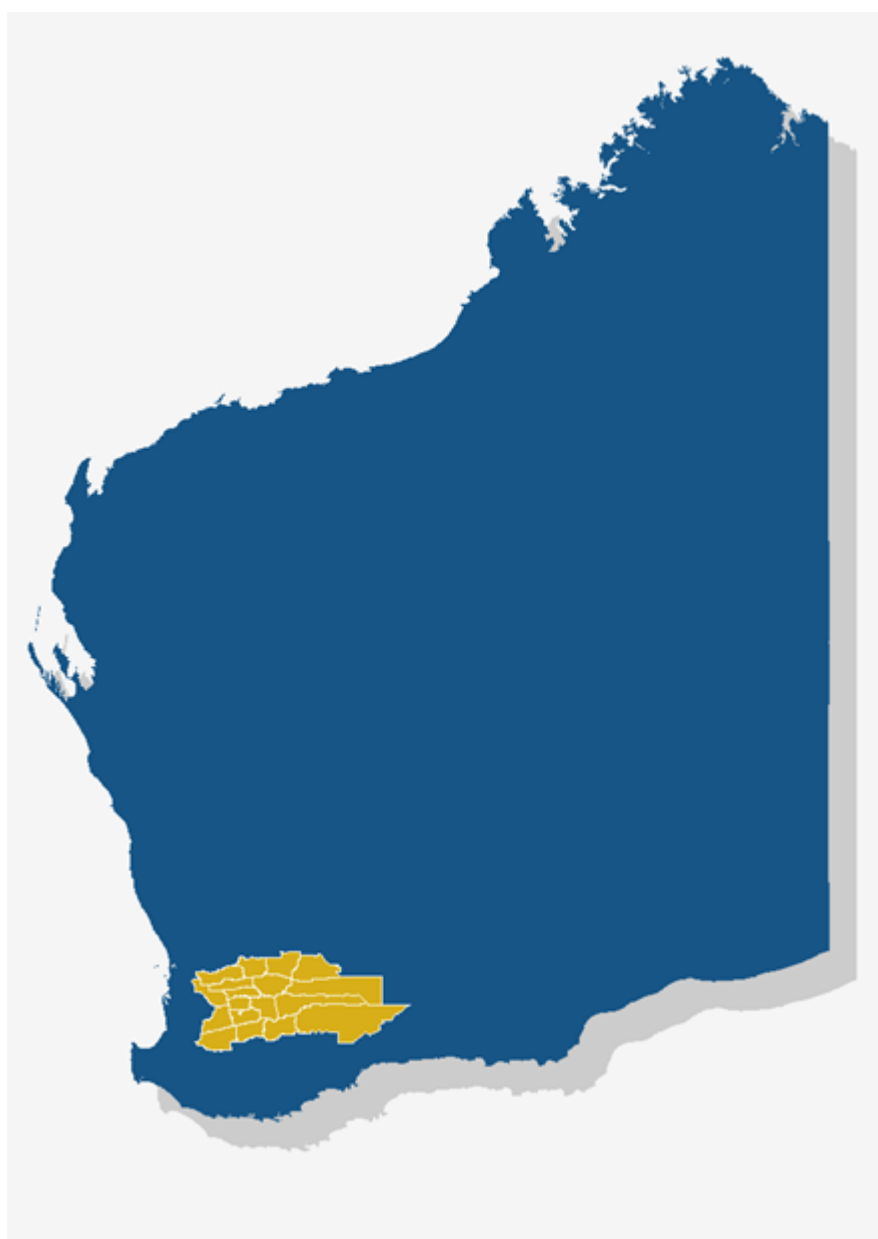


Local Road Crash Report 2012

WHEATBELT SOUTH REGION



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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.

This Local Road Crash Report for the Wheatbelt South 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 Wheatbelt South 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.

Wheatbelt South Region

Local roads constitute 91% of the Wheatbelt South Region road network.

From 2003 to 2012, there were a total of 2,882 crashes in the Wheatbelt South Region resulting in 339 people killed or seriously injured (KSI) on local roads. During this period, 54% of all crashes occurred on local roads including intersections where all legs were local roads. Midblock locations accounted for 45.7% of crashes on local roads.

Generally, the ten year trend for KSI on the Wheatbelt South Region local road network is decreasing.

In 2012, a total of 102 crashes occurred on the Wheatbelt South Region local road network, which included 24 crashes resulting in 2 people killed and 22 people seriously injured. Over 90% of KSI in 2012 resulted from single vehicle crashes of Hit Object and Non-Collision.

The key road safety issues for the Wheatbelt South Region local road network are:

1. Single vehicle crashes.
2. In-attention and speed.
3. Over-representation of males in KSI outcomes.
4. KSI outcomes in 110km/hr. speed zone.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	I
TABLE OF CONTENTS.....	II
1. INTRODUCTION	1
1.1 TOWARDS ZERO WA STATE ROAD SAFETY STRATEGY	1
1.2 SAFE SYSTEM CORNERSTONES	2
1.3 PURPOSE OF THE ROAD CRASH REPORT	3
1.4 CRASHES SUMMARISED IN THE LOCAL ROAD CRASH REPORT	4
1.5 ROAD SAFETY ISSUES FOR THE WHEATBELT SOUTH REGION	5
2. STATE WIDE LOCAL ROAD CRASH AND KSI SUMMARIES.....	6
2.1 ROAD NETWORK OF WESTERN AUSTRALIA	6
2.2 ROAD TRAUMA ON THE ROAD NETWORK.....	7
2.3 CRASH RATES	8
2.4 TRENDS IN KSI.....	9
2.5 CRASHES BY NATURE	10
2.6 KSI BY ROAD USER.....	13
2.7 ESTIMATED COST OF ROAD CRASHES IN WESTERN AUSTRALIA	15
3. REGIONAL ROAD CRASH AND KSI SUMMARIES.....	18
3.1 WHEATBELT SOUTH REGION ROAD NETWORK	18
3.2 CRASHES BY LOCATION AND ROAD MANAGER.....	19
3.3 KSI TREND BY LOCAL GOVERNMENT	21
3.4 CRASH SEVERITY	22
3.5 ROAD SURFACE TYPE	23
3.6 CRASH NATURE.....	23
3.7 VEHICLE TYPE	24
3.8 ROAD USER.....	25
3.9 SPEED	26
3.10 BLOOD ALCOHOL CONTENT (BAC)	27
3.11 SEATBELT USE.....	28
4. SAFE SYSTEM	29
4.1 SAFE ROADS AND ROADSIDES	29
4.2 SAFE SPEEDS	29
4.3 SAFE ROAD USE	30
4.4 SAFE VEHICLES.....	31
5. DEMOGRAPHICS	32
5.1 GENDER	32
5.2 AGE.....	33

6.	LOCAL GOVERNMENT ROAD CRASH AND KSI SUMMARIES.....	34
6.1	SHIRE OF BEVERLEY.....	34
6.2	SHIRE OF BROOKTON	40
6.3	SHIRE OF BRUCE ROCK	46
6.4	SHIRE OF CORRIGIN	52
6.5	SHIRE OF CUBALLING.....	58
6.6	SHIRE OF DUMBLEYUNG	64
6.7	SHIRE OF KONDININ	70
6.8	SHIRE OF KULIN.....	76
6.9	SHIRE OF LAKE GRACE	82
6.10	SHIRE OF NAREMBEEN.....	88
6.11	TOWN OF NARROGIN	94
6.12	SHIRE OF NARROGIN	100
6.13	SHIRE OF PINGELLY	106
6.14	SHIRE OF QUAIRADING	112
6.15	SHIRE OF WAGIN.....	118
6.16	SHIRE OF WANDERING.....	124
6.17	SHIRE OF WEST ARTHUR.....	130
6.18	SHIRE OF WICKEPIN	136
6.19	SHIRE OF WILLIAMS	142
	GLOSSARY.....	148

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 Wheatbelt South Region, which is comprised of the following Local Governments:

Shire of Beverley; Shire of Brookton; Shire of Bruce Rock; Shire of Corrigin; Shire of Cuballing; Shire of Dumbleyung; Shire of Kondinin; Shire of Kulin; Shire of Lake Grace; Shire of Narembeen; Town of Narrogin; Shire of Narrogin; Shire of Pingelly; Shire of Quairading; Shire of Wagin; Shire of Wandering; Shire of West Arthur; Shire of Wickepin; and Shire of Williams.

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.

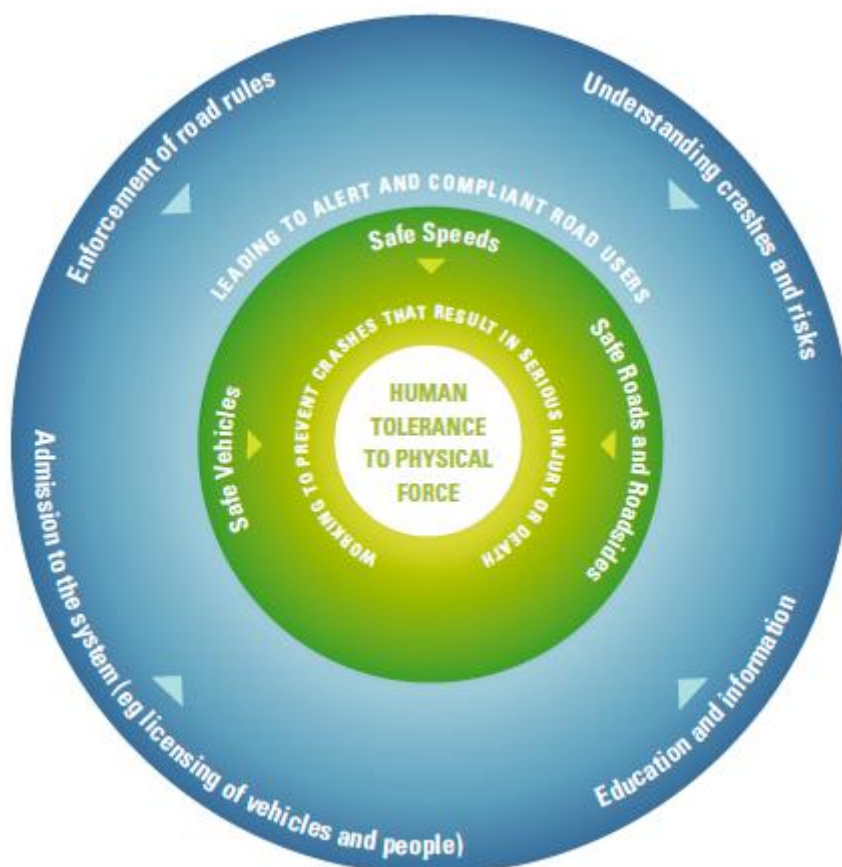


Figure 1: The Safe System (adapted from ATC, 2007)

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

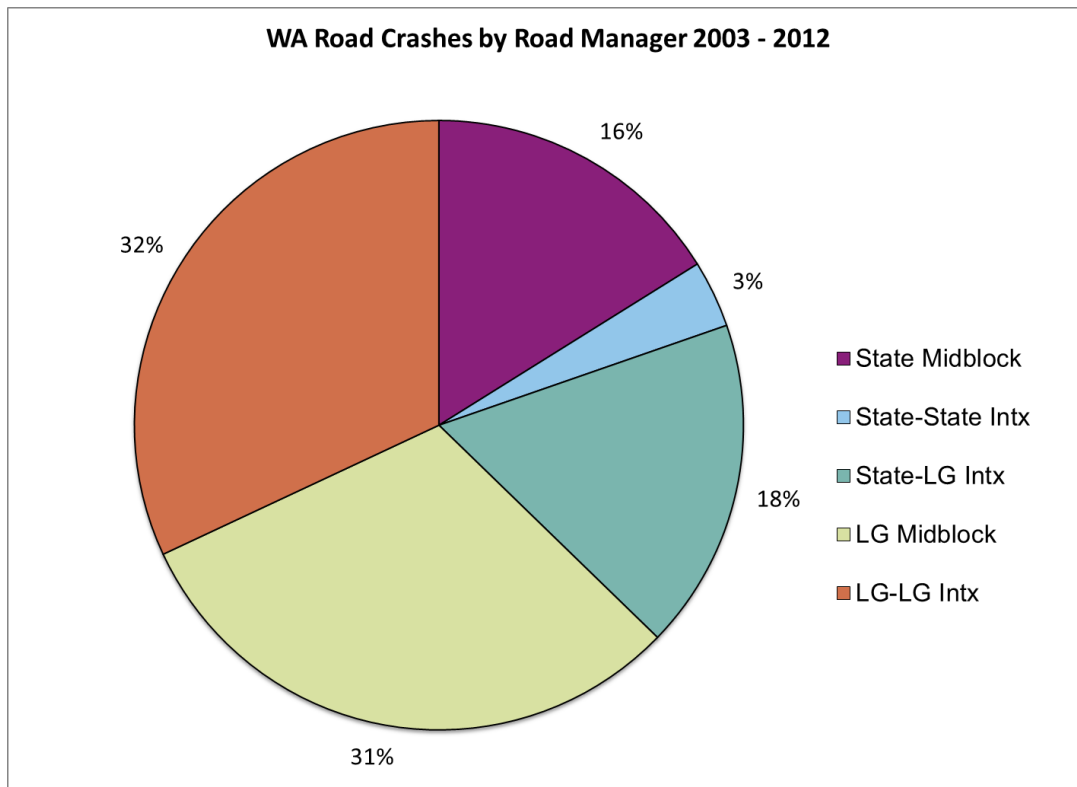


Figure 2: All crashes in WA by crash location and road manager 2003 to 2012

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 Wheatbelt South Region

The road safety issues for the Wheatbelt South Region local road network are:

1. Single vehicle crashes.
2. In-attention and speed.
3. Over-representation of males in KSI outcomes.
4. KSI outcomes in 110km/hr speed zone.

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.

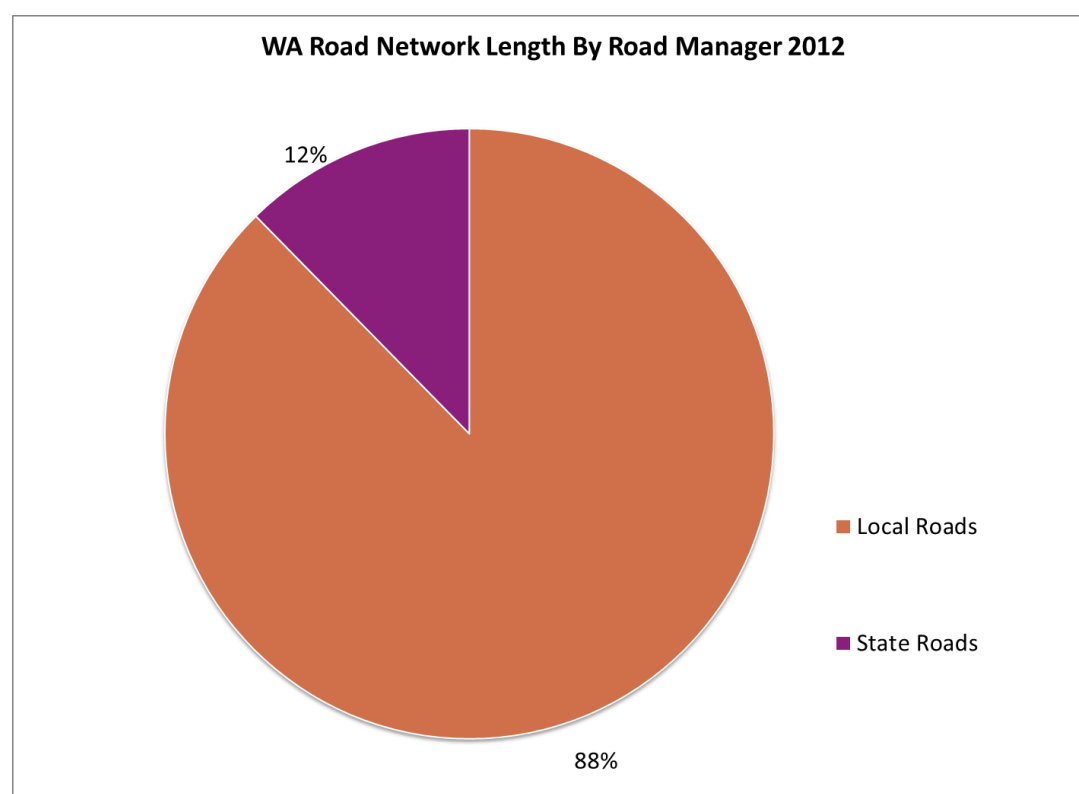


Figure 3: Length of road network in WA by road manager 2012

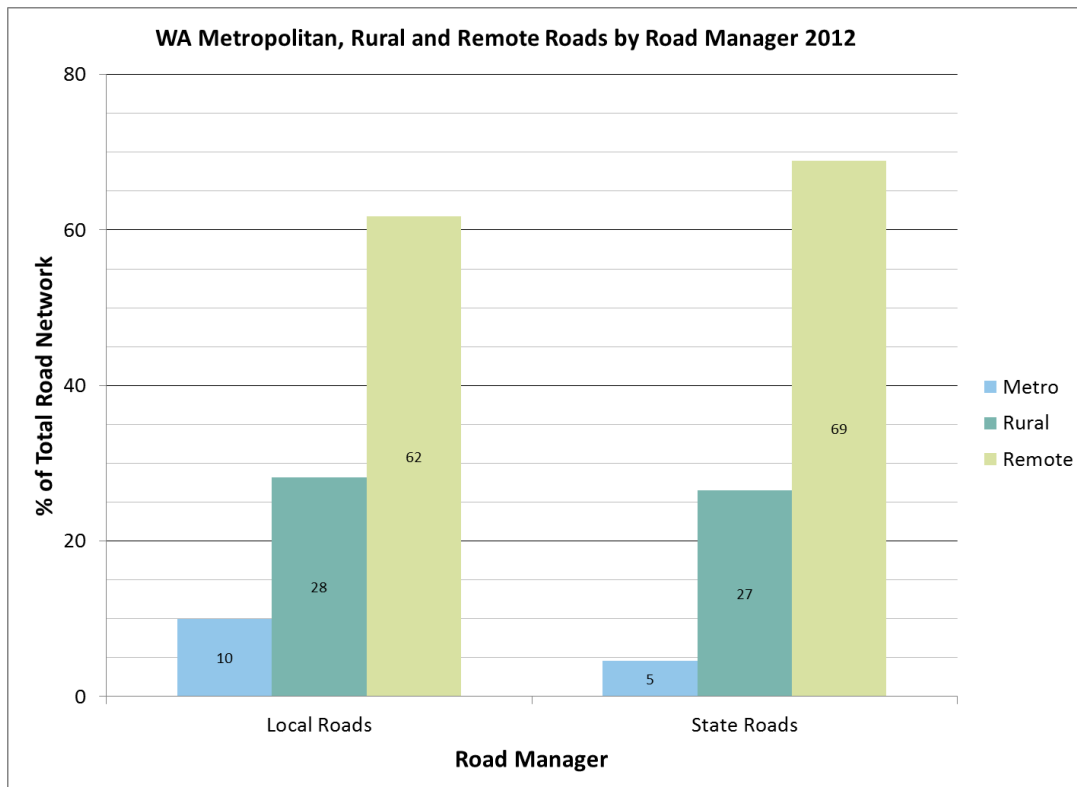


Figure 4: Percentage of road network in WA by road manager and accessibility 2012

2.2 Road Trauma on the Road Network

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

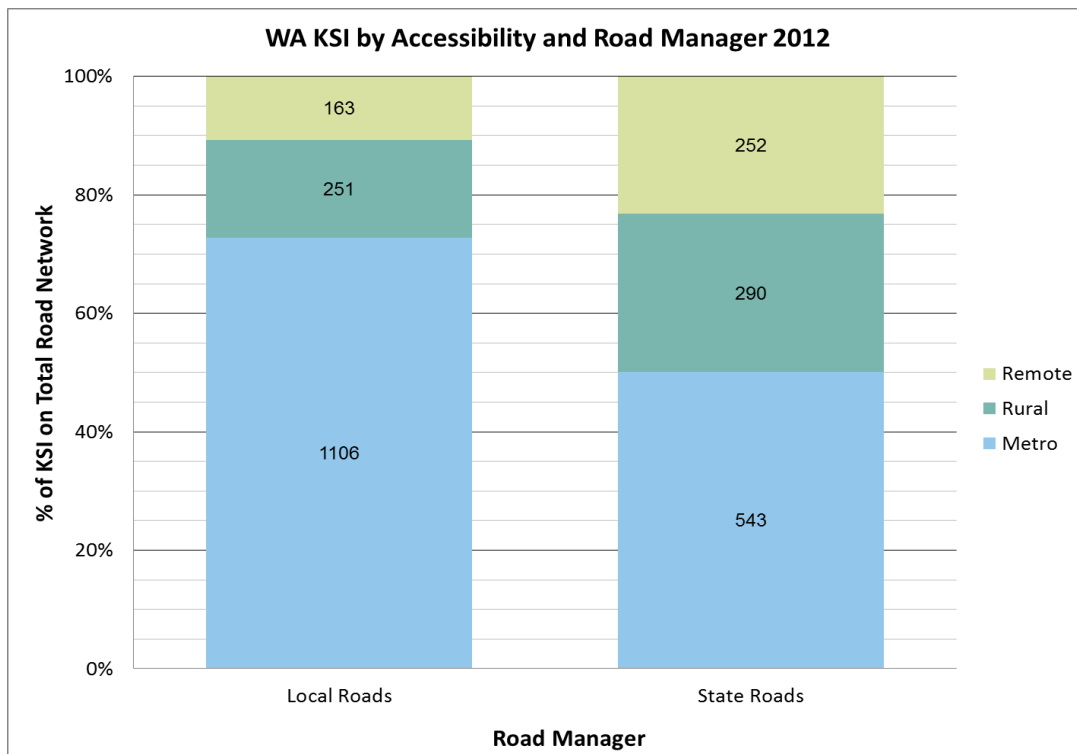


Figure 5: WA KSI by road manager and accessibility 2012

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.

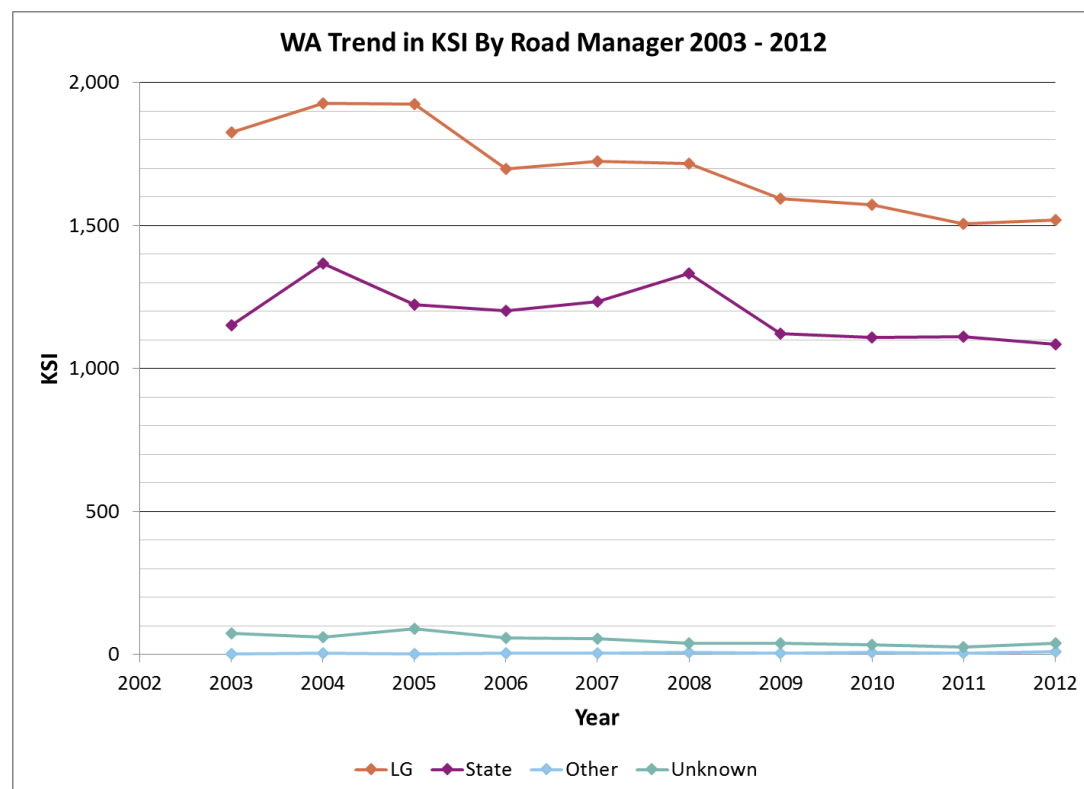


Figure 6: Trend in KSI by road manager 2003 to 2012

2.5 Crashes By Nature

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

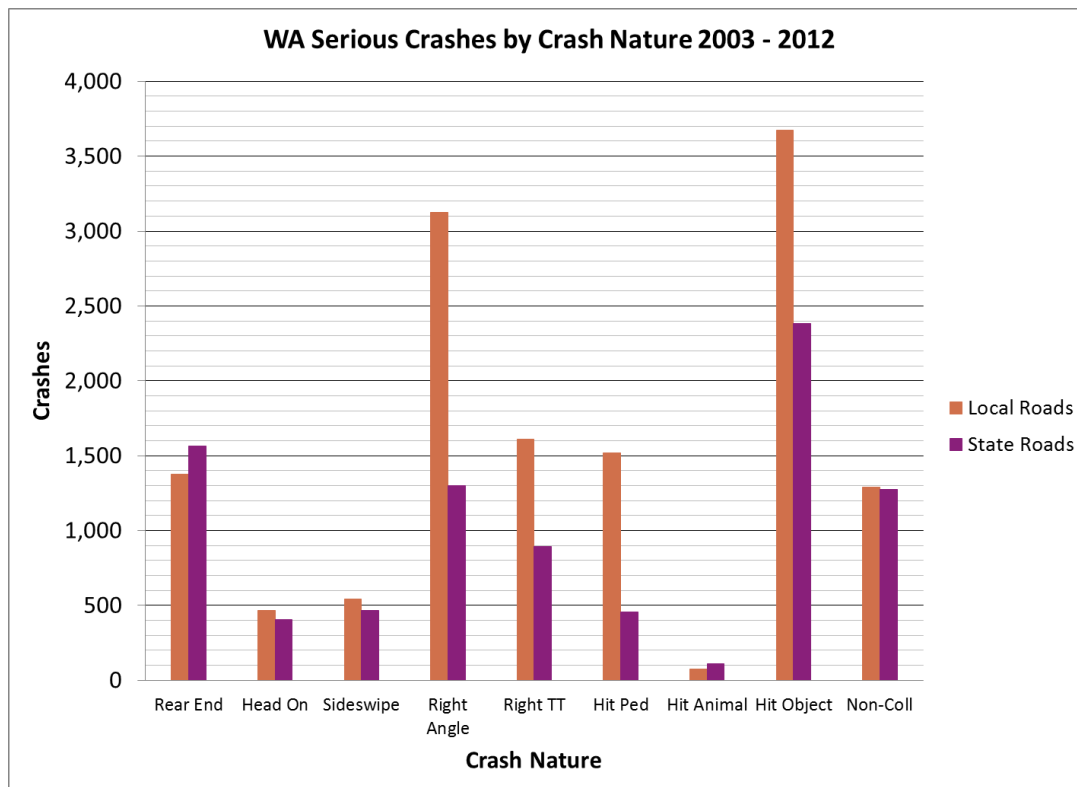


Figure 7: Ten year serious crash totals by crash nature and road manager 2003 to 2012

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.

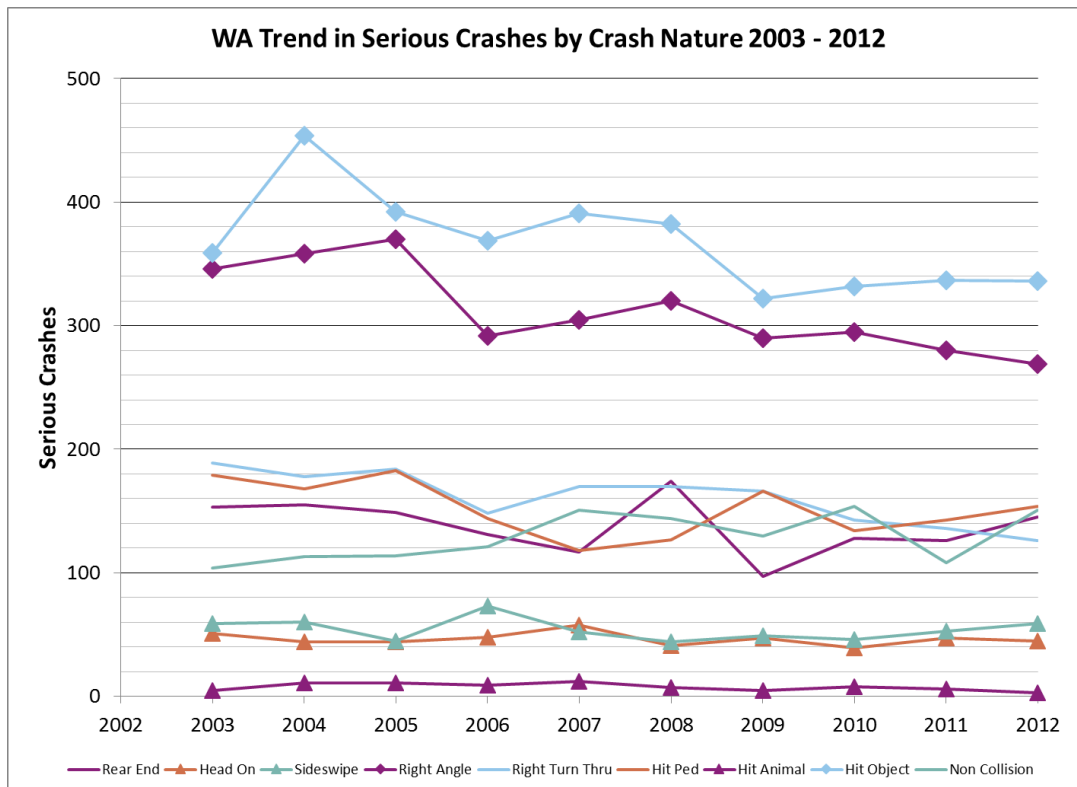


Figure 8: Trend in serious crashes on WA local roads by crash nature 2003 to 2012

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.

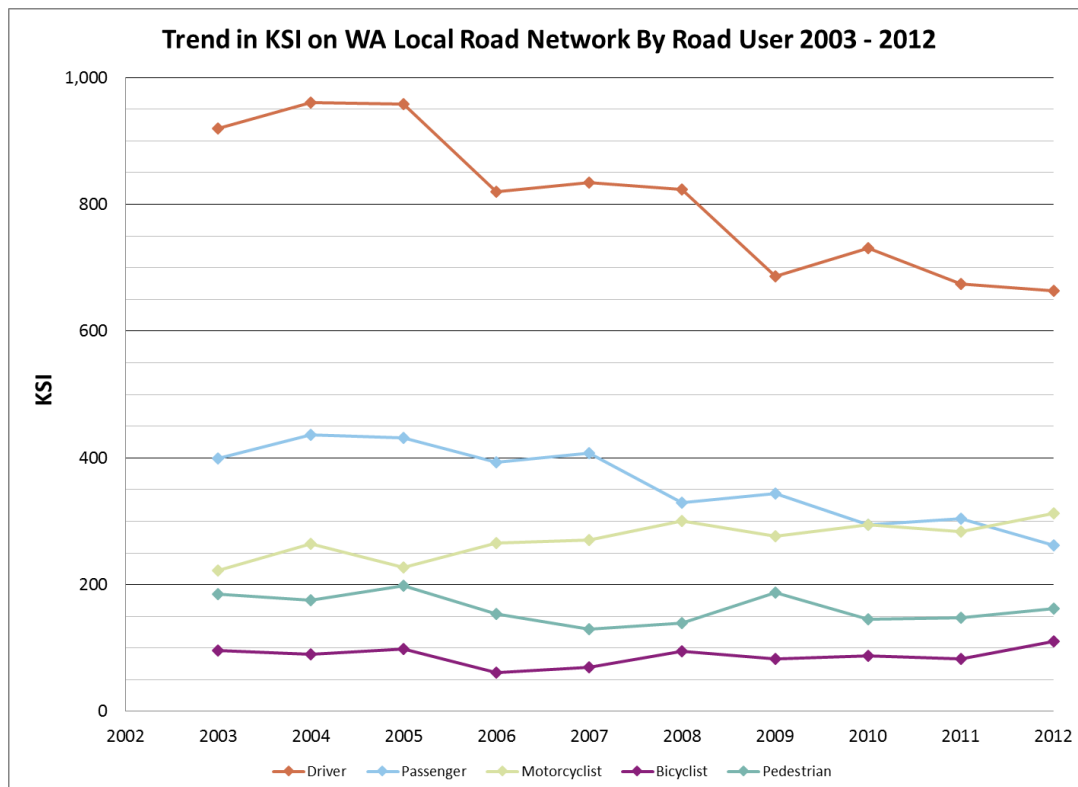


Figure 9: Trend in KSI on WA local roads by road user 2003 to 2012

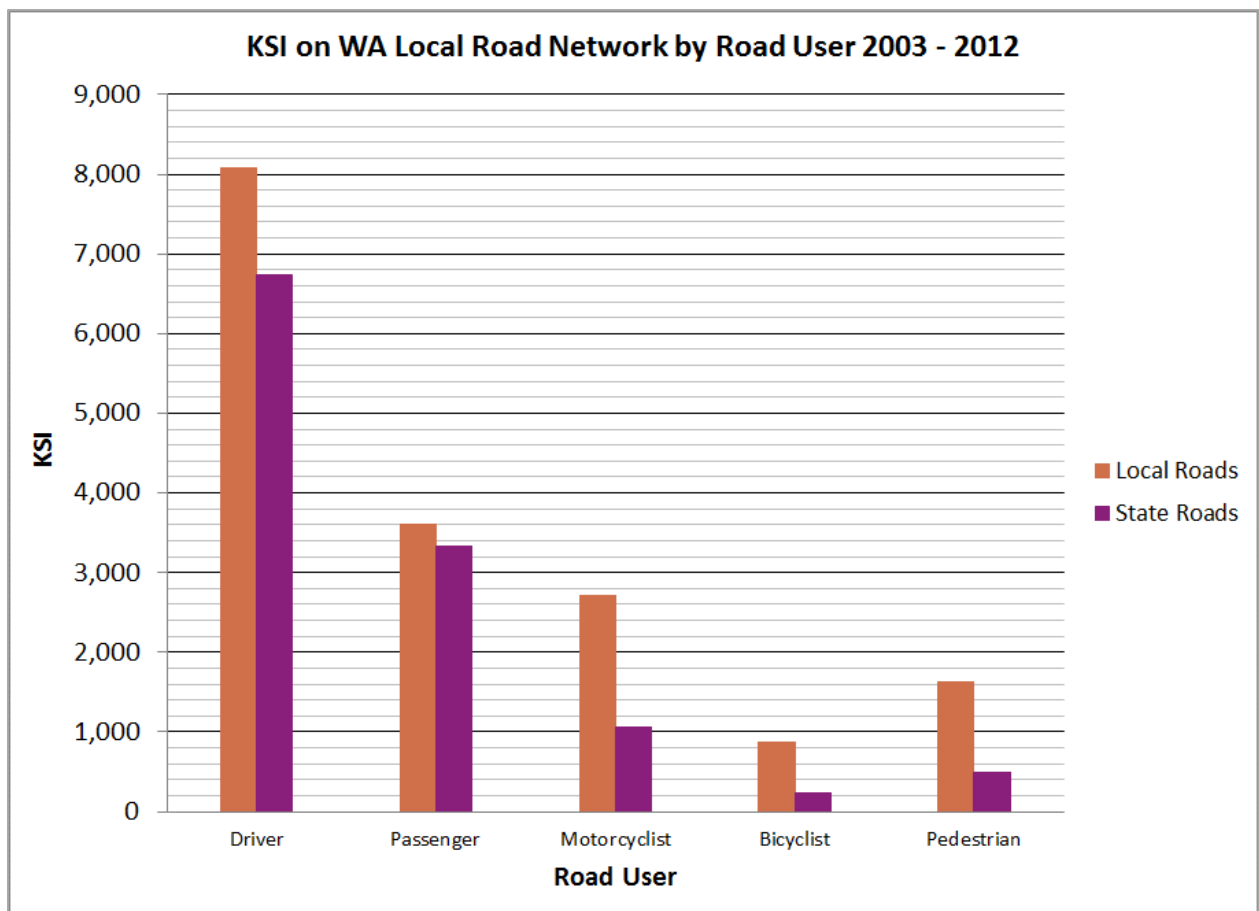


Figure 10: KSI totals by road user 2003 to 2012

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.

