a requirement for all driver's licence holders, regardless of age, to advise they have a medical condition and/or take any medication that may affect their ability to drive a vehicle (April)

2013 Learner Approved Motorcycle Scheme (LAMS) introduced which increased the range, frame size and style of suitable scooters and motorcycles that can be ridden on an R-E class licence (January).

2013 Removal of practical driving test requirement for over 85s based upon research into older driver behaviour suggesting older drivers do not pose an unacceptable road safety risk and requiring a mandatory PDA is potentially discriminatory (December).

2013 EPTs permitted to be used by tour operators in certain areas (April) .

2013 Extension of changes for converting overseas licences to provide for an experienced driver recognition category. This category recognises a person's driving experience and age (minimum 25 years old) as a substitute for novice driver licensing measures (March).

2014 Double demerits on long weekends and public holidays extended to include use of mobile phones while driving and running a red light (April).

2014 Amended penalties for speeding, mobile phones, non-use of restraints, failure to giving way, keeping left and a range of other offences under the *Road Traffic Code 2000* came into effect (September).

2014 A new offence for **intentionally altering or obscuring a number plate** was introduced (September).

2015 Chain of responsibility provisions in the *Road Traffic (Vehicles) Act 2012* commenced to extend liability for breaches against road traffic laws beyond drivers involved in road transport activities to others in the chain of responsibility whose actions and omissions influence vehicle safety and conduct on the road (April).

2015 Road Traffic Legislation Amendment Act *2015* came into effect **increasing maximum penalties** that may be prescribed under road traffic regulations (April).

2015 Commenced implementation of the **(Browne Review) recommendations:** *A Review of Road Safety Governance in Western Australia*. Significant milestones included **commencement of the Road Safety Commission** as a stand-alone agency to help reduce road trauma in Western Australia (July) followed by appointment of the first **Road Safety Commissioner** together with his appointment as Chair of the Road Safety Council (October).

Glossary of terms

Alcohol related crash: Where the attending police officer suspected alcohol as a primary cause either alone or in combination other factors, and/or where police suspected that at least one driver or rider in control of a vehicle had consumed alcohol.

ARIA: (Accessibility/Remoteness Index of Australia). A geographical measure of remoteness. For more information see < http://www.gisca.adelaide.edu.au >.

Articulated Truck: A vehicle consisting of a prime mover having no significant load carrying area, but with a turn-table device that can be linked to a trailer. With or without a trailer the Gross Combination Mass (i.e., the combined prime mover and trailer) must exceed 3.5 tonnes.

BAC: Blood alcohol concentration measured as grams of alcohol per 100mL of blood. A BAC of 0.05 g/100mL is equivalent to a BAC of 0.05 gm%.

Bicycle: A vehicle with one or more wheels that is designed to be propelled by human power through a belt, chain or gears. It does not include a wheelchair, wheeled recreational device, wheeled toy, or any vehicle with an auxiliary motor capable of generating a power output over 200 watts (whether or not the motor is operating).

Bicyclist: A person riding a bicycle, including pillion passengers.

Child Restraint: A device used for restraining a young child travelling in a motor vehicle (e.g. baby capsule, baby seat, booster seat, etc.).

Child Road User: A road user under 17 years of age.

Col %: Column percentage.

Crash Severity: Derived from the most serious injury in a crash. The three levels are:

1. Fatal crash – involved a fatality;
2. Hospitalisation Crash – involved a person who was seriously injured, but no fatalities;
3. Other – involved minor or no/unknown injuries only.

Driver: Any person that is driving a vehicle (excluding a motorcycle, bicycle, animal or animal drawn vehicle).

Driver/Rider: Any person in control of a vehicle (excluding a bicycle, animal or animal drawn vehicle). Includes motor vehicle drivers and motorcycle riders, but excludes motor vehicle passengers and motorcycle pillion and sidecar passengers.

Drivers/Riders *Involved* in Crashes: All persons in control of vehicles (excluding bicycles, animals and animal drawn vehicles) that were in crashes. Includes drivers/riders who were not injured as well as those who were injured or killed.

Fatal Crash: A road crash in which at least one person was killed immediately or died within 30 days of the crash, as a result of the crash.

Fatality: A person who was killed immediately or died within 30 days of the day of a road crash as a result of the crash.

Fatigue related crash: Where police suspected fatigue as a contributing factor and/or the primary crash factor.

Helmet: A protective device worn on the head to prevent injuries in the event of a crash. Motorcyclists and bicyclists are required by legislation to wear a helmet that meets Australian standards.

