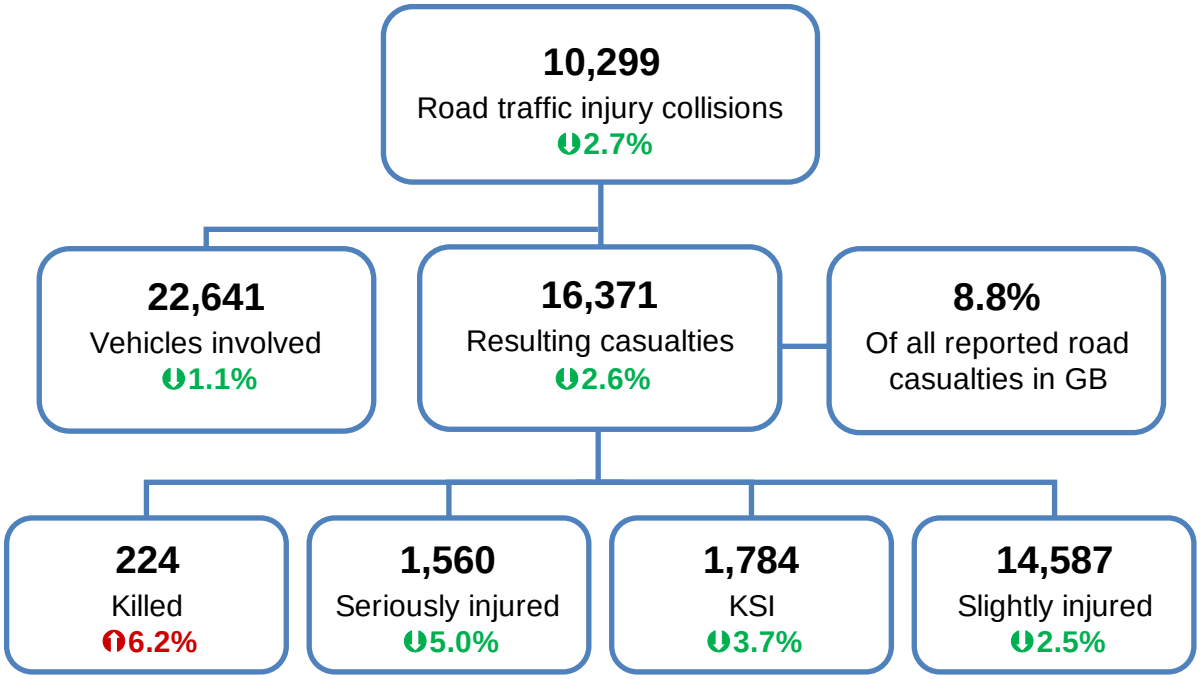
highways england

Reported Road Casualties on the Strategic Network 2015

High Level Summary

High level summary of the validated 2015 personal injury collision and casualty data is provided below. The percentages (together with the arrows) indicate the change from 2014.



		Motorway	A-road	A-road Dual	A-road Single
Collisions	KSI	620 ↑2.3%	902 ↓5.7%	594 ↓6.0%	308 ↓5.2%
	Total	4,826 ↓2.3%	5,473 ↓3.1%	4,085 ↓3.2%	1,388 ↓2.7%
Casualties	KSI	729 ↑1.3%	1,055 ↓6.9%	665 ↓7.1%	390 ↓6.5%
	Total	7,981 ↓2.6%	8,390 ↓2.7%	6,105 ↓2.3%	2,285 ↓3.8%
Traffic (Provisional)	HMVM	586.3 ↑2.2%	312.9 ↑4.0%	254.0 ↑4.2%	58.9 ↑3.2%

Document Map

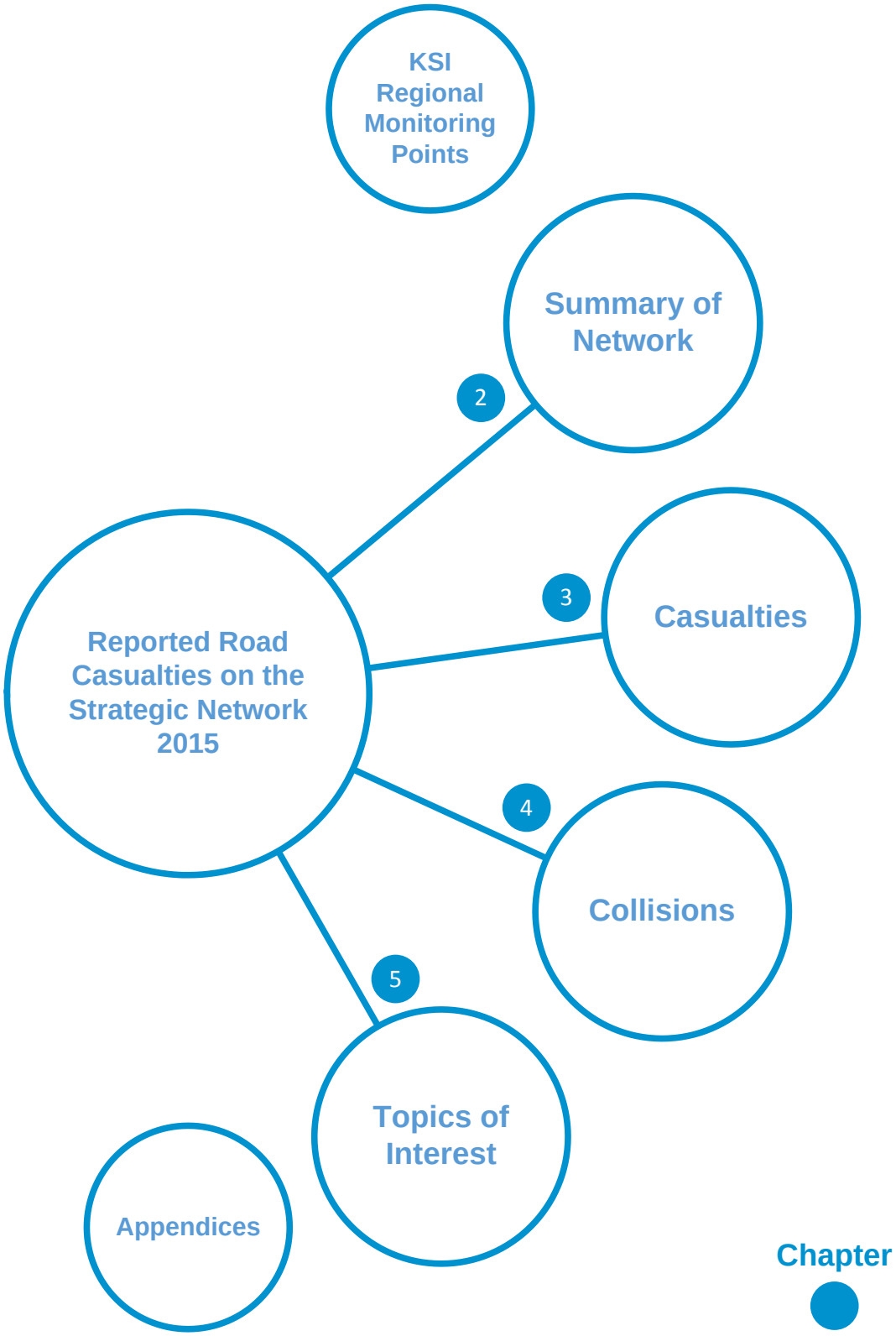


Table of Contents

1. Introduction

1.1. Background

Highways England has launched the 'National Incident and Casualty Reduction Plan: Our approach to road safety' (NICRP) in April 2016. The NICRP sets out the long term vision that no one should be harmed whilst travelling or working on the strategic road network (SRN).

Following the principals of the Safe Systems Approach, the NICRP provides instructions on how we are going to achieve the strategic outcomes as an organisation and what we need to do in order to deliver successful interventions on the ground. This includes the key performance indicator of reducing KSI casualties on the SRN by 40 per cent by 2020 from the 2005-2009 baseline as originally outlined in our Strategic Business Plan and as specified in the Operational Metrics Manual (OMM).

Along with other key documents including Department for Transport's (DfT's) Road Investment Strategy and our Delivery Plan, the annual casualty report 'Reported Road Casualties on the Strategic Network 2015' now is a key supporting component of the NICRP and its road safety delivery model allowing Highways England to identify and monitor trends impacting on the NICRPs future success.

'Reported Road Casualties on the Strategic Network 2015' follows on from the series of 'Accidents on the trunk road' and 'Reported Casualties on the HA network' documents which have been published annually since 1999. This document provides high level insight primarily based on STATS19 data collected by Police on collisions, casualties and contributory factors, supplemented by other sources, to provide a more comprehensive picture.

Further information regarding the personal injury collision and casualty data can be obtained from **Highways England's Strategic Safety Team**[1].

[1] For enquiries to the Strategic Safety Team, contact Kathrine Wilson-Ellis (Kathrine.Wilson-Ellis@highwaysengland.co.uk).

1.2. Purpose of Document

This document is intended for use by Highways England staff, service providers, supply chain and those in the public arena with an interest. They provide quantified road safety information and guidance that describes the current state of Highways England's reportable network in terms of collisions and casualties.

This information is designed to enable Highways England to:

- Assess the performance of the network in achieving the key performance indicator of a 40 per cent reduction in KSI casualties by 2020 from the baseline (2005-2009)
- Identify opportunities in reducing the number of KSI casualties with regards to the KPI
- Monitor and evaluate effectiveness of road safety actions under the Health and Safety Five Year Plan
- Monitor changes in safety on the network year on year and against baseline
- Provide a national safety perspective for balancing needs across the SRN
- Answer safety queries from the Government, stakeholders and other external partners
- Make sound strategic and budgeting decisions concerning the future management and safety of the strategic road network (SRN)
- Assist in developing and monitoring the safety statements prepared by service providers
- Assist in the provision of requirements of the EU Directive on Road Infrastructure Safety Management.

The collision and casualty information in this document and the accompanying appendices are based only on STATS19 data. STATS19 is the national database of personal injury road collisions reported to or by the police.

1.3. Structure of Document

The structure of the rest of the document is as follows:

Chapter	Description
2 Network	• Overview of the SRN and its unique properties • Traffic estimates and economic factors • Estimation of usage by road classification and vehicle type
3 Casualties	• Analysis of casualty and rate trends including by severity • Analysis by road classification including by severity • Snapshot of vehicle interactions, impact , and defects • Understanding of casualty trends by type and age • Understanding the contributory factor influences on casualty numbers
4 Collisions	• Analysis of collision and rate trends including by severity • Analysis by road classification including by severity • Snapshot of vehicle interactions, impact , and defects • Snapshot of the types of drivers and riders involved in collisions • Understanding the contributory factor influences on casualty numbers
5 Topics of Interest	Evaluation of topics of interest, including: • Fatalities • Serious injuries • KSI • Slight injuries • Young motorists • Lighting on the SRN • Weather effects on the SRN • Roadworks • Objects hit on and off carriageways • Junctions • Tyres • Goods vehicles: HGVs and LGVs • Powered Two Wheelers (PTWs) • Hardshoulders and lay-bys • Collision type • Hotspot analysis • Vulnerable and non-motorised users

A to V

Appendices (provided as a separate document)

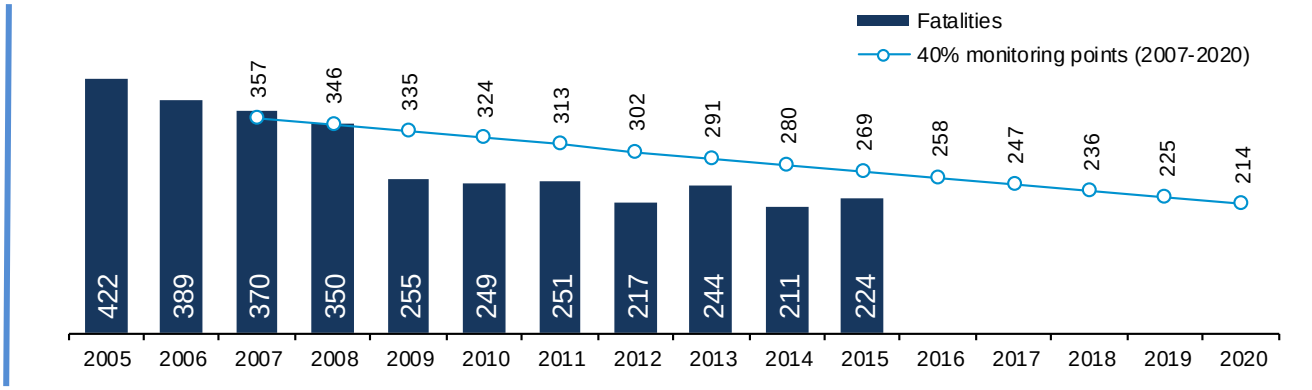
- Appendix A – Glossary of terms
- Appendix B – Collisions
- Appendix C – Casualties
- Appendix D – Traffic and casualty /collision rates
- Appendix E – Vehicles
- Appendix F – Contributory factors
- Appendix G to V – Additional topics of interest statistics

1.4. Summary Sheet of Fatal

A summary of the 2015 fatally injured casualty data can be seen below. The percentages indicate the change from 2014; percentages are only given where the 2014 value is 15 or more.

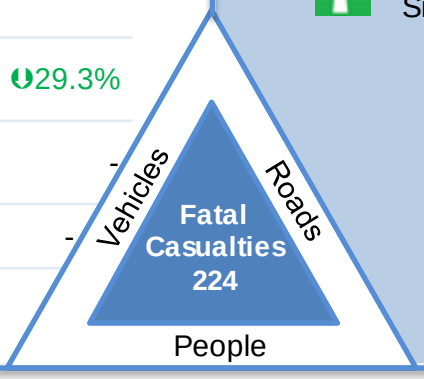
Estimated Cost: £392,700,000

Average Cost: £1,753,125



Car occupants	134	↑16.5%
PTWs	29	↓ 3.3%
Goods vehicle occupants (equal to or under 3.5 tonnes)	10	-
HGV occupants (over 3.5 tonnes)	12	-
Pedestians	29	↓29.3%
Pedal cyclists	6	-
Other/Unknown	4	-

Motorway	92	↑9.5%
A-road	132	↑3.9%
A-road Dual	82	↑12.3%
A-road Single	50	↓7.4%



177
↑9.3%

?
(Unknown)
0

47
↓4.1%

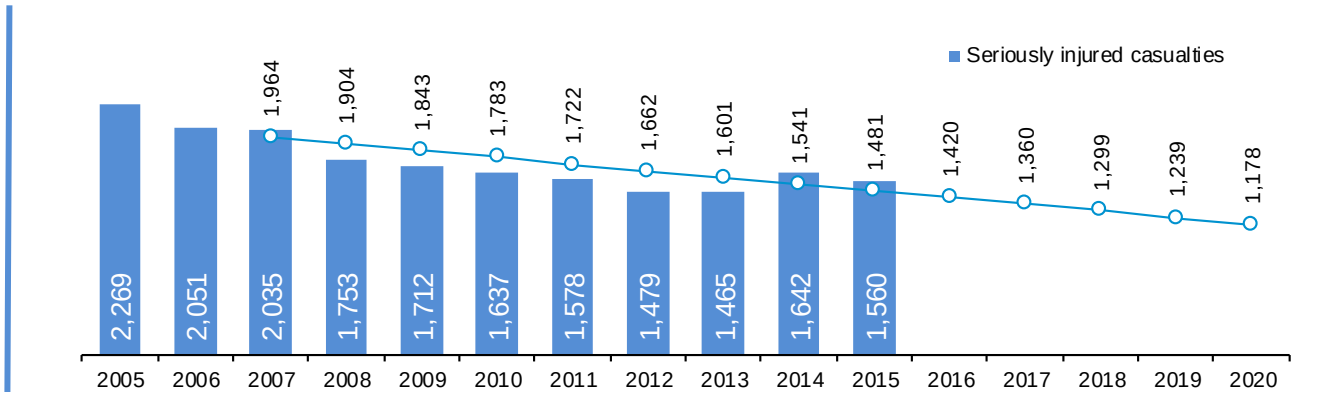
Children (0-15)	Young (16-19)	Other (20-59)	Older (60-69)	Elderly (70+)	? (Unknown)
2	7	157	21	37	-
-	-	↑6.8%	↓12.5%	↑42.3%	-

1.5. Summary Sheet of Serious

A summary of the 2015 seriously injured casualty data can be seen below. The percentages indicate the change from 2014; percentages are only given where the 2014 value is 15 or more.

Estimated Cost: £307,300,000

Average Cost: £196,987



Car occupants	1,022	↓2.1%
PTWs	289	↓8.3%
Goods vehicle occupants (equal to or under 3.5 tonnes)	86	↑13.2%
HGV occupants (over 3.5 tonnes)	69	↓4.2%
Pedestians	43	↓35.8%
Pedal cyclists	34	↓27.7%
Buses/Other/Unknown	17	↓19.0%

Motorway	637	↑0.2%
A-road	923	↓8.3%
A-road Dual	583	↓9.3%
A-road Single	340	↓6.3%

1,033
↓7.3%

? (Unknown) 1

526
↓0.4%

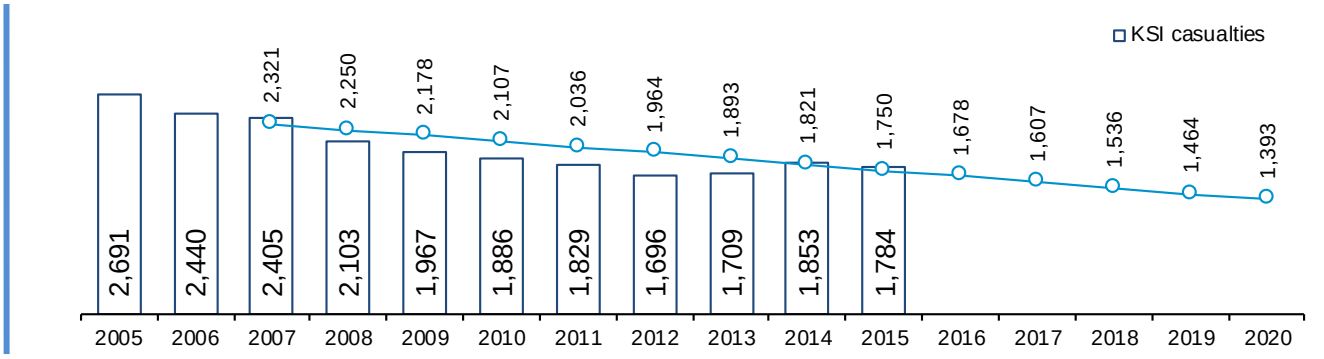
Children (0-15)	Young (16-19)	Other (20-59)	Older (60-69)	Elderly (70+)	? (Unknown)
38	85	1,110	175	137	15
↓34.5%	↓1.2%	↓6.1%	0.0%	↑3.0%	-

1.6. Summary Sheet of KSI

A summary of the 2015 killed or seriously injured (KSI) casualty data can be seen below. The percentages indicate the change from 2014; percentages are only given where the 2014 value is 15 or more.

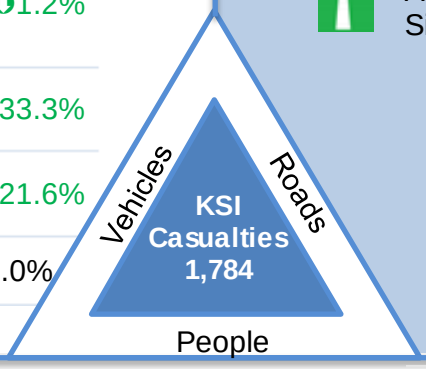
Estimated Cost: £700,000,000

Average Cost: £392,377



Car occupants	1,156	↓0.3%
PTWs	318	↓7.8%
Goods vehicle occupants (equal to or under 3.5 tonnes)	96	↑10.3%
HGV occupants (over 3.5 tonnes)	81	↓1.2%
Pedestians	72	↓33.3%
Pedal cyclists	40	↓21.6%
Buses/Other/Unknown	21	0.0%

Motorway	729	↑1.3%
A-road	1,055	↓6.9%
A-road Dual	665	↓7.1%
A-road Single	390	↓6.5%



1,210	?	573
↓5.2%	(Unknown)	↓0.7%
	1	

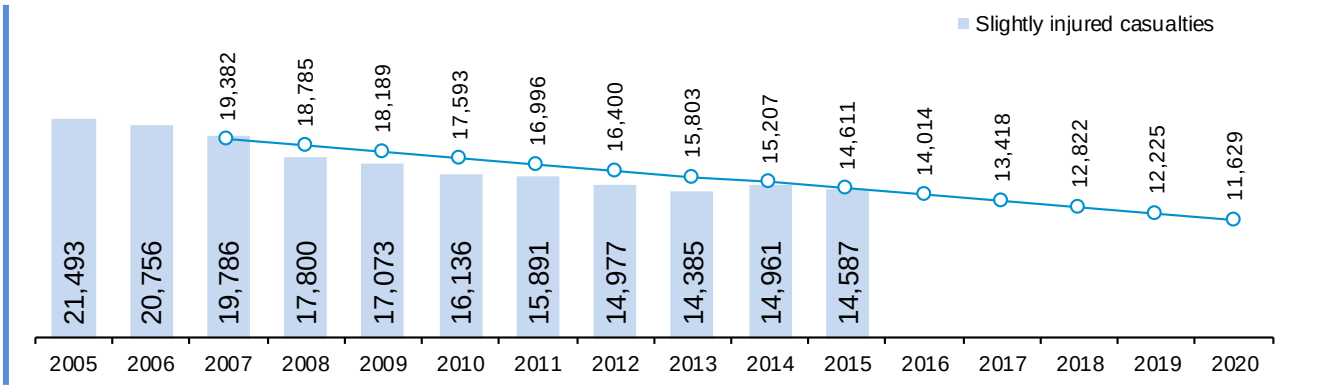
Children (0-15)	Young (16-19)	Other (20-59)	Older (60-69)	Elderly (70+)	? (Unknown)
40	92	1,267	196	174	15
↓37.5%	↓2.1%	↓4.7%	↓1.5%	↑9.4%	-

1.7. Summary Sheet of Slight

A summary of the 2015 slightly injured casualty data can be seen below. The percentages indicate the change from 2014; percentages are only given where the 2014 value is 15 or more.