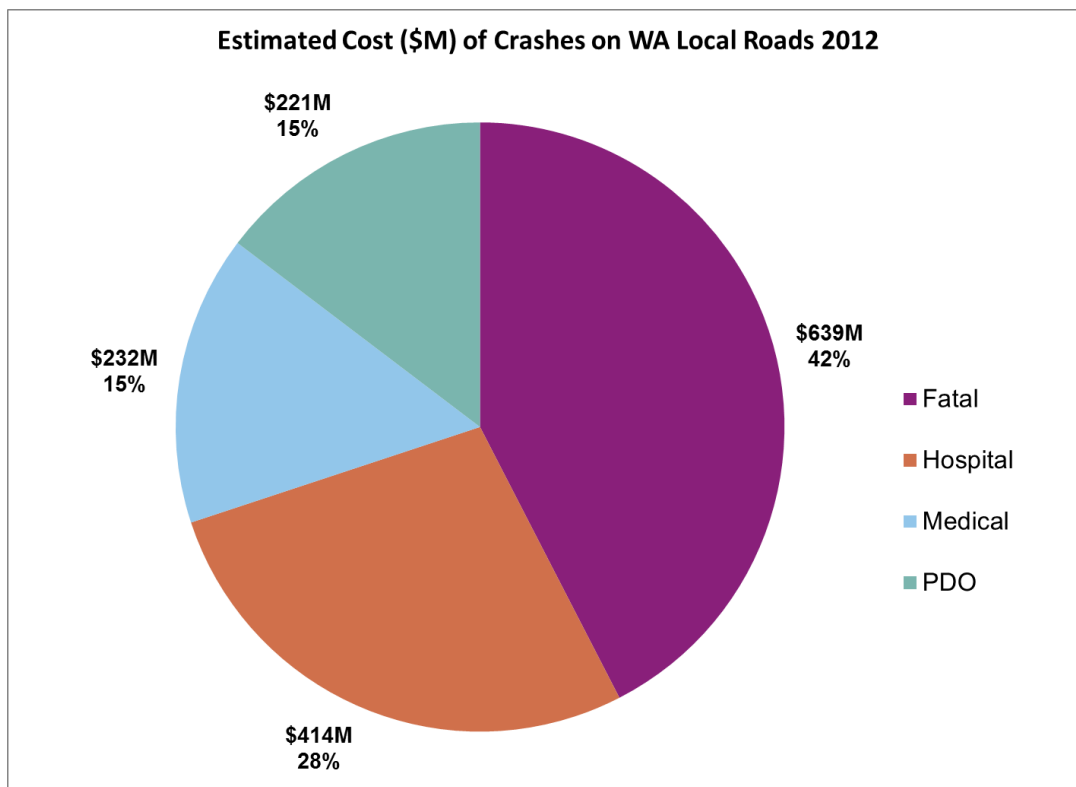


Figure 11: Estimated cost of all crashes on local roads 2012



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

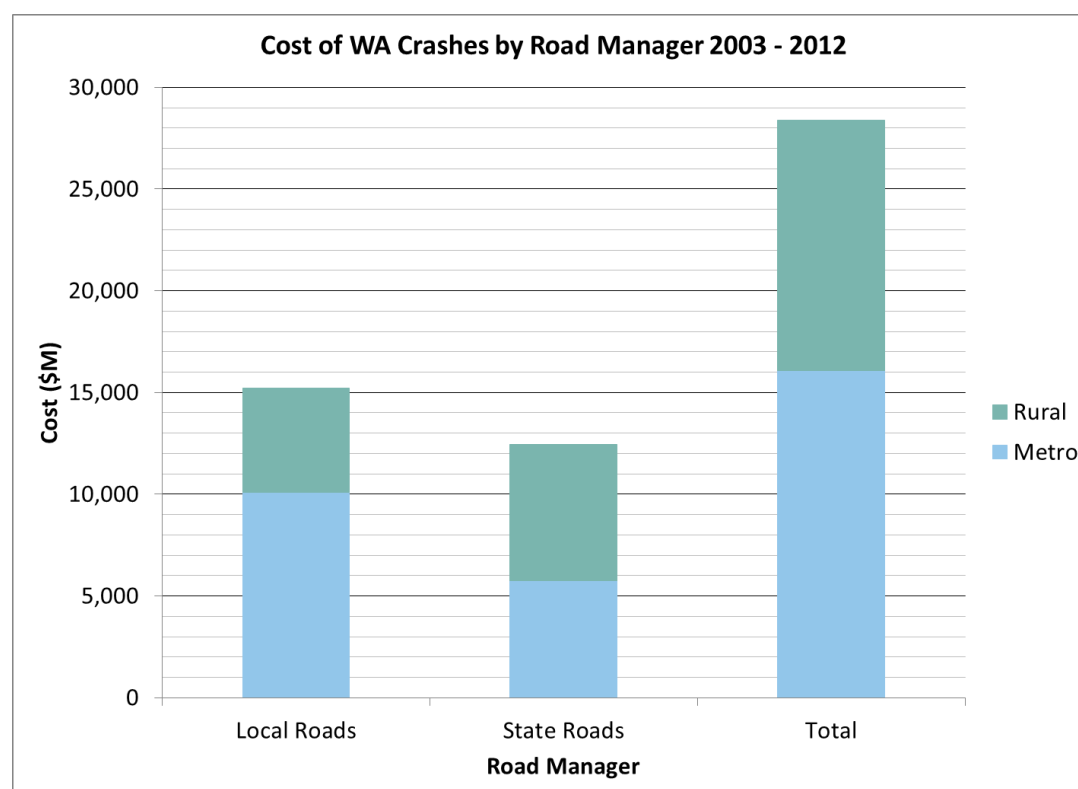


Figure 13: Cost of all crashes in WA by road manager 2003 to 2012

3. REGIONAL ROAD CRASH AND KSI SUMMARIES

In this section road crash and KSI summaries are provided for the Wheatbelt South Region local road network.

3.1 Wheatbelt South Region Road Network

Figures 14 and 15 illustrate the road network in the Wheatbelt South Region 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 91% of the Wheatbelt South Region road network. The local road network has a 40% rural and 60% remote split in terms of accessibility compared to a 50% rural and 50% remote split for State roads.

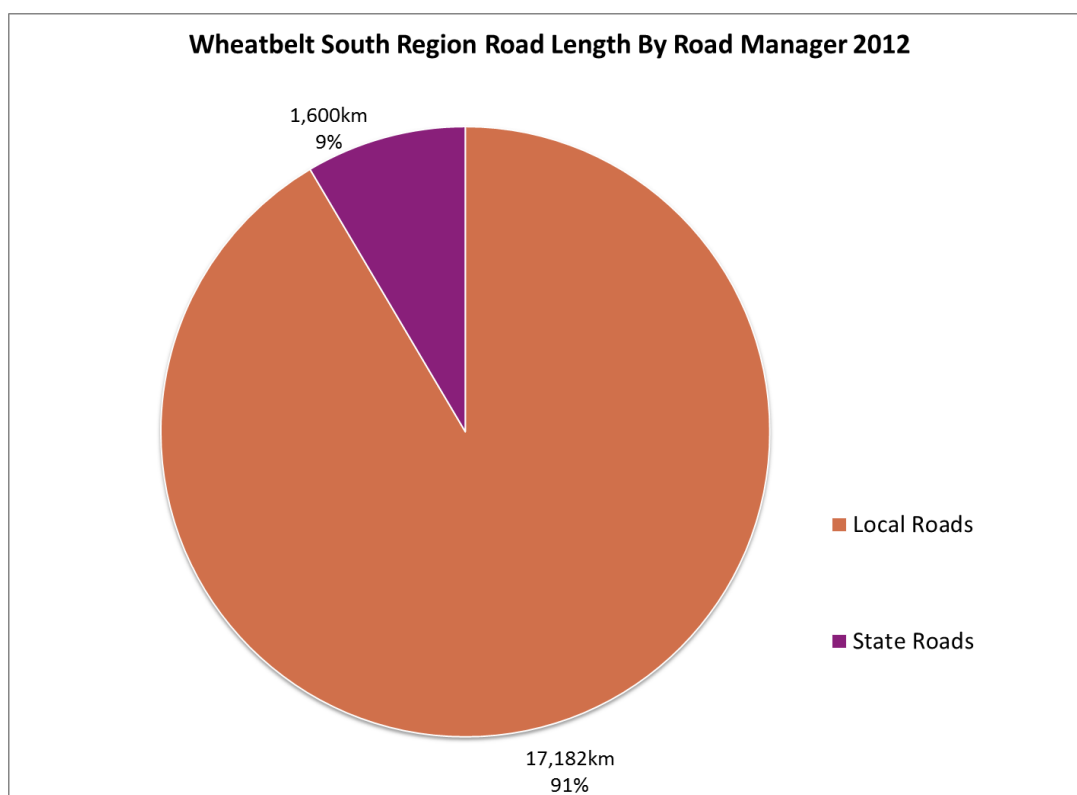


Figure 14: Length of road network in Wheatbelt South Region by road manager 2012

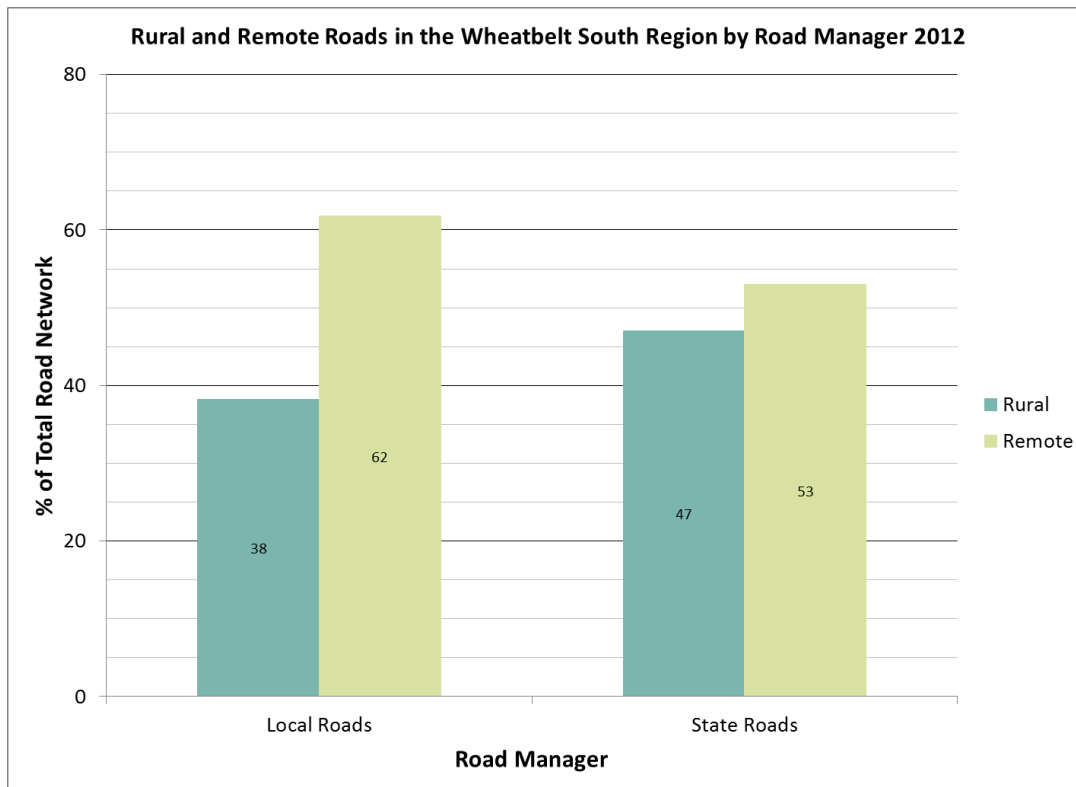


Figure 15: Percentage of road network and accessibility 2012

3.2 Crashes by Location and Road Manager

Table 8 shows all crashes by crash location and road manager in the Wheatbelt South 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	1,143	39.7
Intersection	State, State	9	0.3
Intersection	State, LG	127	4.4
Intersection	State, LG, Other	2	0.1
Intersection	State, Other	1	0.0
Midblock	LG	1,316	45.7
Intersection	LG, LG	165	5.7
Intersection	LG, Other	0	0.0
Midblock	Other	3	0.1
Intersection	Other, Other	0	0.0
Other	Unknown	116	4.0
Total		2,882	100.0

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

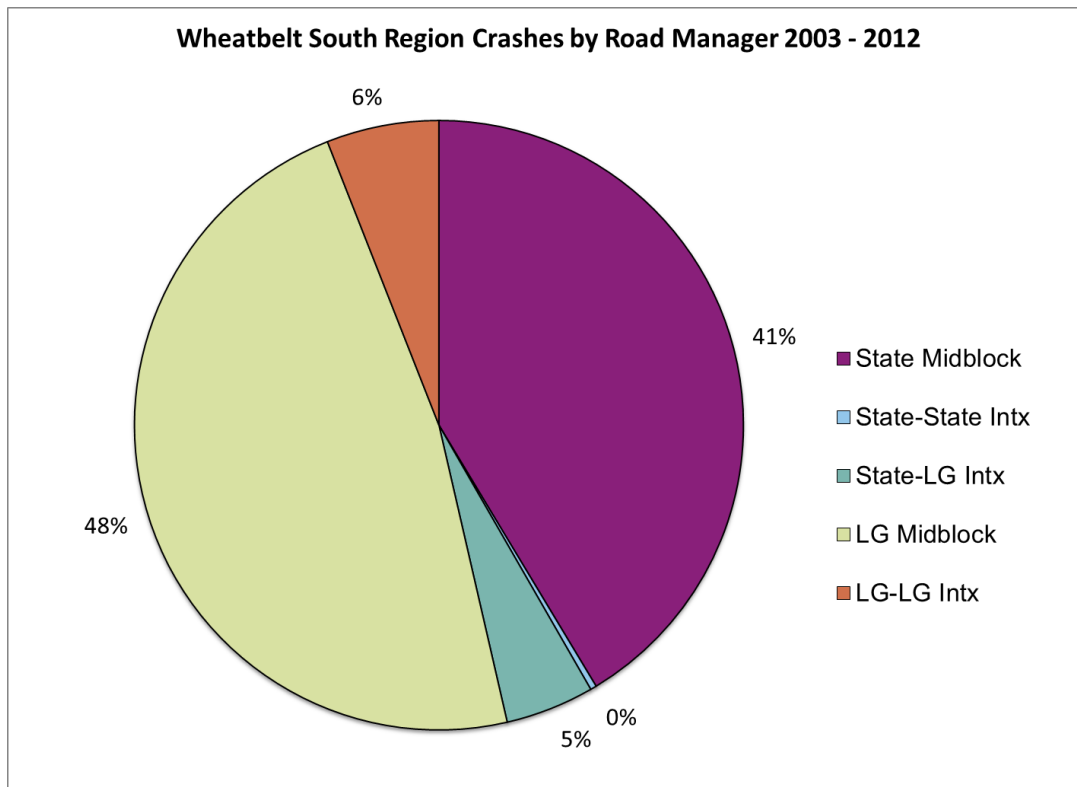


Figure 16: Crashes by crash location and road manager 2003 - 2012

Ignoring crashes at “Other” locations, Figure 16 shows:

- 54% 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.
- 41% of crashes occurred at State road locations including intersections where all legs were State roads.

Figure 16 also shows that 90% of crashes in the Wheatbelt South 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 Wheatbelt South Region local road network. Figure 17 displays the total KSI trend across all Local Governments.

Local Government	Year										
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Beverley	2	7	2	4	1	4	6	2	3	2	33
Brookton	1	1	0	1	0	0	0	1	0	0	4
Bruce Rock	2	0	0	0	1	0	2	2	0	0	7
Corrigin	4	11	2	4	4	0	1	3	3	3	35
Cuballing	0	1	0	5	2	3	4	0	3	0	18
Dumbleyung	0	1	1	0	4	5	0	1	0	0	12
Kondinin	0	2	3	4	4	1	4	1	3	2	24
Kulin	5	0	1	2	4	1	0	3	0	1	17
Lake Grace	0	0	1	3	1	0	1	0	3	0	9
Narembeen	3	9	10	0	3	6	0	3	4	5	43
Narrogin	0	8	1	1	2	1	0	1	4	1	19
Narrogin (T)	0	2	1	1	3	0	5	1	2	2	17
Pingelly	1	5	1	0	2	0	3	0	0	4	16
Quairading	3	0	2	4	2	1	0	1	2	1	16
Wagin	0	0	0	1	1	0	2	3	1	1	9
Wandering	0	0	0	1	2	0	3	1	3	0	10
West Arthur	2	2	3	3	2	2	1	2	1	0	18
Wickepin	1	4	1	3	1	1	4	5	1	2	23
Williams	1	0	0	2	2	1	1	0	2	0	9
TOTAL	25	53	29	39	41	26	37	30	35	24	339

Table 9: KSI trend by Local Government 2003 - 2012

The Shire of Narembeen, Shire of Corrigin and Shire of Beverley experienced the highest frequency of KSI from 2003 to 2012.

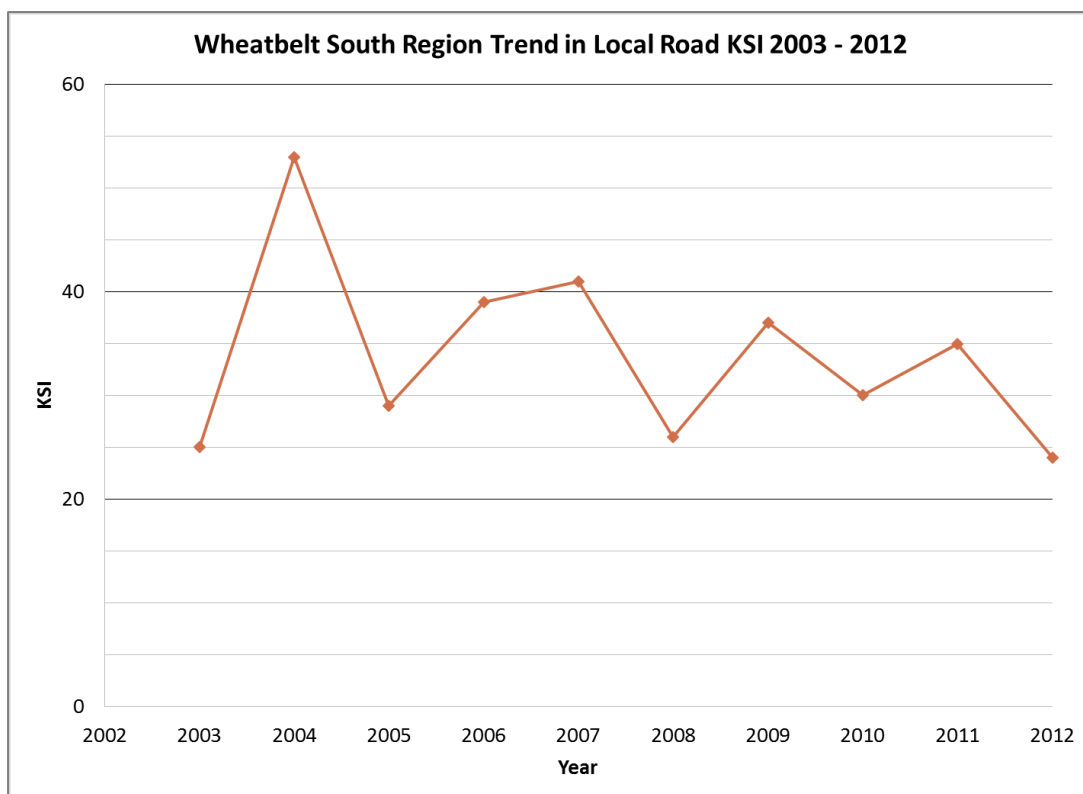


Figure 17: KSI trend for the Wheatbelt South Region 2003 - 2012

3.4 Crash Severity

Table 10 shows all crashes by crash severity for the Wheatbelt South Region local road network for 2012.

Crash Severity	Region		
	Wheatbelt South (WS)	State	% for WS
	n	n	%
Fatal	2	87	2.3
Hospitalisation	19	1,235	1.5
Medical	14	2,949	0.5
PDO Major	55	12,106	0.5
PDO Minor	12	7,417	0.2
Total	102	23,794	0.4

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

3.5 Road Surface Type

36% of crashes occurred on unsealed roads and nearly 60% of crashes occurred on sealed roads on the Wheatbelt South Region local road network.

Crash Severity	Surface Type						
	Sealed		Unsealed		Unknown		Total
	n	%	n	%	n	%	n
Fatal	1	50.0	1	50.0	0	0.0	2
Hospitalisation	12	63.2	6	31.6	1	5.3	19
Medical	8	57.1	6	42.9	0	0.0	14
PDO Major	33	60.0	20	36.4	2	3.6	55
PDO Minor	7	58.3	4	33.3	1	8.3	12
Total	61	59.8	37	36.3	4	3.9	102

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 Wheatbelt South Region local road network 2012.

Crash Nature	Region		
	Wheatbelt South (WS)	State	% for WS
	n	n	%
Multi-Vehicle Crashes			
Rear End	0	163	0.0
Head On	0	57	0.0
Sideswipe	0	60	0.0
Right Angle	2	315	0.6
Right Turn Thru	0	149	0.0
Multi-Vehicle Other	0	19	0.0
Multi-Vehicle Total	2	763	0.3
Single Vehicle Crashes			
Hit Pedestrian	0	159	0.0
Hit Animal	0	3	0.0
Hit Object	16	394	4.1
Non-Collision	5	181	2.8
Single Vehicle Other	1	20	5.0
Single Vehicle Total	22	757	2.9
Total	24	1,520	1.6

Table 12: KSI on Local roads by crash nature 2012

Over 90% of occurred in single vehicle crashes of Hit Object and Non-Collision.

3.7 Vehicle Type

Table 13 and Figure 18 show KSI by vehicle type and road manager for the Wheatbelt South Region local road network for 2012.

Vehicle Type	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Car	10	18	0	2	30
Station Wagon	3	5	0	1	9
Utility	7	3	0	0	10
Panel Van	2	0	0	0	2
Truck	1	3	0	0	4
Prime Mover	0	0	0	0	0
Bus	0	0	0	0	0
Motorcycle	1	2	0	0	3
Multi-Seated Van	0	1	0	0	1
Truck Combination	0	2	0	0	2
4WD	0	4	0	1	5
Other	0	0	0	0	0
Total	24	38	0	4	66

Table 13: KSI by vehicle type and road manager 2012

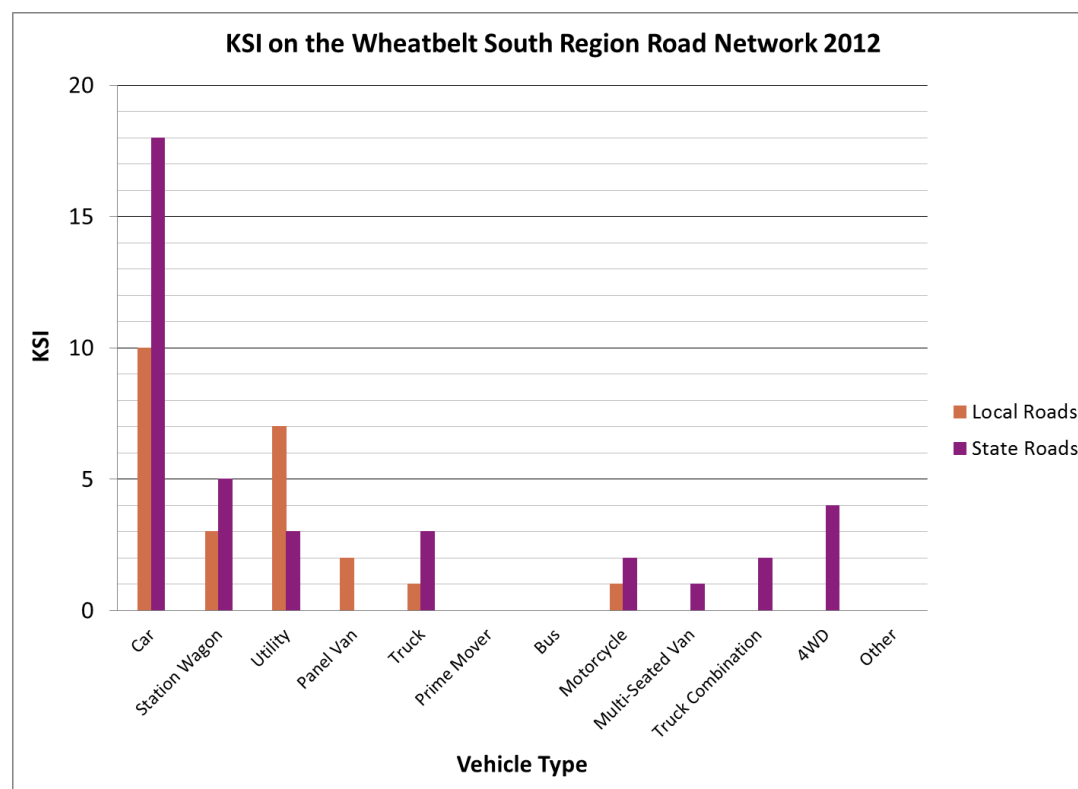


Figure 18: KSI by vehicle type and road manager 2012

3.8 Road User

Table 14 and Figure 19 show KSI by road user and road manager for the Wheatbelt South Region local road network for 2012.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	17	25	0	2	44
Passenger	6	11	0	2	19
Motorcyclist	1	2	0	0	3
Bicyclist	0	0	0	0	0
Pedestrian	0	0	0	1	1
Other	0	0	0	0	0
Total	24	38	0	5	67

Table 14: KSI by road user and road manager 2012

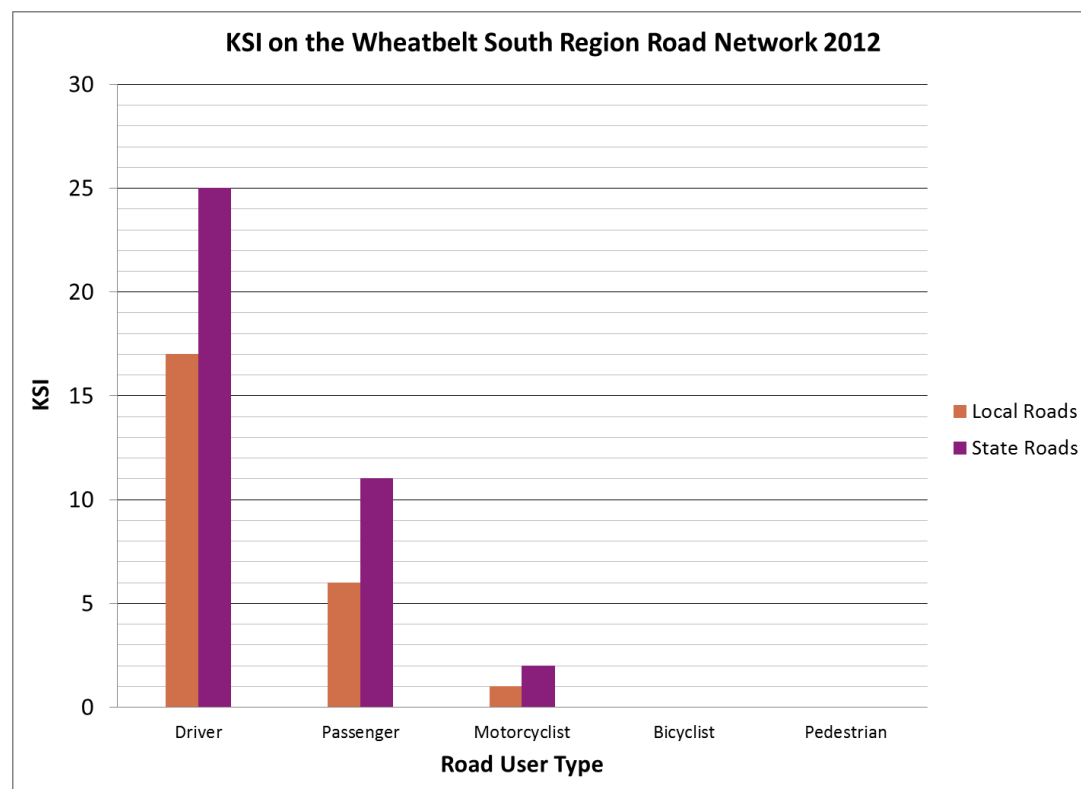


Figure 19: KSI by road user and road manager 2012

3.9 Speed

Figure 20 shows KSI where speed was considered a factor for the Wheatbelt South Region local road network. The determination of whether speed was a factor in a crash can only be reliably determined from police attended crashes.

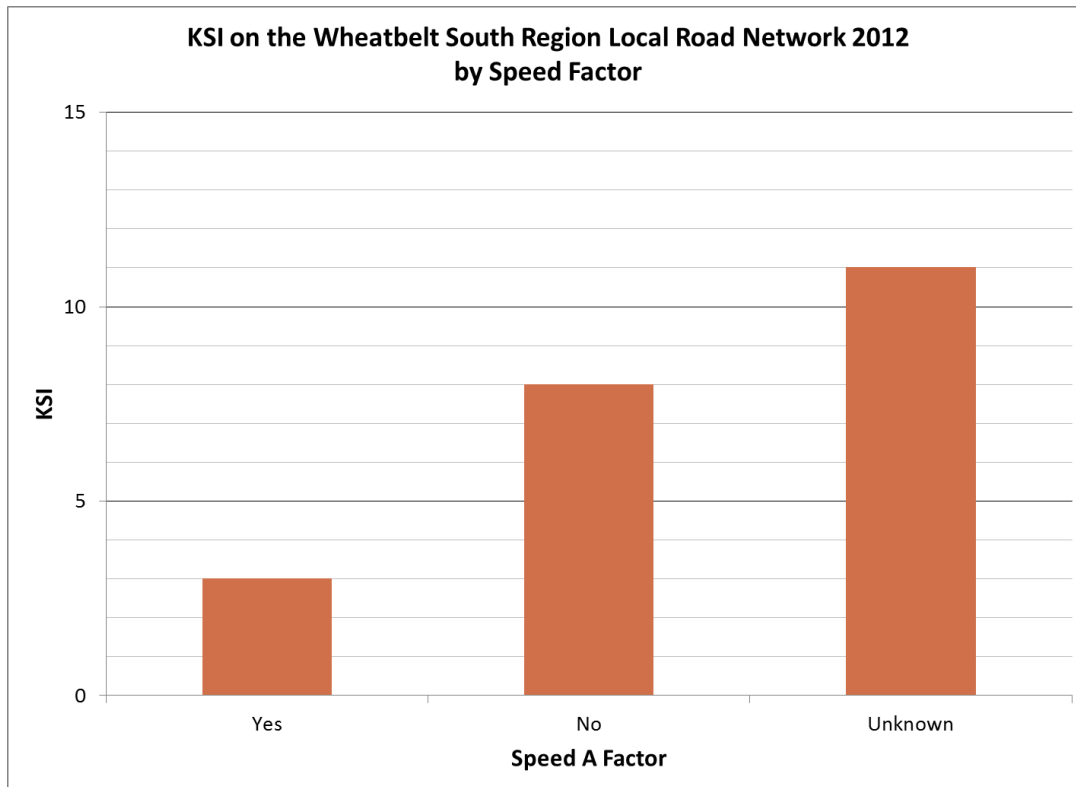


Figure 20: KSI by speed factor 2012 (police attended)

3.10 Blood Alcohol Content (BAC)

Table 15 and Figure 21 show KSI by the highest BAC reading for a driver/rider for the Wheatbelt South 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	0	0	9	45	9	41
$0 \leq \text{BAC} < 0.05$	0	0	0	0	0	0
$0.05 \leq \text{BAC} \leq 0.08$	0	0	2	10	2	9
$0.08 \leq \text{BAC} < 0.15$	0	0	0	0	0	0
$\text{BAC} \geq 0.15$	1	50	0	0	1	5
Subtotal BAC ≥ 0.05	1	50	2	10	3	14
Unknown	1	50	9	45	10	45
Total KSI	2	100	20	100	22	100

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

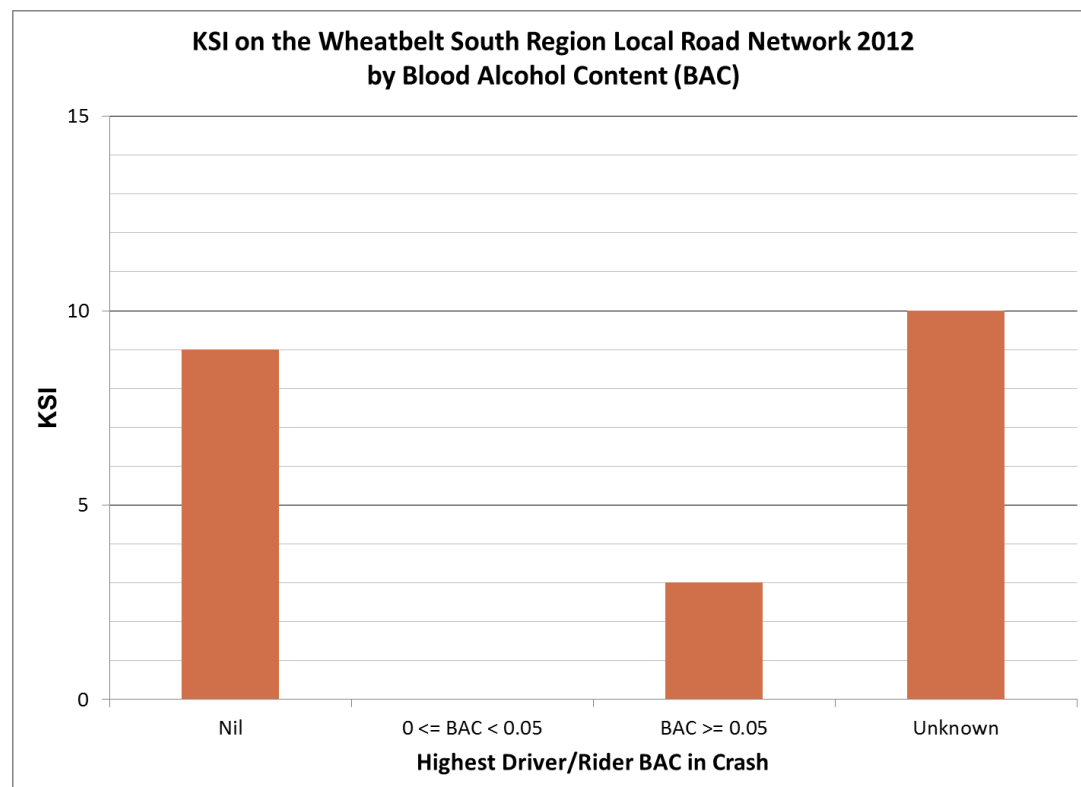


Figure 21: KSI by highest BAC reading in the crash 2012 (police attended)

3.11 Seatbelt Use

Figure 22 shows KSI by seatbelt usage for the Wheatbelt South Region local road network. The subset of police attended crashes was used in the figure below.

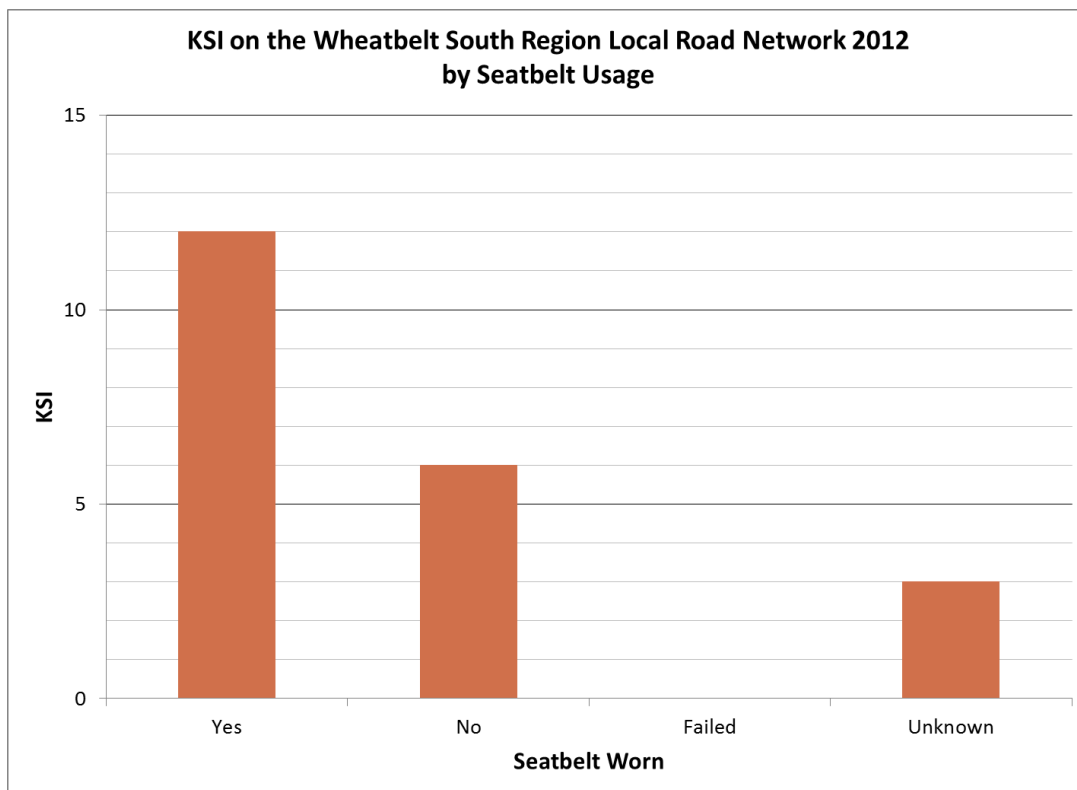


Figure 22: KSI by seatbelt usage 2012 (police attended)

4. SAFE SYSTEM

In this section, KSI summaries are provided for the Wheatbelt South 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 Wheatbelt South 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	284	49
State	274	48
Other	0	0
Unknown	18	3
Total	576	100

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

4.2 Safe Speeds

Table 17 and Figure 23 show KSI by speed zone on the Wheatbelt South 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	0	3	3
60	2	5	7
70	0	0	0
80	1	2	3
90	0	0	0
100	0	1	1
110	6	30	36
Unknown	1	13	14
Total	10	54	64

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

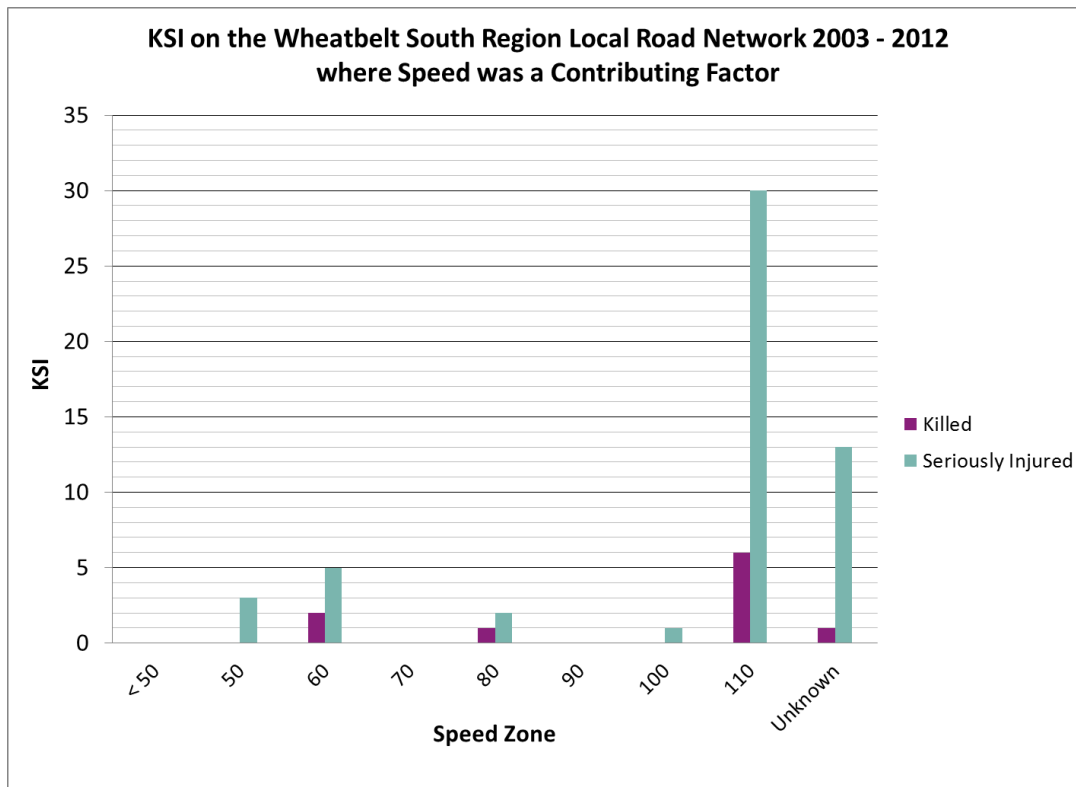


Figure 23: KSI by speed zone 2003 to 2012 (police attended)

Road segments with a speed limit of 110km/hr. had the highest number of KSI.