High priority crash type: crash types identified as having the highest priority for the *Towards Zero ,* State Government's Road Safety Strategy for 2008 to 2020. Identified as such because of their estimated contribution to road crash injury, either because of their frequency or because the associated risks were high.

Hospital Admissions: The total number of times road users were admitted to hospital as a result of road crashes. A single road user can be admitted to hospital more than once for treatment of injuries sustained in a single crash and each admission is counted, hence the number of hospital admissions will be higher than the number of people admitted to hospital as a result of road crashes.

Hospitalisation Crash: A road crash that involved at least one serious injury but no fatalities.

Inattention related crash: Where police suspected inattention as the primary crash factor.

In Scope Crashes: Crashes that occur on state or local roads, or any roads that are open to public access (e.g. Kings Park, CALM roads and laneways). Does not include crashes that occur off road or in car parks. Does not include collisions that occur due to a medical condition, suicide attempts or police chases.

Injury Severity: The level of injury sustained by a person involved in a crash. The four levels used in this report are:

1. Fatal – the person died within 30 days of the crash, due to injuries received in the crash;
2. Serious – the person was admitted to hospital as an inpatient for treatment of injuries sustained in the crash, but did not die within 30 days of the crash. (In earlier volumes of this series of reports, the term hospitalised was used instead of serious injury);
3. Minor – the person was injured and may have received medical attention, but was not admitted to hospital as an inpatient. Includes injuries for which no medical treatment was required;
4. None/Unknown – the person was not injured or it was not recorded whether any injuries were sustained.

KSI: Killed or seriously injured.

KSI Rate: Number of persons killed or seriously injured per specified unit. In this report the following KSI rates are provided:

1. per 10,000 registered vehicles,
2. per 100 million vehicle kilometres travelled and
3. per 100,000 population.

Mature Adult Road User: A road user aged 25 to 59 years.

Medical Attention Crash: A road crash in which the most serious injury resulted in a person requiring medical treatment, but without being admitted to hospital.

Metropolitan: The area equivalent to the Perth Statistical Division as defined by the Australian Bureau of Statistics.

Minor Injuries: Injuries from a road crash in which the person was not admitted to hospital. Includes injuries such as sprains and bruises, which may not require medical treatment.

Motorcycle: A motor vehicle with two or three wheels. Includes motor vehicles that have a sidecar attached, motor scooters, mopeds, trail bikes and mini-bikes.

Motorcycle Pillion: A pillion or sidecar passenger of a motorcycle.

Motorcycle Rider: A person riding a motorcycle, motor scooter, moped, trail bike or mini-bike. Excludes pillion and sidecar passengers – see Motorcycle Pillion.

Motorcyclists: A motorcycle rider or motorcycle pillion.

Motor Vehicle Occupant: An occupant of a motorised vehicle, excluding motorcycles, tractors and trailer type vehicles (caravans, campers etc.). Excludes occupants and riders of non-motorised transport, such as bicycles, animal drawn vehicles and ridden animals.

Multi-Vehicle Crash: A crash involving two or more moving vehicles.

n: Number.

N.a.: not applicable.

N.p.: not publishable.

N/R: Not reported. Where a count is less than ten, percentage changes are not reported.

Off-Road: Locations that are not classified as roads. Includes car parks, cycle paths, beaches, parking areas, petrol stations, driveways and recreational areas.

'Other' Road User: Persons riding an animal or persons in an animal drawn vehicle.

Out of Scope Crashes: Crashes that occur due to a medical condition, deliberate acts (e.g. suicide attempts), police chases or in off-road locations such as beaches, car parks, cycle paths, driveways, petrol stations, recreational areas or ramps at boat harbours.

P: preliminary.

Passenger: Any person other than the driver travelling in a motor vehicle. Excludes persons riding on an animal, bicycle or motorcycle and persons in an animal drawn vehicle.

Pedestrian: A person on foot or sitting or lying, a person in or on a wheeled recreational device or wheeled toy, an occupant of a non-motorised wheelchair, an occupant of a motorised wheelchair/gopher, a person pushing a motorised or non-motorised wheelchair. Includes a person on roller skates, in-line skates or a skateboard, but excludes a person riding a bicycle. Also includes a person who has just alighted from a vehicle.

Persons Killed or Seriously injured: The number of fatalities and persons seriously injured as the result of a crash. Includes persons who were killed outright or died within 30 days of the day of the road crash as a result of the crash and persons admitted to hospital as a result of a road crash and who did not die from injuries sustained in the crash within 30 days of the crash.