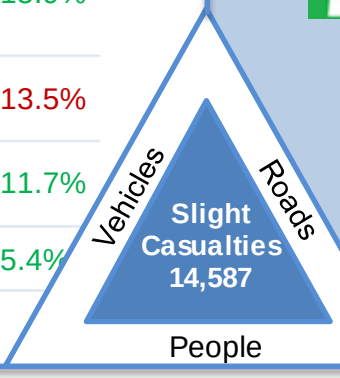
Estimated Cost: £221,500,000

Average Cost: £15,185



Car occupants	12,428	↓2.3%
PTWs	531	↓7.2%
Goods vehicle occupants (equal to or under 3.5 tonnes)	901	↑5.1%
HGV occupants (over 3.5 tonnes)	354	↓15.9%
Pedestians	84	↑13.5%
Pedal cyclists	113	↓11.7%
Buses/Other/Unknown	176	↓5.4%

Motorway	7,252	↓2.9%
A-road	7,335	↓2.1%
A-road Dual	5,440	↓1.6%
A-road Single	1,895	↓3.3%



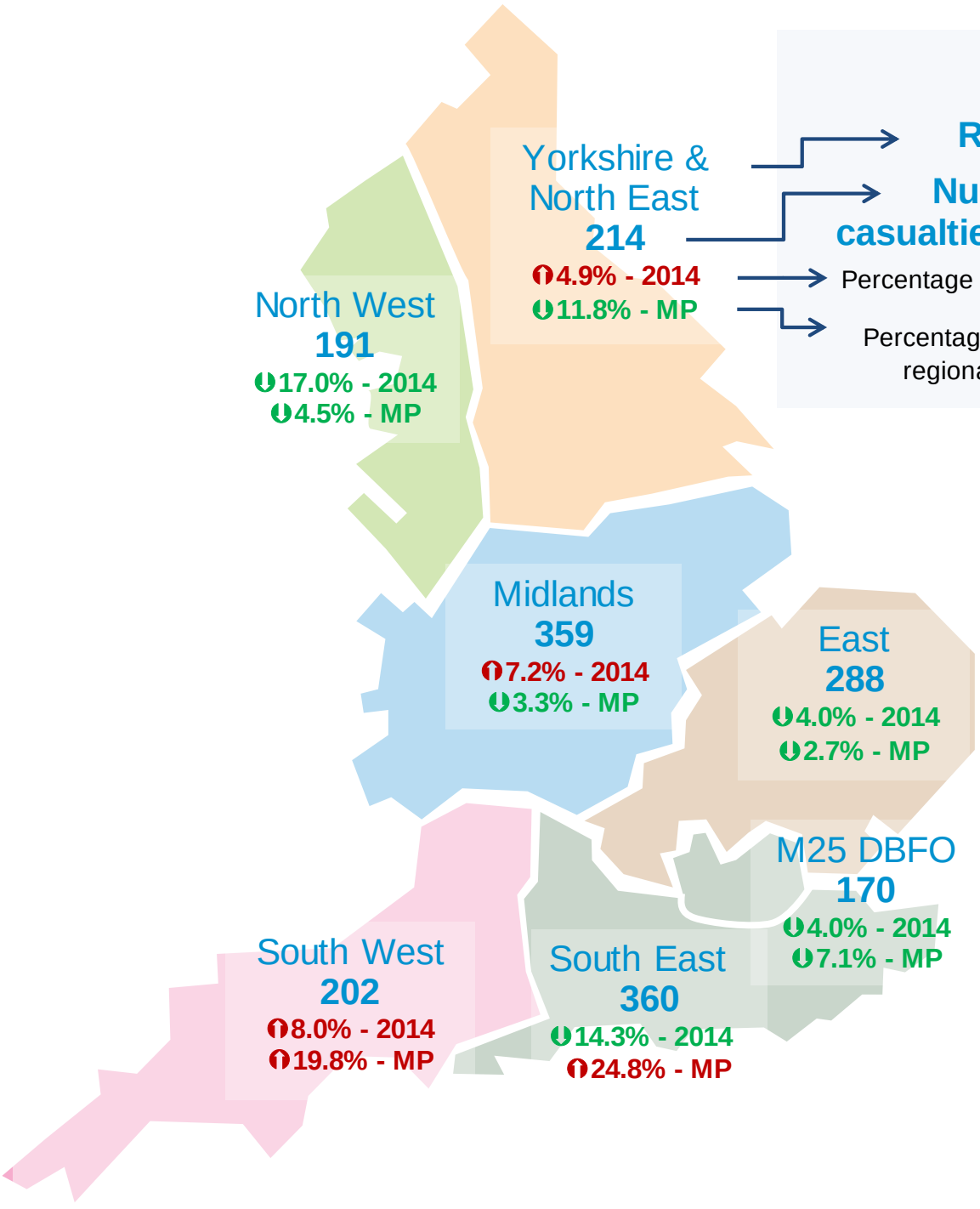
8,076
↓3.8%

? (Unknown)
5

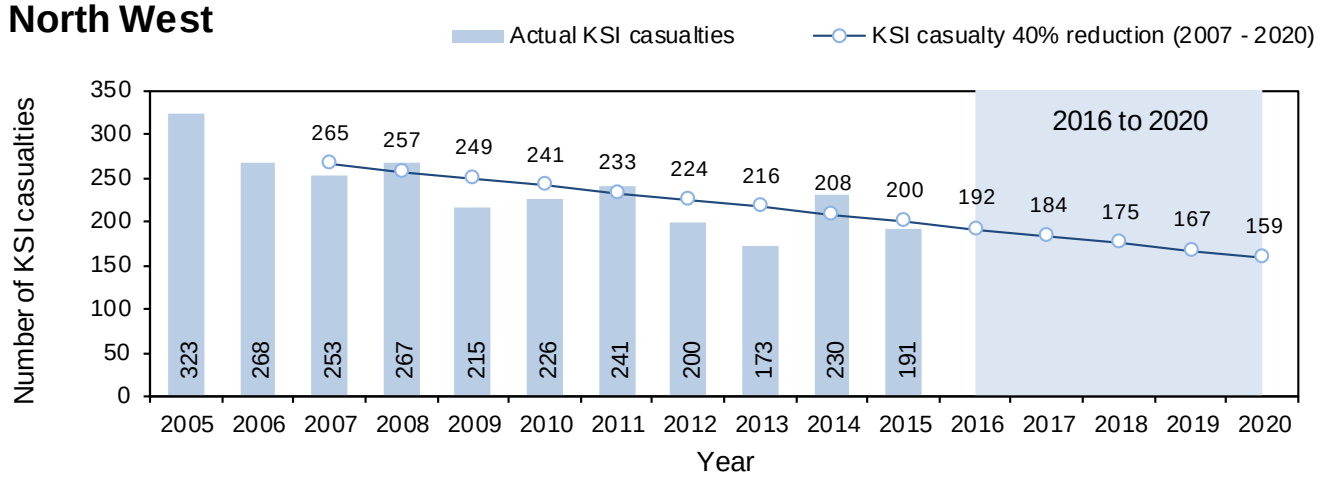
6,506
↓1.0%

Children (0-15)	Young (16-19)	Other (20-59)	Older (60-69)	Elderly (70+)	? (Unknown)
804	858	11,132	1,009	655	129
↓11.5%	↑0.8%	↓2.6%	↓0.2%	↑5.3%	↓7.9%

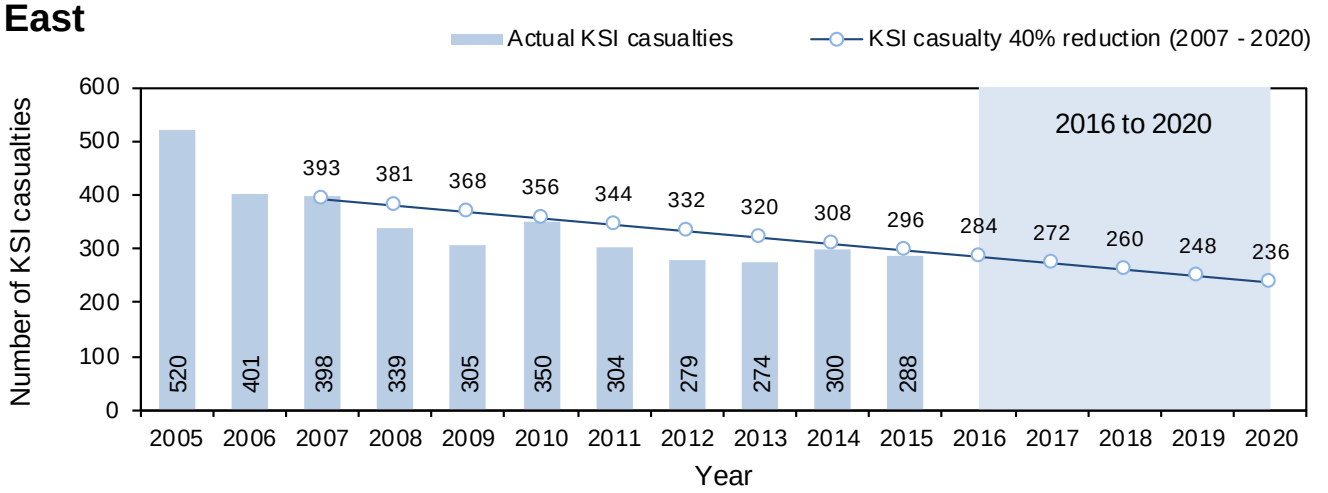
1.8. Regional KSI Values and Monitoring Points



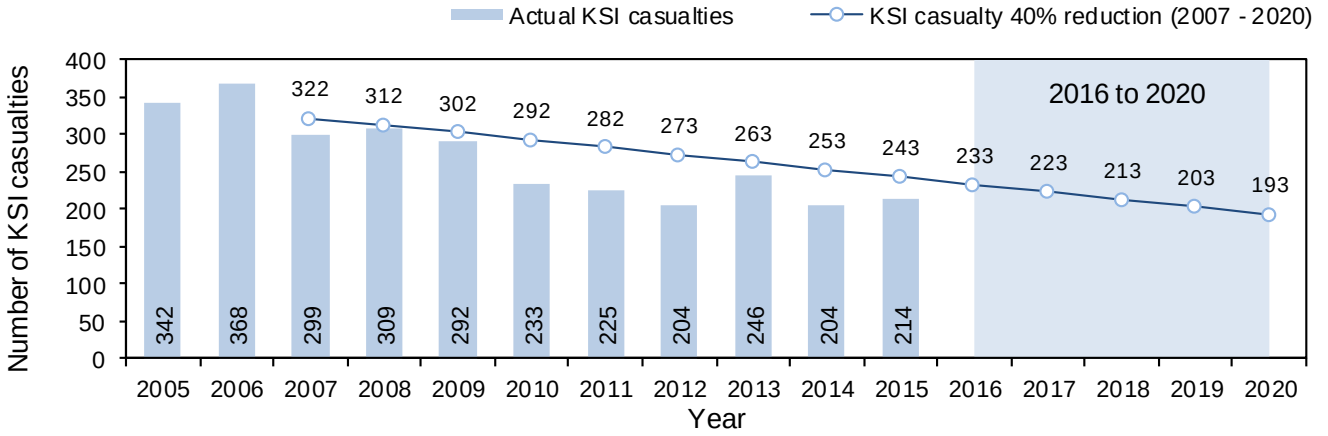
North West



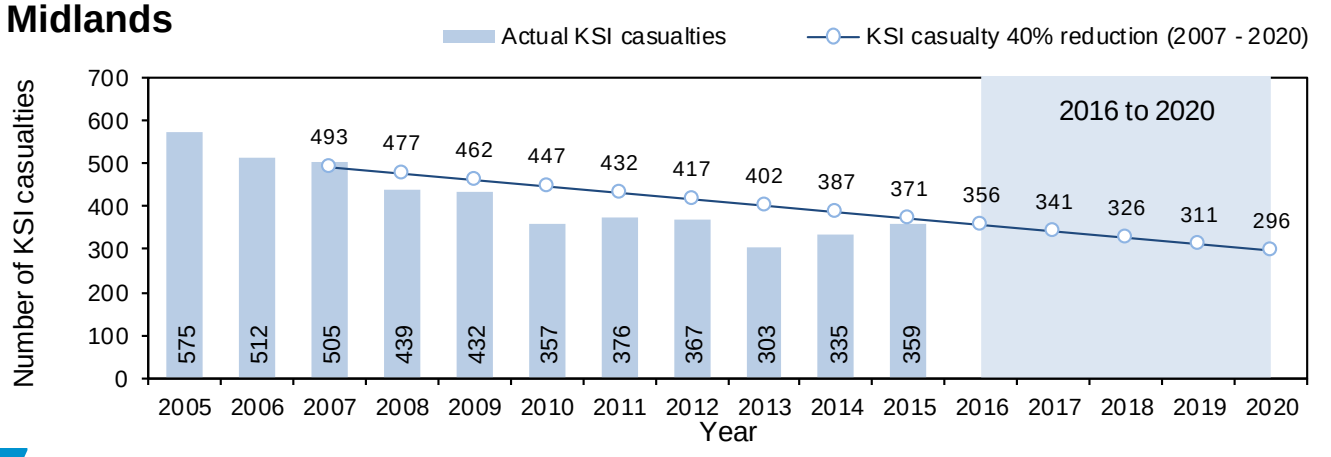
East



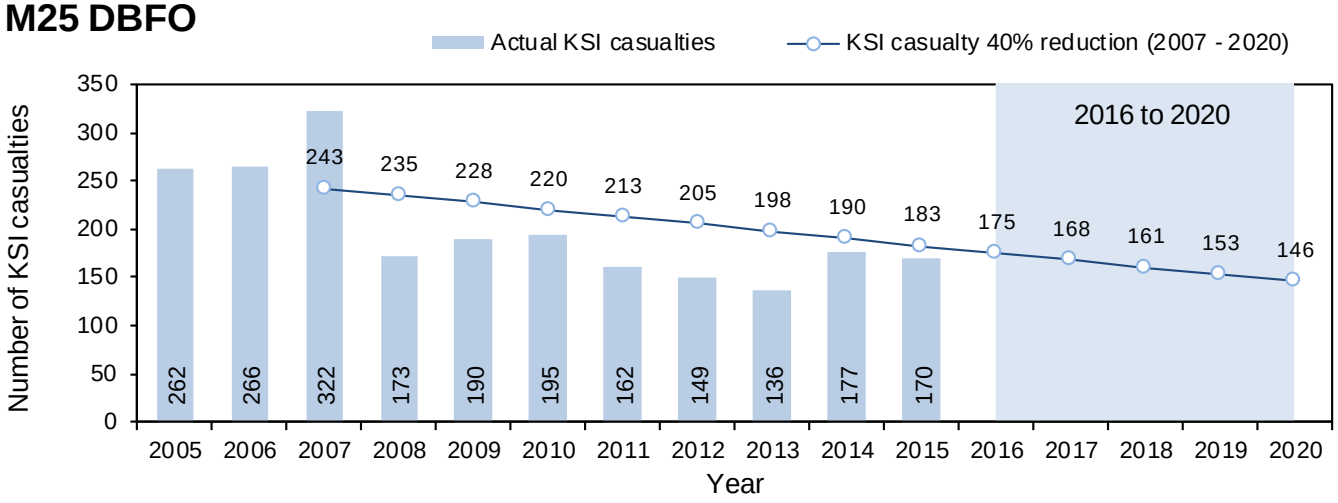
Yorkshire & North East



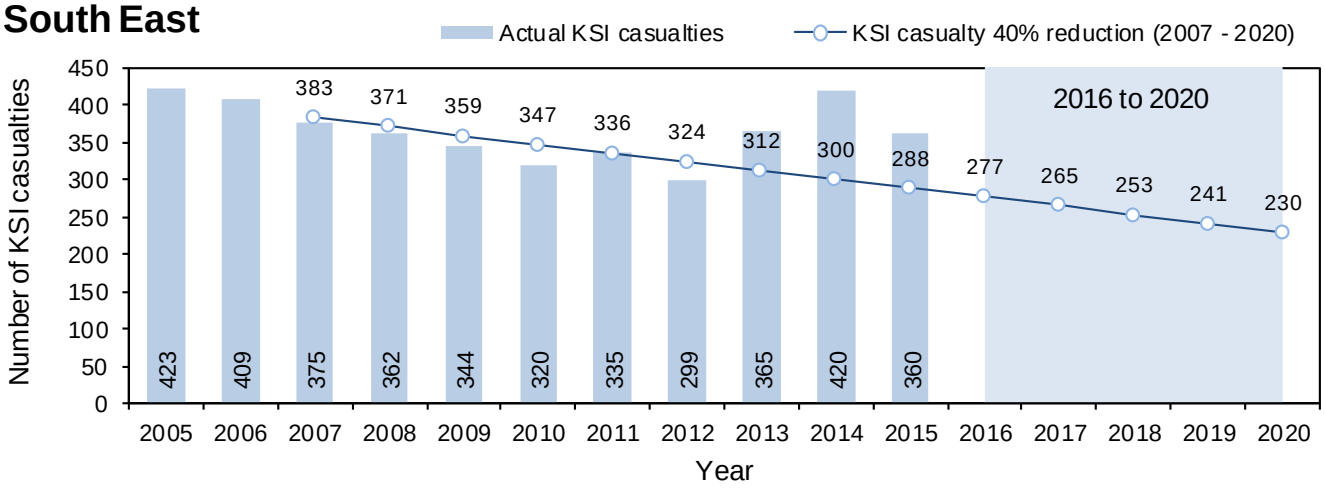
Midlands



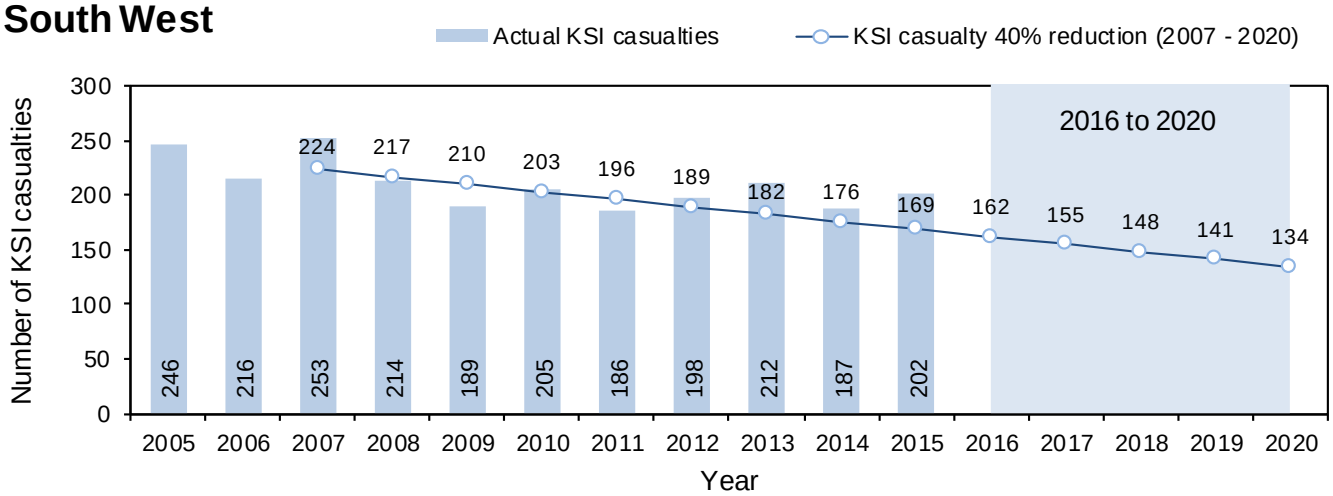
M25 DBFO



South East



South West



2. Summary of Network

2.1. The SRN

Motorways
M & A(M)

Estimated Length[2]
1,857 miles

Average Daily Flow[3]
86,512 vehicles per day

A-road Carriageways

Estimated Length
2,569 miles

Average Daily Flow
59,920 vehicles per day

A-road Dual Carriageways

Estimated Length
1,625 miles

Average Daily Flow
42,816 vehicles per day

A-road Single Carriageways

Estimated Length
944 miles

Average Daily Flow
17,104 vehicles per day

Figure 2-1 Highways England's Strategic Road Network
Based on the 2010 SRN used as a static reference network to analyse collisions and casualties between 2005 and 2015
Source: OpenStreetMap 2011 Contributors CC-BY-SA

To enable a like-for-like comparison of annual trends, all of Highways England's collision and casualty data recorded between 2005 and 2015 has been referenced to Highways England's 2010 strategic road network. This is instead of using the continuously changing 'live' network. The reference network is updated periodically with the next update planned for 2016. Prior to 2010, all collision and casualty data was referenced to the 2006 network.

[2] Based on summation of length from DfT countpoints identified as part of the 2010 SRN.
[3] Based on 2015 AADF values obtained from DfT countpoints identified as part of the 2010 SRN.

