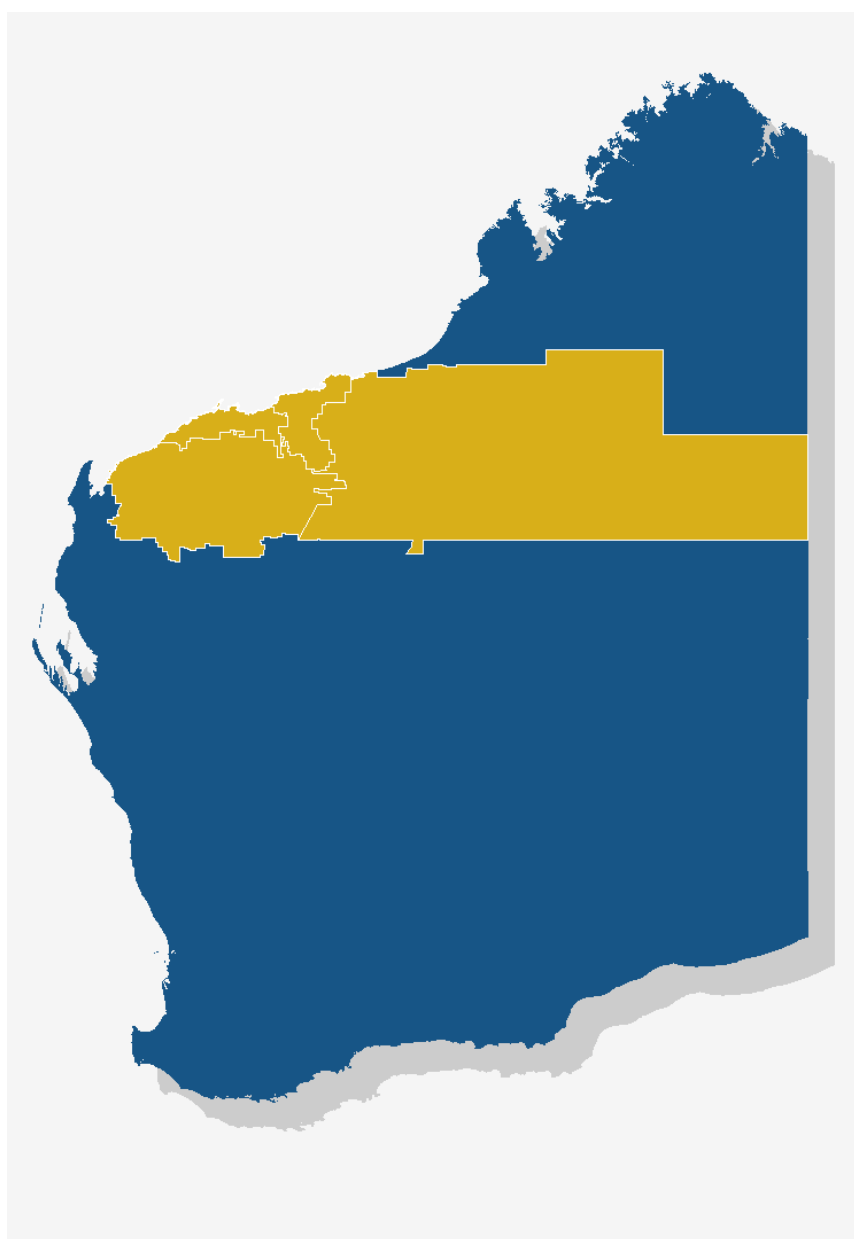


Local Road Crash Report 2012

PILBARA 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 127,000 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 Pilbara 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 Pilbara 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.

Pilbara Region

Local roads constitute 91% of the Pilbara Region road network.

From 2003 to 2012, there were a total of 4,343 crashes in the Pilbara Region resulting in 269 people killed or seriously injured (KSI) on local roads. During this period, 52% of all crashes occurred on local roads including intersections where all legs were local roads. Midblock locations accounted for 31.4% of crashes on local roads.

Generally, the ten year trend for KSI on the Pilbara Region local road network is increasing.

In 2012, a total of 235 crashes occurred on the Pilbara Region local road network, which included 26 crashes resulting in 1 person killed and 25 people seriously injured. Approximately 38% of KSI in 2012 resulted from single vehicle crashes of Hit Object and Non-Collision.

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

1. Single vehicle crashes.
2. Serious crashes in 50km/hr. speed zones.
3. Alcohol and non-wearing of seatbelts.
4. Over-representation of males in KSI outcomes.

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 PILBARA 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 PILBARA 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	22
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 ASHBURTON	34
6.2 SHIRE OF EAST PILBARA	40
6.3 CITY OF KARRATHA	46
6.4 TOWN OF PORT HEDLAND	52
GLOSSARY.....	58

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 Pilbara Region, which is comprised of the following Local Governments:

Shire of Ashburton; Shire of East Pilbara; City of Karratha; and the Town of Port Hedland.

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.

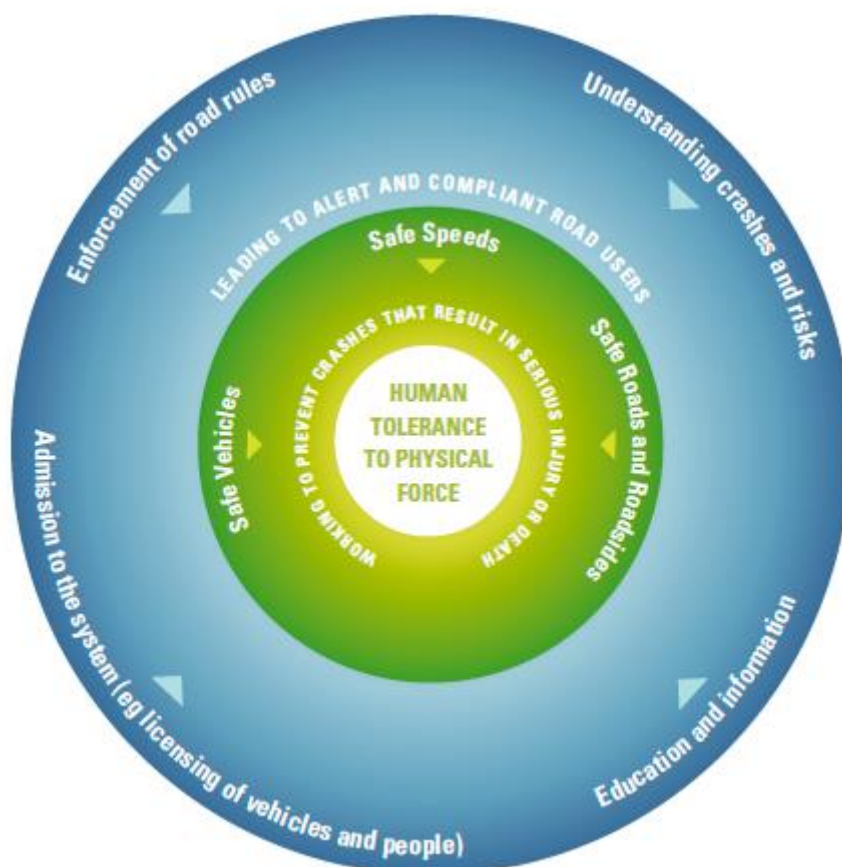


Figure 1: The Safe System (adapted from ATC, 2007)

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 summarizes 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 - 2012

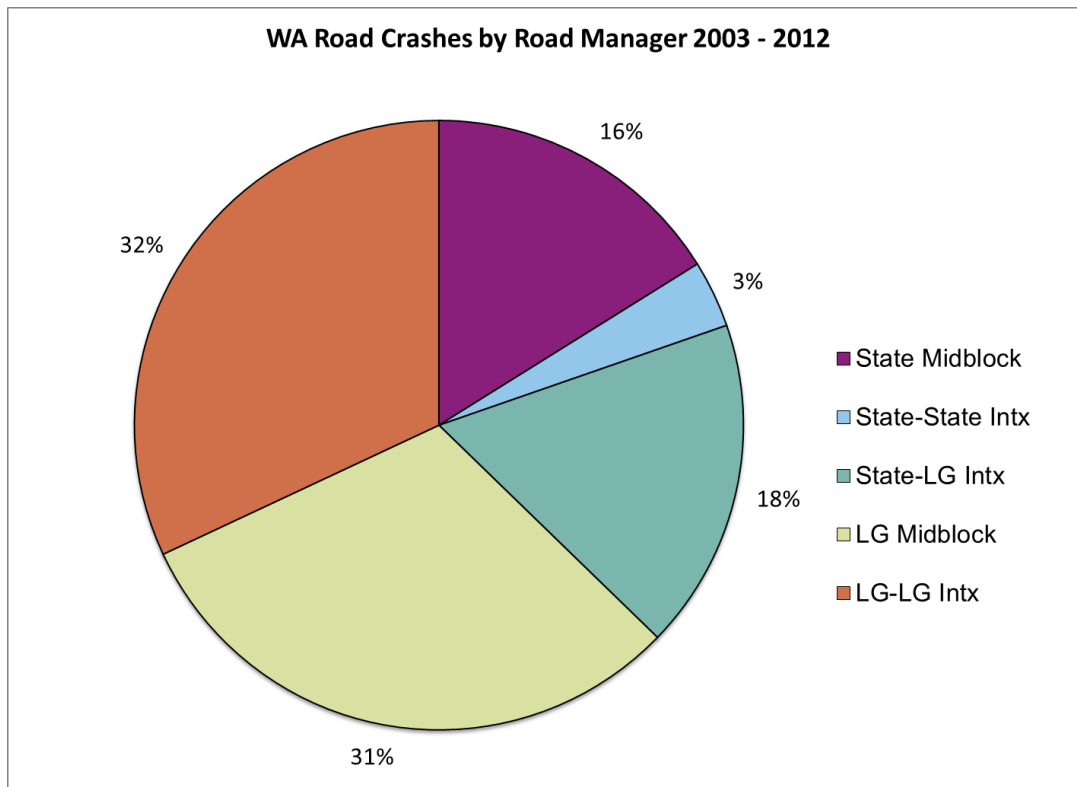


Figure 2: All crashes in WA by crash location and road manager 2003 - 2012

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 Pilbara Region

The road safety issues for the Pilbara Region local road network are:

1. Single vehicle crashes.
2. Serious crashes in 50km/hr. speed zones.
3. Alcohol and non-wearing of seatbelts.
4. Over-representation of males in KSI outcomes.

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.

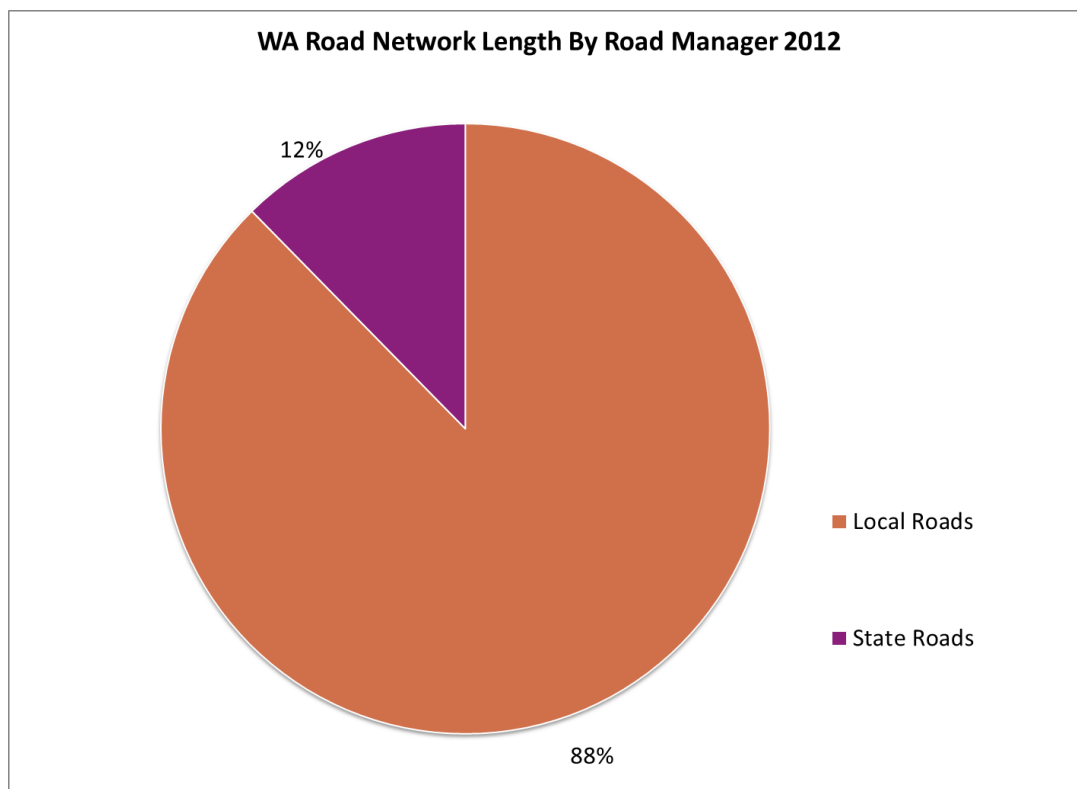


Figure 3: Length of road network in WA by road manager 2012

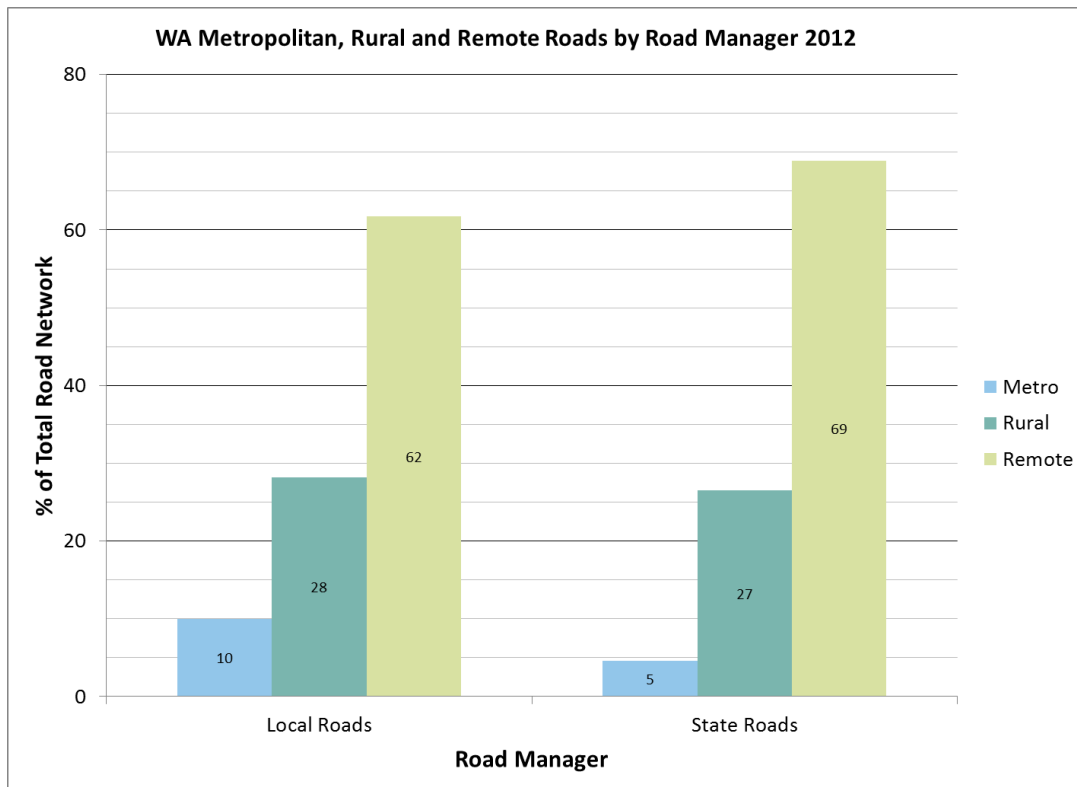


Figure 4: Percentage of road network in WA by road manager and accessibility 2012

