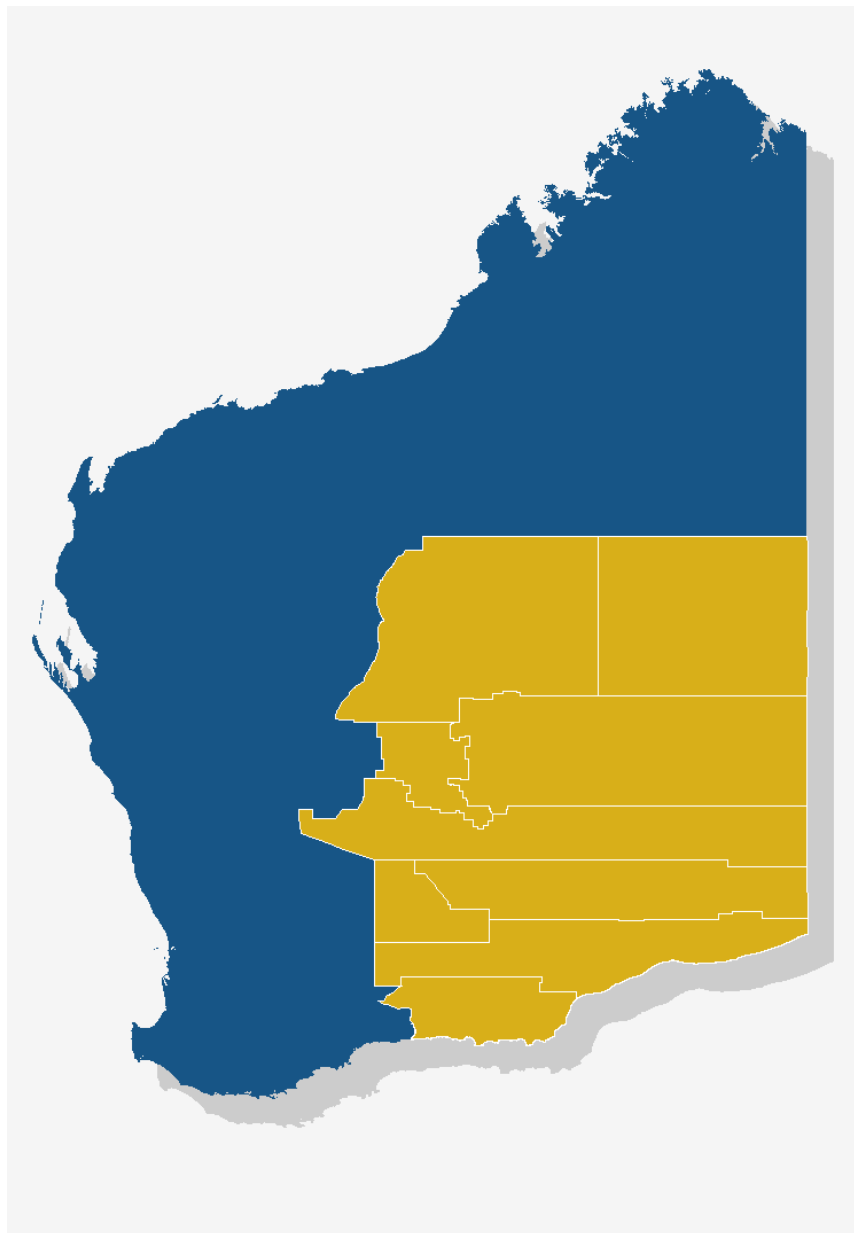


Local Road Crash Report 2012

GOLDFIELDS – ESPERANCE REGION



Report prepared by

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EXECUTIVE SUMMARY

The Local Government sector has a key role to play in road safety. It is responsible for over 128,000 kilometres of road representing 88% of the road network in Western Australia. This report provides contemporary road crash statistical information specific to the local road network and excludes state road lengths, and state and local road intersections. It will assist the Local Government sector to monitor road safety trends and performance; and improve the safety of its network.

The Local Road Crash Report for the Goldfields-Esperance Region has the following sections:

1. State level statistical summaries to enable comparison against the regional level.
2. Regional level statistical summaries for the local road network; statistical summaries for the four cornerstones in *Towards Zero*; and demographic statistical summaries.
3. Crash statistical summaries for each Local Government.

This Local Road Crash Report should be read in conjunction with the Goldfields-Esperance Region Local Road Crash Map Book 2012.

There were 2,655 people killed or seriously injured in crashes on Western Australian roads in 2012; of which 1,520 people were killed or seriously injured on the WA local road network representing 57%. In 2012 the cost of all crashes in Western Australia was \$2.7billion of which \$1.5billion (B) or 55% occurred on local roads. During the same period, 47% of vehicle kilometres travelled were on the local road network.

Goldfields-Esperance Region

Local roads constitute 90% of the Goldfields-Esperance Region road network.

From 2003 to 2012, there were a total of 6,612 crashes in the Goldfields-Esperance Region resulting in 457 people killed or seriously injured (KSI) on local roads. During this period, 69% of all crashes occurred on local roads including intersections where all legs were local roads. Midblock locations accounted for 40.8% of crashes on local roads.

The ten year trend for KSI on the Goldfields-Esperance Region local road network is decreasing.

In 2012, a total of 409 crashes occurred on the Goldfields-Esperance Region local road network, which included 33 crashes resulting in 3 people killed and 30 people seriously injured. Approximately 58% of KSI outcomes in 2012 resulted from single vehicle crashes involving Hit Object and Non-Collision.

The key road safety issues for the Goldfields-Esperance Region local road network are:

1. Single vehicle crashes.
2. Non-wearing of seatbelts and speed.
3. KSI outcomes in 110km/hr. speed zones.
4. Over-representation of males in KSI especially motorcyclists.

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1. INTRODUCTION

The road network in Western Australia comprises state and national roads under the management of Main Roads Western Australia; local roads under the management of Local Government; and other roads such as forestry and national park roads under the management of the Department of Parks and Wildlife. Local Government is responsible for over 128,000 kilometres of roads, which is 88% of the Western Australian road network; therefore the sector has a key role to play in road safety.

This report provides contemporary annual road crash information dedicated to the local road network. The aim of this report is to provide informative road crash information to support strategic and operational decision-making on matters, such as, Safe System improvements to the local road network, network funding, road network management and performance monitoring. In addition, the information contained within this report will inform road safety partners of the issues faced by Local Government to deliver road safety outcomes.

This report will be a valuable tool in monitoring the road safety performance of the local road network in the Goldfields-Esperance Region, which is comprised of the following Local Governments:

Shire of Coolgardie; Shire of Dundas; Shire of Esperance; City of Kalgoorlie – Boulder; Shire of Laverton; Shire of Leonora; Shire of Menzies; Shire of Ngaanyatjaraku; and the Shire of Wiluna.

1.1 Towards Zero WA State Road Safety Strategy

Towards Zero is the Western Australian Road Safety Strategy 2008-2020. *Towards Zero* incorporates the Safe System, which views the road transport system holistically by seeking to manage the interaction between road users, roads, travel speeds and vehicles. The Safe System recognises it is probably not possible to prevent all crashes but aims to prevent those resulting in death and serious injury. The 'Safe System' is diagrammatically displayed in Figure 1.

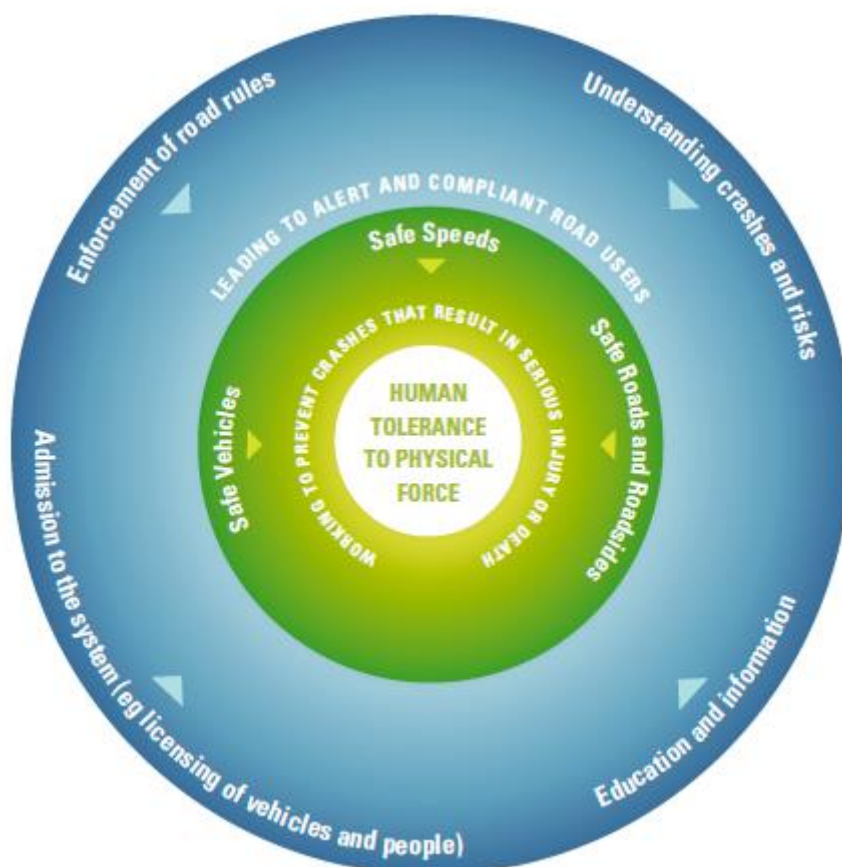


Figure 1: The Safe System (adapted from ATC, 2007)

1.2 Safe System Cornerstones

The Safe System identifies four cornerstones that should be adopted in a road safety strategy: safe road use, safe roads and roadsides, safe speeds, and safe vehicles.

1.2.1 Safe Road Use

Influencing road user behaviour by:

- advising, educating and encouraging road users to comply with road rules;
- encouraging road users to drive unimpaired and alert, and according to the prevailing conditions;
- managing the gradual introduction of new drivers into the system and understanding their specific needs; and
- taking action against those who break the rules.

1.2.2 Safe Roads and Roadsides

Improving road infrastructure by:

- designing and maintaining roads and roadsides to reduce the risk of crashes occurring and the severity of injury if a crash does occur; and
- providing a transport system that supports safe outcomes.

1.2.3 Safe Speeds

Ensuring speed limits and travel speeds reflect the safety of the road infrastructure by:

- undertaking speed enforcement and education; and
- establishing speed limits according to the features of the road and roadside, vehicle crash-worthiness and the functional performance and known limits of the road user.

1.2.4 Safe Vehicles

Improving the safety of the vehicles in the road system by:

- promoting safety features that reduce the likelihood of a crash (and reduce the impact of the crash on vehicle occupants as well as pedestrians and cyclists);
- encouraging consumers and businesses to purchase safer vehicles; and
- implementing mandatory safe vehicle procurement in Government fleets and recommending additional safety features to be considered.

1.3 Purpose of the Road Crash Report

The purpose of the Annual Road Crash Report is to provide meaningful road crash information aggregated at the Local Government road level. Prior to the production of this report, such road crash information was not easily accessible. It is hoped the information in this report will help to:

- Monitor road safety trends and performance on local roads;
- Raise the profile of Local Government's role in road safety;
- Improve our road safety partners' appreciation and understanding of the task required of Local Governments to deliver road safety outcomes;
- Support the implementation of *Towards Zero* by Local Government;
- Provide evidence and support for advocacy efforts for existing and new programs; and
- Identify areas for more research and action on the local road network such as network planning, works programs, asset management, behavioural interventions, planning and engineering countermeasures.

1.4 Crashes Summarised in the Local Road Crash Report

The emphasis of this Local Road Crash Report is on crashes occurring on roads managed by Local Government. Comparative summaries of crashes on other roads will be provided for comparison where useful.

In this report a local road crash is defined as a crash occurring at:

- a midblock location on a local road; or
- an intersection having no State road legs and at least one Local road leg.

Table 1 summarises all crashes in WA from 2003 to 2012 by crash location and road manager. Note that the road manager for category "Other" includes privately owned or other Government managed roads, such as National Park roads.

Crash Location	Road Manager	Crashes	%
Midblock	State	61,877	15.9
Intersection	State, State	13,652	3.5
Intersection	State, LG	66,465	17.1
Intersection	State, LG, Other	404	0.1
Intersection	State, Other	546	0.1
Midblock	LG	118,084	30.4
Intersection	LG, LG	121,003	31.1
Intersection	LG, Other	1,611	0.4
Midblock	Other	568	0.1
Intersection	Other, Other	346	0.1
Other	Unknown	4,332	1.1
Total		388,888	100.0

Table 1: All crashes in WA by location and road manager 2003 to 2012

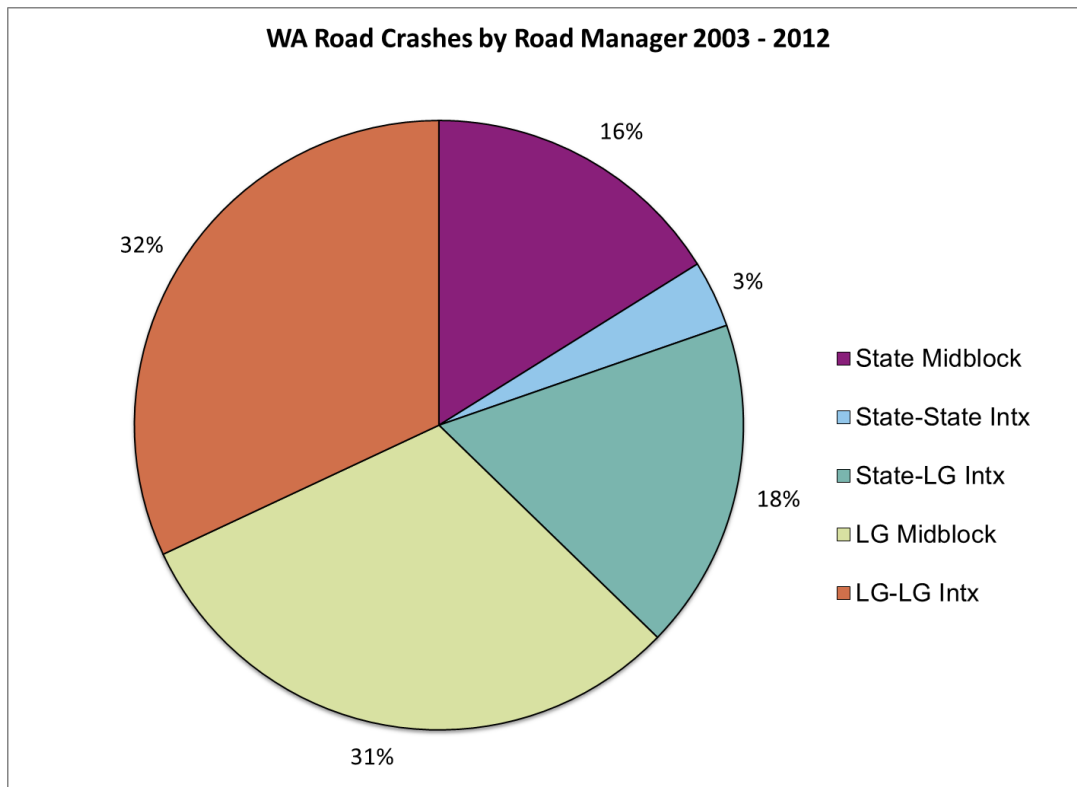


Figure 2: All crashes in WA by crash location and road manager 2003 to 2012

Ignoring crashes at “Other” locations, Figure 2 shows:

- 63% of crashes occurred at local road locations including intersections where all legs were local roads.
- 18% of crashes occurred at intersections having both Local and State road legs.
- 19% of crashes occurred at State road locations including intersections where all legs were State roads.

This report focuses on the 63% of crashes occurring on roads managed by Local Governments.

1.5 Road Safety issues for the Goldfields - Esperance Region

The road safety issues for the Goldfields - Esperance Region local road network are:

1. Single vehicle crashes.
2. Non-wearing of seatbelts and speed.
3. KSI outcomes in 110km/hr. speed zones.
4. Over-representation of males in KSI especially motorcyclists.

2. STATE WIDE LOCAL ROAD CRASH AND KSI SUMMARIES

In this section, statistical summaries of local road crashes and people killed or seriously injured (KSI) on local roads are provided at the State level to enable a comparison against the regional level. Throughout the report, a *serious crash* is defined as a crash with at least one KSI; therefore, by definition, a serious crash can result in more than one KSI.

2.1 Road Network of Western Australia

Figures 3 and 4 summarise the Western Australian road network by road manager. The Accessibility Remoteness Index of Australia (ARIA) is used to define “Metro”, “Rural” and “Remote” roads. The definitions used are consistent with *Towards Zero* regions defined by the Office of Road Safety.

Local roads constitute 88% of the Western Australian road network. The Local and State road networks have similar distributional profiles in terms of accessibility.

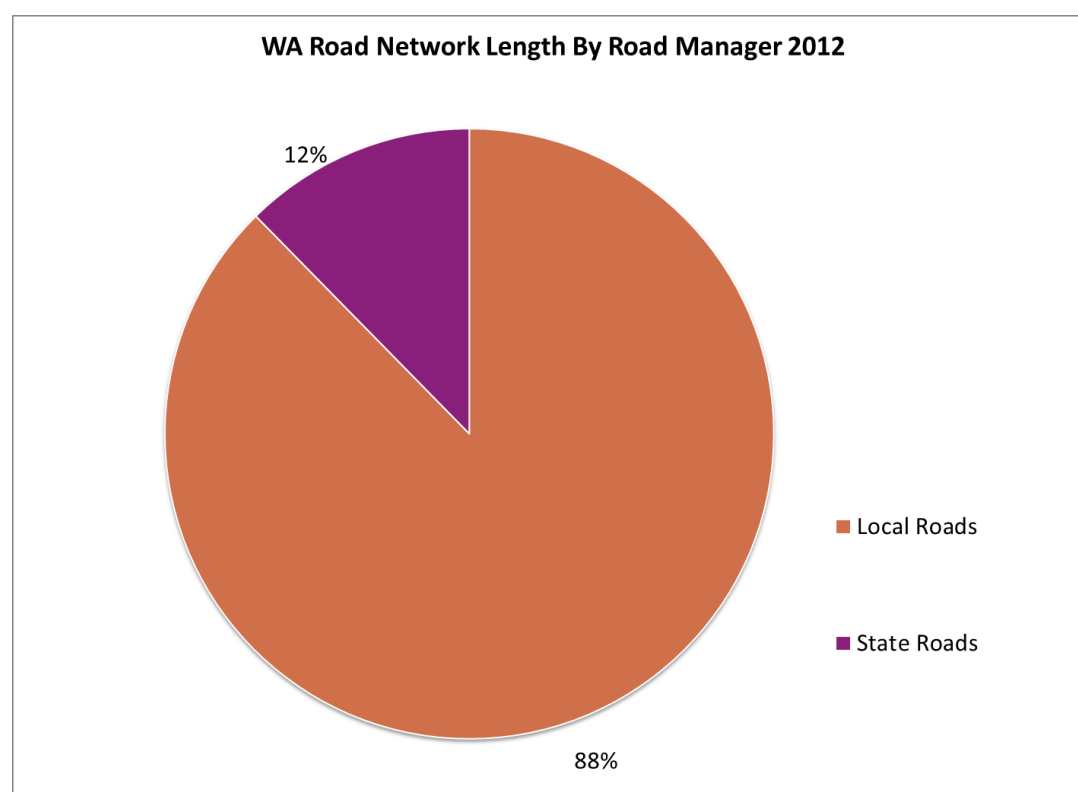


Figure 3: Length of road network in WA by road manager 2012

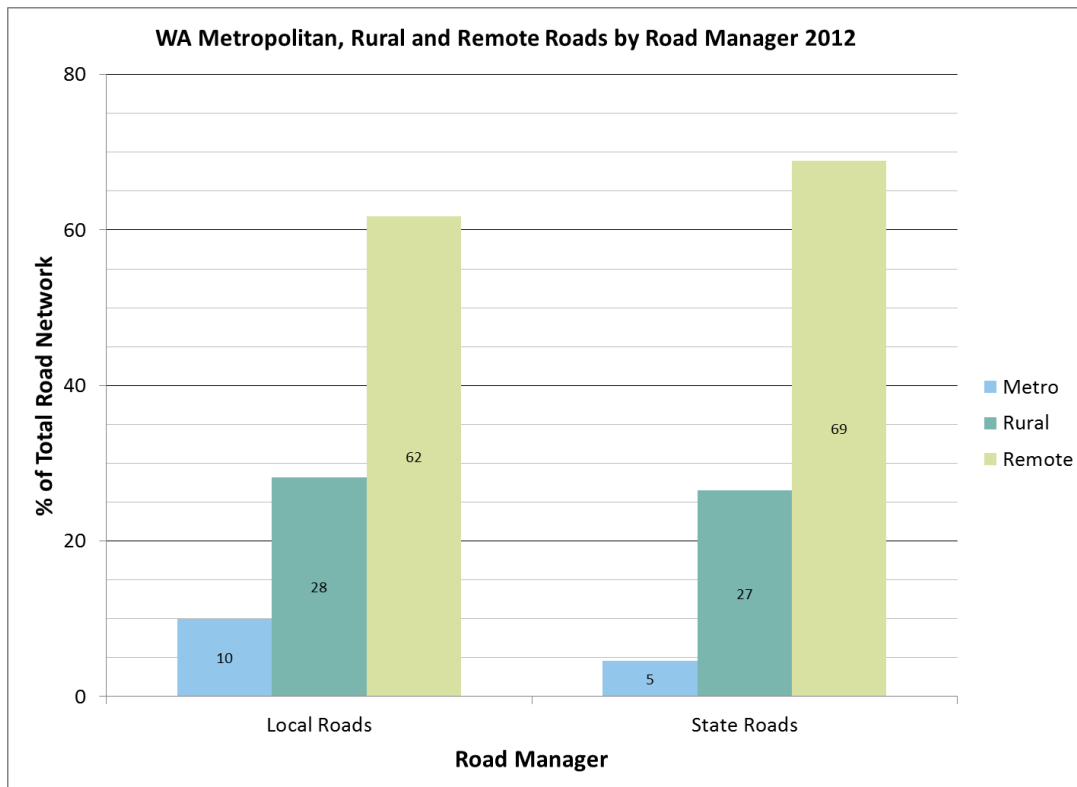


Figure 4: Percentage of road network in WA by road manager and accessibility 2012

2.2 Road Trauma on the Road Network

73% of KSI on local roads occurred in the Metropolitan Region as shown in Figure 5.

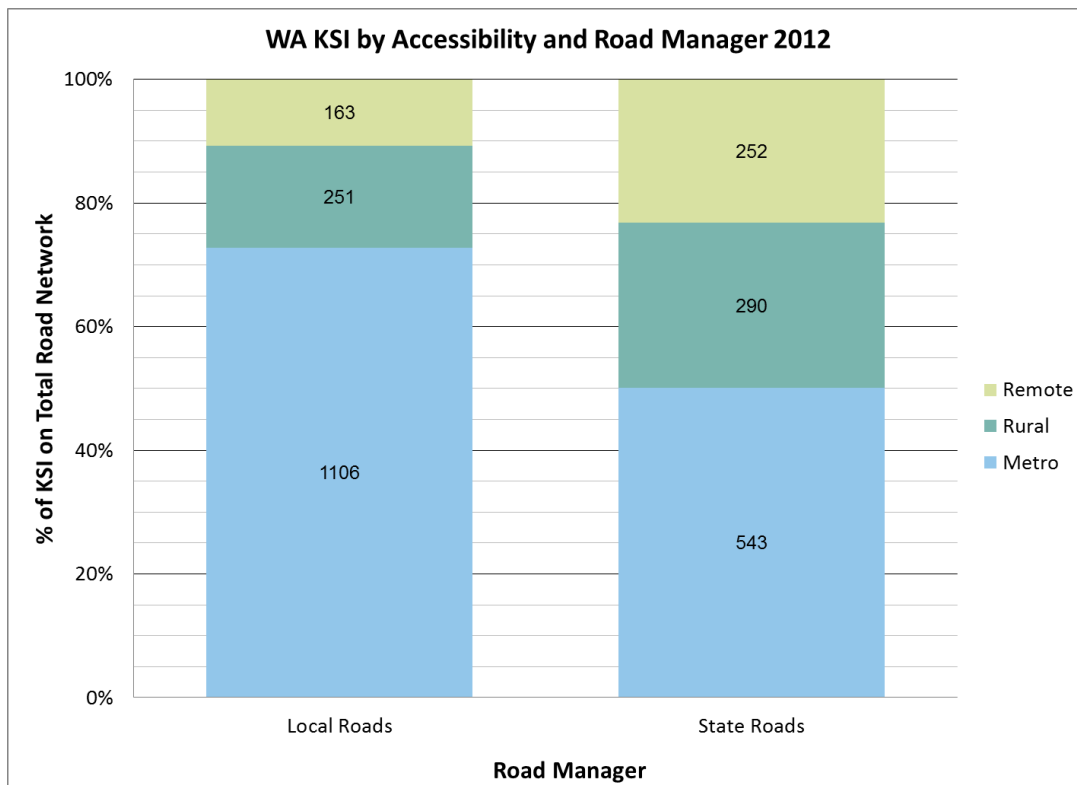


Figure 5: WA KSI by road manager and accessibility 2012

2.3 Crash Rates

Table 2 displays crash rates by road manager; Million Vehicle Kilometres Travelled (MVKT); and population for 2012. For consistency, the MVKT estimates were obtained from Main Roads WA as documented in the *Regional Digest 2011-12* and the population estimates were sourced from the *Main Roads Annual Report 2012*.

Road Manager	MVKT	Population	Serious Crashes			All Other Crashes		
			n	Per 100 MVKT	Per 100,000 Population	n	Per 100 MVKT	Per 100,000 Population
Local	12,898	2,144,000	1,322	10	62	22,472	174	1,048
State	14,602	2,144,000	829	6	39	14,120	97	659
Other		2,144,000	5	n.a.	0	157	n.a.	7
Unknown		2,144,000	32	n.a.	1	219	n.a.	10
Total	27,500	2,144,000	2,188	8	102	36,968	134	1,724

Table 2: Crash rates by road manager 2012

The number of serious crashes on local roads is over-represented in terms of the travel undertaken on local roads compared to State roads.

Table 3 shows the rate of KSI on local roads by population at a regional level.

The Wheatbelt North, Kimberley, Wheatbelt South and Gascoyne Regions have the highest KSI rates on local roads per population.