2.2. Traffic Estimates and Economic Factors

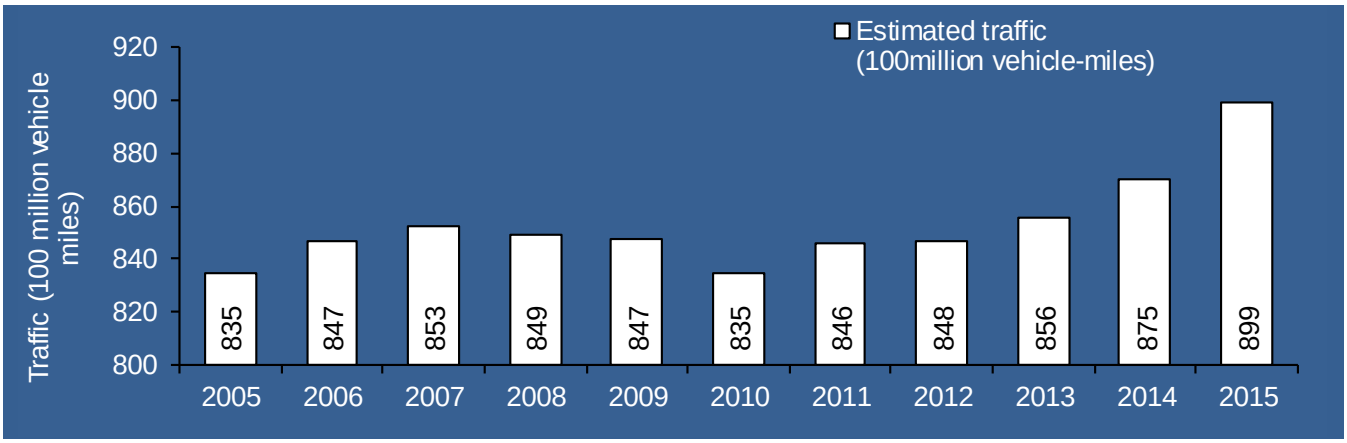


Figure 2-2 Historic traffic levels on the SRN

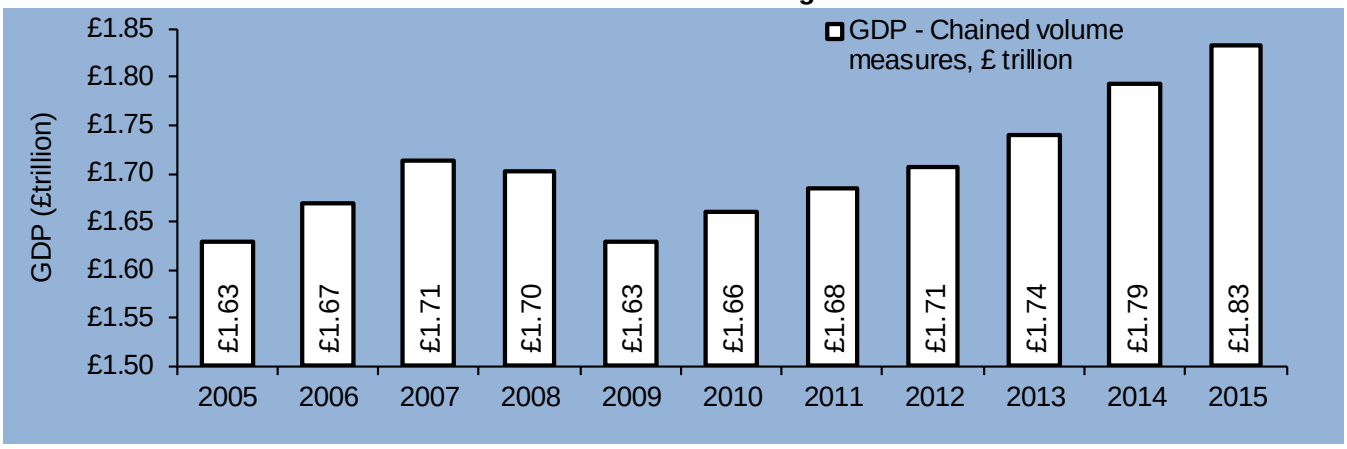


Figure 2-3 UK Gross Domestic Product between 2005 and 2015

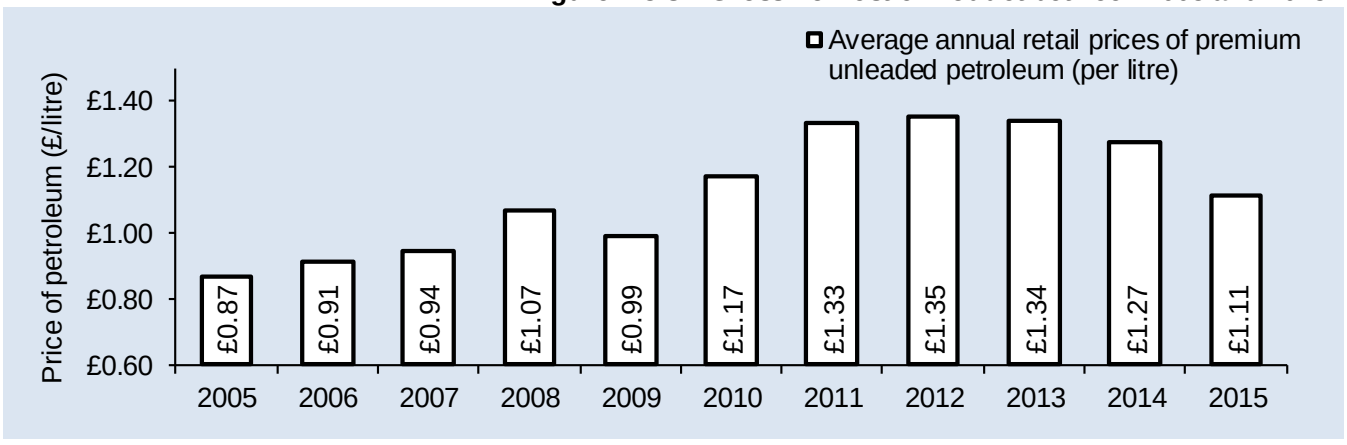


Figure 2-4 UK fuel prices between 2005 and 2015

Notes:

a) *Traffic estimates based on 2015 AADF values obtained from DfT countpoints identified as part of the 2010 SRN.*

b) *UK GDP sourced from http://www.ons.gov.uk/ons/site-information/using-the-website/time-series/index.html#*

c) *UK fuel prices sourced from DfT Table 4.1.2 Average annual retail prices of petroleum products and a crude oil price index UK.*

Figure 2-2 to Figure 2-4 show estimated traffic along with economic factors. Figure 2-2 shows that between 2007 and 2010, the SRN witnessed a decline in overall usage with headline traffic levels decreasing by 2.1 per cent from 853 hundred million vehicle miles (HMVM) to 835 HMVM.

Between 2010 and 2015, traffic levels increased 7.7 per cent from 835 HMVM to 899 HMVM, with the largest percentage traffic growth within this period (2.7 per cent) occurring between 2014 and 2015. In the same period (2010 to 2015), traffic on the Great Britain network (excluding estimates for the SRN) increased 3.2 per cent from 2,197 HMVM to 2,268 HMVM.

The increase in traffic since 2010 on the SRN correlates strongly with improving economic performance, as shown in Figure 2-3; particularly during the recovery after the 2007 to 2009 recession along with the decreased retail prices of premium unleaded petroleum, as shown in Figure 2-4, after 2012.

2.3. Traffic Estimates by Road Classification

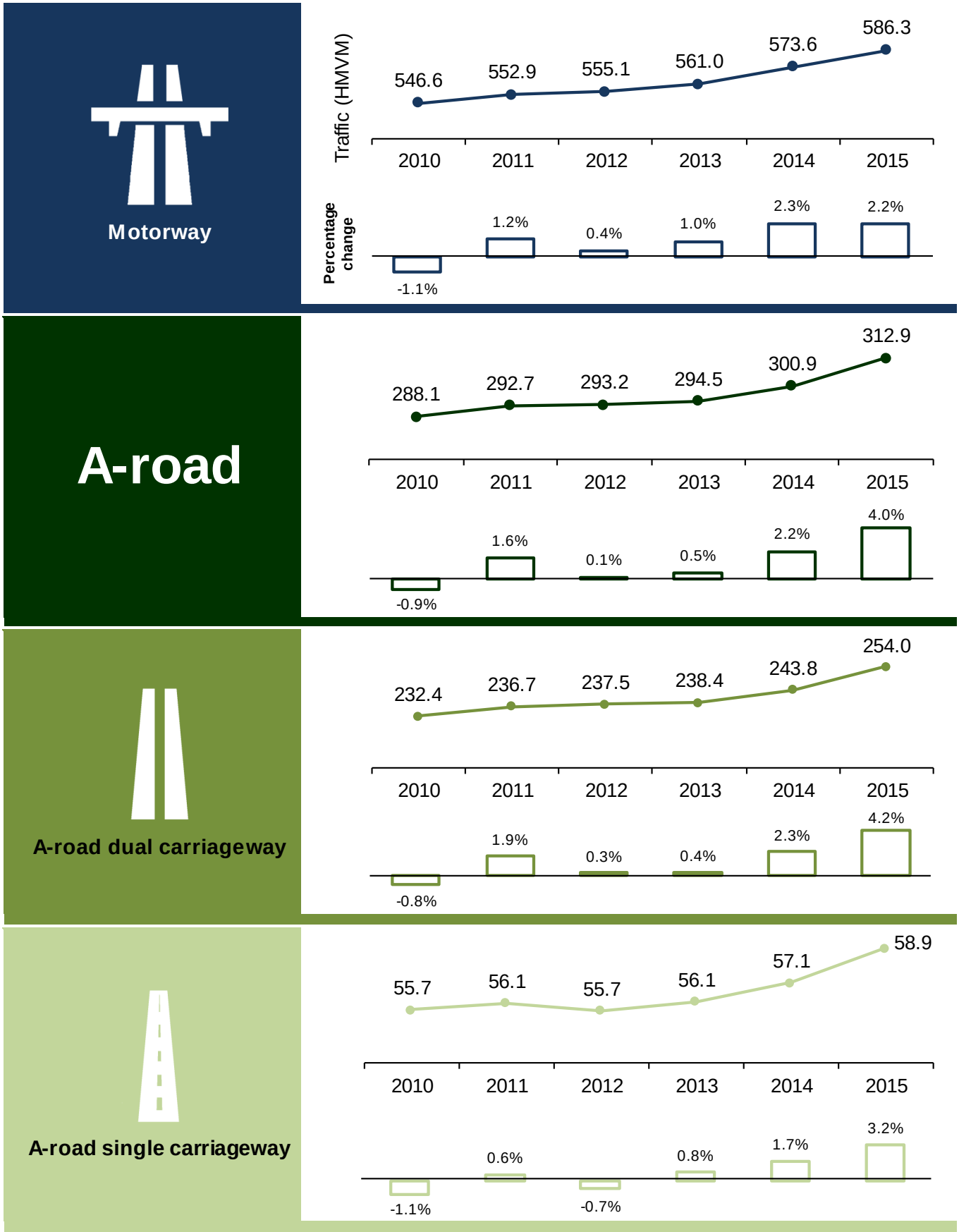


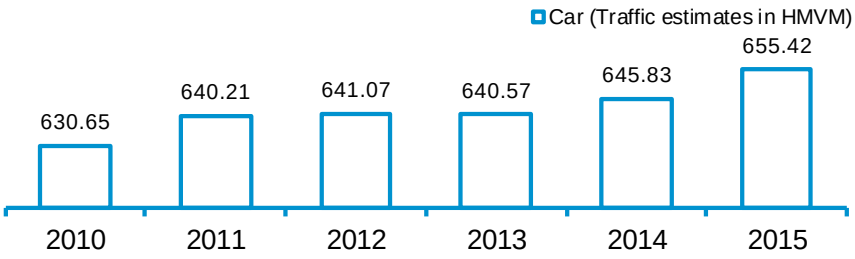
Figure 2-5 Traffic estimates by road classification

Estimates of traffic (measured in hundred million vehicle miles, HMVM) by road classification are provided in Figure 2-5. Between 2010 and 2015, there has been a 7.3 per cent increase in motorway traffic and 9.3 per cent increase in A-road dual carriageway traffic on the SRN (based on the 2010 reference network). Traffic on A-road single carriageways has only increased by 5.7 per cent.

2.4. Traffic Estimates by Vehicle Type

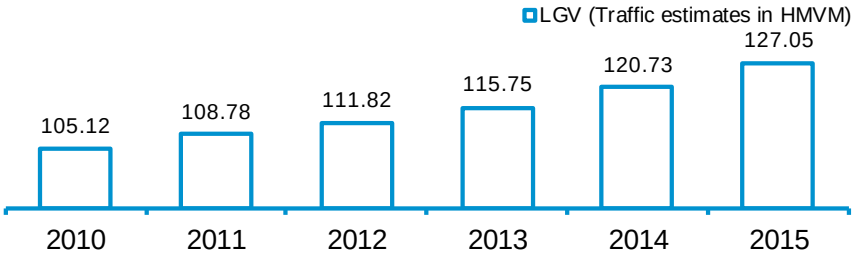
Car

↑ 3.9% from 2010



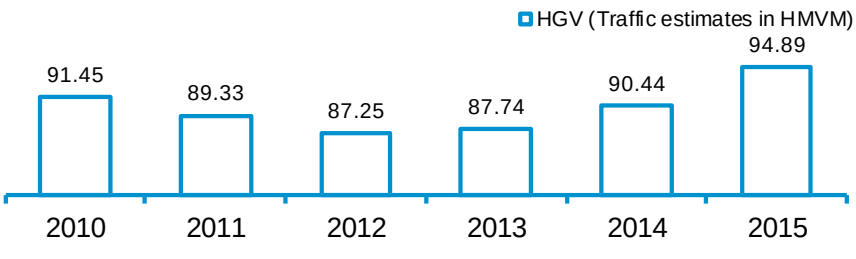
LGV (other GV)

↑ 20.9% from 2010



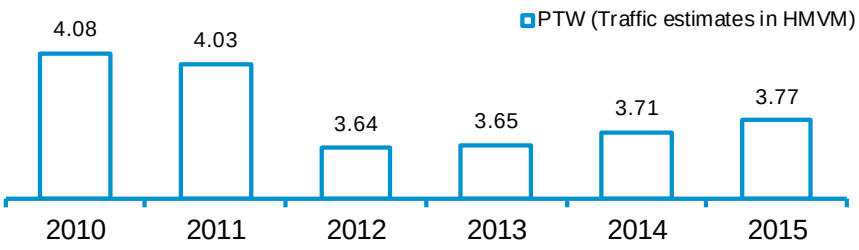
HGV (over 3.5t)

↑ 3.8% from 2010



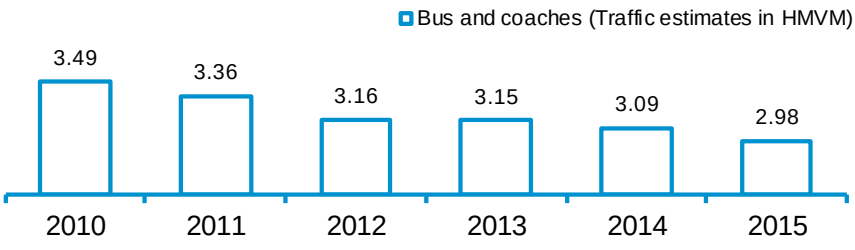
PTW

↓ 7.7% from 2010



Bus / coach

↓ 14.7% from 2010



Pedal cycle

↓ 6.1% from 2010

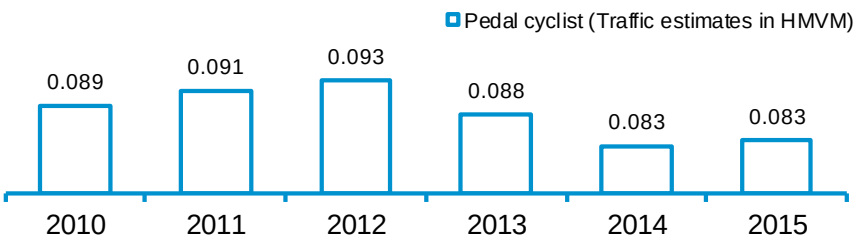


Figure 2-6 Traffic estimates by vehicle type

An estimate of vehicle traffic levels[4] on the SRN in 2015 is shown in Figure 2-6. As shown in the figure, the largest percentage of vehicle traffic on the SRN are cars (74.1 per cent) followed by LGVs (other goods vehicles[5]) with 14.4 per cent.

Between 2010 and 2015, out of the three major vehicle types (car, heavy goods vehicle (HGV) and light goods vehicle (LGVs), the largest increase was LGVs equivalent to 20.9 per cent with the largest annual percentage growth (5.2 per cent) occurring between 2014 and 2015. As shown in Figure 2-6, LGV traffic increased steadily from 105.12 HMVM in 2010 to 127.05 HMVM in 2015. LGVs are further investigated in the goods vehicle topic of interest (Section 5.12).

In the same period, HGV traffic decreased till 2013 and subsequently increased to yield a net increase of 3.8 per cent over the period. Buses and coaches is the only vehicle type to show a continuous decrease (14.6 per cent) between 2010 and 2015.

[4] Vehicle traffic estimates were determined using countpoint vehicular data accessed from the DfT Traffic Counts website found at http://www.dft.gov.uk/traffic-counts/ along with the underlying assumptions and collection methods. Only countpoints aligned with the 2010 reference network were used in the calculation.
[5] For the purposes of reporting traffic estimates, the vehicle type "Other goods vehicles" is represented by light goods vehicles (LGV) as termed by the DfT.

3. Casualties

3.1. Roads

This section provides an overview of casualties linked to road classification by severity, year (including BSL) and rates (i.e. number of casualties per HMVM). The rates provide an indication of the likelihood of being injured. The section also considers the influence of road environment.

Figure 3-1 to Figure 3-5 illustrate the casualty distribution on motorway, A-road dual carriageway and A-road single carriageway in terms of the number and rate. Comparison of road classifications in the figures shows that for 2015:

- The largest proportion of KSI casualties (40.9 per cent) and total casualties (48.8 per cent) occurred on motorways
- The most fatalities (92 out of 224) occurred on motorways
- However, the likelihood of being injured on motorways was in fact the lowest of all three road classifications across all severities
- The likelihood of being injured on A-road single carriageways was the highest of all three road classifications across all severities, followed by A-road dual carriageways

Note: Figure 3-1 depicts the ratio (based on casualty rate) between the likelihood of an injury occurring on a motorway, dual carriageway or single carriageway relative to the motorway (i.e. motorway is set to “1.0”).

3.1.1. Casualties and likelihood of injury by road classification and severity

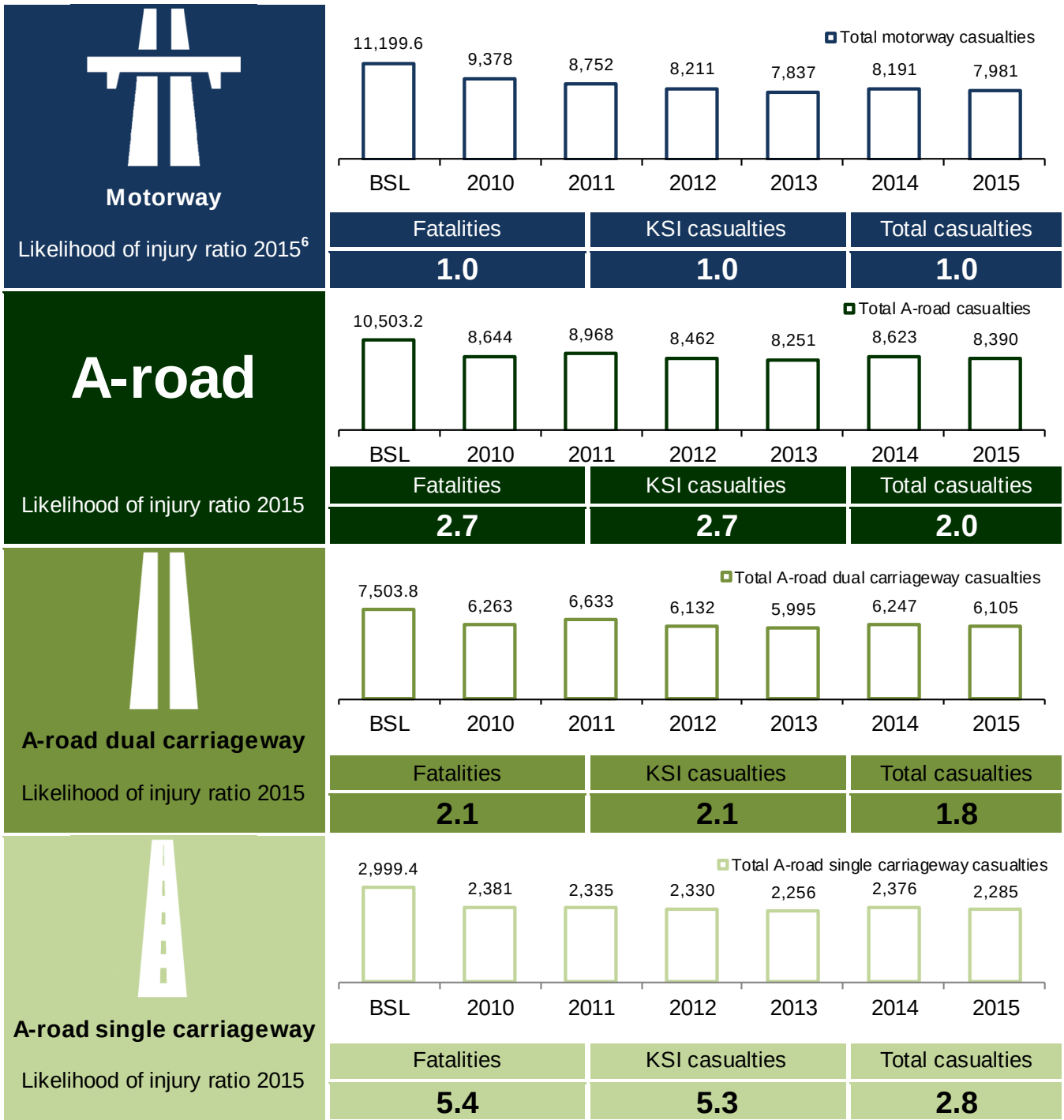


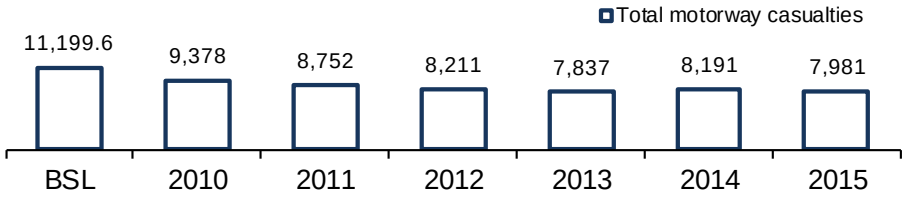
Figure 3-1 Casualties by road classification and likelihood of injury by road classification and severity

.