4.3 Safe Road Use

Table 18 identifies the contributing factors to KSI on the Wheatbelt South 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	60	89	0	2	151
Seatbelts Not Worn	37	19	0	1	57
Alcohol	35	24	0	0	59
Speed	64	55	0	7	126

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

Inattention and speed are significant contributing factors in serious crashes on the Wheatbelt South Region local road network.

4.4 Safe Vehicles

Table 19 shows KSI by vehicle type and road manager on the Wheatbelt South 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	150	42.1	195	54.8	0	0.0	11	3.1	356
Station Wagon	51	55.4	40	43.5	0	0.0	1	1.1	92
Utility	58	53.7	46	42.6	0	0.0	4	3.7	108
Panel Van	7	38.9	10	55.6	0	0.0	1	5.6	18
Truck	10	55.6	8	44.4	0	0.0	0	0.0	18
Prime Mover	0	0.0	0	0.0	0	0.0	0	0.0	0
Bus	1	50.0	1	50.0	0	0.0	0	0.0	2
Motorcycle	22	46.8	20	42.6	0	0.0	5	10.6	47
Multi-Seated Van	4	57.1	3	42.9	0	0.0	0	0.0	7
Truck Combination	5	27.8	12	66.7	0	0.0	1	5.6	18
4WD	26	49.1	24	45.3	0	0.0	3	5.7	53
Other	0	0.0	3	75.0	0	0.0	1	25.0	4
Total	334	46.2	362	50.1	0	0.0	27	3.7	723

Table 19: KSI by vehicle type 2003 to 2012

5. DEMOGRAPHICS

In this section demographic summaries of KSI are provided for the Wheatbelt South Region local road network.

5.1 Gender

Table 20 shows the gender breakdown of KSI on the Wheatbelt South Region local road network from 2003 to 2012.

Road User	Gender	KSI Severity		
		Killed	Seriously Inj.	Total
		n	n	n
Driver	Female	7	81	88
	Male	15	109	124
	Unknown	0	1	1
	Total	22	191	213
Passenger	Female	5	30	35
	Male	5	26	31
	Unknown	0	33	33
	Total	10	89	99
Motorcyclist	Female	0	4	4
	Male	3	14	17
	Unknown	0	1	1
	Total	3	19	22
Bicyclist	Female	0	1	1
	Male	0	1	1
	Unknown	0	0	0
	Total	0	2	2
Pedestrian	Female	0	1	1
	Male	0	1	1
	Unknown	0	1	1
	Total	0	3	3
Total	Female	12	117	129
	Male	23	151	174
	Unknown	0	36	36
	Total	35	304	339

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

Male driver KSI is 50% higher than female driver KSI; and males constitute 77% of motorcyclist KSI.

5.2 Age

Table 21 and Figure 24 show KSI by age and road manager for the Wheatbelt South Region local road network from 2003 to 2012.

Age	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
0 to 11	15	15	0	0	30
12 to 16	17	16	0	1	34
17 to 20	47	54	0	2	103
21 to 24	41	42	0	5	88
25 to 29	33	47	0	3	83
30 to 39	58	49	0	5	112
40 to 49	39	50	0	4	93
50 to 59	36	28	0	2	66
60 to 69	23	24	0	2	49
70+	15	22	0	1	38
Unknown	15	16	0	3	34
Total	339	363	0	28	730

Table 21: KSI by age 2003 to 2012

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

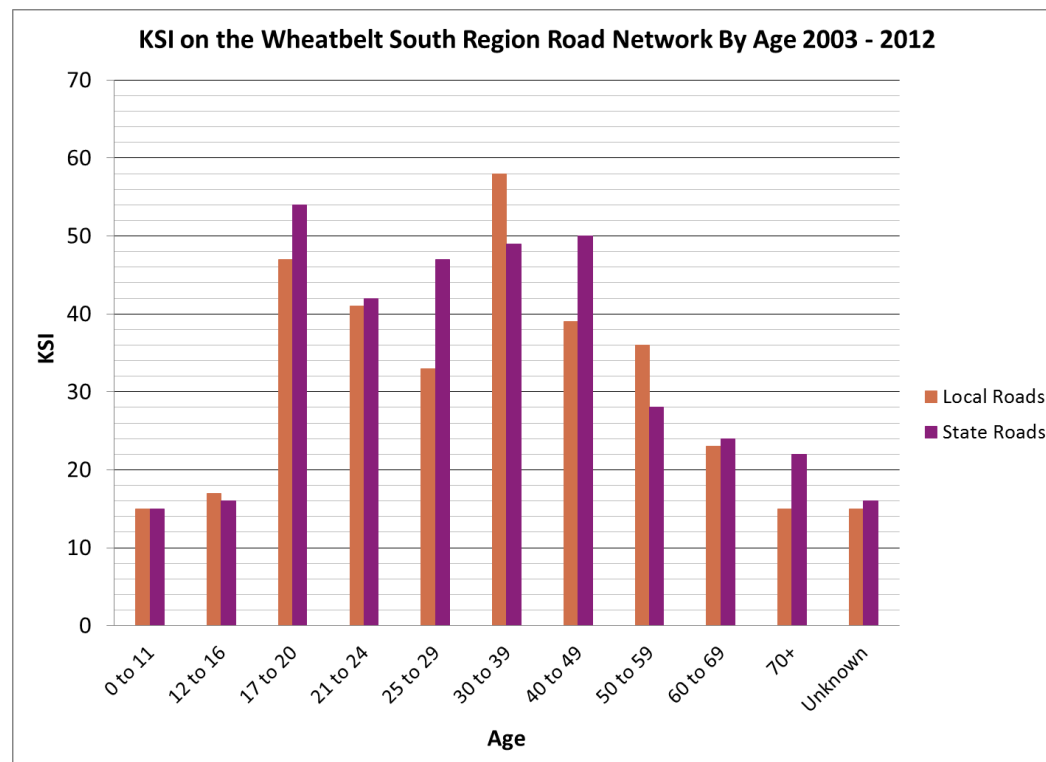


Figure 24: KSI by age 2003 to 2012

6. LOCAL GOVERNMENT ROAD CRASH AND KSI SUMMARIES

In this section, crash and KSI summaries are provided for each Local Government in the Wheatbelt South Region.

6.1 Shire of Beverley

Refer also to the Wheatbelt South Region Local Road Crash Map Book 2012.

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

Crash Location	Road Manager	Crashes	%
Midblock	State	93	39.2
Intersection	State, State	0	0.0
Intersection	State, LG	12	5.1
Intersection	State, LG, Other	0	0.0
Intersection	State, Other	0	0.0
Midblock	LG	113	47.7
Intersection	LG, LG	13	5.5
Intersection	LG, Other	0	0.0
Midblock	Other	0	0.0
Intersection	Other, Other	0	0.0
Other	Unknown	6	2.5
Total		237	100.0

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

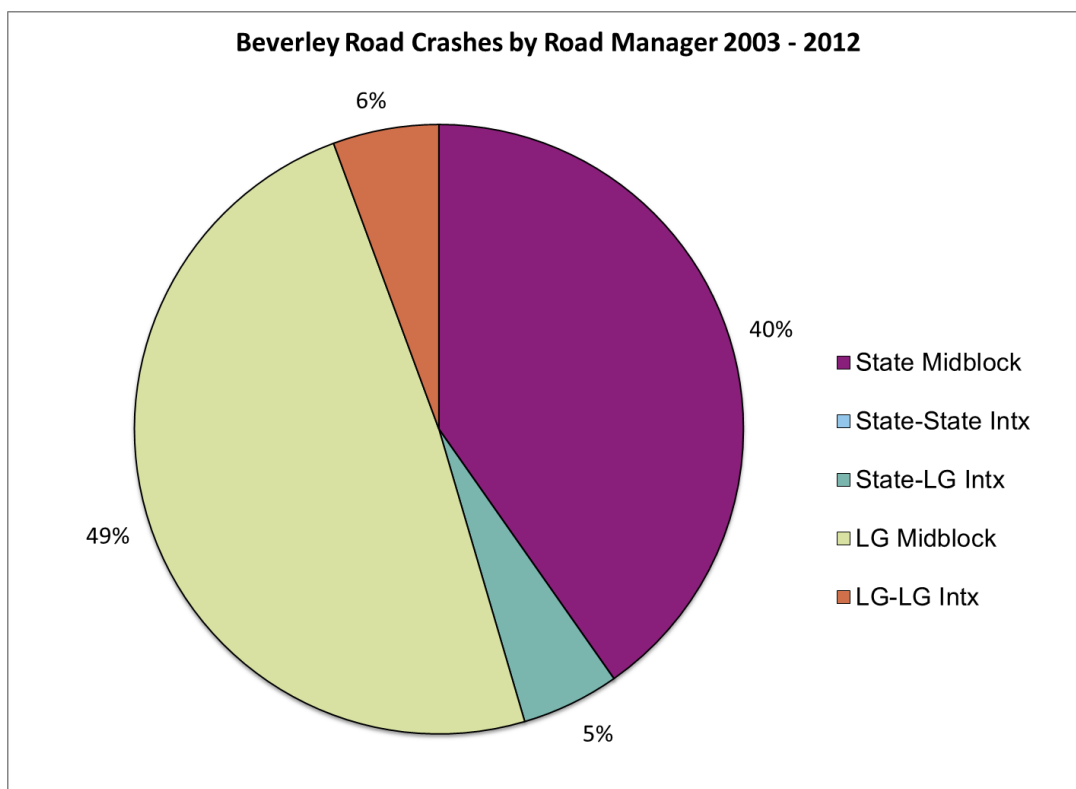


Figure 25: All crashes by crash location and road manager 2003 - 2012

Ignoring crashes at "Other" locations, Figure 25 shows:

- 55% 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.
- 40% of crashes occurred at State road locations including intersections where all legs were State roads.

Figure 25 also shows that 89% of crashes in the Shire of Beverley 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 Beverley 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	2	7	2	4	1	4	6	2	3	2	33

Table 23: KSI trend 2003 - 2012

6.1.1 Crash Nature

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

- 73% of KSI occurred in single vehicle crashes of Hit Object or Non-Collision; and
- 12% of KSI occurred in multi-vehicle crashes of Head On.

Crash Nature	Local Government and Region			
	2003 - 2012			2012
	Beverley	Wheatbelt South	% for Beverley	Beverley
	n	n	%	n
Multi-Vehicle Crashes				
Rear End	2	7	28.6	0
Head On	4	12	33.3	0
Sideswipe	1	3	33.3	0
Right Angle	2	12	16.7	0
Right Turn Thru	0	0	0.0	0
Multi-Vehicle Other	0	0	0.0	0
Multi-Vehicle Total	9	34	26.5	0
Single Vehicle Crashes				
Hit Pedestrian	1	3	33.3	0
Hit Animal	0	4	0.0	0
Hit Object	14	197	7.1	2
Non-Collision	8	97	8.2	0
Single Vehicle Other	1	4	25.0	0
Single Vehicle Total	24	305	7.9	2
Total	33	339	9.7	2

Table 24: KSI by crash nature 2003 - 2012

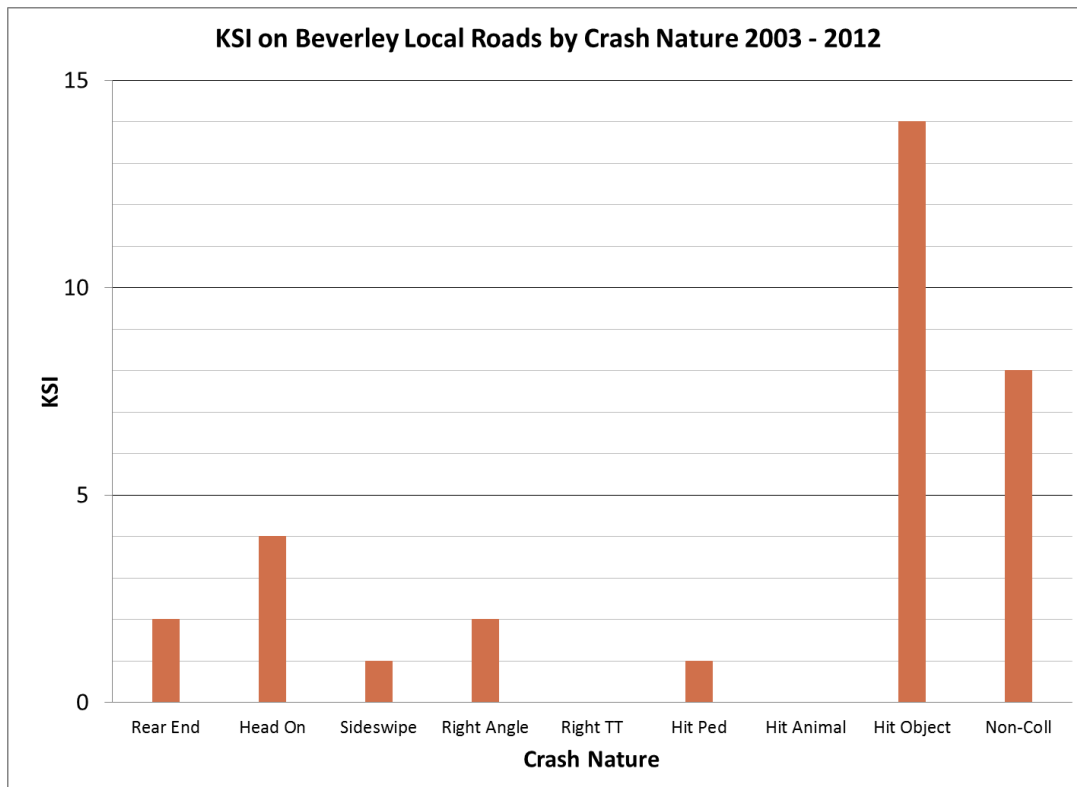


Figure 26: KSI by crash nature 2003 - 2012

6.1.2 Road User Type

KSI by road user type on the Shire of Beverley local road network from 2003 to 2012 is shown in Table 25 and Figure 27.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	19	22	0	0	41
Passenger	7	13	0	0	20
Motorcyclist	6	4	0	3	13
Bicyclist	0	0	0	0	0
Pedestrian	1	0	0	0	1
Other	0	2	0	0	2
Total	33	41	0	3	77

Table 25: KSI by road user 2003 - 2012

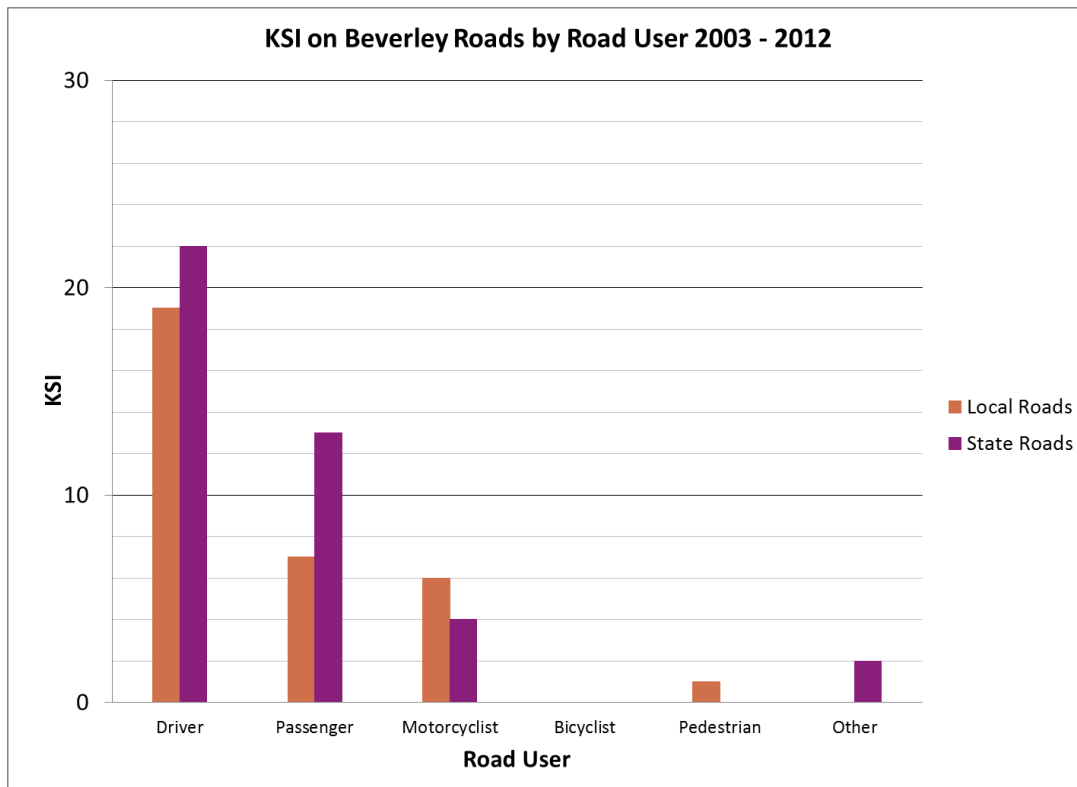


Figure 27: KSI by road user 2003 - 2012

From 2003 to 2012 approximately 80% of KSI on local roads were drivers or passengers, and 20% 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	1	7	0	0	8
Passenger	0	1	0	0	1
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	2	8	0	0	10

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 Beverley 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	9	11	0	0	20
Seatbelts Not Worn	2	1	0	0	3
Alcohol	3	0	0	0	3
Speed	3	2	0	3	8

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

Inattention is the dominant contributing factor in KSI, which is consistent with the Hit Object and Non-Collision crash natures identified previously.

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	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	3	0	0
50 to 59	1	0	0
60 to 69	1	0	0
70+	0	0	0
Unknown	1	0	0
Total	6	0	1

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

Table 28 shows there were six motorcyclists KSI on local roads.

6.2 Shire of Brookton

Refer also to the Wheatbelt South Region Local Road Crash Map Book 2012.

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

Crash Location	Road Manager	Crashes	%
Midblock	State	94	56.6
Intersection	State, State	1	0.6
Intersection	State, LG	6	3.6
Intersection	State, LG, Other	0	0.0
Intersection	State, Other	0	0.0
Midblock	LG	45	27.1
Intersection	LG, LG	2	1.2
Intersection	LG, Other	0	0.0
Midblock	Other	0	0.0
Intersection	Other, Other	0	0.0
Other	Unknown	18	10.8
Total		166	100.0

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

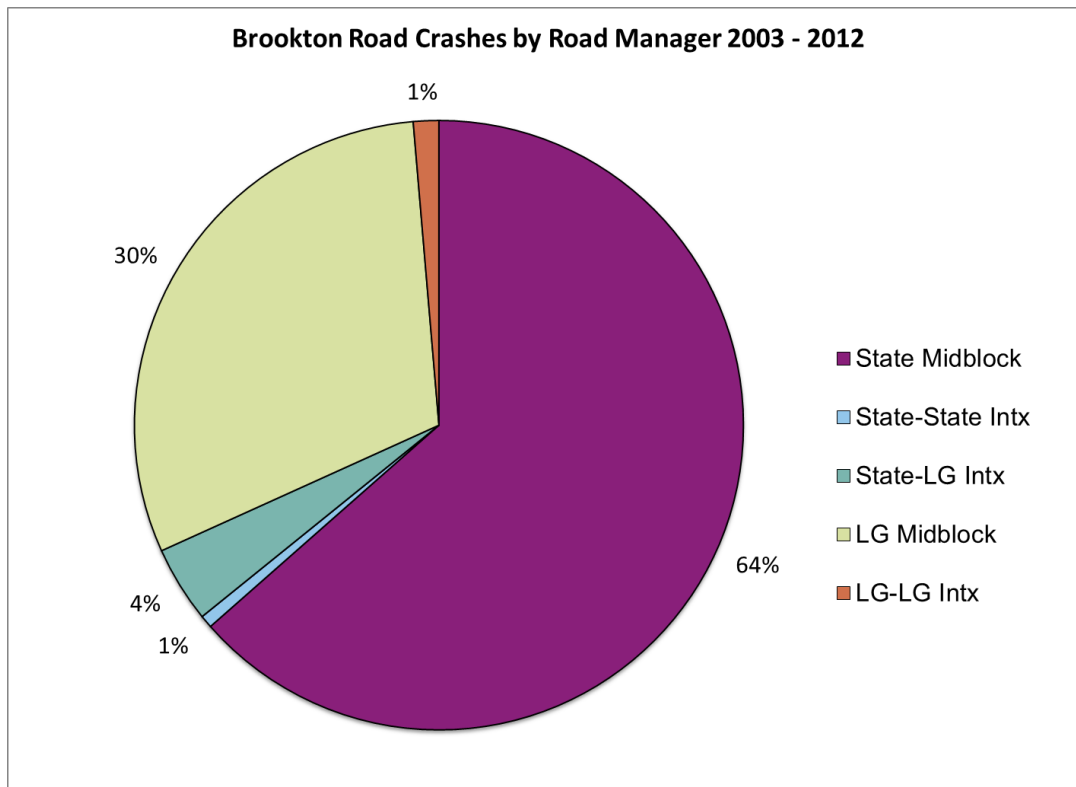


Figure 28: All crashes by crash location and road manager 2003 - 2012

Ignoring crashes at “Other” locations, Figure 28 shows:

- 30% 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.
- 65% of crashes occurred at State road locations including intersections where all legs were State roads.

Figure 28 also shows that 94% of crashes in the Shire of Brookton 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 Brookton 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	1	1	0	1	0	0	0	1	0	0	4

Table 30: KSI trend 2003 - 2012

6.2.1 Crash Nature

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

- All KSI occurred in single vehicle Hit Object crashes.

Crash Nature	Local Government and Region			
	2003 - 2012			2012
	Brookton	Wheatbelt South	% for Brookton	Brookton
	n	n	%	n
Multi-Vehicle Crashes				
Rear End	0	7	0.0	0
Head On	0	12	0.0	0
Sideswipe	0	3	0.0	0
Right Angle	0	12	0.0	0
Right Turn Thru	0	0	0.0	0
Multi-Vehicle Other	0	0	0.0	0
Multi-Vehicle Total	0	34	0.0	0
Single Vehicle Crashes				
Hit Pedestrian	0	3	0.0	0
Hit Animal	0	4	0.0	0
Hit Object	4	197	2.0	0
Non-Collision	0	97	0.0	0
Single Vehicle Other	0	4	0.0	0
Single Vehicle Total	4	305	1.3	0
Total	4	339	1.2	0

Table 31: KSI by crash nature 2003 - 2012

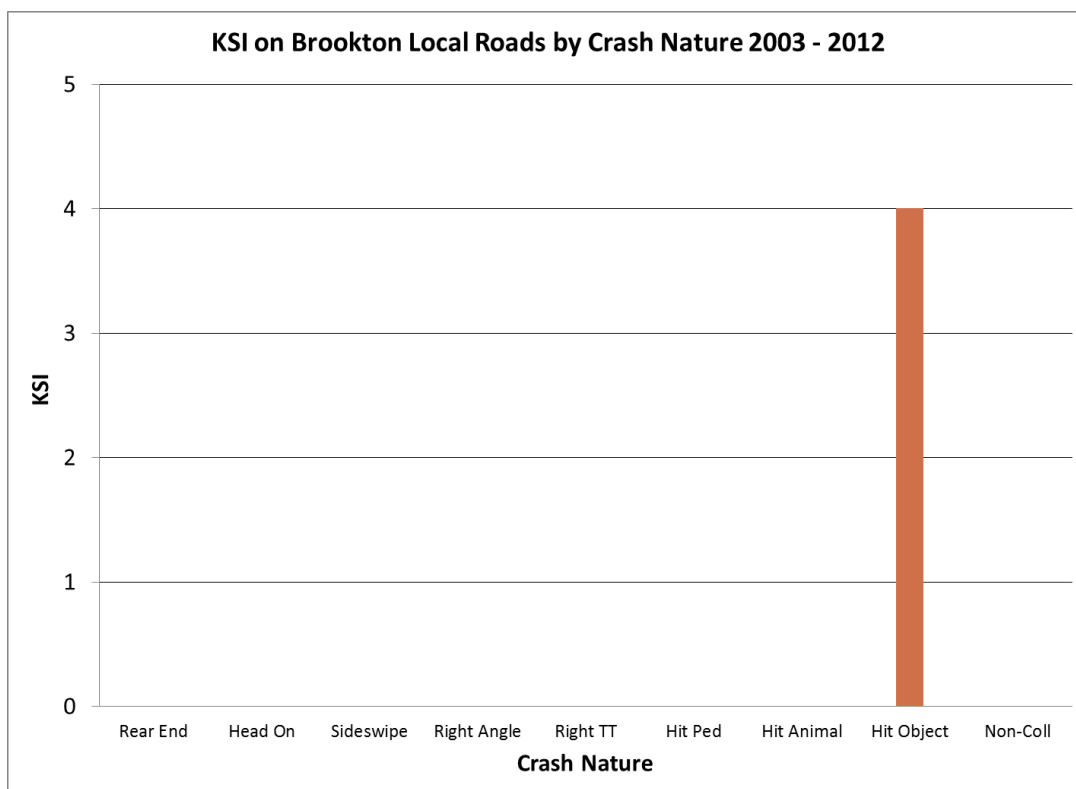


Figure 29: KSI by crash nature 2003 - 2012

6.2.2 Road User Type

KSI by road user type on the Shire of Brookton local road network from 2003 to 2012 is shown in Table 32 and Figure 30.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	2	14	0	5	21
Passenger	2	10	0	1	13
Motorcyclist	0	2	0	1	3
Bicyclist	0	0	0	0	0
Pedestrian	0	0	0	1	1
Other	0	0	0	0	0
Total	4	26	0	8	38

Table 32: KSI by road user 2003 - 2012

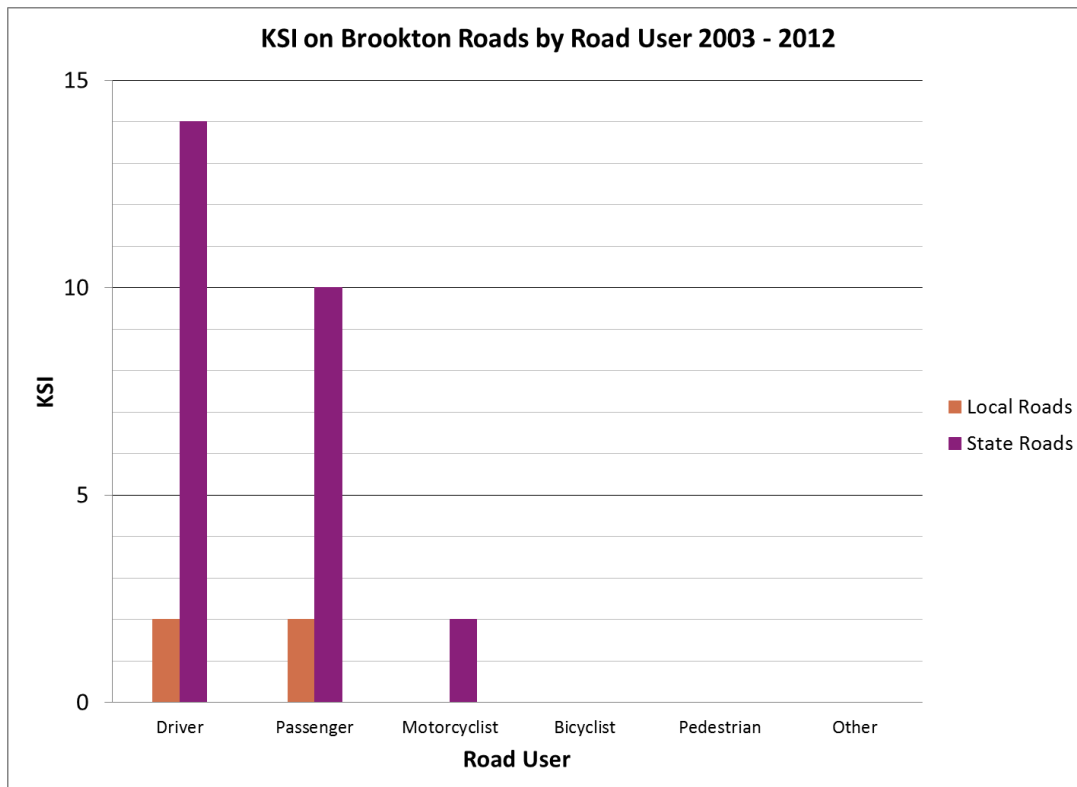


Figure 30: KSI by road user 2003 - 2012

From 2003 to 2012 all 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	0	0	1	1
Passenger	0	2	0	1	3
Motorcyclist	0	0	0	0	0
Bicyclist	0	0	0	0	0
Pedestrian	0	0	0	1	1
Other	0	0	0	0	0
Total	0	2	0	3	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 Brookton 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	8	0	0	8
Seatbelts Not Worn	1	0	0	1	2
Alcohol	1	3	0	0	4
Speed	1	4	0	1	6

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

Contributing factors in KSI cannot be identified due to low KSI numbers.

6.2.4 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.

6.3 Shire of Bruce Rock

Refer also to the Wheatbelt South Region Local Road Crash Map Book 2012.

Table 35 displays all crashes by crash location and road manager in the Shire of Bruce Rock from 2003 to 2012.

Crash Location	Road Manager	Crashes	%
Midblock	State	19	22.6
Intersection	State, State	0	0.0
Intersection	State, LG	5	6.0
Intersection	State, LG, Other	2	2.4
Intersection	State, Other	0	0.0
Midblock	LG	48	57.1
Intersection	LG, LG	7	8.3
Intersection	LG, Other	0	0.0
Midblock	Other	0	0.0
Intersection	Other, Other	0	0.0
Other	Unknown	3	3.6
Total		84	100.0

Table 35: All crashes by crash location and road manager 2003 - 2012

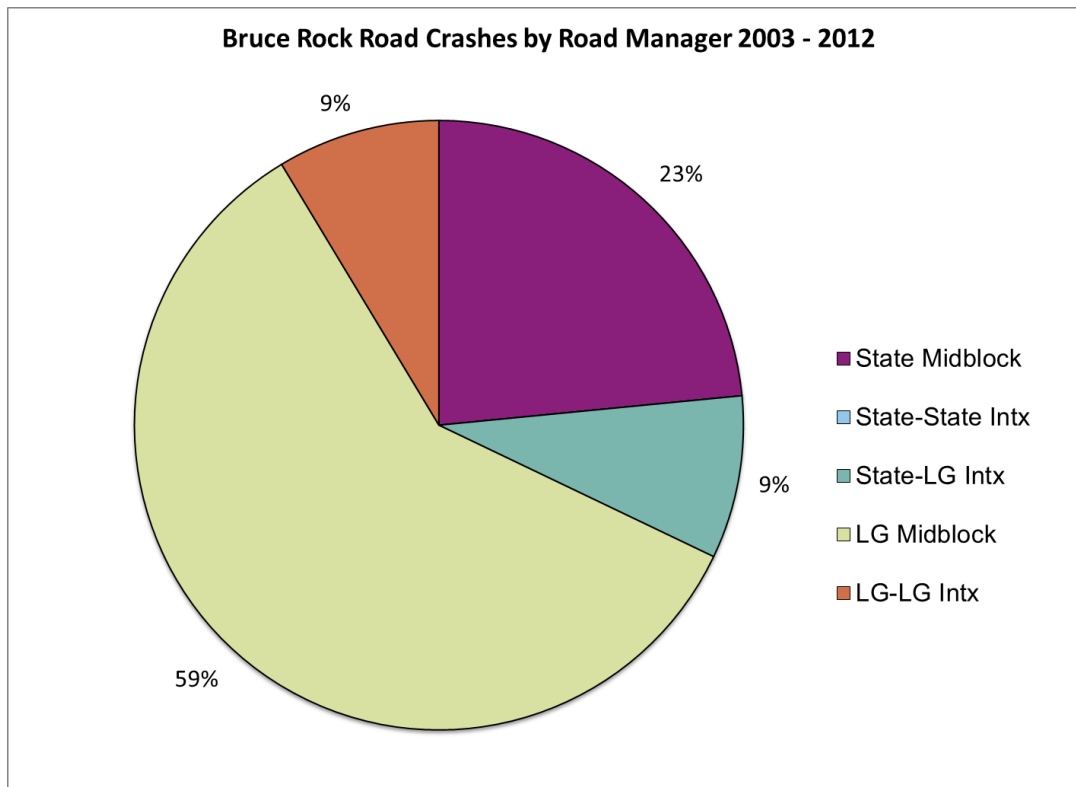


Figure 31: All crashes by crash location and road manager 2003 - 2012

Ignoring crashes at “Other” locations, Figure 31 shows:

- 68% 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.
- 23% of crashes occurred at State road locations including intersections where all legs were State roads.

Figure 31 also shows that 82% of crashes in the Shire of Bruce Rock 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 Bruce Rock local road network from 2003 to 2012 is shown in Table 36.

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

Table 36: KSI trend 2003 - 2012

6.3.1 Crash Nature

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

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

Crash Nature	Local Government and Region			
	2003 - 2012			2012
	Bruce Rock	Wheatbelt South	% for Bruce Rock	Bruce Rock
	n	n	%	n
Multi-Vehicle Crashes				
Rear End	0	7	0.0	0
Head On	0	12	0.0	0
Sideswipe	0	3	0.0	0
Right Angle	0	12	0.0	0
Right Turn Thru	0	0	0.0	0
Multi-Vehicle Other	0	0	0.0	0
Multi-Vehicle Total	0	34	0.0	0
Single Vehicle Crashes				
Hit Pedestrian	0	3	0.0	0
Hit Animal	0	4	0.0	0
Hit Object	4	197	2.0	0
Non-Collision	3	97	3.1	0
Single Vehicle Other	0	4	0.0	0
Single Vehicle Total	7	305	2.3	0
Total	7	339	2.1	0

Table 37: KSI by crash nature 2003 - 2012

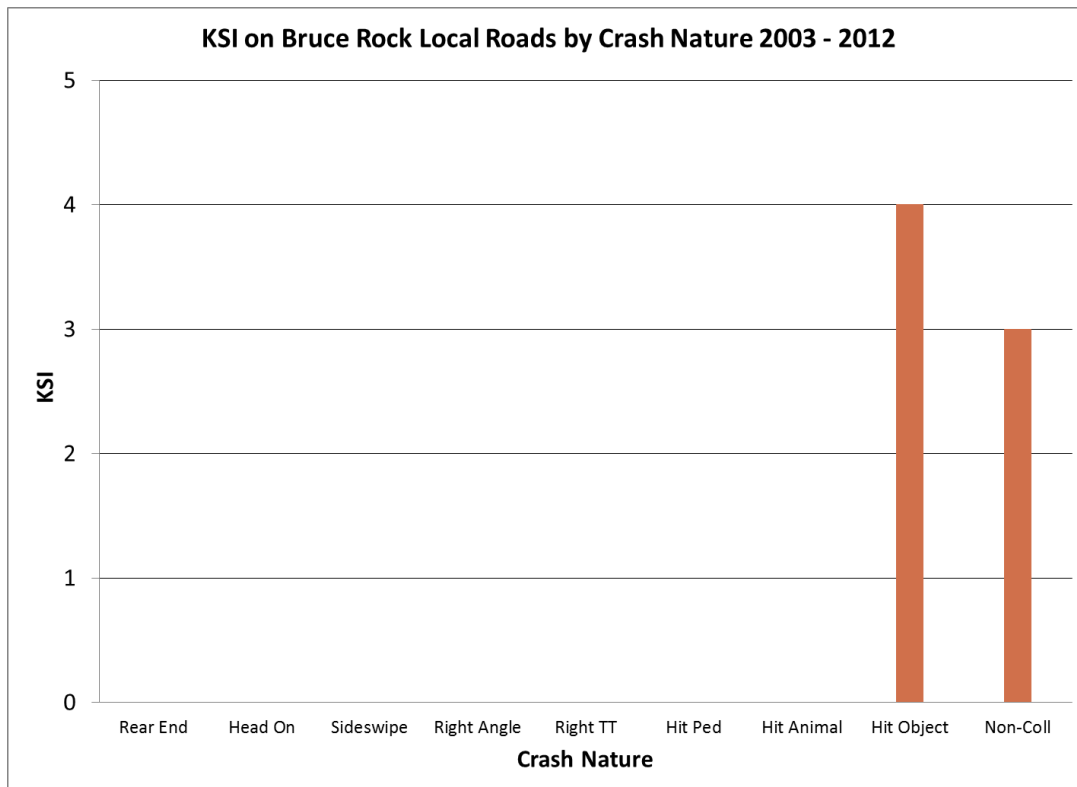


Figure 32: KSI by crash nature 2003 - 2012

6.3.2 Road User Type

KSI by road user type on the Shire of Bruce Rock local road network from 2003 to 2012 is shown in Table 38 and Figure 33.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	5	6	0	0	11
Passenger	1	0	0	0	1
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	7	6	0	0	13

Table 38: KSI by road user 2003 - 2012

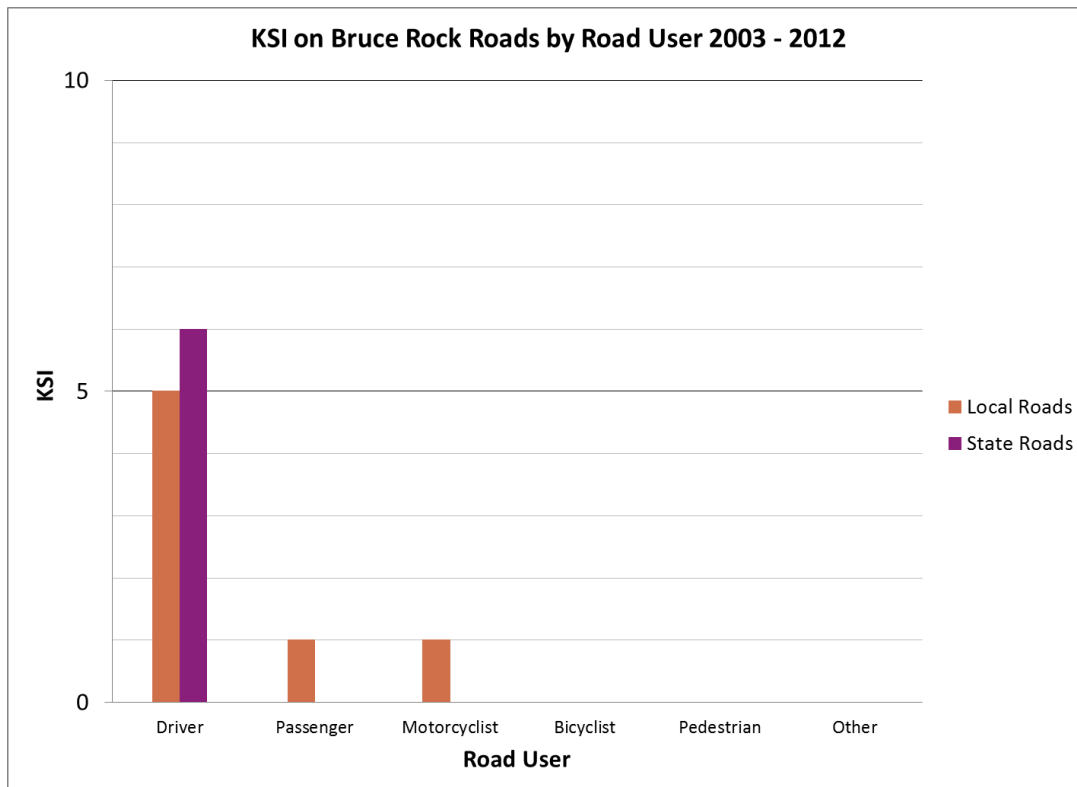


Figure 33: KSI by road user 2003 - 2012

From 2003 to 2012 approximately 86% of KSI on local roads were drivers or passengers. KSI for 2012 is shown in Table 39.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	0	1	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	0	1	0	0	1

Table 39: KSI by road user 2012

6.3.3 Road User Behaviour

The following table shows factors contributing to KSI on the Shire of Bruce Rock 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	1	0	0	2
Seatbelts Not Worn	2	1	0	0	3
Alcohol	2	2	0	0	4
Speed	1	1	0	0	2

Table 40: KSI by contributing factor 2003 - 2012 (police attended)

All four contributing factors have led to at least one KSI.