Region	KSI Severity			Population	KSI per 100,000 Population
	Killed	Seriously Injured	Total		
Great Southern	3	33	36	59,000	61
South West	9	152	161	233,000	69
Gascoyne	1	9	10	10,000	100
Mid-West	4	29	33	52,000	63
Goldfields - Esperance	3	30	33	55,000	60
Kimberley	3	33	36	34,000	106
Metropolitan	52	1,054	1,106	1,583,000	70
Wheatbelt South	2	22	24	23,000	104
Wheatbelt North	10	45	55	49,000	112
Pilbara	1	25	26	46,000	57
Total	88	1,432	1,520	2,144,000	71

Table 3: KSI rates per population for local roads 2012

2.4 Trends in KSI

The ten year trend for KSI by road manager is shown in Table 4 and Figure 6.

Year	Road Manager				
	Local Roads	State Roads	Other Roads	Unknown	Total
2003	1,827	1,152	2	73	3,054
2004	1,927	1,368	5	61	3,361
2005	1,924	1,223	2	91	3,240
2006	1,699	1,203	4	59	2,965
2007	1,726	1,234	6	55	3,021
2008	1,718	1,332	7	40	3,097
2009	1,594	1,121	5	39	2,759
2010	1,573	1,110	7	34	2,724
2011	1,507	1,111	5	25	2,648
2012	1,520	1,085	11	39	2,655

Table 4: Trend in KSI by road manager 2003 to 2012

In general, the trend in annual KSI decreases from 2003 for both Local and State roads, but plateaus out from 2009.

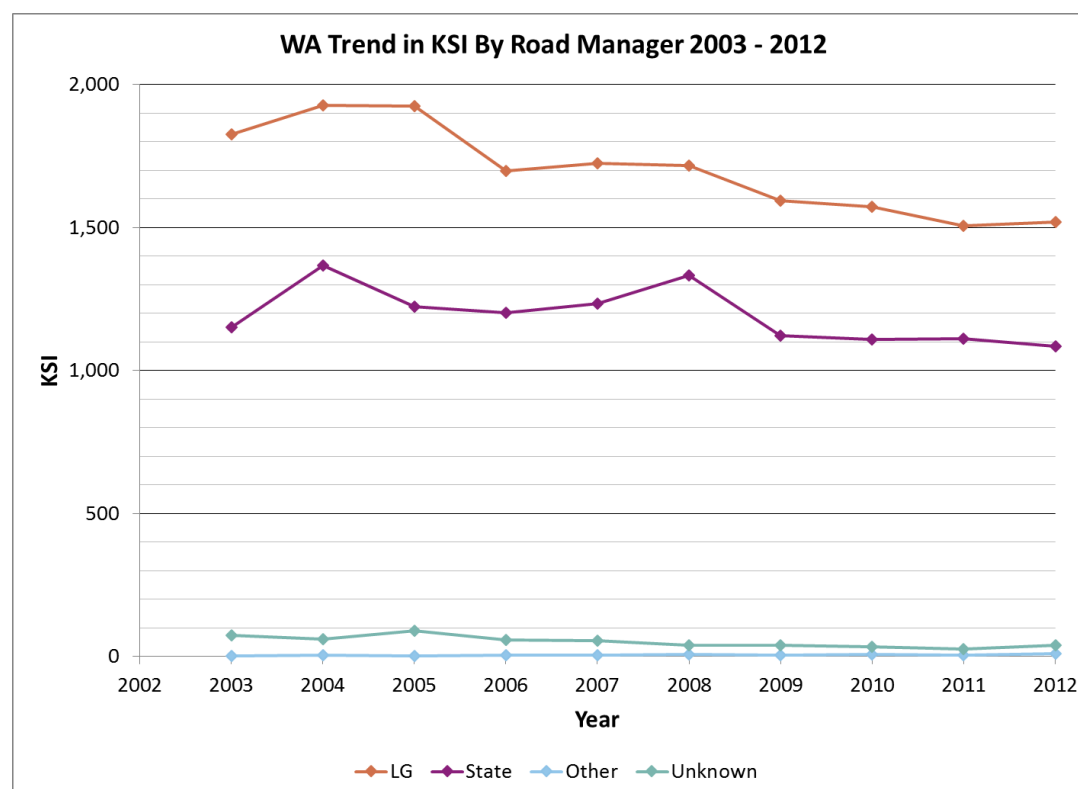


Figure 6: Trend in KSI by road manager 2003 to 2012

2.5 Crashes by Nature

Serious crashes by crash nature from 2003 to 2012 are shown in Figure 7 and 8.

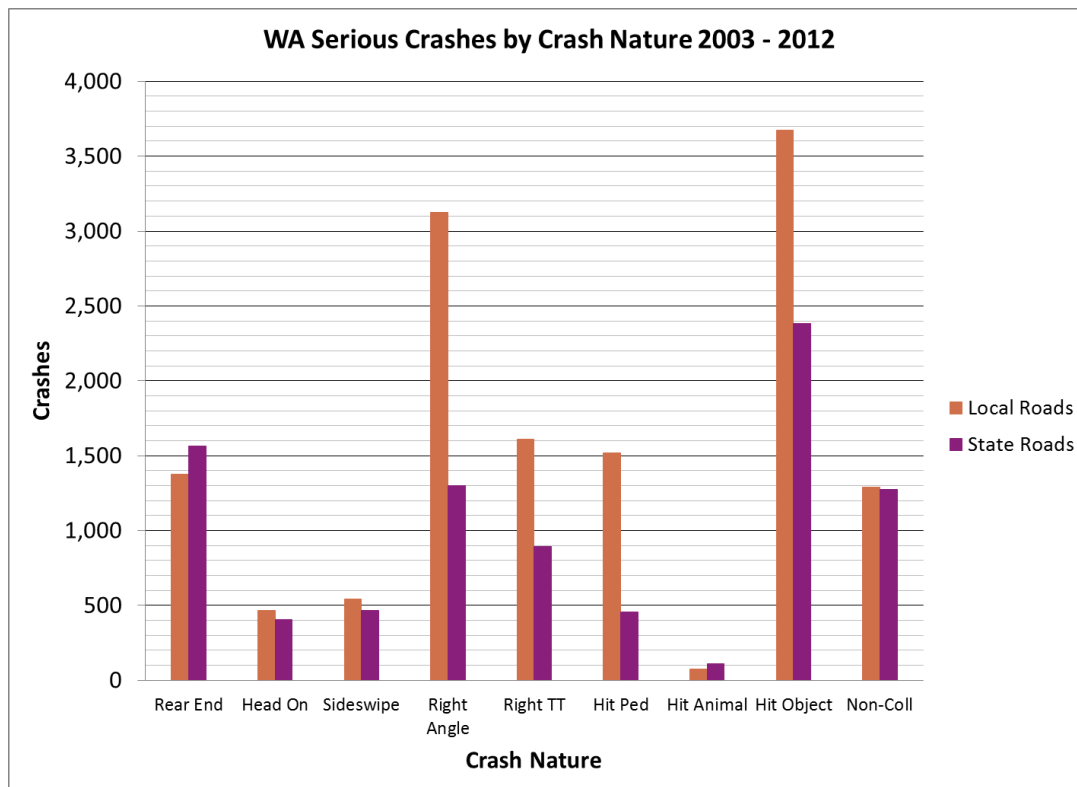


Figure 7: Ten year serious crash totals by crash nature and road manager 2003 to 2012

Hit Object and Right Angle crashes are the most prevalent serious crash nature on local roads; however the trend in these crash natures has decreased from 2003 to 2012 as shown in Figure 8.

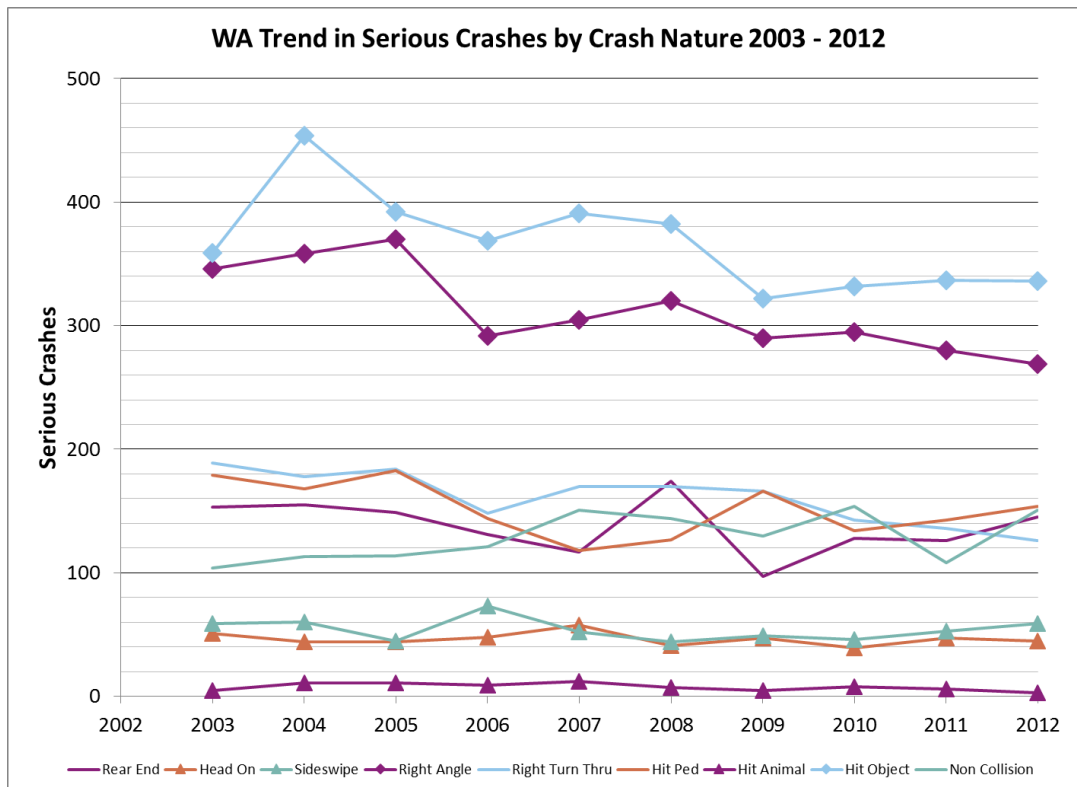


Figure 8: Trend in serious crashes on WA local roads by crash nature 2003 to 2012

Table 5 shows serious crashes by crash nature and region for local roads from 2003 to 2012.

- Single vehicle run-off road crashes and right angle intersection crashes are the dominant crash natures.
- Single vehicle run-off road crashes are the most frequent crash nature for non-metropolitan regions.
- Right angle intersection crashes are the most frequent crash nature for the Metropolitan Region.
- Hit pedestrian crashes are also a high frequency crash nature for all regions.

Region	Crash Nature										
	Rear End	Head On	Side Swipe	Right Angle	Right TT	Hit Ped.	Hit Animal	Hit Obj.	Non Coll.	Run Off Rd	Total
Great Southern	13	14	2	27	7	24	6	7	4	187	301
South West	63	45	40	195	91	114	9	45	26	609	1,269
Gascoyne	2	1	1	2	1	2	2	1	2	45	61
Mid West	15	7	5	43	9	30	4	13	8	147	293
Goldfields - Esperance	12	6	9	52	18	33	4	12	11	180	349
Kimberley	10	5	1	39	14	53	2	8	9	100	248
Wheatbelt South	6	6	3	8	0	3	4	4	5	221	264
Wheatbelt North	13	9	8	22	2	14	10	11	6	353	463
Pilbara	9	5	1	20	7	33	3	7	7	106	206
Rural Total	143	98	70	408	149	306	44	108	78	1,948	3,454
Metropolitan	1,232	366	470	2,717	1,461	1,210	33	228	185	2,417	10,593
Total	1,375	464	540	3,125	1,610	1,516	77	336	263	4,365	14,047

Table 5: Serious crashes by crash nature and Region on the local road network 2003 to 2012

 Denotes the highest crash frequency, by nature, for a region.

 Denotes the second highest crash frequency, by nature, for a region.

 Denotes the third highest crash frequency, by nature, for a region.

2.6 KSI by Road User

Figures 9 and 10 show the KSI trend and ten year totals by road user for the local road network in WA.

- The trend in vehicle driver and vehicle passenger KSI has decreased from 2003 to 2012.
- The trend in motorcyclist KSI has increased from 2003 to 2012.
- The trend in bicyclist and pedestrian KSI has remained constant from 2003 to 2012.
- Motorcyclist, bicyclist and pedestrian KSI are significantly higher on local roads than State roads.

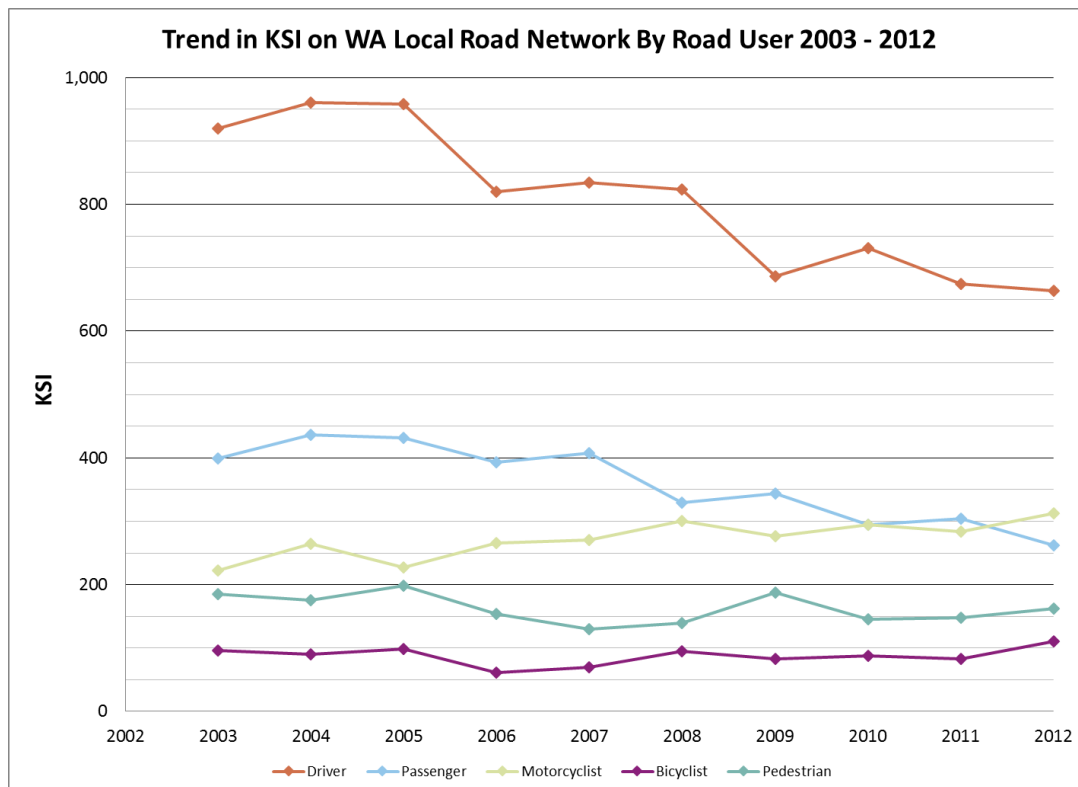


Figure 9: Trend in KSI on WA local roads by road user 2003 to 2012

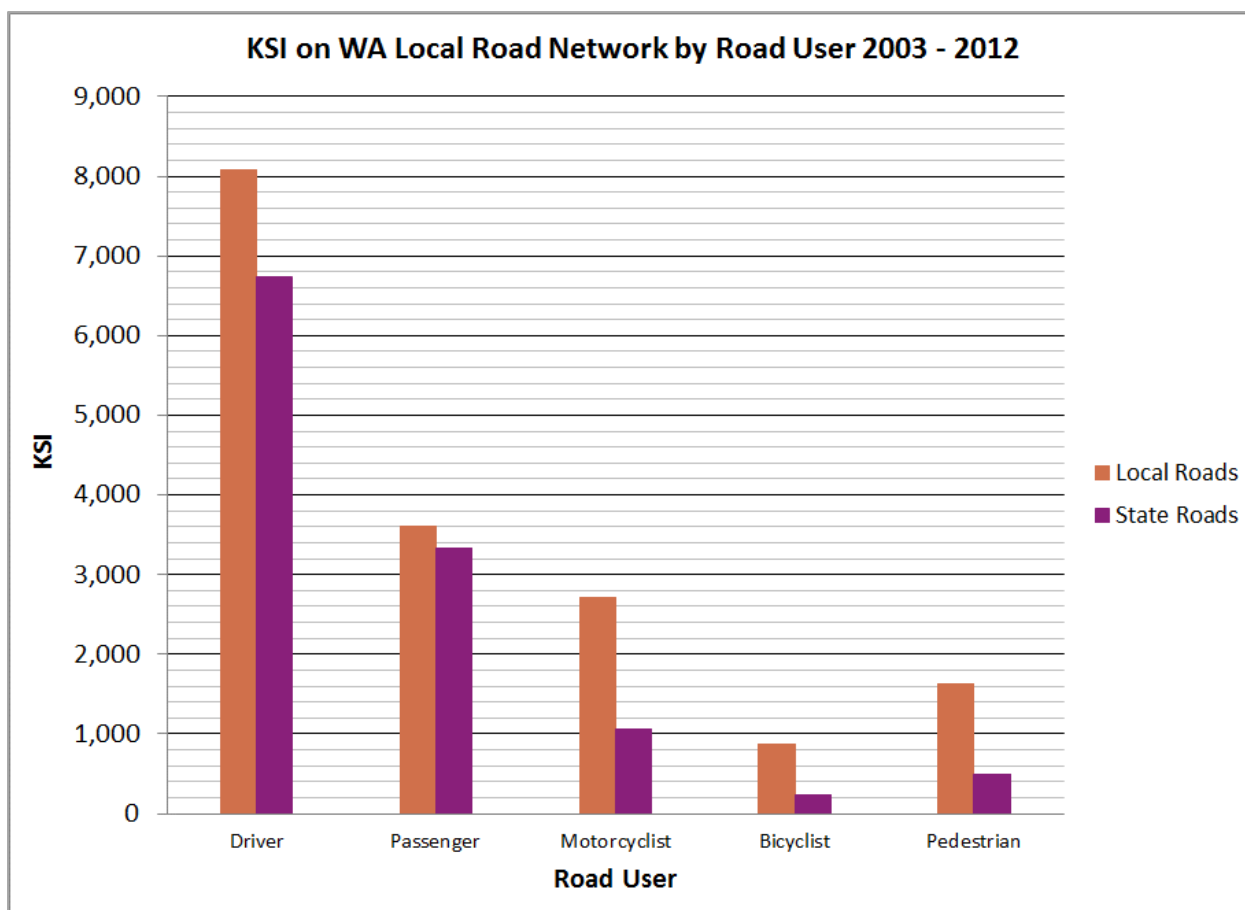


Figure 10: KSI totals by road user 2003 to 2012

2.7 Estimated Cost of Road Crashes in Western Australia

Table 6 shows the estimated cost of crashes on the Western Australian road network for 2012. The unit crash costs in \$2012 were provided by the Office of Road Safety and are based upon the Willingness-to-Pay unit costs from the RTA NSW report entitled “*Economic Valuation of Safety Benefits: Serious injuries - Final Report*”.

Crash Severity	Cost Per Crash	Local Roads		State Roads		WA
		Crashes	Cost	Crashes	Cost	Total Cost
	\$	n	\$	n	\$	\$
Metropolitan						
Fatal	6,898,492	51	352M	24	166M	559M
Hospitalisation	292,766	936	274M	424	124M	401M
Medical	74,991	2,583	194M	1,872	140M	336M
PDO	11,330	16,873	191M	10,013	113M	308M
Metropolitan Total		20,443	1,011M	12,333	544M	1,604M
Rural						
Fatal	7,969,955	36	287M	50	398M	717M
Hospitalisation	467,526	299	140M	331	155M	302M
Medical	103,480	366	38M	372	38M	78M
PDO	11,330	2,650	30M	1,863	21M	52M
Rural Total		3,351	495M	2,616	613M	1,149M
Total		23,794	1,505M	14,949	1,156M	2,753M

Table 6: Estimated cost of all crashes in WA by road manager 2012

The cost of crashes on the local road network in 2012 was \$1.5B (Figure 11), two-thirds of which was accrued in the Metropolitan Region. For State roads, the crash cost accrued in the Metropolitan Region is half the total State road crash cost (Figure 12). Table 7 and Figure 13 show the distribution of crash costs from 2003 to 2012.

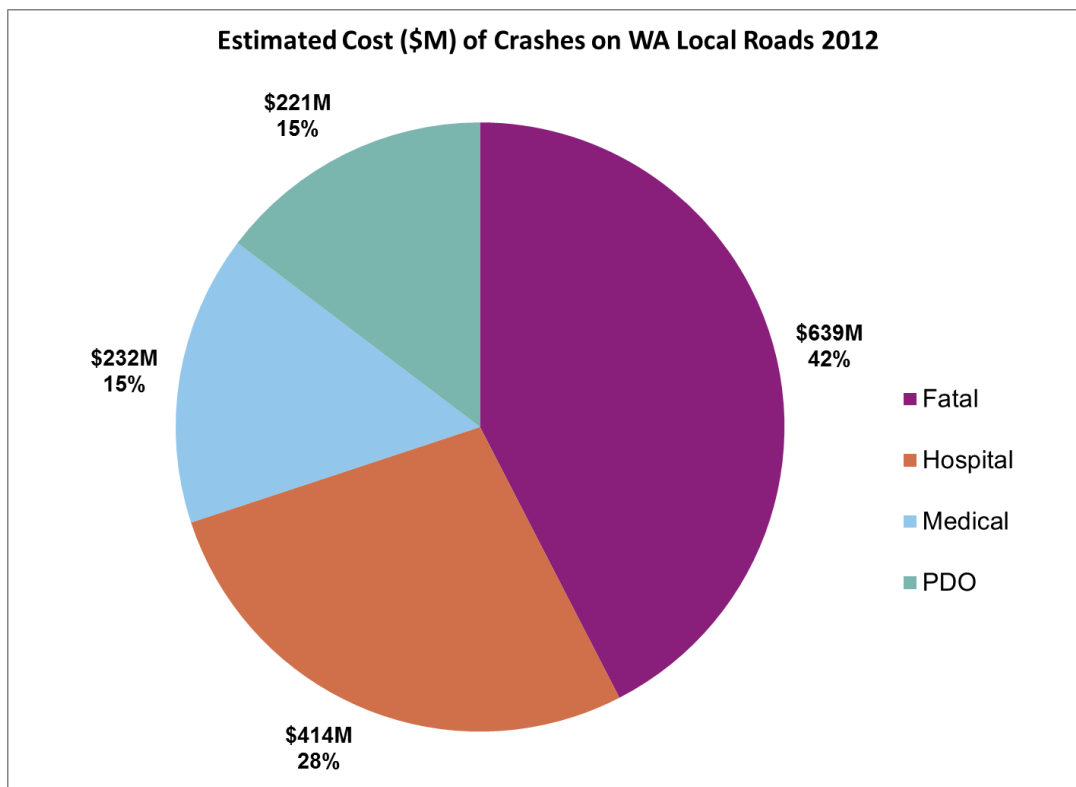


Figure 11: Estimated cost of all crashes on local roads 2012



Figure 12: Estimated cost of all crashes in WA by road manager 2012

Crash Severity	Cost Per Crash	Local Roads		State Roads		WA
		Crashes	Cost	Crashes	Cost	Total Cost
	\$	n	\$	n	\$	\$
Metropolitan						
Fatal	6,898,492	462	3,187M	271	1,869M	5,195M
Hospitalisation	292,766	10,131	2,966M	4,963	1,453M	4,465M
Medical	74,991	27,285	2,046M	18,456	1,384M	3,458M
PDO	11,330	166,118	1,882M	92,262	1,045M	2,959M
Metropolitan Total		203,996	10,081M	115,952	5,752M	16,077M
Rural						
Fatal	7,969,955	367	2,925M	576	4,591M	7,842M
Hospitalisation	467,526	3,087	1,443M	3,202	1,497M	3,040M
Medical	103,480	4,256	440M	3,685	381M	847M
PDO	11,330	28,993	328M	19,529	221M	565M
Rural Total		36,703	5,137M	26,992	6,690M	12,295M
Total		240,699	15,219M	142,944	12,442M	28,372M

Table 7: Cost of all crashes in WA by road manager 2003 to 2012

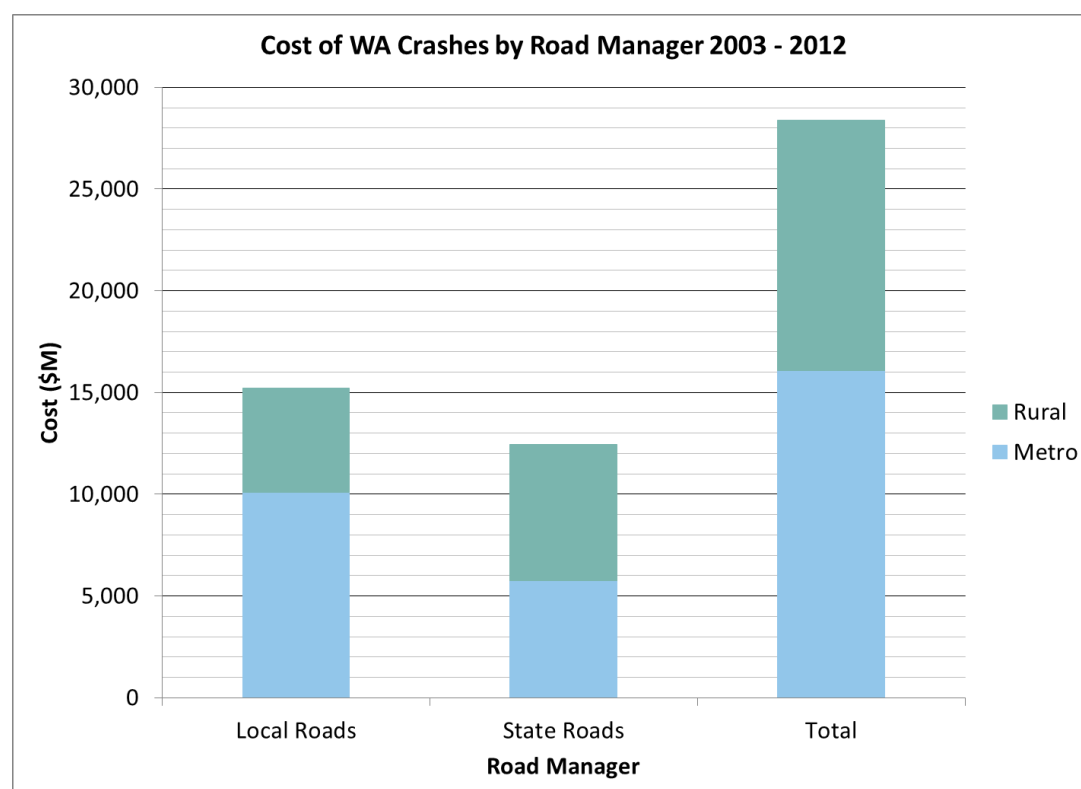


Figure 13: Cost of all crashes in WA by road manager 2003 to 2012

3. REGIONAL ROAD CRASH AND KSI SUMMARIES

In this section road crash and KSI summaries are provided for the Goldfields - Esperance Region local road network.