[6]Likelihood of injury ratio is the ratio between casualty rates; with motorway set to an arbitrary "1.0".

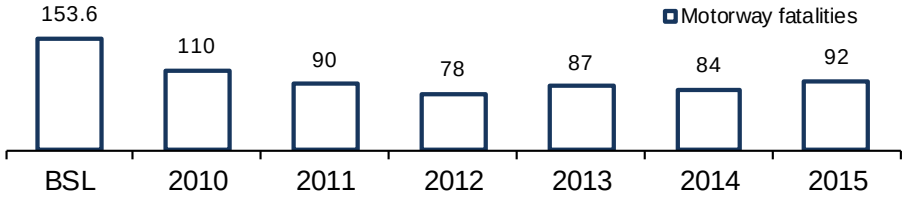
3.1.2.Motorway casualties and rates by severity

Motorway casualties



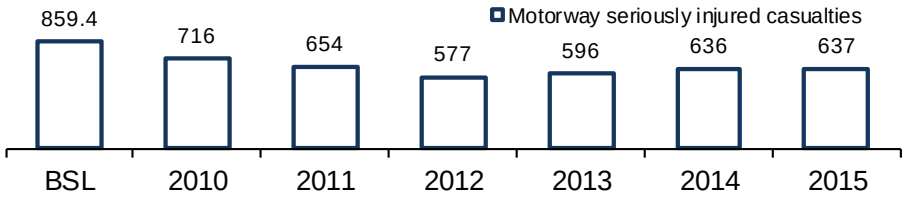
	BSL	2010	2011	2012	2013	2014	2015
Total rate (Cas./HMVM)	**20.48**	**17.16**	**15.83**	**14.79**	**13.97**	**14.28**	**13.61**

Killed



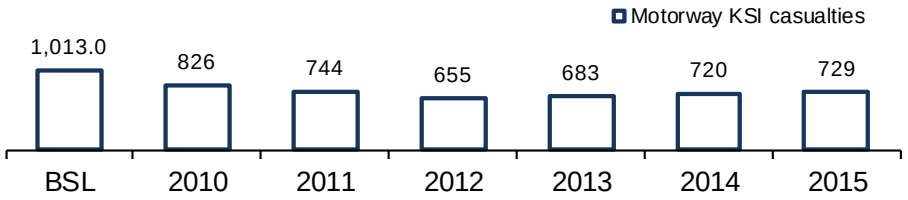
	BSL	2010	2011	2012	2013	2014	2015
Killed rate (Cas./HMVM)	**0.28**	**0.20**	**0.16**	**0.14**	**0.16**	**0.15**	**0.16**

Seriously injured



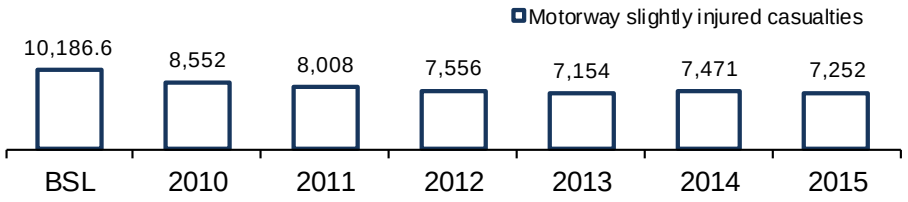
	BSL	2010	2011	2012	2013	2014	2015
Serious rate (Cas./HMVM)	**1.57**	**1.31**	**1.18**	**1.04**	**1.06**	**1.11**	**1.09**

KSI



	BSL	2010	2011	2012	2013	2014	2015
KSI rate (Cas./HMVM)	**1.85**	**1.51**	**1.35**	**1.18**	**1.22**	**1.26**	**1.24**

Slightly injured



	BSL	2010	2011	2012	2013	2014	2015
Slight rate (Cas./HMVM)	**18.63**	**15.65**	**14.48**	**13.61**	**12.75**	**13.02**	**12.37**

Figure 3-2 Motorway casualties and rates by severity

3.1.3.A-road casualties and rates by severity

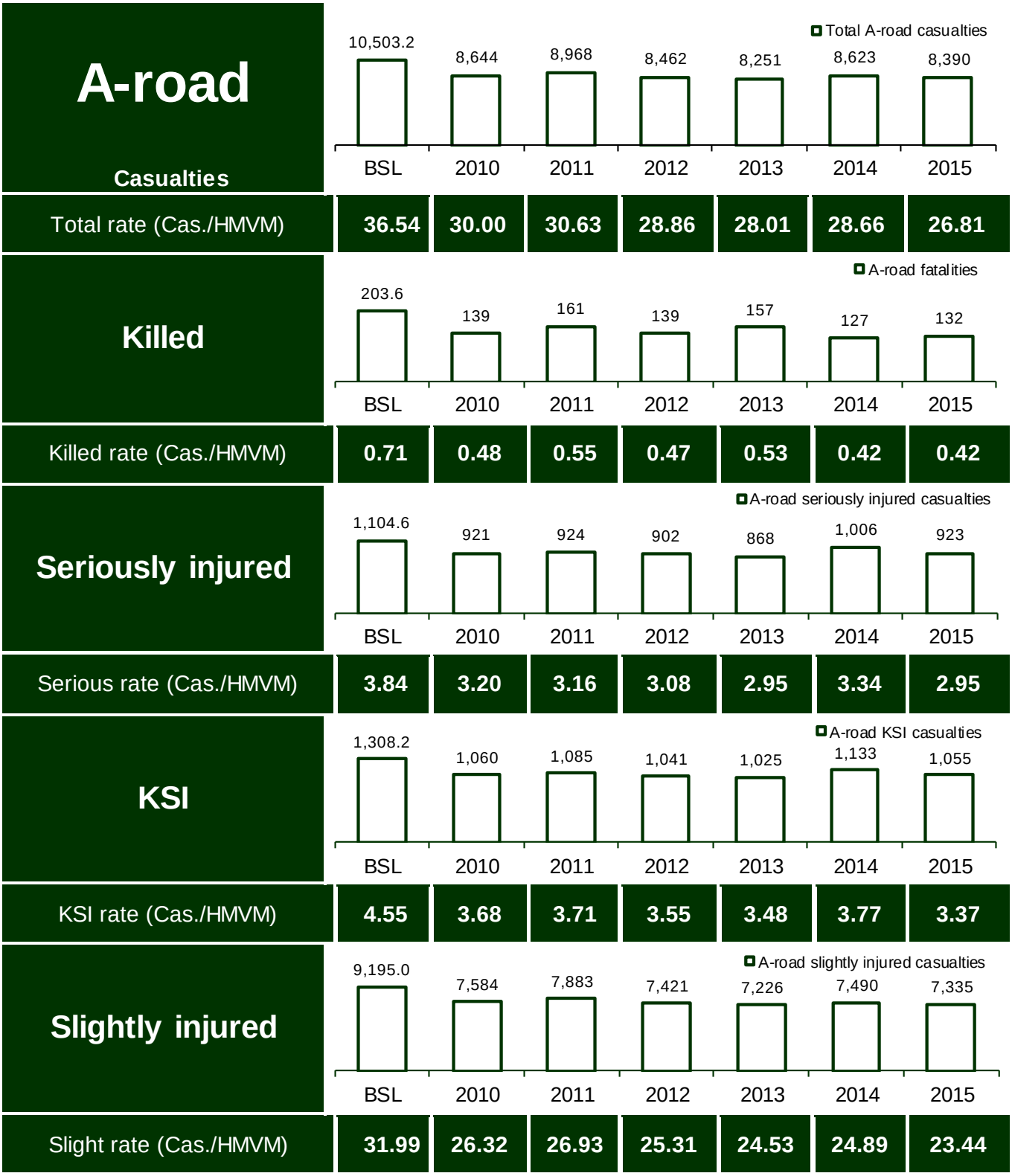
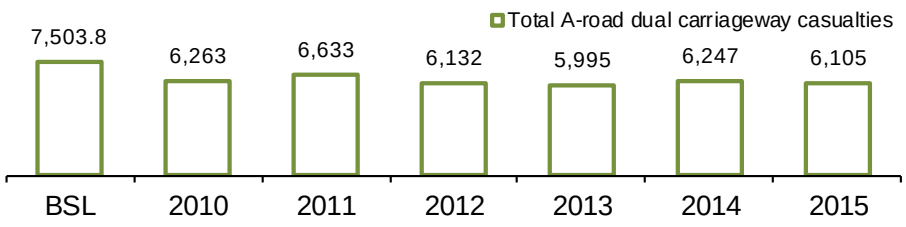


Figure 3-3 A-road casualties and rates by severity

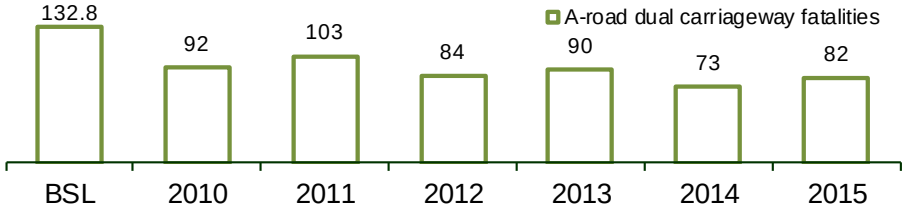
3.1.4.A-road dual carriageway casualties and rates by severity

A-road dual casualties



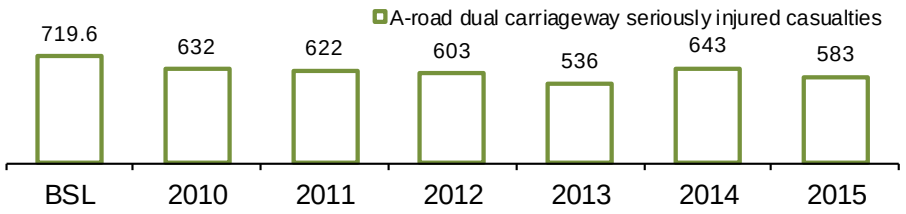
	BSL	2010	2011	2012	2013	2014	2015
Total rate (Cas./HMVM)	**32.47**	**26.95**	**28.02**	**25.82**	**25.15**	**25.62**	**24.04**

Killed



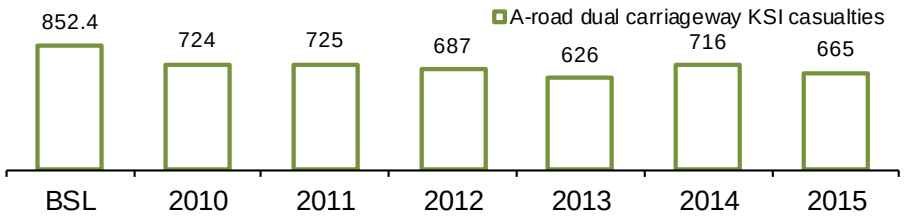
	BSL	2010	2011	2012	2013	2014	2015
Killed rate (Cas./HMVM)	**0.57**	**0.40**	**0.44**	**0.35**	**0.38**	**0.30**	**0.32**

Seriously injured



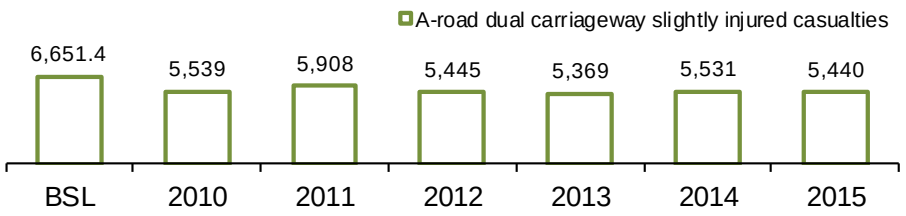
	BSL	2010	2011	2012	2013	2014	2015
Serious rate (Cas./HMVM)	**3.11**	**2.72**	**2.63**	**2.54**	**2.25**	**2.64**	**2.30**

KSI



	BSL	2010	2011	2012	2013	2014	2015
KSI rate (Cas./HMVM)	**3.69**	**3.12**	**3.06**	**2.89**	**2.63**	**2.94**	**2.62**

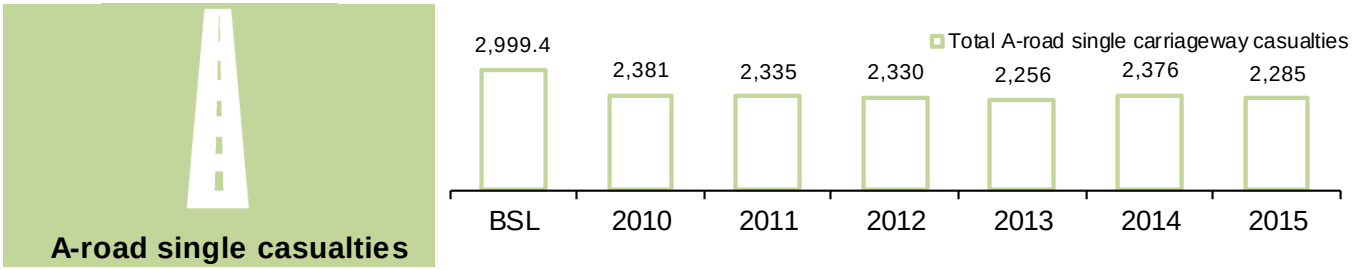
Slightly injured



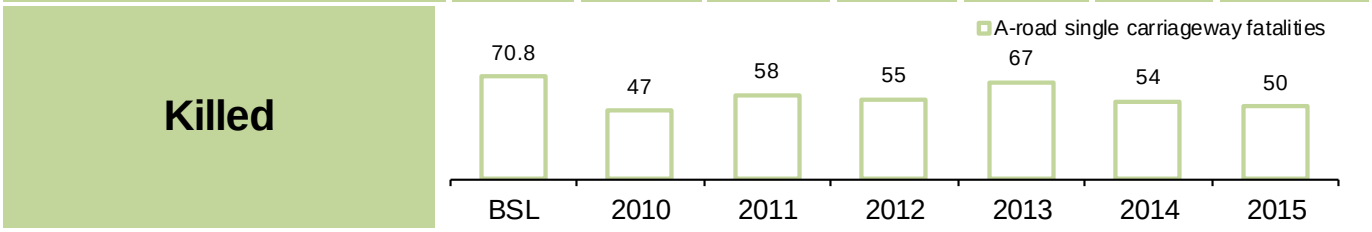
	BSL	2010	2011	2012	2013	2014	2015
Slight rate (Cas./HMVM)	**28.78**	**23.84**	**24.96**	**22.93**	**22.52**	**22.69**	**21.42**

Figure 3-4 A-road dual carriageway casualties and rates by severity

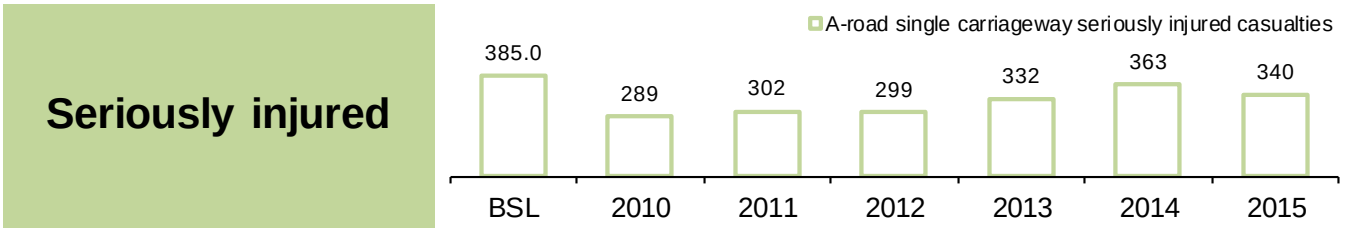
3.1.5.A-road single carriageway casualties and rates by severity



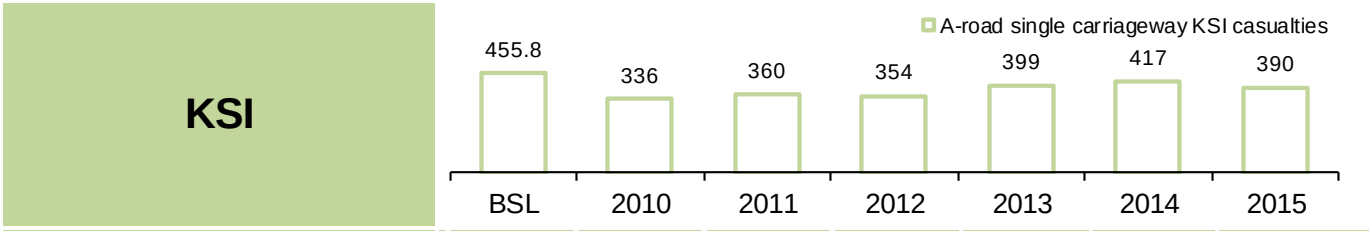
	BSL	2010	2011	2012	2013	2014	2015
Total rate (Cas./HMVM)	**53.26**	**42.73**	**41.65**	**41.85**	**40.19**	**41.61**	**38.79**



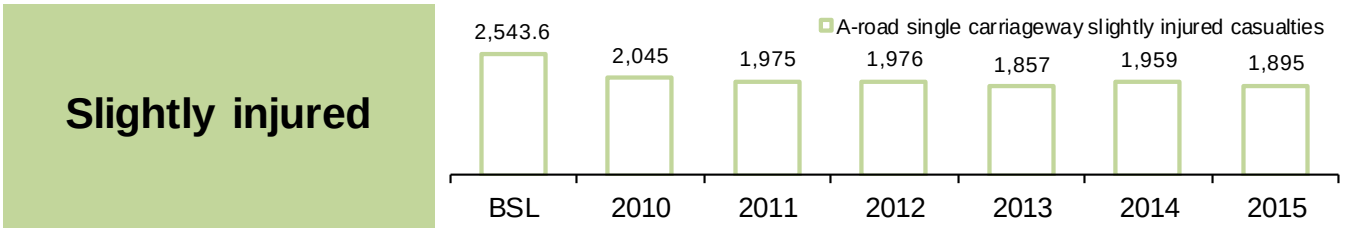
	BSL	2010	2011	2012	2013	2014	2015
Killed rate (Cas./HMVM)	**1.26**	**0.84**	**1.03**	**0.99**	**1.19**	**0.95**	**0.85**



	BSL	2010	2011	2012	2013	2014	2015
Serious rate (Cas./HMVM)	**6.84**	**5.19**	**5.39**	**5.37**	**5.92**	**6.36**	**5.77**



	BSL	2010	2011	2012	2013	2014	2015
KSI rate (Cas./HMVM)	**8.09**	**6.03**	**6.42**	**6.36**	**7.11**	**7.30**	**6.62**



	BSL	2010	2011	2012	2013	2014	2015
Slight rate (Cas./HMVM)	**45.16**	**36.70**	**35.23**	**35.49**	**33.09**	**34.30**	**32.17**

Figure 3-5 A-road single carriageway casualties and rates by severity

3.1.6. Casualties involving road environment

This section evaluates the number of casualties where the road environment is categorised as a contributory factor. Assessment of these factors gives an indication of how the SRN could be enhanced to mitigate further casualties where the road is a contributory factor.

In 2015, the number of KSI casualties involving road environment factors was 153 and was equivalent to 8.6 per cent of the respective total KSI casualties (1,784) (was 10.3 per cent in 2014). This is a 19.5 per cent decrease since 2014 (which was 190).

Figure 3-6 summarises the number of KSI casualties involving at least one factor associated with the road environment at least from 2010 to 2015. The diagram depicting the split by road classification shows the 2005 to 2015 trend in KSI casualties involving road environment factors fluctuates across all road classifications; particularly the motorways.

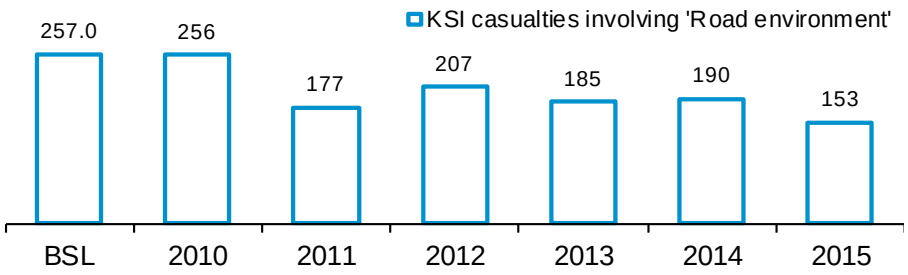
As indicated in Figure 3-6, the primary contributory factor for road environment was “Slippery road (due to weather)" which contributed to 99 of the KSI casualties in 2015. However, this too showed a 19.5 per cent decrease from 2014.