2.2 Road Trauma on the Road Network

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

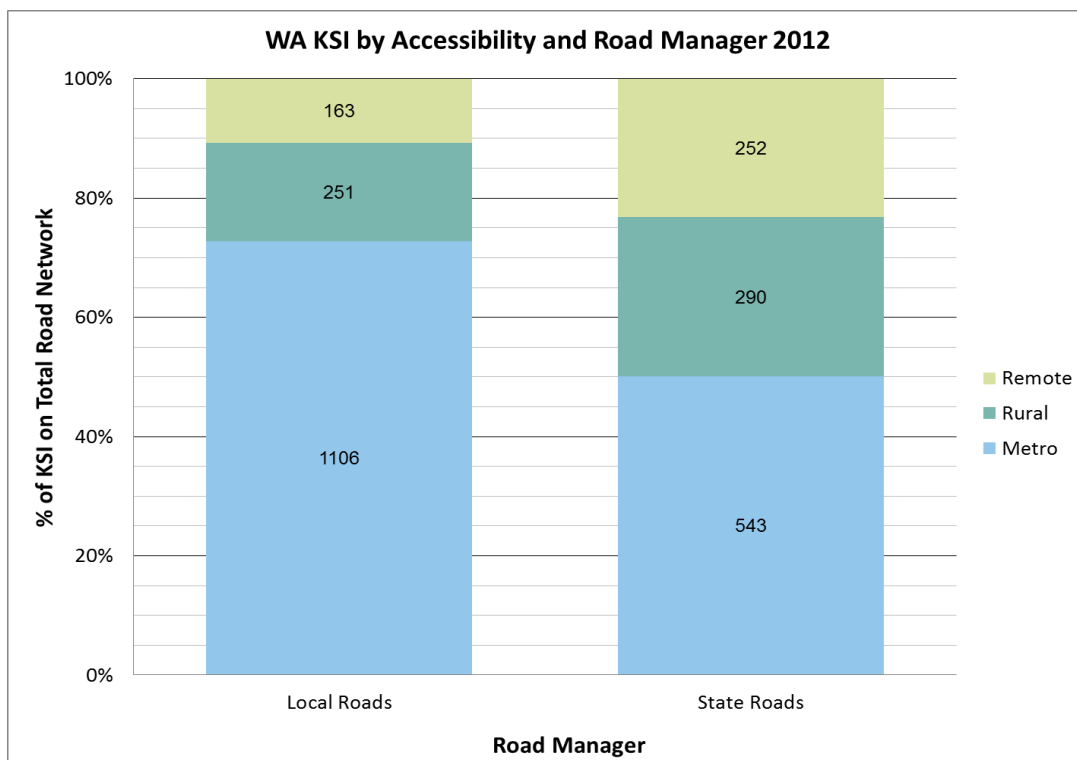


Figure 5: WA KSI by road manager and accessibility 2012

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 - 2012

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

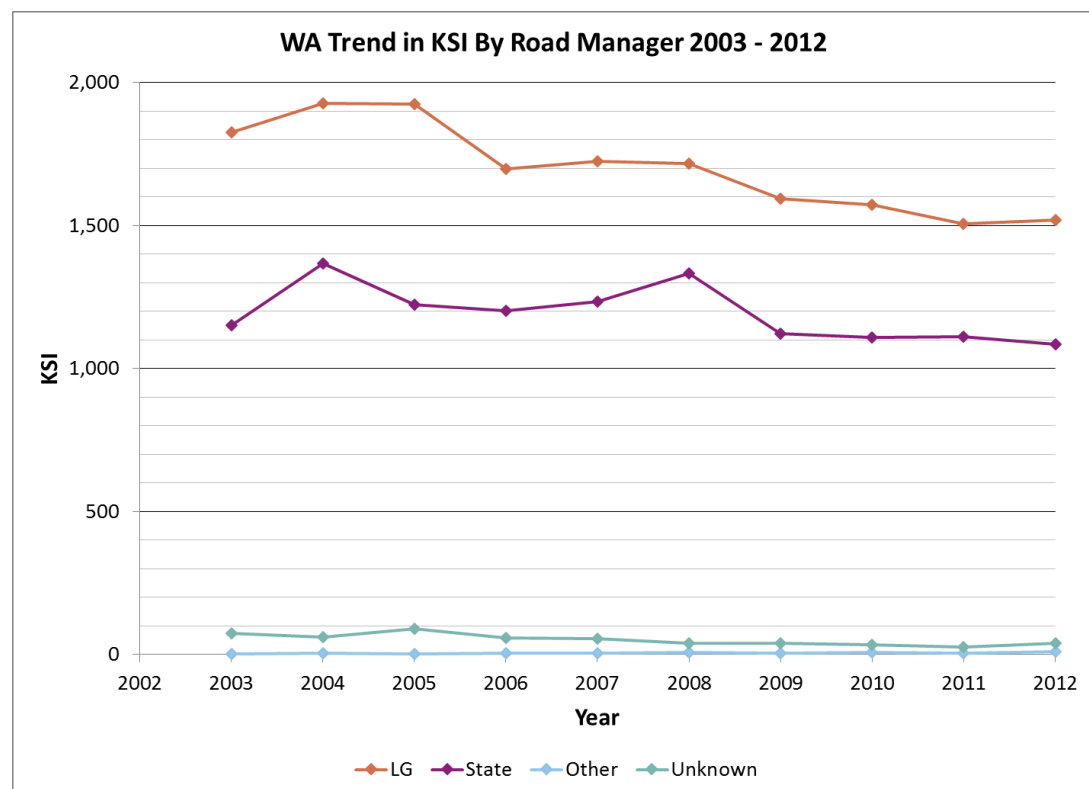


Figure 6: Trend in KSI by road manager 2003 - 2012

2.5 Crashes by Nature

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

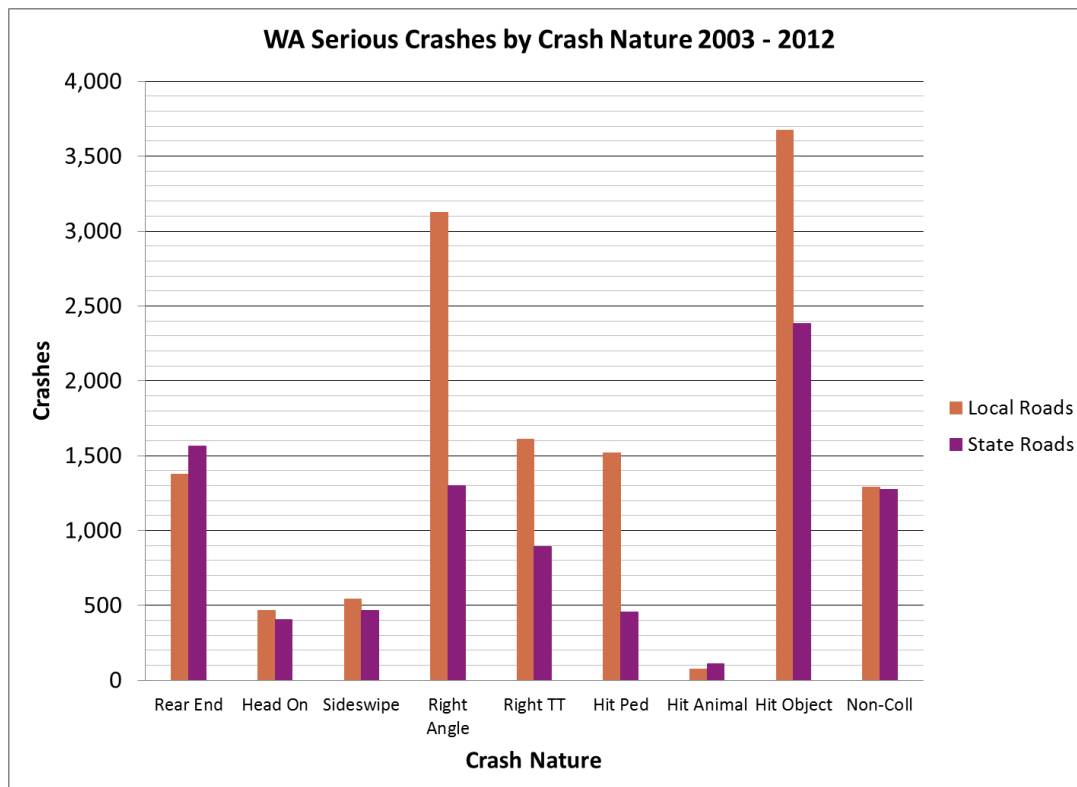


Figure 7: Ten year serious crash totals by crash nature and road manager 2003 - 2012

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.

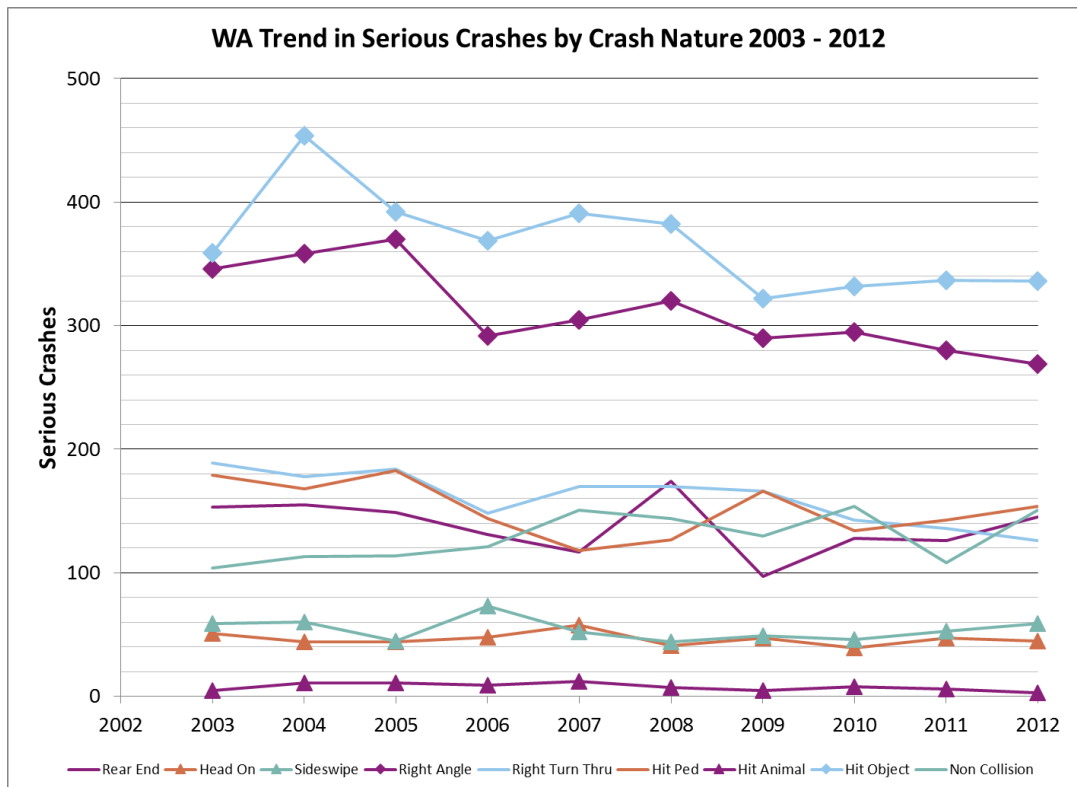


Figure 8: Trend in serious crashes on WA local roads by crash nature 2003 - 2012

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 - 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.

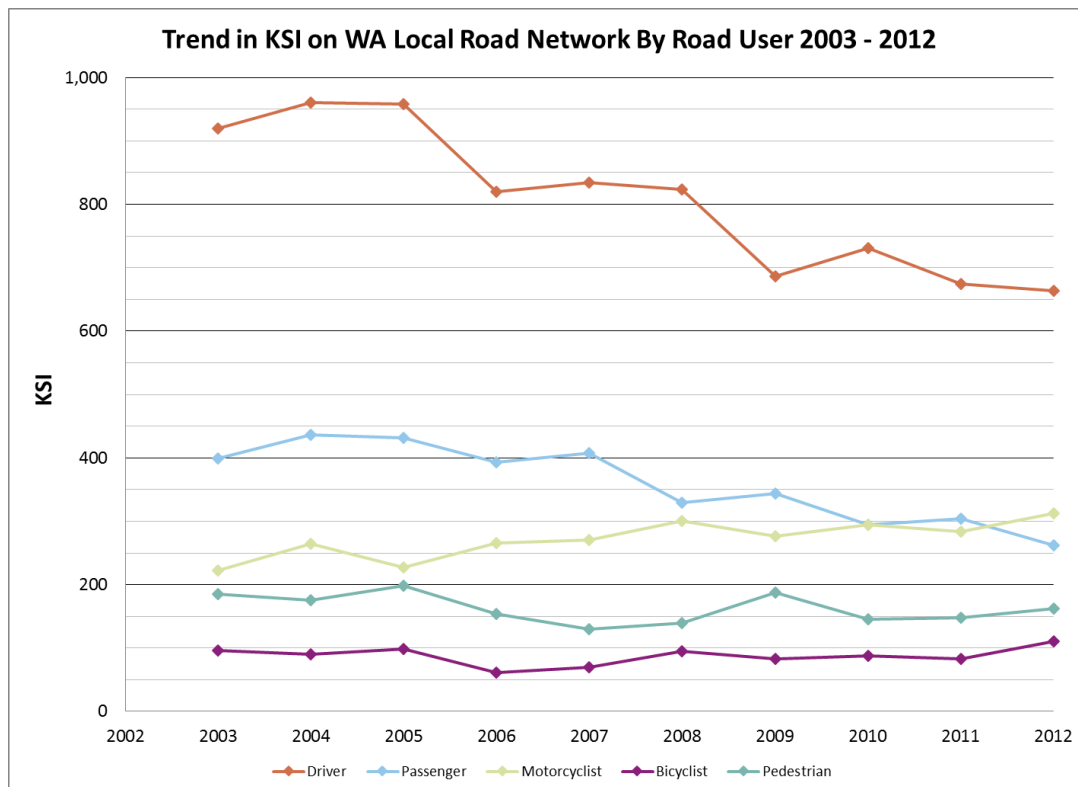


Figure 9: Trend in KSI on WA local roads by road user 2003 - 2012

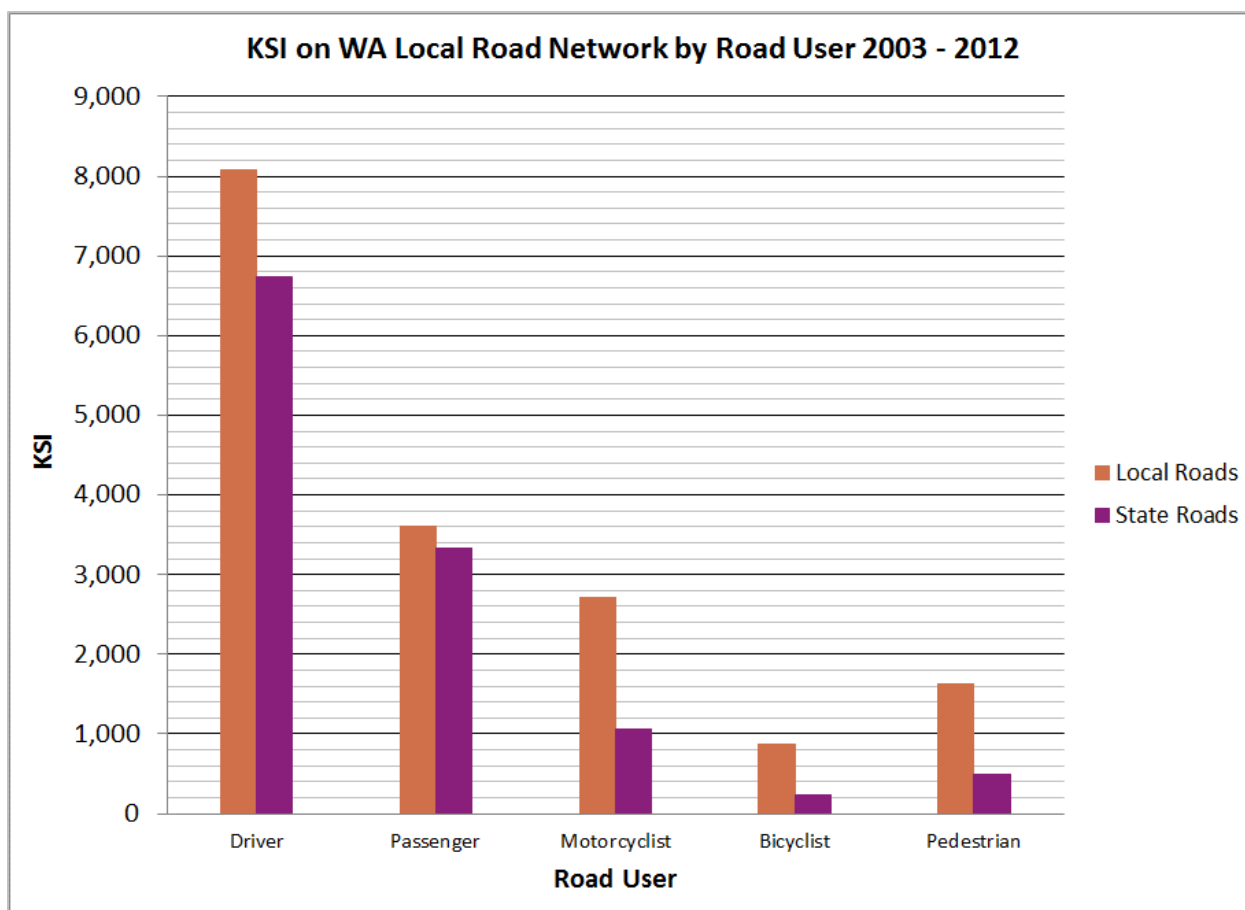


Figure 10: KSI totals by road user 2003 to 2012

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.