3.1 Goldfields - Esperance Region Road Network

Figure 14 illustrates the road network in the Goldfields - Esperance Region by road manager. All roads in the Goldfields – Esperance Region are defined under the Accessibility Remoteness Index of Australia (ARIA) as being “Remote”.

Local roads constitute 90% of the Goldfields - Esperance Region road network.

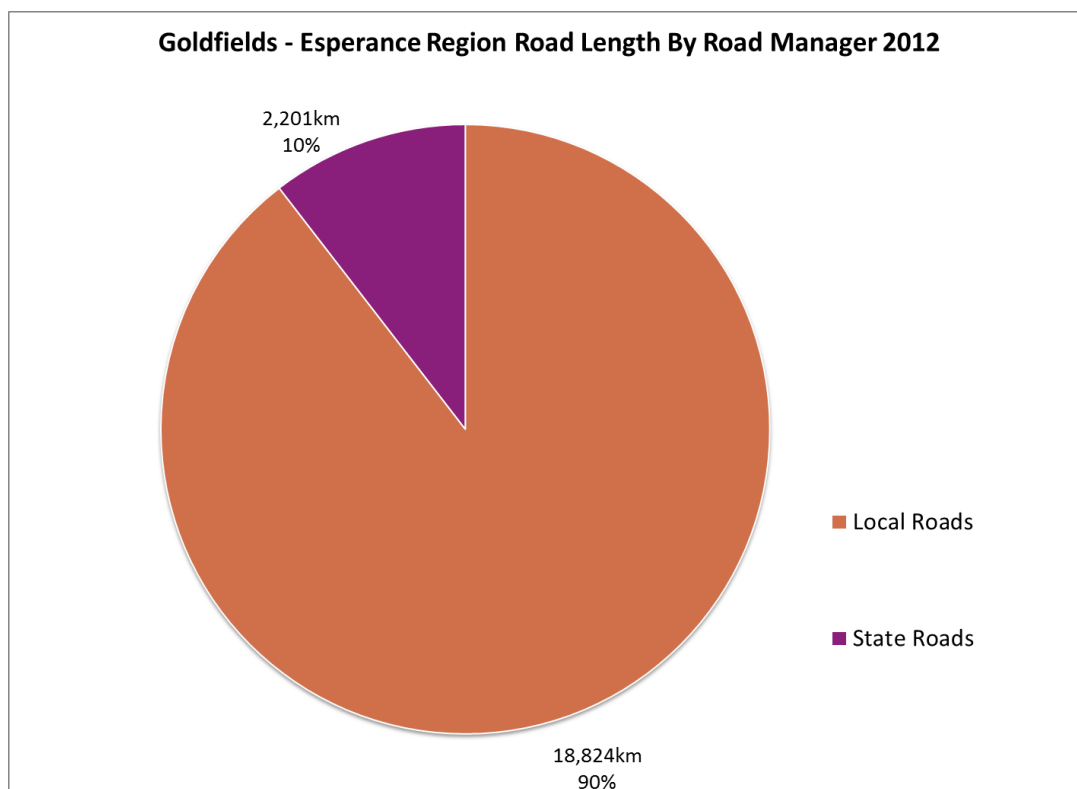


Figure 14: Length of road network in Goldfields - Esperance Region by road manager 2012

3.2 Crashes by Location and Road Manager

Table 8 shows all crashes by crash location and road manager in the Goldfields - Esperance Region from 2003 to 2012. Note that the road manager of category "Other" includes privately owned or other Government managed roads, such as National Park roads.

Crash Location	Road Manager	Crashes	%
Midblock	State	1,500	22.7
Intersection	State, State	25	0.4
Intersection	State, LG	461	7.0
Intersection	State, LG, Other	0	0.0
Intersection	State, Other	3	0.0
Midblock	LG	2,697	40.8
Intersection	LG, LG	1,667	25.2
Intersection	LG, Other	0	0.0
Midblock	Other	2	0.0
Intersection	Other, Other	0	0.0
Other	Unknown	257	3.9
Total		6,612	100.0

Table 8: Crashes by crash location and road manager 2003 - 2012

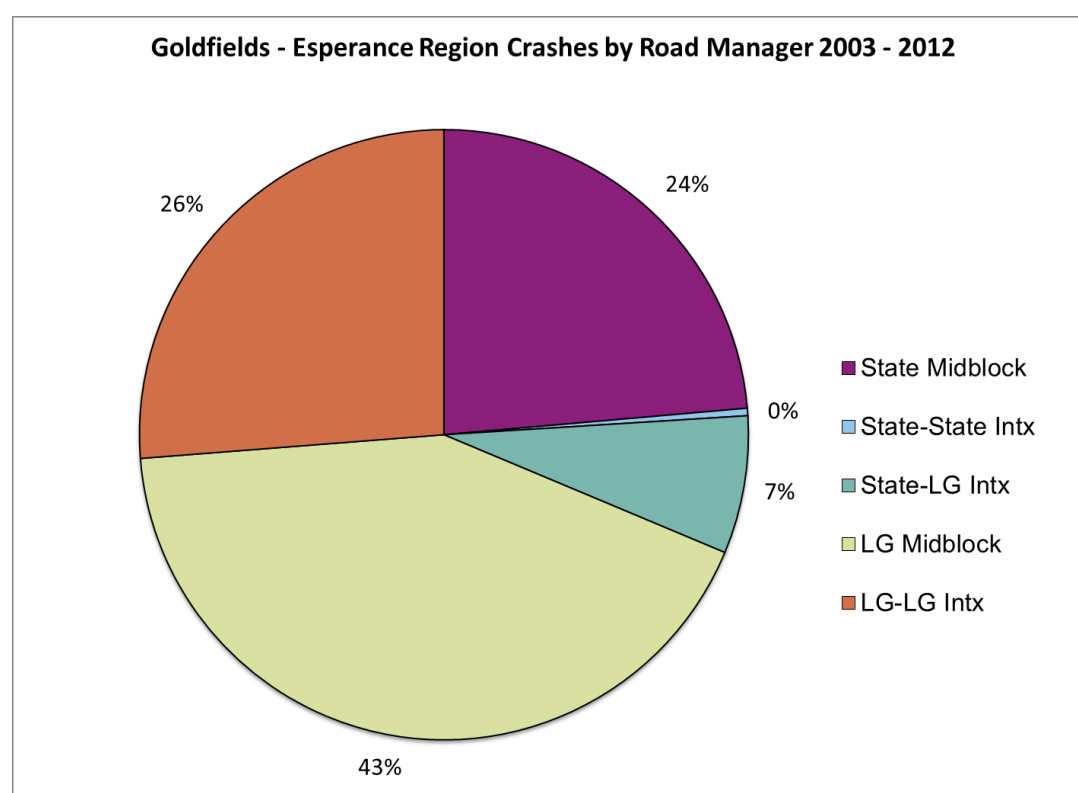


Figure 15: Crashes by crash location and road manager 2003 - 2012

Ignoring crashes at “Other” locations, Figure 15 shows:

- 69% of crashes occurred at local road locations including intersections where all legs were local roads.
- 7% of crashes occurred at intersections having both Local and State road legs.
- 24% of crashes occurred at State road locations including intersections where all legs were State roads.

Figure 15 also shows that 67% of crashes in the Goldfields - Esperance Region occurred at midblock locations on Local and State roads. This is further investigated in the analysis of the crash nature.

3.3 KSI Trend by Local Government

Table 9 shows the KSI trend by Local Government for the Goldfields - Esperance Region local road network. Figure 16 displays the total KSI trend across all Local Governments.

Local Government	Year										
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Coolgardie	4	5	0	1	2	4	2	2	1	1	22
Dundas	0	1	3	2	4	1	0	3	1	0	15
Esperance	8	17	17	7	10	7	10	5	16	9	106
Kalgoorlie-Boulder (C)	13	22	33	24	13	22	15	18	11	15	186
Laverton	3	1	18	11	7	9	1	2	6	1	59
Leonora	5	0	0	8	0	1	0	1	0	1	16
Menzies	1	4	2	4	1	0	3	2	0	0	17
Ngaanyatjarraku	0	1	1	3	3	4	2	6	4	5	29
Wiluna	3	0	0	0	2	0	1	0	0	1	7
TOTAL	37	51	74	60	42	48	34	39	39	33	457

Table 9: KSI trend by Local Government 2003 - 2012

The City of Kalgoorlie – Boulder and the Shire of Esperance experienced the highest frequencies of KSI from 2003 to 2012.

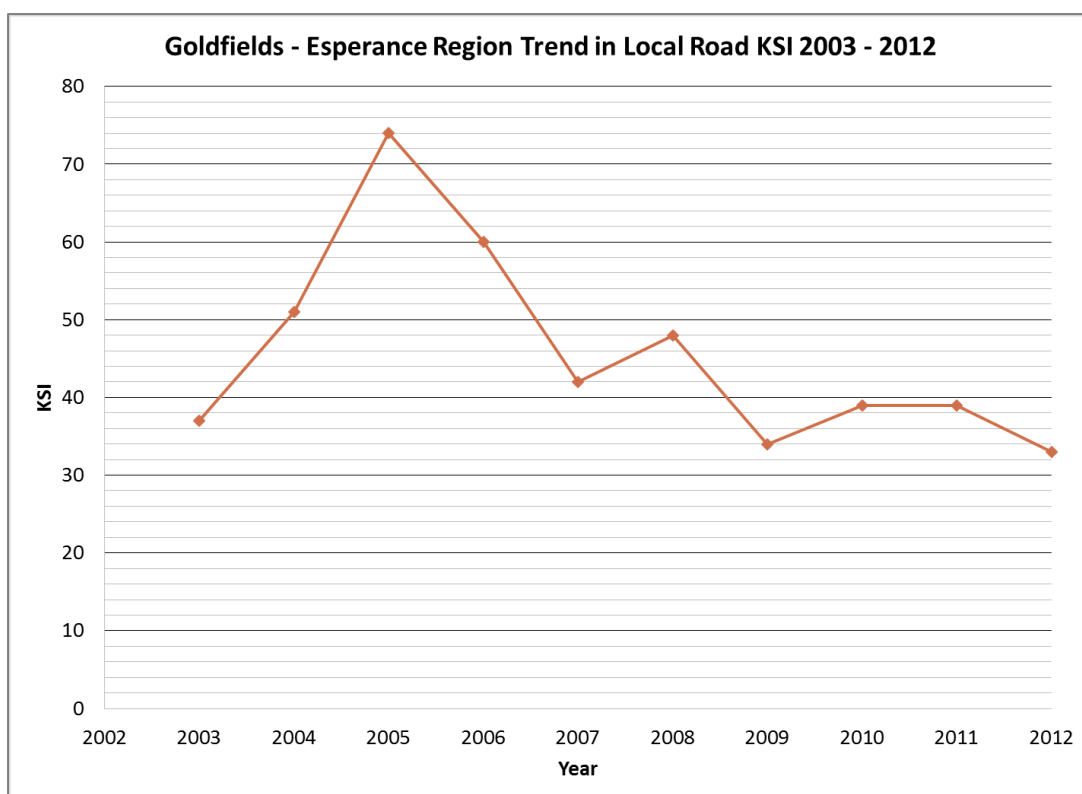


Figure 16: KSI trend for the Goldfields - Esperance Region 2003 - 2012

3.4 Crash Severity

Table 10 shows all crashes by crash severity for the Goldfields - Esperance Region local road network for 2012.

Crash Severity	Region		
	Goldfields - Esperance (GE)	State	% for GE
	n	n	%
Fatal	3	87	3.4
Hospitalisation	22	1,235	1.8
Medical	45	2,949	1.5
PDO Major	230	12,106	1.9
PDO Minor	109	7,417	1.5
Total	409	23,794	1.7

Table 10: All crashes on local roads by crash severity 2012

3.5 Road Surface Type

Nearly 84% of crashes occurred on sealed roads and 14% of crashes occurred on unsealed roads on the Goldfields - Esperance Region local road network. Significantly, 67% of fatal crashes occurred on unsealed roads.

Crash Severity	Surface Type						
	Sealed		Unsealed		Unknown		Total
	n	%	n	%	n	%	n
Fatal	1	33.3	2	66.7	0	0.0	3
Hospitalisation	14	63.6	8	36.4	0	0.0	22
Medical	36	80.0	9	20.0	0	0.0	45
PDO Major	190	82.6	38	16.5	2	0.9	230
PDO Minor	104	95.4	1	0.9	4	3.7	109
Total	345	84.4	58	14.2	6	1.5	409

Table 11: All crashes on local roads by surface type and crash severity 2012

3.6 Crash Nature

Table 12 shows KSI by crash nature for the Goldfields - Esperance Region local road network for 2012.

Crash Nature	Region		
	Goldfields - Esperance (GE)	State	% for GE
	n	n	%
Multi-Vehicle Crashes			
Rear End	0	163	0.0
Head On	0	57	0.0
Sideswipe	0	60	0.0
Right Angle	9	315	2.9
Right Turn Thru	2	149	1.3
Multi-Vehicle Other	2	19	10.5
Multi-Vehicle Total	13	763	1.7
Single Vehicle Crashes			
Hit Pedestrian	0	159	0.0
Hit Animal	1	3	33.3
Hit Object	10	394	2.5
Non-Collision	9	181	5.0
Single Vehicle Other	0	20	0.0
Single Vehicle Total	20	757	2.6
Total	33	1,520	2.2

Table 12: KSI on local roads by crash nature 2012

Approximately 58% of KSI on the Goldfields - Esperance local road network occurred in single vehicle crashes of Hit Object or Non-Collision.

3.7 Vehicle Type

Table 13 and Figure 17 show KSI by vehicle type and road manager for the Goldfields - Esperance Region local road network for 2012.

Vehicle Type	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Car	15	16	0	1	32
Station Wagon	0	2	0	1	3
Utility	8	2	0	0	10
Panel Van	1	0	0	0	1
Truck	0	0	0	0	0
Prime Mover	0	0	0	0	0
Bus	0	0	0	0	0
Motorcycle	5	0	0	1	6
Multi-Seated Van	0	0	0	0	0
Truck Combination	1	2	0	0	3
4WD	1	3	0	0	4
Other	0	1	0	2	3
Total	31	26	0	5	62

Table 13: KSI by vehicle type and road manager 2012

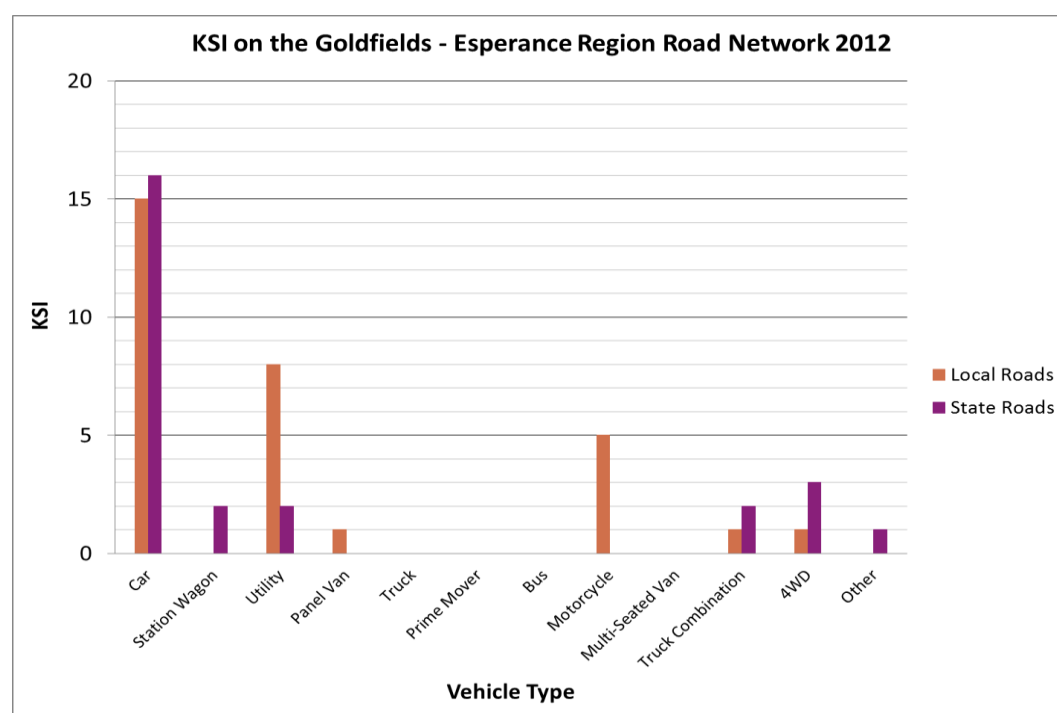


Figure 17: KSI by vehicle type and road manager 2012

3.8 Road User

Table 14 and Figure 18 show KSI for the Goldfields - Esperance Region local road network by road user and road manager for 2012.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	15	17	0	1	33
Passenger	11	8	0	1	20
Motorcyclist	5	0	0	1	6
Bicyclist	2	0	0	0	2
Pedestrian	0	6	0	0	6
Other	0	1	0	2	3
Total	33	32	0	5	70

Table 14: KSI by road user and road manager 2012

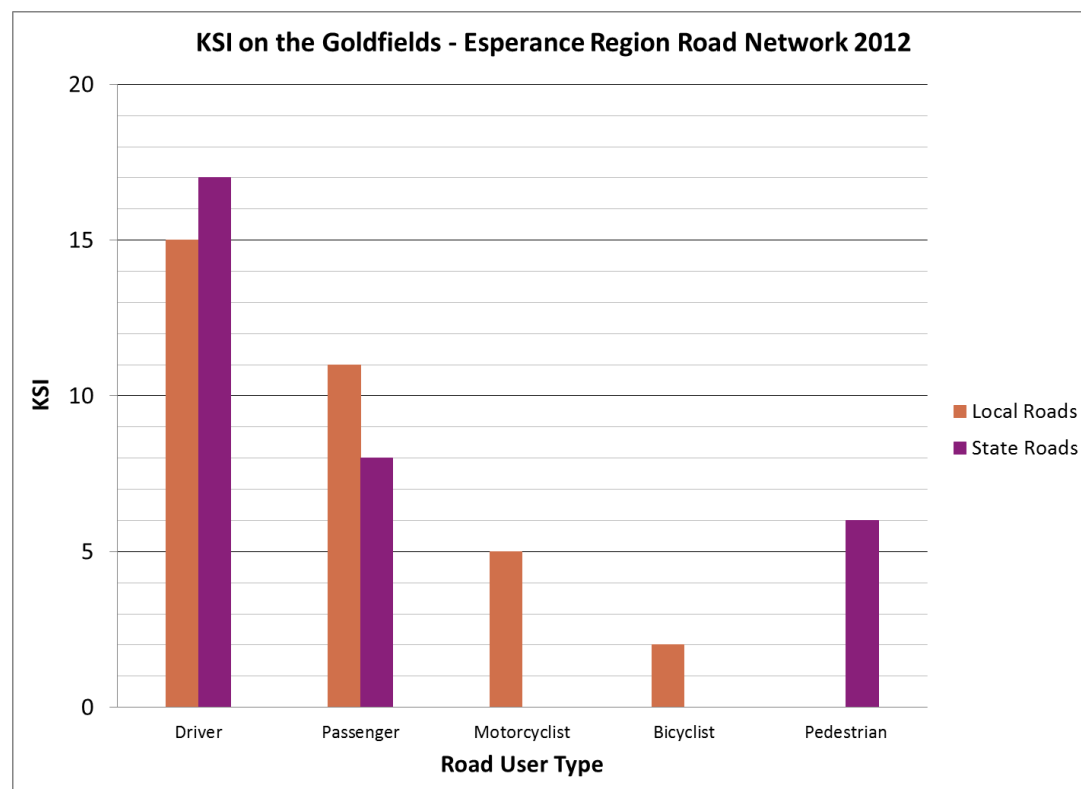


Figure 18: KSI by road user and road manager 2012

3.9 Speed

Figure 19 shows KSI where speed was considered a factor for the Goldfields - Esperance Region local road network. The determination of whether speed was a factor in a crash can only be reliably determined from police attended crashes.

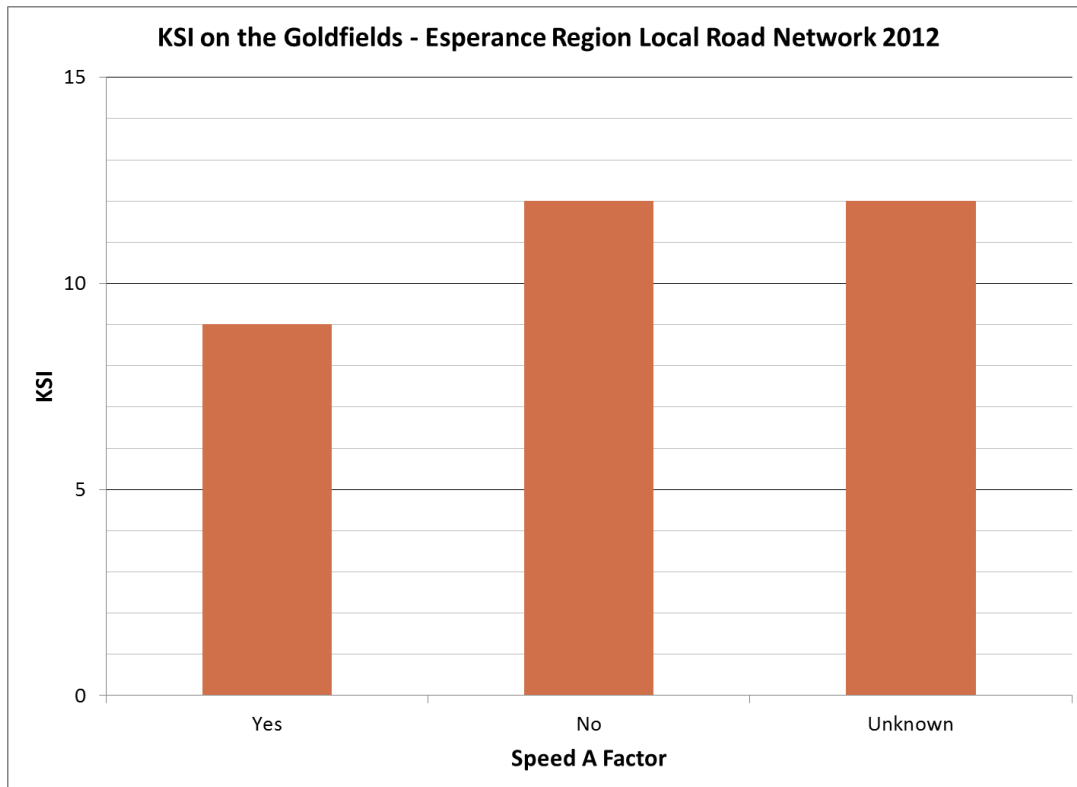


Figure 19: KSI by speed factor 2012 (police attended)

3.10 Blood Alcohol Content (BAC)

Table 15 and Figure 20 show KSI by the highest BAC reading for a driver/rider for the Goldfields - Esperance Region local road network. The subset of police attended crashes was used in the summaries below.

Highest Driver/Rider BAC in Police Attended Crash	KSI Severity					
	Killed		Seriously Injured		Total	
	n	%	n	%	n	%
Nil	1	33	20	67	21	64
$0 \leq \text{BAC} < 0.05$	0	0	0	0	0	0
$0.05 \leq \text{BAC} \leq 0.08$	0	0	0	0	0	0
$0.08 \leq \text{BAC} < 0.15$	1	33	0	0	1	3
$\text{BAC} \geq 0.15$	0	0	2	7	2	6
Subtotal BAC ≥ 0.05	1	33	2	7	3	9
Unknown	1	33	8	27	9	27
Total KSI	3	100	30	100	33	100

Table 15: KSI by highest BAC reading in the crash 2012

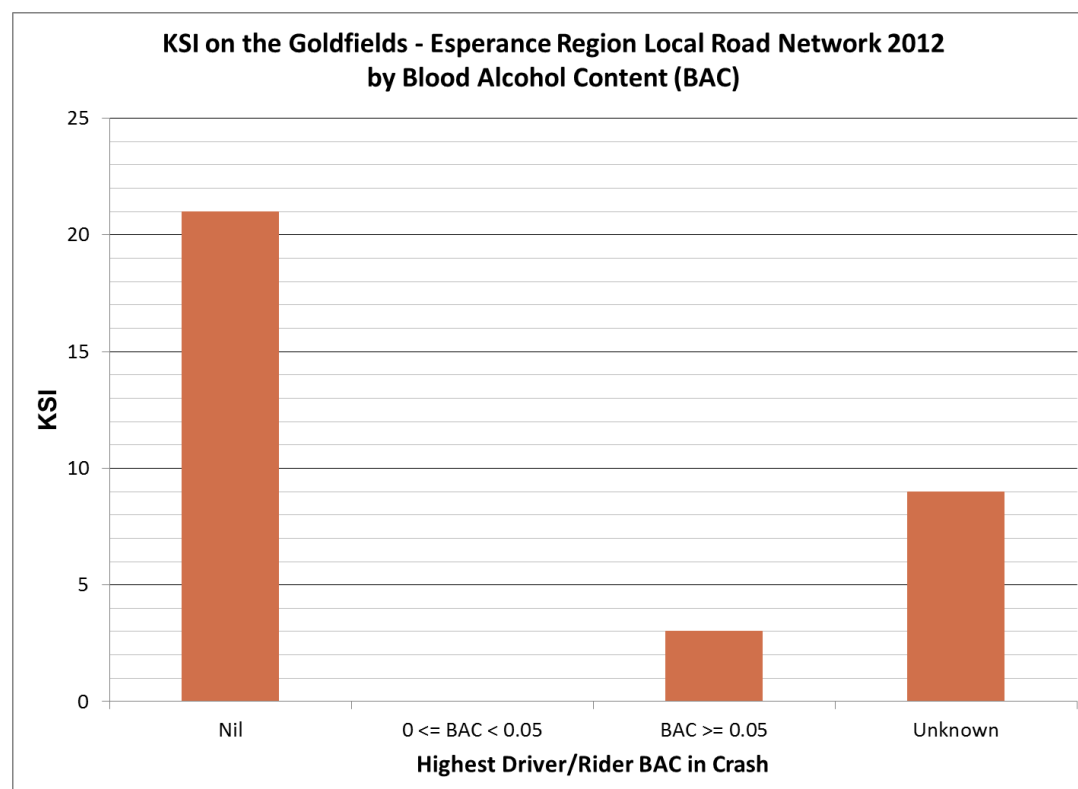


Figure 20: KSI by highest BAC reading in the crash 2012 (police attended)

3.11 Seatbelt Use

Figure 21 shows KSI by seatbelt usage for the Goldfields - Esperance Region local road network. The subset of police attended crashes was used in the figure below.