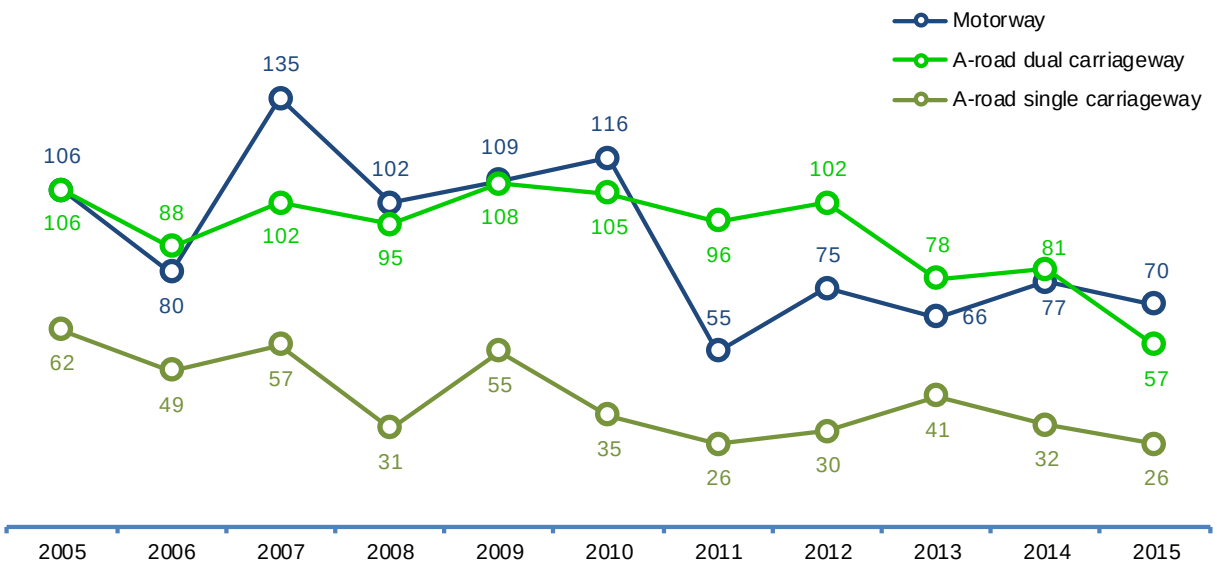
The number of casualties involving a poor or defective road surfacing on the SRN is also shown in Figure 3-6. This provides context on the potential human cost from defects in surfacing. From 2008 to 2011, England experienced a number of harsh winters, with December 2010 being one of the coldest on record[7]. As a result, the occurrence of surface defects during and after this period became a significant concern for all stakeholders.

The graph depicting the trend of casualties involving poor or defective road surfacing (in Figure 3-6) shows that the number spiked in 2012; a 47.7 per cent increase from 44 in 2011 to 65 in 2012, followed by a 40.0 per cent decrease in 2013 to 39, which is the lowest value since at least 2010. The 2015 value is the same as in 2013 following the increase in 2014. When assessing the overall impact of this contributory factor against total casualties for all years, the typical contribution is less than one per cent per annum.

[7] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/4002/potholes-review-progress-report.pdf

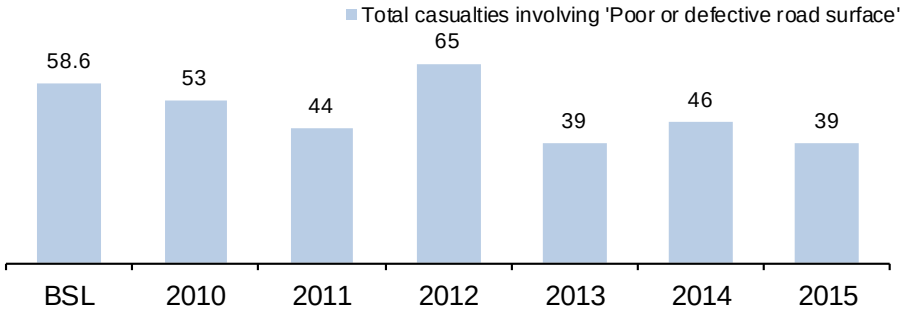
Road environment contributed to 153 KSI casualties in 2015 ↓ 19.5% on 2014





In 2015, 45.8% of KSI casualties where the road environment contributed occurred on motorways

39 casualties involved 'Poor or defective road surface' in 2015 ↓ 15.2% on 2014



99 KSI casualties involving slippery road in 2015 ↓ 19.5% on 2014

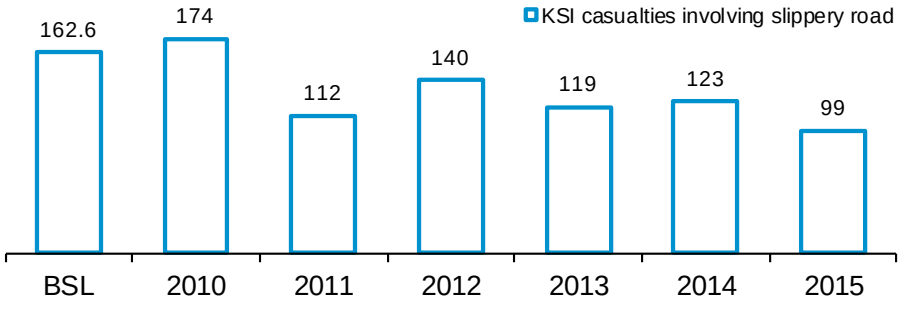


Figure 3-6 Summary of casualties where road environment contributed

3.2. Vehicles

This section briefly assesses the impact of vehicles on casualties occurring on the SRN.

The section primarily focuses on providing an overview of casualties based on first point of vehicle impact, different vehicle interactions and where vehicle defects contributed.

3.2.1. Casualties by first point of impact

Figure 3-7 provides a breakdown of the number of KSI casualties by first point of vehicle impact. Note: The analysis excludes pedestrian casualties.

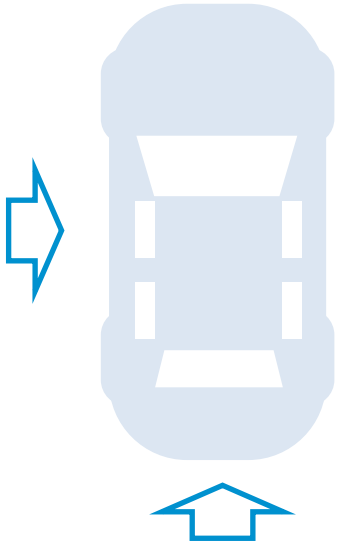
KSI casualties where the first point of vehicle impact was front (988) made up 57.7 per cent of KSI casualties in 2015 and the corresponding KSI severity ratio (KSI severity ratios are the percentage of KSI casualties to total casualties for each individual category) was 14.7 per cent. It can also be seen that both offside and nearside impacts resulted in a similar number of KSI casualties and severity ratios.

Figure 3-7 also shows the KSI casualty types where first point of impact was either offside or nearside. It can be seen that 62.9 per cent of the 415 total KSI casualties in side impacts were car occupants with 26.7 per cent being PTW users.

First point of impact:

988 KSI casualties
14.7% of the 6,739 front casualties

200 KSI casualties
11.8% of the 1,698 nearside casualties



215 KSI casualties
11.9% of the 1,801 offside casualties

264 KSI casualties
4.7% of the 5,661 back casualties

45 KSI casualties had no recorded first point of impact (64 in 2014)

Note: Pedestrians excluded from analysis

Figure 3-7 Casualties by first point of impact

3.2.2. Casualties from vehicle interactions

All collisions in 2015 were grouped by the various combinations of vehicle types that were involved in the collision, for instance, a car colliding with a pedal cyclist. A breakdown of all collision combination types where data were available are reported in Appendix Table E-4.

There can be 45 different combinations of vehicle type interactions involved in collisions. In the Appendix table(s) each collision interaction has been labelled with a reference letter (A to AS).

An evaluation of how specific vehicle interactions influence the numbers of casualties in 2015 by severity and type is provided in Figure 3-8 and Figure 3-9.

Figure 3-8 reports the resulting casualties (including pedestrians) where only one vehicle type was involved; Figure 3-9 reports where two vehicle types were involved.

Vehicles in collision	Number of casualties involved by casualty type and severity		
	Fatalities	Seriously injured	Slightly injured
Car only	13, 85, 72	22, 748, 726	57, 8,938, 8,881
HGV only	7, 17, 10	5, 45, 40	3, 166, 163
LGV only	4, 7, 3	5, 35, 30	6, 195, 189
PTW only	5, 5	97, 97	4, 130, 126

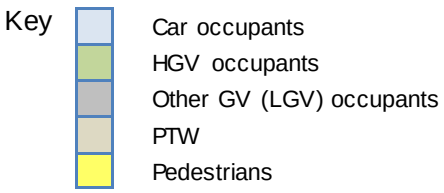
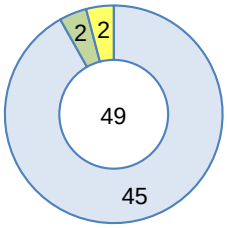
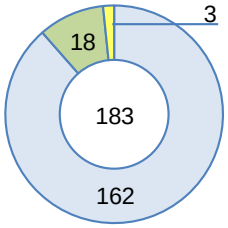
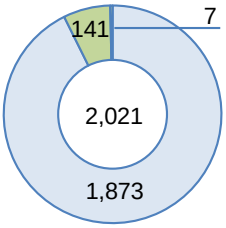
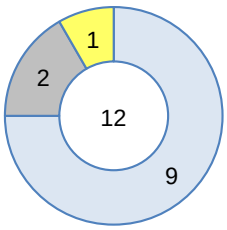
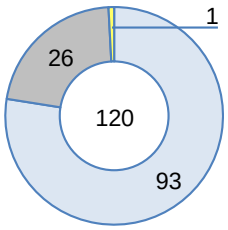
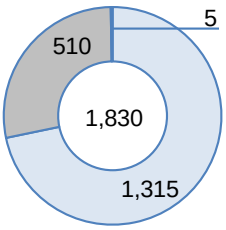
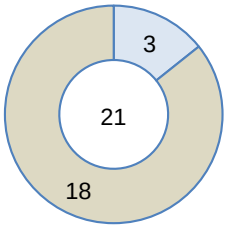
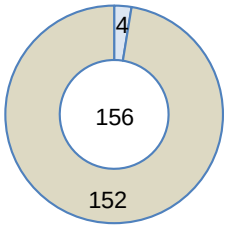
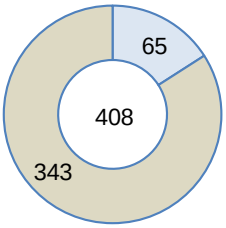
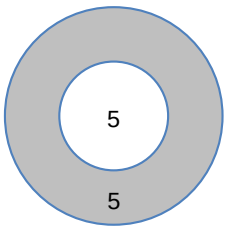
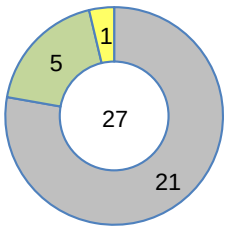
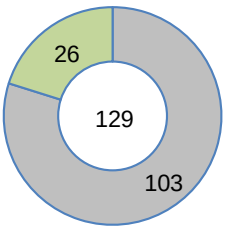
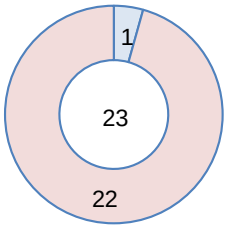
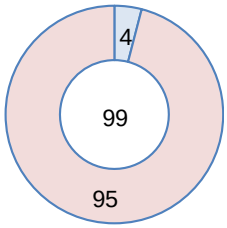


Figure 3-8 Casualty breakdown involving a single vehicle type

Vehicles in collision	Number of casualties involved by casualty type and severity		
	Fatalities	Seriously injured	Slightly injured
Car & HGV			
Car & LGV			
Car & PTW			
HGV & LGV			
Car & Cycle	No fatalities involving this vehicle interaction		

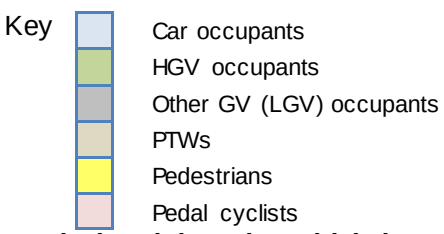


Figure 3-9 Casualty breakdown by vehicle interaction

The most frequent interaction as shown in Figure 3-8 was car only collisions. Car only collisions resulted in 85 fatalities, equivalent to 37.9 per cent of the 224 total fatalities in 2015. In 2015, 13 pedestrian fatalities involved car only and 7 involved HGV only.

Where cars collide with vulnerable roads users[8] such as PTW users and pedal cyclists as shown in Figure 3-9, the vulnerable road users are at high risk of being fatally or seriously injured. In these two collision types, 96.0 per cent of the 200 KSI casualties were the vulnerable road user.

In collisions involving cars and HGVs, car occupants are disproportionally killed with 91.8 per cent of fatalities being car occupants. The corresponding KSI casualty value is 89.2 per cent.

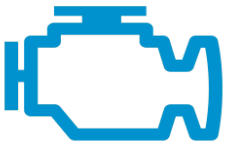
[8] Vulnerable road users include PTW users, pedal cyclists and pedestrians.

3.2.3. Casualties involving vehicle defects

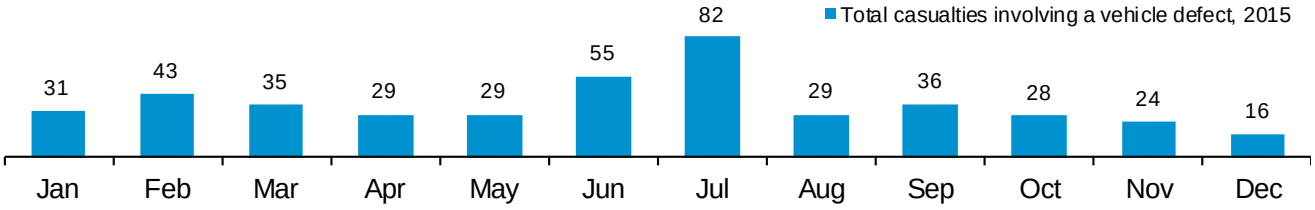
This section evaluates the number of casualties where at least one vehicle within a collision had a defect which was a contributory factor. As shown previously in Figure 2-3, it is apparent that the economic situation is recovering and hence this section also assesses the corresponding historic trends in vehicle defects.

Figure 3-10 provides a summary of casualties involving vehicle defects dissected in various ways including specific factors classed as vehicle defects and their overall impact on KSI casualties for 2015. The latter indicates that the most common vehicle defect which contributed to 33 (50.8 per cent of) KSI casualties was tyres that were illegal, defective or under inflated. For further detailed analysis of the tyres contributory factor refer to the tyre Topic of Interest in Section 5.11.

KSI casualties involving vehicle defects decreased by 38.6 per cent from the baseline value of 105.8 to 65 in 2015. In comparison, overall KSI casualties decreased by 23.1 per cent from the baseline value of 2,321.2 to 1,784 in 2015. The most significant change over the period was between 2013 and 2014, which resulted in an increase in KSI casualties involving vehicle defects by 78.7 per cent from 47 in 2013 to 84 in 2014. However, there was subsequently a significant reduction in KSI casualties involving vehicle defects of 22.6 per cent from 84 in 2014 to 65 in 2015; yielding the lowest value at least since 2010 when ignoring the low value of 2013.



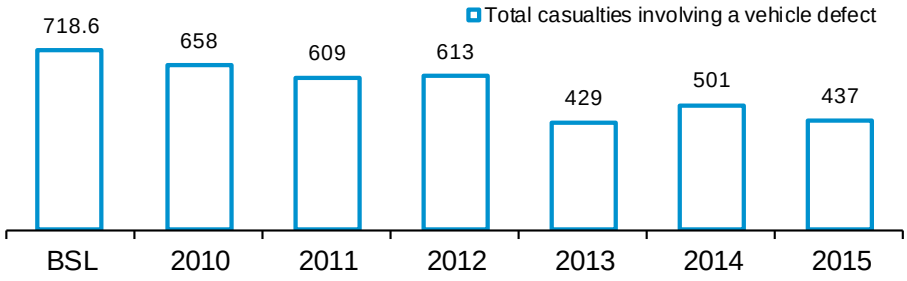
437 casualties involved a vehicle defect in 2015



82 casualites involved a vehicle defect in July 2015

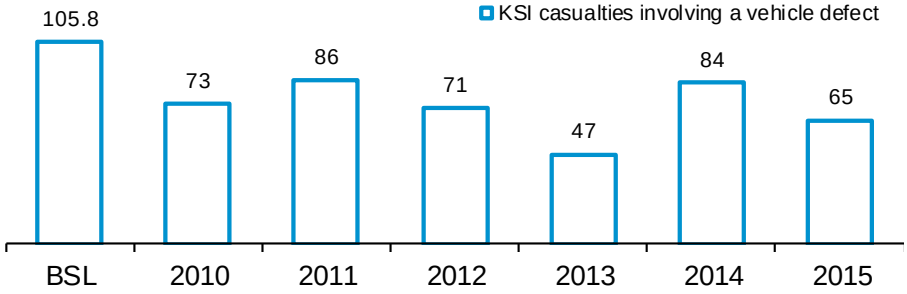
Total casualties

12.8% from 2014

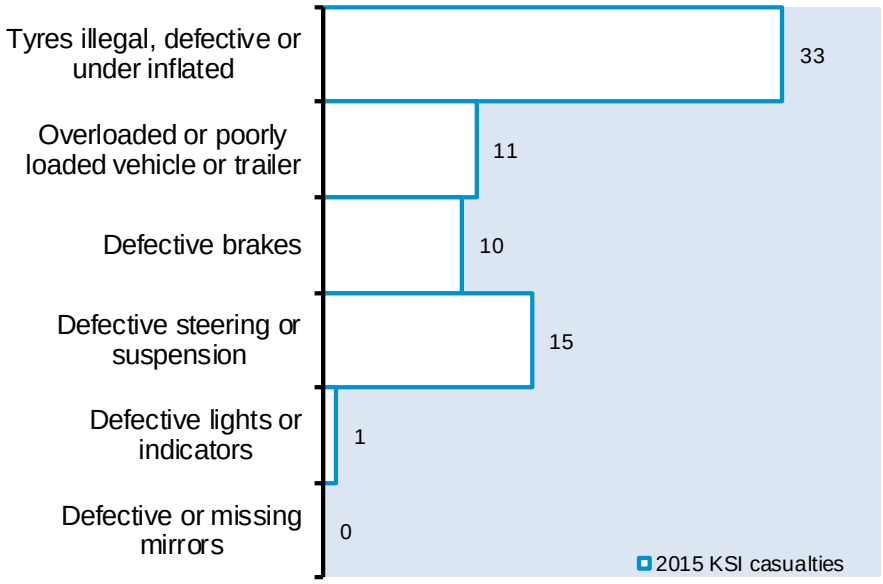


KSI casualties

22.6% from 2014



50.8% of KSI casualties involving a vehicle defects involved 'Tyres illegal, defective or under inflated'



As more than one contributory factor can be recorded per collision; defects will not sum to 65 KSI casualties

Figure 3-10 Summary of casualties involving a vehicle defect

3.3. People

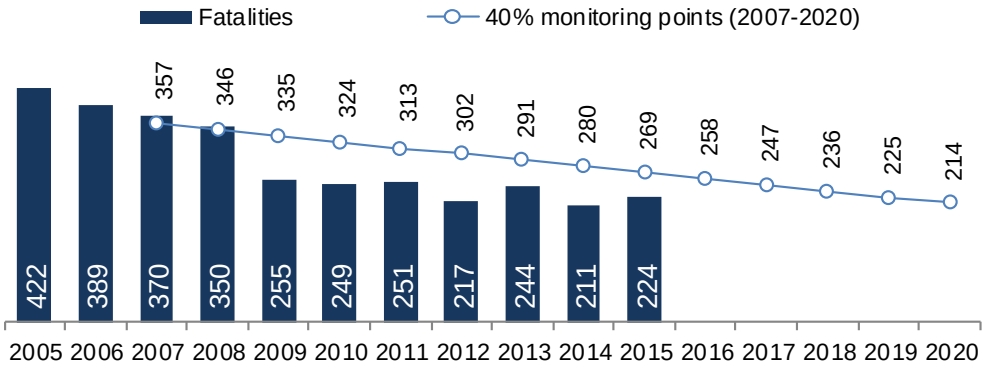
This section provides an assessment of the casualties on the SRN including an analysis of historic and future trends, casualty types and assessment of the drivers and riders including the human factors involved in collisions.

3.3.1. Casualty severity trends

This section identifies underlying trends in the number of casualties occurring each year by severity between 2005 and 2015.