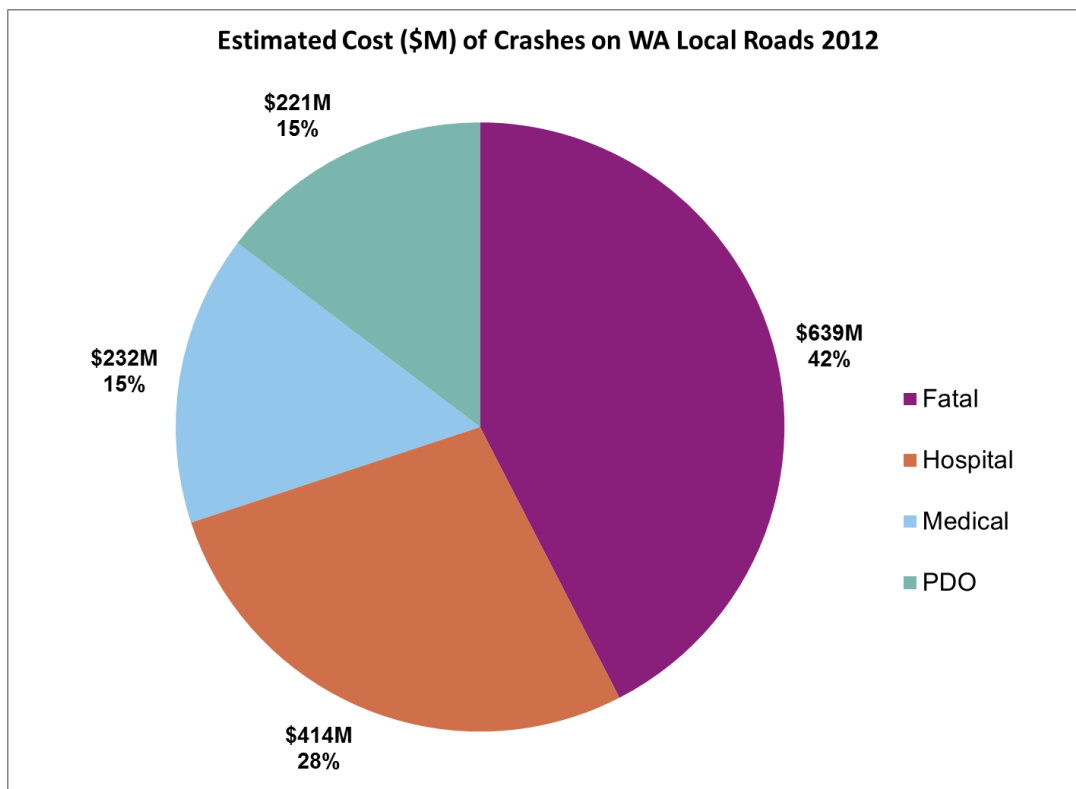


Figure 11: Estimated cost of all crashes on local roads 2012

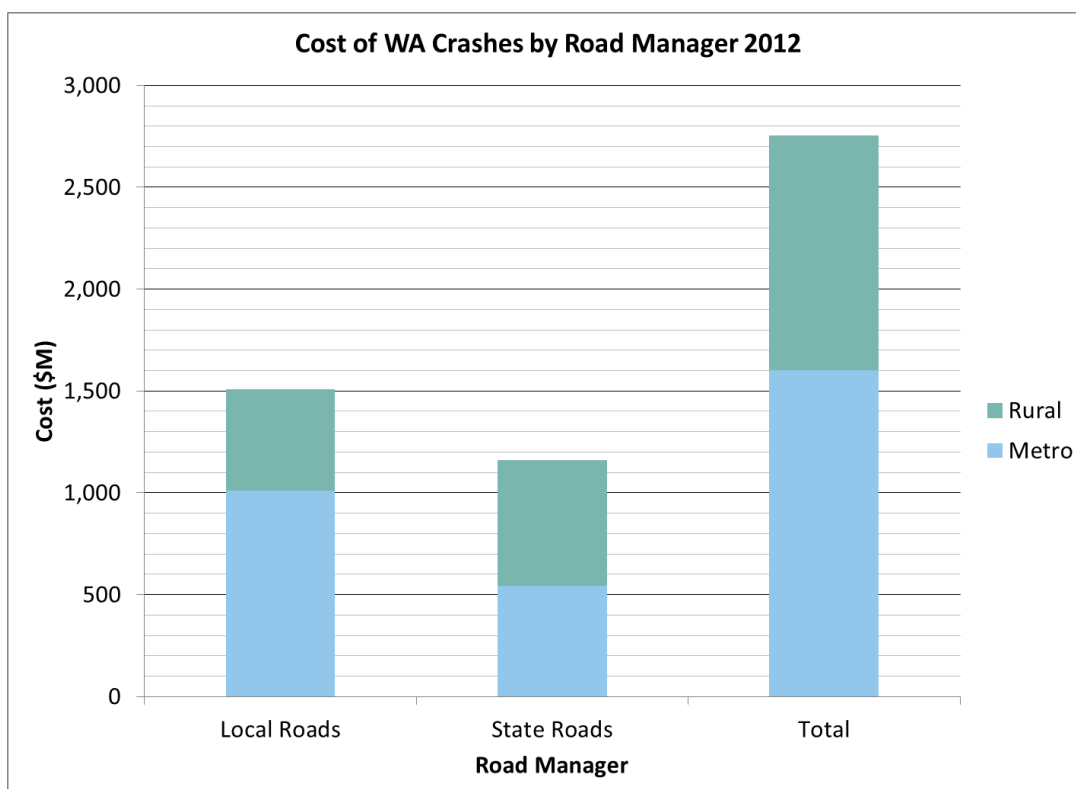


Figure 12: Estimated cost of all crashes in WA by road manager 2012

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 - 2012

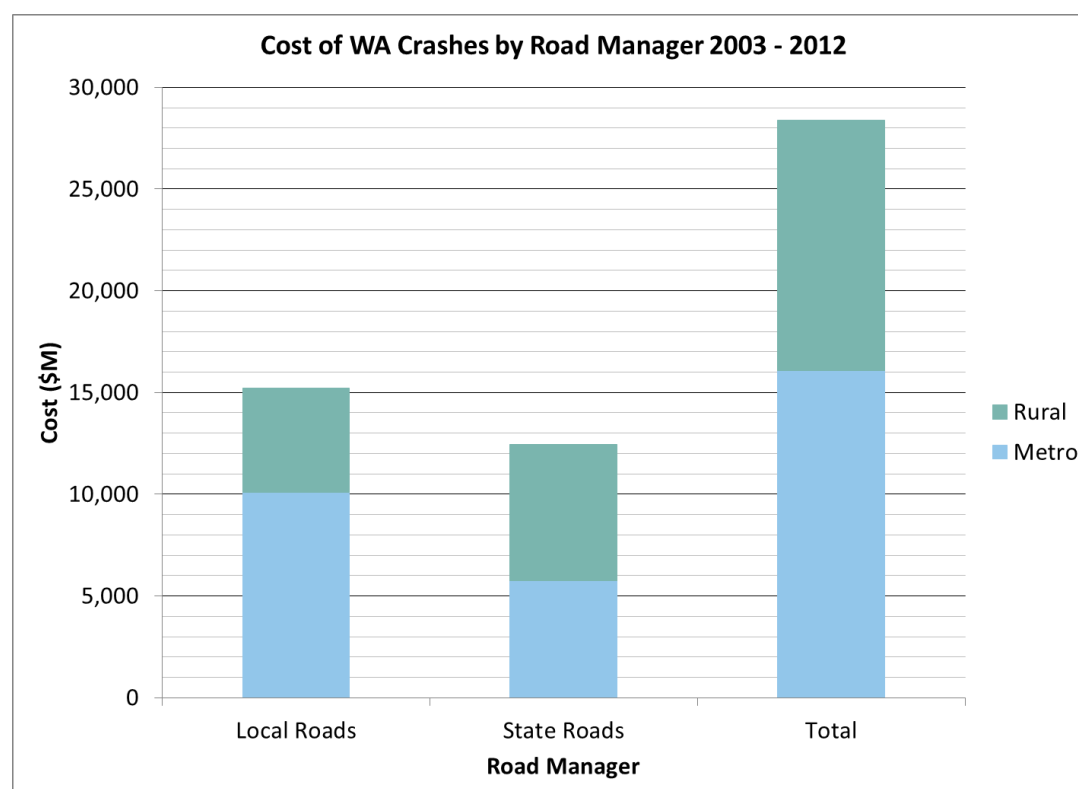


Figure 13: Cost of all crashes in WA by road manager 2003 - 2012

3. REGIONAL ROAD CRASH AND KSI SUMMARIES

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

3.1 Pilbara Region Road Network

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

Local roads constitute 74% of the Pilbara Region road network.

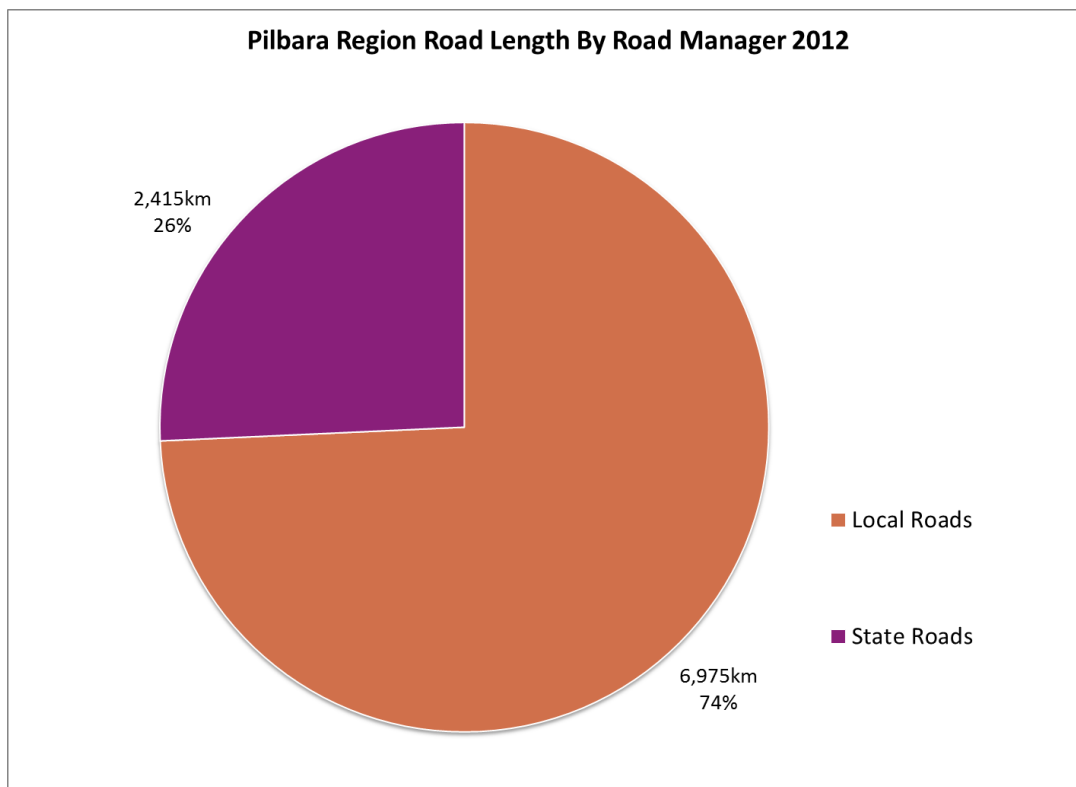


Figure 14: Length of road network in Pilbara Region by road manager 2012

3.2 Crashes by Location and Road Manager

Table 8 shows all crashes by crash location and road manager in the Pilbara 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	1,520	35.0
Intersection	State, State	76	1.7
Intersection	State, LG	342	7.9
Intersection	State, LG, Other	7	0.2
Intersection	State, Other	5	0.1
Midblock	LG	1,364	31.4
Intersection	LG, LG	756	17.4
Intersection	LG, Other	2	0.0
Midblock	Other	8	0.2
Intersection	Other, Other	1	0.0
Other	Unknown	262	6.0
Total		4,343	100.0

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

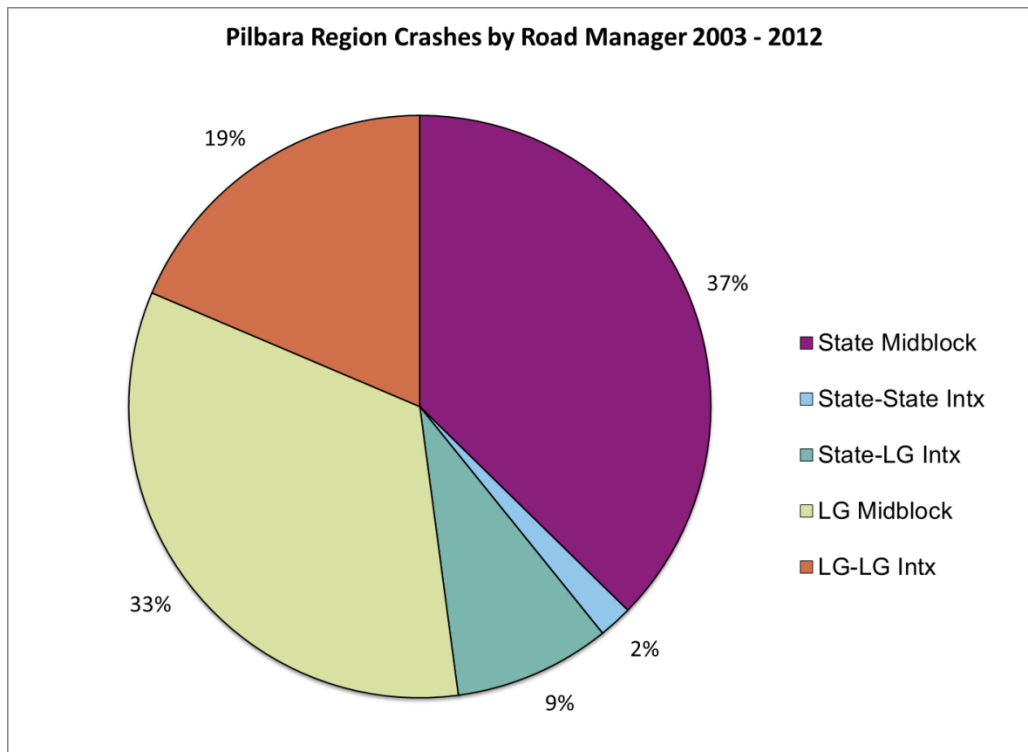


Figure 15: Crashes by crash location and road manager 2003 - 2012

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

- 52% 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.
- 39% of crashes occurred at State road locations including intersections where all legs were State roads.