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	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	1	0	0
50 to 59	0	0	0
60 to 69	0	0	0
70+	0	0	0
Unknown	0	0	0
Total	1	0	0

Table 41: KSI by vulnerable road user and age 2003 - 2012

6.4 Shire of Corrigin

Refer also to the Wheatbelt South Region Local Road Crash Map Book 2012.

Table 42 displays all crashes by crash location and road manager in the Shire of Corrigin from 2003 to 2012.

Crash Location	Road Manager	Crashes	%
Midblock	State	41	28.5
Intersection	State, State	1	0.7
Intersection	State, LG	2	1.4
Intersection	State, LG, Other	0	0.0
Intersection	State, Other	0	0.0
Midblock	LG	80	55.6
Intersection	LG, LG	7	4.9
Intersection	LG, Other	0	0.0
Midblock	Other	0	0.0
Intersection	Other, Other	0	0.0
Other	Unknown	13	9.0
Total		144	100.0

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

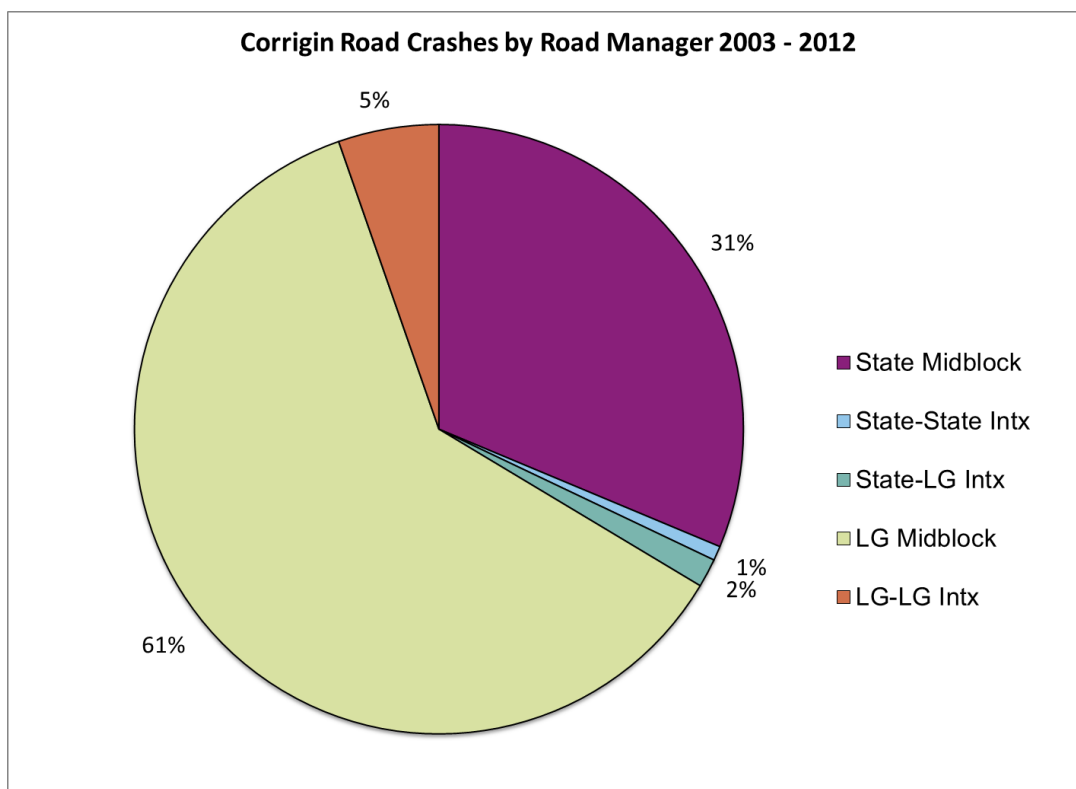


Figure 34: All crashes by crash location and road manager 2003 - 2012

Ignoring crashes at "Other" locations, Figure 34 shows:

- 66% 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.
- 32% of crashes occurred at State road locations including intersections where all legs were State roads.

Figure 34 also shows that 92% of crashes in the Shire of Corrigin 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 Corrigin local road network from 2003 to 2012 is shown in Table 43.

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
KSI	4	11	2	4	4	0	1	3	3	3	35

Table 43: KSI trend 2003 - 2012

6.4.1 Crash Nature

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

- 88% of KSI occurred in single vehicle crashes of Hit Object or Non-Collision.
- The Shire of Corrigin had 15% of single vehicle Non-Collision crashes resulting in KSI on the Wheatbelt South Region local road network; and
- The Shire of Corrigin had 10% of all single vehicle crashes resulting in KSI on the Wheatbelt South Region local road network.

Crash Nature	Local Government and Region			
	2003 - 2012			2012
	Corrigin	Wheatbelt South	% for Corrigin	Corrigin
	n	n	%	n
Multi-Vehicle Crashes				
Rear End	1	7	14.3	0
Head On	3	12	25.0	0
Sideswipe	0	3	0.0	0
Right Angle	0	12	0.0	0
Right Turn Thru	0	0	0.0	0
Multi-Vehicle Other	0	0	0.0	0
Multi-Vehicle Total	4	34	11.8	0
Single Vehicle Crashes				
Hit Pedestrian	0	3	0.0	0
Hit Animal	1	4	25.0	0
Hit Object	15	197	7.6	2
Non-Collision	15	97	15.5	1
Single Vehicle Other	0	4	0.0	0
Single Vehicle Total	31	305	10.2	3
Total	35	339	10.3	3

Table 44: KSI by crash nature 2003 - 2012

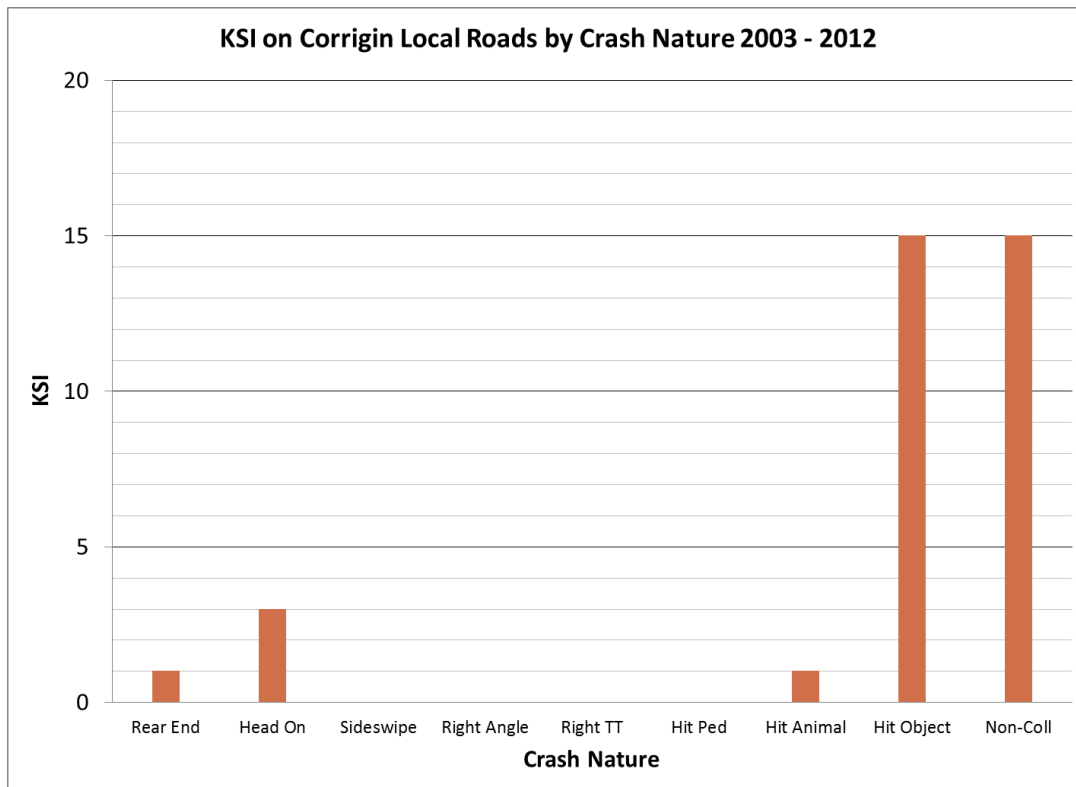


Figure 35: KSI by crash nature 2003 - 2012

6.4.2 Road User Type

KSI by road user type on the Shire of Corrigin local road network from 2003 to 2012 is shown in Table 45 and Figure 36.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	17	11	0	3	31
Passenger	16	6	0	3	25
Motorcyclist	2	0	0	0	2
Bicyclist	0	0	0	0	0
Pedestrian	0	0	0	0	0
Other	0	0	0	0	0
Total	35	17	0	6	58

Table 45: KSI by road user 2003 - 2012

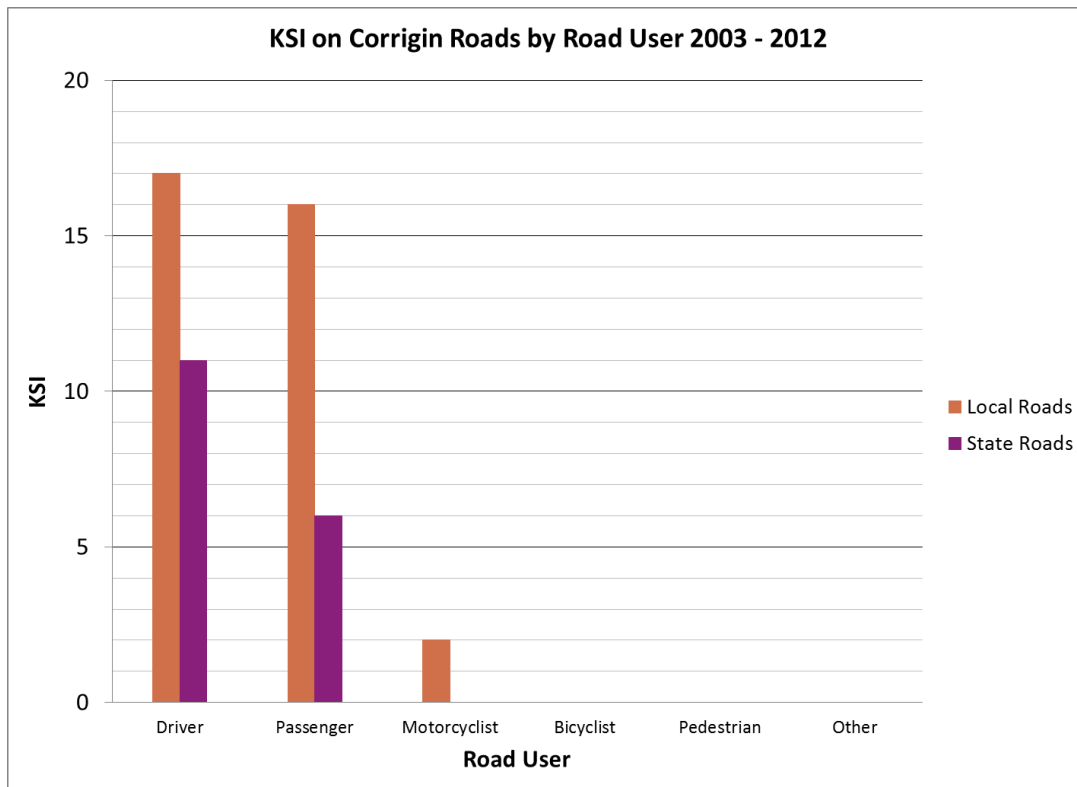


Figure 36: KSI by road user 2003 - 2012

From 2003 to 2012 approximately 94% of KSI on local roads were drivers or passengers. KSI for 2012 is shown in Table 46.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	2	1	0	0	3
Passenger	1	2	0	1	4
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	3	3	0	1	7

Table 46: KSI by road user 2012

6.4.3 Road User Behaviour

The following table shows factors contributing to KSI on the Shire of Corrigin 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	5	0	0	10
Seatbelts Not Worn	1	0	0	0	1
Alcohol	2	0	0	0	2
Speed	9	2	0	1	12

Table 47: KSI by contributing factor 2003 - 2012 (police attended)

Speed and inattention are the dominant contributing factors in KSI, which is consistent with the Hit Object and Non-Collision crash natures identified previously.

6.4.4 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	1	0	0
70+	0	0	0
Unknown	0	0	0
Total	2	0	0

Table 48: KSI by vulnerable road user and age 2003 - 2012

6.5 Shire of Cuballing

Refer also to the Wheatbelt South Region Local Road Crash Map Book 2012.

Table 49 displays all crashes by crash location and road manager in the Shire of Cuballing from 2003 to 2012.

Crash Location	Road Manager	Crashes	%
Midblock	State	41	36.6
Intersection	State, State	0	0.0
Intersection	State, LG	5	4.5
Intersection	State, LG, Other	0	0.0
Intersection	State, Other	0	0.0
Midblock	LG	60	53.6
Intersection	LG, LG	3	2.7
Intersection	LG, Other	0	0.0
Midblock	Other	0	0.0
Intersection	Other, Other	0	0.0
Other	Unknown	3	2.7
Total		112	100.0

Table 49: All crashes by crash location and road manager 2003 - 2012

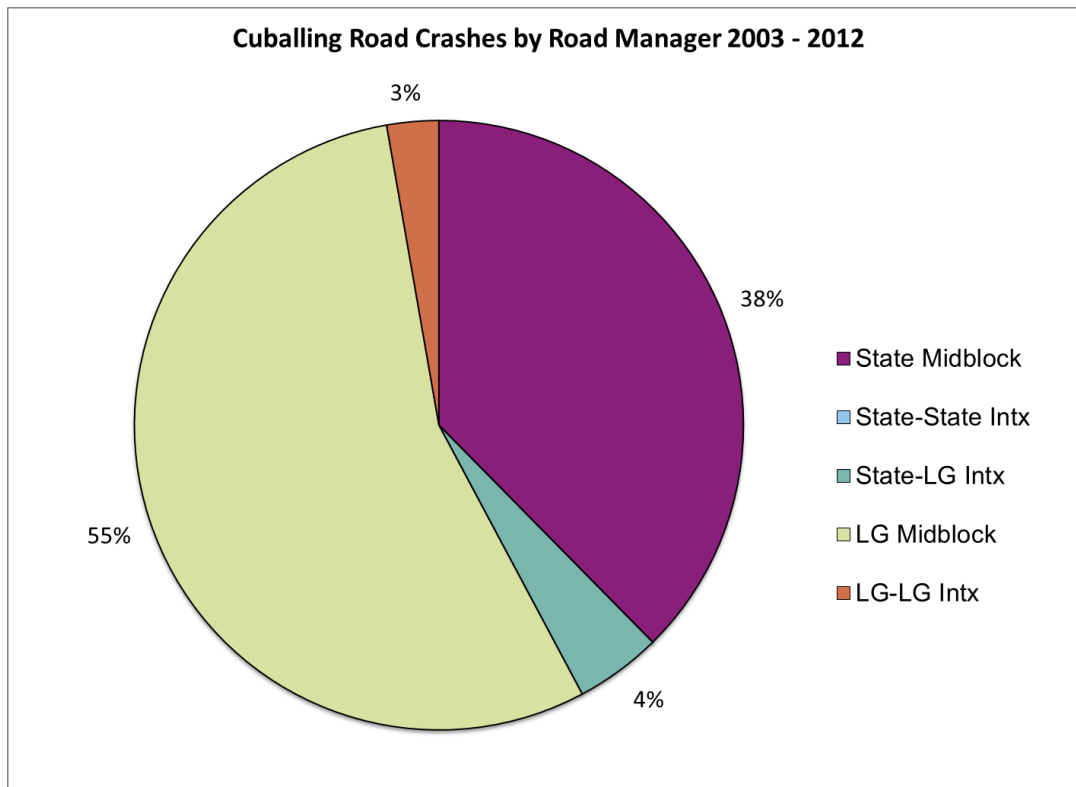


Figure 37: All crashes by crash location and road manager 2003 - 2012

Ignoring crashes at “Other” locations, Figure 37 shows:

- 58% 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.
- 38% of crashes occurred at State road locations including intersections where all legs were State roads.

Figure 37 also shows that 93% of crashes in the Shire of Cuballing occurred at midblock locations for Local and State roads. This is further investigated in the analysis of the crash nature.

The KSI trend for the Shire of Cuballing local road network from 2003 to 2012 is shown in Table 50.

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
KSI	0	1	0	5	2	3	4	0	3	0	18

Table 50: KSI trend 2003 - 2012

6.5.1 Crash Nature

A summary of KSI by crash nature on the Shire of Cuballing 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
	Cuballing	Wheatbelt South	% for Cuballing	Cuballing
	n	n	%	n
Multi-Vehicle Crashes				
Rear End	1	7	14.3	0
Head On	0	12	0.0	0
Sideswipe	0	3	0.0	0
Right Angle	0	12	0.0	0
Right Turn Thru	0	0	0.0	0
Multi-Vehicle Other	0	0	0.0	0
Multi-Vehicle Total	1	34	2.9	0
Single Vehicle Crashes				
Hit Pedestrian	0	3	0.0	0
Hit Animal	0	4	0.0	0
Hit Object	13	197	6.6	0
Non-Collision	4	97	4.1	0
Single Vehicle Other	0	4	0.0	0
Single Vehicle Total	17	305	5.6	0
Total	18	339	5.3	0

Table 51: KSI by crash nature 2003 - 2012

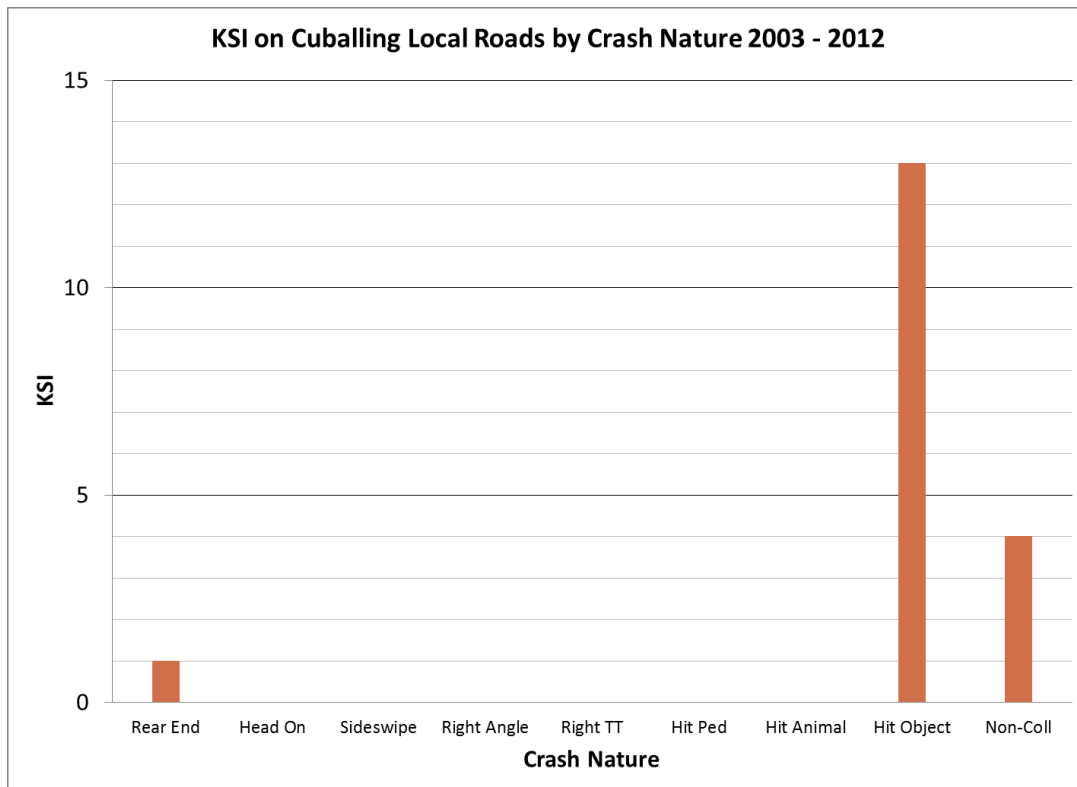


Figure 38: KSI by crash nature 2003 - 2012

6.5.2 Road User Type

KSI by road user type on the Shire of Cuballing local road network from 2003 to 2012 is shown in Table 52 and Figure 39.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	12	9	0	0	21
Passenger	6	2	0	0	8
Motorcyclist	0	2	0	0	2
Bicyclist	0	0	0	0	0
Pedestrian	0	0	0	0	0
Other	0	0	0	0	0
Total	18	13	0	0	31

Table 52: KSI by road user 2003 - 2012

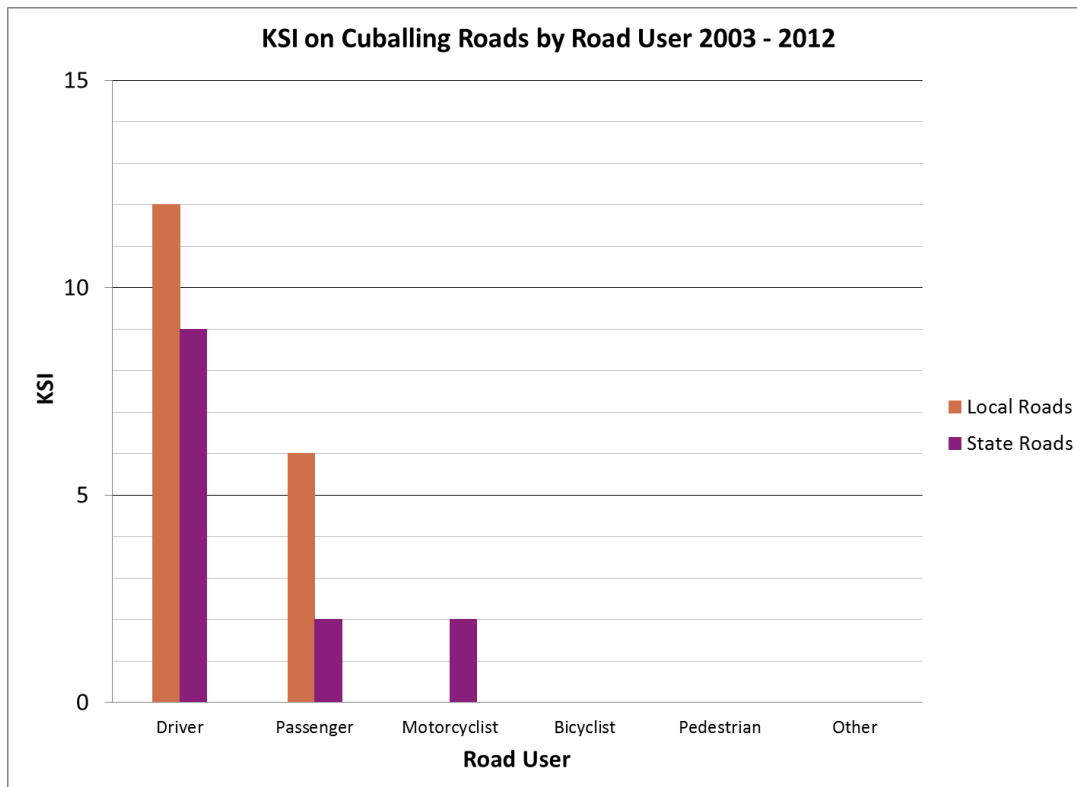


Figure 39: KSI by road user 2003 - 2012

From 2003 to 2012 all KSI on local roads were drivers or passengers. KSI for 2012 is shown in Table 53.

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

Table 53: KSI by road user 2012

6.5.3 Road User Behaviour

The following table shows factors contributing to KSI on the Shire of Cuballing 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	3	0	0	8
Seatbelts Not Worn	0	2	0	0	2
Alcohol	1	1	0	0	2
Speed	4	4	0	0	8

Table 54: KSI by contributing factor 2003 - 2012 (police attended)

Speed and inattention are the dominant contributing factors in KSI, which is consistent with the Hit Object and Non-Collision crash natures identified previously.

6.5.4 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.

6.6 Shire of Dumbleyung

Refer also to the Wheatbelt South Region Local Road Crash Map Book 2012.

Table 55 displays all crashes in the Shire of Dumbleyung by crash location and road manager from 2003 to 2012.

Crash Location	Road Manager	Crashes	%
Midblock	State	37	38.1
Intersection	State, State	0	0.0
Intersection	State, LG	2	2.1
Intersection	State, LG, Other	0	0.0
Intersection	State, Other	0	0.0
Midblock	LG	44	45.4
Intersection	LG, LG	8	8.2
Intersection	LG, Other	0	0.0
Midblock	Other	0	0.0
Intersection	Other, Other	0	0.0
Other	Unknown	6	6.2
Total		97	100.0

Table 55: All crashes by crash location and road manager 2003 - 2012

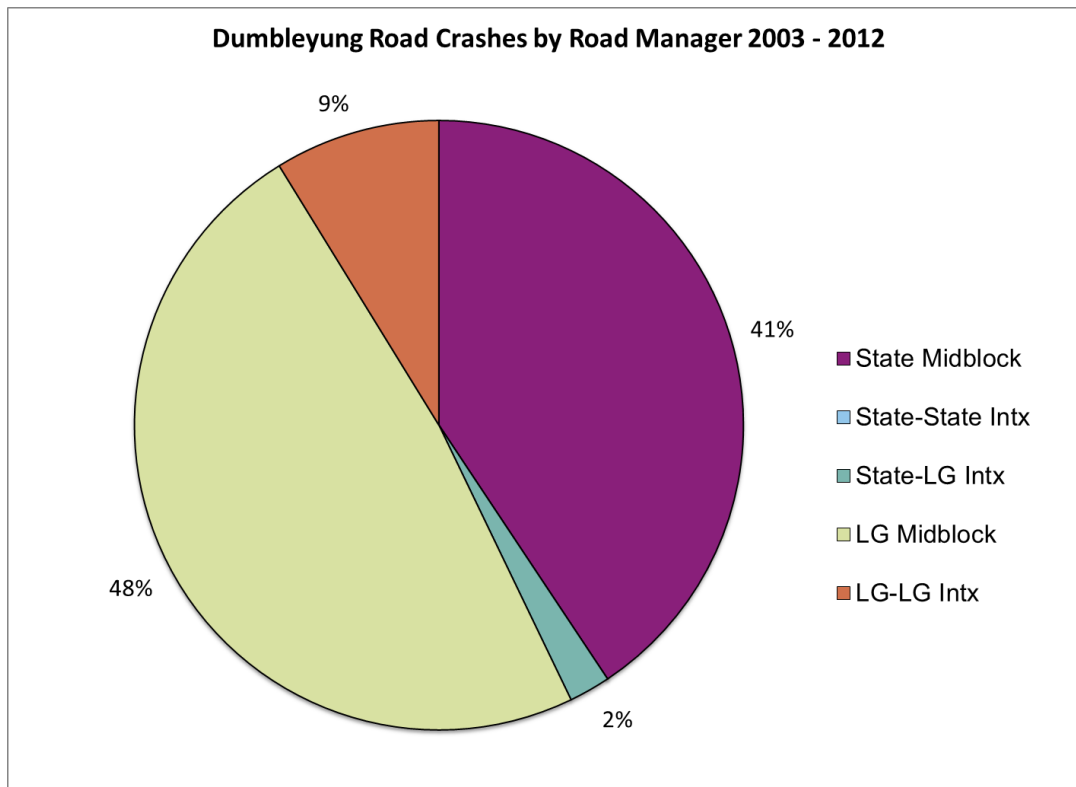


Figure 40: All crashes by crash location and road manager 2003 - 2012

Ignoring crashes at “Other” locations, Figure 40 shows:

- 57% 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.
- 41% of crashes occurred at State road locations including intersections where all legs were State roads.

Figure 40 also shows that 89% of crashes in the Shire of Dumbleyung occurred at midblock locations for Local and State roads. This is further investigated in the analysis of the crash nature.

The KSI trend for the Shire of Dumbleyung local road network from 2003 to 2012 is shown in Table 56.

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
KSI	0	1	1	0	4	5	0	1	0	0	12

Table 56: KSI trend 2003 - 2012

6.6.1 Crash Nature

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

- 83% of KSI occurred in single vehicle crashes of Hit Object or Non-Collision; and
- 17% of KSI occurred in Head On crashes.

Crash Nature	Local Government and Region			
	2003 - 2012			2012
	Dumbleyung	Wheatbelt South	% for Dumbleyung	Dumbleyung
	n	n	%	n
Multi-Vehicle Crashes				
Rear End	0	7	0.0	0
Head On	2	12	16.7	0
Sideswipe	0	3	0.0	0
Right Angle	0	12	0.0	0
Right Turn Thru	0	0	0.0	0
Multi-Vehicle Other	0	0	0.0	0
Multi-Vehicle Total	2	34	5.9	0
Single Vehicle Crashes				
Hit Pedestrian	0	3	0.0	0
Hit Animal	0	4	0.0	0
Hit Object	6	197	3.0	0
Non-Collision	4	97	4.1	0
Single Vehicle Other	0	4	0.0	0
Single Vehicle Total	10	305	3.3	0
Total	12	339	3.5	0

Table 57: KSI by crash nature 2003 - 2012

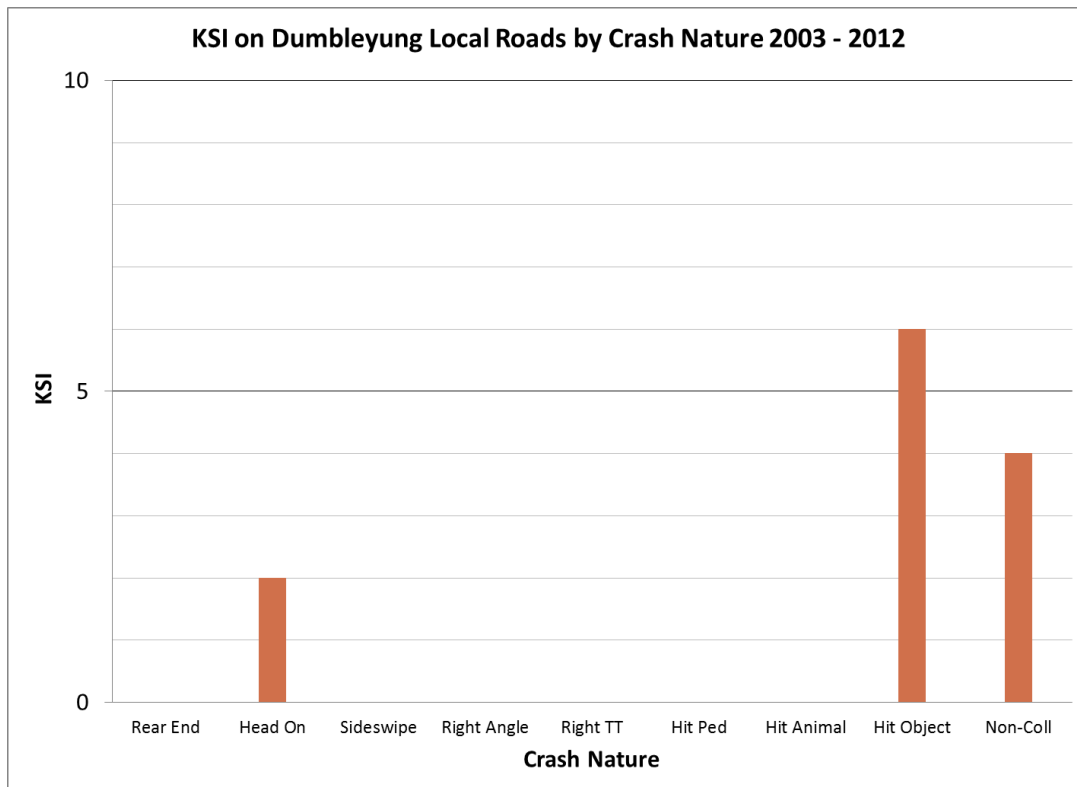


Figure 41: KSI by crash nature 2003 - 2012

6.6.2 Road User Type

KSI by road user type on the Shire of Dumbleyung local road network from 2003 to 2012 is shown in Table 58 and Figure 42.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	8	5	0	0	13
Passenger	2	4	0	0	6
Motorcyclist	2	0	0	0	2
Bicyclist	0	0	0	0	0
Pedestrian	0	0	0	0	0
Other	0	0	0	0	0
Total	12	9	0	0	21

Table 58: KSI by road user 2003 - 2012

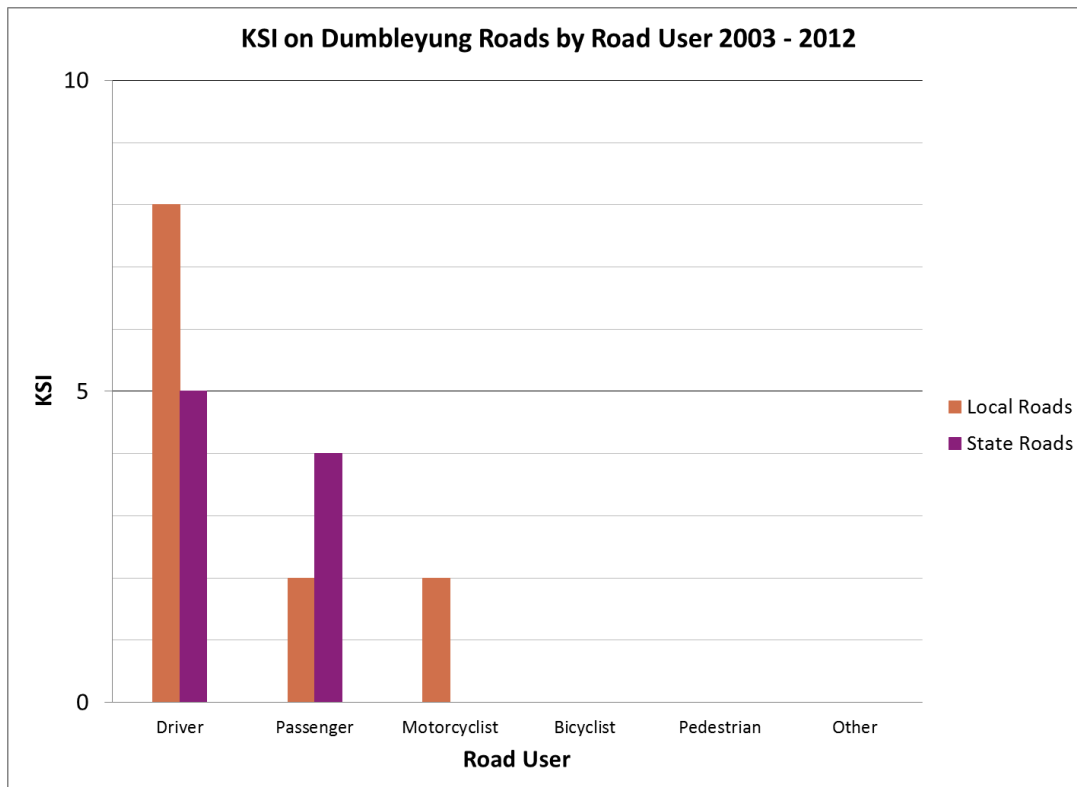


Figure 42: KSI by road user 2003 - 2012

From 2003 to 2012 approximately 83% of KSI on local roads were drivers or passengers, and 17% were motorcyclists. KSI for 2012 is shown in Table 59.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	0	2	0	0	2
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	4	0	0	4

Table 59: KSI by road user 2012

6.6.3 Road User Behaviour

The following table shows factors contributing to KSI on the Shire of Dumbleyung 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	0	0	0	3
Seatbelts Not Worn	0	0	0	0	0
Alcohol	2	0	0	0	2
Speed	1	0	0	0	1

Table 60: KSI by contributing factor 2003 - 2012 (police attended)

Inattention is the dominant contributing factor in KSI, which is consistent with the Hit Object and Non-Collision crash natures identified previously.