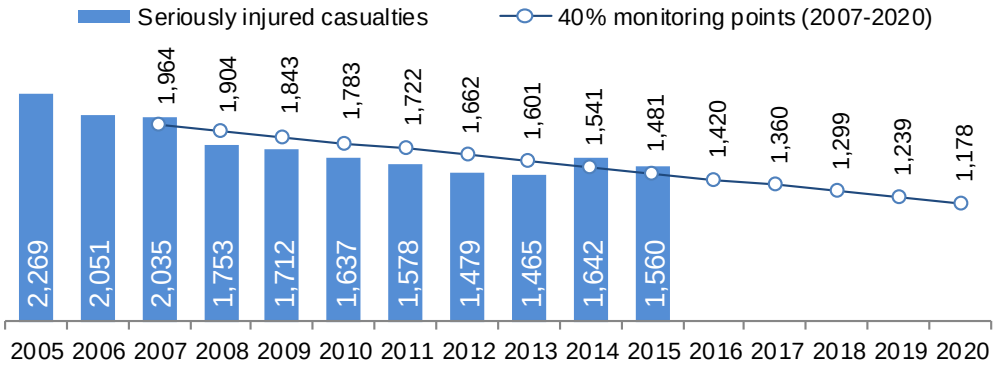
Fatalities

6.2 per cent from 2014



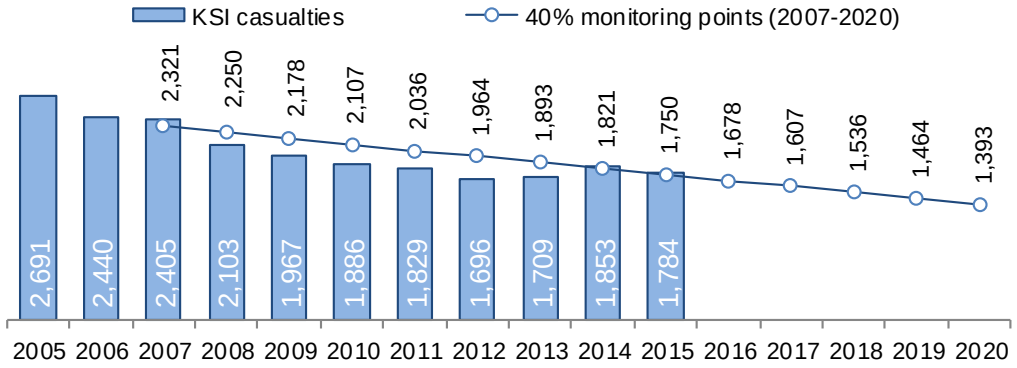
Seriously injured

5.0 per cent from 2014



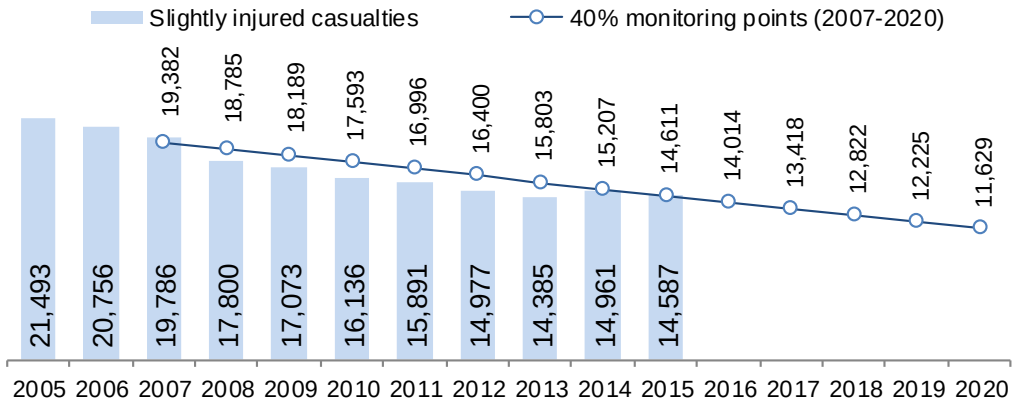
KSI

3.7 per cent from 2014



Slightly injured

2.5 per cent from 2014



Total casualties

2.6 per cent from 2014

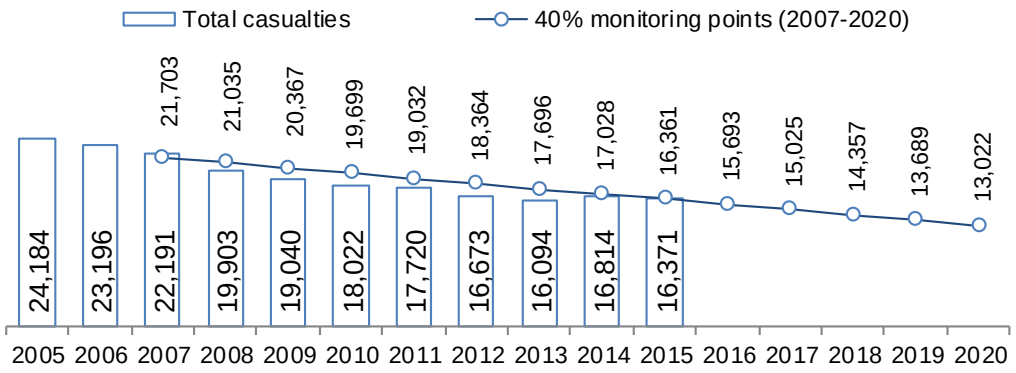


Figure 3-11 Casualty trends by severity

Figure 3-11 provides an outline of historic casualty trends for fatalities, seriously injured casualties, KSI casualties, slightly injured casualties and total casualties between 2005 and 2015. It also provides the 40% monitoring points from 2007 to 2020.

Summarising Figure 3-11, the largest percentage change between severities since 2014 was the fatalities. The number of fatalities increased by 6.2 per cent (from 211 to 224); compared to a decrease of 5.0 per cent for seriously injured casualties (from 1,642 to 1,560) and 3.7 per cent for KSI casualties (from 1,853 to 1,784).

Figure 3-12 indexes all severities against a base value of 100.0 in order to directly compare changes in casualty numbers across severities by year. The base value is equivalent to the baseline average (2005-2009).

As shown by Figure 3-12, the change in total casualties over time has been relatively steady and decreased on average by 3.6 index points per annum. The increase in the total number of casualties between 2013 and 2014 is the first increase since at least 2005. The fatalities profile plateaued at approximately 70.0 index points between 2009 and 2011 after which it fluctuated between approximately 60.0 and 70.0 index points. In 2015, fatalities increased from that of 2014 while KSI casualties and total casualties decreased.

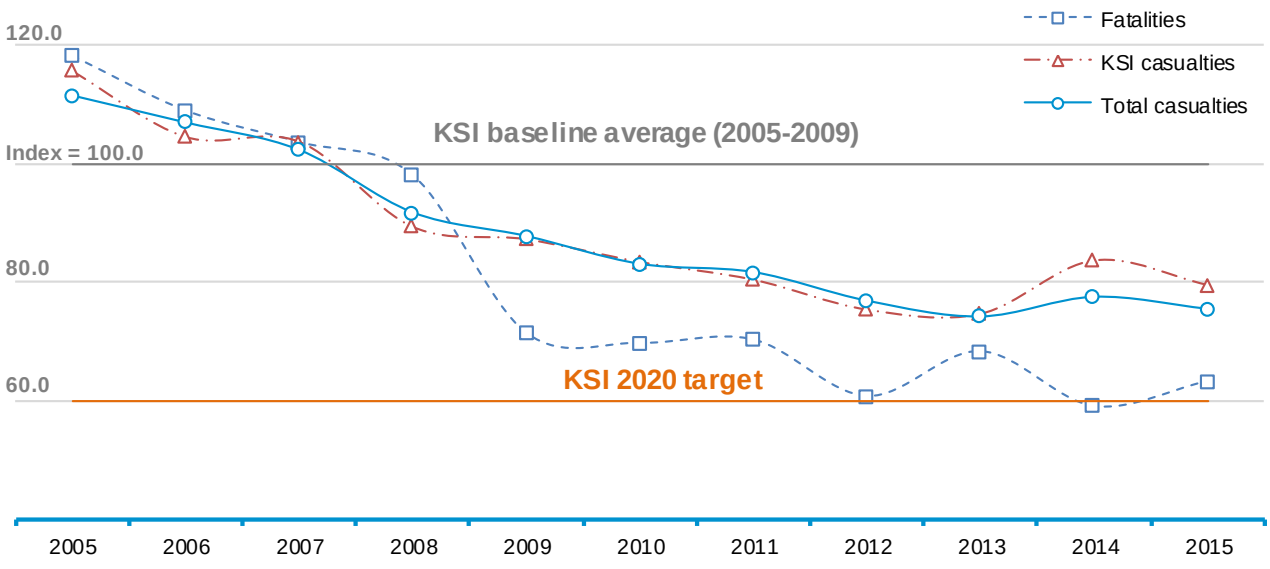


Figure 3-12 Index of changes in casualties by severity

3.3.2.Casualty by type and age

This section provides an overview of casualty types and ages involved in collisions on the SRN. Figure 3-13 illustrates all 224 fatalities in 2015 by casualty type, gender and age.

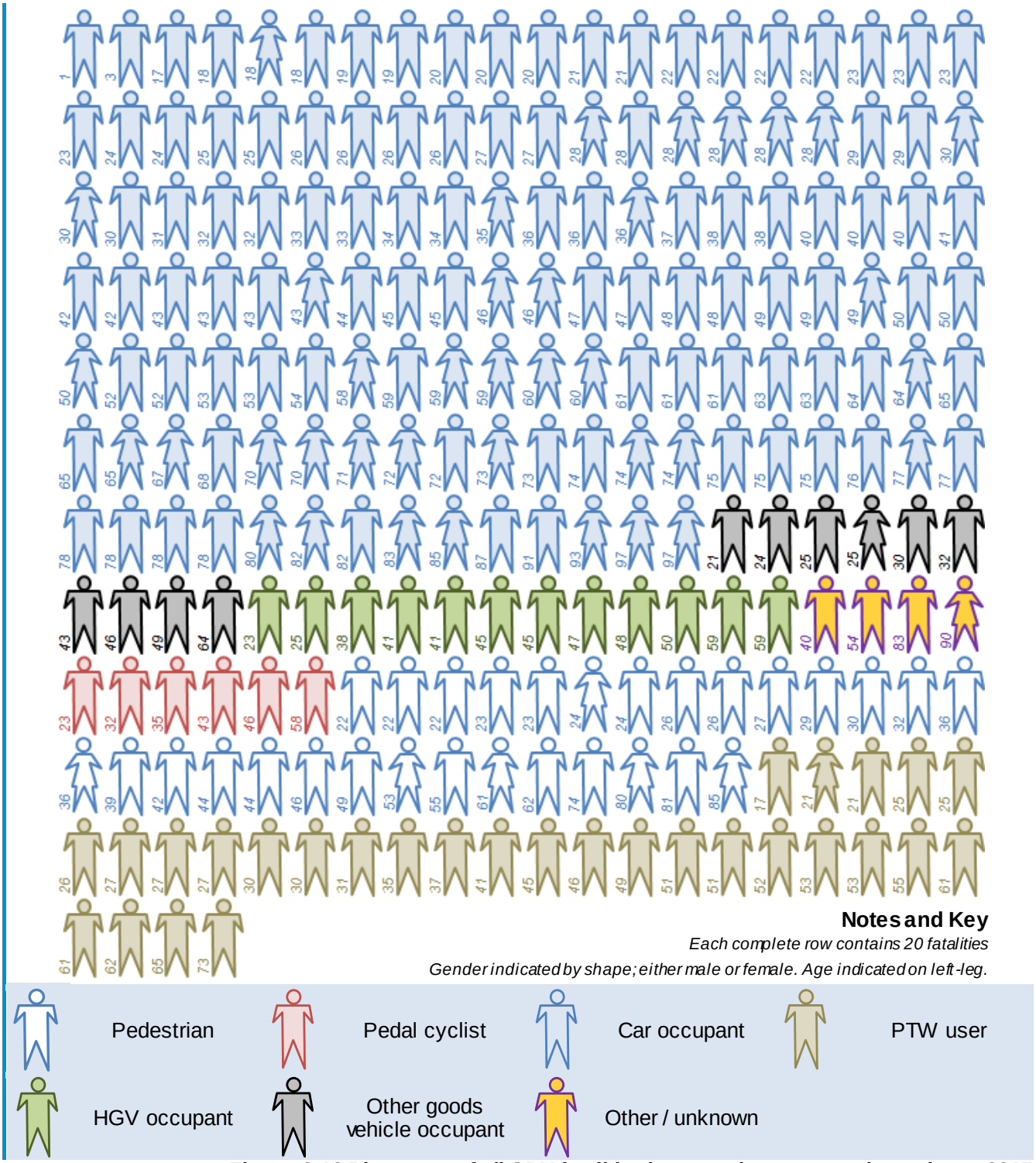


Figure 3-13 Pictogram of all SRN fatalities by casualty type, gender and age, 2015

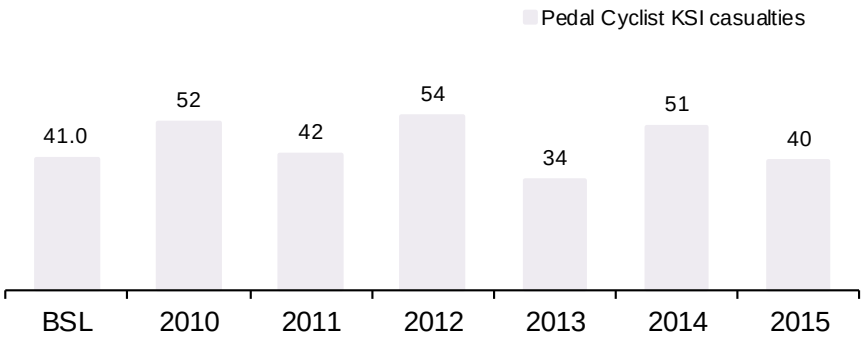
Figure 3-13 shows that road users of all ages were killed on the SRN in 2015; including a one year old who was a car occupant. No bus / coach occupants or horse riders were killed on the SRN in 2015.

Further data on casualty type including trends are provided in Appendix Table C-3. It shows that decreases in fatalities from 2014 to 2015 occurred in pedestrians (by 29.3 per cent from 41 to 29) and goods vehicle occupants (by 9.1 per cent from 11 to 10). In contrast, pedal cyclists increased from 2014 to 2015 by 50.0 per cent, HGVs by 20.0 per cent and car occupants by 16.5 per cent.

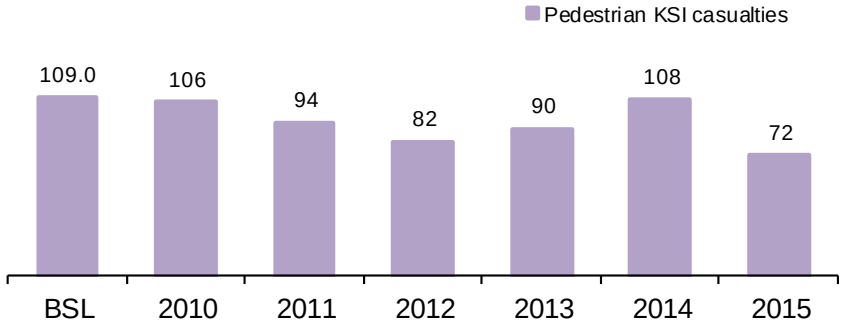
Similarly, the casualty age groups are provided in Appendix Table C-6. It highlights a relatively large decrease in child fatalities (by 66.7 per cent) from 6 in 2014 to 2 in 2015. This makes 2015 the safest year since at least 2005 (in terms of child fatalities) along with 2011 (which also had 2 fatalities). The data indicates that the greatest increase in fatalities from 2014 to 2015 is in the Elderly (ages 70 years or over); 42.3 per cent to 37 in 2015. This increase brings the Elderly back to a value comparable to that of 2012 (34) and 2013 (36) following the lower value of 26 in 2014.

Changes in casualty types and ages between 2010 and 2015 for KSI casualties are shown below in Figure 3-14 and Figure 3-15, and Figure 3-16.

Pedal cyclists
40 KSI casualties
21.6 per cent from 51 in 2014



Pedestrians
72 KSI casualties
33.3 per cent from 108 in 2014



PTW users
318 KSI casualties
7.8 per cent from 345 in 2014

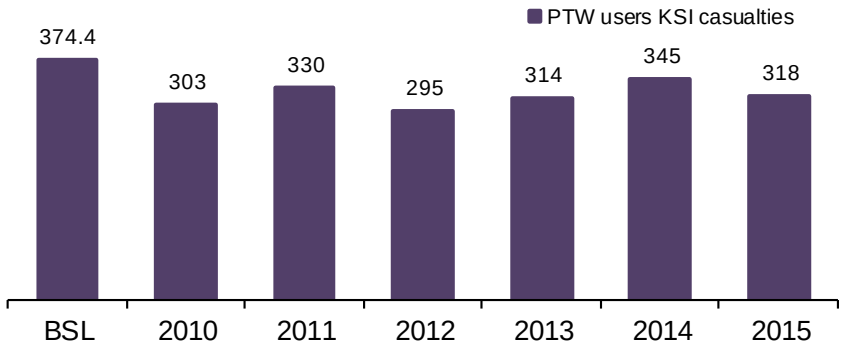
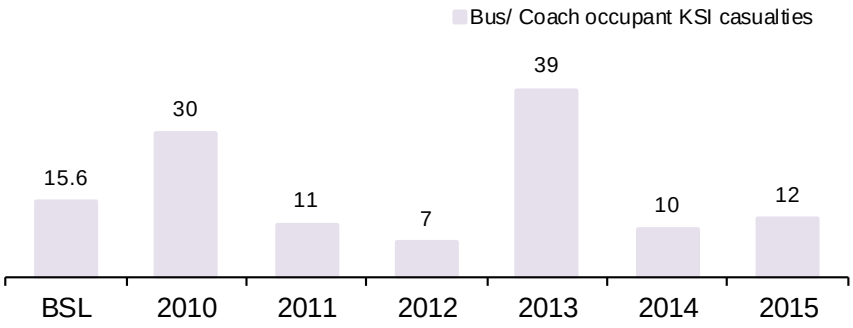


Figure 3-14 Vulnerable user KSI casualties by type

Bus/ Coach occupants

12 KSI casualties

20.0 per cent from 10 in 2014



Car occupants

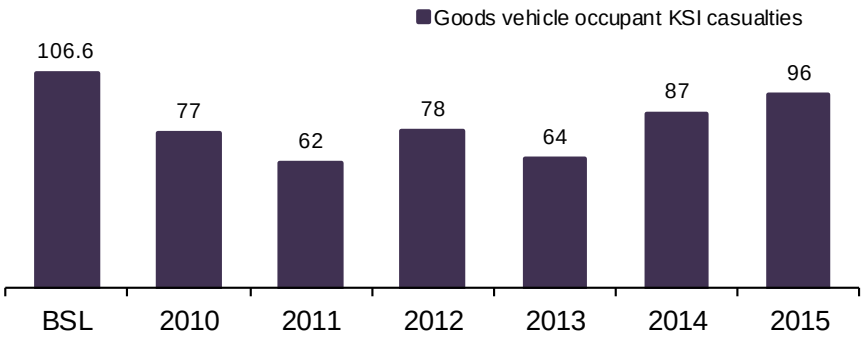
1,156 KSI casualties

0.3 per cent from 1,159 in 2014

Goods vehicle occupants

96 KSI casualties

10.3 per cent from 87 in 2014



HGV occupants

81 KSI casualties

1.2 per cent from 82 in 2014

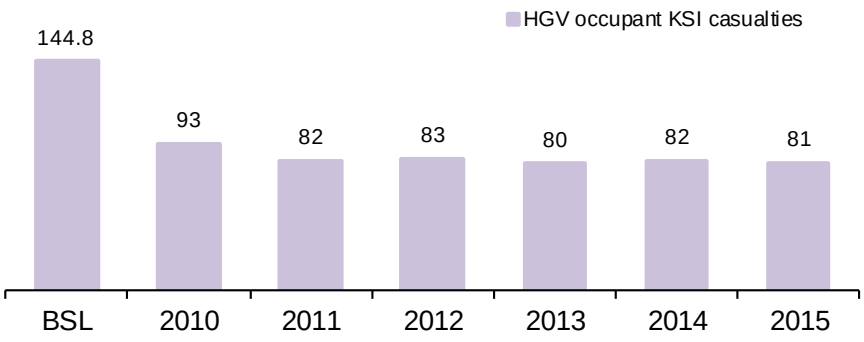
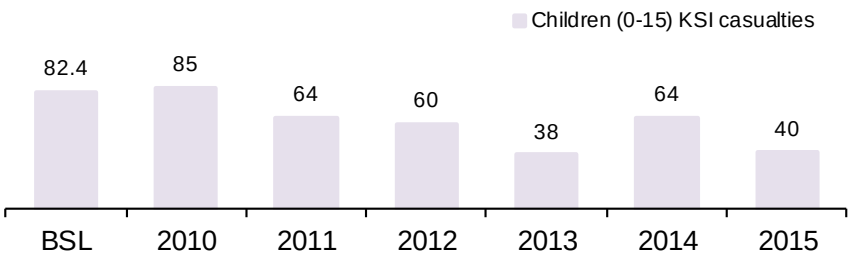
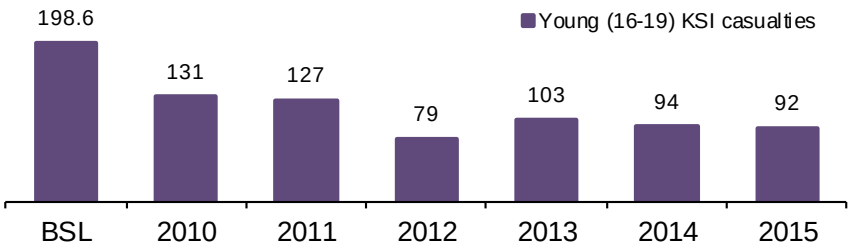