Figure 15 also shows that 70% of crashes in the Pilbara 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 Pilbara Region local road network. Figure 16 displays the total KSI across all Local Governments.

Local Government	Year										
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Ashburton	3	3	5	2	8	1	4	5	3	3	37
East Pilbara	2	3	4	6	3	7	2	4	3	3	37
Karratha (C)	4	13	9	8	20	7	17	12	5	9	104
Port Hedland (T)	4	8	8	13	17	9	3	13	5	11	91
TOTAL	13	27	26	29	48	24	26	34	16	26	269

Table 9: KSI trend by Local Government 2003 - 2012

The City of Karratha and the Town of Port Hedland experienced the highest frequencies of KSI from 2003 to 2012.

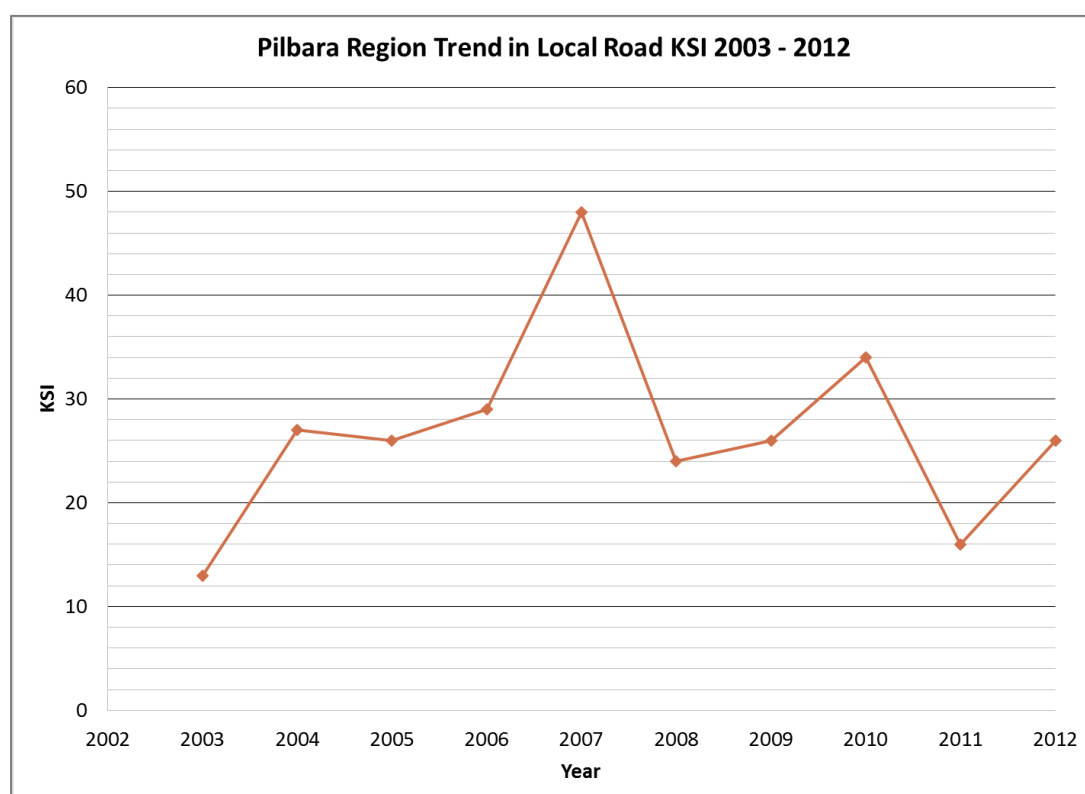


Figure 16: KSI trend for the Pilbara Region 2003 - 2012

3.4 Crash Severity

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

Crash Severity	Region		
	Pilbara	State	% for Pilbara
	n	n	%
Fatal	1	87	1.1
Hospitalisation	16	1,235	1.3
Medical	29	2,949	1.0
PDO Major	132	12,106	1.1
PDO Minor	57	7,417	0.8
Total	235	23,794	1.0

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

3.5 Road Surface Type

Nearly 86% of crashes occurred on sealed roads and 13% of crashes occurred on unsealed roads on the Pilbara Region local road network. The only fatal crash for 2012 occurred on an unsealed road.

Crash Severity	Surface Type						
	Sealed		Unsealed		Unknown		Total
	n	%	n	%	n	%	n
Fatal	0	0.0	1	100.0	0	0.0	1
Hospitalisation	10	62.5	6	37.5	0	0.0	16
Medical	23	79.3	6	20.7	0	0.0	29
PDO Major	116	87.9	15	11.4	1	0.8	132
PDO Minor	54	94.7	2	3.5	1	1.8	57
Total	203	86.4	30	12.8	2	0.9	235

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 Pilbara Region local road network for 2012.

Crash Nature	Region		
	Pilbara	State	% for Pilbara
	n	n	%
Multi-Vehicle Crashes			
Rear End	3	163	1.8
Head On	2	57	3.5
Sideswipe	0	60	0.0
Right Angle	2	315	0.6
Right Turn Thru	2	149	1.3
Multi-Vehicle Other	0	19	0.0
Multi-Vehicle Total	9	763	1.2
Single Vehicle Crashes			
Hit Pedestrian	4	159	2.5
Hit Animal	0	3	0.0
Hit Object	6	394	1.5
Non-Collision	4	181	2.2
Single Vehicle Other	3	20	15.0
Single Vehicle Total	17	757	2.2
Total	26	1,520	1.7

Table 12: KSI on local roads by crash nature 2012

Approximately 38% of KSI on the Pilbara local road network occurred in single vehicle crashes of Hit Object or Non-collision.

3.7 Vehicle Type

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

Vehicle Type	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Car	5	6	0	0	11
Station Wagon	1	4	2	0	7
Utility	3	12	0	7	22
Panel Van	0	0	0	0	0
Truck	1	4	0	0	5
Prime Mover	0	0	0	0	0
Bus	0	7	0	0	7
Motorcycle	7	4	0	1	12
Multi-Seated Van	0	0	0	0	0
Truck Combination	0	6	0	0	6
4WD	7	11	0	0	18
Other	0	1	0	0	1
Total	24	55	2	8	89

Table 13: KSI by vehicle type and road manager 2012

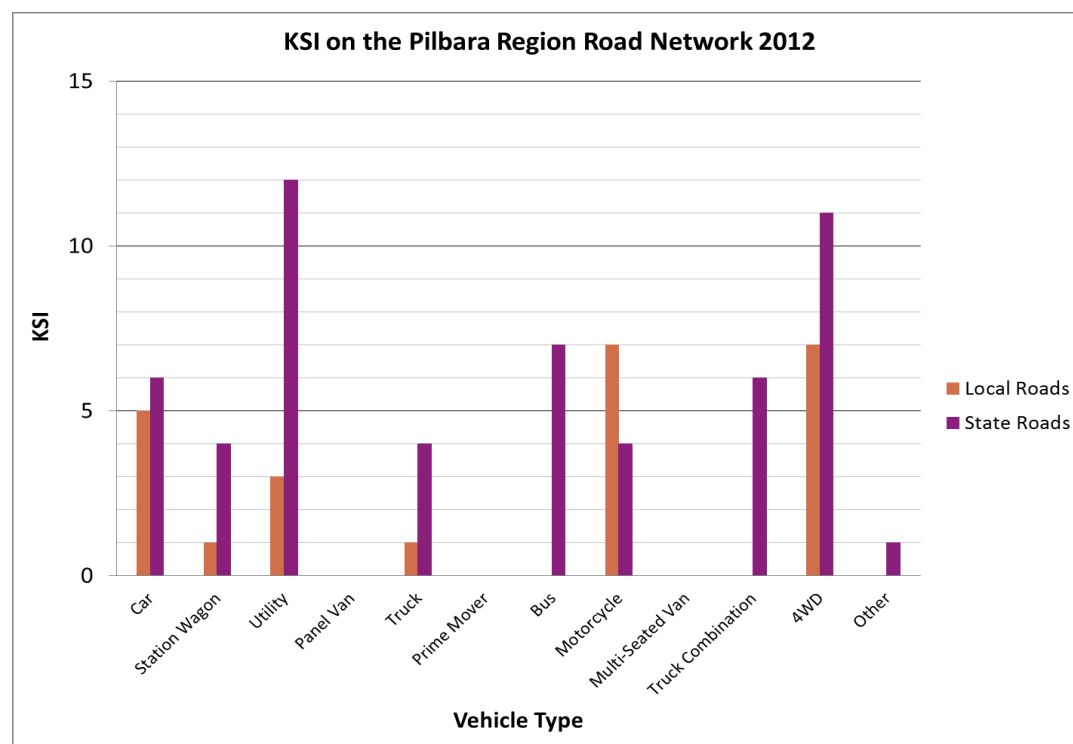


Figure 17: KSI by vehicle type and road manager 2012

3.8 Road User

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

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	10	29	2	2	43
Passenger	7	21	0	5	33
Motorcyclist	7	4	0	1	12
Bicyclist	0	0	0	0	0
Pedestrian	2	3	0	0	5
Other	0	1	0	0	1
Total	26	58	2	8	94

Table 14: KSI by road user and road manager 2012

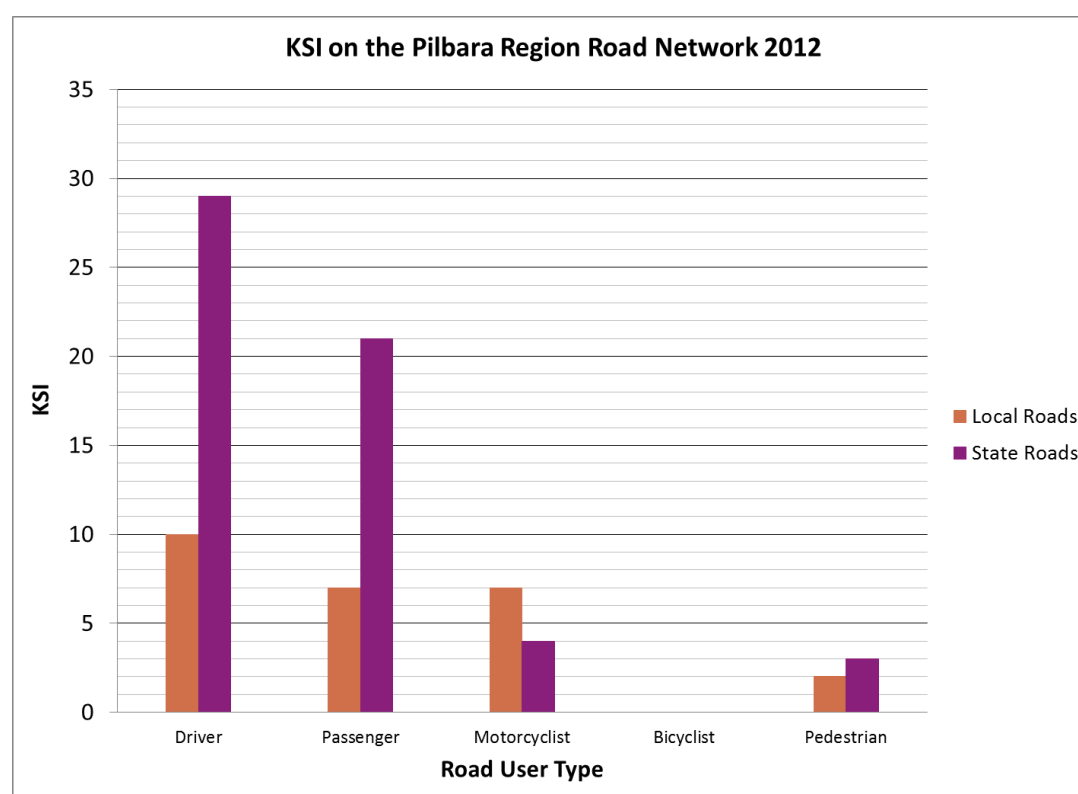


Figure 18: KSI by road user and road manager 2012

3.9 Speed

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

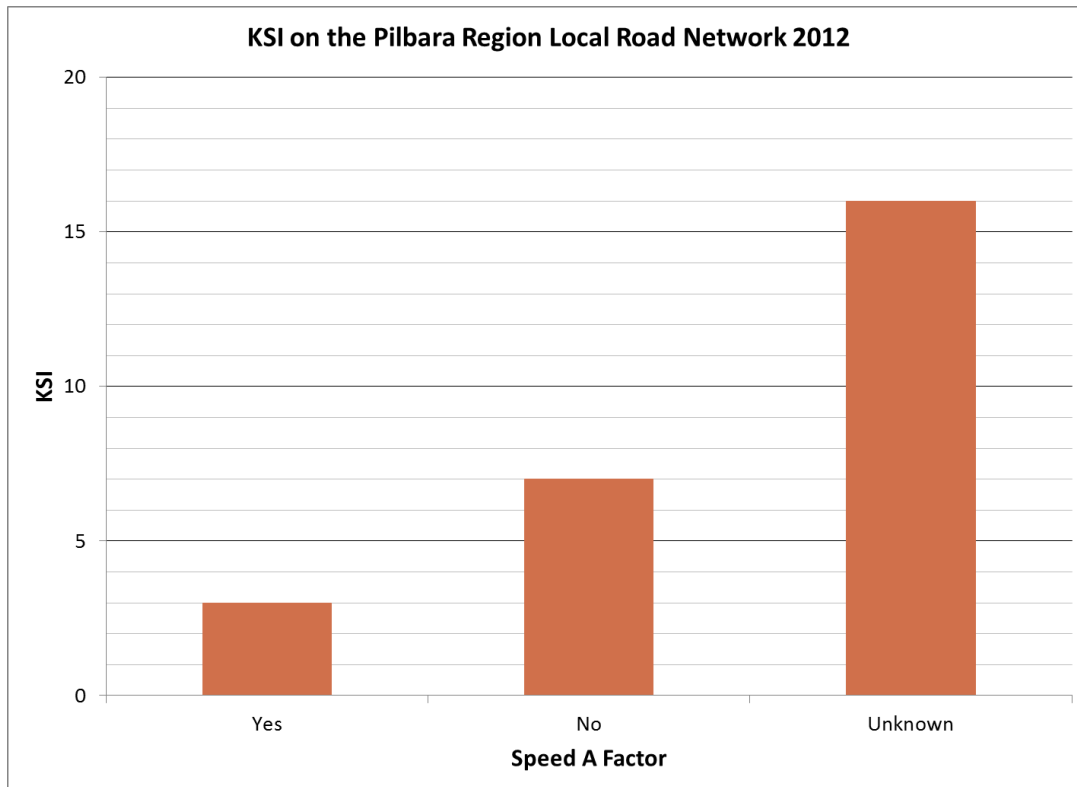


Figure 19: KSI by speed factor 2012 (police attended)