6.6.4 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	1	0	0
50 to 59	1	0	0
60 to 69	0	0	0
70+	0	0	0
Unknown	0	0	0
Total	2	0	0

Table 61: KSI by vulnerable road user and age 2003 - 2012

6.7 Shire of Kondinin

Refer also to the Wheatbelt South Region Local Road Crash Map Book 2012.

Table 62 displays all crashes in the Shire of Kondinin by crash location and road manager from 2003 to 2012.

Crash Location	Road Manager	Crashes	%
Midblock	State	63	36.4
Intersection	State, State	0	0.0
Intersection	State, LG	2	1.2
Intersection	State, LG, Other	0	0.0
Intersection	State, Other	0	0.0
Midblock	LG	80	46.2
Intersection	LG, LG	9	5.2
Intersection	LG, Other	0	0.0
Midblock	Other	0	0.0
Intersection	Other, Other	0	0.0
Other	Unknown	19	11.0
Total		173	100.0

Table 62: All crashes by crash location and road manager 2003 - 2012

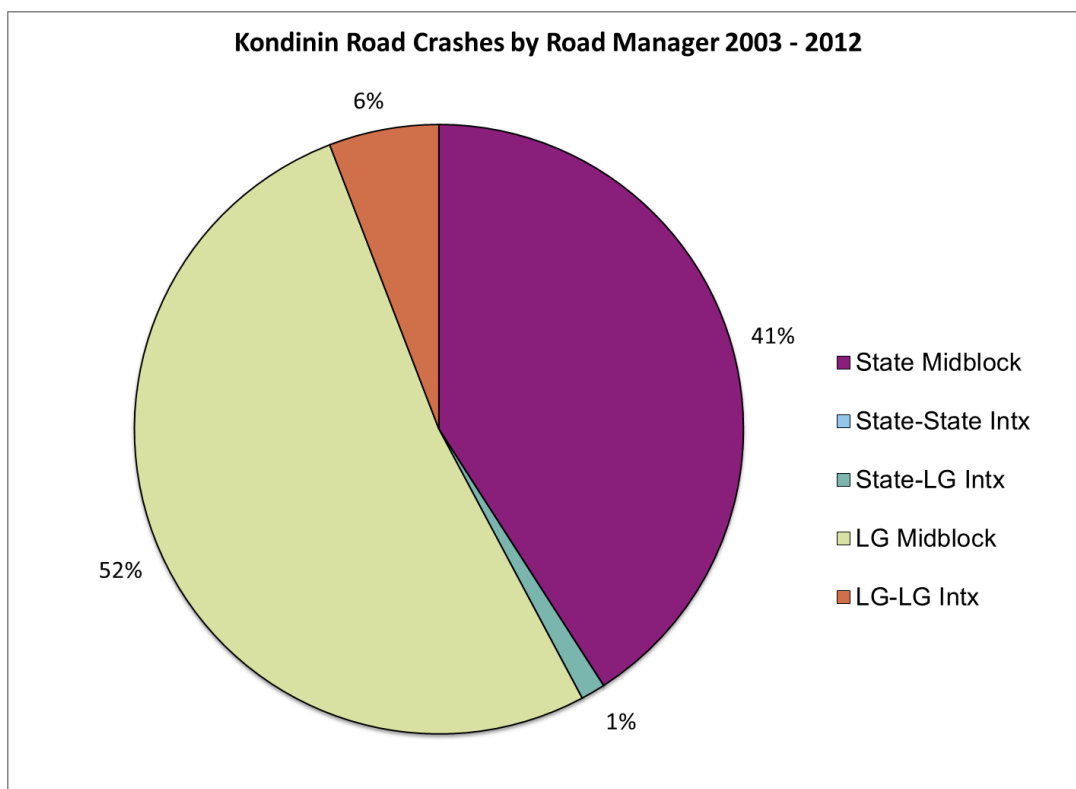


Figure 43: All crashes by crash location and road manager 2003 - 2012

Ignoring crashes at “Other” locations, Figure 43 shows:

- 58% 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.
- 41% of crashes occurred at State road locations including intersections where all legs were State roads.

Figure 43 also shows that 93% of crashes in the Shire of Kondinin occurred at midblock locations for Local and State roads. This is further investigated in the analysis of the crash nature.

The KSI trend for the Shire of Kondinin local road network from 2003 to 2012 is shown in Table 63.

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
KSI	0	2	3	4	4	1	4	1	3	2	24

Table 63: KSI trend 2003 - 2012

6.7.1 Crash Nature

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

- 100% of KSI occurred in single vehicle crashes of Hit Object or Non-Collision.
- The Shire of Kondinin had 13% of single vehicle Non-Collision crashes resulting in KSI on the Wheatbelt South Region local road network.

Crash Nature	Local Government and Region			
	2003 - 2012			2012
	Kondinin	Wheatbelt South	% for Kondinin	Kondinin
	n	n	%	n
Multi-Vehicle Crashes				
Rear End	0	7	0.0	0
Head On	0	12	0.0	0
Sideswipe	0	3	0.0	0
Right Angle	0	12	0.0	0
Right Turn Thru	0	0	0.0	0
Multi-Vehicle Other	0	0	0.0	0
Multi-Vehicle Total	0	34	0.0	0
Single Vehicle Crashes				
Hit Pedestrian	0	3	0.0	0
Hit Animal	0	4	0.0	0
Hit Object	12	197	6.1	1
Non-Collision	12	97	12.4	1
Single Vehicle Other	0	4	0.0	0
Single Vehicle Total	24	305	7.9	2
Total	24	339	7.1	2

Table 64: KSI by crash nature 2003 - 2012

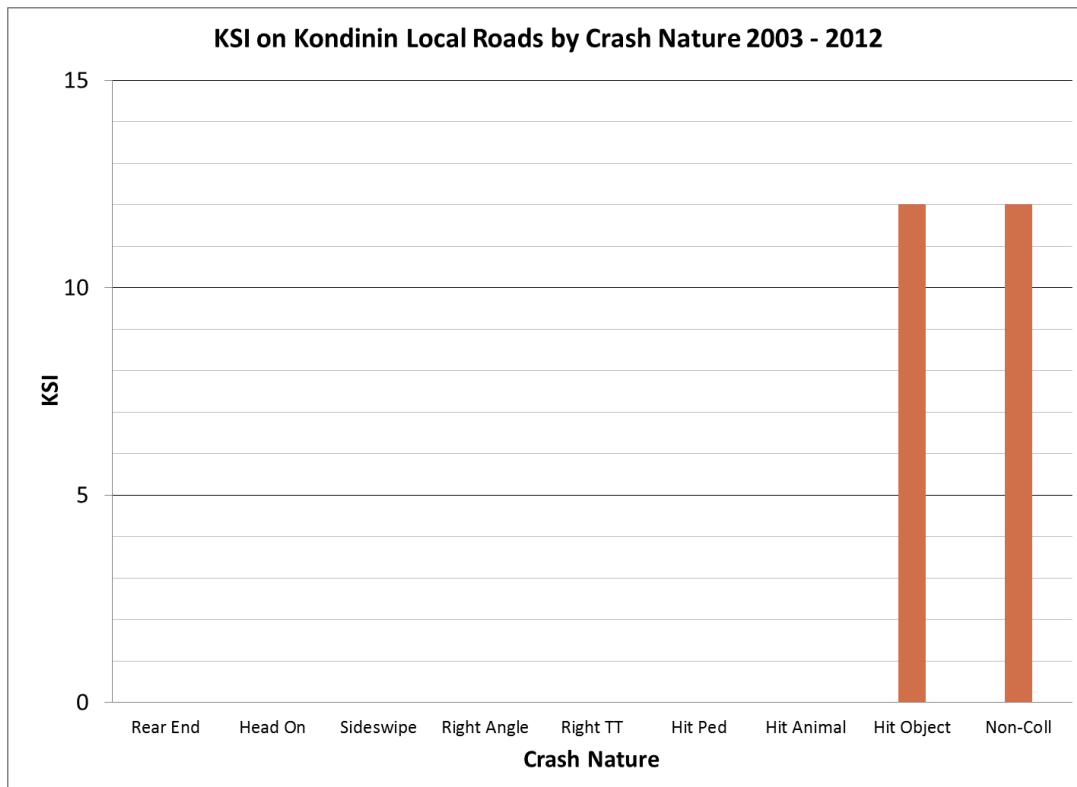


Figure 44: KSI by crash nature 2003 - 2012

6.7.2 Road User Type

KSI by road user type on the Shire of Kondinin local road network from 2003 to 2012 is shown in Table 65 and Figure 45.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	15	9	0	2	26
Passenger	9	8	0	4	21
Motorcyclist	0	1	0	1	2
Bicyclist	0	0	0	0	0
Pedestrian	0	0	0	0	0
Other	0	0	0	0	0
Total	24	18	0	7	49

Table 65: KSI by road user 2003 - 2012

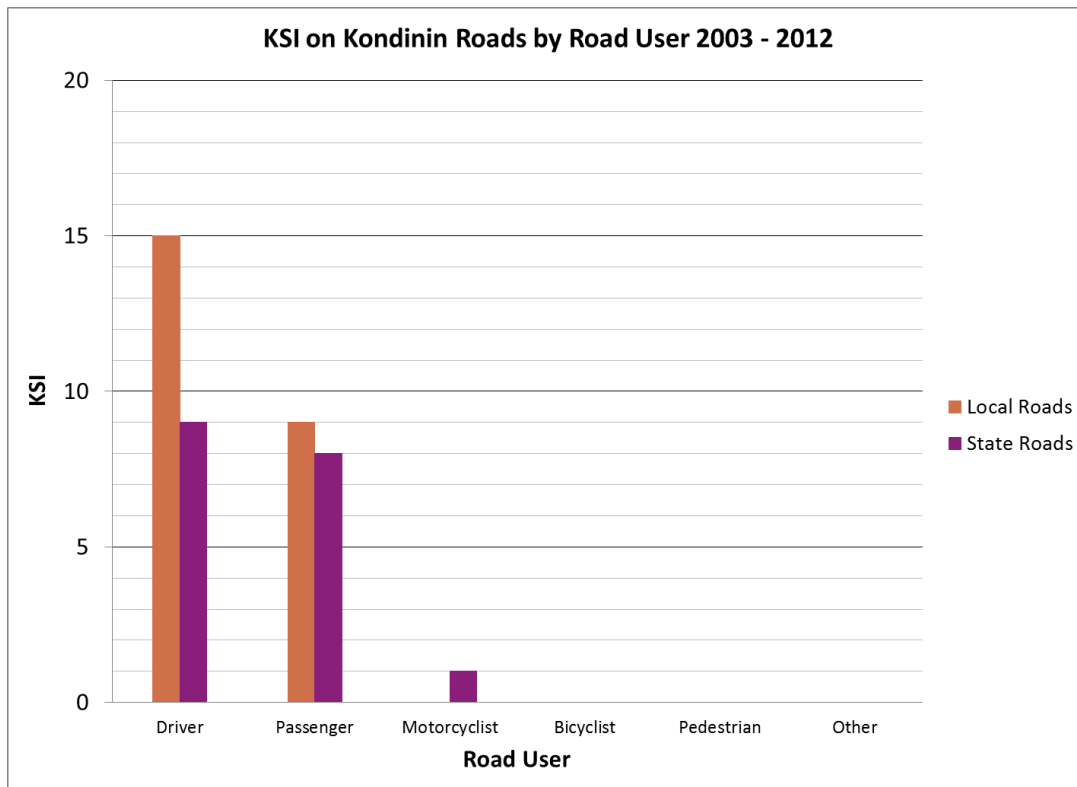


Figure 45: KSI by road user 2003 - 2012

From 2003 to 2012 all KSI on local roads were drivers or passengers. KSI for 2012 is shown in Table 66.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	2	1	0	0	3
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	2	1	0	0	3

Table 66: KSI by road user 2012

6.7.3 Road User Behaviour

The following table shows factors contributing to KSI on the Shire of Kondinin 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	7	0	2	11
Seatbelts Not Worn	5	0	0	0	5
Alcohol	3	0	0	0	3
Speed	8	3	0	2	13

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

Speed is the dominant contributing factor in KSI, which is consistent with the Hit Object and Non-Collision crash natures identified previously.

6.7.4 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.

6.8 Shire of Kulin

Refer also to the Wheatbelt South Region Local Road Crash Map Book 2012.

Table 68 displays all crashes in the Shire of Kulin by crash location and road manager from 2003 to 2012.

Crash Location	Road Manager	Crashes	%
Midblock	State	35	35.4
Intersection	State, State	0	0.0
Intersection	State, LG	0	0.0
Intersection	State, LG, Other	0	0.0
Intersection	State, Other	0	0.0
Midblock	LG	55	55.6
Intersection	LG, LG	7	7.1
Intersection	LG, Other	0	0.0
Midblock	Other	0	0.0
Intersection	Other, Other	0	0.0
Other	Unknown	2	2.0
Total		99	100.0

Table 68: All crashes by crash location and road manager 2003 - 2012

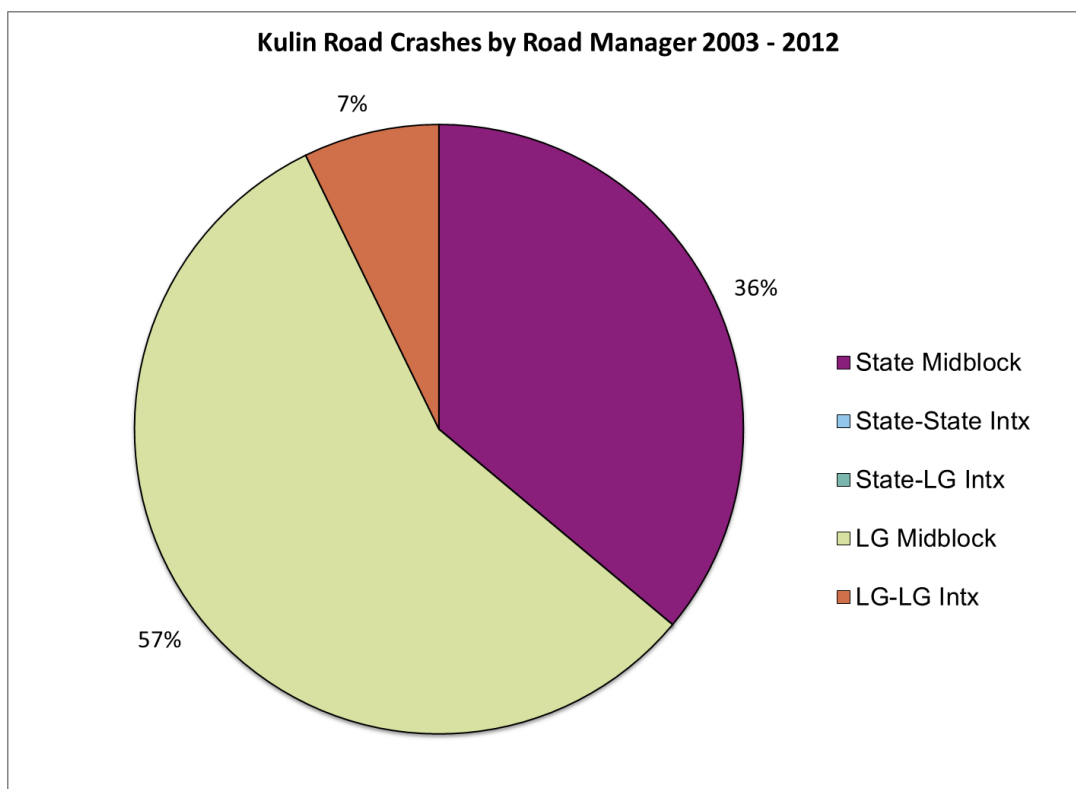


Figure 46: All crashes by crash location and road manager 2003 - 2012

Ignoring crashes at “Other” locations, Figure 46 shows:

- 64% of crashes occurred at local road locations including intersections where all legs were local roads; and
- 36% of crashes occurred at State road locations including intersections where all legs were State roads.

Figure 46 also shows that 93% of crashes in the Shire of Kulin occurred at midblock locations for Local and State roads. This is further investigated in the analysis of the crash nature.

The KSI trend for the Shire of Kulin local road network from 2003 to 2012 is shown in Table 69.

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
KSI	5	0	1	2	4	1	0	3	0	1	17

Table 69: KSI trend 2003 - 2012

6.8.1 Crash Nature

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

- 82% of KSI occurred in single vehicle crashes of Hit Object or Non-Collision.

Crash Nature	Local Government and Region			
	2003 - 2012			2012
	Kulin	Wheatbelt South	% for Kulin	Kulin
	n	n	%	n
Multi-Vehicle Crashes				
Rear End	2	7	28.6	0
Head On	0	12	0.0	0
Sideswipe	0	3	0.0	0
Right Angle	0	12	0.0	0
Right Turn Thru	0	0	0.0	0
Multi-Vehicle Other	0	0	0.0	0
Multi-Vehicle Total	2	34	5.9	0
Single Vehicle Crashes				
Hit Pedestrian	0	3	0.0	0
Hit Animal	1	4	25.0	0
Hit Object	7	197	3.6	1
Non-Collision	7	97	7.2	0
Single Vehicle Other	0	4	0.0	0
Single Vehicle Total	15	305	4.9	1
Total	17	339	5.0	1

Table 70: KSI by crash nature 2003 - 2012

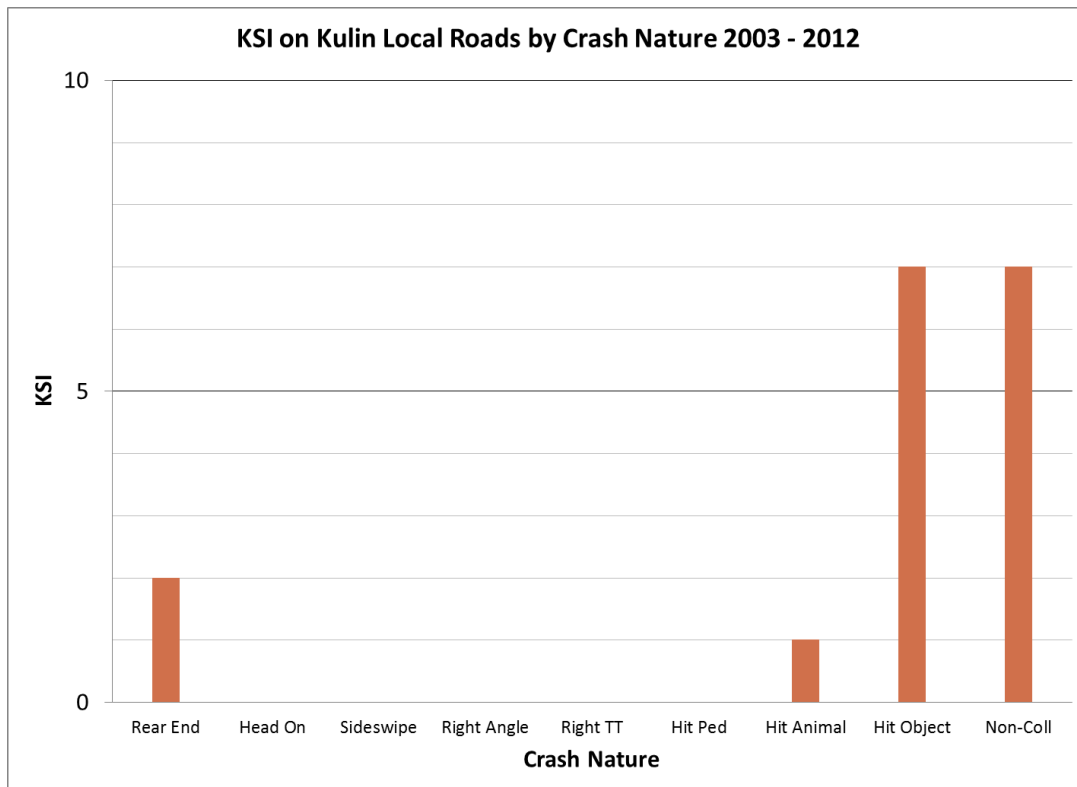


Figure 47: KSI by crash nature 2003 - 2012

6.8.2 Road User Type

KSI by road user type on the Shire of Kulin local road network from 2003 to 2012 is shown in Table 71 and Figure 48.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	10	7	0	0	17
Passenger	7	9	0	0	16
Motorcyclist	0	3	0	0	3
Bicyclist	0	0	0	0	0
Pedestrian	0	0	0	0	0
Other	0	0	0	1	1
Total	17	19	0	1	37

Table 71: KSI by road user 2003 - 2012

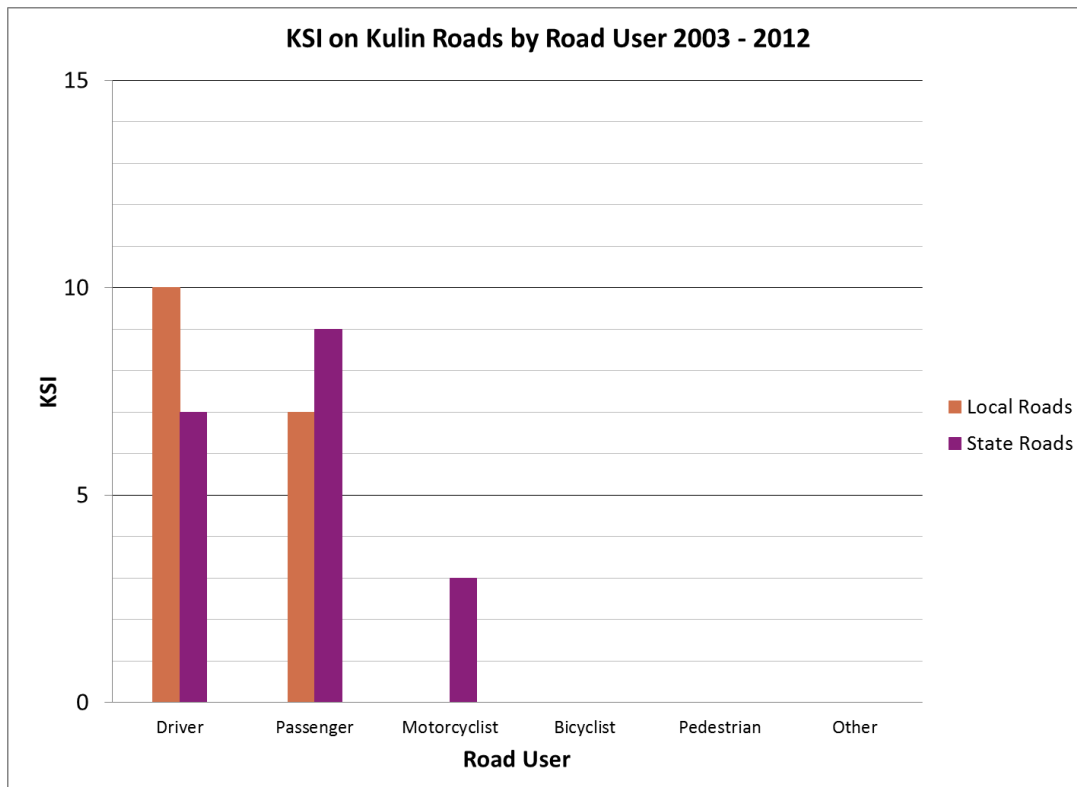


Figure 48: KSI by road user 2003 - 2012

From 2003 to 2012 all KSI on local roads were drivers or passengers. KSI for 2012 is shown in Table 72.

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 72: KSI by road user 2012

6.8.3 Road User Behaviour

The following table shows factors contributing to KSI on the Shire of Kulin 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	2	2	0	0	4
Alcohol	1	1	0	0	2
Speed	0	6	0	0	6

Table 73: KSI by contributing factor 2003 - 2012 (police attended)

6.8.4 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.

6.9 Shire of Lake Grace

Refer also to the Wheatbelt South Region Local Road Crash Map Book 2012.

Table 74 displays all crashes in the Shire of Lake Grace by crash location and road manager from 2003 to 2012.

Crash Location	Road Manager	Crashes	%
Midblock	State	102	56.7
Intersection	State, State	1	0.6
Intersection	State, LG	11	6.1
Intersection	State, LG, Other	0	0.0
Intersection	State, Other	0	0.0
Midblock	LG	56	31.1
Intersection	LG, LG	7	3.9
Intersection	LG, Other	0	0.0
Midblock	Other	0	0.0
Intersection	Other, Other	0	0.0
Other	Unknown	3	1.7
Total		180	100.0

Table 74: All crashes by crash location and road manager 2003 - 2012

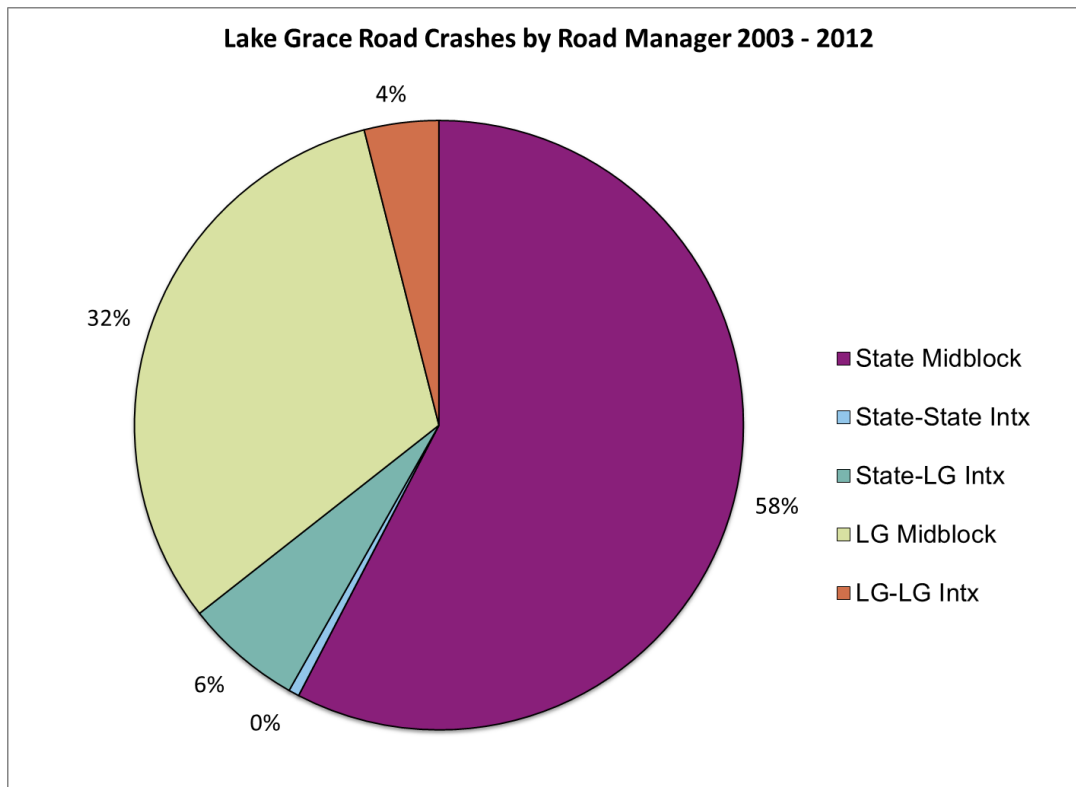


Figure 49: All crashes by crash location and road manager 2003 - 2012

Ignoring crashes at “Other” locations, Figure 49 shows:

- 36% of crashes occurred at local road locations including intersections where all legs were local roads.
- 6% of crashes occurred at intersections having both Local and State road legs.
- 58% of crashes occurred at State road locations including intersections where all legs were State roads.

Figure 49 also shows that 90% of crashes in the Shire of Lake Grace occurred at midblock locations for Local and State roads. This is further investigated in the analysis of the crash nature.

The KSI trend for the Shire of Lake Grace local road network from 2003 to 2012 is shown in Table 75.

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
KSI	0	0	1	3	1	0	1	0	3	0	9

Table 75: KSI trend 2003 - 2012

6.9.1 Crash Nature

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

- 89% of KSI occurred in single vehicle crashes of Hit Object or Non-Collision.

Crash Nature	Local Government and Region			
	2003 - 2012			2012
	Lake Grace	Wheatbelt South	% for Lake Grace	Lake Grace
	n	n	%	n
Multi-Vehicle Crashes				
Rear End	0	7	0.0	0
Head On	0	12	0.0	0
Sideswipe	0	3	0.0	0
Right Angle	0	12	0.0	0
Right Turn Thru	0	0	0.0	0
Multi-Vehicle Other	0	0	0.0	0
Multi-Vehicle Total	0	34	0.0	0
Single Vehicle Crashes				
Hit Pedestrian	1	3	33.3	0
Hit Animal	0	4	0.0	0
Hit Object	2	197	1.0	0
Non-Collision	6	97	6.2	0
Single Vehicle Other	0	4	0.0	0
Single Vehicle Total	9	305	3.0	0
Total	9	339	2.7	0

Table 76: KSI by crash nature 2003 - 2012

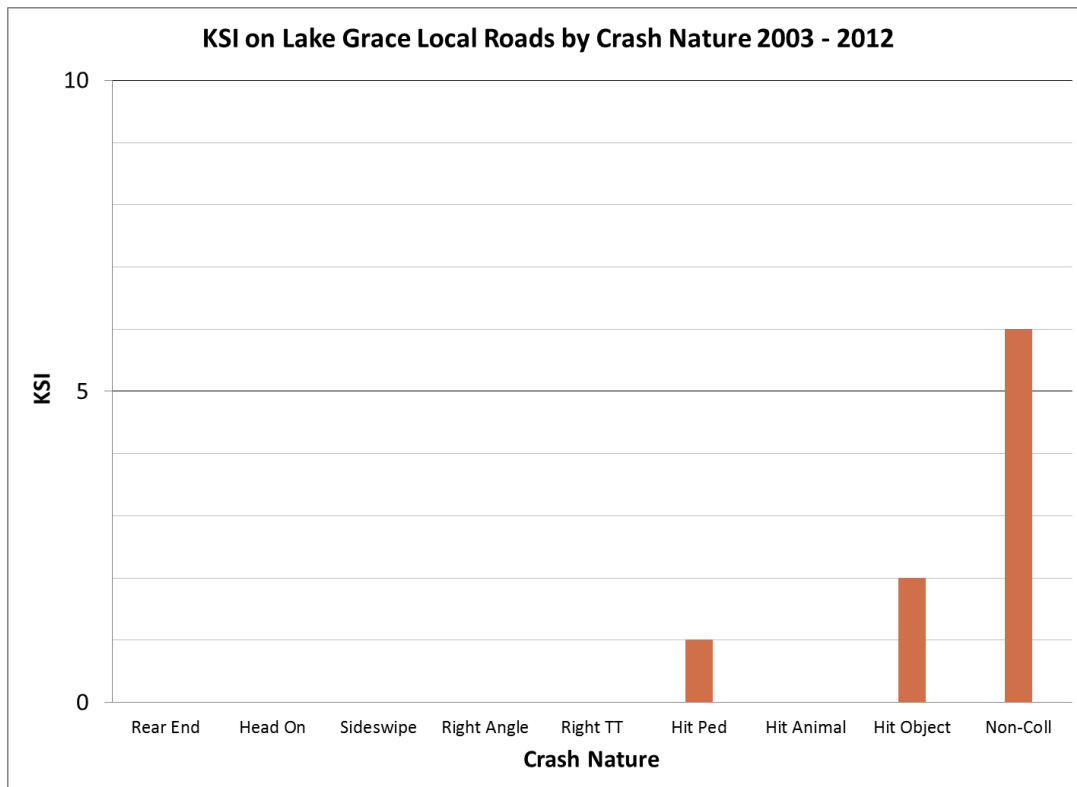


Figure 50: KSI by crash nature 2003 - 2012

6.9.2 Road User Type

KSI by road user type on the Shire of Lake Grace local road network from 2003 to 2012 is shown in Table 77 and Figure 51.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	7	25	0	0	32
Passenger	0	10	0	0	10
Motorcyclist	1	2	0	0	3
Bicyclist	0	0	0	0	0
Pedestrian	1	0	0	0	1
Other	0	0	0	0	0
Total	9	37	0	0	46

Table 77: KSI by road user 2003 - 2012

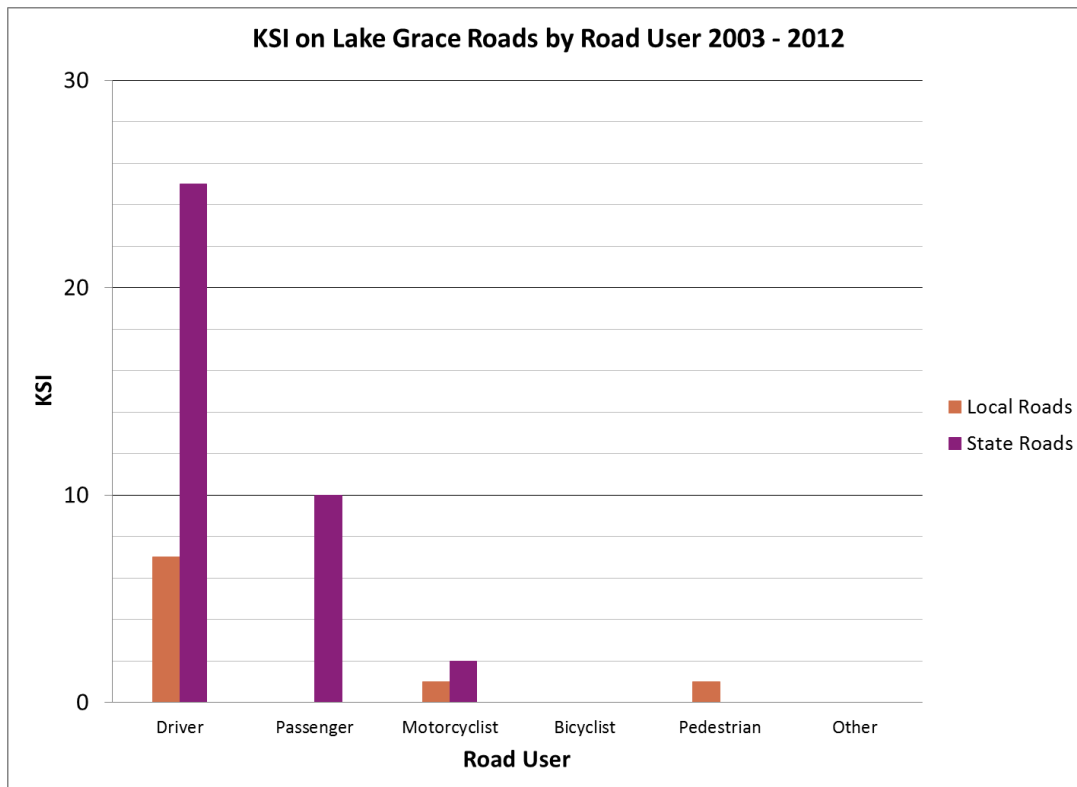


Figure 51: KSI by road user 2003 - 2012

From 2003 to 2012 approximately 89% of KSI on local roads were drivers or passengers. KSI for 2012 is shown in Table 78.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	0	1	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	0	1	0	0	1

Table 78: KSI by road user 2012

6.9.3 Road User Behaviour

The following table shows factors contributing to KSI on the Shire of Lake Grace 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	4	0	0	5
Seatbelts Not Worn	3	1	0	0	4
Alcohol	2	2	0	0	4
Speed	0	3	0	0	3

Table 79: KSI by contributing factor 2003 - 2012 (police attended)

Alcohol and the non-wearing of seatbelts are contributing factors in KSI.

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	1	0	0
50 to 59	0	0	0
60 to 69	0	0	0
70+	0	0	0
Unknown	0	0	1
Total	1	0	1

Table 80: KSI by vulnerable road user and age 2003 - 2012

6.10 Shire of Narembreen

Refer also to the Wheatbelt South Region Local Road Crash Map Book 2012.

Table 81 displays all crashes in the Shire of Narembreen by crash location and road manager from 2003 to 2012. There are no State roads in the Shire of Narembreen.

Crash Location	Road Manager	Crashes	%
Midblock	State	0	0.0
Intersection	State, State	0	0.0
Intersection	State, LG	0	0.0
Intersection	State, LG, Other	0	0.0
Intersection	State, Other	0	0.0
Midblock	LG	90	90.0
Intersection	LG, LG	8	8.0
Intersection	LG, Other	0	0.0
Midblock	Other	0	0.0
Intersection	Other, Other	0	0.0
Other	Unknown	2	2.0
Total		100	100.0

Table 81: All crashes by crash location and road manager 2003 - 2012

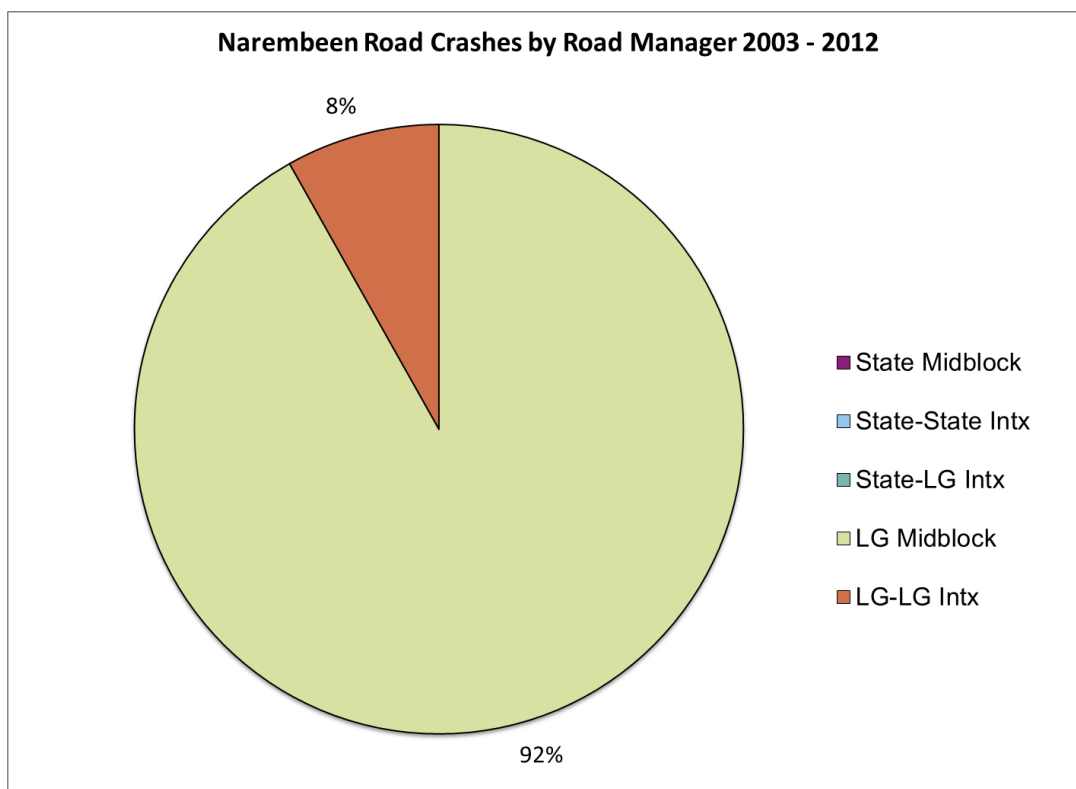


Figure 52: All crashes by crash location and road manager 2003 - 2012

Ignoring crashes at “Other” locations, Figure 52 shows:

- 92% of crashes occurred at local road midblock locations.
- 8% of crashes occurred at local road intersections.