Figure 3-15 Non-vulnerable user KSI casualties by type

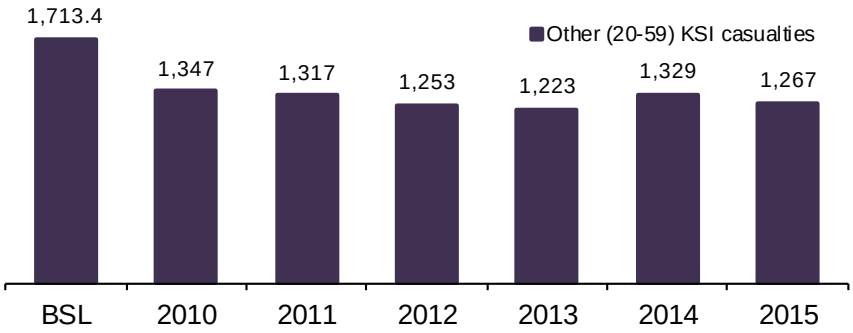
Children (0-15)
40 KSI casualties
37.5 per cent from 64 in 2014



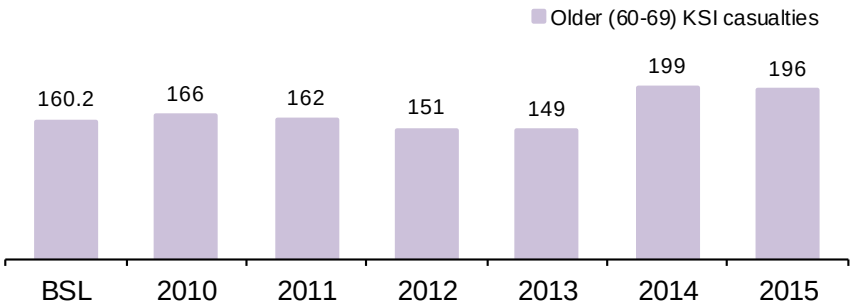
Young (16-19)
92 KSI casualties
2.1 per cent from 94 in 2014



Other (20-59)
1,267 KSI casualties
4.7 per cent from 1,329 in 2014



Older (60-69)
196 KSI casualties
1.5 per cent from 199 in 2014



Elderly (70+)
174 KSI casualties
9.4 per cent from 159 in 2014

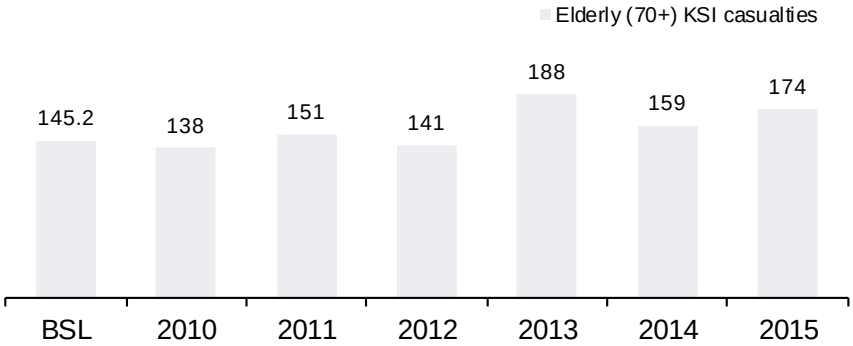


Figure 3-16 KSI casualties by age group

Figure 3-16 shows that KSI casualties in younger age groups have decreased significantly compared to the 2005-09 baseline average with young (16-19) group showing the greatest decrease (53.7 per cent). In contrast, the older groups show an increase in KSI casualties compared to the baseline with the largest increase observed in older (60-69) group; a 22.3 per cent increase.

Analysing changes in casualty type (linked to age) as provided in Appendix Table I-19 shows that KSI casualties in young motorists (17-24) have decreased by 28.8 per cent and young riders (16-19) by 42.6 per cent compared to the 2005-09 baseline average. In contrast, older motorist (60-69), elderly motorist (70+) and older rider (60-69) KSI casualties have increased by 5.9, 20.9 and 111.3 per cent against the baseline. Only the elderly motorist (70+) and older rider (60-69) KSI casualties showed and increase against both the baseline and 2014.

3.3.3. Casualties where human factors contributed

Human factors remain the largest single cause of killed and seriously injured casualties on the SRN. In 2015, there were 1,444 KSI casualties involving at least one human factor representing 80.9 per cent of total KSI casualties.

Figure 3-17 is an assessment of the contributing human factors which result in KSI casualties on the SRN. These human factors broadly fall into 4 categories of contributory factors:

- Driver/rider error or reaction
- Impairment or distraction
- Injudicious action
- Behaviour or inexperience

The contributory factors within these groupings are provided in the table below[9]

Driver/Rider error or reaction	
Junction overshoot	Failed to judge other person's path or speed
Junction restart (moving off at junction)	Too close to cyclist, horse rider or pedestrian
Poor turn or manoeuvre	Sudden braking
Failed to signal or misleading signal	Swerved
Failed to look properly	Loss of control
Impairment or distraction	
Impaired by alcohol	Not displaying lights at night or in poor visibility
Impaired by drugs (illicit or medicinal)	Rider wearing dark clothing
Fatigue	Driver using mobile phone
Uncorrected, defective eyesight	Distraction in vehicle
Illness or disability, mental or physical	Distraction outside vehicle
Injudicious action	
Disobeyed automatic traffic signal	Exceeding speed limit
Disobeyed 'Give Way' or 'Stop' sign or markings	Travelling too fast for conditions
Disobeyed double white lines	Following too close
Disobeyed pedestrian crossing facility	Vehicle travelling along pavement
Illegal turn or direction of travel	Cyclist entering road from pavement
Behaviour or inexperience	
Aggressive driving	Learner or inexperienced driver/rider
Careless, reckless or in a hurry	Inexperience of driving on the left
Nervous, uncertain or panic	Unfamiliar with model of vehicle
Driving too slow for conditions or slow veh (e.g. tractor)	

[9] Full listing of contributory factors of all groupings is provided in Appendix Table F-1.

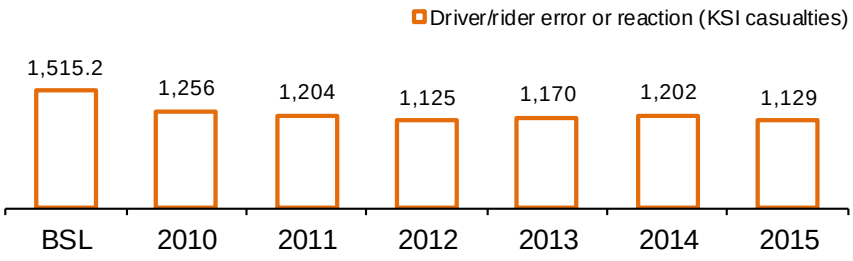
1,444 KSI casualties where human factors were attributed

80.9 per cent of the 1,784 KSI casualties in 2015

Driver/Rider error or reaction

1,129 KSI casualties

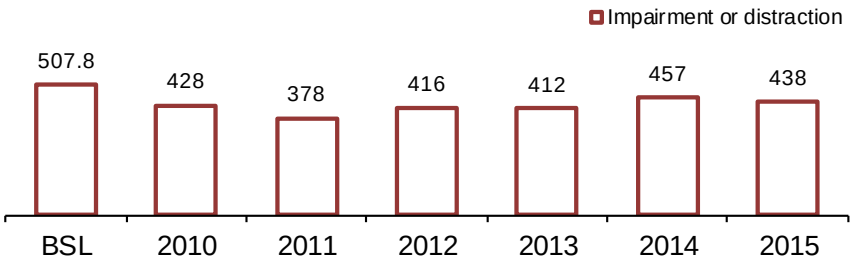
6.1 per cent from 1,202 in 2014



Impairment or distraction

438 KSI casualties

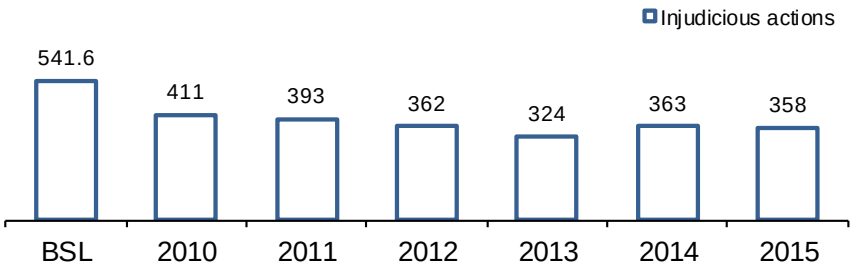
4.2 per cent from 457 in 2014



Injudicious actions

358 KSI casualties

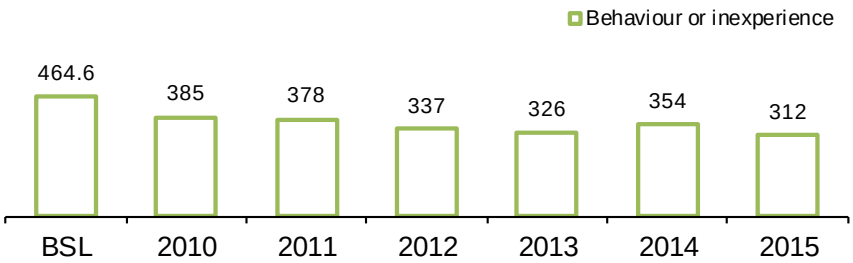
1.4 per cent from 363 in 2014



Behaviour or inexperience

312 KSI casualties

11.9 per cent from 354 in 2014



Note:

(a) Figures show the number of KSI casualties involving at least one contributory factor from the relevant group. The listing of each group is provided in previous page.

Figure 3-17 KSI casualties involving human contributory factors by group and year

In 2015, Figure 3-17 shows that KSI casualties involving at least one of the human factors above have decreased with behaviour or inexperience factor witnessing the greatest decrease by 11.9 from 2014.

Investigating the impairment or distraction human factor category further, Figure 3-18 details the number of KSI casualties involving at least one driver using a mobile phone. From the figure it can be seen that since 2011, the number of KSI casualties has increased by 33.3 per cent from 15 in 2011 to 20 in both 2014 and 2015, despite increased awareness and legislation.

Driver using mobile phone
20 KSI casualties
No change from 2014

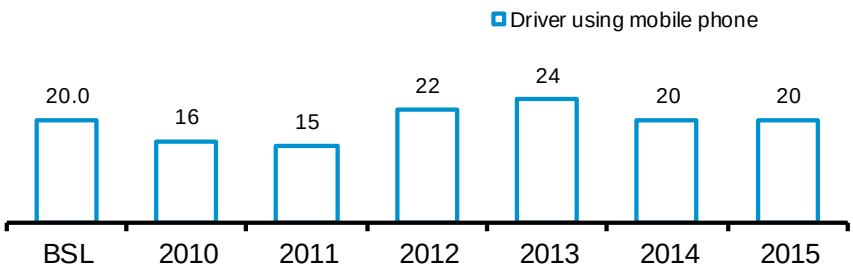


Figure 3-18 KSI casualties involving mobile phones by year

Finally, Table 3-1 highlights the top 20 human contributory factors by severity for 2015 (ranked by KSI casualties). The top 3 contributory factors involved in KSI casualties were all driver/rider error or reaction. This category features heavily in all collisions as stated previously.

From the table, it is evident that the impairment or distraction human factor category also remains a major issue. Individual factors such as fatigue, distraction in vehicle, illness or disability, mental or physical, and impaired by alcohol contributed to 145, 120, 111 and 95 KSI casualties respectively in 2015.

Table 3-1 Top 20 human contributory factors by severity, 2015r

Rank		Contributory factor	KSI	Killed	Seriously injured	Slightly injured	Total casualties
1	405	Failed to look properly	523	57	466	4,916	5,439
2	406	Failed to judge other person's path or speed	368	40	328	4,394	4,762
3	410	Loss of control	353	48	305	1,754	2,107
4	403	Poor turn or manoeuvre	223	20	203	1,407	1,630
5	602	Careless, reckless or in a hurry	222	28	194	1,542	1,764
6	503	Fatigue	145	25	120	559	704
7	307	Travelling too fast for conditions	136	14	122	1,129	1,265
8	408	Sudden braking	127	6	121	1,620	1,747
9	509	Distraction in vehicle	120	25	95	625	745
10	409	Swerved	118	11	107	771	889
11	308	Following too close	114	9	105	1,974	2,088
12	505	Illness or disability, mental or physical	111	19	92	284	395
13	306	Exceeding speed limit	105	27	78	388	493
14	501	Impaired by alcohol	95	16	79	348	443
15	601	Aggressive driving	56	10	46	228	284
16	502	Impaired by drugs (illicit or medicinal)	40	9	31	75	115
17	605	Learner or inexperienced driver/rider	36	5	31	342	378
18	510	Distraction outside vehicle	32	7	25	227	259
19	603	Nervous, uncertain or panic	30	2	28	229	259
20	302	Disobeyed 'Give Way' or 'Stop' sign or markings	22	3	19	75	97

Key (CF groups):

Driver/Rider error or reaction | Impairment or distraction | Injudicious action | Behaviour or inexperience

Notes:

(a) Table reports number of casualties.
(b) Table ranked by KSI casualties.
(c) As more than one contributory factor can be recorded per collision; columns will not sum to their respective totals.

Table 3-2 is an adaptation of the 'Fatal Four' driving offences:

- Speeding (CFs 306 and 307)
- Improper use of restraints (Casualty code "Seat belt in use – not used")
- Distractions in vehicle (including use of mobile phone) (CFs 508, 509 and 510)
- Impaired by drink and drugs (CFs 501 and 502)

It can be seen from Table 3-2 that the number of fatalities and seriously injured casualties involving distraction increased in 2015 with KSI casualties increasing by 19.3% from 2014. The Table 3-2 also indicates that fatalities across all four categories increased to that in 2014.

Due to the recording of the use of seatbelts not being mandatory this category potentially shows the minimum number of casualties by severity. In terms of casualties, Table 3-2 shows that in 2015 a minimum of 160 casualties were linked to improper use of or no restraints.

Table 3-2 Casualties involving speeding, restraints, distractions and drink/drugs, 2015

Category/ Severity	Speeding	Restraints[(a)]	Distractions	Drink/Drugs
Fatalities	**35** ↑ 12.9%	**13** ↑ –	**26** ↑ 30.0%	**22** ↑ 46.7%
Seriously injured	**176** ↓ 15.0%	**36** ↓ 44.6%	**104** ↑ 16.9%	**98** ↓ 10.9%
KSI	**211** ↓ 11.3%	**49** ↓ 34.7%	**130** ↑ 19.3%	**120** ↓ 4.0%
Slightly injured	**1,435** ↑ 4.0%	**111** ↓ 73.4%	**664** ↓ 2.4%	**408** ↑ 4.1%
Total	**1,646** ↑ 1.7%	**160** ↓ 67.5%	**794** ↑ 0.6%	**528** ↑ 2.1%

Notes:
(a) The recording of seatbelts is only required in STATS19 for fatalities who are occupants of vehicles in which the wearing of a seatbelt is mandatory. However police forces can choose to collect this data for all casualty severities-and hence any large variation in 'Restraints' is likely to come from the increase or decrease of the recording by police forces.
(b) Percentages represent the per cent change of 2015 values from 2014 values; percentages are only shown where the base is 15 or more.

4. Collisions

4.1. Roads

This section provides an overview of personal injury collisions (PICs - but for the purpose of this document and the accompanying Appendices generally termed as 'collision') linked to road classification by severity, year (including BSL) and rates (i.e. number of collisions per HMVM). The rates discussed in this section provide an indication of the likelihood of getting involved in a collision.

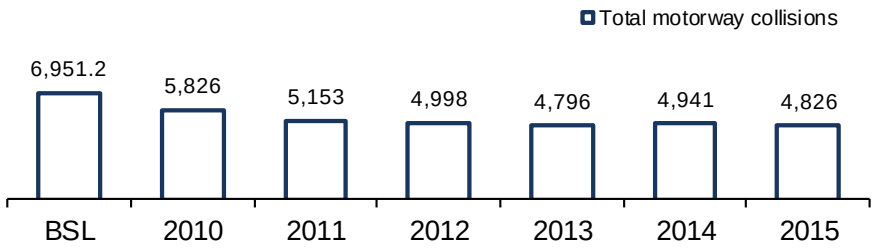
Figure 4-1 to Figure 4-5 illustrate the collision distribution on motorway, A-road dual carriageway and A-road single carriageway in terms of the number and rate. Comparison of road classifications in the figures shows that for 2015:

- The largest proportion of fatal and serious collisions (40.7 per cent) and total collisions (46.9 per cent) occurred on motorways
- The most fatal collisions (82 out of 202) occurred on motorways
- The likelihood of getting involved in a collision on motorways was however the lowest of all three road classifications across all severities of collision
- The likelihood of getting involved in a collision on A-road single carriageways was the highest of all three road classifications across all severities of collision, followed by A-road dual carriageways

Note: Figure 4-1 depicts the ratio (based on collision rate) between the likelihood of a collision occurring on a motorway, dual carriageway or single carriageway relative to the motorway (i.e. motorway is set to "1.0").

4.1.1. Collisions and likelihood of injury by road classification and severity

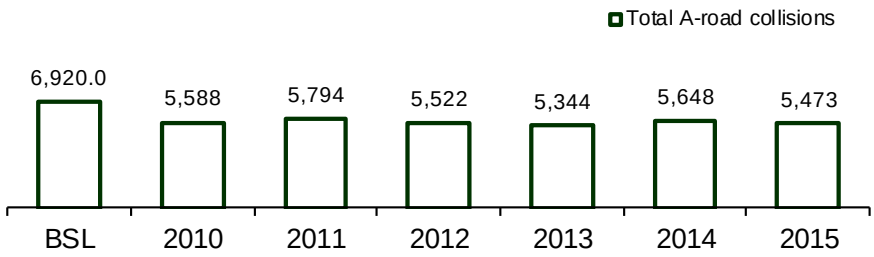
Motorway



Likelihood of collision ratio 2015[10]

Fatal collisions	Fatal + Serious collisions	Total collisions
1.0	1.0	1.0

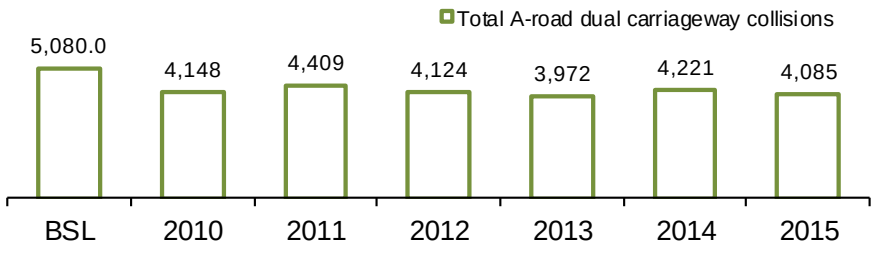
A-road



Likelihood of collision ratio 2015

Fatal collisions	Fatal + Serious collisions	Total collisions
2.7	2.7	2.1

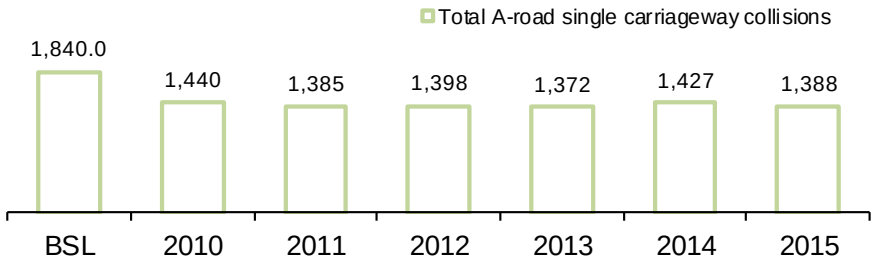
A-road dual carriageway



Likelihood of collision ratio 2015

Fatal collisions	Fatal + Serious collisions	Total collisions
2.1	2.2	2.0

A-road single carriageway



Likelihood of collision ratio 2015

Fatal collisions	Fatal + Serious collisions	Total collisions
5.3	4.9	2.9

Figure 4-1 Collisions by road classification and likelihood of collision by road classification and severity

[10] Likelihood of collision ratio is the ratio between collision rates; with motorway set to an arbitrary "1.0".