3.10 Blood Alcohol Content (BAC)

Table 15 and Figure 20 show KSI by the highest BAC reading for a driver/rider for the Pilbara 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	13	52	13	50
$0 \leq \text{BAC} < 0.05$	0	0	0	0	0	0
$0.05 \leq \text{BAC} \leq 0.08$	1	100	1	4	2	8
$0.08 \leq \text{BAC} < 0.15$	0	0	0	0	0	0
$\text{BAC} \geq 0.15$	0	0	1	4	1	4
Subtotal BAC ≥ 0.05	1	100	2	8	3	12
Unknown	0	0	10	40	10	38
Total KSI	1	100	25	100	26	100

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

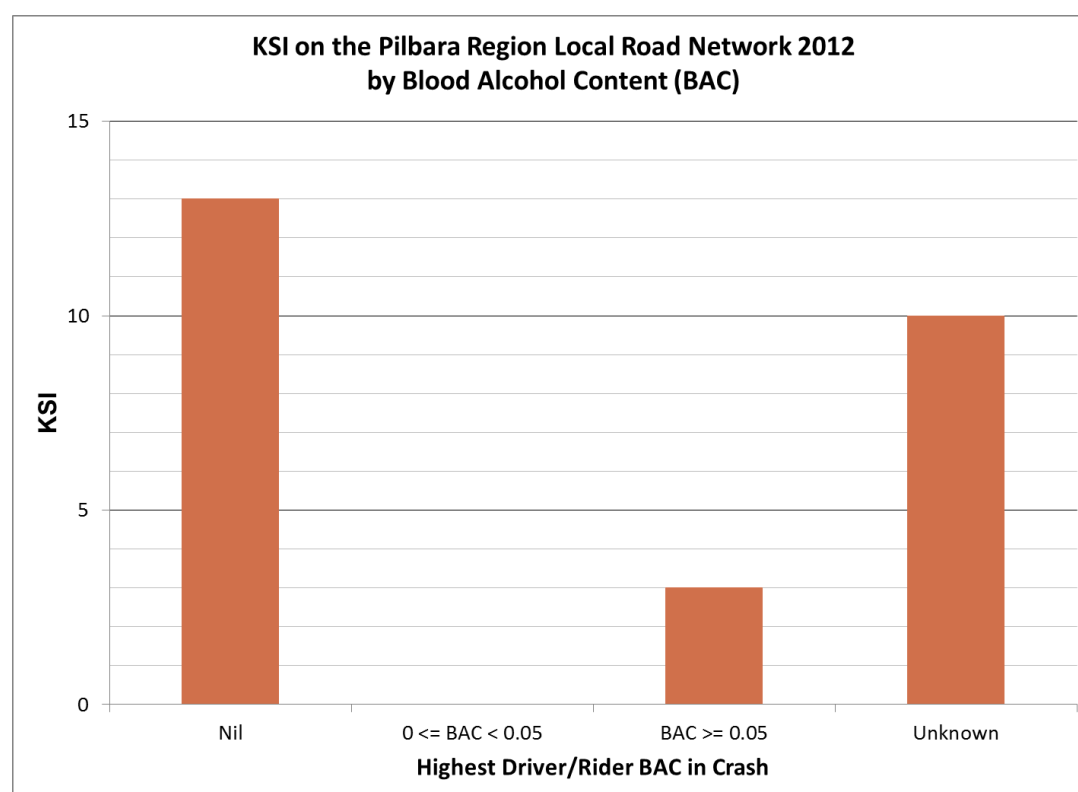


Figure 20: KSI by highest BAC reading in the crash 2012 (police attended)

3.11 Seatbelt Use

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

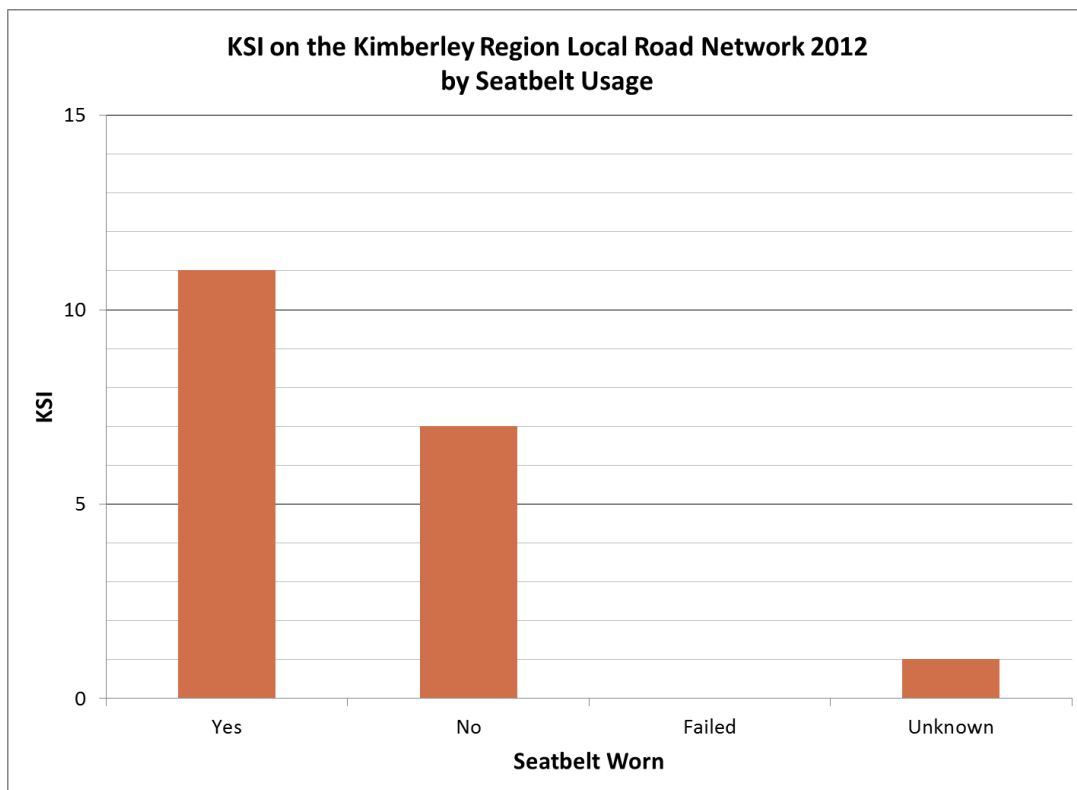


Figure 21: KSI by seatbelt usage 2012 (police attended)

4. SAFE SYSTEM

In this section, KSI summaries are provided for the Pilbara 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 Pilbara 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	152	29.3
State	317	61.1
Other	2	0.4
Unknown	48	9.2
Total	519	100

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

4.2 Safe Speeds

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

Speed Zone (km/hr.)	KSI Severity		
	Killed	Seriously Injured	KSI Total
	n	n	n
< 50	0	0	0
50	4	36	40
60	1	13	14
70	1	3	4
80	1	12	13
90	0	0	0
100	0	0	0
110	3	11	14
Unknown	0	11	11
Total	10	86	96

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

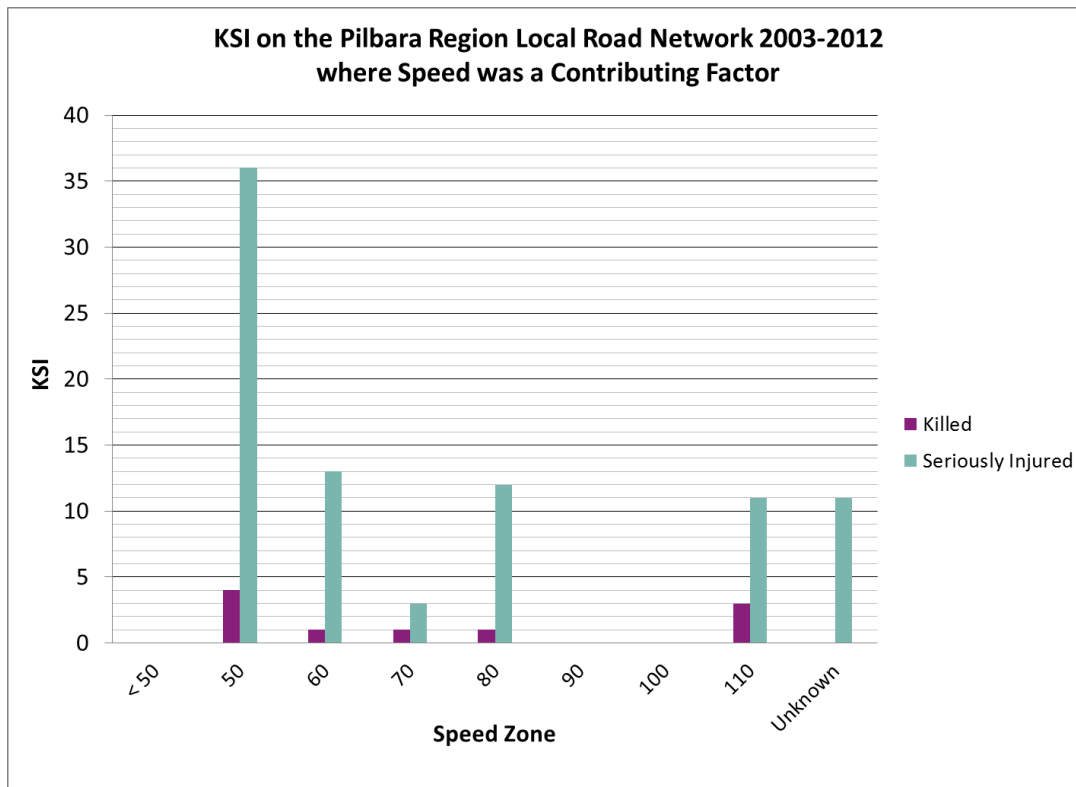


Figure 22: KSI by speed zone 2003 to 2012 (police attended)

Road segments with a speed limit of 50km/hr. accounted for 41% of KSI on local roads in the Pilbara Region.

4.3 Safe Road Use

Table 18 identifies the contributing factors to KSI on the Pilbara 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	43	84	0	3	130
Seatbelts Not Worn	46	84	1	26	157
Alcohol	62	67	0	23	152
Speed	96	71	1	18	186

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

Speed and alcohol are the dominant factors contributing to KSI on the Pilbara Region local road network.

4.4 Safe Vehicles

Table 19 shows KSI by vehicle type and road manager on the Pilbara Region 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	65	32.7	122	61.3	0	0.0	12	6.0	199
Station Wagon	15	17.6	58	68.2	4	4.7	8	9.4	85
Utility	49	27.1	113	62.4	1	0.6	18	9.9	181
Panel Van	5	15.2	27	81.8	0	0.0	1	3.0	33
Truck	4	23.5	12	70.6	0	0.0	1	5.9	17
Prime Mover	0		0		0		0		0
Bus	0	0.0	9	100.0	0	0.0	0	0.0	9
Motorcycle	55	64.7	26	30.6	0	0.0	4	4.7	85
Multi-Seated Van	0	0.0	5	100.0	0	0.0	0	0.0	5
Truck Combination	1	5.6	17	94.4	0	0.0	0	0.0	18
4WD	35	21.7	113	70.2	0	0.0	13	8.1	161
Other	1	10.0	8	80.0	0	0.0	1	10.0	10
Total	230	28.6	510	63.5	5	0.6	58	7.2	803

Table 19: KSI by vehicle type 2003 - 2012

Table 19 shows:

- High number of KSI attributed to motorcycles.
- Low number of KSI attributed to trucks, prime movers and truck combinations.

5. DEMOGRAPHICS

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

5.1 Gender

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

Road User	Gender	KSI Severity		
		Killed	Seriously Inj.	Total
		n	n	n
Driver	Female	1	23	24
	Male	8	63	71
	Unknown	0	0	0
	Total	9	86	95
Passenger	Female	2	11	13
	Male	4	31	35
	Unknown	0	31	31
	Total	6	73	79
Motorcyclist	Female	0	5	5
	Male	4	45	49
	Unknown	0	1	1
	Total	4	51	55
Bicyclist	Female	0	2	2
	Male	1	3	4
	Unknown	0	0	0
	Total	1	5	6
Pedestrian	Female	0	8	8
	Male	4	20	24
	Unknown	0	1	1
	Total	4	29	33
Other	Female	0	0	0
	Male	0	1	1
	Unknown	0	0	0
	Total	0	1	1
Total	Female	3	49	52
	Male	21	163	184
	Unknown	0	33	33
	Total	24	245	269

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

Table 20 shows that males represent 68% of all KSI on local roads; 75% of drivers KSI; and 89% of motorcyclists KSI.

5.2 Age

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

Age	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
0 to 11	12	26	0	2	40
12 to 16	19	24	0	10	53
17 to 20	37	59	0	8	104
21 to 24	34	63	1	6	104
25 to 29	39	65	0	13	117
30 to 39	58	98	0	9	165
40 to 49	26	78	1	9	114
50 to 59	21	47	3	1	72
60 to 69	6	23	0	1	30
70+	2	11	0	0	13
Unknown	15	34	0	2	51
Total	269	528	5	61	863

Table 21: KSI by age 2003 - 2012

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

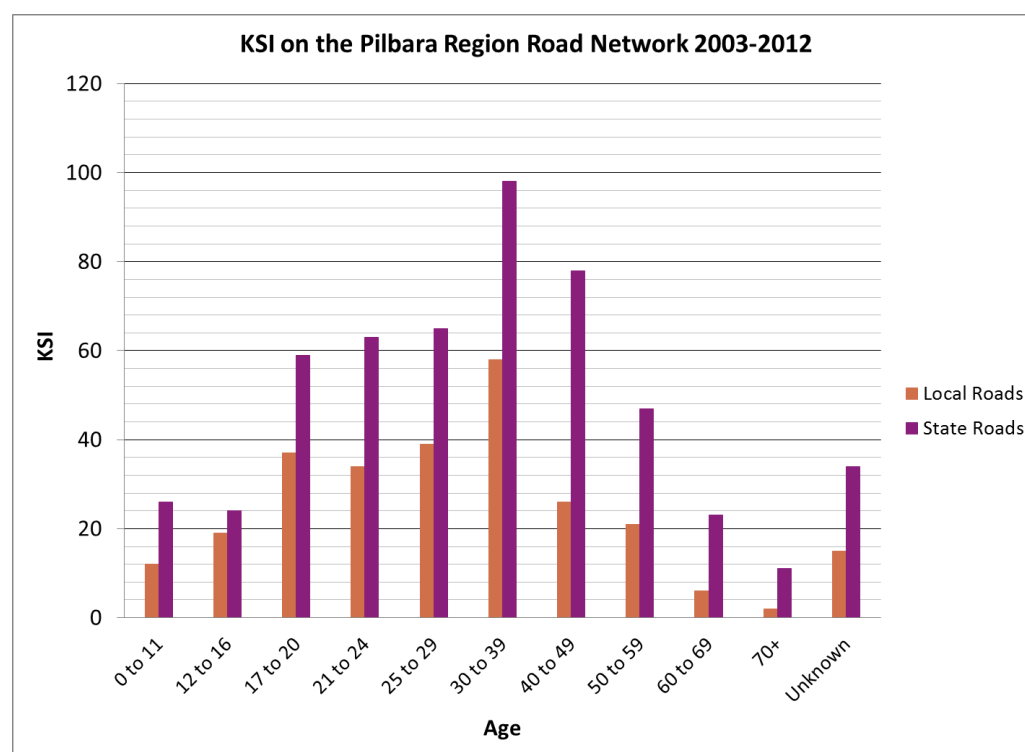


Figure 23: KSI by age 2003 to 2012

6. LOCAL GOVERNMENT ROAD CRASH AND KSI SUMMARIES

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

6.1 Shire of Ashburton

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

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

Crash Location	Road Manager	Crashes	%
Midblock	State	365	53.6
Intersection	State, State	4	0.6
Intersection	State, LG	8	1.2
Intersection	State, LG, Other	1	0.1
Intersection	State, Other	1	0.1
Midblock	LG	209	30.7
Intersection	LG, LG	42	6.2
Intersection	LG, Other	0	0.0
Midblock	Other	1	0.1
Intersection	Other, Other	0	0.0
Other	Unknown	50	7.3
Total		681	100.0