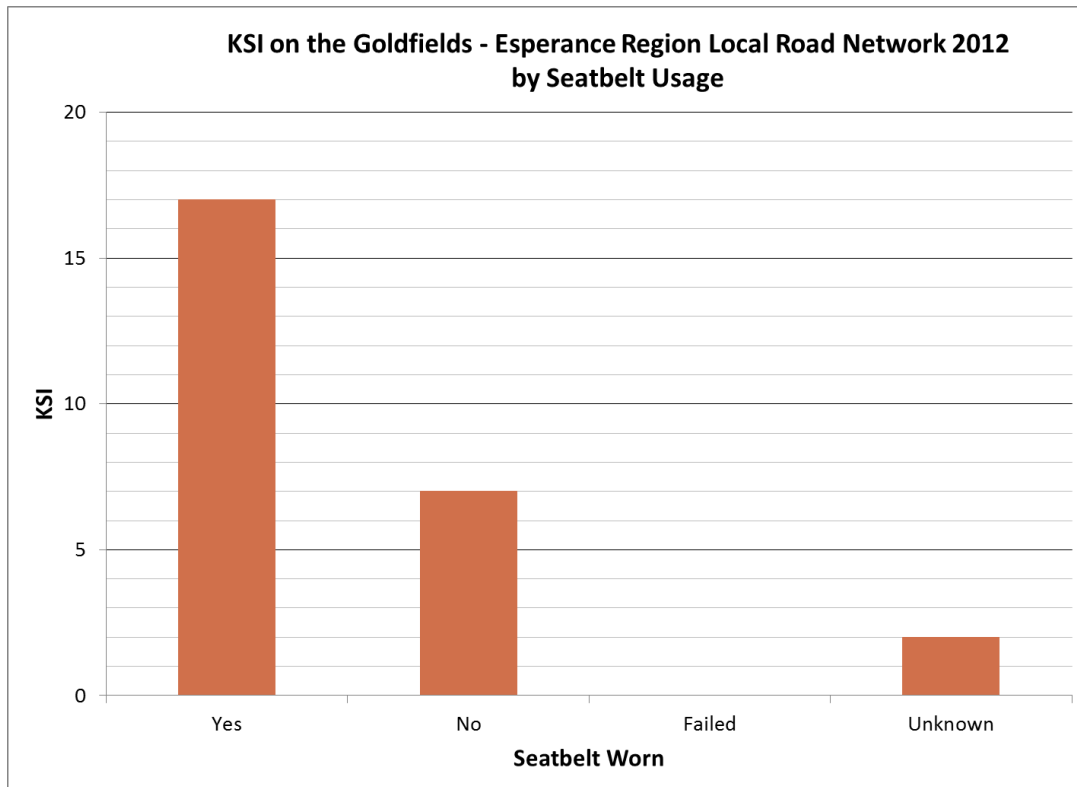


Figure 21: KSI by seatbelt usage 2012 (police attended)

4. SAFE SYSTEM

In this section, KSI summaries are provided for the Goldfields - Esperance Region local road network for the four cornerstones of *Towards Zero* – Safe Roads and Roadsides, Safe Speeds, Safe Road Use, and Safe Vehicles.

4.1 Safe Roads and Roadsides

Table 16 shows KSI in single vehicle run-off crashes on the Goldfields - Esperance Region local road network from 2003 to 2012. Run-off road crashes are a road safety issue for both Local and State road managers.

Road Manager	KSI in Run-off Road Crashes	
	n	%
Local	259	46.8
State	254	45.8
Other	0	0
Unknown	41	7.4
Total	554	100

Table 16: KSI in run-off road crashes 2003 to 2012

4.2 Safe Speeds

Table 17 and Figure 22 show KSI by speed zone on the Goldfields - Esperance Region local road network where speed was a factor from 2003 to 2012. The analysis was restricted to police attended crashes for consistency.

Speed Zone (km/hr.)	KSI Severity		
	Killed	Seriously Injured	KSI Total
	n	n	n
< 50	0	0	0
50	4	23	27
60	3	26	29
70	0	0	0
80	0	2	2
90	0	0	0
100	0	1	1
110	13	38	51
Unknown	2	17	19
Total	22	107	129

Table 17: KSI by speed zone 2003 to 2012 (police attended)

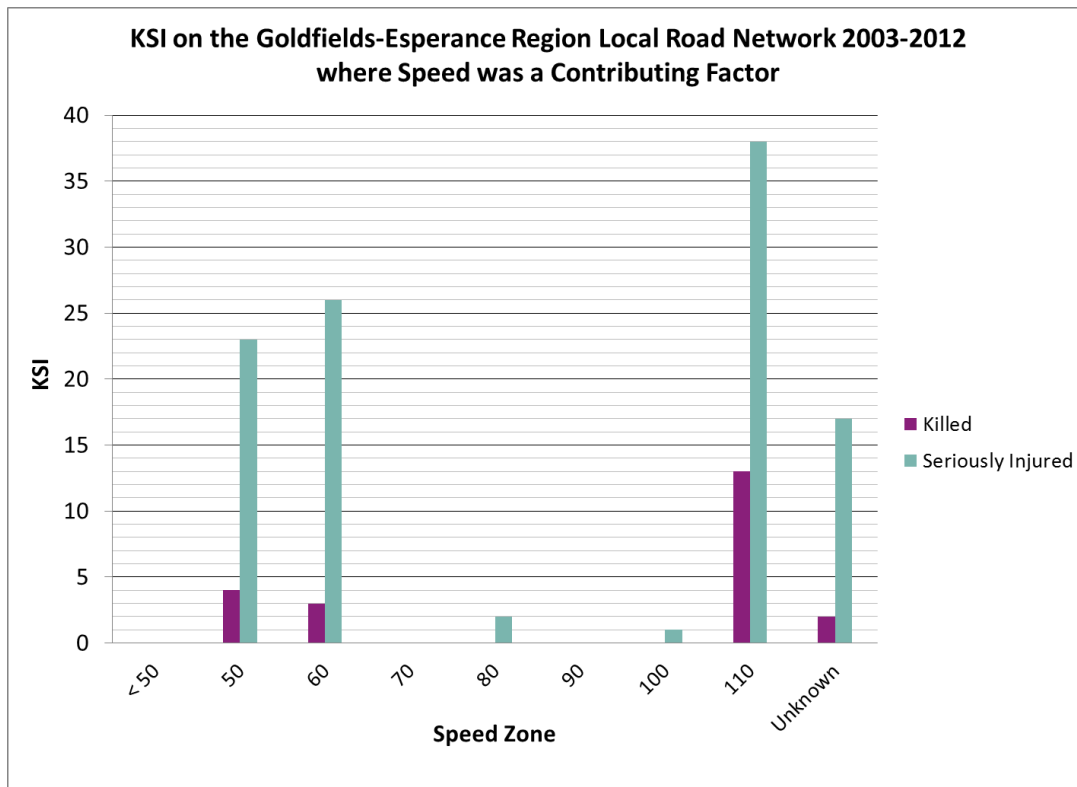


Figure 22: KSI by speed zone 2003 to 2012 (police attended)

On the Goldfields-Esperance Region local road network from 2003 to 2012:

- Road segments with a speed limit of 110km/hr. accounted for 39% of KSI.
- Road segments with speed limits of 50 and 60km/hr. accounted for 43% of KSI.

4.3 Safe Road Use

Table 18 identifies the contributing factors to KSI on the Goldfields - Esperance Region local road network. The analysis is restricted to Police attended crashes for consistency. The contributing factors are not necessarily mutually exclusive – a crash might have more than one contributing factor.

Contributing Factor	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Inattention	59	53	0	3	115
Seatbelts Not Worn	107	51	0	17	175
Alcohol	85	31	0	7	123
Speed	129	65	0	12	206

Table 18: KSI by contributing factor 2003 to 2012 (police attended)

Speed and non-wearing of seatbelts were the significant factors contributing to KSI on the Goldfields - Esperance Region local road network.

4.4 Safe Vehicles

Table 19 shows KSI by vehicle type and road manager on the Goldfields – Esperance local road network for 2003 to 2012.

Vehicle Type	Road Manager								
	Local		State		Other		Unknown		Total
	n	Row %	n	Row %	n	Row %	n	Row %	n
Car	156	54.0	112	38.8	0	0.0	21	7.3	289
Station Wagon	38	45.8	38	45.8	0	0.0	7	8.4	83
Utility	69	47.9	65	45.1	0	0.0	10	6.9	144
Panel Van	11	37.9	16	55.2	0	0.0	2	6.9	29
Truck	3	27.3	7	63.6	0	0.0	1	9.1	11
Prime Mover	0	0.0	2	100.0	0	0.0	0	0.0	2
Bus	0	n.a.	0	n.a.	0	n.a.	0	n.a.	0
Motorcycle	76	74.5	20	19.6	0	0.0	6	5.9	102
Multi-Seated Van	2	33.3	2	33.3	0	0.0	2	33.3	6
Truck Combination	5	15.6	27	84.4	0	0.0	0	0.0	32
4WD	47	41.2	59	51.8	0	0.0	8	7.0	114
Other	4	50.0	2	25.0	0	0.0	2	25.0	8
Total	411	50.1	350	42.7	0	0.0	59	7.2	820

Table 19: KSI by vehicle type 2003 to 2012

Cars, utilities and motorcycles were the dominant vehicle types involved in KSI outcomes on the Goldfields-Esperance Region local road network.

5. DEMOGRAPHICS

In this section demographic summaries of KSI are provided for the Goldfields - Esperance Region local road network.

5.1 Gender

Table 20 shows the gender breakdown of KSI on the Goldfields - Esperance Region local road network from 2003 to 2012.

Road User	Gender	KSI Severity		
		Killed	Seriously Inj.	Total
		n	n	n
Driver	Female	3	58	61
	Male	15	103	118
	Unknown	0	1	1
	Total	18	162	180
Passenger	Female	5	43	48
	Male	16	40	56
	Unknown	0	47	47
	Total	21	130	151
Motorcyclist	Female	1	8	9
	Male	1	62	63
	Unknown	0	4	4
	Total	2	74	76
Bicyclist	Female	0	2	2
	Male	0	7	7
	Unknown	0	0	0
	Total	0	9	9
Pedestrian	Female	2	9	11
	Male	3	20	23
	Unknown	0	3	3
	Total	5	32	37
Other	Female	0	1	1
	Male	0	2	2
	Unknown	0	1	1
	Total	0	4	4
Total	Female	11	121	132
	Male	35	234	269
	Unknown	0	56	56
	Total	46	411	457

Table 20: KSI by road user and gender for 2003 to 2012

Table 20 shows that males represent 59% of all KSI on local roads; 83% of motorcyclists KSI and 62% of pedestrians KSI.

5.2 Age

Table 21 and Figure 23 show KSI by age and road manager for the Goldfields - Esperance Region local road network from 2003 to 2012.

Age	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
0 to 11	19	12	0	1	32
12 to 16	24	10	0	3	37
17 to 20	56	34	0	6	96
21 to 24	60	45	0	4	109
25 to 29	54	50	0	6	110
30 to 39	82	53	0	15	150
40 to 49	63	53	0	12	128
50 to 59	34	51	0	2	87
60 to 69	20	28	0	5	53
70+	10	17	0	1	28
Unknown	35	18	0	6	59
Total	457	371	0	61	889

Table 21: KSI by age 2003 to 2012

People in the 17 to 24 age group are most prevalent KSI in crashes followed by people in the 30 to 39 age group.

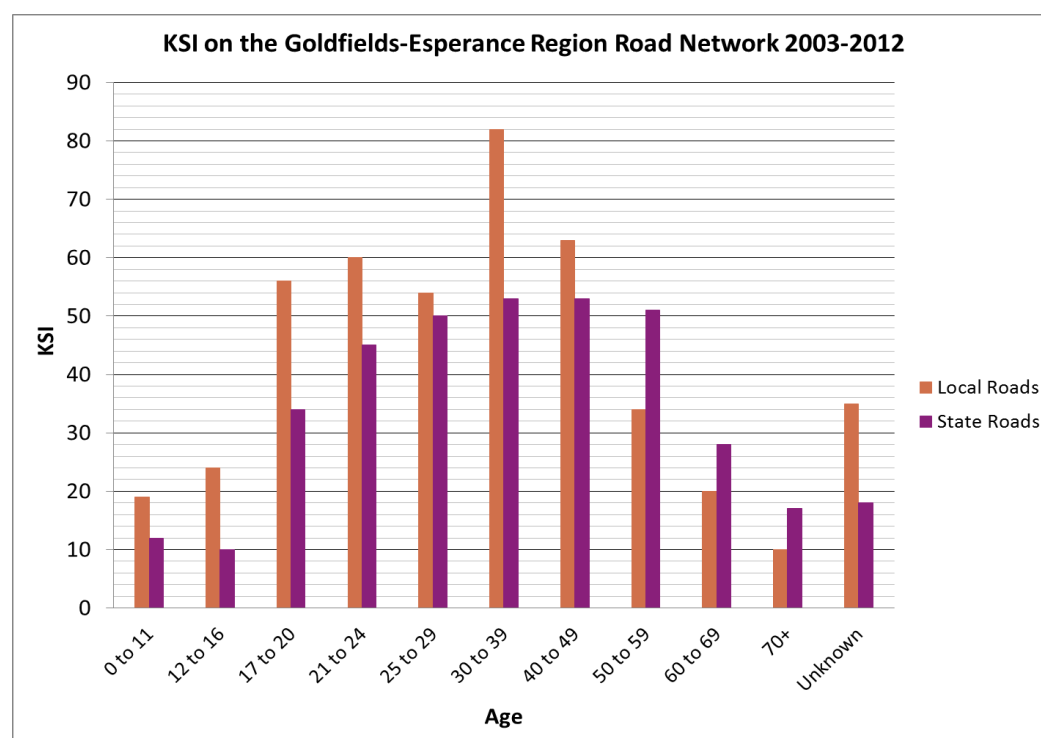


Figure 23: KSI by age 2003 to 2012

6. LOCAL GOVERNMENT ROAD CRASH AND KSI SUMMARIES

In this section, crash and KSI summaries are provided for each Local Government in the Goldfields - Esperance Region.

6.1 Shire of Coolgardie

Refer also to the Goldfields - Esperance Region Local Road Crash Map Book 2012.

Table 22 displays all crashes in the Shire of Coolgardie by crash location and road manager from 2003 to 2012.

Crash Location	Road Manager	Crashes	%
Midblock	State	294	62.8
Intersection	State, State	7	1.5
Intersection	State, LG	8	1.7
Intersection	State, LG, Other	0	0.0
Intersection	State, Other	0	0.0
Midblock	LG	98	20.9
Intersection	LG, LG	34	7.3
Intersection	LG, Other	0	0.0
Midblock	Other	2	0.4
Intersection	Other, Other	0	0.0
Other	Unknown	25	5.3
Total		468	100.0

Table 22: All crashes by crash location and road manager 2003 - 2012

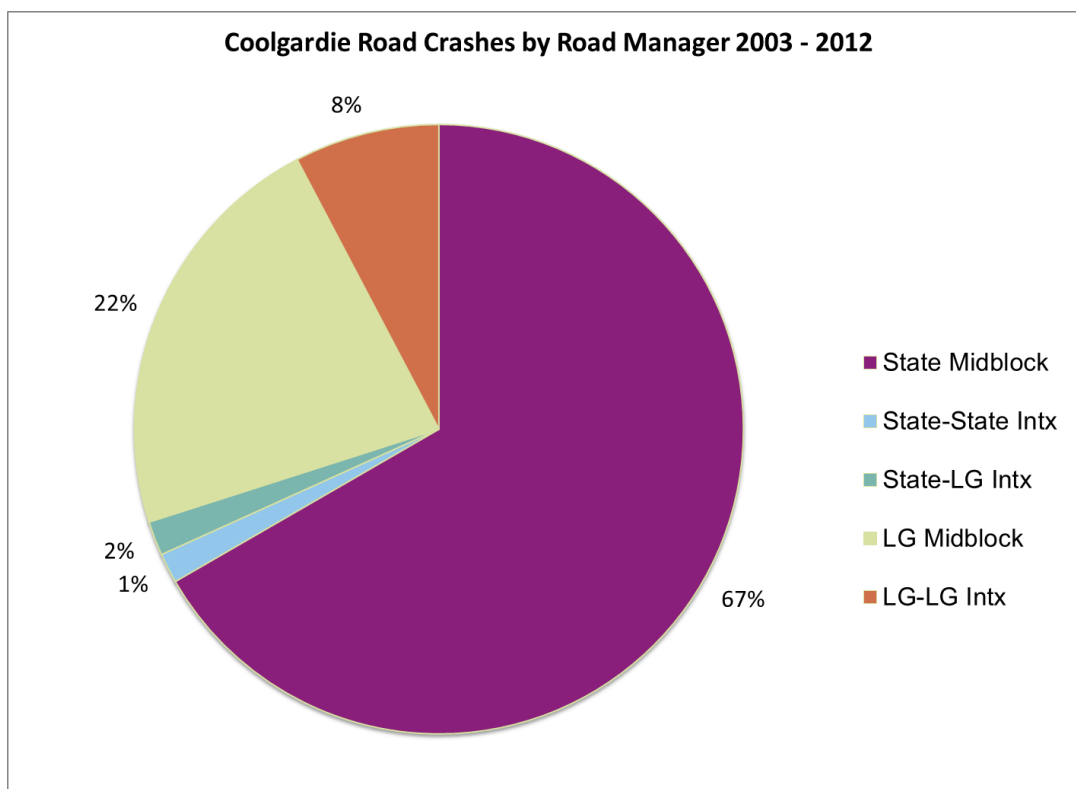


Figure 24: All crashes by crash location and road manager 2003 - 2012

Ignoring crashes at “Other” locations, Figure 24 shows:

- 30% of crashes occurred at local road locations including intersections where all legs were local roads.
- 2% of crashes occurred at intersections having both Local and State road legs.
- 68% of crashes occurred at State road locations including intersections where all legs were State roads.

Figure 24 also shows that 89% of crashes in the Shire of Coolgardie occurred at midblock locations on Local and State roads. This is further investigated in the analysis of the crash nature.

The KSI trend for the Shire of Coolgardie local road network from 2003 to 2012 is shown in Table 23.

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
KSI	4	5	0	1	2	4	2	2	1	1	22

Table 23: KSI trend 2003 - 2012

6.1.1 Crash Nature

A summary of KSI by crash nature on the Shire of Coolgardie local road network from 2003 to 2012 is displayed in the table and figure below, which show:

- 86% of KSI occurred in single vehicle crashes of Hit Object or Non-Collision.

Crash Nature	Local Government and Region			
	2003 - 2012			2012
	Coolgardie	Goldfields-Esperance	% for Coolgardie	Coolgardie
	n	n	%	n
Multi-Vehicle Crashes				
Rear End	0	13	0.0	0
Head On	1	8	12.5	0
Sideswipe	0	9	0.0	0
Right Angle	1	61	1.6	0
Right Turn Thru	0	22	0.0	0
Multi-Vehicle Other	0	7	0.0	0
Multi-Vehicle Total	2	120	1.7	0
Single Vehicle Crashes				
Hit Pedestrian	0	33	0.0	0
Hit Animal	0	7	0.0	0
Hit Object	11	132	8.3	1
Non-Collision	8	157	5.1	0
Single Vehicle Other	1	8	12.5	0
Single Vehicle Total	20	337	5.9	1
Total	22	457	4.8	1

Table 24: KSI by crash nature 2003 - 2012

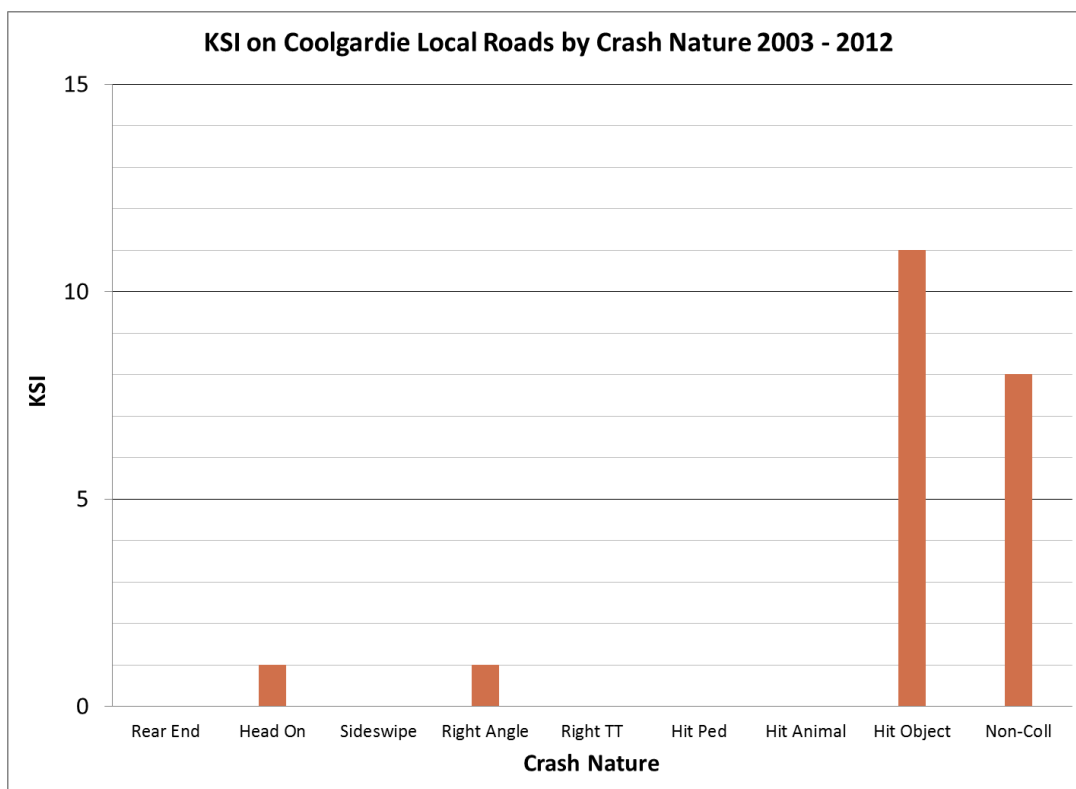


Figure 25: KSI by crash nature 2003 - 2012

6.1.2 Road User Type

KSI by road user type on the Shire of Coolgardie local road network from 2003 to 2012 is shown in Table 25 and Figure 26.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	6	49	0	4	59
Passenger	7	26	0	2	35
Motorcyclist	8	2	0	1	11
Bicyclist	0	0	0	0	0
Pedestrian	0	1	0	0	1
Other	1	1	0	0	2
Total	22	79	0	7	108

Table 25: KSI by road user 2003 - 2012

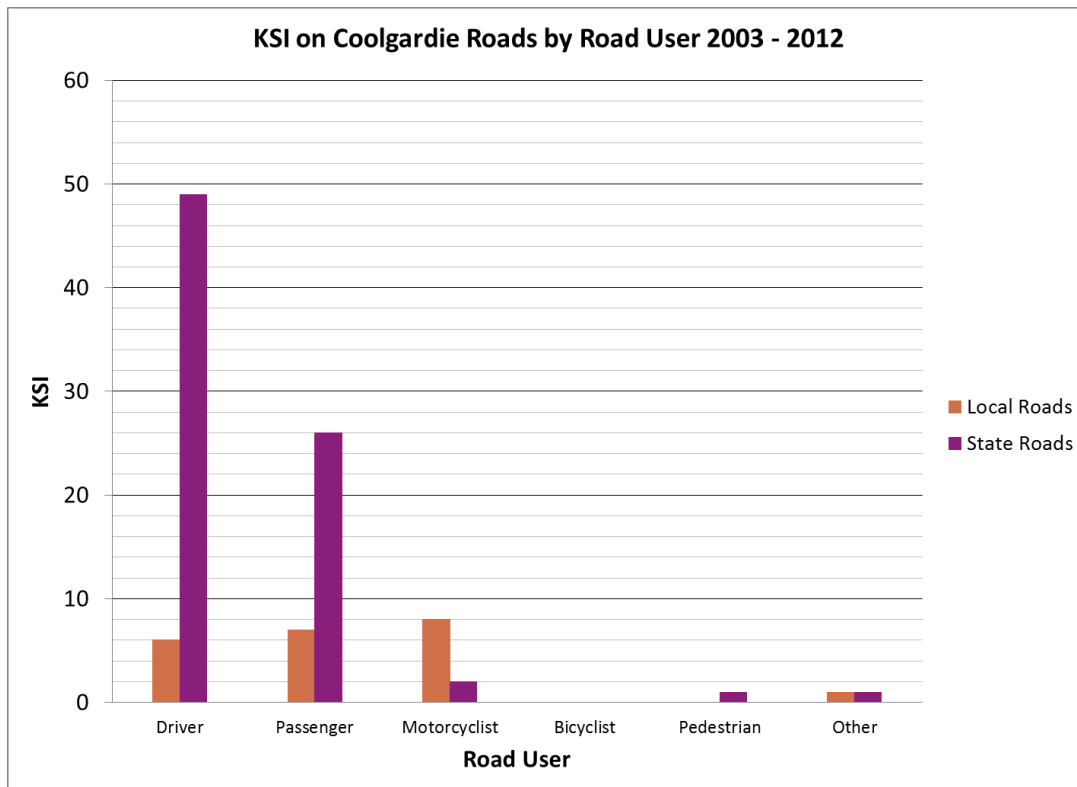


Figure 26: KSI by road user 2003 - 2012

From 2003 to 2012 approximately 36% of KSI on local roads were motorcyclists. KSI for 2012 is shown in Table 26.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	0	3	0	1	4
Passenger	1	0	0	0	1
Motorcyclist	0	0	0	0	0
Bicyclist	0	0	0	0	0
Pedestrian	0	0	0	0	0
Other	0	1	0	0	1
Total	1	4	0	1	6

Table 26: KSI by road user 2012

6.1.3 Road User Behaviour

The following table shows factors contributing to KSI on the Shire of Coolgardie local road network. The analysis is restricted to police attended crashes for consistency. Note that the contributing factors are not necessarily mutually exclusive, that is, it is possible that more than one factor contributed to the crash.

Contributing Factor	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Inattention	3	14	0	1	18
Seatbelts Not Worn	5	8	0	2	15
Alcohol	8	2	0	0	10
Speed	10	10	0	3	23

Table 27: KSI by contributing factor 2003 - 2012 (police attended)

Speed and alcohol were the dominant contributing factors in KSI on local roads.