The KSI trend for the Shire of Narembeen local road network from 2003 to 2012 is shown in Table 82.

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
KSI	3	9	10	0	3	6	0	3	4	5	43

Table 82: KSI trend 2003 - 2012

6.10.1 Crash Nature

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

- 88% of KSI occurred in single vehicle crashes of Hit Object and Non-Collision.

From 2003 to 2012 the Shire of Narembeen had:

- 14% of single vehicle KSI crashes of Non-Collision for the Wheatbelt South Region.
- 12% of single vehicle KSI crashes of Hit Object for the Wheatbelt South Region.

Crash Nature	Local Government and Region			
	2003 - 2012			2012
	Narembeen	Wheatbelt South	% for Narembeen	Narembeen
	n	n	%	n
Multi-Vehicle Crashes				
Rear End	0	7	0.0	0
Head On	2	12	16.7	0
Sideswipe	0	3	0.0	0
Right Angle	3	12	25.0	1
Right Turn Thru	0	0	0.0	0
Multi-Vehicle Other	0	0	0.0	0
Multi-Vehicle Total	5	34	14.7	1
Single Vehicle Crashes				
Hit Pedestrian	0	3	0.0	0
Hit Animal	0	4	0.0	0
Hit Object	24	197	12.2	1
Non-Collision	14	97	14.4	3
Single Vehicle Other	0	4	0.0	0
Single Vehicle Total	38	305	12.5	4
Total	43	339	12.7	5

Table 83: KSI by crash nature 2003 - 2012

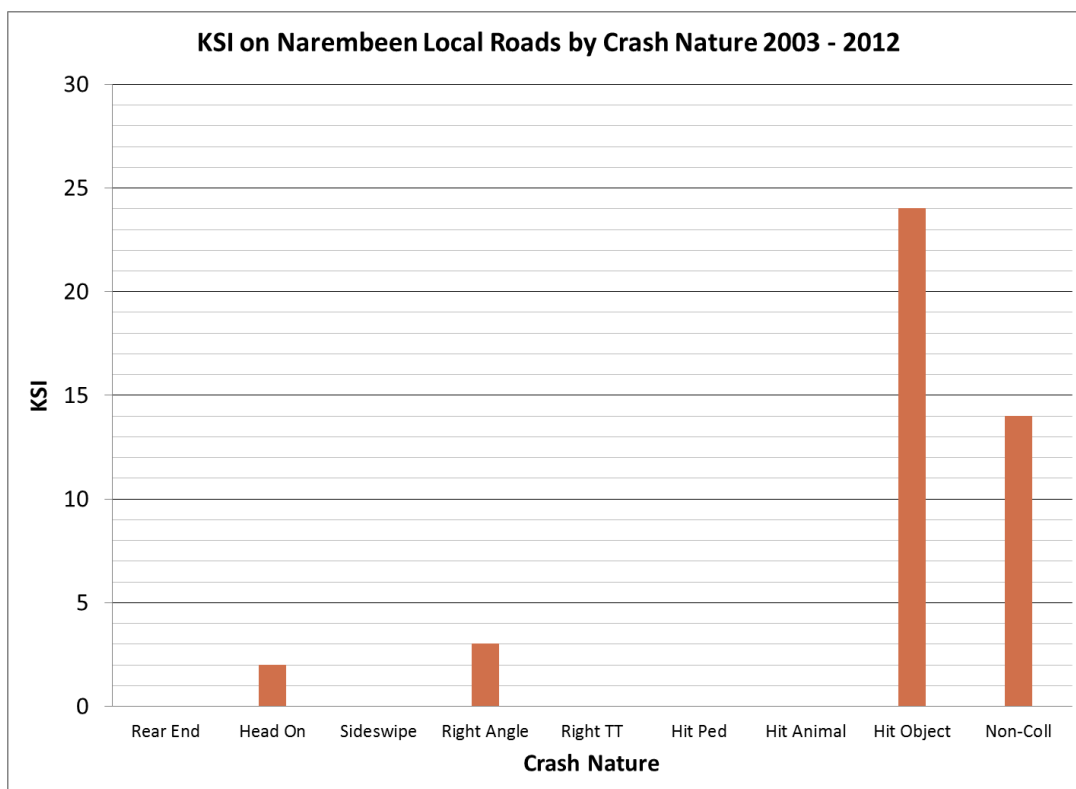


Figure 53: KSI by crash nature 2003 - 2012

6.10.2 Road User Type

KSI by road user type on the Shire of Narembeen local road network from 2003 to 2012 is shown in Table 84 and Figure 54.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	33	0	0	0	33
Passenger	10	0	0	0	10
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	43	0	0	0	43

Table 84: KSI by road user 2003 - 2012

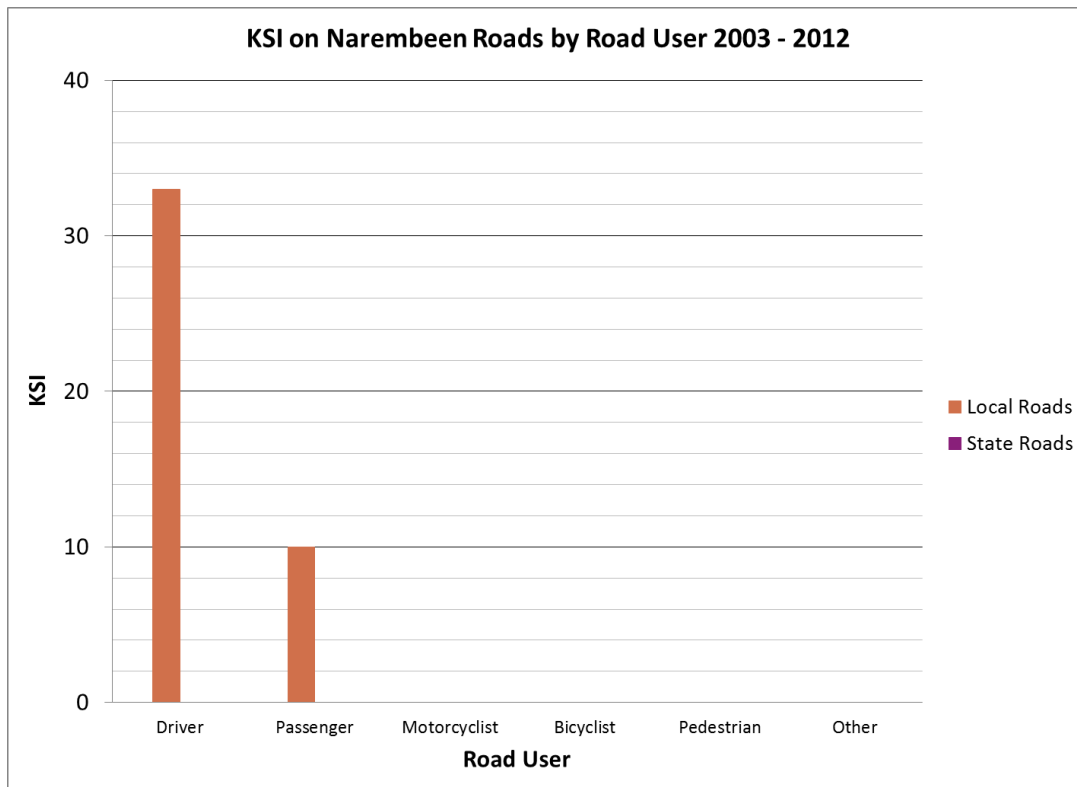


Figure 54: KSI by road user 2003 - 2012

From 2003 to 2012 all KSI on local roads were drivers or passengers. KSI for 2012 is shown in Table 85.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	4	0	0	0	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	0	0	0	0
Total	5	0	0	0	5

Table 85: KSI by road user 2012

6.10.3 Road User Behaviour

The following table shows factors contributing to KSI on the Shire of Narembeen 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	0	0	0	5
Seatbelts Not Worn	7	0	0	0	7
Alcohol	6	0	0	0	6
Speed	4	0	0	0	4

Table 86: KSI by contributing factor 2003 - 2012 (police attended)

All four contributing factors are relevant.

6.10.4 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.

6.11 Town of Narrogin

Refer also to the Wheatbelt South Region Local Road Crash Map Book 2012.

Table 87 displays all crashes in the Town of Narrogin by crash location and road manager from 2003 to 2012.

Crash Location	Road Manager	Crashes	%
Midblock	State	31	11.8
Intersection	State, State	5	1.9
Intersection	State, LG	42	16.0
Intersection	State, LG, Other	0	0.0
Intersection	State, Other	0	0.0
Midblock	LG	133	50.6
Intersection	LG, LG	51	19.4
Intersection	LG, Other	0	0.0
Midblock	Other	0	0.0
Intersection	Other, Other	0	0.0
Other	Unknown	1	0.4
Total		263	100.0

Table 87: All crashes by crash location and road manager 2003 - 2012

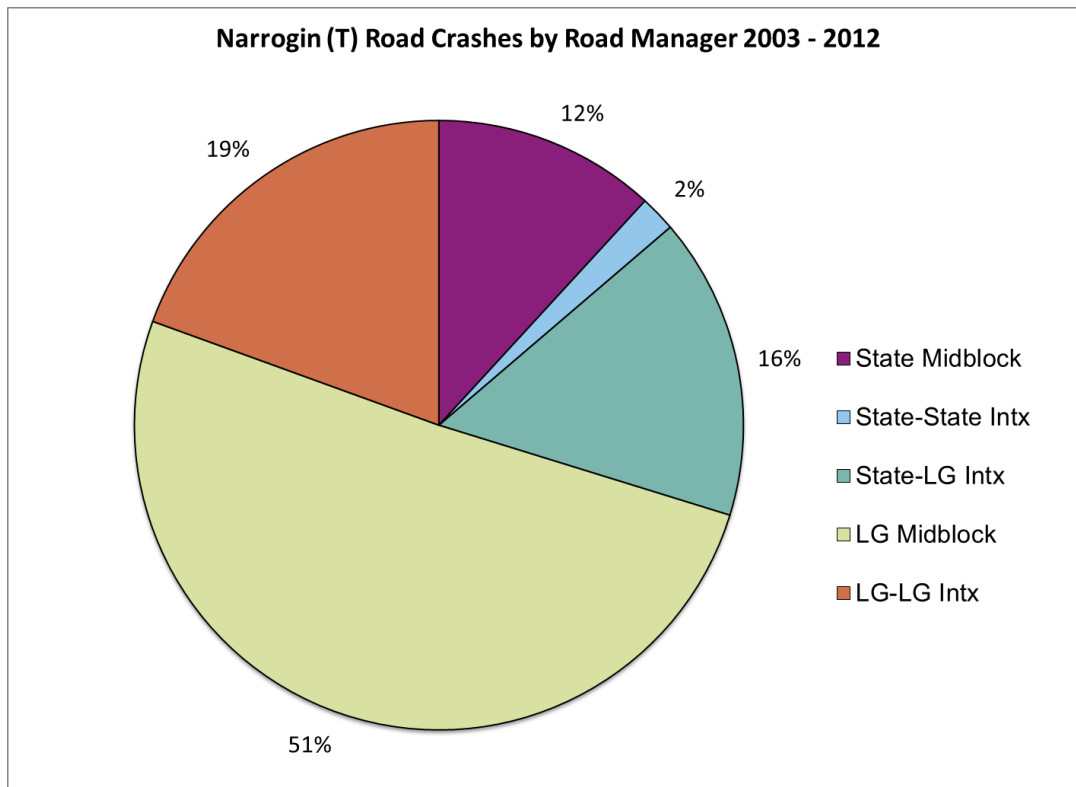


Figure 55: All crashes by crash location and road manager 2003 - 2012

Ignoring crashes at “Other” locations, Figure 55 shows:

- 70% of crashes occurred at local road locations including intersections where all legs were local roads.
- 16% 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.

The KSI trend for the Town of Narrogin local road network from 2003 to 2012 is shown in Table 88.

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
KSI	0	2	1	1	3	0	5	1	2	2	17

Table 88: KSI trend 2003 - 2012

6.11.1 Crash Nature

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

- 47% of KSI occurred in single vehicle crashes of Hit Object or Non-Collision; and
- 35% of KSI occurred in multi-vehicle Right Angle crashes.

Crash Nature	Local Government and Region			
	2003 - 2012			2012
	Narrogin (T)	Wheatbelt South	% for Narrogin (T)	Narrogin (T)
	n	n	%	n
Multi-Vehicle Crashes				
Rear End	1	7	14.3	0
Head On	0	12	0.0	0
Sideswipe	1	3	33.3	0
Right Angle	6	12	50.0	1
Right Turn Thru	0	0	0.0	0
Multi-Vehicle Other	0	0	0.0	0
Multi-Vehicle Total	8	34	23.5	1
Single Vehicle Crashes				
Hit Pedestrian	0	3	0.0	0
Hit Animal	0	4	0.0	0
Hit Object	5	197	2.5	0
Non-Collision	3	97	3.1	0
Single Vehicle Other	1	4	25.0	1
Single Vehicle Total	9	305	3.0	1
Total	17	339	5.0	2

Table 89: KSI by crash nature 2003 - 2012

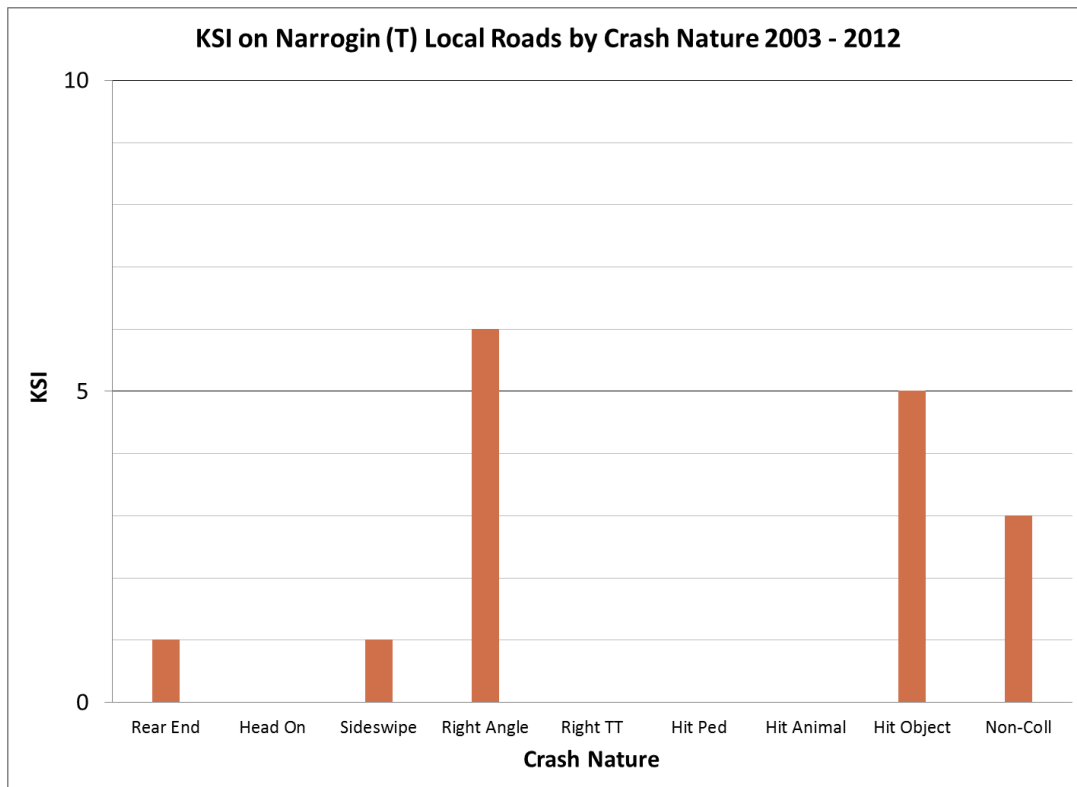


Figure 56: KSI by crash nature 2003 - 2012

6.11.2 Road User Type

KSI by road user type on the Town of Narrogin local road network from 2003 to 2012 is shown in Table 90 and Figure 57.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	8	5	0	0	13
Passenger	2	1	0	0	3
Motorcyclist	6	0	0	0	6
Bicyclist	1	0	0	0	1
Pedestrian	0	0	0	0	0
Other	0	0	0	0	0
Total	17	6	0	0	23

Table 90: KSI by road user 2003 - 2012

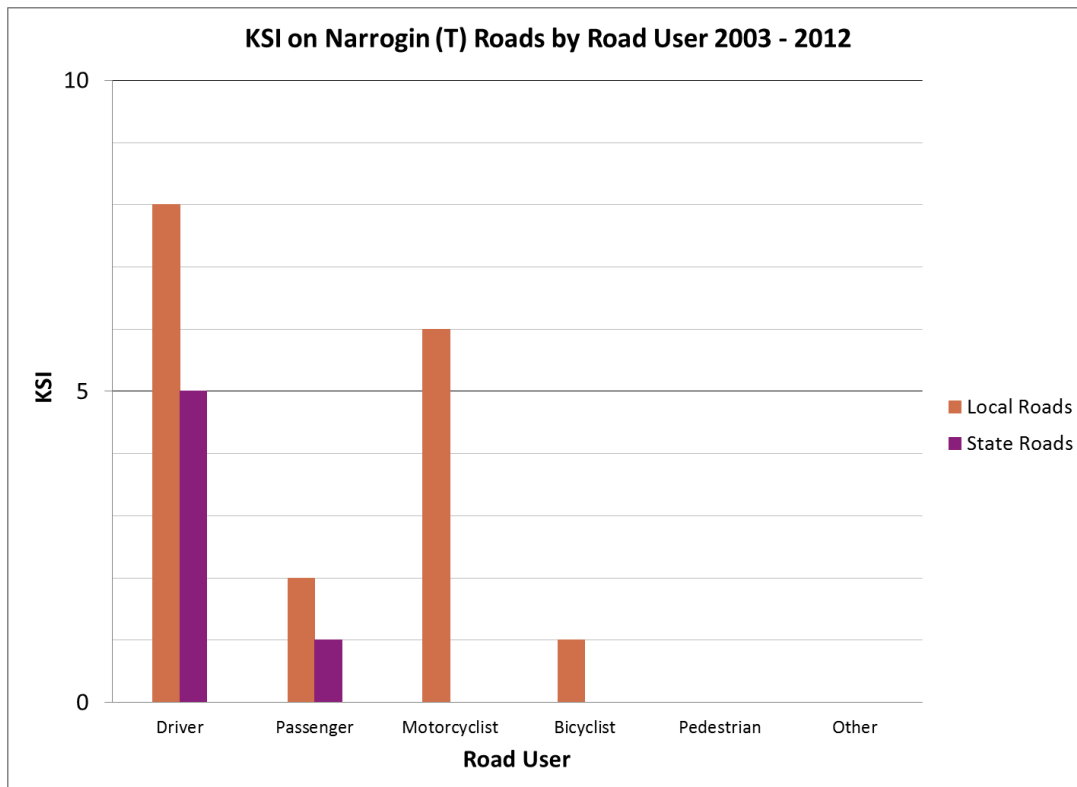


Figure 57: KSI by road user 2003 - 2012

From 2003 to 2012 approximately 59% of KSI on local roads were drivers or passengers, and 35% were motorcyclists. KSI for 2012 is shown in Table 91.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	1	0	0	0	1
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	0	0
Total	2	0	0	0	2

Table 91: KSI by road user 2012

6.11.3 Road User Behaviour

The following table shows factors contributing to KSI on the Town of Narrogin 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	6	1	0	0	7
Seatbelts Not Worn	0	1	0	0	1
Alcohol	0	4	0	0	4
Speed	3	3	0	0	6

Table 92: KSI by contributing factor 2003 - 2012 (police attended)

Inattention and speed are contributing factors in KSI.

6.11.4 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	1	0
12 to 16	1	0	0
17 to 20	0	0	0
21 to 24	1	0	0
25 to 29	0	0	0
30 to 39	2	0	0
40 to 49	0	0	0
50 to 59	1	0	0
60 to 69	1	0	0
70+	0	0	0
Unknown	0	0	0
Total	6	1	0

Table 93: KSI by vulnerable road user and age 2003 - 2012

Table 93 shows there were six motorcyclists KSI.

6.12 Shire of Narrogin

Refer also to the Wheatbelt South Region Local Road Crash Map Book 2012.

Table 94 displays all crashes in the Shire of Narrogin by crash location and road manager from 2003 to 2012.

Crash Location	Road Manager	Crashes	%
Midblock	State	76	45.8
Intersection	State, State	0	0.0
Intersection	State, LG	5	3.0
Intersection	State, LG, Other	0	0.0
Intersection	State, Other	0	0.0
Midblock	LG	76	45.8
Intersection	LG, LG	6	3.6
Intersection	LG, Other	0	0.0
Midblock	Other	0	0.0
Intersection	Other, Other	0	0.0
Other	Unknown	3	1.8
Total		166	100.0

Table 94: All crashes by crash location and road manager 2003 - 2012

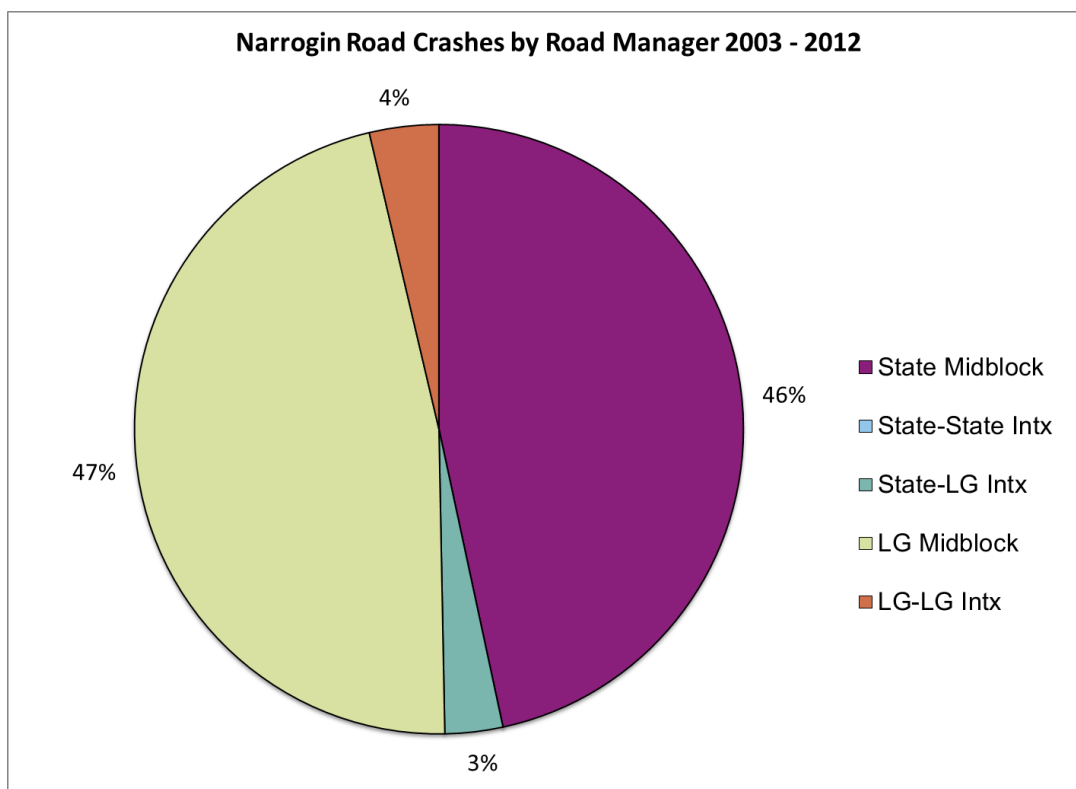


Figure 58: All crashes by crash location and road manager 2003 - 2012

Ignoring crashes at “Other” locations, Figure 58 shows:

- 51% 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.
- 46% of crashes occurred at State road locations including intersections where all legs were State roads.

Figure 58 also shows that 93% of crashes in the Shire of Narrogen occurred at midblock locations for Local and State roads. This is further investigated in the analysis of the crash nature.

The KSI trend for the Shire of Narrogen local road network from 2003 to 2012 is shown in Table 95.

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
KSI	0	8	1	1	2	1	0	1	4	1	19

Table 95: KSI trend 2003 - 2012

6.12.1 Crash Nature

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

- All KSI occurred in single vehicle crashes and of those, 89% were Hit Object.

Crash Nature	Local Government and Region			
	2003 - 2012			2012
	Narrogin	Wheatbelt South	% for Narrogin	Narrogin
	n	n	%	n
Multi-Vehicle Crashes				
Rear End	0	7	0.0	0
Head On	0	12	0.0	0
Sideswipe	0	3	0.0	0
Right Angle	0	12	0.0	0
Right Turn Thru	0	0	0.0	0
Multi-Vehicle Other	0	0	0.0	0
Multi-Vehicle Total	0	34	0.0	0
Single Vehicle Crashes				
Hit Pedestrian	0	3	0.0	0
Hit Animal	0	4	0.0	0
Hit Object	17	197	8.6	1
Non-Collision	2	97	2.1	0
Single Vehicle Other	0	4	0.0	0
Single Vehicle Total	19	305	6.2	1
Total	19	339	5.6	1

Table 96: KSI by crash nature 2003 - 2012

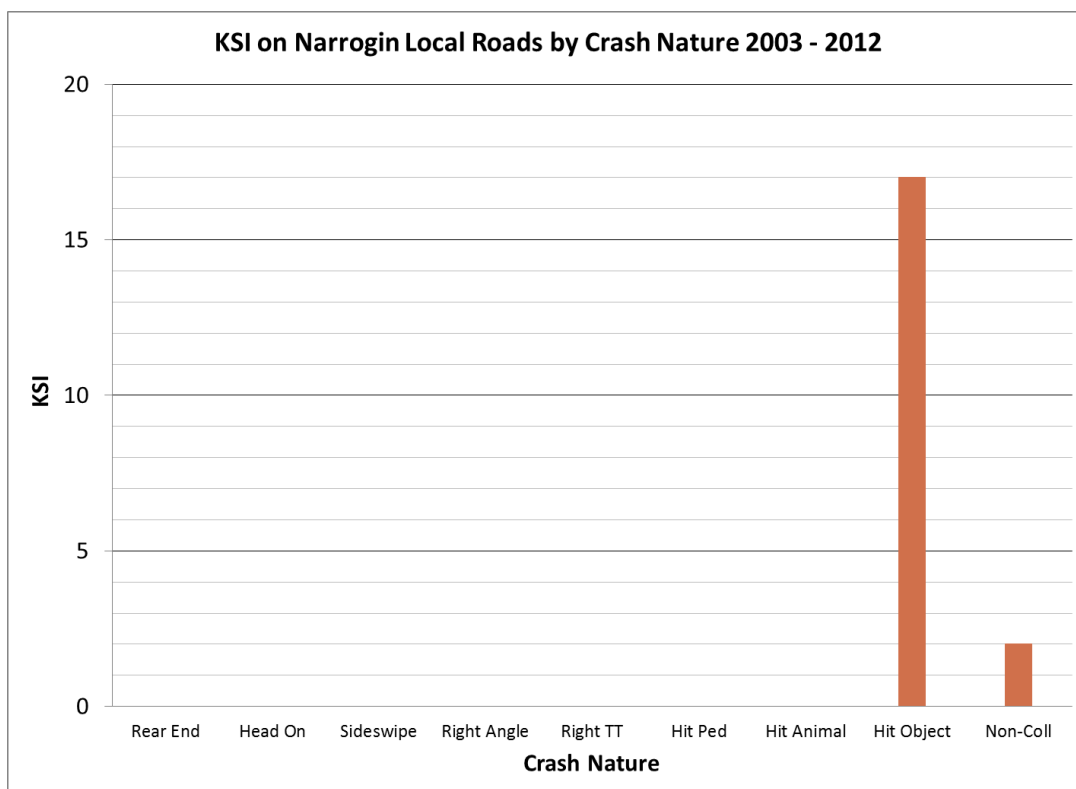


Figure 59: KSI by crash nature 2003 - 2012

6.12.2 Road User Type

KSI by road user type on the Shire of Narrogin local road network from 2003 to 2012 is shown in Table 97 and Figure 60.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	11	19	0	0	30
Passenger	8	10	0	0	18
Motorcyclist	0	1	0	0	1
Bicyclist	0	0	0	0	0
Pedestrian	0	0	0	0	0
Other	0	0	0	0	0
Total	19	30	0	0	49

Table 97: KSI by road user 2003 - 2012

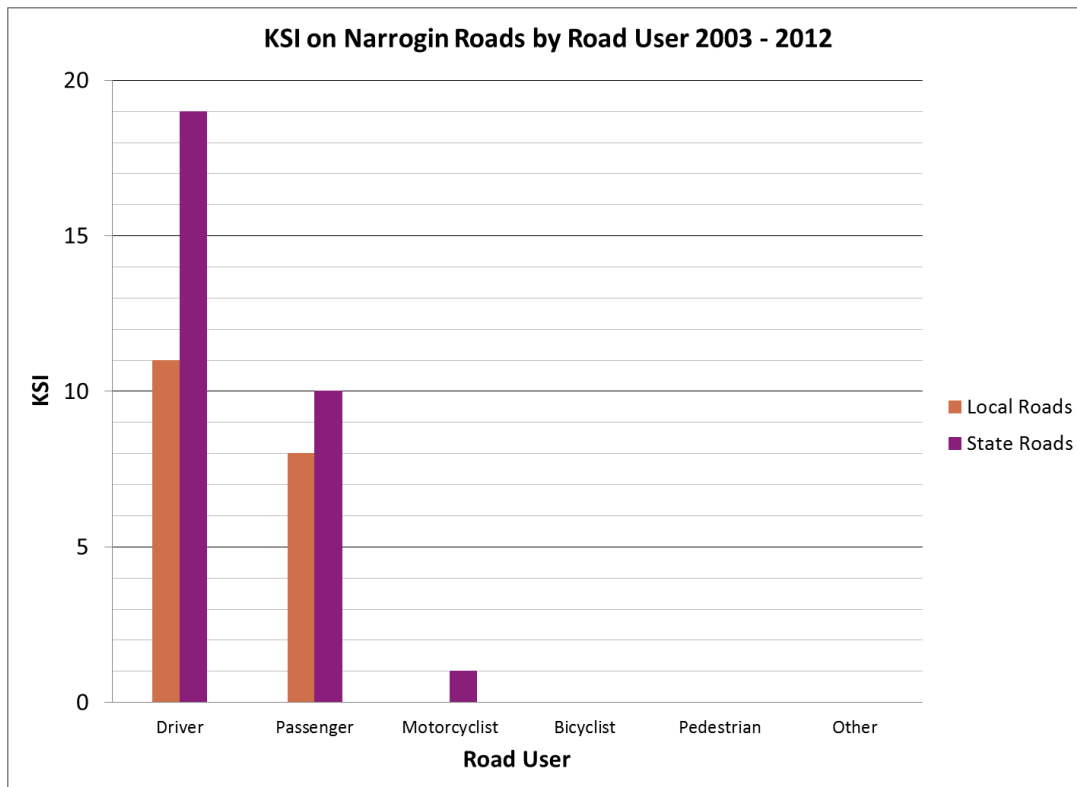


Figure 60: KSI by road user 2003 - 2012

From 2003 to 2012 all KSI on local roads were drivers or passengers. KSI for 2012 is shown in Table 98.

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 98: KSI by road user 2012

6.12.3 Road User Behaviour

The following table shows factors contributing to KSI on the Shire of Narrogin 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	4	5	0	0	9
Seatbelts Not Worn	2	3	0	0	5
Alcohol	0	6	0	0	6
Speed	4	5	0	0	9

Table 99: KSI by contributing factor 2003 - 2012 (police attended)

Inattention and speed are dominant contributing factors in KSI, which is consistent with the Hit Object and Non-Collision crash natures identified previously.

6.12.4 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.

6.13 Shire of Pingelly

Refer also to the Wheatbelt South Region Local Road Crash Map Book 2012.

Table 100 displays all crashes in the Shire of Pingelly by crash location and road manager from 2003 to 2012.

Crash Location	Road Manager	Crashes	%
Midblock	State	14	15.2
Intersection	State, State	0	0.0
Intersection	State, LG	11	12.0
Intersection	State, LG, Other	0	0.0
Intersection	State, Other	0	0.0
Midblock	LG	54	58.7
Intersection	LG, LG	12	13.0
Intersection	LG, Other	0	0.0
Midblock	Other	0	0.0
Intersection	Other, Other	0	0.0
Other	Unknown	1	1.1
Total		92	100.0

Table 100: All crashes by crash location and road manager 2003 - 2012

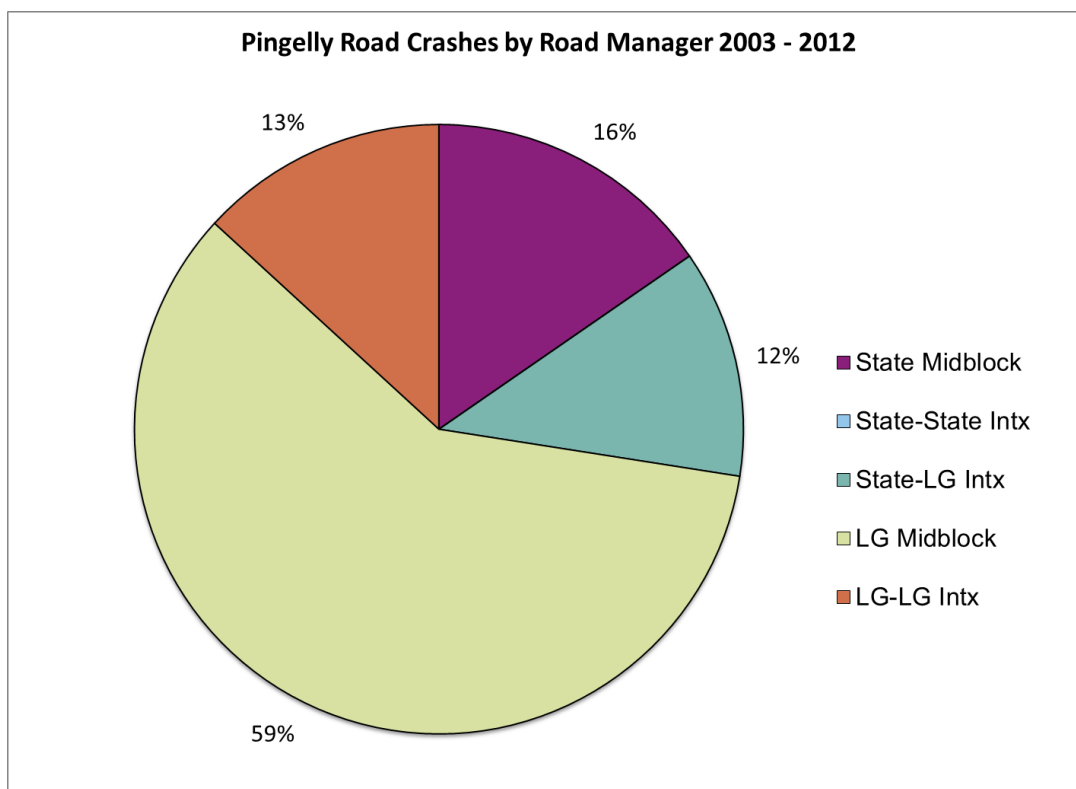


Figure 61: All crashes by crash location and road manager 2003 - 2012

Ignoring crashes at "Other" locations, Figure 61 shows:

- 72% of crashes occurred at local road locations including intersections where all legs were local roads.
- 12% 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.

The KSI trend for the Shire of Pingelly local road network from 2003 to 2012 is shown in Table 101.