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

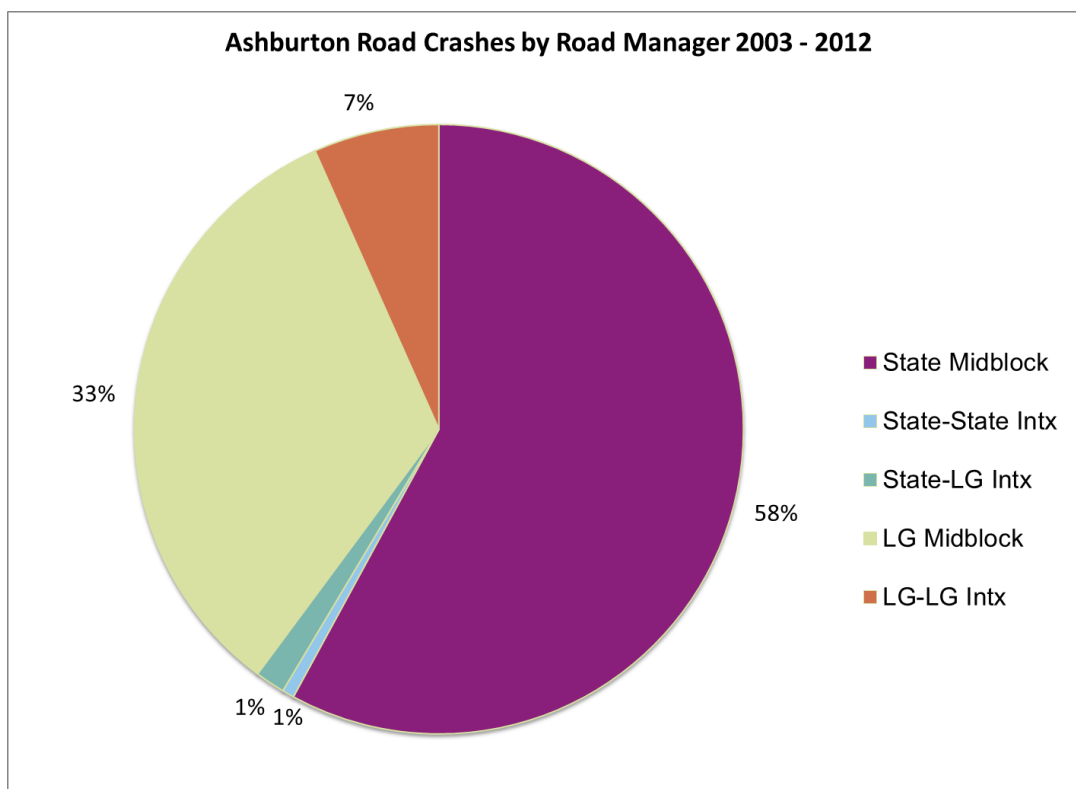


Figure 24: All crashes by crash location and road manager 2003 - 2012

Ignoring crashes at "Other" locations, Figure 24 shows:

- 40% 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.
- 59% of crashes occurred at State road locations including intersections where all legs were State roads.

Figure 24 also shows that 91% of crashes in the Shire of Ashburton 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 Ashburton 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	3	3	5	2	8	1	4	5	3	3	37

Table 23: KSI trend 2003 - 2012

6.1.1 Crash Nature

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

- 68% of KSI occurred in single vehicle crashes of Hit Object or Non-Collision; and
- 14% of KSI occurred in single vehicle crashes of Hit Pedestrian.

Crash Nature	Local Government and Region			
	2003 - 2012			2012
	Ashburton	Pilbara Region	% for Ashburton	Ashburton
	n	n	%	n
Multi-Vehicle Crashes				
Rear End	0	11	0.0	0
Head On	4	9	44.4	2
Sideswipe	0	1	0.0	0
Right Angle	1	20	5.0	0
Right Turn Thru	1	10	10.0	0
Multi-Vehicle Other	0	1	0.0	0
Multi-Vehicle Total	6	52	11.5	2
Single Vehicle Crashes				
Hit Pedestrian	5	36	13.9	1
Hit Animal	0	3	0.0	0
Hit Object	15	108	13.9	0
Non-Collision	10	63	15.9	0
Single Vehicle Other	1	7	14.3	0
Single Vehicle Total	31	217	14.3	1
Total	37	269	13.8	3

Table 24: KSI by crash nature 2003 - 2012

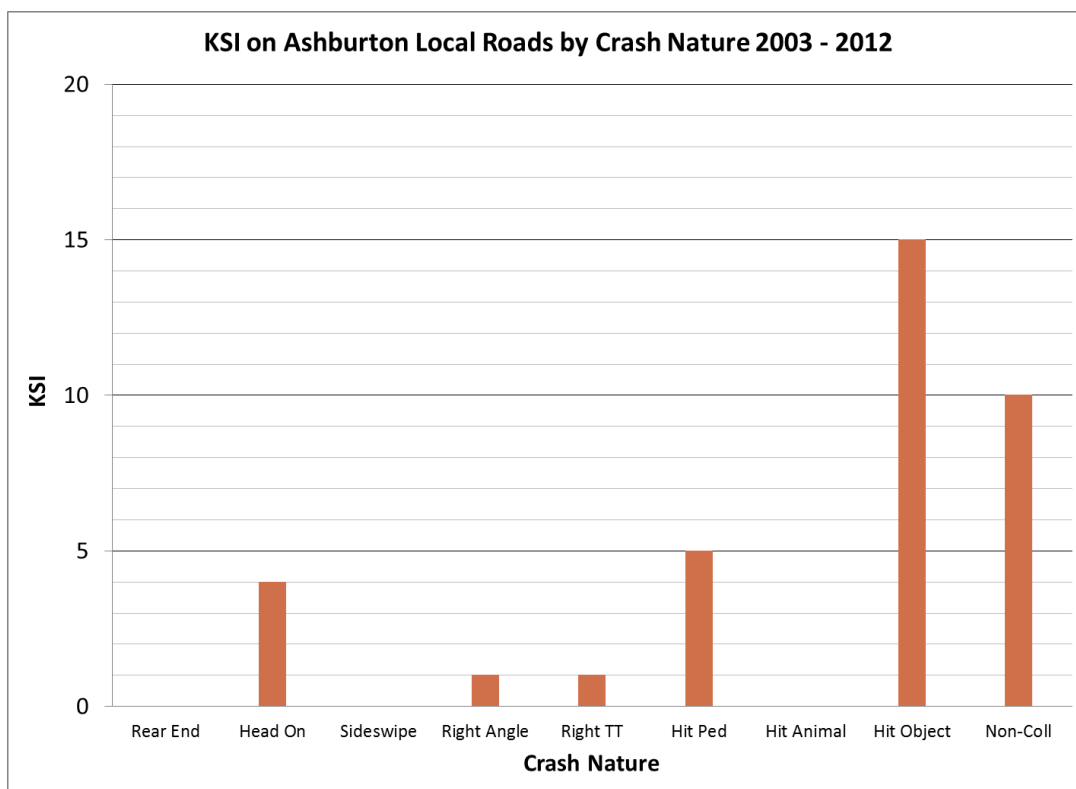


Figure 25: KSI by crash nature 2003 - 2012

6.1.2 Road User Type

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

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	16	64	1	5	86
Passenger	10	60	1	2	73
Motorcyclist	4	2	0	2	8
Bicyclist	1	0	0	0	1
Pedestrian	5	0	0	0	5
Other	1	2	0	0	3
Total	37	128	2	9	176

Table 25: KSI by road user 2003 - 2012

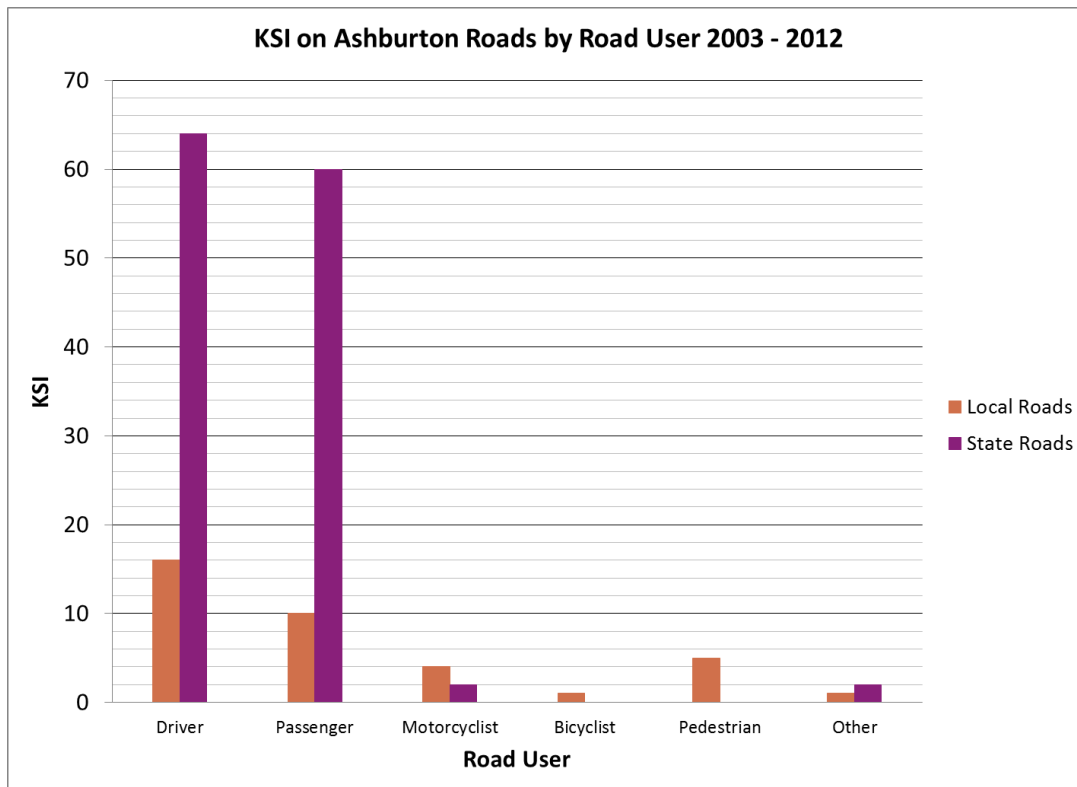


Figure 26: KSI by road user 2003 - 2012

From 2003 to 2012 approximately 27% of KSI on local roads were vulnerable road users defined as motorcyclists, bicyclists or pedestrians. KSI for 2012 is shown in Table 26.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	2	13	0	0	15
Passenger	0	10	0	0	10
Motorcyclist	0	0	0	0	0
Bicyclist	0	0	0	0	0
Pedestrian	1	0	0	0	1
Other	0	0	0	0	0
Total	3	23	0	0	26

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 Ashburton 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	23	0	0	28
Seatbelts Not Worn	2	20	0	1	23
Alcohol	8	11	0	2	21
Speed	15	8	0	3	26

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

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

6.1.4 Vulnerable Road Users

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

Age	Vulnerable Road User		
	Motorcyclist	Bicyclist	Pedestrian
	n	n	n
0 to 11	0	1	1
12 to 16	0	0	0
17 to 20	0	0	0
21 to 24	0	0	0
25 to 29	1	0	2
30 to 39	3	0	1
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	1
Total	4	1	5

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

Table 28 shows:

- All motorcyclists KSI were aged 25 to 39; and
- 60% of pedestrians KSI were aged 25 to 39.

6.2 Shire of East Pilbara

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

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

Crash Location	Road Manager	Crashes	%
Midblock	State	294	49.5
Intersection	State, State	3	0.5
Intersection	State, LG	9	1.5
Intersection	State, LG, Other	0	0.0
Intersection	State, Other	0	0.0
Midblock	LG	161	27.1
Intersection	LG, LG	61	10.3
Intersection	LG, Other	0	0.0
Midblock	Other	3	0.5
Intersection	Other, Other	0	0.0
Other	Unknown	63	10.6
Total		594	100.0

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

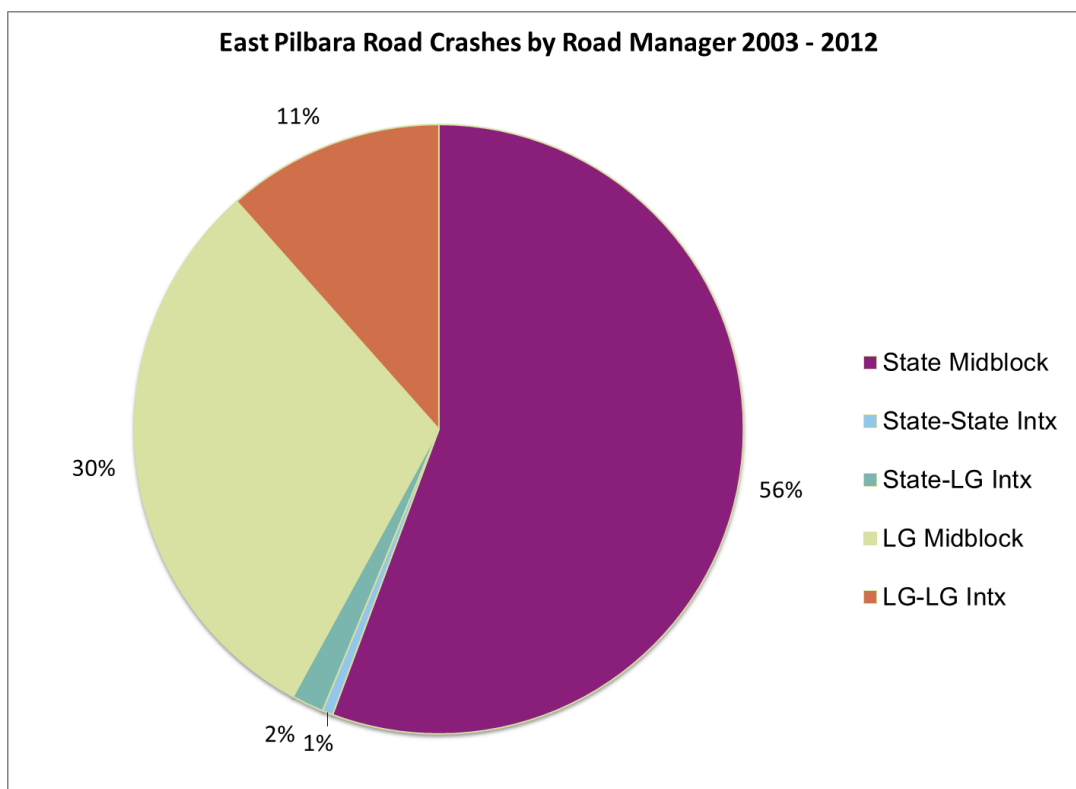


Figure 27: All crashes by crash location and road manager 2003 - 2012

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

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

Figure 27 also shows that 86% of crashes in the Shire of East Pilbara 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 East Pilbara 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	2	3	4	6	3	7	2	4	3	3	37

Table 30: KSI trend 2003 - 2012

6.2.1 Crash Nature

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

- 65% of KSI occurred in single vehicle crashes of Hit Object or Non-Collision; and
- 14% of KSI occurred in single vehicle crashes of Hit Pedestrian.