Person Seriously Injured: A person admitted to hospital as a result of a road crash and who does not die from injuries sustained in the crash within 30 days of the crash.

Region: Subdivisions of Western Australia used by Main Roads Western Australia.

Restraint: A device designed to hold a person within the body of a vehicle and limit movement during a crash, thereby reducing severity of injury. Includes inertia reel and fixed lap or sash seat belts, and child restraints such as capsules. (See also Seat belt).

Rider: Used as an abbreviation for Motorcycle Rider in some tables and graphs. A person riding a motorcycle, motor scooter, moped, trail bike or mini-bike. Excludes bicycle riders, motorcycle pillion and sidecar passengers.

Rigid Truck: A vehicle constructed primarily for load carrying with a gross vehicle mass (GVM) exceeding 3.5 tonnes.

Road: Any thoroughfare, highway or road that is open to or used by the public for the purpose of driving or riding of motor vehicles.

Road Crash: Any unpremeditated incident where in the course of the use of any vehicle on a road that was not temporarily closed off to the public, a person is injured or property is damaged. The crash must involve vehicle movement. Does not include collisions that occur due to a medical condition, deliberate acts (e.g. suicide attempts) or police chases.

Road User: Includes drivers, passengers, motorcycle riders, motorcycle pillion, bicycle riders, persons riding an animal, persons in an animal drawn vehicle and pedestrians.

Road User Groups: Categories used to separate different road users. These categories are used for hospital admission data only and are not directly comparable with the 'Road User Types' used for police-reported data.

Road User Types: Categories used to separate different road users. These categories are used for police-reported data only and are not directly comparable with the 'Road User Groups' used for hospital admission data.

Run-Off-Road Crash: Crashes in which a vehicle involved exits the carriageway, through a loss of control, swerving to avoid a collision or for other reasons. After the vehicle has left the carriageway it may also collide with a person, object, or vehicle, or it may roll over, and/or a person may fall or be ejected from the vehicle.

Seat belt: A device designed to hold a person within the body of a vehicle and limit movement during a crash, thereby reducing severity of injury. Includes inertia reel and fixed lap or sash seat belts, and child restraints such as capsules. The device must meet the relevant Australian Vehicle Design Rules and the Australian Standards. Drivers and passengers of motor vehicles must wear seat belts.

Senior Adult Road User: A road user aged 60 years or over.

Serious Crash: A road crash that resulted in at least one fatality and/or where at least one person was seriously injured.

Serious Injury Rate: The number of persons seriously injured per specified unit. In this report the following serious injury rates are provided:

1. per 10,000 registered vehicles;
2. per 100 million vehicle kilometres travelled; and
3. per 100,000 population.

Seriously Injured: Admitted to hospital as an inpatient for treatment of injuries sustained in a crash, but did not die within 30 days of the crash.

Single-Vehicle Crash: A crash in which only one moving vehicle was involved. Includes collisions with pedestrians, animals and fixed objects such as a tree, pole, bridge, dropped load, or parked vehicle, and includes non-collisions such as a roll-over.

Speeding: A vehicle is considered to be speeding if it travels at excessive speed for the prevailing conditions, or above the posted speed limit.

Speed related crash: Include those crashes where police recorded speed as a primary crash factor, either alone or in combination with other factors, and/or where police record speed as a contributing factor. Police may record speed as a contributing factor where at least one vehicle is travelling in excess of the speed limit or at an inappropriate speed for the prevailing conditions.

Vehicle: Includes motor vehicles, trailers, trams, bicycles, animal drawn vehicles or animals that are being ridden and motorised golf buggies. Excludes non-motorised wheelchairs, motorised wheelchairs/gophers, trains, wheeled recreational devices and wheeled toys.

WA: Western Australia

Wheelchair: A chair mounted on two or more wheels that is built to transport a person who is unable to walk or has difficulty in walking. Does not include a pram, stroller or trolley.

Wheeled Recreational Device: A wheeled device built to transport a person that is propelled by human power or gravity and ordinarily used for recreation or play. Includes in-line skates, roller skates, skateboards and similar wheeled devices. Does not include a golf buggy, pram, stroller, trolley, bicycle, wheelchair or wheeled toy.

Wheeled Toy: A child's pedal car, child's scooter, child's tricycle or a similar toy. Does not include a bicycle.

Young Adult Road User: A road user aged 17 to 24 years.