6.1.4 Vulnerable Road Users

The following table shows vulnerable road user KSI by age on local roads from 2003 to 2012. A vulnerable road user is defined as a motorcyclist, bicyclist or pedestrian.

Age	Vulnerable Road User		
	Motorcyclist	Bicyclist	Pedestrian
	n	n	n
0 to 11	0	0	0
12 to 16	2	0	0
17 to 20	1	0	0
21 to 24	2	0	0
25 to 29	1	0	0
30 to 39	1	0	0
40 to 49	0	0	0
50 to 59	0	0	0
60 to 69	0	0	0
70+	0	0	0
Unknown	1	0	0
Total	8	0	0

Table 28: KSI by vulnerable road user and age 2003 - 2012

Table 28 shows that five of the eight motorcyclists KSI were aged between 12 and 24 years.

6.2 Shire of Dundas

Refer also to the Goldfields - Esperance Region Local Road Crash Map Book 2012.

Table 29 displays all crashes in the Shire of Dundas by crash location and road manager from 2003 to 2012.

Crash Location	Road Manager	Crashes	%
Midblock	State	274	71.0
Intersection	State, State	0	0.0
Intersection	State, LG	10	2.6
Intersection	State, LG, Other	0	0.0
Intersection	State, Other	1	0.3
Midblock	LG	72	18.7
Intersection	LG, LG	8	2.1
Intersection	LG, Other	0	0.0
Midblock	Other	0	0.0
Intersection	Other, Other	0	0.0
Other	Unknown	21	5.4
Total		386	100.0

Table 29: All crashes by crash location and road manager 2003 - 2012

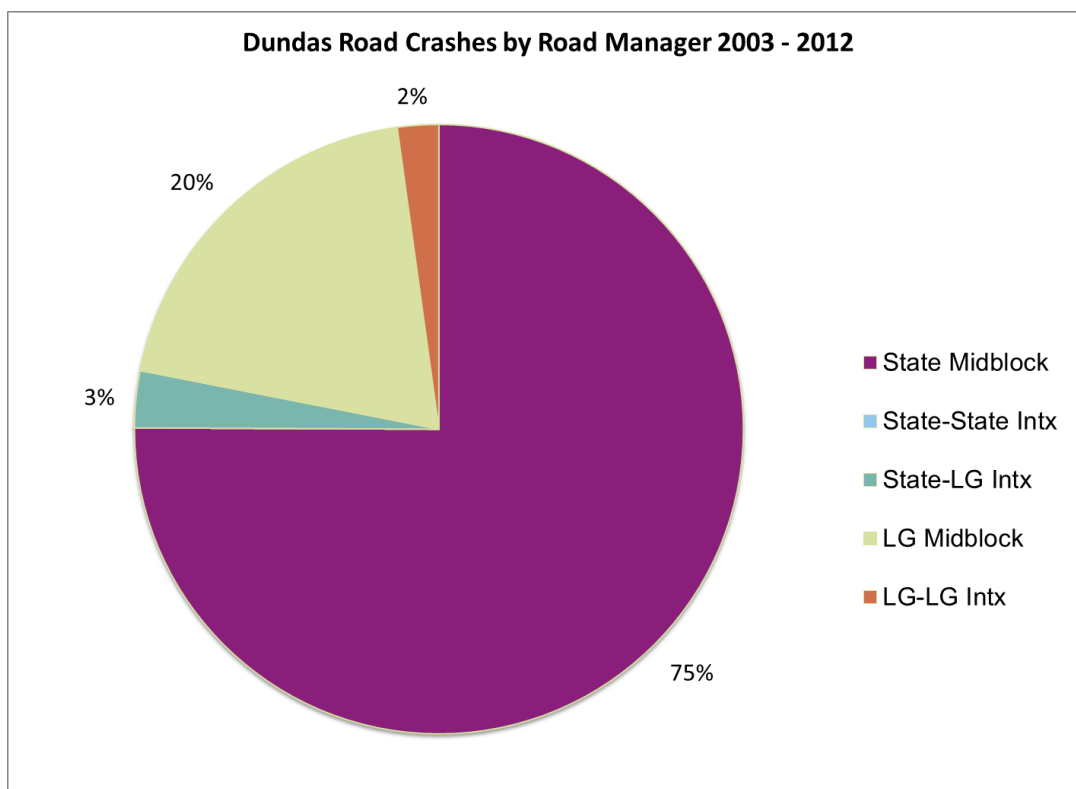


Figure 27: All crashes by crash location and road manager 2003 - 2012

Ignoring crashes at “Other” locations, Figure 27 shows:

- 22% of crashes occurred at local road locations including intersections where all legs were local roads.
- 3% of crashes occurred at intersections having both Local and State road legs.
- 75% of crashes occurred at State road locations including intersections where all legs were State roads.

Figure 27 also shows that 95% of crashes in the Shire of Dundas occurred at midblock locations on Local and State roads. This is further investigated in the analysis of the crash nature.

The KSI trend for the Shire of Dundas local road network from 2003 to 2012 is shown in Table 30.

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
KSI	0	1	3	2	4	1	0	3	1	0	15

Table 30: KSI trend 2003 - 2012

6.2.1 Crash Nature

A summary of KSI by crash nature on the Shire of Dundas local road network from 2003 to 2012 is displayed in the table and figure below, which show:

- 87% of KSI occurred in single vehicle crashes of Hit Object or Non-Collision.

Crash Nature	Local Government and Region			
	2003 - 2012			2012
	Dundas	Goldfields-Esperance	% for Dundas	Dundas
	n	n	%	n
Multi-Vehicle Crashes				
Rear End	0	13	0.0	0
Head On	1	8	12.5	0
Sideswipe	0	9	0.0	0
Right Angle	0	61	0.0	0
Right Turn Thru	0	22	0.0	0
Multi-Vehicle Other	0	7	0.0	0
Multi-Vehicle Total	1	120	0.8	0
Single Vehicle Crashes				
Hit Pedestrian	1	33	3.0	0
Hit Animal	0	7	0.0	0
Hit Object	9	132	6.8	0
Non-Collision	4	157	2.5	0
Single Vehicle Other	0	8	0.0	0
Single Vehicle Total	14	337	4.2	0
Total	15	457	3.3	0

Table 31: KSI by crash nature 2003 - 2012

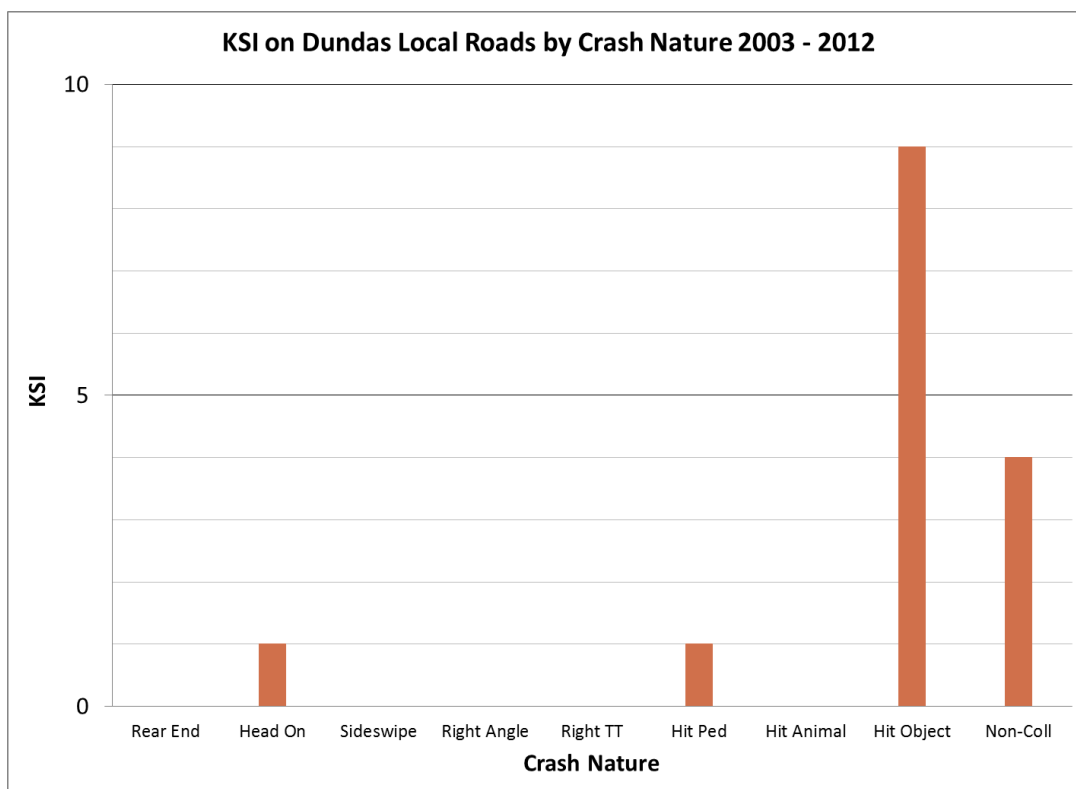


Figure 28: KSI by crash nature 2003 - 2012

6.2.2 Road User Type

KSI by road user type on the Shire of Dundas local road network from 2003 to 2012 is shown in Table 32 and Figure 29.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	9	48	0	3	60
Passenger	3	33	0	4	40
Motorcyclist	2	9	0	0	11
Bicyclist	0	1	0	0	1
Pedestrian	1	0	0	0	1
Other	0	0	0	0	0
Total	15	91	0	7	113

Table 32: KSI by road user 2003 - 2012

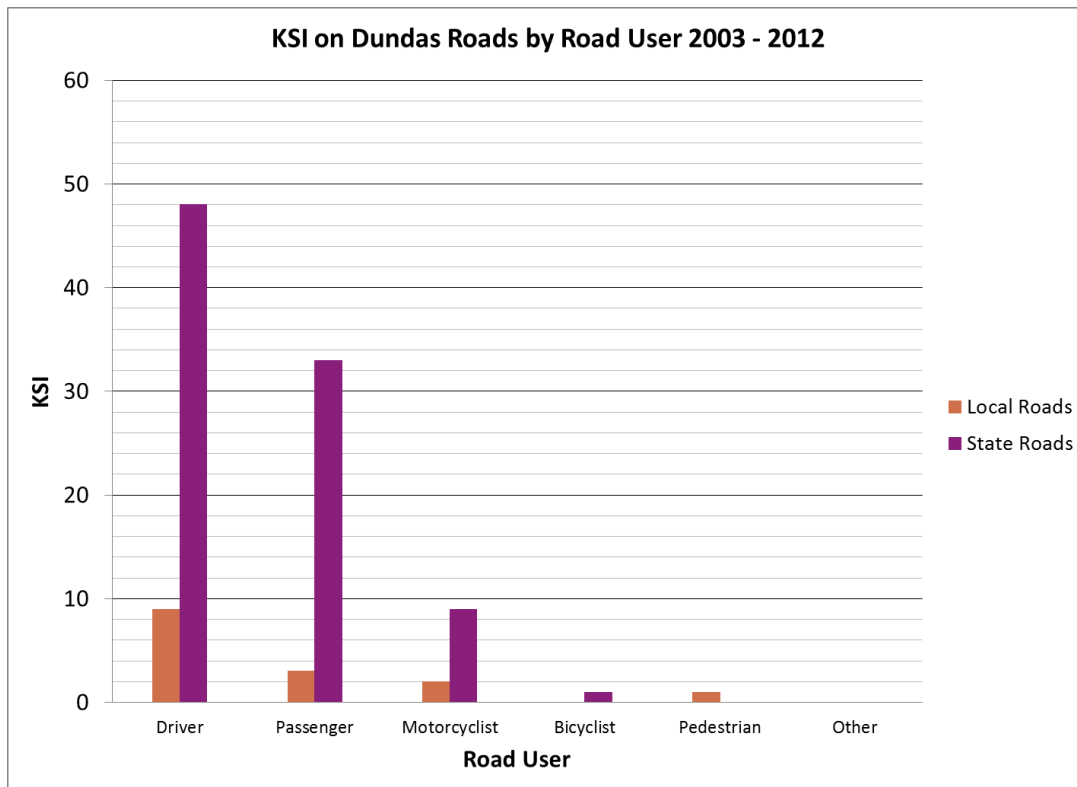


Figure 29: KSI by road user 2003 - 2012

From 2003 to 2012 approximately 80% of KSI on local roads were drivers or passengers. KSI for 2012 is shown in Table 33.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	0	3	0	0	3
Passenger	0	2	0	0	2
Motorcyclist	0	0	0	0	0
Bicyclist	0	0	0	0	0
Pedestrian	0	0	0	0	0
Other	0	0	0	0	0
Total	0	5	0	0	5

Table 33: KSI by road user 2012

6.2.3 Road User Behaviour

The following table shows factors contributing to KSI on the Shire of Dundas local road network. The analysis is restricted to police attended crashes for consistency. Note that the contributing factors are not necessarily mutually exclusive, that is, it is possible that more than one factor contributed to the crash.

Contributing Factor	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Inattention	5	13	0	2	20
Seatbelts Not Worn	5	10	0	3	18
Alcohol	1	0	0	2	3
Speed	4	6	0	1	11

Table 34: KSI by contributing factor 2003 - 2012 (police attended)

Inattention, non-wearing of seatbelts and speed were the dominant contributing factors in KSI.

6.2.4 Vulnerable Road Users

The following table shows vulnerable road user KSI by age on local roads from 2003 to 2012. A vulnerable road user is defined as a motorcyclist, bicyclist or pedestrian.

Age	Vulnerable Road User		
	Motorcyclist	Bicyclist	Pedestrian
	n	n	n
0 to 11	0	0	0
12 to 16	0	0	0
17 to 20	0	0	0
21 to 24	2	0	0
25 to 29	0	0	0
30 to 39	0	0	0
40 to 49	0	0	0
50 to 59	0	0	0
60 to 69	0	0	1
70+	0	0	0
Unknown	0	0	0
Total	2	0	1

Table 35: KSI by vulnerable road user and age 2003 - 2012

6.3 Shire of Esperance

Refer also to the Goldfields - Esperance Region Local Road Crash Map Book 2012.

Table 36 displays all crashes in the Shire of Esperance by crash location and road manager from 2003 to 2012.

Crash Location	Road Manager	Crashes	%
Midblock	State	160	14.0
Intersection	State, State	6	0.5
Intersection	State, LG	95	8.3
Intersection	State, LG, Other	0	0.0
Intersection	State, Other	0	0.0
Midblock	LG	594	52.0
Intersection	LG, LG	258	22.6
Intersection	LG, Other	0	0.0
Midblock	Other	0	0.0
Intersection	Other, Other	0	0.0
Other	Unknown	30	2.6
Total		1,143	100.0

Table 36: All crashes by crash location and road manager 2003 - 2012

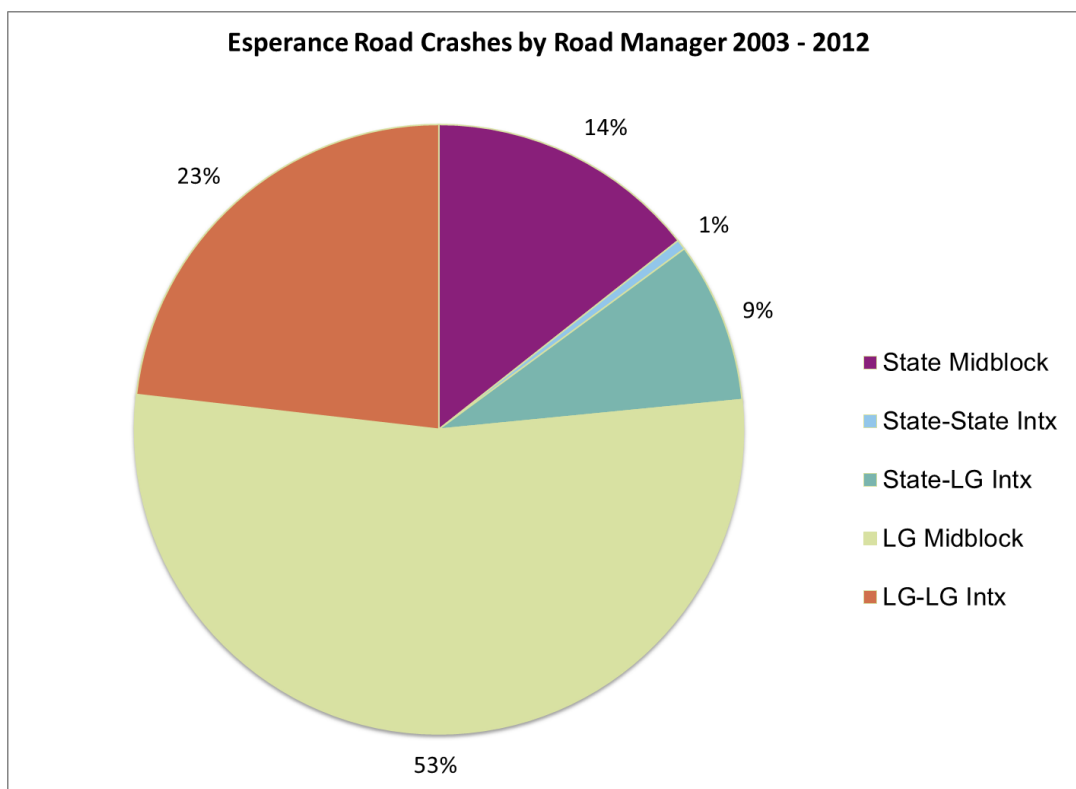


Figure 30: All crashes by crash location and road manager 2003 - 2012

Ignoring crashes at “Other” locations, Figure 30 shows:

- 76% of crashes occurred at local road locations including intersections where all legs were local roads.
- 1% of crashes occurred at intersections having both Local and State road legs.
- 23% of crashes occurred at State road locations including intersections where all legs were State roads.

Figure 30 also shows that 67% of crashes in the Shire of Esperance occurred at midblock locations on Local and State roads. This is further investigated in the analysis of the crash nature.

The KSI trend for the Shire of Esperance local road network from 2003 to 2012 is shown in Table 37.

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
KSI	8	17	17	7	10	7	10	5	16	9	106

Table 37: KSI trend 2003 - 2012

6.3.1 Crash Nature

A summary of KSI by crash nature on the Shire of Esperance local road network from 2003 to 2012 is displayed in the table and figure below, which show:

- 63% of KSI occurred in single vehicle crashes of Hit Object or Non-Collision;
- 19% of KSI occurred in multi-vehicle crashes of Right Angle or Right turn Thru crash; and
- 6% of KSI occurred in single vehicle of Hit Pedestrian crashes.

Crash Nature	Local Government and Region			
	2003 - 2012			2012
	Esperance	Goldfields-Esperance	% for Esperance	Esperance
	n	n	%	n
Multi-Vehicle Crashes				
Rear End	2	13	15.4	0
Head On	4	8	50.0	0
Sideswipe	3	9	33.3	0
Right Angle	15	61	24.6	5
Right Turn Thru	5	22	22.7	0
Multi-Vehicle Other	0	7	0.0	0
Multi-Vehicle Total	29	120	24.2	5
Single Vehicle Crashes				
Hit Pedestrian	6	33	18.2	0
Hit Animal	1	7	14.3	0
Hit Object	36	132	27.3	2
Non-Collision	31	157	19.7	2
Single Vehicle Other	3	8	37.5	0
Single Vehicle Total	77	337	22.8	4
Total	106	457	23.2	9

Table 38: KSI by crash nature 2003 - 2012

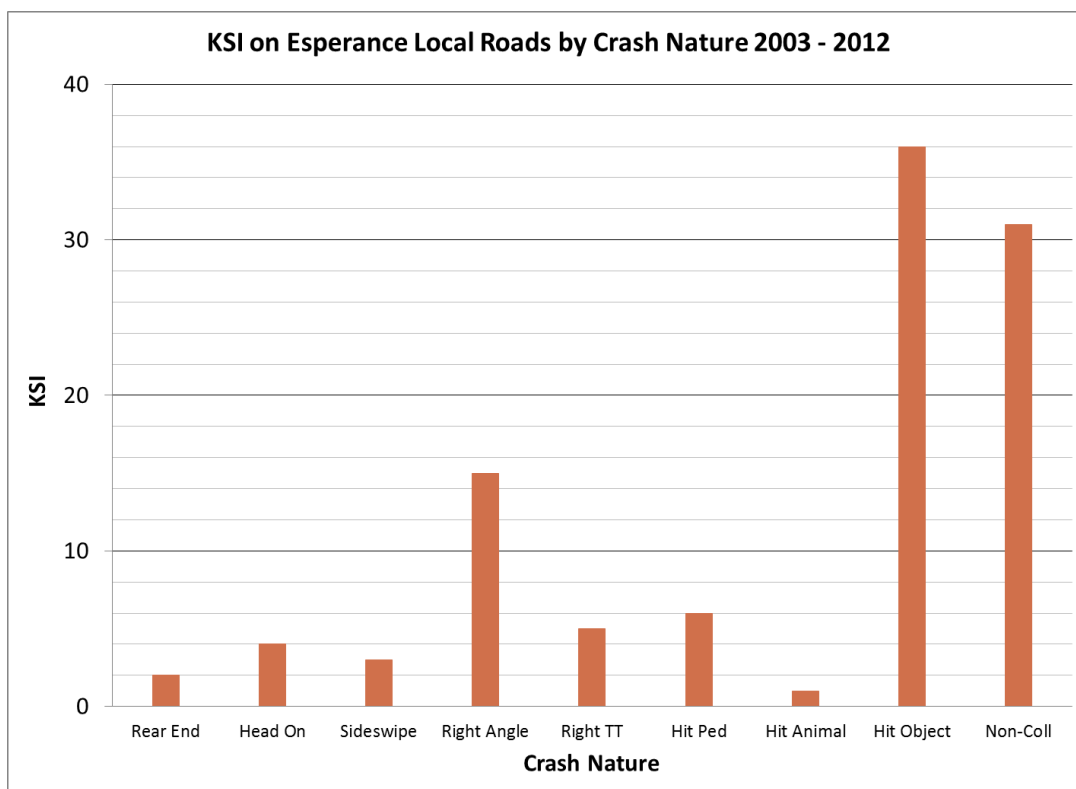


Figure 31: KSI by crash nature 2003 - 2012

6.3.2 Road User Type

KSI by road user type on the Shire of Esperance local road network from 2003 to 2012 is shown in Table 39 and Figure 32.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	38	28	0	2	68
Passenger	37	19	0	1	57
Motorcyclist	21	3	0	4	28
Bicyclist	3	1	0	0	4
Pedestrian	7	0	0	0	7
Other	0	0	0	0	0
Total	106	51	0	7	164

Table 39: KSI by road user 2003 - 2012

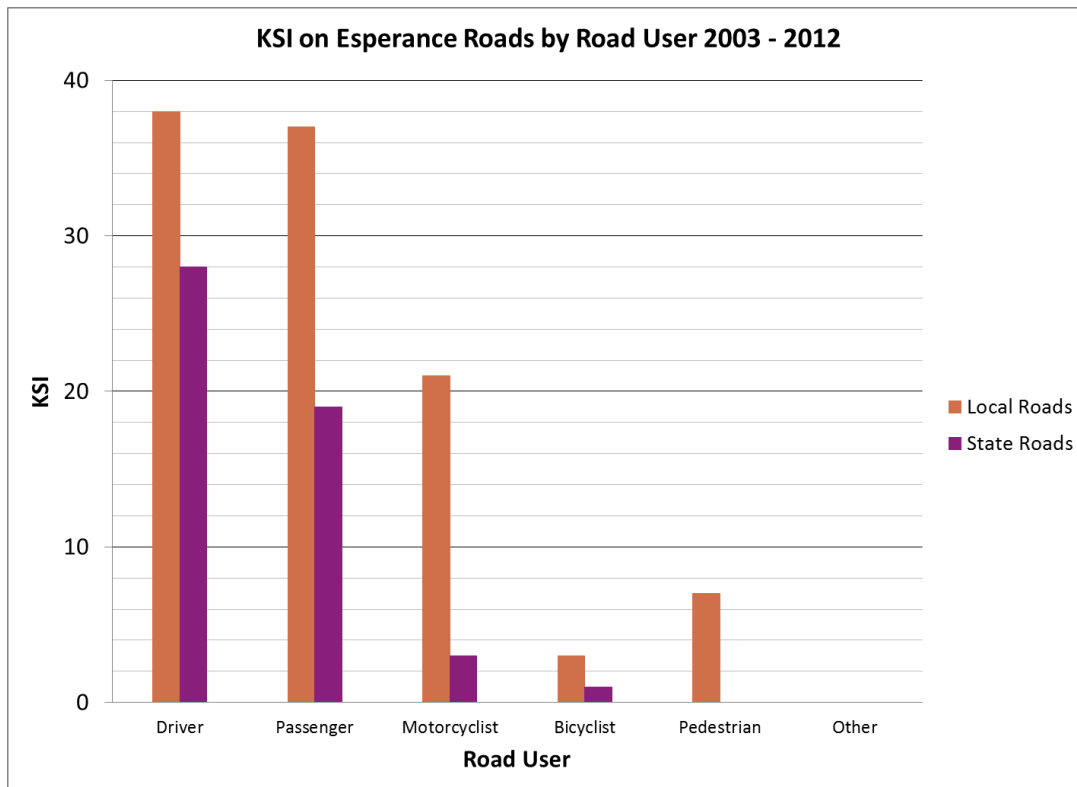


Figure 32: KSI by road user 2003 - 2012

From 2003 to 2012 approximately 71% of KSI on local roads were drivers or pedestrians, and 20% were motorcyclists. KSI for 2012 is shown in Table 40.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	5	6	0	0	11
Passenger	4	3	0	0	7
Motorcyclist	0	0	0	1	1
Bicyclist	0	0	0	0	0
Pedestrian	0	0	0	0	0
Other	0	0	0	0	0
Total	9	9	0	1	19

Table 40: KSI by road user 2012

6.3.3 Road User Behaviour

The following table shows factors contributing to KSI on the Shire of Esperance local road network. The analysis is restricted to police attended crashes for consistency. Note that the contributing factors are not necessarily mutually exclusive, that is, it is possible that more than one factor contributed to the crash.

Contributing Factor	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Inattention	18	5	0	0	23
Seatbelts Not Worn	19	6	0	1	26
Alcohol	24	5	0	0	29
Speed	30	6	0	0	36

Table 41: KSI by contributing factor 2003 - 2012 (police attended)

Speed, alcohol, non-wearing of seatbelts and inattention all contributed to KSI on local roads.

6.3.4 Vulnerable Road Users

The following table shows vulnerable road user KSI by age on local roads from 2003 to 2012. A vulnerable road user is defined as a motorcyclist, bicyclist or pedestrian.