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
KSI	1	5	1	0	2	0	3	0	0	4	16

Table 101: KSI trend 2003 - 2012

6.13.1 Crash Nature

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

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

Crash Nature	Local Government and Region			
	2003 - 2012			2012
	Pingelly	Wheatbelt South	% for Pingelly	Pingelly
	n	n	%	n
Multi-Vehicle Crashes				
Rear End	0	7	0.0	0
Head On	0	12	0.0	0
Sideswipe	0	3	0.0	0
Right Angle	0	12	0.0	0
Right Turn Thru	0	0	0.0	0
Multi-Vehicle Other	0	0	0.0	0
Multi-Vehicle Total	0	34	0.0	0
Single Vehicle Crashes				
Hit Pedestrian	0	3	0.0	0
Hit Animal	0	4	0.0	0
Hit Object	14	197	7.1	4
Non-Collision	2	97	2.1	0
Single Vehicle Other	0	4	0.0	0
Single Vehicle Total	16	305	5.2	4
Total	16	339	4.7	4

Table 102: KSI by crash nature 2003 - 2012

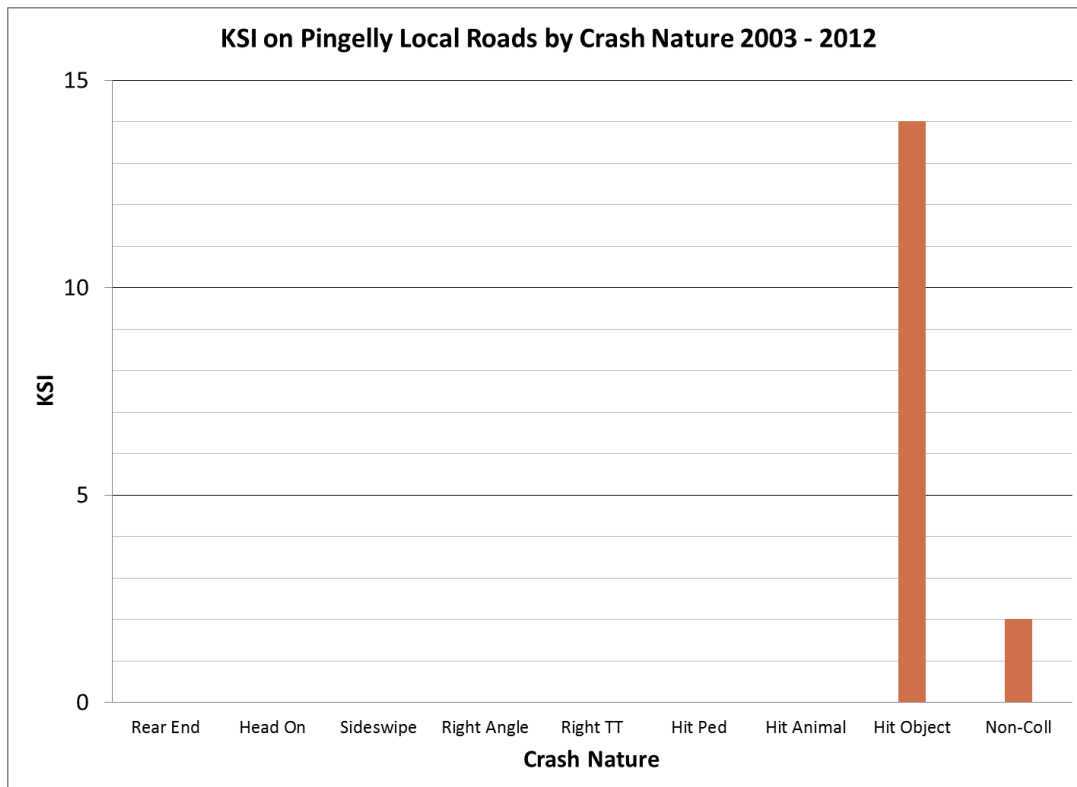


Figure 62: KSI by crash nature 2003 - 2012

6.13.2 Road User Type

KSI by road user type on the Shire of Pingelly local road network from 2003 to 2012 is shown in Table 103 and Figure 63.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	10	5	0	0	15
Passenger	6	2	0	0	8
Motorcyclist	0	1	0	0	1
Bicyclist	0	0	0	0	0
Pedestrian	0	0	0	0	0
Other	0	0	0	0	0
Total	16	8	0	0	24

Table 103: KSI by road user 2003 - 2012

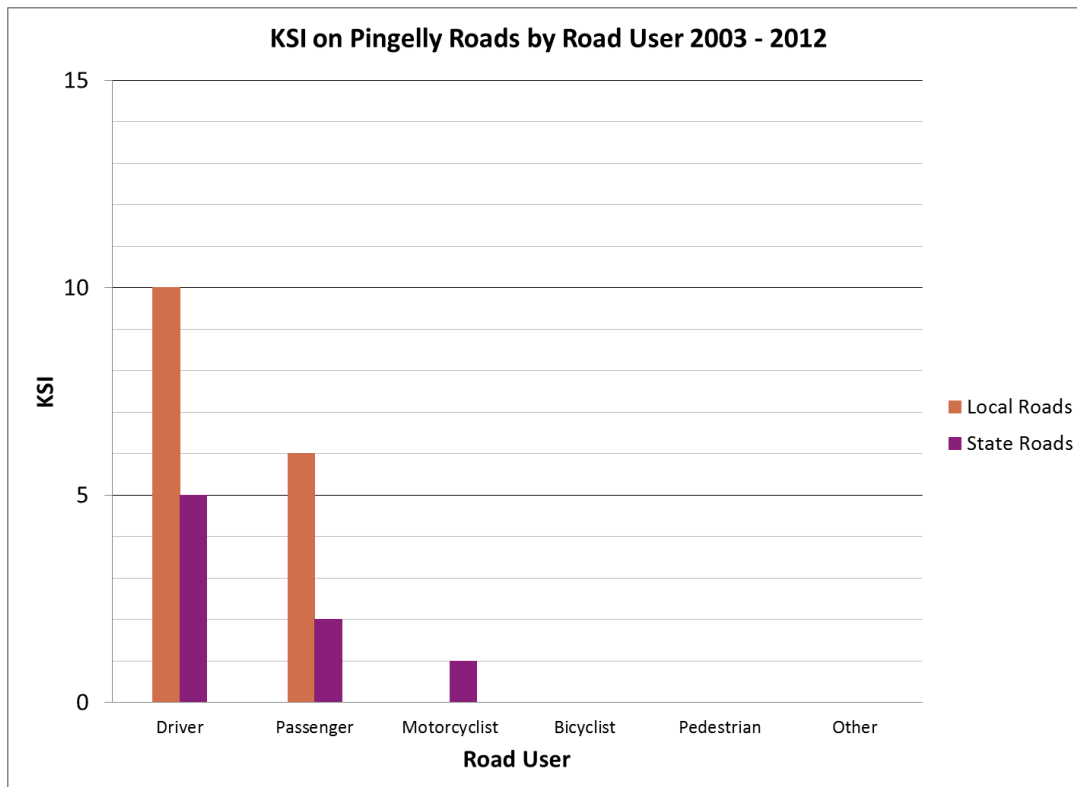


Figure 63: KSI by road user 2003 - 2012

From 2003 to 2012 all KSI on local roads were drivers or passengers. KSI for 2012 is shown in Table 104.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	2	0	0	0	2
Passenger	2	0	0	0	2
Motorcyclist	0	1	0	0	1
Bicyclist	0	0	0	0	0
Pedestrian	0	0	0	0	0
Other	0	0	0	0	0
Total	4	1	0	0	5

Table 104: KSI by road user 2012

6.13.3 Road User Behaviour

The following table shows factors contributing to KSI on the Shire of Pingelly 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	4	5	0	0	9
Seatbelts Not Worn	0	0	0	0	0
Alcohol	1	0	0	0	1
Speed	4	0	0	0	4

Table 105: KSI by contributing factor 2003 - 2012 (police attended)

Inattention and speed are dominant contributing factors in KSI, which is consistent with the Hit Object and Non-Collision crash natures identified previously.

6.13.4 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.

6.14 Shire of Quairading

Refer also to the Wheatbelt South Region Local Road Crash Map Book 2012.

Table 106 displays all crashes in the Shire of Quairading by crash location and road manager from 2003 to 2012.

Crash Location	Road Manager	Crashes	%
Midblock	State	33	33.0
Intersection	State, State	0	0.0
Intersection	State, LG	4	4.0
Intersection	State, LG, Other	0	0.0
Intersection	State, Other	0	0.0
Midblock	LG	56	56.0
Intersection	LG, LG	4	4.0
Intersection	LG, Other	0	0.0
Midblock	Other	0	0.0
Intersection	Other, Other	0	0.0
Other	Unknown	3	3.0
Total		100	100.0

Table 106: All crashes by crash location and road manager 2003 - 2012

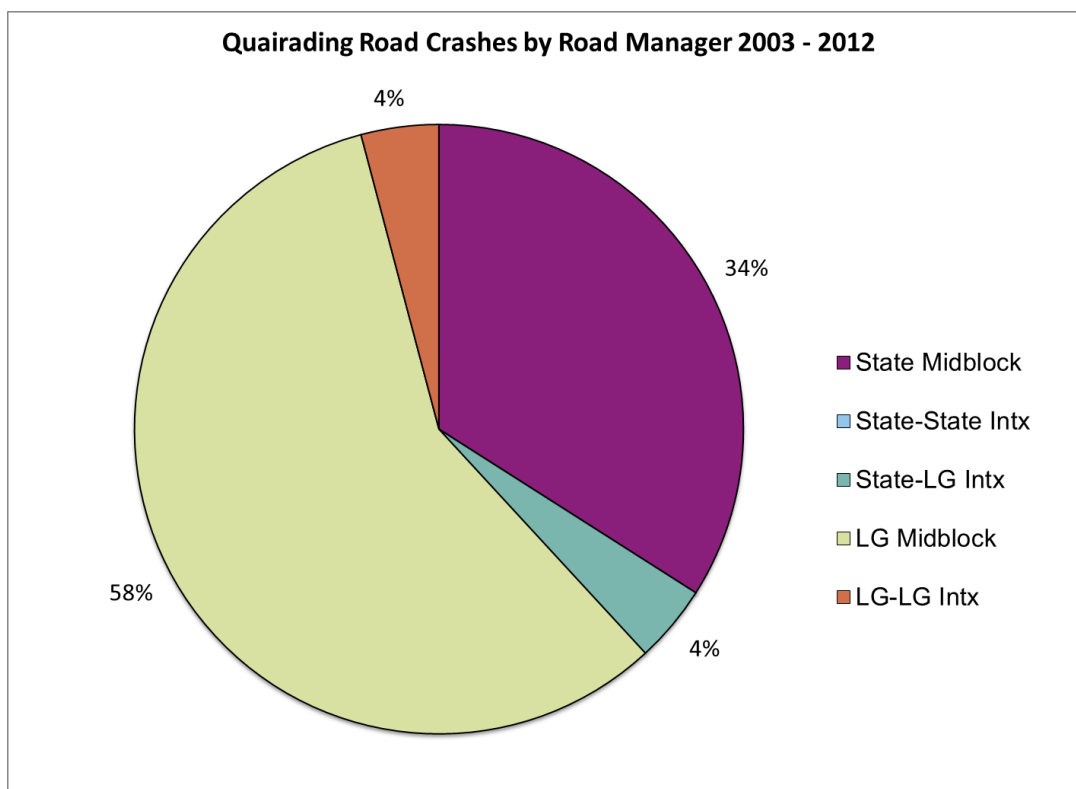


Figure 64: All crashes by crash location and road manager 2003 - 2012

Ignoring crashes at “Other” locations, Figure 64 shows:

- 62% 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.
- 34% of crashes occurred at State road locations including intersections where all legs were State roads.

Figure 64 also shows that 92% of crashes in the Shire of Quairading occurred at midblock locations for Local and State roads. This is further investigated in the analysis of the crash nature.

The KSI trend for the Shire of Quairading local road network from 2003 to 2012 is shown in Table 107.

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
KSI	3	0	2	4	2	1	0	1	2	1	16

Table 107: KSI trend 2003 - 2012

6.14.1 Crash Nature

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

- 88% of KSI occurred in single vehicle crashes of Hit Object or Non-Collision.

Crash Nature	Local Government and Region			
	2003 - 2012			2012
	Quairading	Wheatbelt South	% for Quairading	Quairading
	n	n	%	n
Multi-Vehicle Crashes				
Rear End	0	7	0.0	0
Head On	0	12	0.0	0
Sideswipe	0	3	0.0	0
Right Angle	0	12	0.0	0
Right Turn Thru	0	0	0.0	0
Multi-Vehicle Other	0	0	0.0	0
Multi-Vehicle Total	0	34	0.0	0
Single Vehicle Crashes				
Hit Pedestrian	1	3	33.3	0
Hit Animal	0	4	0.0	0
Hit Object	6	197	3.0	1
Non-Collision	8	97	8.2	0
Single Vehicle Other	1	4	25.0	0
Single Vehicle Total	16	305	5.2	1
Total	16	339	4.7	1

Table 108: KSI by crash nature 2003 - 2012

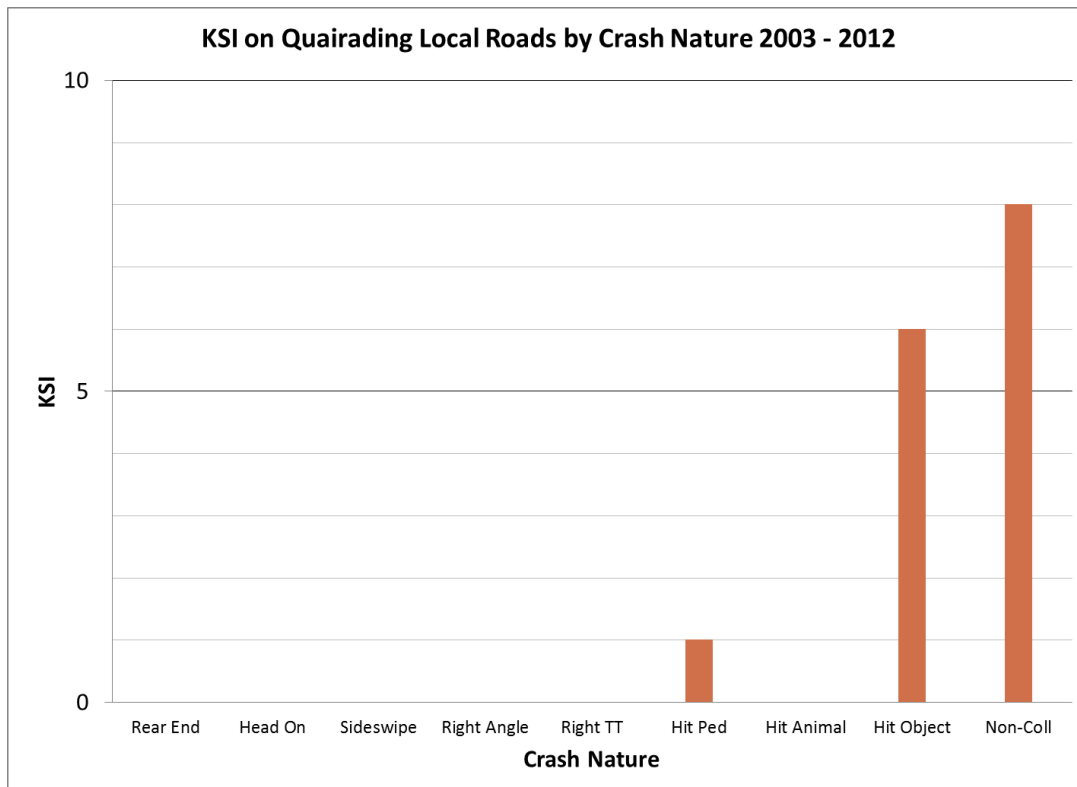


Figure 65: KSI by crash nature 2003 - 2012

6.14.2 Road User Type

KSI by road user type on the Shire of Quairading local road network from 2003 to 2012 is shown in Table 109 and Figure 66.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	9	8	0	0	17
Passenger	5	4	0	0	9
Motorcyclist	1	0	0	0	1
Bicyclist	0	0	0	0	0
Pedestrian	1	0	0	0	1
Other	0	0	0	0	0
Total	16	12	0	0	28

Table 109: KSI by road user 2003 - 2012

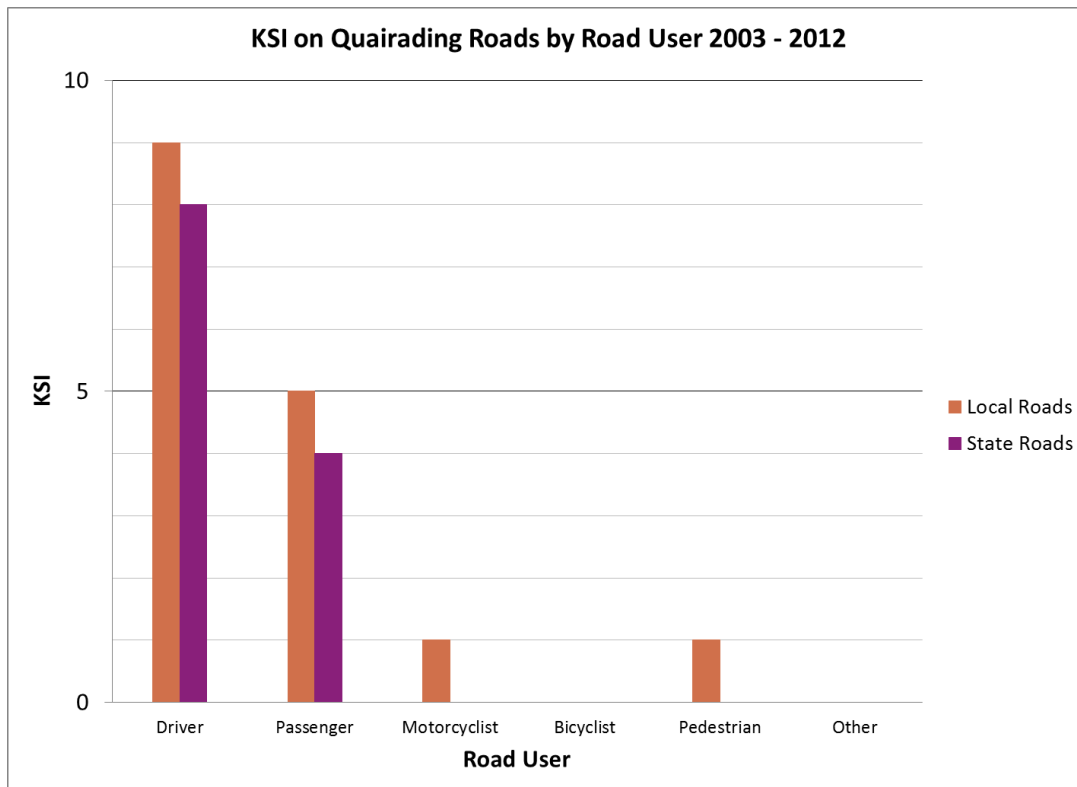


Figure 66: KSI by road user 2003 - 2012

From 2003 to 2012 approximately 88% of KSI on local roads were drivers or passengers. KSI for 2012 is shown in Table 110.

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 110: KSI by road user 2012

6.14.3 Road User Behaviour

The following table shows factors contributing to KSI on the Shire of Quairading 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	1	0	0	2
Seatbelts Not Worn	3	1	0	0	4
Alcohol	2	1	0	0	3
Speed	5	0	0	0	5

Table 111: KSI by contributing factor 2003 - 2012 (police attended)

Speed is the dominant contributing factor in KSI, which is consistent with the Hit Object and Non-Collision crash natures identified previously.

6.14.4 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	1	0	1
50 to 59	0	0	0
60 to 69	0	0	0
70+	0	0	0
Unknown	0	0	0
Total	1	0	1

Table 112: KSI by vulnerable road user and age 2003 – 2012

6.15 Shire of Wagin

Refer also to the Wheatbelt South Region Local Road Crash Map Book 2012.

Table 113 displays all crashes in the Shire of Wagin by crash location and road manager from 2003 to 2012.

Crash Location	Road Manager	Crashes	%
Midblock	State	85	49.4
Intersection	State, State	1	0.6
Intersection	State, LG	7	4.1
Intersection	State, LG, Other	0	0.0
Intersection	State, Other	0	0.0
Midblock	LG	68	39.5
Intersection	LG, LG	5	2.9
Intersection	LG, Other	0	0.0
Midblock	Other	0	0.0
Intersection	Other, Other	0	0.0
Other	Unknown	6	3.5
Total		172	100.0

Table 113: All crashes by crash location and road manager 2003 - 2012

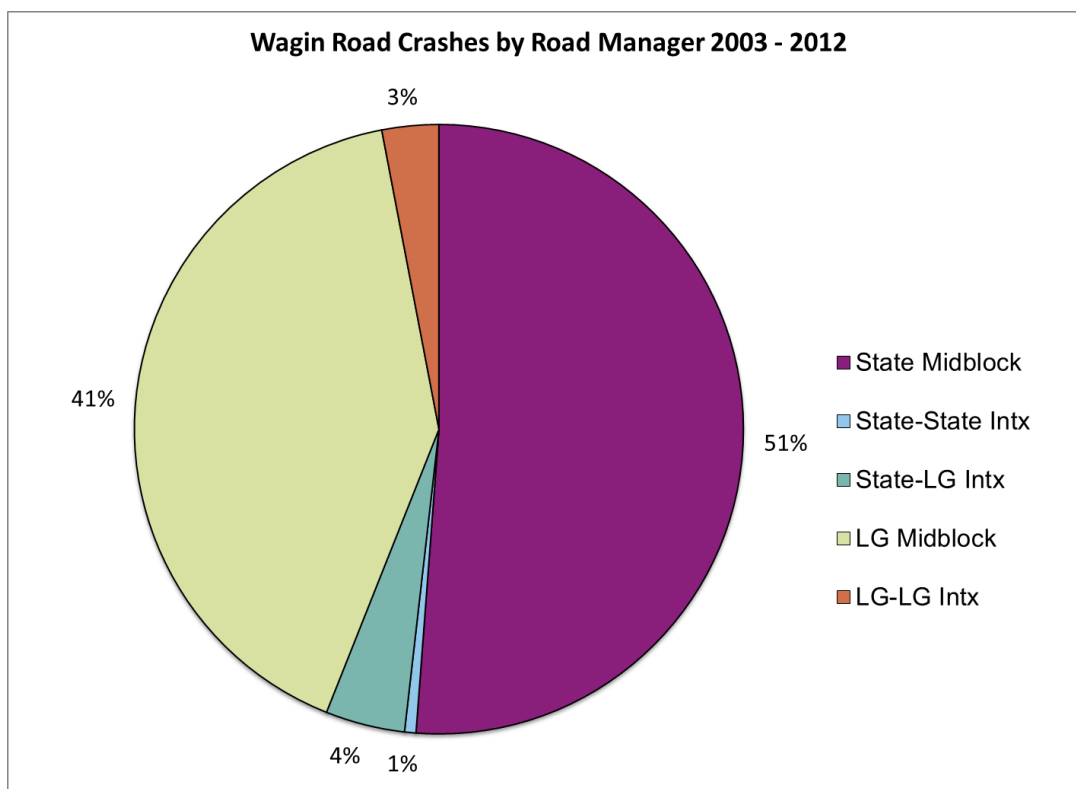


Figure 67: All crashes by crash location and road manager 2003 - 2012

Ignoring crashes at “Other” locations, Figure 67 shows:

- 44% 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.
- 52% of crashes occurred at State road locations including intersections where all legs were State roads.

Figure 67 also shows that 92% of crashes in the Shire of Wagin 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 Wagin local road network from 2003 to 2012 is shown in Table 114.

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
KSI	0	0	0	1	1	0	2	3	1	1	9

Table 114: KSI trend 2003 - 2012

6.15.1 Crash Nature

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

- All KSI occurred in single vehicle Hit Object crashes.

Crash Nature	Local Government and Region			
	2003 - 2012			2012
	Wagin	Wheatbelt South	% for Wagin	Wagin
	n	n	%	n
Multi-Vehicle Crashes				
Rear End	0	7	0.0	0
Head On	0	12	0.0	0
Sideswipe	0	3	0.0	0
Right Angle	0	12	0.0	0
Right Turn Thru	0	0	0.0	0
Multi-Vehicle Other	0	0	0.0	0
Multi-Vehicle Total	0	34	0.0	0
Single Vehicle Crashes				
Hit Pedestrian	0	3	0.0	0
Hit Animal	0	4	0.0	0
Hit Object	9	197	4.6	1
Non-Collision	0	97	0.0	0
Single Vehicle Other	0	4	0.0	0
Single Vehicle Total	9	305	3.0	1
Total	9	339	2.7	1

Table 115: KSI by crash nature 2003 - 2012

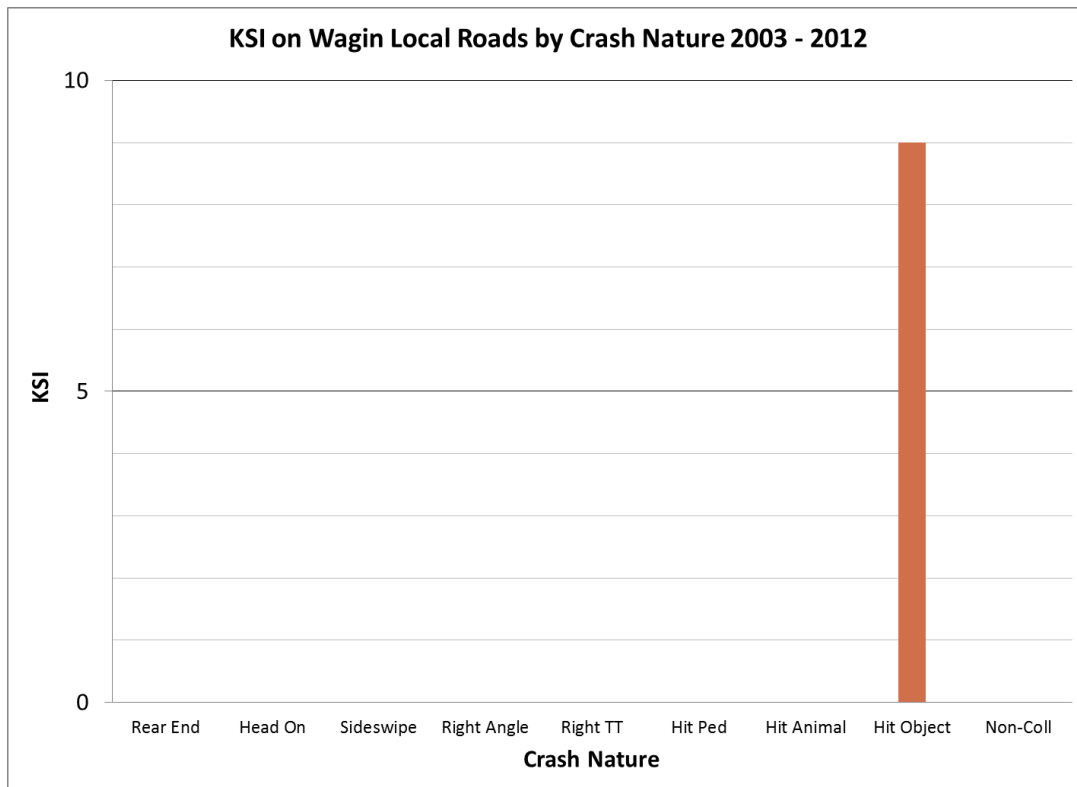


Figure 68: KSI by crash nature 2003 - 2012

6.15.2 Road User Type

KSI by road user type on the Shire of Wagin local road network from 2003 to 2012 is shown in Table 116 and Figure 69.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	5	20	0	0	25
Passenger	3	5	0	0	8
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	9	25	0	0	34

Table 116: KSI by road user 2003 - 2012

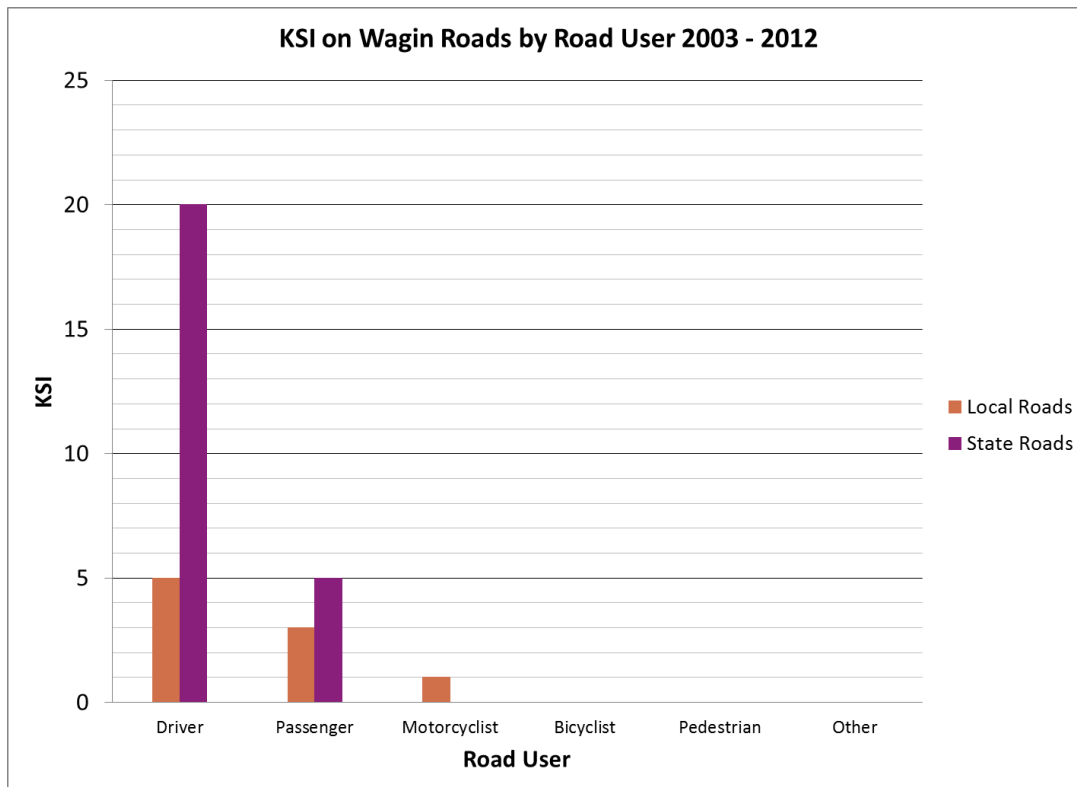


Figure 69: KSI by road user 2003 - 2012

From 2003 to 2012 approximately 89% of KSI on local roads were drivers or passengers. KSI for 2012 is shown in Table 117.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	0	4	0	0	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	0	0	0	0
Total	1	4	0	0	5

Table 117: KSI by road user 2012

6.15.3 Road User Behaviour

The following table shows factors contributing to KSI on the Shire of Wagin 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	6	0	0	7
Seatbelts Not Worn	0	1	0	0	1
Alcohol	2	3	0	0	5
Speed	3	3	0	0	6

Table 118: KSI by contributing factor 2003 - 2012 (police attended)

Speed is the dominant factor in KSI, which is consistent with the Hit Object and Non-Collision crash natures identified previously.

6.15.4 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	1	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	0
70+	0	0	0
Unknown	0	0	0
Total	1	0	0

Table 119: KSI by vulnerable road user and age 2003 - 2012

6.16 Shire of Wandering

Refer also to the Wheatbelt South Region Local Road Crash Map Book 2012.

Table 120 displays all crashes in the Shire of Wandering by crash location and road manager from 2003 to 2012.

Crash Location	Road Manager	Crashes	%
Midblock	State	111	57.2
Intersection	State, State	0	0.0
Intersection	State, LG	1	0.5
Intersection	State, LG, Other	0	0.0
Intersection	State, Other	1	0.5
Midblock	LG	70	36.1
Intersection	LG, LG	0	0.0
Intersection	LG, Other	0	0.0
Midblock	Other	2	1.0
Intersection	Other, Other	0	0.0
Other	Unknown	9	4.6
Total		194	100.0

Table 120: All crashes by crash location and road manager 2003 - 2012

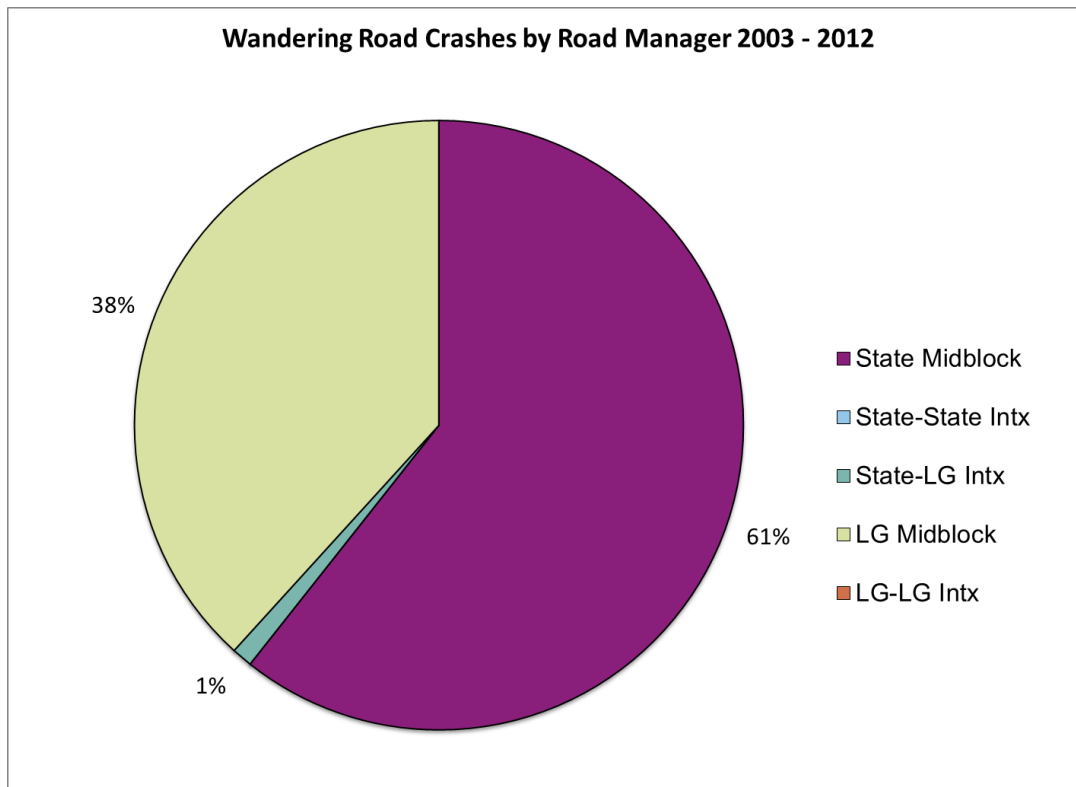


Figure 70: All crashes by crash location and road manager 2003 - 2012

Ignoring crashes at “Other” and “Unknown” locations, Figure 70 shows:

- 38% 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.
- 61% of crashes occurred at State road locations including intersections where all legs were State roads.

Figure 70 also shows that 99% of crashes in the Shire of Wandering occurred at midblock locations for Local and State roads. This is further investigated in the analysis of the crash nature.

The KSI trend for the Shire of Wandering local road network from 2003 to 2012 is shown in Table 121.

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
KSI	0	0	0	1	2	0	3	1	3	0	10

Table 121: KSI trend 2003 - 2012

6.16.1 Crash Nature

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

- All KSI occurred in single vehicle Hit Object crashes.

Crash Nature	Local Government and Region			
	2003 - 2012			2012
	Wandering	Wheatbelt South	% for Wandering	Wandering
	n	n	%	n
Multi-Vehicle Crashes				
Rear End	0	7	0.0	0
Head On	0	12	0.0	0
Sideswipe	0	3	0.0	0
Right Angle	0	12	0.0	0
Right Turn Thru	0	0	0.0	0
Multi-Vehicle Other	0	0	0.0	0
Multi-Vehicle Total	0	34	0.0	0
Single Vehicle Crashes				
Hit Pedestrian	0	3	0.0	0
Hit Animal	0	4	0.0	0
Hit Object	10	197	5.1	0
Non-Collision	0	97	0.0	0
Single Vehicle Other	0	4	0.0	0
Single Vehicle Total	10	305	3.3	0
Total	10	339	2.9	0

Table 122: KSI by crash nature 2003 - 2012

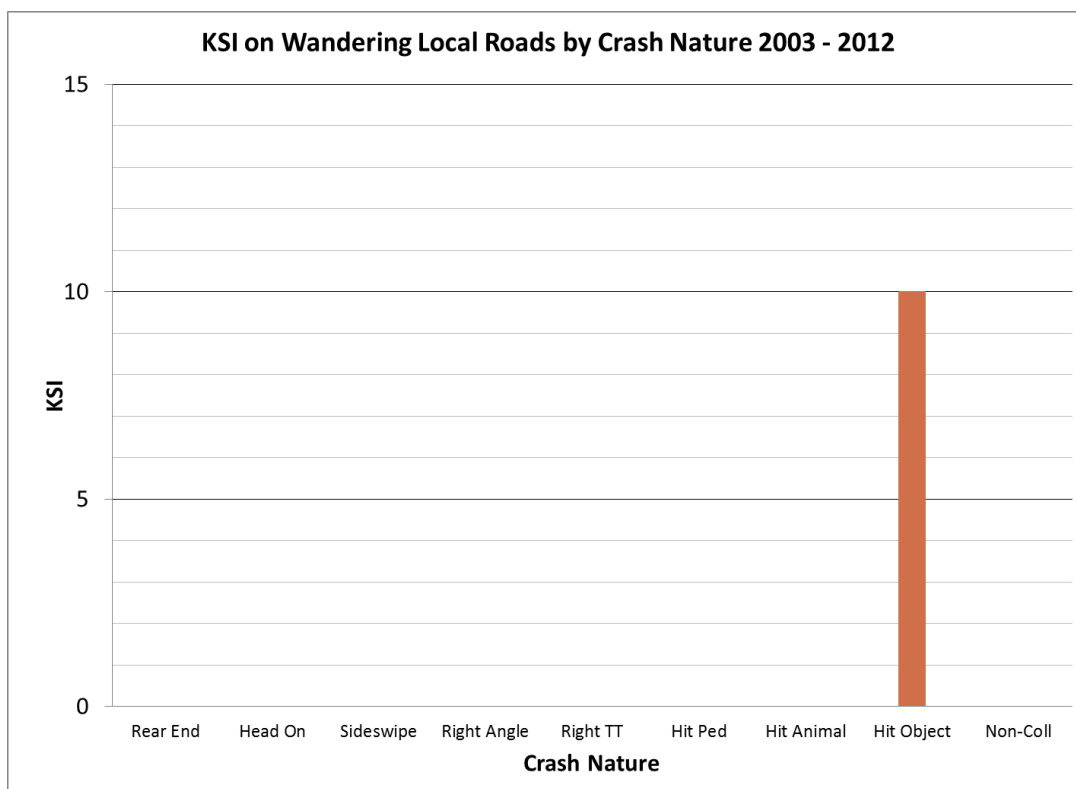


Figure 71: KSI by crash nature 2003 - 2012

6.16.2 Road User Type

KSI by road user type on the Shire of Wandering local road network from 2003 to 2012 is shown in Table 123 and Figure 72.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	4	14	0	0	18
Passenger	6	11	0	0	17
Motorcyclist	0	1	0	0	1
Bicyclist	0	0	0	0	0
Pedestrian	0	0	0	0	0
Other	0	0	0	0	0
Total	10	26	0	0	36

Table 123: KSI by road user 2003 - 2012

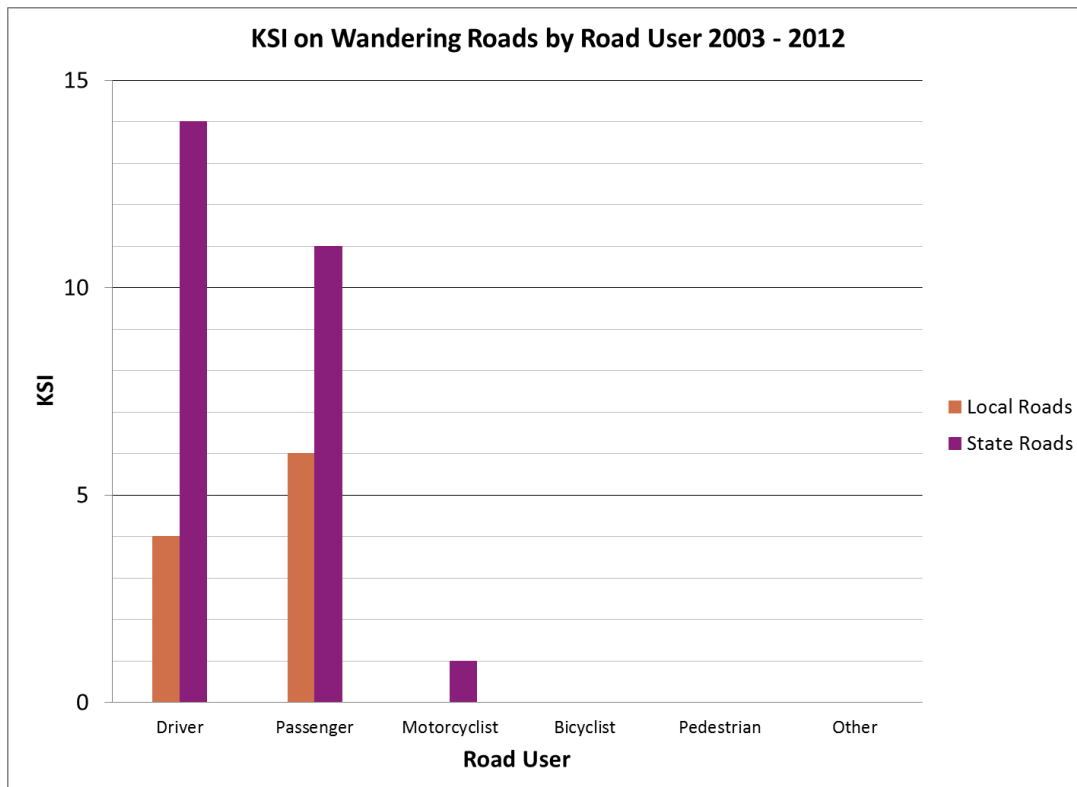


Figure 72: KSI by road user 2003 - 2012

From 2003 to 2012 all KSI on local roads were drivers or passengers. KSI for 2012 is shown in Table 124.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	0	3	0	0	3
Passenger	0	1	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	0	0
Total	0	4	0	0	4

Table 124: KSI by road user 2012

6.16.3 Road User Behaviour

The following table shows factors contributing to KSI on the Shire of Wandering 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	4	13	0	0	17
Seatbelts Not Worn	1	1	0	0	2
Alcohol	1	0	0	0	1
Speed	4	11	0	0	15

Table 125: KSI by contributing factor 2003 - 2012 (police attended)

Inattention and speed are the dominant contributing factors in KSI, which is consistent with the Hit Object crash nature identified previously.