Crash Nature	Local Government and Region			
	2003 - 2012			2012
	East Pilbara	Pilbara	% for East Pilbara	East Pilbara
	n	n	%	n
Multi-Vehicle Crashes				
Rear End	1	11	9.1	0
Head On	3	9	33.3	0
Sideswipe	0	1	0.0	0
Right Angle	3	20	15.0	1
Right Turn Thru	0	10	0.0	0
Multi-Vehicle Other	0	1	0.0	0
Multi-Vehicle Total	7	52	13.5	1
Single Vehicle Crashes				
Hit Pedestrian	5	36	13.9	0
Hit Animal	1	3	33.3	0
Hit Object	11	108	10.2	1
Non-Collision	13	63	20.6	1
Single Vehicle Other	0	7	0.0	0
Single Vehicle Total	30	217	13.8	2
Total	37	269	13.8	3

Table 31: KSI by crash nature 2003 - 2012

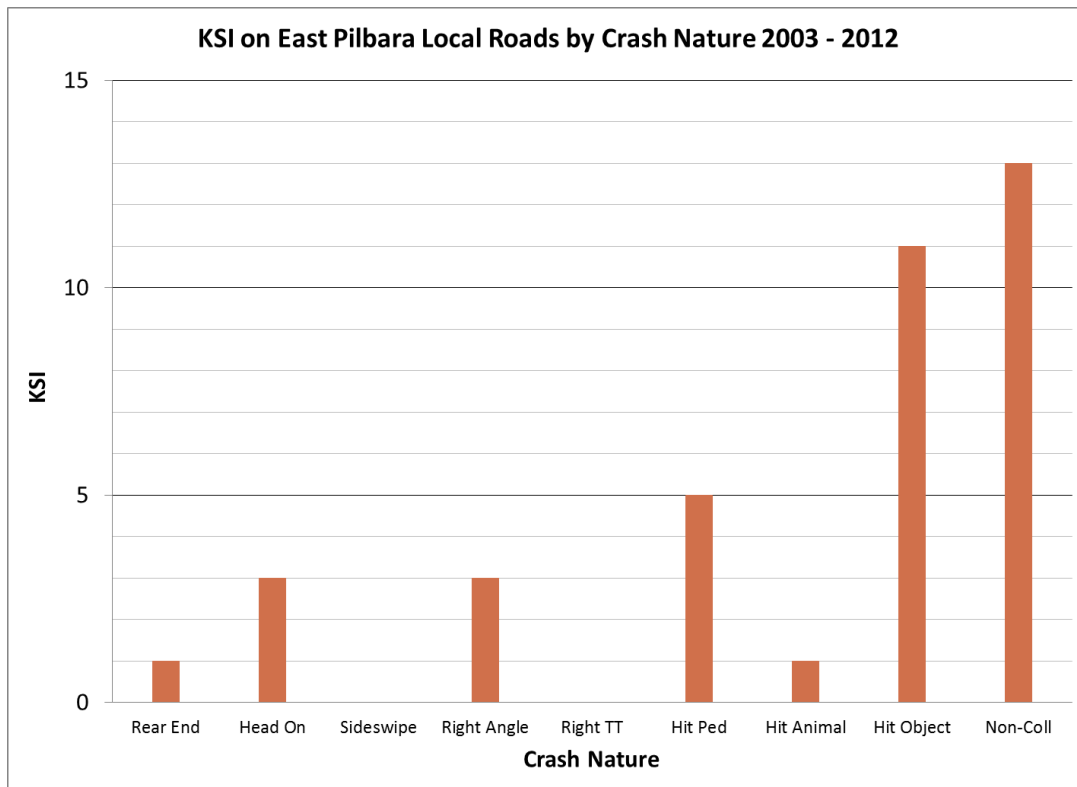


Figure 28: KSI by crash nature 2003 - 2012

6.2.2 Road User Type

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

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	14	44	1	7	66
Passenger	11	54	0	9	74
Motorcyclist	6	4	0	0	10
Bicyclist	1	0	0	0	1
Pedestrian	5	3	0	2	10
Other	0	0	0	1	1
Total	37	105	1	19	162

Table 32: KSI by road user 2003 - 2012

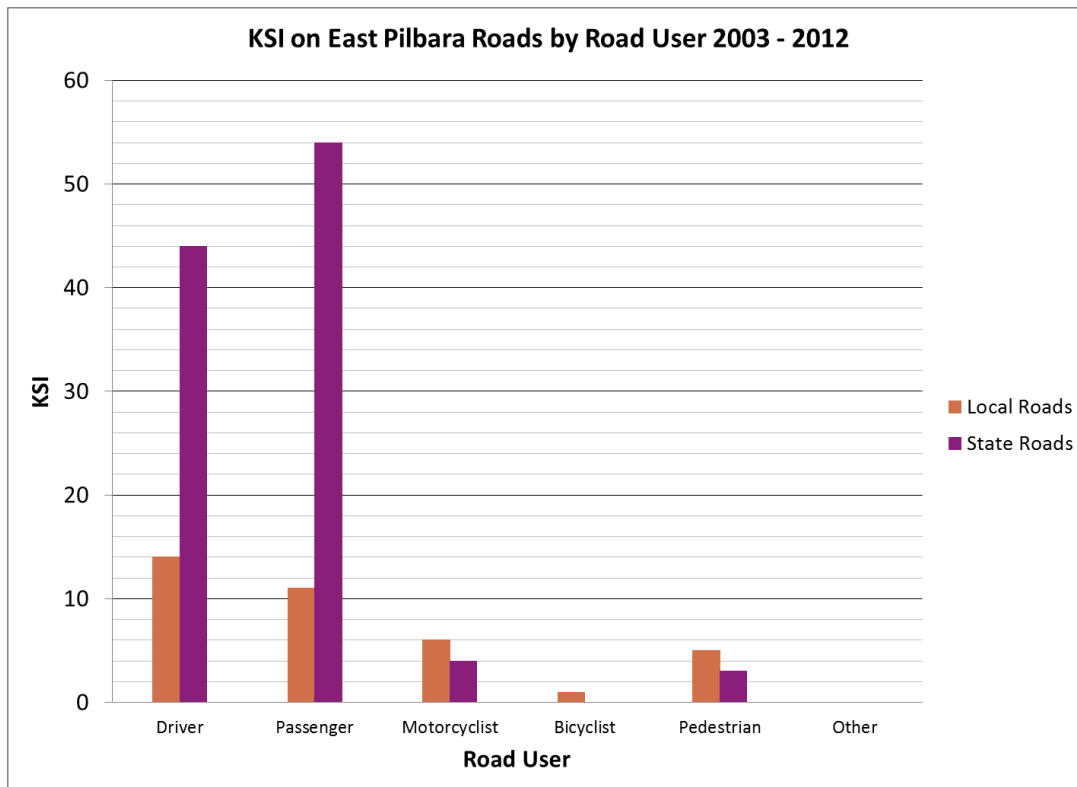


Figure 29: KSI by road user 2003 - 2012

From 2003 to 2012 approximately 32% of KSI on local roads were vulnerable road users defined as motorcyclists, bicyclists or pedestrians. KSI for 2012 is shown in Table 33.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	2	8	1	0	11
Passenger	0	4	0	0	4
Motorcyclist	1	0	0	0	1
Bicyclist	0	0	0	0	0
Pedestrian	0	1	0	0	1
Other	0	0	0	0	0
Total	3	13	1	0	17

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 East Pilbara 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	13	0	0	19
Seatbelts Not Worn	15	21	0	10	46
Alcohol	3	15	0	4	22
Speed	9	26	0	3	38

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

Non-wearing of seat belts and speed were dominant factors contributing to KSI on local roads.

6.2.4 Vulnerable Road Users

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

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

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

Table 35 shows:

- Three of the six motorcyclists KSI were aged 16 or younger; and
- Three of the five pedestrians KSI were aged 40 to 59.

6.3 City of Karratha

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

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

Crash Location	Road Manager	Crashes	%
Midblock	State	499	29.0
Intersection	State, State	31	1.8
Intersection	State, LG	216	12.6
Intersection	State, LG, Other	6	0.3
Intersection	State, Other	1	0.1
Midblock	LG	537	31.3
Intersection	LG, LG	338	19.7
Intersection	LG, Other	2	0.1
Midblock	Other	1	0.1
Intersection	Other, Other	1	0.1
Other	Unknown	86	5.0
Total		1,718	100.0

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

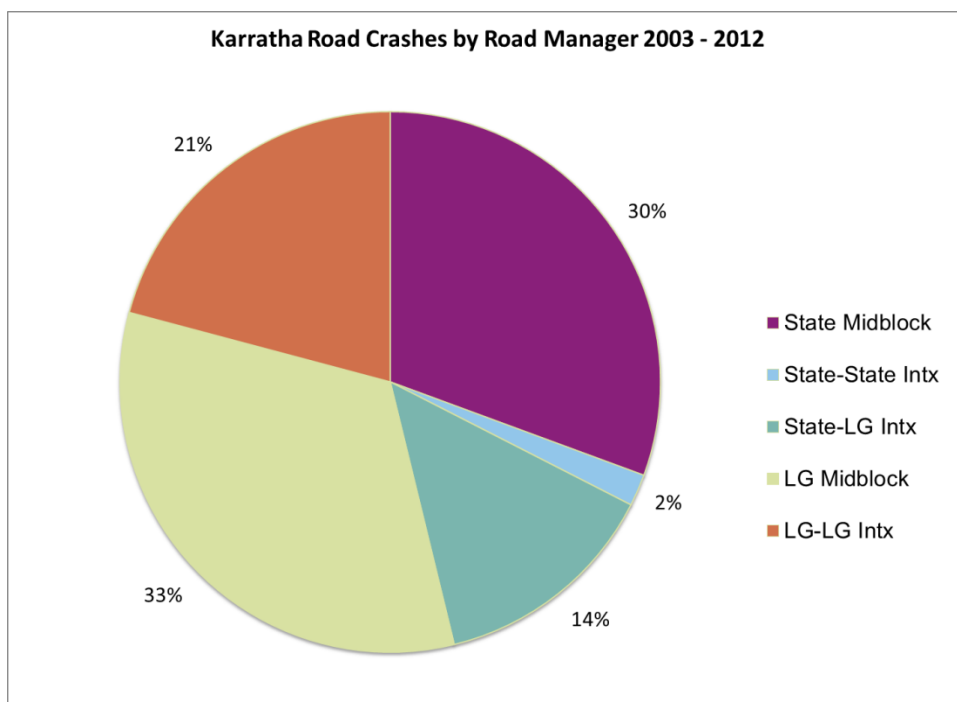


Figure 30: All crashes by crash location and road manager 2003 - 2012

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

- 54% 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.
- 44% of crashes occurred at State road locations including intersections where all legs were State roads.

Figure 33 also shows that 63% of crashes in the City of Karratha occurred at midblock locations on Local and State roads. This is further investigated in the analysis of the crash nature.

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

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
KSI	4	13	9	8	20	7	17	12	5	9	104

Table 37: KSI trend 2003 - 2012

6.3.1 Crash Nature

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

- 68% of KSI occurred in single vehicle crashes of Hit Object or Non-Collision;
- 11% of KSI occurred in multi-vehicle crashes of Right Angle or Right Turn Thru ; and
- 10% of KSI occurred in single vehicle crashes of Hit Pedestrian.

Crash Nature	Local Government and Region			
	2003 - 2012			2012
	Karratha	Pilbara	% for Karratha	Karratha
	n	n	%	n
Multi-Vehicle Crashes				
Rear End	3	11	27.3	0
Head On	2	9	22.2	0
Sideswipe	0	1	0.0	0
Right Angle	7	20	35.0	0
Right Turn Thru	5	10	50.0	2
Multi-Vehicle Other	0	1	0.0	0
Multi-Vehicle Total	17	52	32.7	2
Single Vehicle Crashes				
Hit Pedestrian	10	36	27.8	0
Hit Animal	2	3	66.7	0
Hit Object	49	108	45.4	5
Non-Collision	22	63	34.9	0
Single Vehicle Other	4	7	57.1	2
Single Vehicle Total	87	217	40.1	7
Total	104	269	38.7	9

Table 38: KSI by crash nature 2003 - 2012

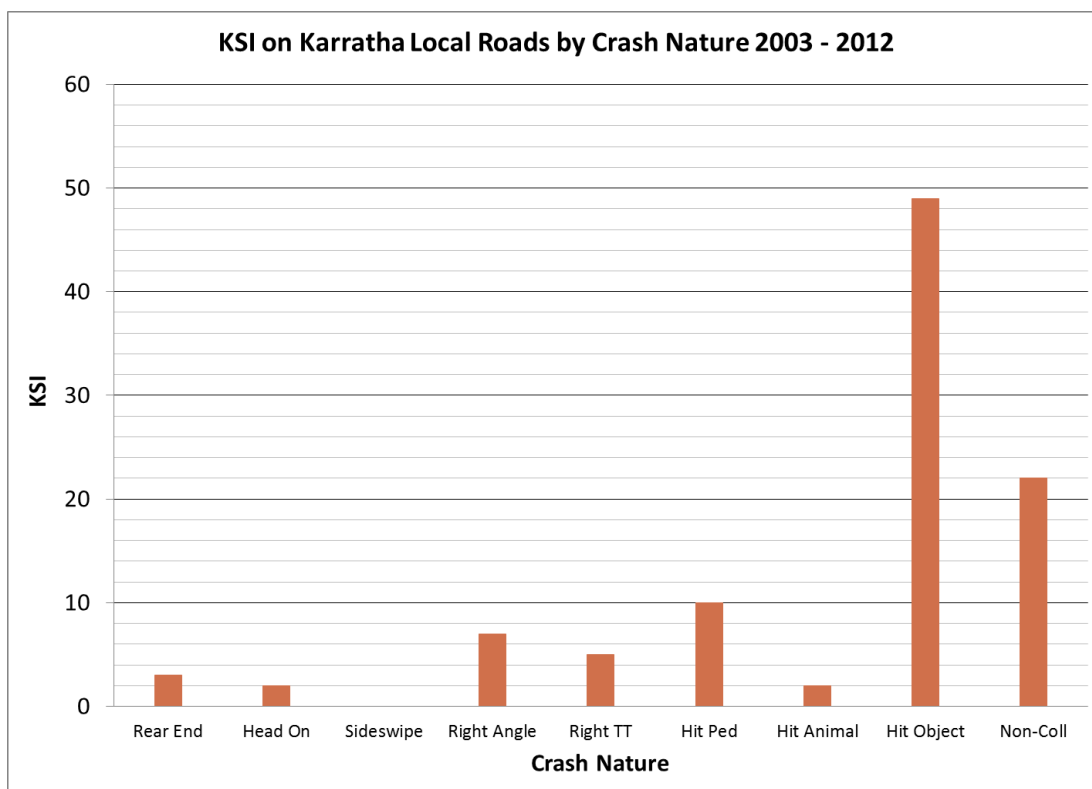


Figure 31: KSI by crash nature 2003 - 2012

6.3.2 Road User Type

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

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	37	94	0	7	138
Passenger	37	68	0	11	116
Motorcyclist	18	10	0	1	29
Bicyclist	3	1	0	0	4
Pedestrian	9	5	0	0	14
Other	0	3	0	0	3
Total	104	181	0	19	304