Age	Vulnerable Road User		
	Motorcyclist	Bicyclist	Pedestrian
	n	n	n
0 to 11	0	0	1
12 to 16	9	1	0
17 to 20	0	0	0
21 to 24	1	0	2
25 to 29	1	0	0
30 to 39	3	1	1
40 to 49	4	1	0
50 to 59	1	0	1
60 to 69	2	0	0
70+	0	0	1
Unknown	0	0	1
Total	21	3	7

Table 42: KSI by vulnerable road user and age 2003 - 2012

Table 42 shows 9 of the 21 motorcyclists KSI on local roads were aged between 12 and 16 years.

6.4 City of Kalgoorlie - Boulder

Refer also to the Goldfields - Esperance Region Local Road Crash Map Book 2012.

Table 43 displays all crashes in the City of Kalgoorlie - Boulder by crash location and road manager from 2003 to 2012.

Crash Location	Road Manager	Crashes	%
Midblock	State	537	13.6
Intersection	State, State	11	0.3
Intersection	State, LG	330	8.3
Intersection	State, LG, Other	0	0.0
Intersection	State, Other	2	0.1
Midblock	LG	1,634	41.3
Intersection	LG, LG	1,351	34.2
Intersection	LG, Other	0	0.0
Midblock	Other	0	0.0
Intersection	Other, Other	0	0.0
Other	Unknown	91	2.3
Total		3,956	100.0

Table 43: All crashes by crash location and road manager 2003 - 2012

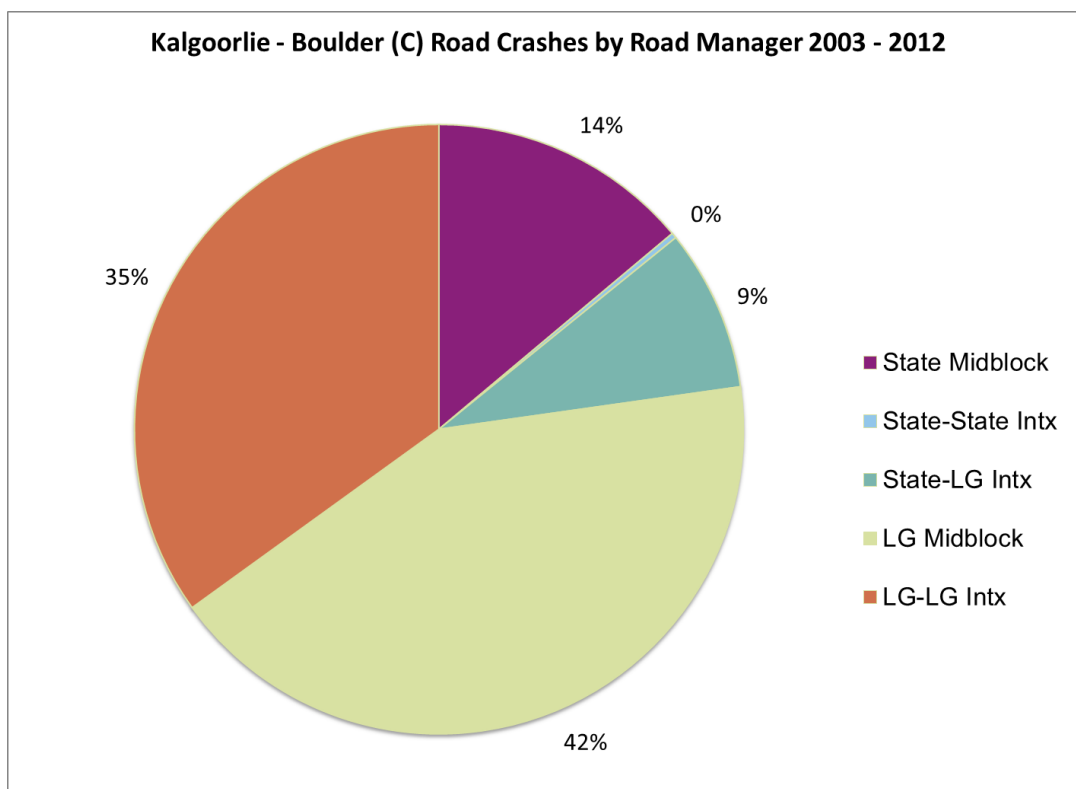


Figure 33: All crashes by crash location and road manager 2003 - 2012

Ignoring crashes at “Other” locations, Figure 33 shows:

- 77% of crashes occurred at local road locations including intersections where all legs were local roads.
- 9% of crashes occurred at intersections having both Local and State road legs.
- 14% of crashes occurred at State road locations including intersections where all legs were State roads.

Figure 33 also shows that 56% of crashes in the City of Kalgoorlie – Boulder occurred at midblock locations on Local and State roads. This is further investigated in the analysis of the crash nature.

The KSI trend for the City of Kalgoorlie-Boulder local road network from 2003 to 2012 is shown in Table 44.

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
KSI	13	22	33	24	13	22	15	18	11	15	186

Table 44: KSI trend 2003 - 2012

6.4.1 Crash Nature

A summary of KSI by crash nature on the City of Kalgoorlie - Boulder local road network from 2003 to 2012 is displayed in the table and figure below, which show:

- 39% of KSI occurred in single vehicle crashes of Hit Object or Non-Collision;
- 33% of KSI occurred in multi-vehicle crashes of Right Angle or Right turn Thru crash; and
- 13% of KSI occurred in single vehicle Hit Pedestrian crashes.

Crash Nature	Local Government and Region			
	2003 - 2012			2012
	Kalgoorlie-Boulder	Goldfields-Esperance	% for Kalgoorlie-Boulder	Kalgoorlie-Boulder
	n	n	%	n
Multi-Vehicle Crashes				
Rear End	11	13	84.6	0
Head On	2	8	25.0	0
Sideswipe	6	9	66.7	0
Right Angle	44	61	72.1	4
Right Turn Thru	17	22	77.3	2
Multi-Vehicle Other	5	7	71.4	2
Multi-Vehicle Total	85	120	70.8	8
Single Vehicle Crashes				
Hit Pedestrian	24	33	72.7	0
Hit Animal	3	7	42.9	0
Hit Object	44	132	33.3	5
Non-Collision	29	157	18.5	2
Single Vehicle Other	1	8	12.5	0
Single Vehicle Total	101	337	30.0	7
Total	186	457	40.7	15

Table 45: KSI by crash nature 2003 - 2012

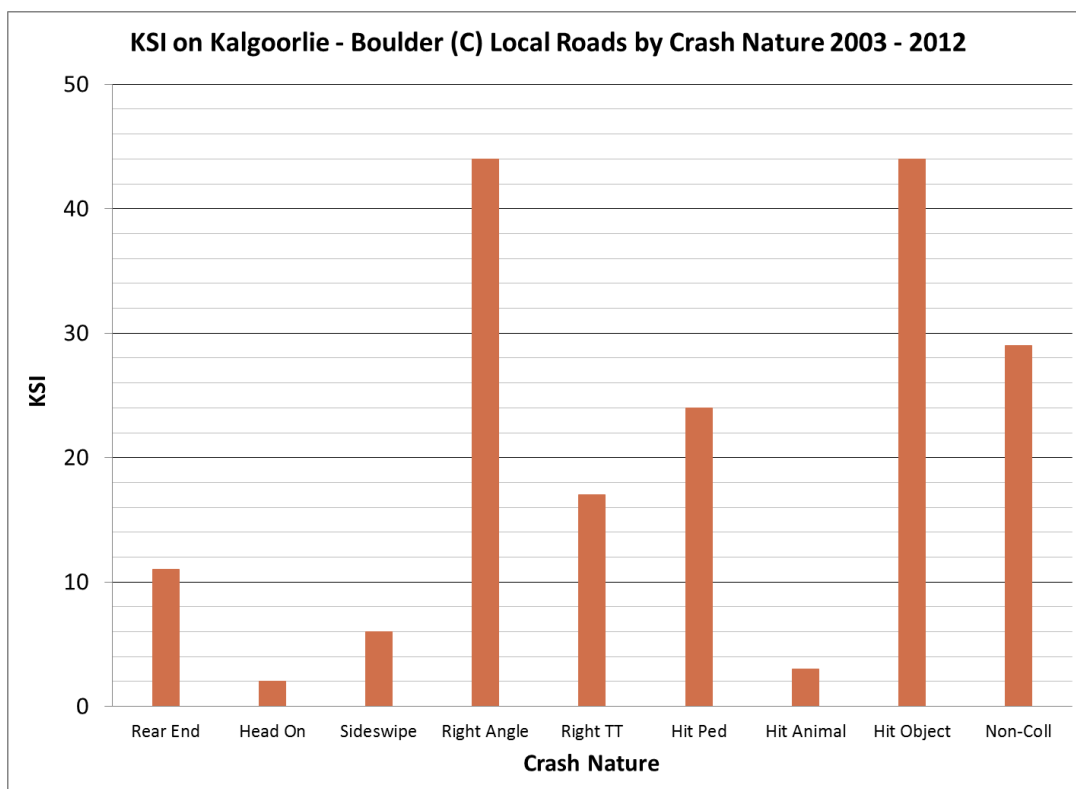


Figure 34: KSI by crash nature 2003 - 2012

6.4.2 Road User Type

KSI by road user type on the City of Kalgoorlie - Boulder local road network from 2003 to 2012 is shown in Table 46 and Figure 35.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	81	50	0	7	138
Passenger	33	25	0	9	67
Motorcyclist	37	5	0	1	43
Bicyclist	6	1	0	0	7
Pedestrian	26	16	0	1	43
Other	3	0	0	0	3
Total	186	97	0	18	301

Table 46: KSI by road user 2003 - 2012

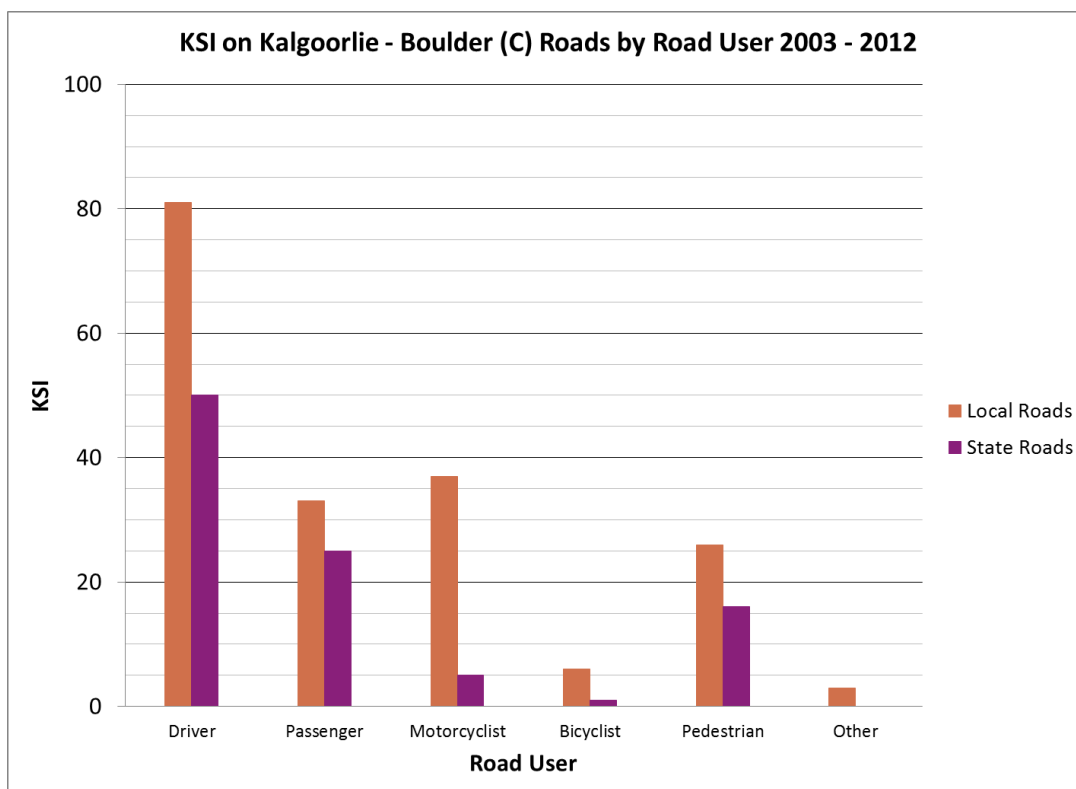


Figure 35: KSI by road user 2003 - 2012

From 2003 to 2012 approximately 37% of KSI on local roads were vulnerable road users defined as motorcyclists, bicyclists or pedestrians. KSI for 2012 is shown in Table 47.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	7	4	0	0	11
Passenger	2	3	0	1	6
Motorcyclist	4	0	0	0	4
Bicyclist	2	0	0	0	2
Pedestrian	0	6	0	0	6
Other	0	0	0	0	0
Total	15	13	0	1	29

Table 47: KSI by road user 2012

6.4.3 Road User Behaviour

The following table shows factors contributing to KSI on the City of Kalgoorlie - Boulder local road network. The analysis is restricted to police attended crashes for consistency. Note that the contributing factors are not necessarily mutually exclusive, that is, it is possible that more than one factor contributed to the crash.

Contributing Factor	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Inattention	30	15	0	0	45
Seatbelts Not Worn	13	15	0	7	35
Alcohol	23	16	0	1	40
Speed	39	32	0	1	72

Table 48: KSI by contributing factor 2003 - 2012 (police attended)

Speed, inattention, alcohol and non-wearing of seatbelts were all contributing factors in KSI on local roads.

6.4.4 Vulnerable Road Users

The following table shows vulnerable road user KSI by age on local roads from 2003 to 2012.

Age	Vulnerable Road User		
	Motorcyclist	Bicyclist	Pedestrian
	n	n	n
0 to 11	0	2	3
12 to 16	3	1	1
17 to 20	4	0	1
21 to 24	4	0	2
25 to 29	7	1	1
30 to 39	7	1	3
40 to 49	7	1	3
50 to 59	2	0	4
60 to 69	2	0	1
70+	1	0	2
Unknown	0	0	5
Total	37	6	26

Table 49: KSI by vulnerable road user and age 2003 - 2012

Table 49 shows:

- Motorcyclists and pedestrians are the dominant vulnerable road users KSI.
- Three of the six bicyclists KSI were aged 16 or younger.

6.5 Shire of Laverton

Refer also to the Goldfields - Esperance Region Local Road Crash Map Book 2012.

Table 50 displays all crashes in the Shire of Laverton by crash location and road manager from 2003 to 2012.

Crash Location	Road Manager	Crashes	%
Midblock	State	22	14.0
Intersection	State, State	0	0.0
Intersection	State, LG	6	3.8
Intersection	State, LG, Other	0	0.0
Intersection	State, Other	0	0.0
Midblock	LG	105	66.9
Intersection	LG, LG	4	2.5
Intersection	LG, Other	0	0.0
Midblock	Other	0	0.0
Intersection	Other, Other	0	0.0
Other	Unknown	20	12.7
Total		157	100.0

Table 50: All crashes by crash location and road manager 2003 - 2012

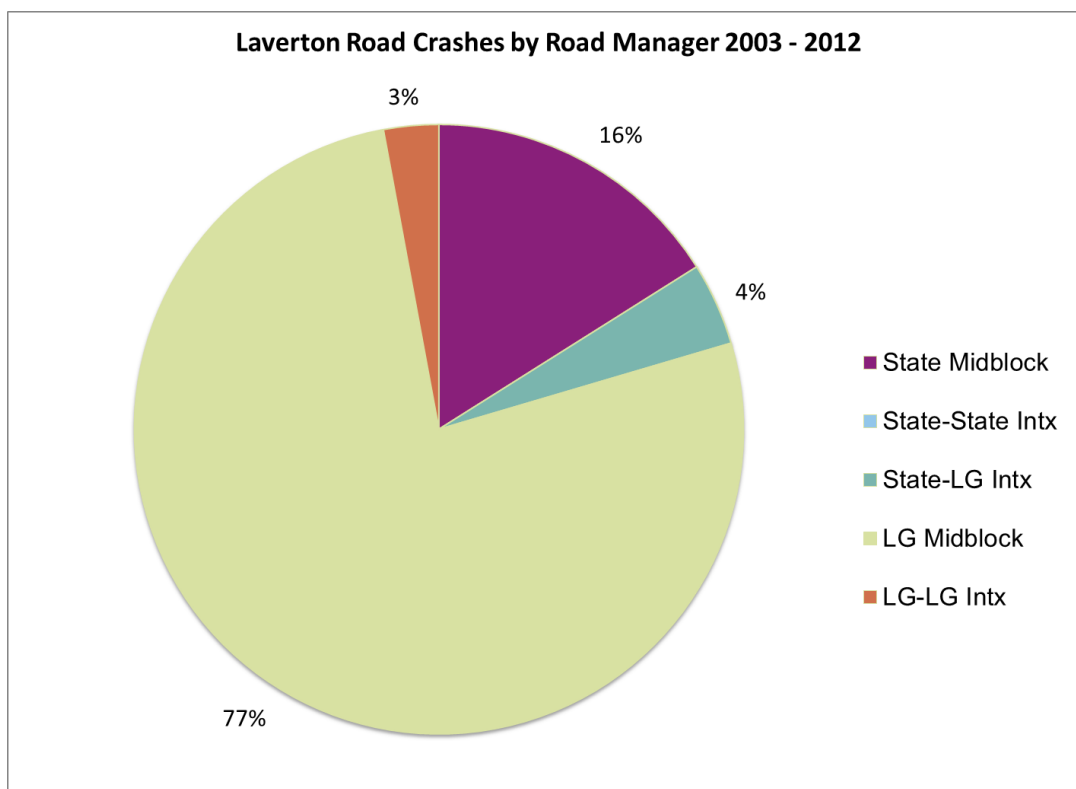


Figure 36: All crashes by crash location and road manager 2003 - 2012

Ignoring crashes at “Other” locations, Figure 36 shows:

- 80% of crashes occurred at local road locations including intersections where all legs were local roads.
- 4% of crashes occurred at intersections having both Local and State road legs.
- 16% of crashes occurred at State road locations including intersections where all legs were State roads.

Figure 36 also shows that 93% of crashes in the Shire of Laverton occurred at midblock locations on Local and State roads. This is further investigated in the analysis of the crash nature.

The KSI trend for the Shire of Laverton local road network from 2003 to 2012 is shown in Table 51.

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
KSI	3	1	18	11	7	9	1	2	6	1	59

Table 51: KSI trend 2003 - 2012

6.5.1 Crash Nature

A summary of KSI by crash nature on the Shire of Laverton local road network from 2003 to 2012 is displayed in the table and figure below, which show:

- 68% of KSI occurred in single vehicle crashes of Non-Collision; and
- 27% of KSI occurred in single vehicle crashes of Hit Object.

Crash Nature	Local Government and Region			
	2003 - 2012			2012
	Laverton	Goldfields-Esperance	% for Laverton	Laverton
	n	n	%	n
Multi-Vehicle Crashes				
Rear End	0	13	0.0	0
Head On	0	8	0.0	0
Sideswipe	0	9	0.0	0
Right Angle	0	61	0.0	0
Right Turn Thru	0	22	0.0	0
Multi-Vehicle Other	0	7	0.0	0
Multi-Vehicle Total	0	120	0.0	0
Single Vehicle Crashes				
Hit Pedestrian	1	33	3.0	0
Hit Animal	0	7	0.0	0
Hit Object	16	132	12.1	0
Non-Collision	40	157	25.5	1
Single Vehicle Other	2	8	25.0	0
Single Vehicle Total	59	337	17.5	1
Total	59	457	12.9	1

Table 52: KSI by crash nature 2003 - 2012

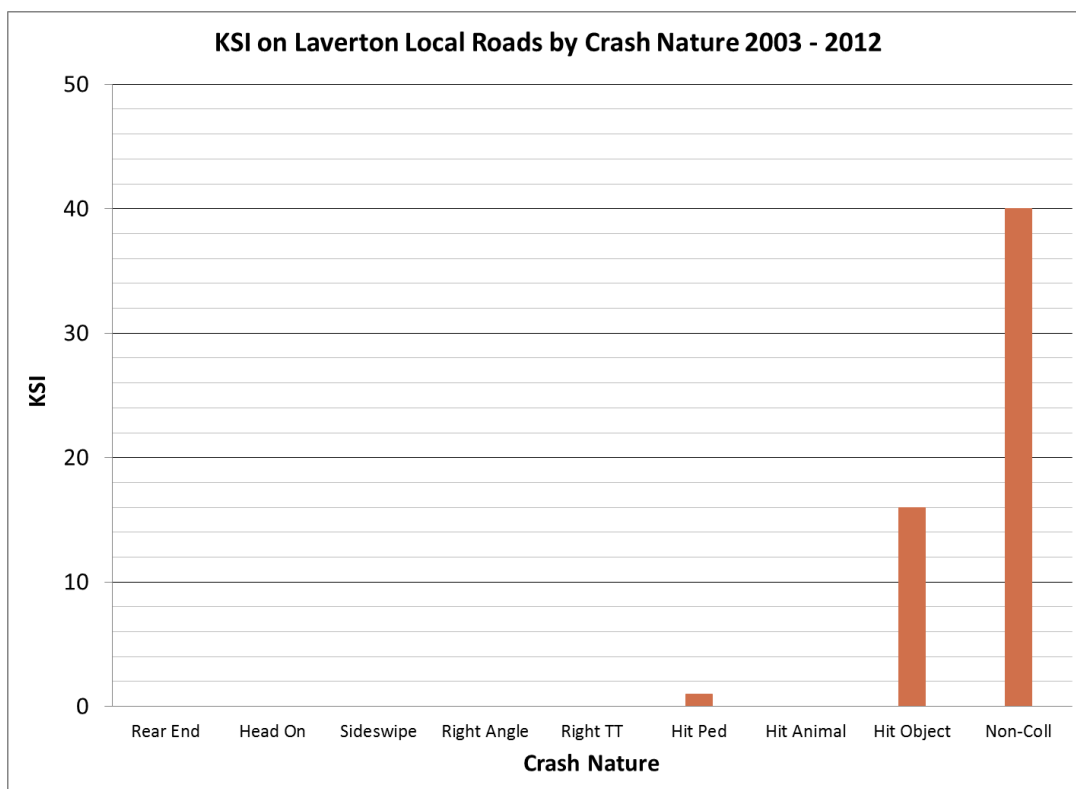


Figure 37: KSI by crash nature 2003 - 2012

6.5.2 Road User Type

KSI by road user type on the Shire of Laverton local road network from 2003 to 2012 is shown in Table 53 and Figure 38.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	19	2	0	2	23
Passenger	37	4	0	3	44
Motorcyclist	2	0	0	0	2
Bicyclist	0	0	0	0	0
Pedestrian	1	0	0	1	2
Other	0	0	0	2	2
Total	59	6	0	8	73

Table 53: KSI by road user 2003 - 2012

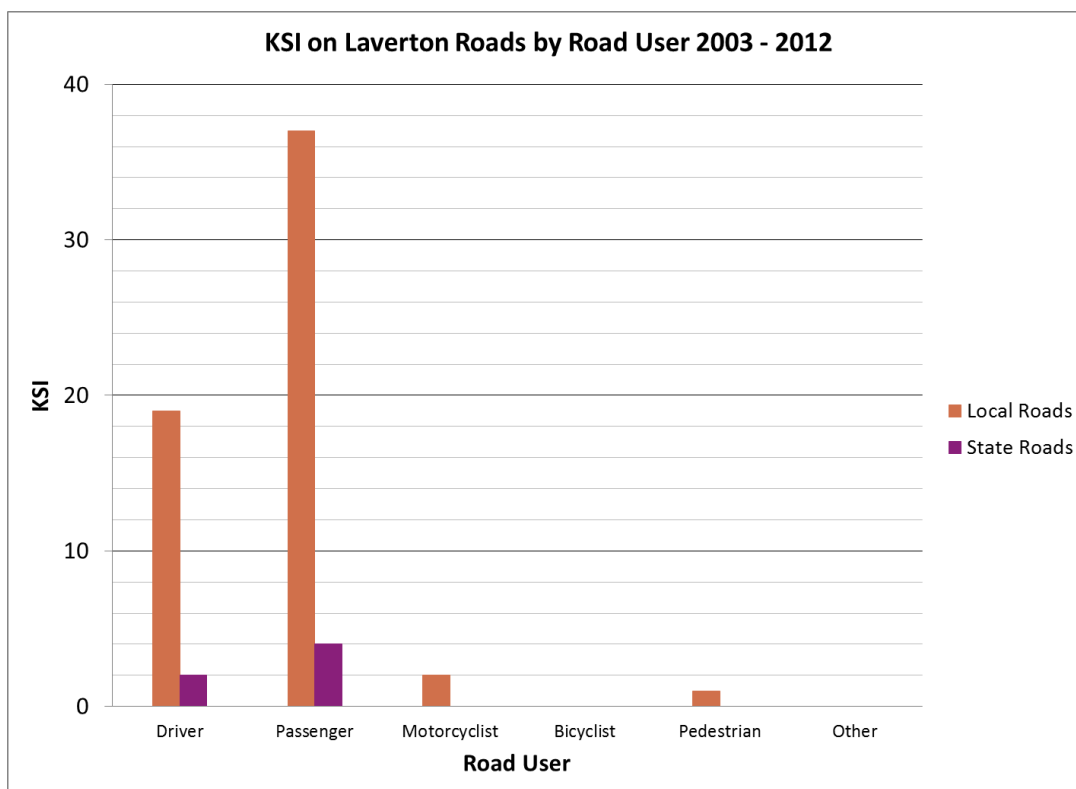


Figure 38: KSI by road user 2003 - 2012

From 2003 to 2012 approximately 63% of KSI on local roads were passengers. KSI for 2012 is shown in Table 54.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	0	0	0	0	0
Passenger	1	0	0	0	1
Motorcyclist	0	0	0	0	0
Bicyclist	0	0	0	0	0
Pedestrian	0	0	0	0	0
Other	0	0	0	2	2
Total	1	0	0	2	3

Table 54: KSI by road user 2012

6.5.3 Road User Behaviour

The following table shows factors contributing to KSI on the Shire of Laverton local road network. The analysis is restricted to police attended crashes for consistency. Note that the contributing factors are not necessarily mutually exclusive, that is, it is possible that more than one factor contributed to the crash.

Contributing Factor	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Inattention	2	1	0	0	3
Seatbelts Not Worn	31	1	0	0	32
Alcohol	12	0	0	3	15
Speed	29	0	0	3	32

Table 55: KSI by contributing factor 2003 - 2012 (police attended)

The non-wearing of seatbelts and speed were the dominant contributing factors in KSI on local roads. This is consistent with the high percentage of passengers killed in Non-Collision crashes.