6.16.4 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.

6.17 Shire of West Arthur

Refer also to the Wheatbelt South Region Local Road Crash Map Book 2012.

Table 126 table displays all crashes in the Shire of West Arthur by crash location and road manager from 2003 to 2012.

Crash Location	Road Manager	Crashes	%
Midblock	State	66	44.6
Intersection	State, State	0	0.0
Intersection	State, LG	3	2.0
Intersection	State, LG, Other	0	0.0
Intersection	State, Other	0	0.0
Midblock	LG	69	46.6
Intersection	LG, LG	6	4.1
Intersection	LG, Other	0	0.0
Midblock	Other	0	0.0
Intersection	Other, Other	0	0.0
Other	Unknown	4	2.7
Total		148	100.0

Table 126: All crashes by crash location and road manager 2003 - 2012

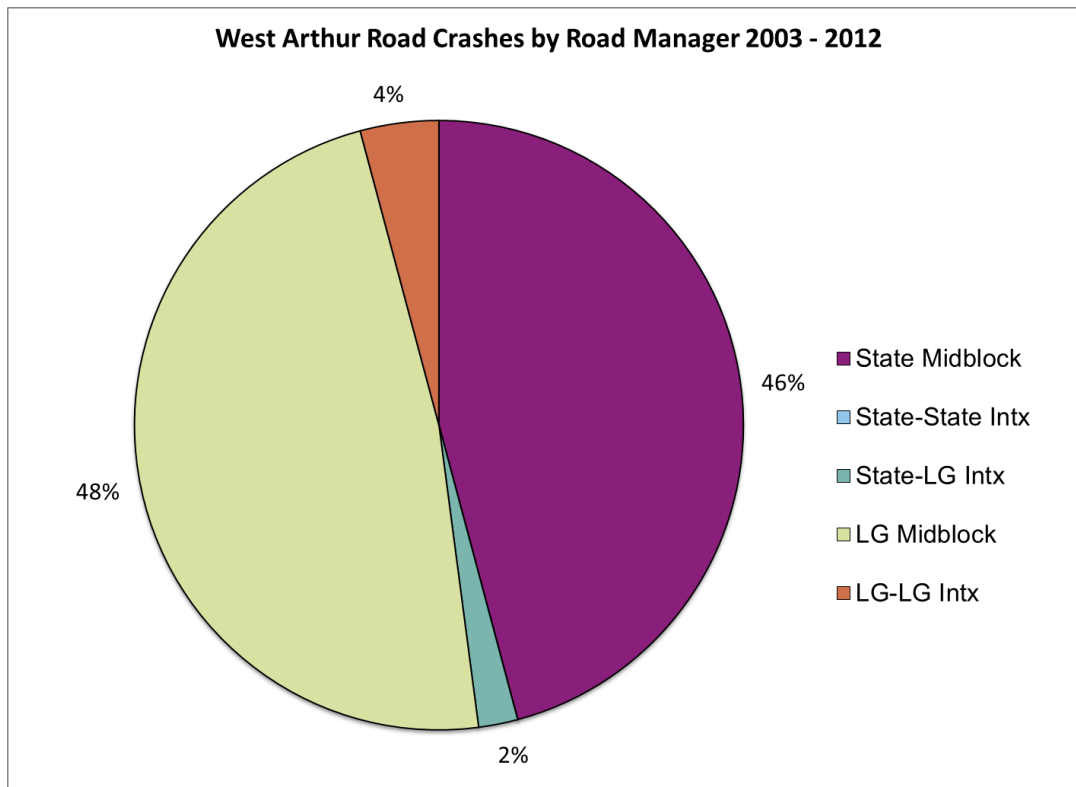


Figure 73: All crashes by crash location and road manager 2003 - 2012

Ignoring crashes at “Other” and “Unknown” locations, Figure 73 shows:

- 52% 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.
- 46% of crashes occurred at State road locations including intersections where all legs were State roads.

Figure 73 also shows that 94% of crashes in the Shire of West Arthur occurred at midblock locations for Local and State roads. This is further investigated in the analysis of the crash nature.

The KSI trend for the Shire of West Arthur local road network from 2003 to 2012 is shown in Table 127.

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
KSI	2	2	3	3	2	2	1	2	1	0	18

Table 127: KSI trend 2003 - 2012

6.17.1 Crash Nature

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

- 83% of KSI occurred in single vehicle crashes of Hit Object or Non-Collision.

Crash Nature	Local Government and Region			
	2003 - 2012			2012
	West Arthur	Wheatbelt South	% for West Arthur	West Arthur
	n	n	%	n
Multi-Vehicle Crashes				
Rear End	0	7	0.0	0
Head On	0	12	0.0	0
Sideswipe	1	3	33.3	0
Right Angle	0	12	0.0	0
Right Turn Thru	0	0	0.0	0
Multi-Vehicle Other	0	0	0.0	0
Multi-Vehicle Total	1	34	2.9	0
Single Vehicle Crashes				
Hit Pedestrian	0	3	0.0	0
Hit Animal	2	4	50.0	0
Hit Object	12	197	6.1	0
Non-Collision	3	97	3.1	0
Single Vehicle Other	0	4	0.0	0
Single Vehicle Total	17	305	5.6	0
Total	18	339	5.3	0

Table 128: KSI by crash nature 2003 - 2012

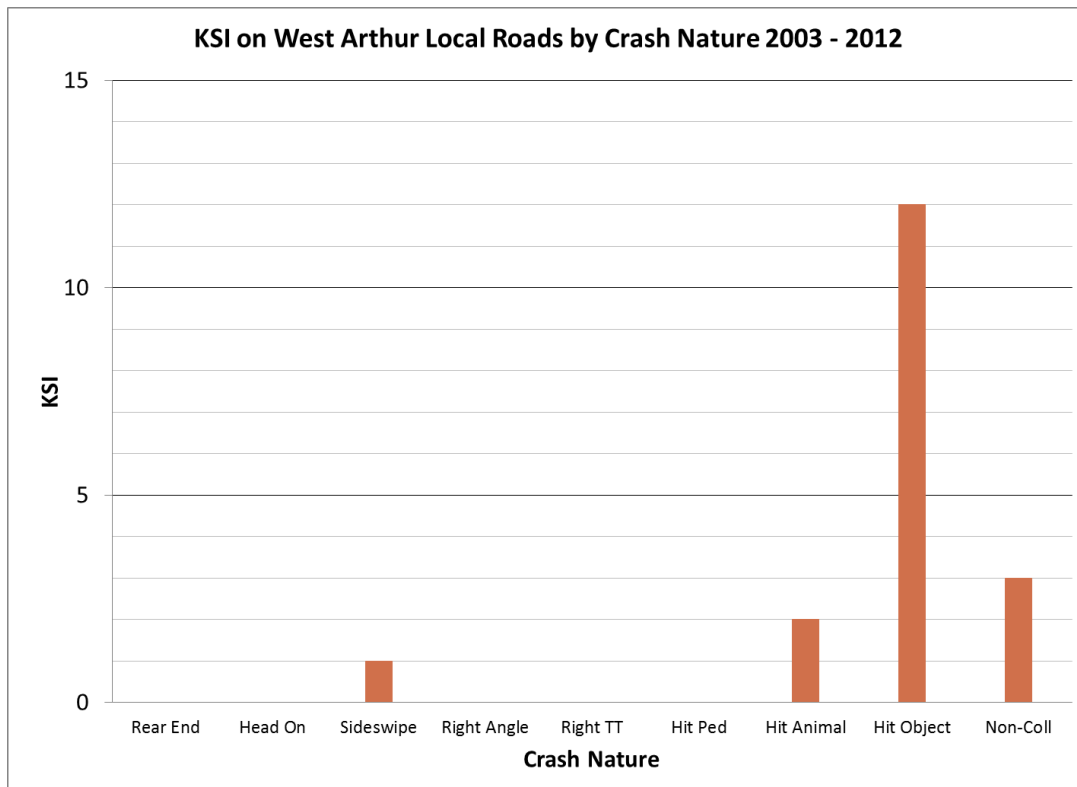


Figure 74: KSI by crash nature 2003 - 2012

6.17.2 Road User Type

KSI by road user type on the Shire of West Arthur local road network from 2003 to 2012 is shown in Table 129 and Figure 75.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	13	13	0	0	26
Passenger	2	6	0	1	9
Motorcyclist	2	0	0	0	2
Bicyclist	1	0	0	0	1
Pedestrian	0	0	0	0	0
Other	0	1	0	0	1
Total	18	20	0	1	39

Table 129: KSI by road user 2003 - 2012

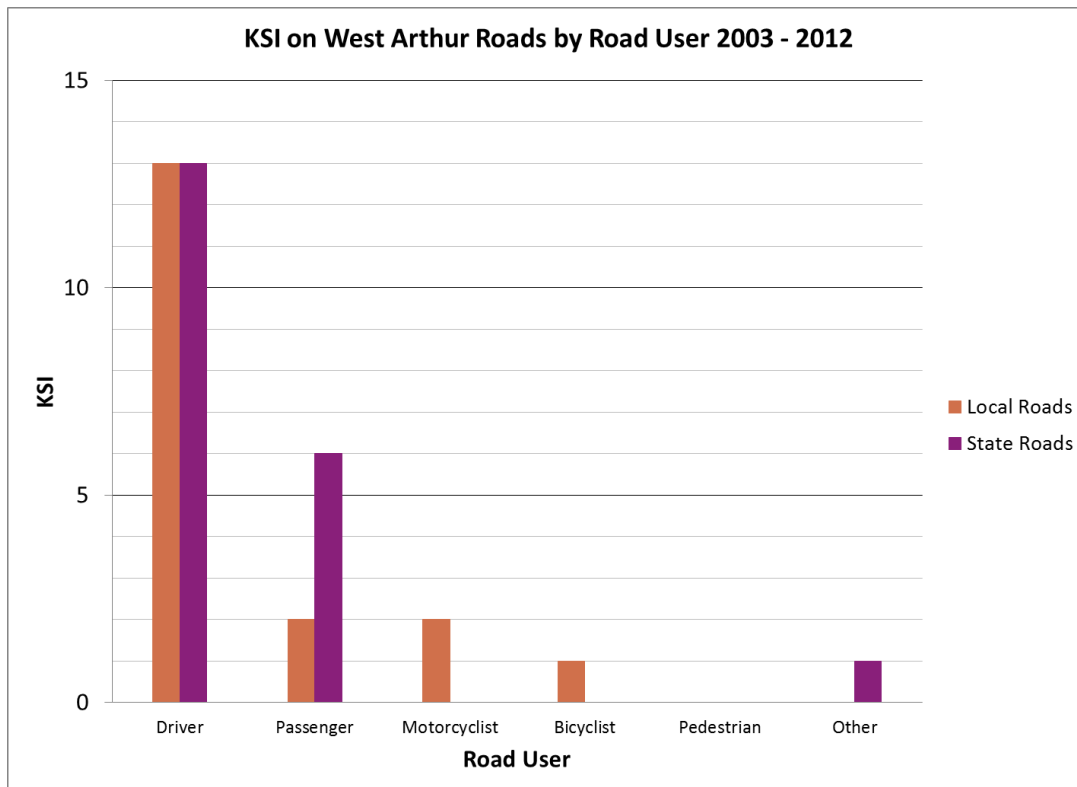


Figure 75: KSI by road user 2003 - 2012

From 2003 to 2012 approximately 83% of KSI on local roads were drivers or passengers, and 10% were motorcyclists. KSI for 2012 is shown in Table 130.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	0	0	0	0	0
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	0	0	0	0	0

Table 130: KSI by road user 2012

6.17.3 Road User Behaviour

The following table shows factors contributing to KSI on the Shire of West Arthur 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	1	2	0	0	3
Alcohol	1	0	0	0	1
Speed	3	4	0	0	7

Table 131: KSI by contributing factor 2003 - 2012 (police attended)

Speed is a contributing factor in KSI, which is consistent with the Hit Object and Non-Collision crash natures identified previously.

6.17.4 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	1	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	2	0	0
60 to 69	0	0	0
70+	0	0	0
Unknown	0	0	0
Total	2	1	0

Table 132: KSI by vulnerable road user and age 2003 - 2012

6.18 Shire of Wickepin

Refer also to the Wheatbelt South Region Local Road Crash Map Book 2012.

Table 133 displays all crashes in the Shire of Wickepin by crash location and road manager from 2003 to 2012.

Crash Location	Road Manager	Crashes	%
Midblock	State	20	23.3
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	53	61.6
Intersection	LG, LG	5	5.8
Intersection	LG, Other	0	0.0
Midblock	Other	0	0.0
Intersection	Other, Other	0	0.0
Other	Unknown	7	8.1
Total		86	100.0

Table 133: All crashes by crash location and road manager 2003 - 2012

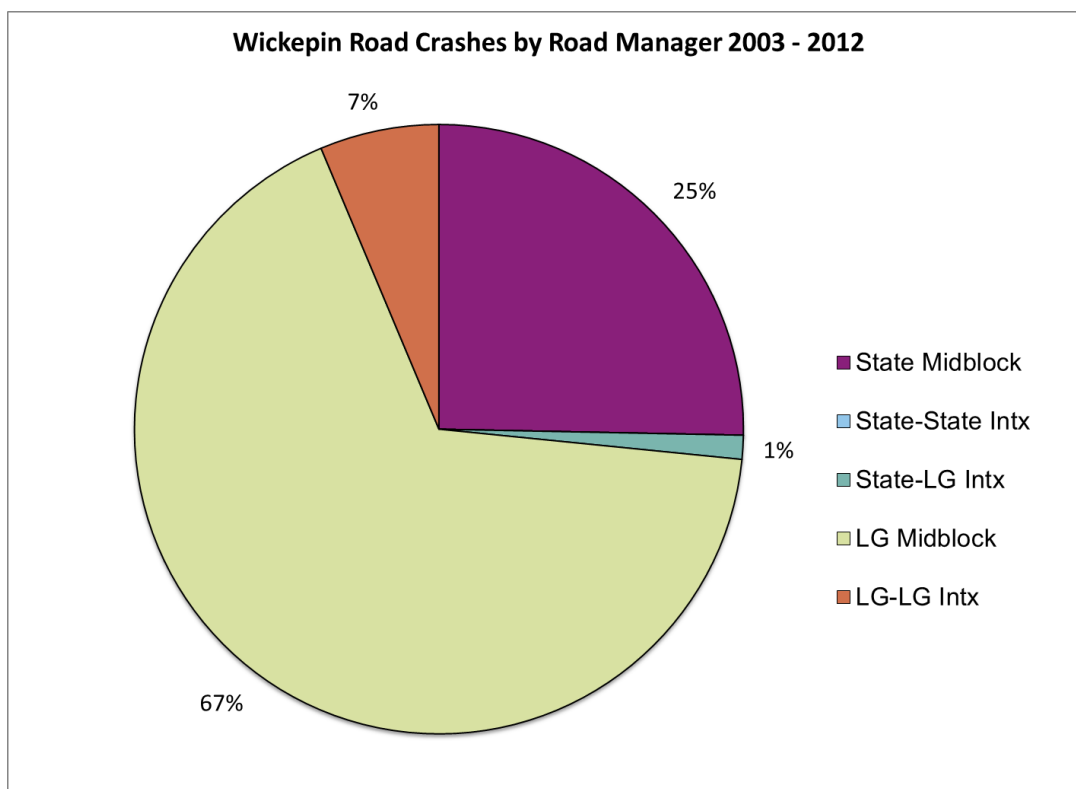


Figure 76: All crashes by crash location and road manager 2003 - 2012

Ignoring crashes at “Other” and “Unknown” locations, Figure 76 shows:

- 74% 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.
- 25% of crashes occurred at State road locations including intersections where all legs were State roads.

Figure 76 also shows that 89% of crashes in the Shire of Wickepin occurred at midblock locations for Local and State roads. This is further investigated in the analysis of the crash nature.

The KSI trend for the Shire of Wickepin local road network from 2003 to 2012 is shown in Table 134.

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
KSI	1	4	1	3	1	1	4	5	1	2	23

Table 134: KSI trend 2003 - 2012

6.18.1 Crash Nature

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

- 91% of KSI occurred in single vehicle crashes of Hit Object or Non-Collision; and
- 78% of KSI occurred in Hit Object crashes.

Crash Nature	Local Government and Region			
	2003 - 2012			2012
	Wickepin	Wheatbelt South	% for Wickepin	Wickepin
	n	n	%	n
Multi-Vehicle Crashes				
Rear End	0	7	0.0	0
Head On	1	12	8.3	0
Sideswipe	0	3	0.0	0
Right Angle	1	12	8.3	0
Right Turn Thru	0	0	0.0	0
Multi-Vehicle Other	0	0	0.0	0
Multi-Vehicle Total	2	34	5.9	0
Single Vehicle Crashes				
Hit Pedestrian	0	3	0.0	0
Hit Animal	0	4	0.0	0
Hit Object	18	197	9.1	2
Non-Collision	3	97	3.1	0
Single Vehicle Other	0	4	0.0	0
Single Vehicle Total	21	305	6.9	2
Total	23	339	6.8	2

Table 135: KSI by crash nature 2003 - 2012

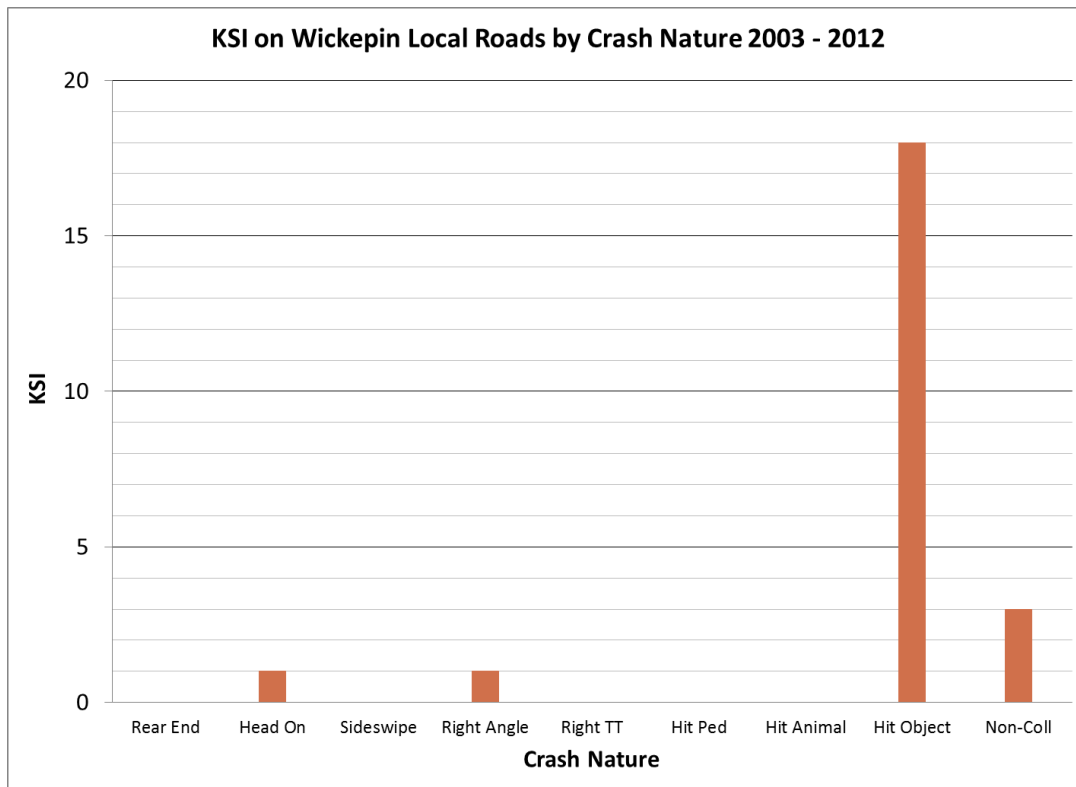


Figure 77: KSI by crash nature 2003 - 2012

6.18.2 Road User Type

KSI by road user type on the Shire of Wickepin local road network from 2003 to 2012 is shown in Table 136 and Figure 78.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	16	3	0	1	20
Passenger	7	2	0	0	9
Motorcyclist	0	0	0	0	0
Bicyclist	0	0	0	0	0
Pedestrian	0	1	0	0	1
Other	0	0	0	0	0
Total	23	6	0	1	30

Table 136: KSI by road user 2003 - 2012

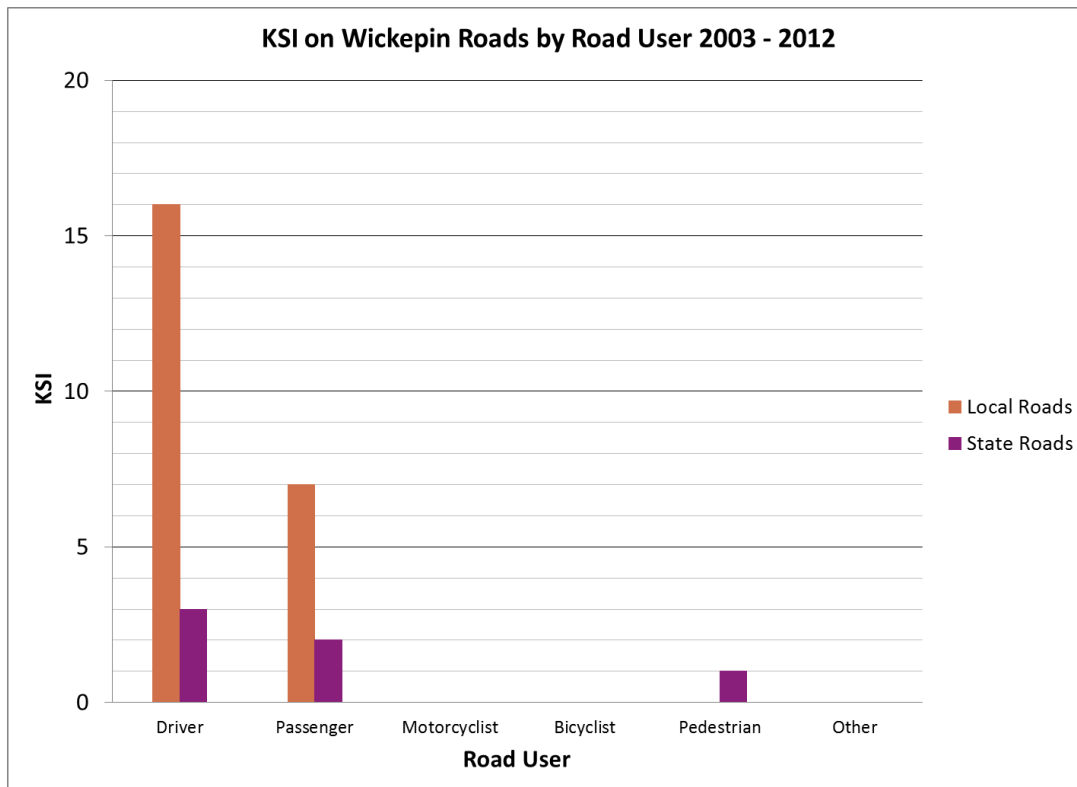


Figure 78: KSI by road user 2003 - 2012

From 2003 to 2012 all KSI on local roads were drivers or passengers. KSI for 2012 is shown in Table 137.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	2	0	0	1	3
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	2	0	0	1	3

Table 137: KSI by road user 2012

6.18.3 Road User Behaviour

The following table shows factors contributing to KSI on the Shire of Wickepin 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	7	0	0	0	7
Seatbelts Not Worn	5	1	0	0	6
Alcohol	3	0	0	0	3
Speed	6	0	0	0	6

Table 138: KSI by contributing factor 2003 - 2012 (police attended)

All four factors contributed to KSI outcomes, which is consistent with the Hit Object and Non-Collision crash natures identified previously.

6.18.4 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.

6.19 Shire of Williams

Refer also to the Wheatbelt South Region Local Road Crash Map Book 2012.

Table 139 displays all crashes in the Shire of Williams by crash location and road manager from 2003 to 2012.

Crash Location	Road Manager	Crashes	%
Midblock	State	182	67.7
Intersection	State, State	0	0.0
Intersection	State, LG	8	3.0
Intersection	State, LG, Other	0	0.0
Intersection	State, Other	0	0.0
Midblock	LG	66	24.5
Intersection	LG, LG	5	1.9
Intersection	LG, Other	0	0.0
Midblock	Other	1	0.4
Intersection	Other, Other	0	0.0
Other	Unknown	7	2.6
Total		269	100.0

Table 139: All crashes by crash location and road manager 2003 - 2012

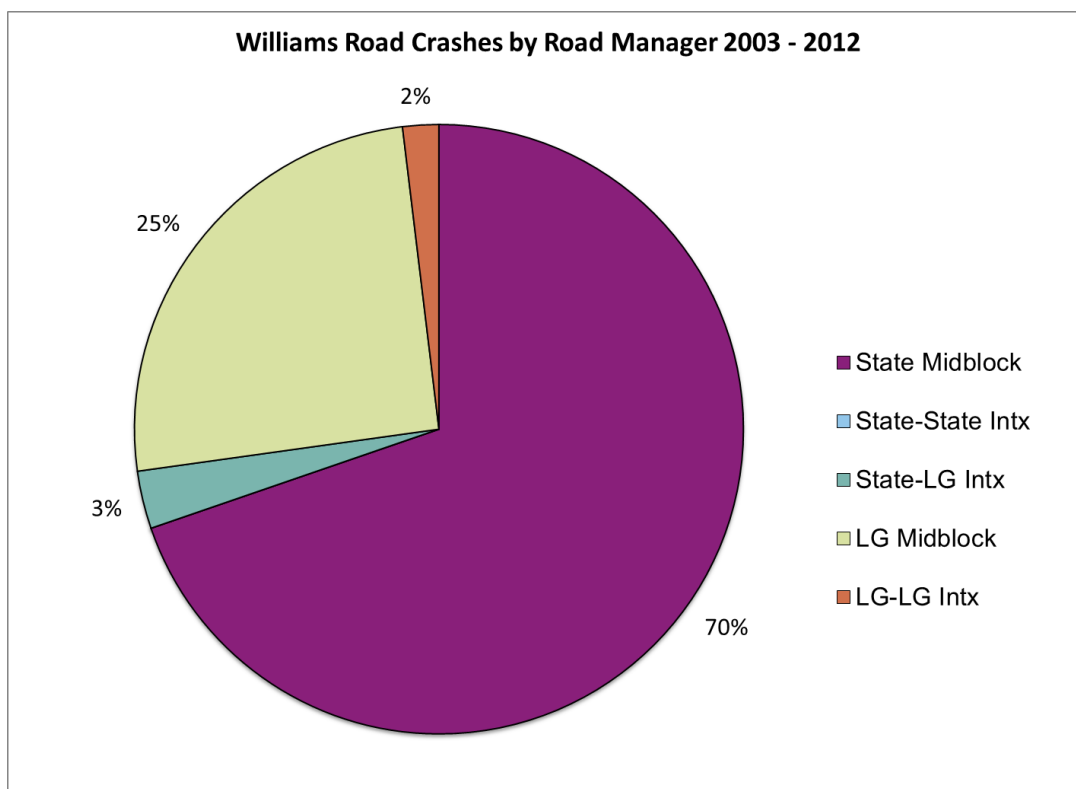


Figure 79: All crashes by crash location and road manager 2003 - 2012

Ignoring crashes at “Other” and “Unknown” locations, Figure 79 shows:

- 27% 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.
- 70% of crashes occurred at State road locations including intersections where all legs were State roads.

Figure 79 also shows that 95% of crashes in the Shire of Williams occurred at midblock locations for Local and State roads. This is further investigated in the analysis of the crash nature.

The KSI trend for the Shire of Williams local road network from 2003 to 2012 is shown in Table 140.

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
KSI	1	0	0	2	2	1	1	0	2	0	9

Table 140: KSI trend 2003 - 2012

6.19.1 Crash Nature

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

- 89% of KSI occurred in single vehicle crashes of Hit Object or Non-Collision.

Crash Nature	Local Government and Region			
	2003 - 2012			2012
	Williams	Wheatbelt South	% for Williams	Williams
	n	n	%	n
Multi-Vehicle Crashes				
Rear End	0	7	0.0	0
Head On	0	12	0.0	0
Sideswipe	0	3	0.0	0
Right Angle	0	12	0.0	0
Right Turn Thru	0	0	0.0	0
Multi-Vehicle Other	0	0	0.0	0
Multi-Vehicle Total	0	34	0.0	0
Single Vehicle Crashes				
Hit Pedestrian	0	3	0.0	0
Hit Animal	0	4	0.0	0
Hit Object	5	197	2.5	0
Non-Collision	3	97	3.1	0
Single Vehicle Other	1	4	25.0	0
Single Vehicle Total	9	305	3.0	0
Total	9	339	2.7	0

Table 141: KSI by crash nature 2003 - 2012

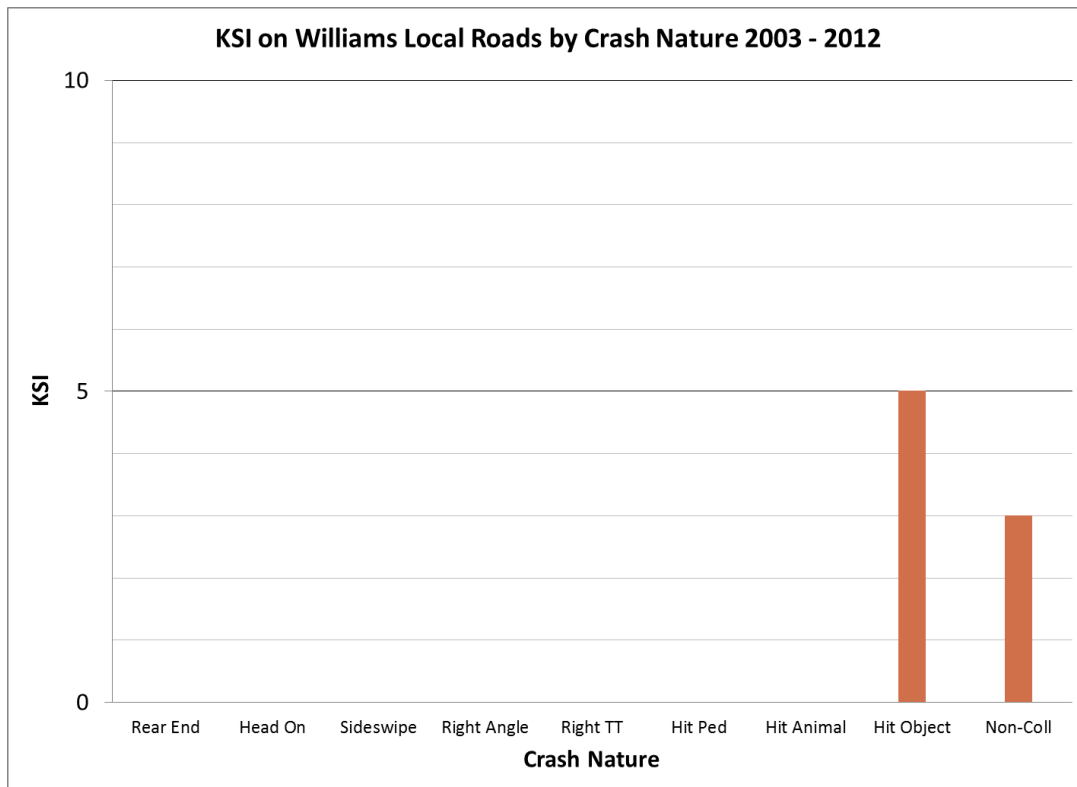


Figure 80: KSI by crash nature 2003 - 2012

6.19.2 Road User Type

KSI by road user type on the Shire of Williams local road network from 2003 to 2012 is shown in Table 142 and Figure 81.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	9	26	0	1	36
Passenger	0	15	0	0	15
Motorcyclist	0	3	0	0	3
Bicyclist	0	0	0	0	0
Pedestrian	0	0	0	0	0
Other	0	0	0	0	0
Total	9	44	0	1	54

Table 142: KSI by road user 2003 - 2012

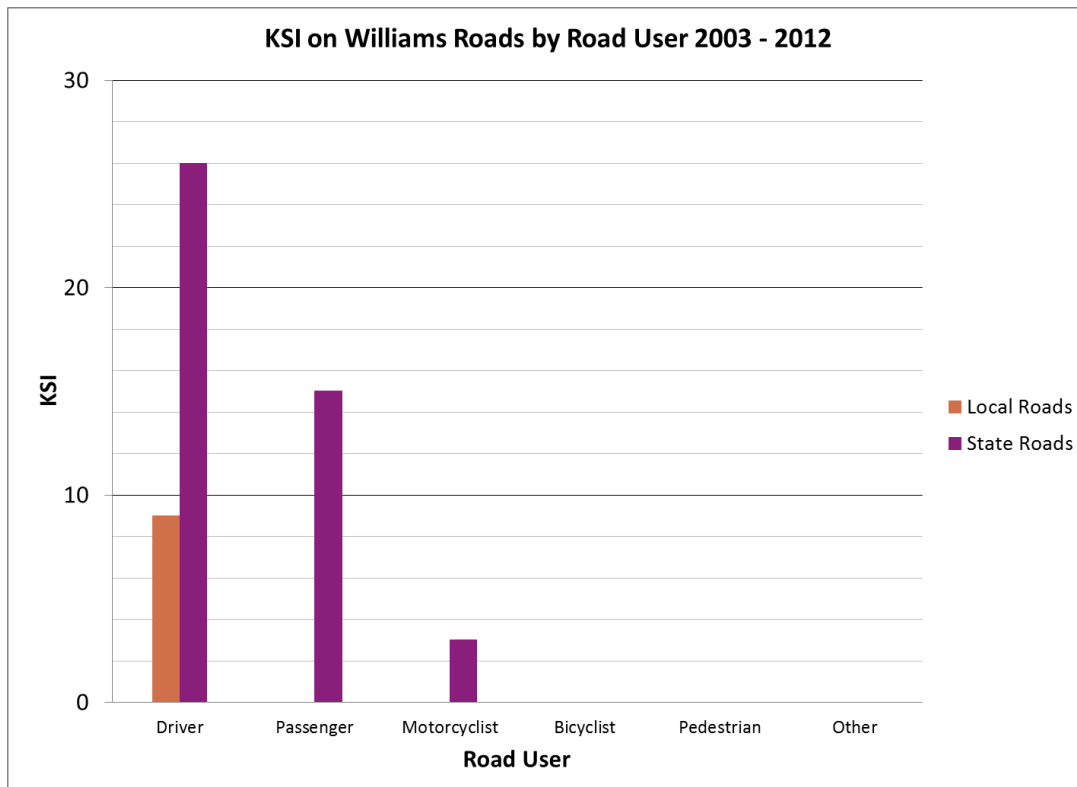


Figure 81: KSI by road user 2003 - 2012

From 2003 to 2012 all KSI on local roads were drivers. KSI for 2012 is shown in Table 143.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	0	2	0	0	2
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	4	0	0	4

Table 143: KSI by road user 2012

6.19.3 Road User Behaviour

The following table shows factors contributing to KSI on the Shire of Williams 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	15	0	0	17
Seatbelts Not Worn	2	2	0	0	4
Alcohol	2	1	0	0	3
Speed	1	4	0	0	5

Table 144: KSI by contributing factor 2003 - 2012 (police attended)

6.19.4 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.

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.