Table 39: KSI by road user 2003 - 2012

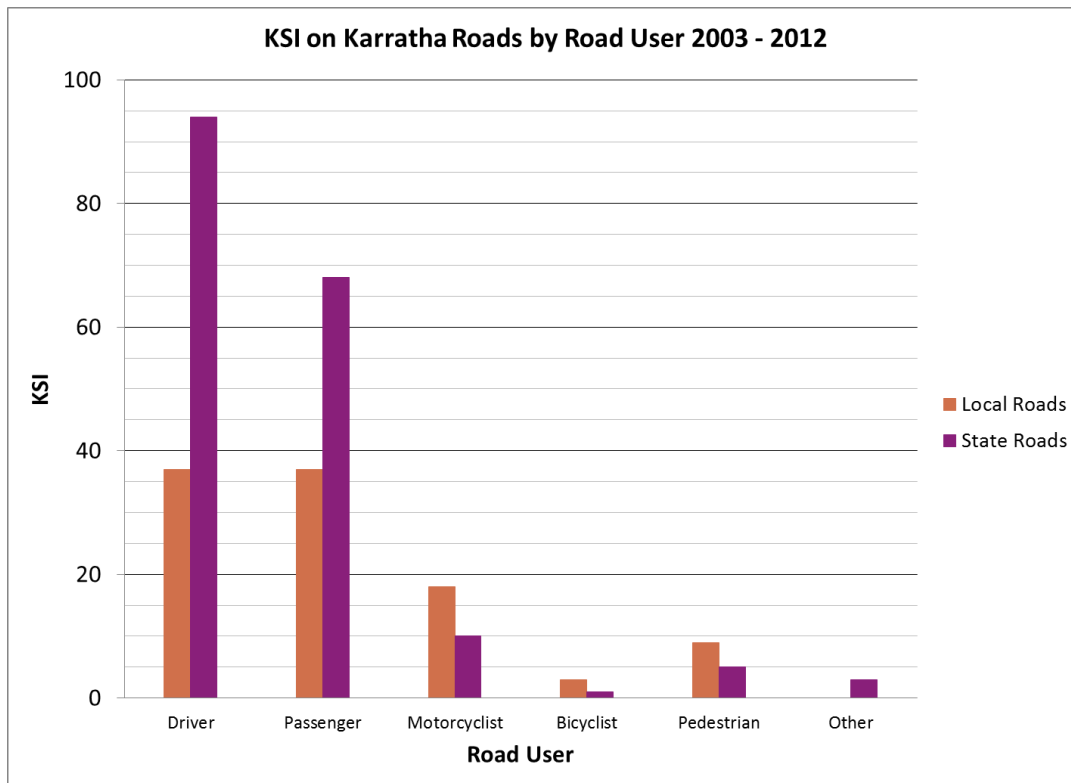


Figure 32: KSI by road user 2003 - 2012

From 2003 to 2012 approximately 29% of KSI on local roads were vulnerable road users defined as motorcyclists, bicyclists or pedestrians. KSI for 2012 is shown in Table 47.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	3	6	0	2	11
Passenger	4	2	0	3	9
Motorcyclist	2	3	0	0	5
Bicyclist	0	0	0	0	0
Pedestrian	0	2	0	0	2
Other	0	1	0	0	1
Total	9	14	0	5	28

Table 40: KSI by road user 2012

6.3.3 Road User Behaviour

The following table shows factors contributing to KSI on the City of Karratha 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	16	27	0	1	44
Seatbelts Not Worn	22	30	0	7	59
Alcohol	25	31	0	9	65
Speed	37	22	0	7	66

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

All factors contributed to KSI on local roads.

6.3.4 Vulnerable Road Users

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

Age	Vulnerable Road User		
	Motorcyclist	Bicyclist	Pedestrian
	n	n	n
0 to 11	0	1	1
12 to 16	1	0	1
17 to 20	2	0	1
21 to 24	3	0	0
25 to 29	3	0	1
30 to 39	8	1	1
40 to 49	0	0	0
50 to 59	1	1	2
60 to 69	0	0	1
70+	0	0	1
Unknown	0	0	0
Total	18	3	9

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

Table 49 shows:

- 78% of motorcyclists KSI were aged 21 to 39; and
- Of the nine pedestrians KSI, three were under 20 years of age and four were over 50 years of age.

6.4 Town of Port Hedland

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

Table 36 displays all crashes in the Town of Port Hedland by crash location and road manager from 2003 to 2012.

Crash Location	Road Manager	Crashes	%
Midblock	State	362	26.8
Intersection	State, State	38	2.8
Intersection	State, LG	109	8.1
Intersection	State, LG, Other	0	0.0
Intersection	State, Other	3	0.2
Midblock	LG	457	33.9
Intersection	LG, LG	315	23.3
Intersection	LG, Other	0	0.0
Midblock	Other	3	0.2
Intersection	Other, Other	0	0.0
Other	Unknown	63	4.7
Total		1,350	100.0

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

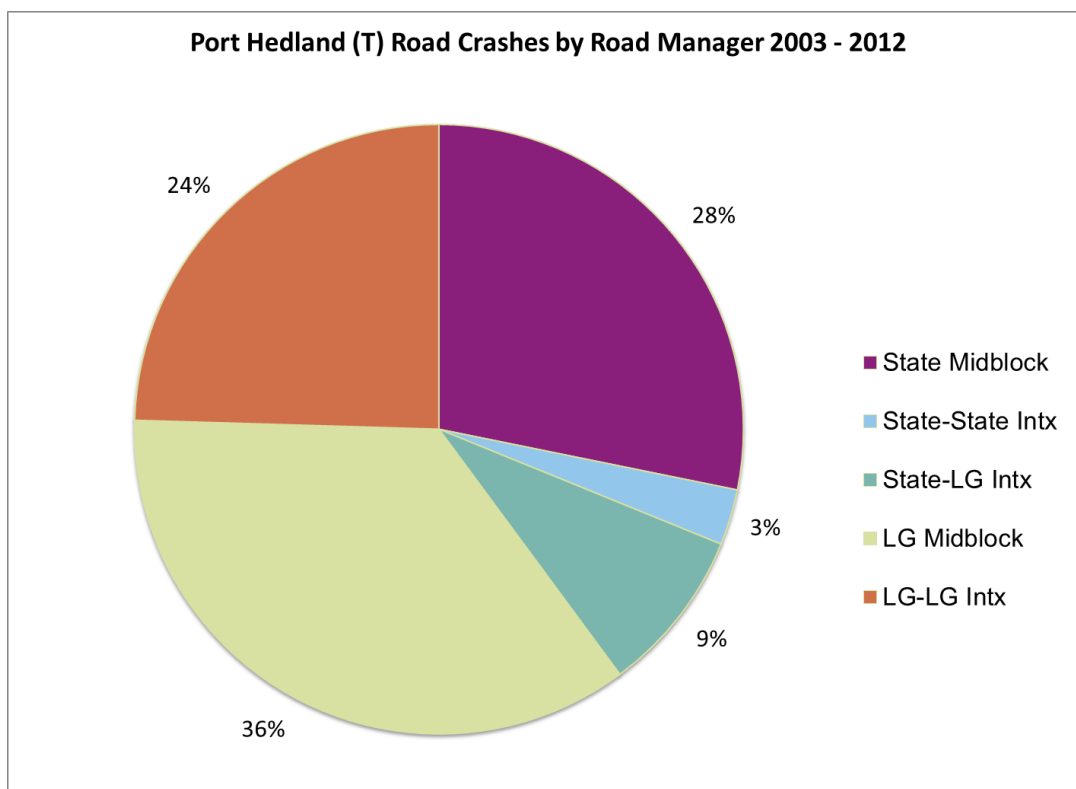


Figure 33: All crashes by crash location and road manager 2003 - 2012

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

- 60% 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.
- 31% of crashes occurred at State road locations including intersections where all legs were State roads.

Figure 30 also shows that 64% of crashes in the Town of Port Hedland 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 Town of Port Hedland local road network from 2003 to 2012 is shown in Table 37.

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
KSI	4	8	8	13	17	9	3	13	5	11	91

Table 44: KSI trend 2003 - 2012

The ten year KSI trend for the Town of Port Hedland is increasing.

6.4.1 Crash Nature

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

- 56% of KSI occurred in single vehicle crashes of Hit Object or Non-Collision;
- 18% of KSI occurred in single vehicle crashes of Hit Pedestrian; and
- 14% of KSI occurred in multi-vehicle crashes of Right Angle or Right Turn Thru.

Crash Nature	Local Government and Region			
	2003 - 2012			2012
	Port Hedland	Pilbara	% for Port Hedland	Port Hedland
	n	n	%	n
Multi-Vehicle Crashes				
Rear End	7	11	63.6	3
Head On	0	9	0.0	0
Sideswipe	1	1	100.0	0
Right Angle	9	20	45.0	1
Right Turn Thru	4	10	40.0	0
Multi-Vehicle Other	1	1	100.0	0
Multi-Vehicle Total	22	52	42.3	4
Single Vehicle Crashes				
Hit Pedestrian	16	36	44.4	3
Hit Animal	0	3	0.0	0
Hit Object	33	108	30.6	0
Non-Collision	18	63	28.6	3
Single Vehicle Other	2	7	28.6	1
Single Vehicle Total	69	217	31.8	7
Total	91	269	33.8	11

Table 45: KSI by crash nature 2003 - 2012

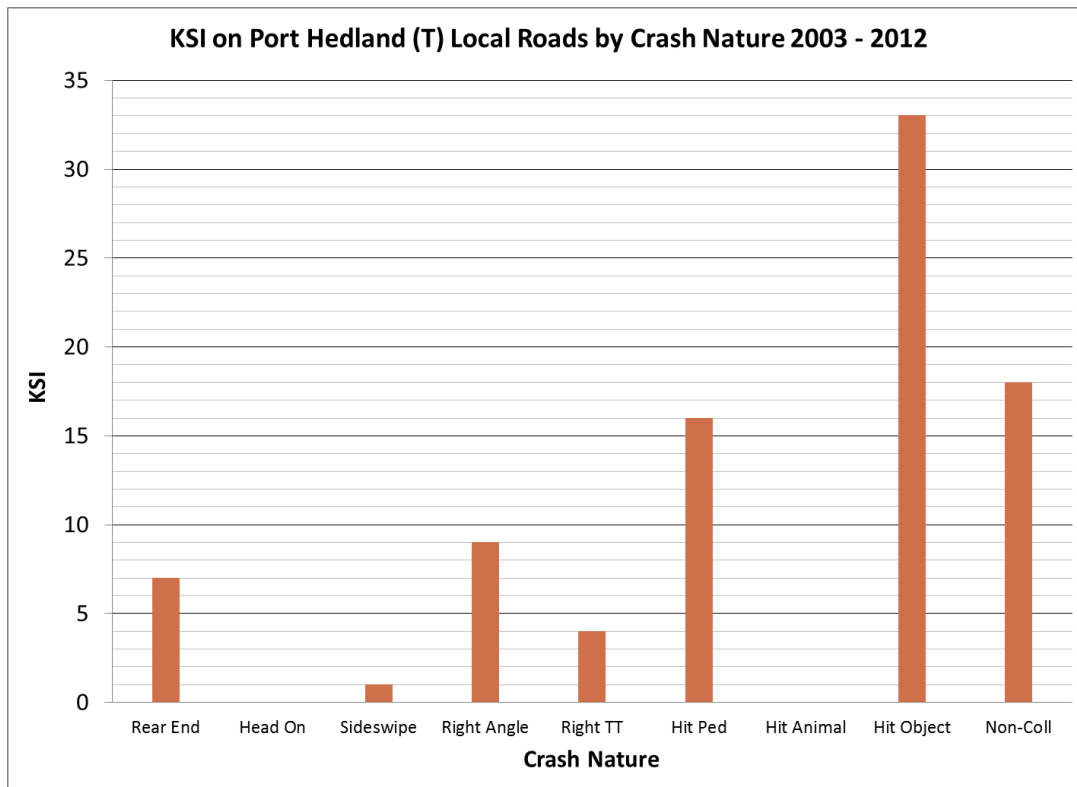


Figure 34: KSI by crash nature 2003 - 2012

6.4.2 Road User Type

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

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	28	50	2	3	83
Passenger	21	45	0	9	75
Motorcyclist	27	10	0	1	38
Bicyclist	1	0	0	0	1
Pedestrian	14	9	0	1	24
Other	0	0	0	0	0
Total	91	114	2	14	221

Table 46: KSI by road user 2003 - 2012

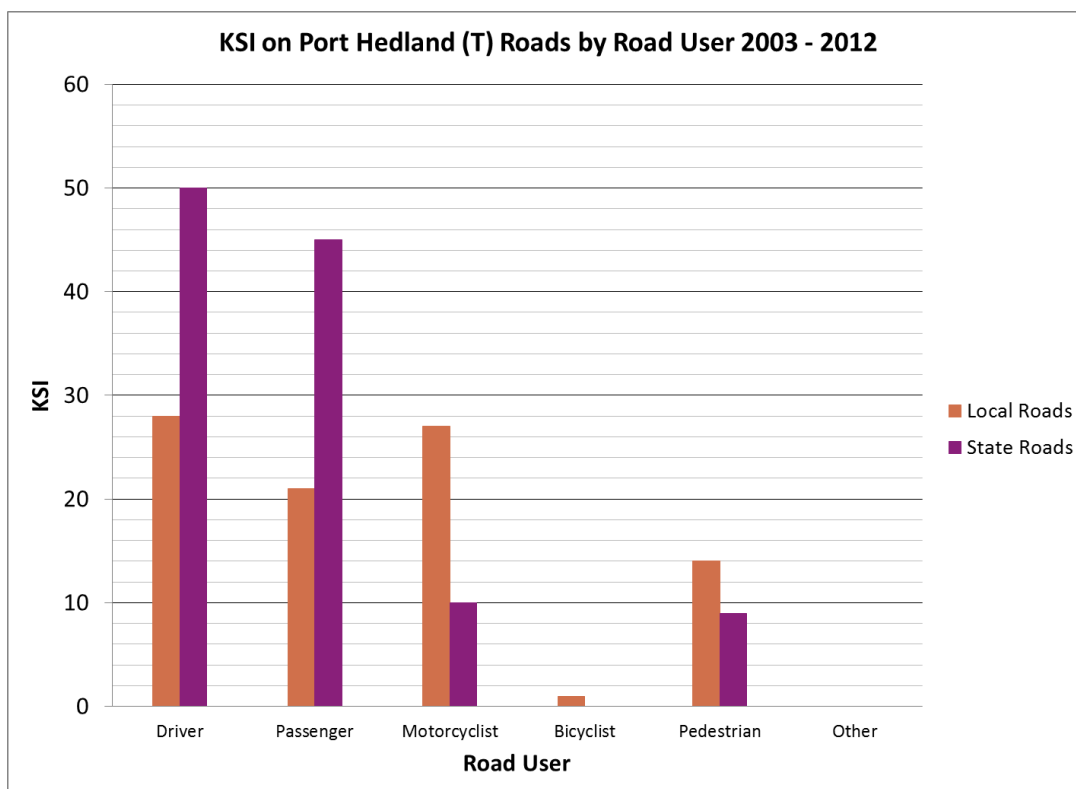


Figure 35: KSI by road user 2003 - 2012

From 2003 to 2012 approximately 30% of KSI on local roads were motorcyclists and 15% were pedestrians. KSI for 2012 is shown in Table 40.

Road User	Road Manager				
	Local	State	Other	Unknown	Total
	n	n	n	n	n
Driver	3	2	1	0	6
Passenger	3	5	0	2	10
Motorcyclist	4	1	0	1	6
Bicyclist	0	0	0	0	0
Pedestrian	1	0	0	0	1
Other	0	0	0	0	0
Total	11	8	1	3	23

Table 47: KSI by road user 2012

6.4.3 Road User Behaviour

The following table shows factors contributing to KSI on the Town of Port Hedland 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	16	21	0	2	39
Seatbelts Not Worn	7	13	1	8	29
Alcohol	26	10	0	8	44
Speed	35	15	1	5	56

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

Speed, alcohol and inattention were dominant factors contributing to KSI on local roads.

6.4.4 Vulnerable Road Users

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

Age	Vulnerable Road User		
	Motorcyclist	Bicyclist	Pedestrian
	n	n	n
0 to 11	0	0	1
12 to 16	5	0	0
17 to 20	2	0	0
21 to 24	4	0	1
25 to 29	5	0	3
30 to 39	4	0	5
40 to 49	3	1	0
50 to 59	2	0	1
60 to 69	0	0	2
70+	0	0	0
Unknown	2	0	1
Total	27	1	14

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

Table 42 shows:

- 48% of motorcyclists KSI were 21 to 39; and
- 57% of pedestrians KSI were aged 25 to 39.

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.