6.5.4 Vulnerable Road Users

The following table shows vulnerable road user KSI by age on local roads from 2003 to 2012. A vulnerable road user is defined as a motorcyclist, bicyclist or pedestrian.

Age	Vulnerable Road User		
	Motorcyclist	Bicyclist	Pedestrian
	n	n	n
0 to 11	0	0	0
12 to 16	0	0	0
17 to 20	0	0	0
21 to 24	0	0	0
25 to 29	1	0	1
30 to 39	1	0	0
40 to 49	0	0	0
50 to 59	0	0	0
60 to 69	0	0	0
70+	0	0	0
Unknown	0	0	0
Total	2	0	1

Table 56: KSI by vulnerable road user and age 2003 - 2012

6.6 Shire of Leonora

Refer also to the Goldfields - Esperance Region Local Road Crash Map Book 2012.

Table 57 displays all crashes in the Shire of Leonora by crash location and road manager from 2003 to 2012.

Crash Location	Road Manager	Crashes	%
Midblock	State	115	57.8
Intersection	State, State	1	0.5
Intersection	State, LG	9	4.5
Intersection	State, LG, Other	0	0.0
Intersection	State, Other	0	0.0
Midblock	LG	41	20.6
Intersection	LG, LG	9	4.5
Intersection	LG, Other	0	0.0
Midblock	Other	0	0.0
Intersection	Other, Other	0	0.0
Other	Unknown	24	12.1
Total		199	100.0

Table 57: All crashes by crash location and road manager 2003 - 2012

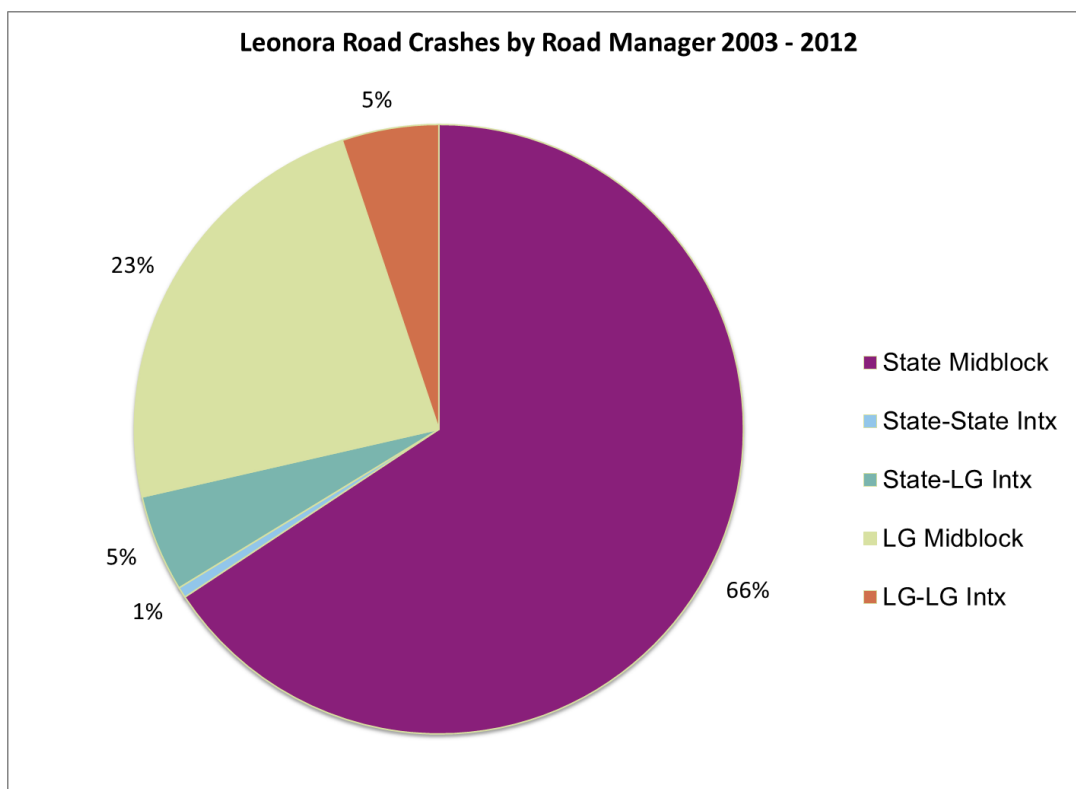


Figure 39: All crashes by crash location and road manager 2003 - 2012

Ignoring crashes at “Other” locations, Figure 39 shows:

- 28% of crashes occurred at local road locations including intersections where all legs were local roads.
- 5% of crashes occurred at intersections having both Local and State road legs.
- 67% of crashes occurred at State road locations including intersections where all legs were State roads.

Figure 39 also shows that 89% of crashes in the Shire of Leonora occurred at midblock locations on Local and State roads. This is further investigated in the analysis of the crash nature.

The KSI trend for the Shire of Leonora local road network from 2003 to 2012 is shown in Table 58.

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
KSI	5	0	0	8	0	1	0	1	0	1	16

Table 58: KSI trend 2003 - 2012

6.6.1 Crash Nature

A summary of KSI by crash nature on the Shire of Leonora local road network from 2003 to 2012 is displayed in the table and figure below, which show:

- 81% of KSI occurred in single vehicle crashes of Non-Collision.

Crash Nature	Local Government and Region			
	2003 - 2012			2012
	Leonora	Goldfields-Esperance	% for Leonora	Leonora
	n	n	%	n
Multi-Vehicle Crashes				
Rear End	0	13	0.0	0
Head On	0	8	0.0	0
Sideswipe	0	9	0.0	0
Right Angle	0	61	0.0	0
Right Turn Thru	0	22	0.0	0
Multi-Vehicle Other	0	7	0.0	0
Multi-Vehicle Total	0	120	0.0	0
Single Vehicle Crashes				
Hit Pedestrian	0	33	0.0	0
Hit Animal	0	7	0.0	0
Hit Object	2	132	1.5	1
Non-Collision	13	157	8.3	0
Single Vehicle Other	1	8	12.5	0
Single Vehicle Total	16	337	4.7	1
Total	16	457	3.5	1

Table 59: KSI by crash nature 2003 - 2012

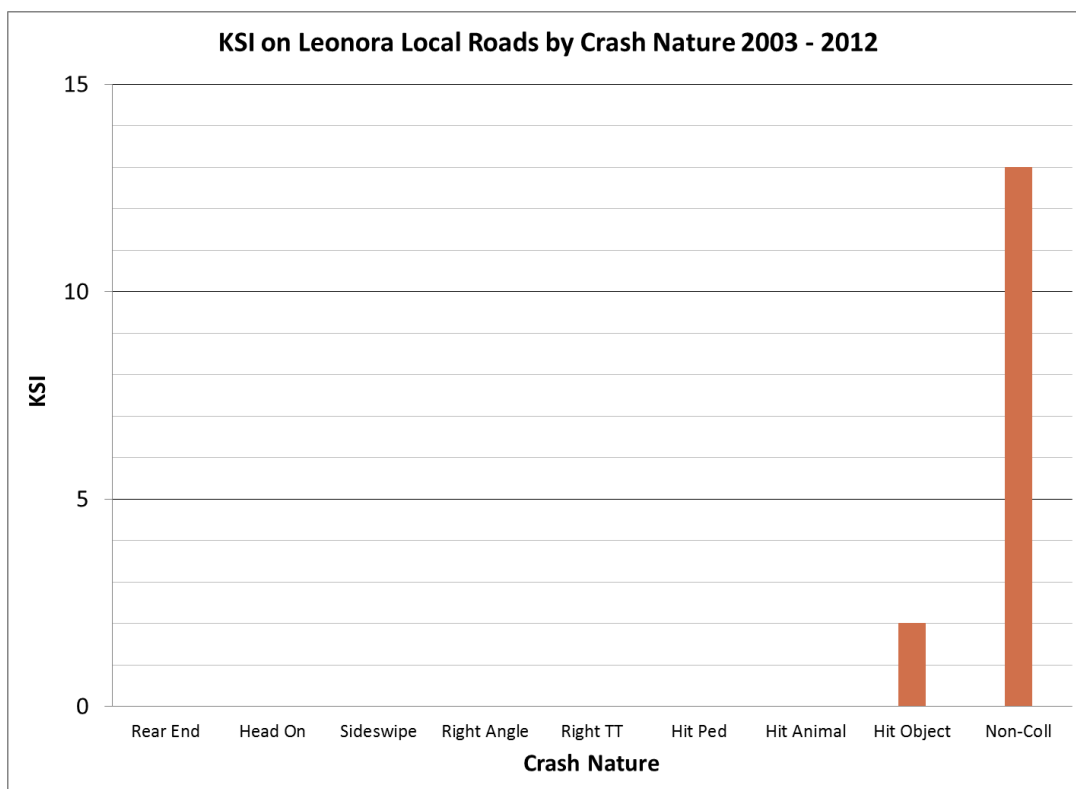


Figure 40: KSI by crash nature 2003 - 2012

6.6.2 Road User Type

KSI by road user type on the Shire of Leonora local road network from 2003 to 2012 is shown in Table 60 and Figure 41.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	7	13	0	0	20
Passenger	9	7	0	1	17
Motorcyclist	0	1	0	0	1
Bicyclist	0	0	0	0	0
Pedestrian	0	1	0	0	1
Other	0	0	0	0	0
Total	16	22	0	1	39

Table 60: KSI by road user 2003 - 2012

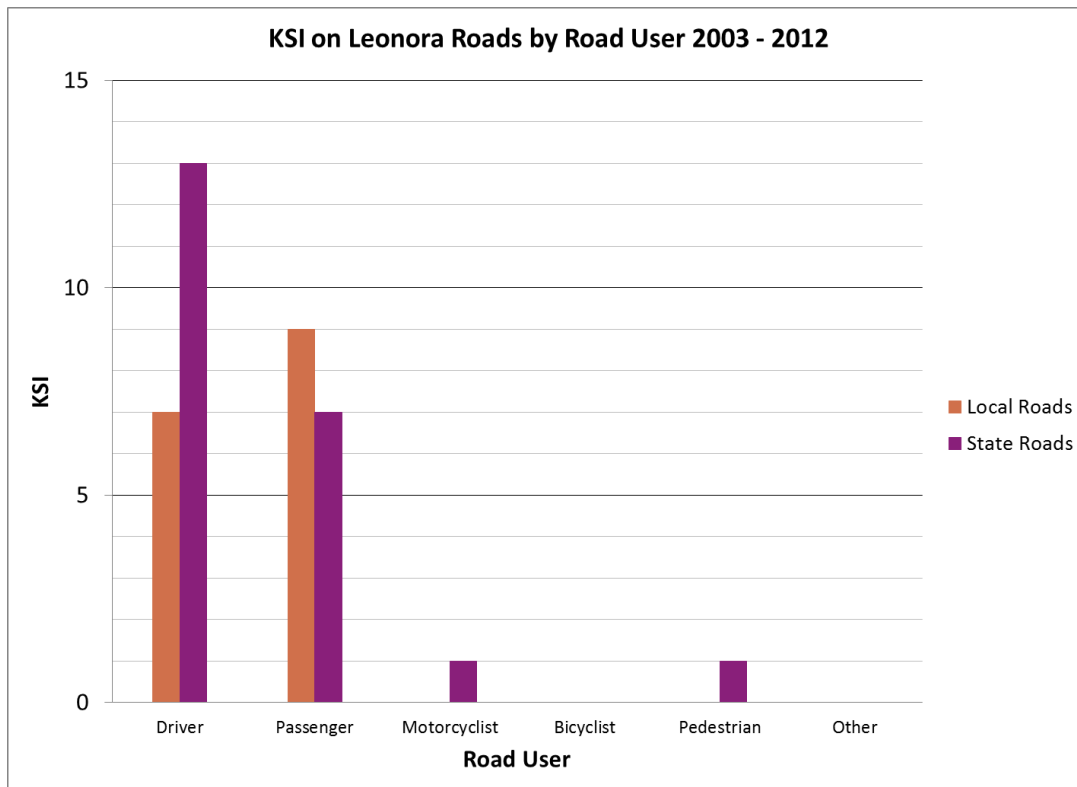


Figure 41: KSI by road user 2003 - 2012

From 2003 to 2012 approximately 56% of KSI on local roads were passengers. KSI for 2012 is shown in Table 61.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	1	0	0	0	1
Passenger	0	0	0	0	0
Motorcyclist	0	0	0	0	0
Bicyclist	0	0	0	0	0
Pedestrian	0	0	0	0	0
Other	0	0	0	0	0
Total	1	0	0	0	1

Table 61: KSI by road user 2012

6.6.3 Road User Behaviour

The following table shows factors contributing to KSI on the Shire of Leonora local road network. The analysis is restricted to police attended crashes for consistency. Note that the contributing factors are not necessarily mutually exclusive, that is, it is possible that more than one factor contributed to the crash.

Contributing Factor	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Inattention	0	2	0	0	2
Seatbelts Not Worn	12	6	0	0	18
Alcohol	9	5	0	0	14
Speed	6	4	0	0	10

Table 62: KSI by contributing factor 2003 - 2012 (police attended)

Non-wearing of seatbelts and alcohol were the dominant contributing factors in KSI on local roads. This is consistent with the high percentage of passengers killed in Non-Collision crashes.

6.6.4 Vulnerable Road Users

There were no vulnerable road users KSI on local roads from 2003 to 2012. A vulnerable road user is defined as a motorcyclist, bicyclist or pedestrian.

6.7 Shire of Menzies

Refer also to the Goldfields - Esperance Region Local Road Crash Map Book 2012.

Table 63 displays all crashes in the Shire of Menzies by crash location and road manager from 2003 to 2012.

Crash Location	Road Manager	Crashes	%
Midblock	State	66	52.4
Intersection	State, State	0	0.0
Intersection	State, LG	2	1.6
Intersection	State, LG, Other	0	0.0
Intersection	State, Other	0	0.0
Midblock	LG	47	37.3
Intersection	LG, LG	1	0.8
Intersection	LG, Other	0	0.0
Midblock	Other	0	0.0
Intersection	Other, Other	0	0.0
Other	Unknown	10	7.9
Total		126	100.0

Table 63: All crashes by crash location and road manager 2003 - 2012

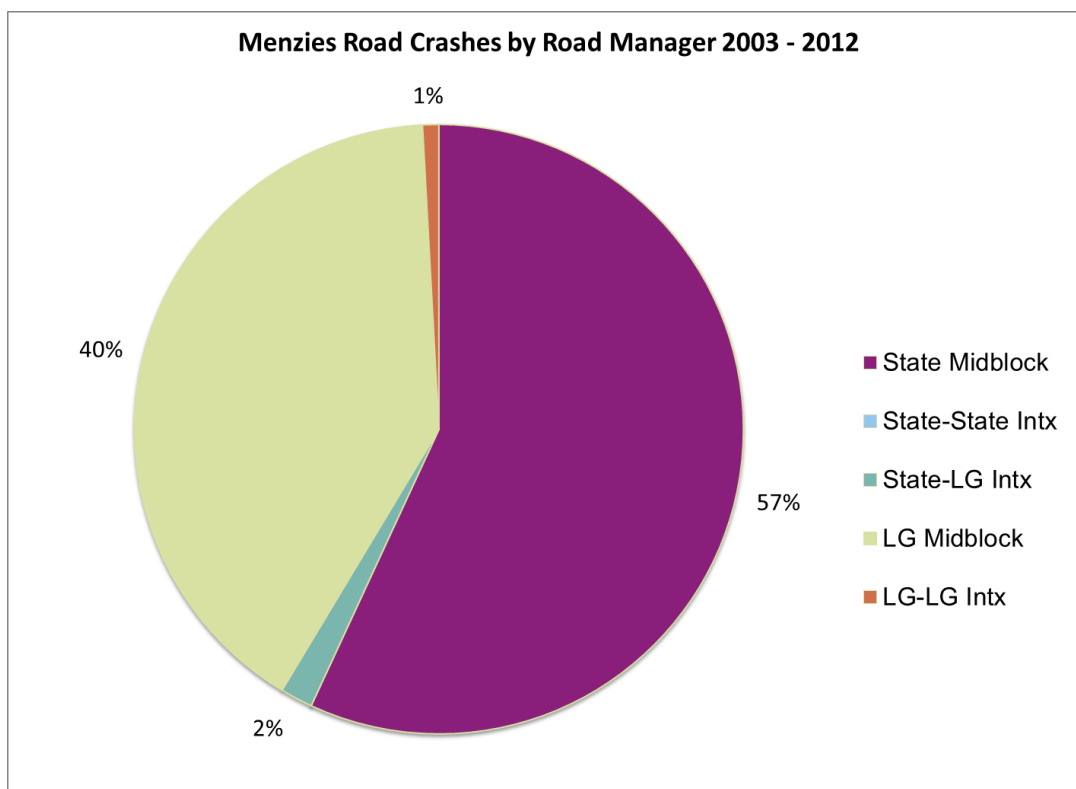


Figure 42: All crashes by crash location and road manager 2003 - 2012

Ignoring crashes at “Other” locations, Figure 42 shows:

- 41% of crashes occurred at local road locations including intersections where all legs were local roads.
- 2% of crashes occurred at intersections having both Local and State road legs.
- 57% of crashes occurred at State road locations including intersections where all legs were State roads.

Figure 42 also shows that 97% of crashes in the Shire of Menzies occurred at midblock locations on Local and State roads. This is further investigated in the analysis of the crash nature.

The KSI trend for the Shire of Menzies local road network from 2003 to 2012 is shown in Table 64.

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
KSI	1	4	2	4	1	0	3	2	0	0	17

Table 64: KSI trend 2003 - 2012

6.7.1 Crash Nature

A summary of KSI by crash nature on the Shire of Menzies local road network from 2003 to 2012 is displayed in the table and figure below, which show:

- 94% of KSI occurred in single vehicle crashes of Hit Object or Non-Collision.

Crash Nature	Local Government and Region			
	2003 - 2012			2012
	Menzies	Goldfields-Esperance	% for Menzies	Menzies
	n	n	%	n
Multi-Vehicle Crashes				
Rear End	0	13	0.0	0
Head On	0	8	0.0	0
Sideswipe	0	9	0.0	0
Right Angle	1	61	1.6	0
Right Turn Thru	0	22	0.0	0
Multi-Vehicle Other	0	7	0.0	0
Multi-Vehicle Total	1	120	0.8	0
Single Vehicle Crashes				
Hit Pedestrian	0	33	0.0	0
Hit Animal	0	7	0.0	0
Hit Object	8	132	6.1	0
Non-Collision	8	157	5.1	0
Single Vehicle Other	0	8	0.0	0
Single Vehicle Total	16	337	4.7	0
Total	17	457	3.7	0

Table 65: KSI by crash nature 2003 - 2012

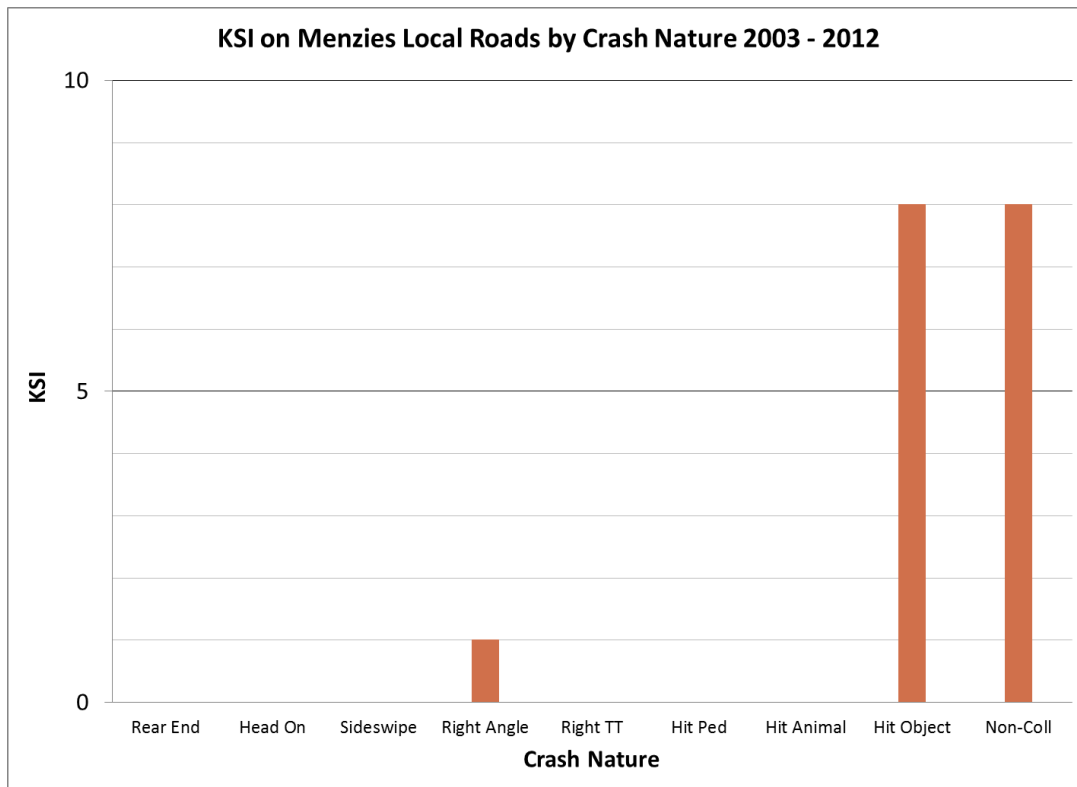


Figure 43: KSI by crash nature 2003 - 2012

6.7.2 Road User Type

KSI by road user type on the Shire of Menzies local road network from 2003 to 2012 is shown in Table 66 and Figure 44.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	9	10	0	0	19
Passenger	7	7	0	0	14
Motorcyclist	1	0	0	0	1
Bicyclist	0	0	0	0	0
Pedestrian	0	0	0	0	0
Other	0	0	0	0	0
Total	17	17	0	0	34

Table 66: KSI by road user 2003 - 2012

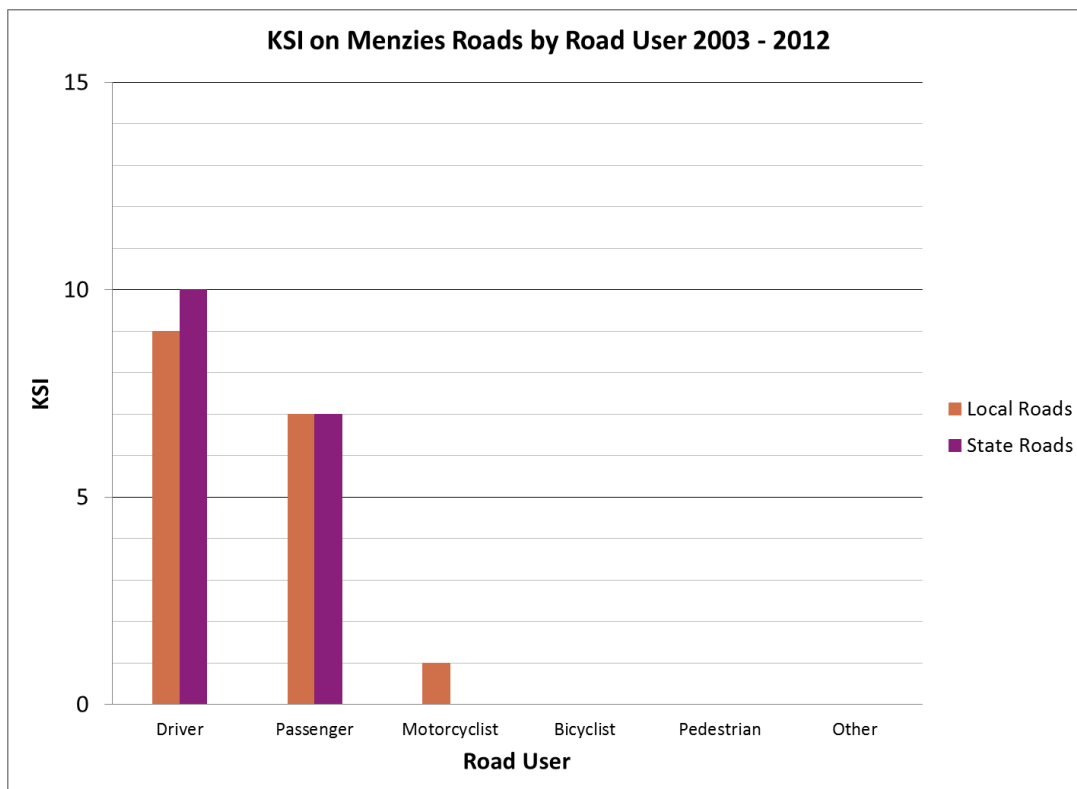


Figure 44: KSI by road user 2003 - 2012

From 2003 to 2012 approximately 94% of KSI on local roads were drivers or passengers. There were no KSI on local roads during 2012.

6.7.3 Road User Behaviour

The following table shows factors contributing to KSI on the Shire of Menzies local road network. The analysis is restricted to police attended crashes for consistency. Note that the contributing factors are not necessarily mutually exclusive, that is, it is possible that more than one factor contributed to the crash.

Contributing Factor	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Inattention	1	2	0	0	3
Seatbelts Not Worn	7	1	0	0	8
Alcohol	6	2	0	0	8
Speed	5	5	0	0	10

Table 67: KSI by contributing factor 2003 - 2012 (police attended)

Non-wearing of seatbelts, alcohol and speed were dominant contributing factors in KSI on local roads.

6.7.4 Vulnerable Road Users

The following table shows vulnerable road user KSI by age on local roads from 2003 to 2012. A vulnerable road user is defined as a motorcyclist, bicyclist or pedestrian.

Age	Vulnerable Road User		
	Motorcyclist	Bicyclist	Pedestrian
	n	n	n
0 to 11	0	0	0
12 to 16	0	0	0
17 to 20	0	0	0
21 to 24	0	0	0
25 to 29	0	0	0
30 to 39	0	0	0
40 to 49	0	0	0
50 to 59	1	0	0
60 to 69	0	0	0
70+	0	0	0
Unknown	0	0	0
Total	1	0	0

Table 68: KSI by vulnerable road user and age 2003 - 2012

6.8 Shire of Ngaanyatjarraku

Refer also to the Goldfields - Esperance Region Local Road Crash Map Book 2012.

Table 69 displays all crashes in the Shire of Ngaanyatjarraku by crash location and road manager from 2003 to 2012. There are no State roads in the Shire of Ngaanyatjarraku.

Crash Location	Road Manager	Crashes	%
Midblock	State	0	0.0
Intersection	State, State	0	0.0
Intersection	State, LG	0	0.0
Midblock	LG	81	85.3
Intersection	LG, LG	0	0.0
Other	Unknown	14	14.7
Total		95	100.0

Table 69: All crashes by crash location and road manager 2003 - 2012

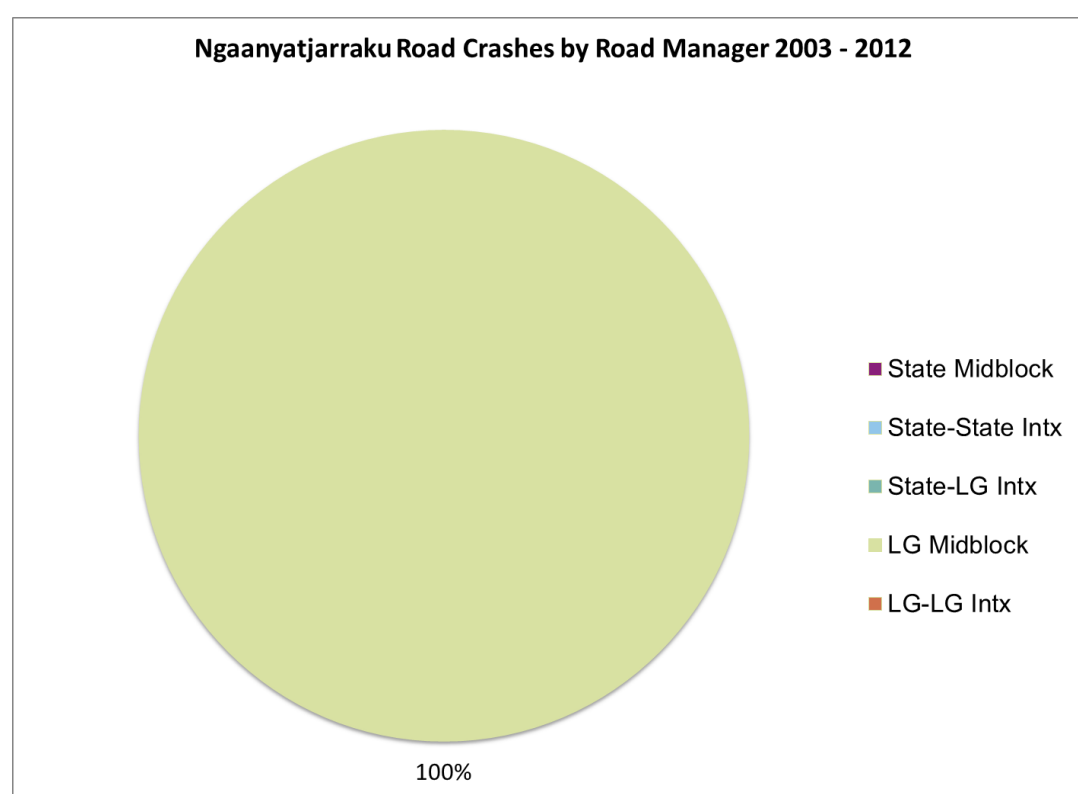


Figure 45: All crashes by crash location and road manager 2003 - 2012

Ignoring crashes at “Other” locations, Figure 45 shows that all crashes in the Shire of Ngaanyatjarraku occurred at local road midblock locations. This is further investigated in the analysis of the crash nature.

Table 70 shows the number of KSI for the Shire of Ngaanyatarraku from 2003 to 2012.

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
KSI	0	1	1	3	3	4	2	6	4	5	29

Table 70: KSI trend 2003 - 2012

6.8.1 Crash Nature

A summary of KSI by crash nature on the Shire of Ngaanyatjarraku local road network from 2003 to 2012 is displayed in the table and figure below, which show:

- 79% of KSI occurred in single vehicle crashes of Non-Collision.

Crash Nature	Local Government and Region			
	2003 - 2012			2012
	Ngaanyatjarraku	Goldfields-Esperance	% for Ngaanyatjarraku	Ngaanyatjarraku
	n	n	%	n
Multi-Vehicle				
Rear End	0	13	0.0	0
Head On	0	8	0.0	0
Sideswipe	0	9	0.0	0
Right Angle	0	61	0.0	0
Right Turn Thru	0	22	0.0	0
Multi-Vehicle Other	2	7	28.6	0
Multi-Vehicle Total	2	120	1.7	0
Single Vehicle				
Hit Pedestrian	0	33	0.0	0
Hit Animal	1	7	14.3	1
Hit Object	3	132	2.3	0
Non-Collision	23	157	14.6	4
Single Vehicle Other	0	8	0.0	0
Single Vehicle Tot.	27	337	8.0	5
Total	29	457	6.3	5

Table 71: KSI by crash nature 2003 - 2012

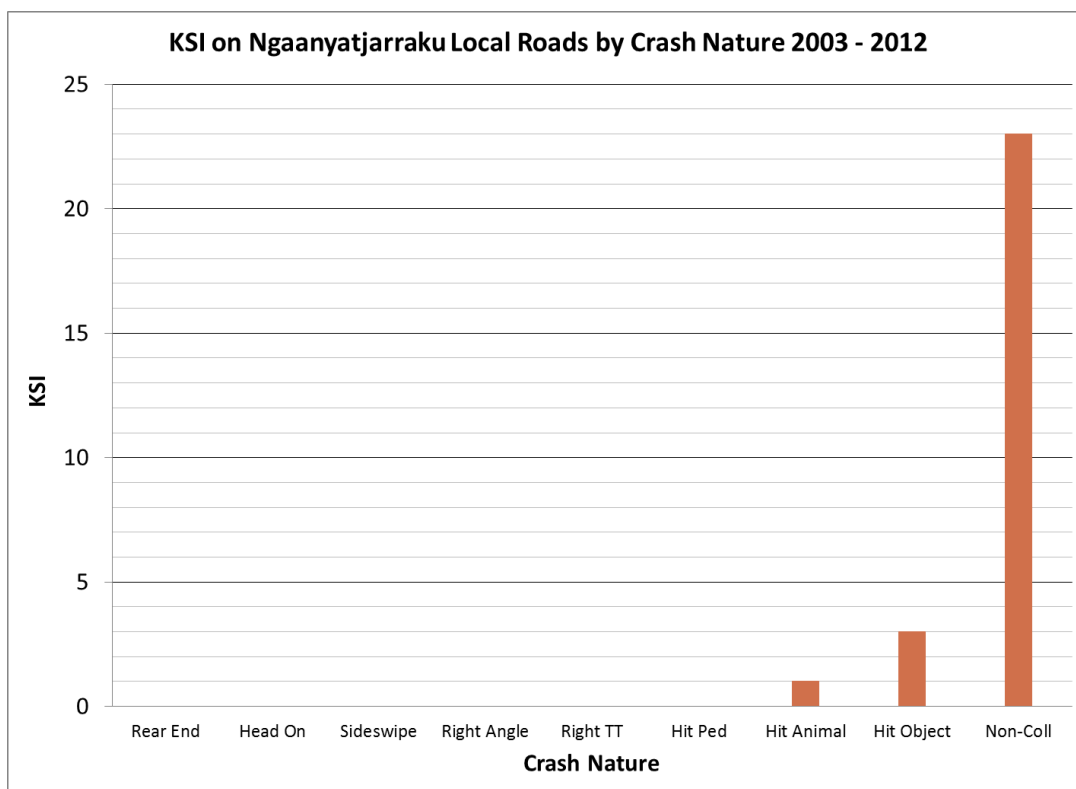


Figure 46: KSI by crash nature 2003 - 2012

6.8.2 Road User Type

KSI by road user type on the Shire of Ngaanyatjarraku local road network from 2003 to 2012 is shown in Table 72 and Figure 47.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	7	0	0	3	10
Passenger	16	0	0	8	24
Motorcyclist	5	0	0	0	5
Bicyclist	0	0	0	0	0
Pedestrian	1	0	0	0	1
Other	0	0	0	0	0
Total	29	0	0	11	40

Table 72: KSI by road user 2003 - 2012

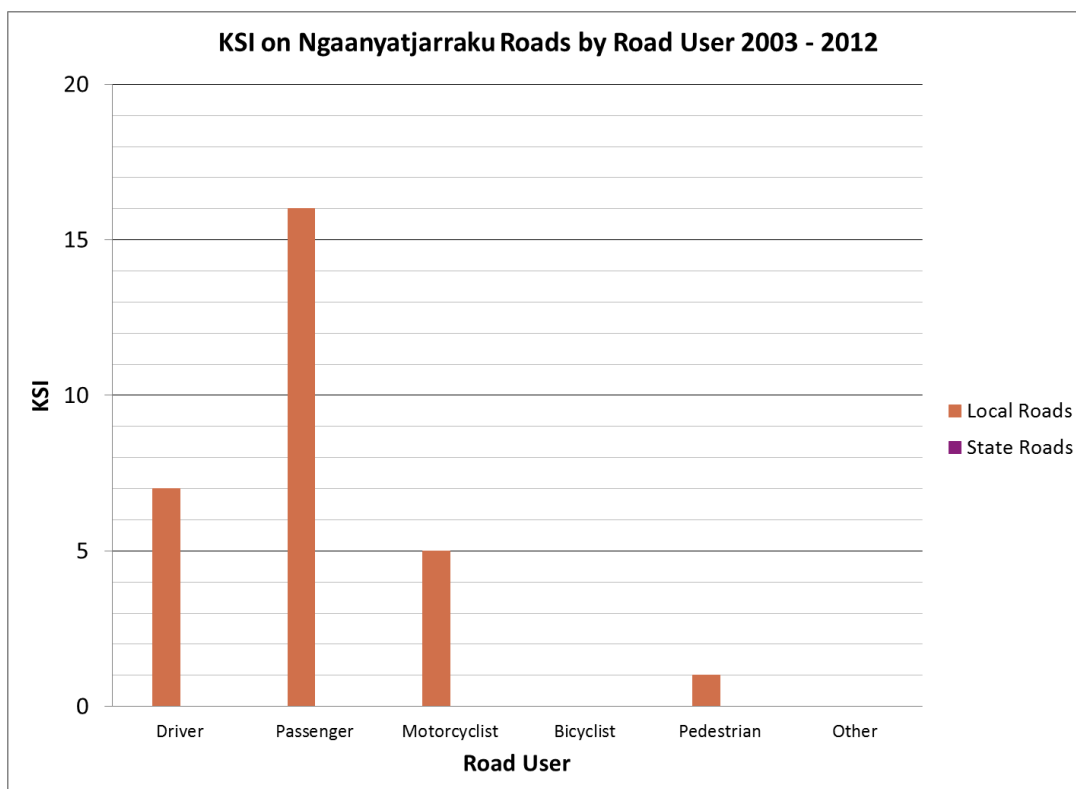


Figure 47: KSI by road user 2003 - 2012

From 2003 to 2012 approximately 55% of KSI on local roads were passengers. KSI for 2012 is shown in Table 73.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	1	0	0	0	1
Passenger	3	0	0	0	3
Motorcyclist	1	0	0	0	1
Bicyclist	0	0	0	0	0
Pedestrian	0	0	0	0	0
Other	0	0	0	0	0
Total	5	0	0	0	5

Table 73: KSI by road user 2012

6.8.3 Road User Behaviour

The following table shows factors contributing to KSI on the Shire of Ngaanyatjaraku local road network. The analysis is restricted to police attended crashes for consistency. Note that the contributing factors are not necessarily mutually exclusive, that is, it is possible that more than one factor contributed to the crash.

Contributing Factor	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Inattention	0	0	0	0	0
Seatbelts Not Worn	14	0	0	3	17
Alcohol	2	0	0	0	2
Speed	6	0	0	4	10

Table 74: KSI by contributing factor 2003 - 2012 (police attended)

Non-wearing of seatbelts and speed were dominant contributing factors in KSI on local roads. This is consistent with the high percentage of passengers killed in Non-Collision crashes.

6.8.4 Vulnerable Road Users

The following table shows vulnerable road user KSI by age on local roads from 2003 to 2012. A vulnerable road user is defined as a motorcyclist, bicyclist or pedestrian.

Age	Vulnerable Road User		
	Motorcyclist	Bicyclist	Pedestrian
	n	n	n
0 to 11	0	0	0
12 to 16	0	0	0
17 to 20	0	0	1
21 to 24	0	0	0
25 to 29	0	0	0
30 to 39	0	0	0
40 to 49	2	0	0
50 to 59	2	0	0
60 to 69	0	0	0
70+	0	0	0
Unknown	1	0	0
Total	5	0	1

Table 75: KSI by vulnerable road user and age 2003 - 2012

Table 75 shows that four of the five motorcyclists KSI were aged 40 to 59.

6.9 Shire of Wiluna

Refer also to the Goldfields - Esperance Region Local Road Crash Map Book 2012.

Table 76 displays all crashes in the Shire of Wiluna by crash location and road manager from 2003 to 2012.

Crash Location	Road Manager	Crashes	%
Midblock	State	32	39.0
Intersection	State, State	0	0.0
Intersection	State, LG	1	1.2
Intersection	State, LG, Other	0	0.0
Intersection	State, Other	0	0.0
Midblock	LG	25	30.5
Intersection	LG, LG	2	2.4
Intersection	LG, Other	0	0.0
Midblock	Other	0	0.0
Intersection	Other, Other	0	0.0
Other	Unknown	22	26.8
Total		82	100.0

Table 76: All crashes by crash location and road manager 2003 - 2012

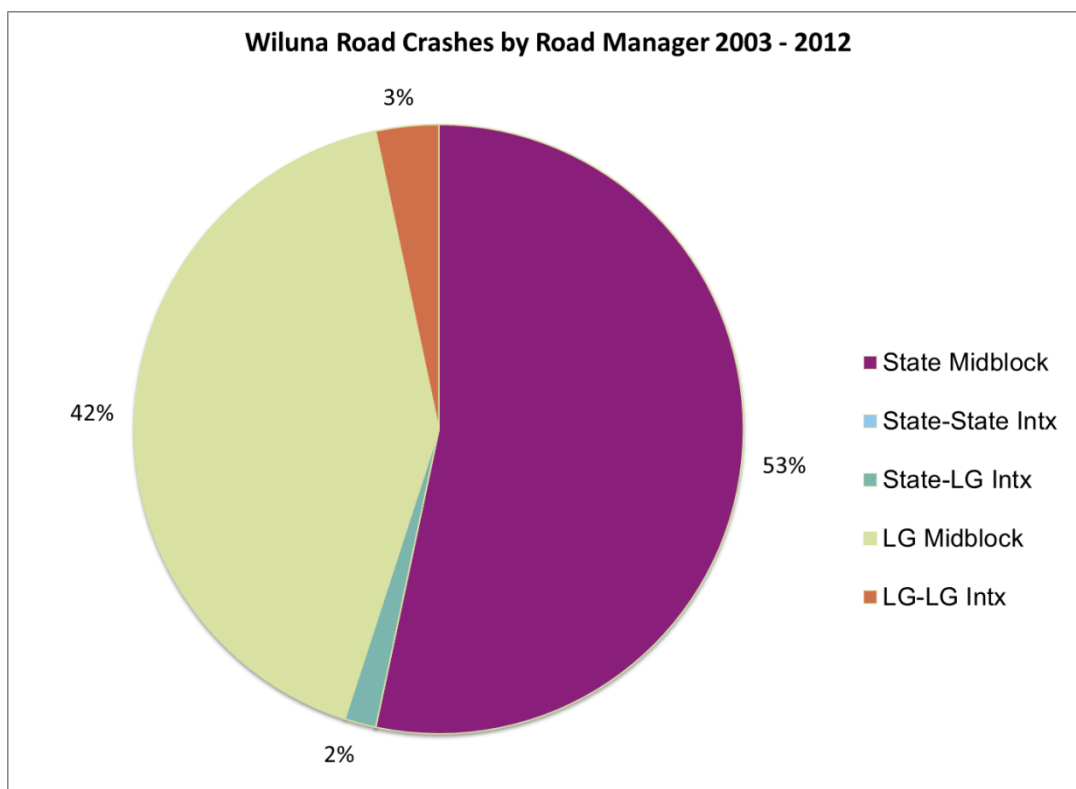


Figure 48: All crashes by crash location and road manager 2003 - 2012

Ignoring crashes at "Other" locations, Figure 48 shows:

- 45% of crashes occurred at local road locations including intersections where all legs were local roads
- 2% of crashes occurred at intersections having both Local and State road legs.
- 53% of crashes occurred at State road locations including intersections where all legs were State roads.

Figure 48 also shows that 95% of crashes in the Shire of Wiluna occurred at midblock locations on Local and State roads. This is further investigated in the analysis of the crash nature.

The KSI trend for the Shire of Wiluna local road network from 2003 to 2012 is shown in Table 77.

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
KSI	3	0	0	0	2	0	1	0	0	1	7

Table 77: KSI trend 2003 - 2012

6.9.1 Crash Nature

A summary of KSI by crash nature on the Shire of Wiluna local road network from 2003 to 2012 is displayed in the table and figure below, which show:

- 57% of KSI occurred in single vehicle crashes of Hit Object or Non-Collision; and
- 28% of KSI occurred in single vehicle crashes of Hit Animal.

Crash Nature	Local Government and Region			
	2003 - 2012			2012
	Wiluna	Goldfields-Esperance	% for Wiluna	Wiluna
	n	n	%	n
Multi-Vehicle Crashes				
Rear End	0	13	0.0	0
Head On	0	8	0.0	0
Sideswipe	0	9	0.0	0
Right Angle	0	61	0.0	0
Right Turn Thru	0	22	0.0	0
Multi-Vehicle Other	0	7	0.0	0
Multi-Vehicle Total	0	120	0.0	0
Single Vehicle Crashes				
Hit Pedestrian	1	33	3.0	0
Hit Animal	2	7	28.6	0
Hit Object	3	132	2.3	1
Non-Collision	1	157	0.6	0
Single Vehicle Other	0	8	0.0	0
Single Vehicle Total	7	337	2.1	1
Total	7	457	1.5	1

Table 78: KSI by crash nature 2003 - 2012

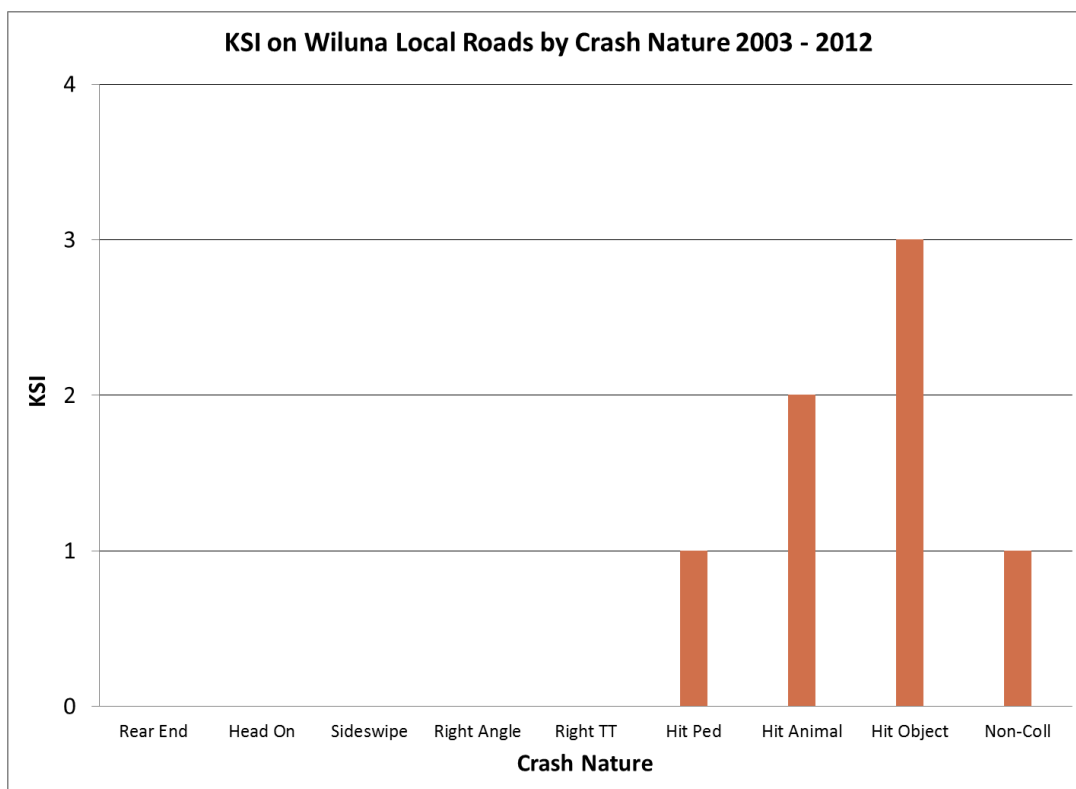


Figure 49: KSI by crash nature 2003 - 2012

6.9.2 Road User Type

KSI by road user type on the Shire of Wiluna local road network from 2003 to 2012 is shown in Table 79 and Figure 50.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	4	5	0	1	10
Passenger	2	3	0	1	6
Motorcyclist	0	0	0	0	0
Bicyclist	0	0	0	0	0
Pedestrian	1	0	0	0	1
Other	0	0	0	0	0
Total	7	8	0	2	17

Table 79: KSI by road user 2003 - 2012

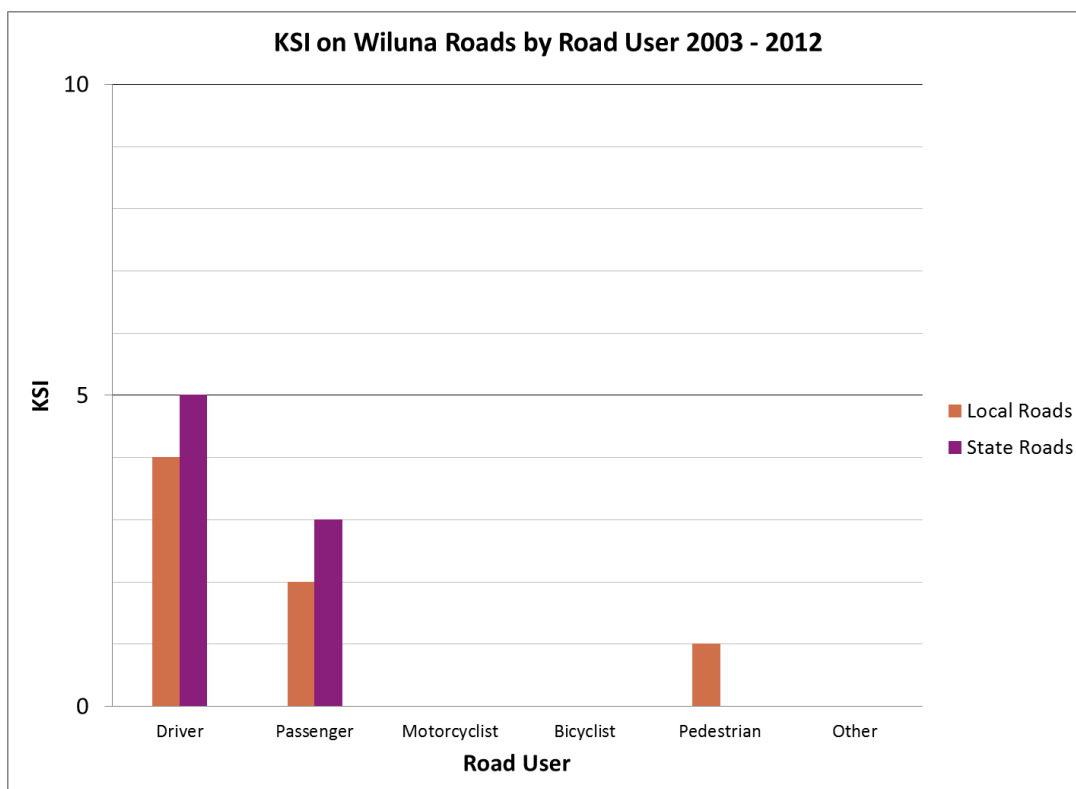


Figure 50: KSI by road user 2003 - 2012

From 2003 to 2012 approximately 86% of KSI on local roads were drivers or passengers. KSI for 2012 is shown in Table 80.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	1	1	0	0	2
Passenger	0	0	0	0	0
Motorcyclist	0	0	0	0	0
Bicyclist	0	0	0	0	0
Pedestrian	0	0	0	0	0
Other	0	0	0	0	0
Total	1	1	0	0	2

Table 80: KSI by road user 2012

6.9.3 Road User Behaviour

The following table shows factors contributing to KSI on the Shire of Wiluna local road network. The analysis is restricted to police attended crashes for consistency. Note that the contributing factors are not necessarily mutually exclusive, that is, it is possible that more than one factor contributed to the crash.

Contributing Factor	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Inattention	0	1	0	0	1
Seatbelts Not Worn	1	4	0	1	6
Alcohol	0	1	0	1	2
Speed	0	2	0	0	2

Table 81: KSI by contributing factor 2003 - 2012 (police attended)

6.9.4 Vulnerable Road Users

The following table shows vulnerable road user KSI by age on local roads from 2003 to 2012. A vulnerable road user is defined as a motorcyclist, bicyclist or pedestrian.

Age	Vulnerable Road User		
	Motorcyclist	Bicyclist	Pedestrian
	n	n	n
0 to 11	0	0	0
12 to 16	0	0	0
17 to 20	0	0	0
21 to 24	0	0	0
25 to 29	0	0	0
30 to 39	0	0	0
40 to 49	0	0	1
50 to 59	0	0	0
60 to 69	0	0	0
70+	0	0	0
Unknown	0	0	0
Total	0	0	1

Table 82: KSI by vulnerable road user and age 2003 - 2012

GLOSSARY

ARIA: (Accessibility Remoteness Index of Australia). A geographical measure of remoteness defined by the University of Adelaide.

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.

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 such as suicide attempts, or police chases.

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

1. 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.
2. Hospitalisation Crash - A road crash that involved at least one serious injury but no fatalities.
3. 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.
4. Property Damage Only Major Crash – A road crash in which no person was injured, but with estimated property damage exceeding \$3,000.
5. Property Damage Only Minor Crash - A road crash in which no person was injured, but with estimated property damage not exceeding \$3,000.

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

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.

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

KSI: Killed or seriously injured. See *Persons 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. KSI per 100 million vehicle kilometres travelled (MVKT) and
2. KSI per 100,000 population.

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

Motorcyclists: A motorcycle rider or motorcycle pillion.

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

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 motorized 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.

Rider: Used as an abbreviation for Motorcycle Rider. 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 User: Includes drivers, passengers, motorcycle riders, motorcycle pillion, bicycle riders, persons riding an animal, persons in an animal drawn vehicle and pedestrians.

Road User Types: Categories used to separate different road users.

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.

Seatbelt: 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 car restraints. The device must meet the relevant Australian Vehicle Design Rules and the Australian Standards. Drivers and passengers of motor vehicles must wear seat belts.

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

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.

Vulnerable Road User: A motorcyclist, bicyclist or pedestrian.