4.1.2.Motorway collisions and rates by severity

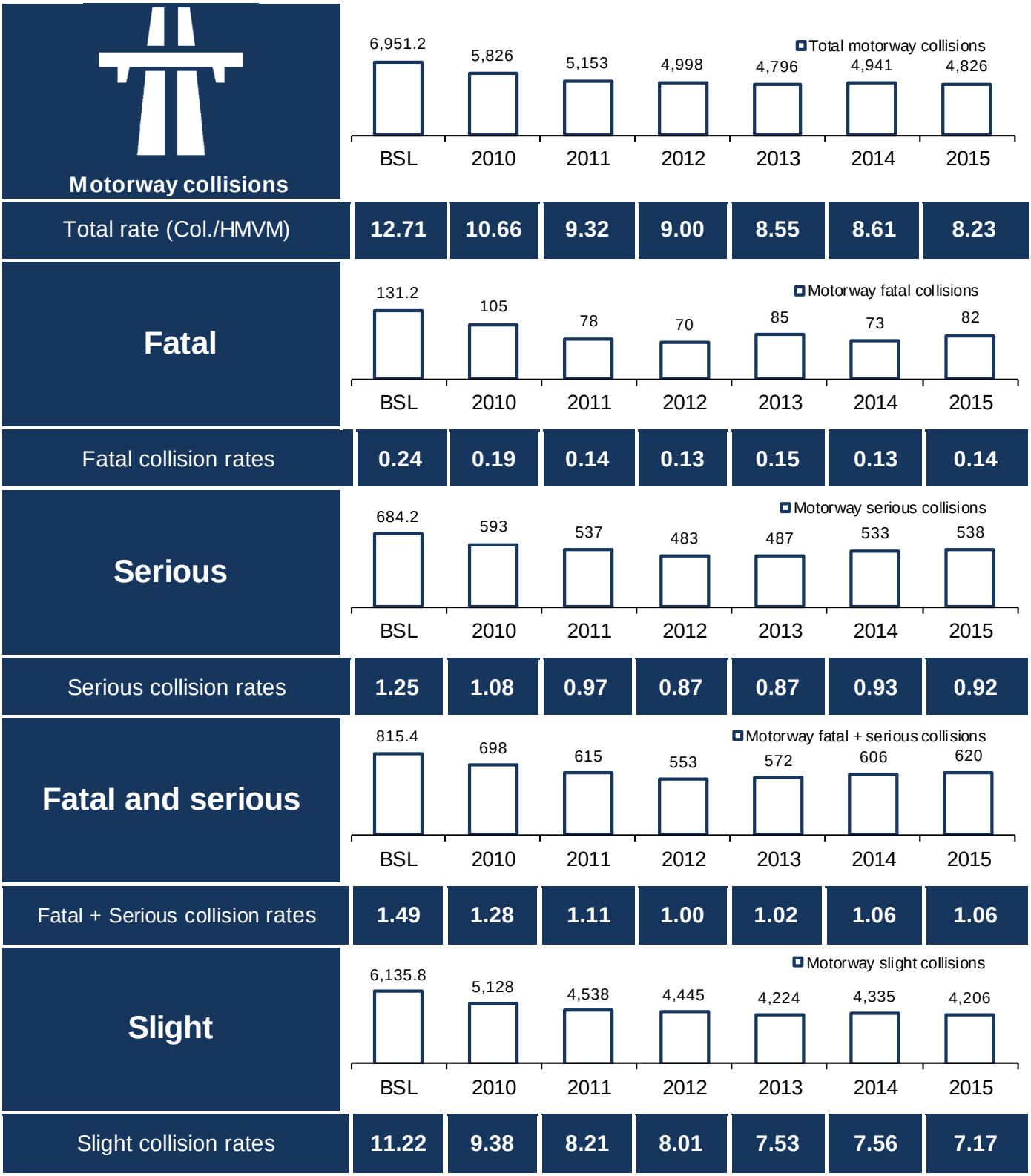
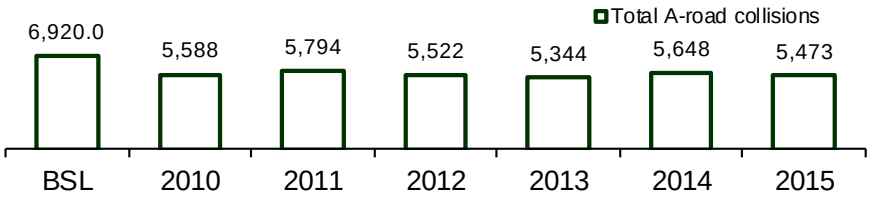
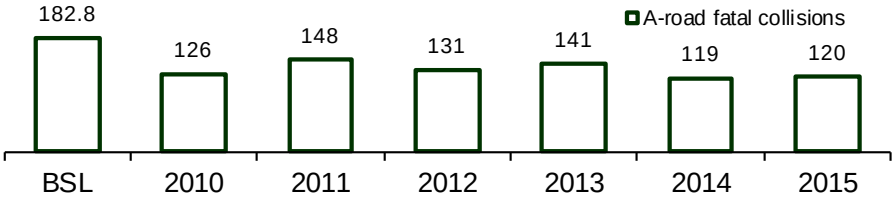


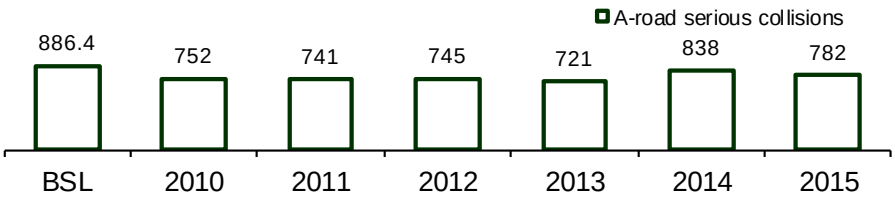
Figure 4-2 Motorway collisions and rates by severity

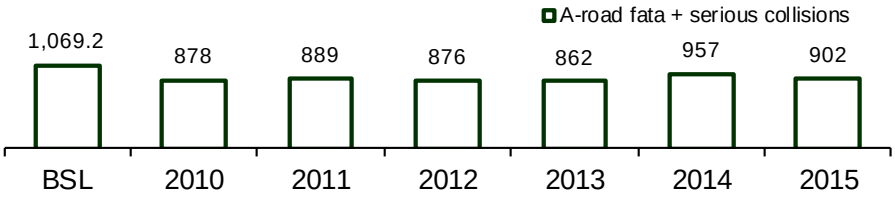
4.1.3.A-road collisions and rates by severity

A-road Collisions	BSL	2010	2011	2012	2013	2014	2015
Total rate (Col./HMVM)	24.07	19.40	19.79	18.83	18.14	18.77	17.49
Fatal							
Fatal collision rates	0.64	0.44	0.51	0.45	0.48	0.40	0.38
Serious							
Serious collision rates	3.08	2.61	2.53	2.54	2.45	2.78	2.50
Fatal and serious							
Fatal + Serious collision rates	3.72	3.05	3.04	2.99	2.93	3.18	2.88
Slight							
Slight collision rates	20.35	16.35	16.76	15.85	15.22	15.59	14.61









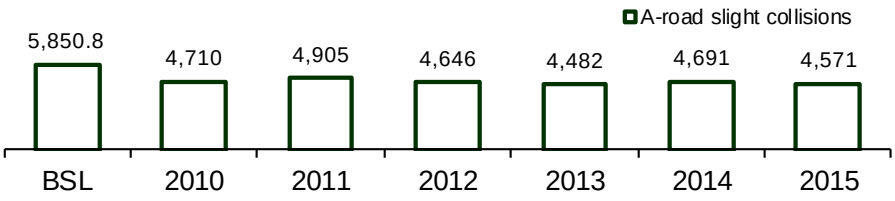


Figure 4-3 A-road collisions and rates by severity

4.1.4.A-road dual carriageway collisions and rates by severity

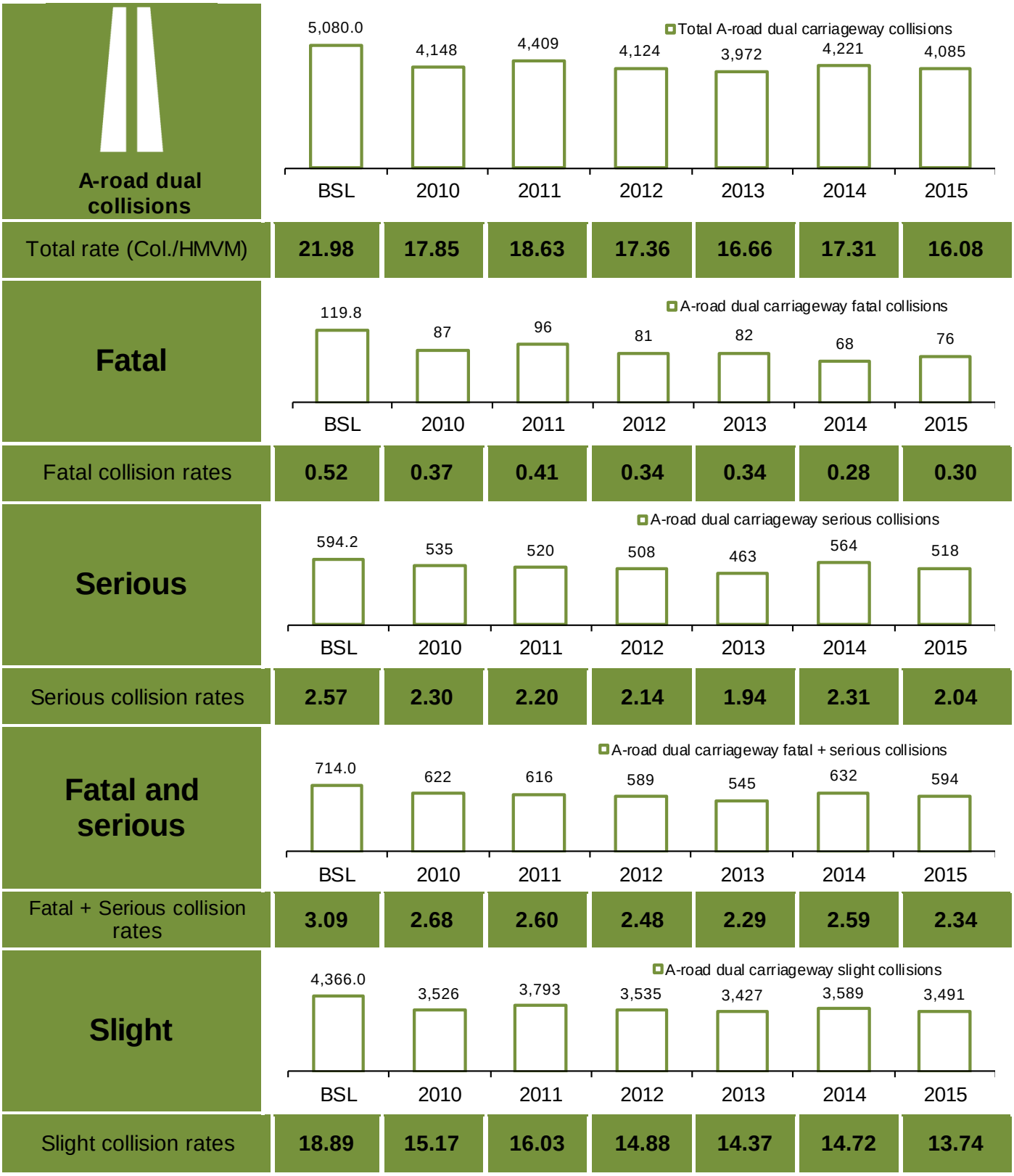
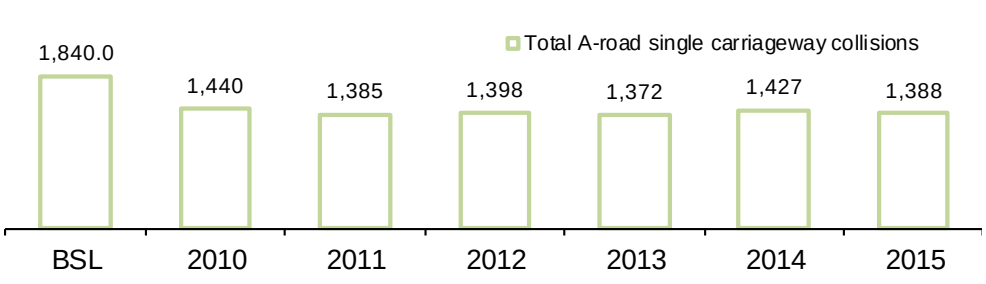
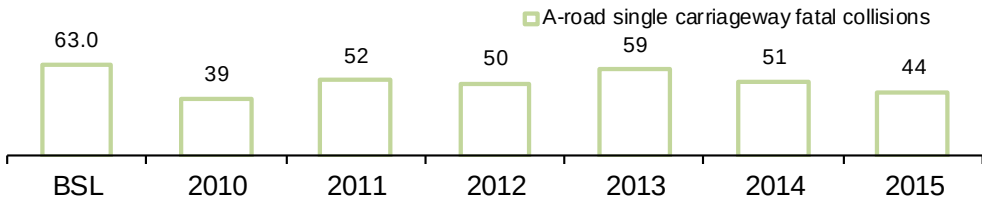


Figure 4-4 A-road dual carriageway collisions and rates by severity

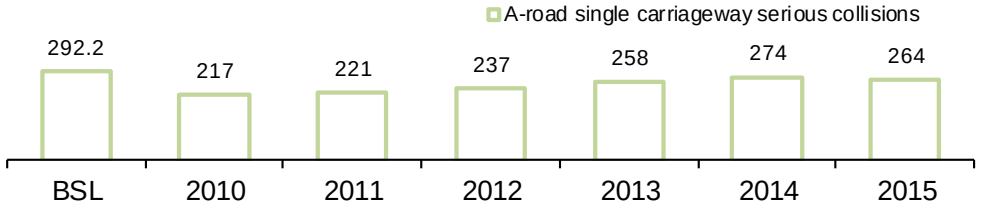
4.1.5.A-road single carriageway collisions and rates by severity



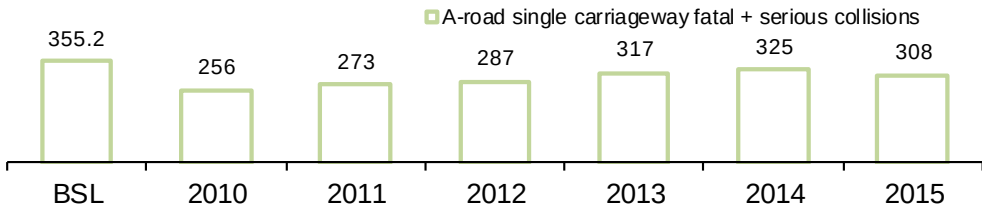
A-road single collisions	BSL	2010	2011	2012	2013	2014	2015
Total rate (Col./HMVM)	**32.67**	**25.84**	**24.71**	**25.11**	**24.44**	**24.99**	**23.56**



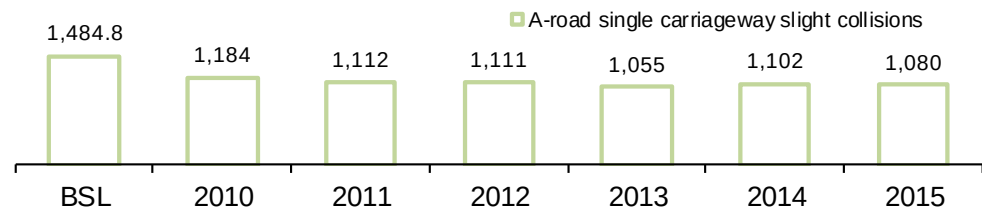
Fatal	BSL	2010	2011	2012	2013	2014	2015
Fatal collision rates	**1.12**	**0.70**	**0.93**	**0.90**	**1.05**	**0.89**	**0.75**



Serious	BSL	2010	2011	2012	2013	2014	2015
Serious collision rates	**5.19**	**3.89**	**3.94**	**4.26**	**4.60**	**4.80**	**4.48**



Fatal and serious	BSL	2010	2011	2012	2013	2014	2015
Fatal + Serious collision rates	**6.31**	**4.59**	**4.87**	**5.15**	**5.65**	**5.69**	**5.23**



Slight	BSL	2010	2011	2012	2013	2014	2015
Slight collision rates	**26.36**	**21.25**	**19.84**	**19.95**	**18.80**	**19.30**	**18.33**

Figure 4-5 A-road single carriageway collisions and rates by severity

4.1.6. Collisions involving road environment

This section evaluates the number of collisions where the road environment is categorised as a contributory factor. Assessment of these factors gives an indication of how the SRN could be enhanced to mitigate further collisions where the road is a contributing factor.

In 2015, the number of fatal and serious collisions involving road environment factors was 141 and was equivalent to 9.3 per cent of the respective total fatal and serious collisions of 1,522 (10.2 per cent in 2014). This is an 11.3 per cent decrease from the 159 in 2014.

Figure 4-6 outlines the number of fatal and serious collisions involving at least one factor associated with the road environment between 2010 and 2015. The diagram depicting the split by road classification shows the 2005 to 2015 trend in fatal and serious collisions involving road environment factors fluctuates somewhat across all road classifications especially the motorways. The fluctuation is lower than observed for casualties.

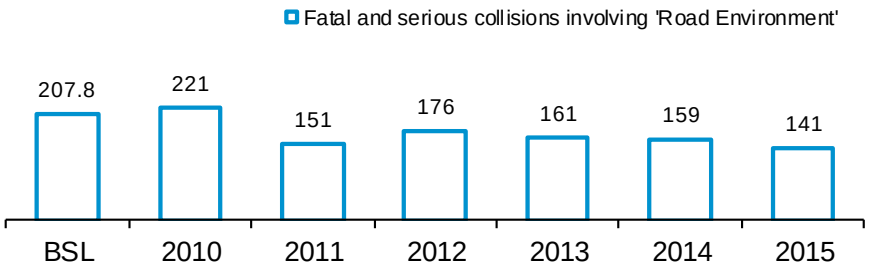
The primary contributory factor for road environment was “Slippery road (due to weather)" which contributed to 90 fatal and serious collisions in 2015. This was still a 14.3 per cent decrease from 2014.

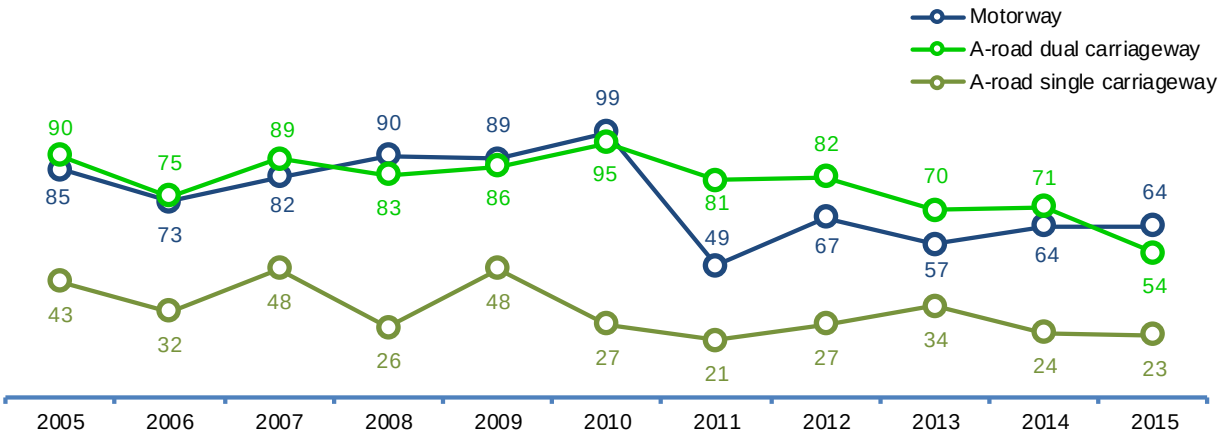
An analysis of the number of collisions involving a poor or defective road surface on the SRN is also provided in Figure 4-6. This provides context on the potential collisions from defects in surfacing. From 2008 to 2011, England experienced a number of harsh winters, with December 2010 being one of the coldest on record[11]. As a result, the occurrence of surface defects during and after this period became a significant concern for all stakeholders.

The graph in Figure 4-6 depicting the trend of collisions involving poor or defective road surfacing shows that the number of collisions peaked in 2012; a 20.0 per cent increase from 35 in 2011 to 42 in 2012, followed by a 28.6 per cent decrease in 2013. This decrease in related collisions continued through to 2015 to yield the lowest number (24) since at least 2010 (38.1 per cent decrease from the baseline).

[11] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/4002/potholes-review-progress-report.pdf

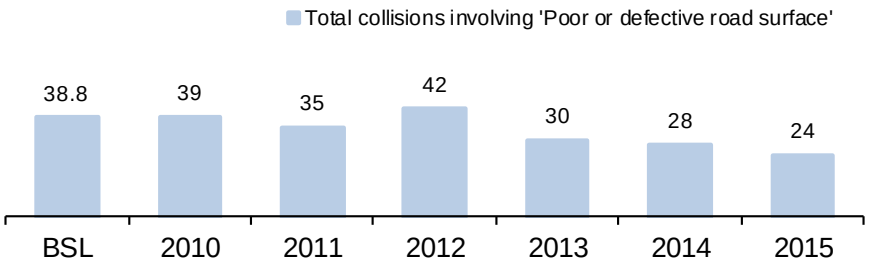
Road environment contributed to 141 fatal and serious collisions in 2015
11.3% on 2014





45.4% of fatal and serious collisions where the road environment contributed occurred on motorways

24 collisions involved 'Poor or defective road surface' in 2015
14.3% on 2014



90 fatal and serious collisions involving slippery road in 2015
14.3% on 2014

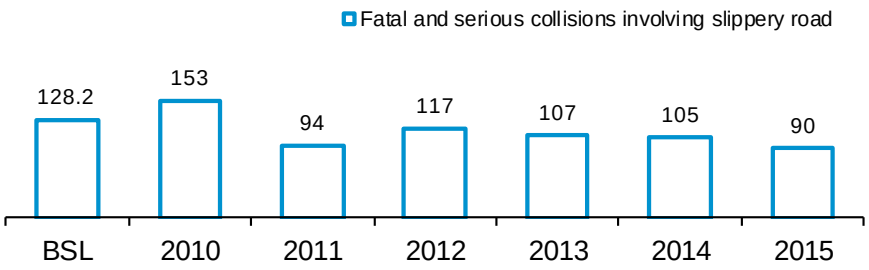


Figure 4-6 Summary of collisions where road environment contributed

4.2. Vehicles

This section briefly assesses the potential impact vehicles had towards collisions that occurred on the SRN. It focuses on providing an overview of collisions based on the first point of vehicle impact, differing vehicle interactions and where vehicle defects contributed to the collision.

4.2.1. Collisions by First Point of Impact

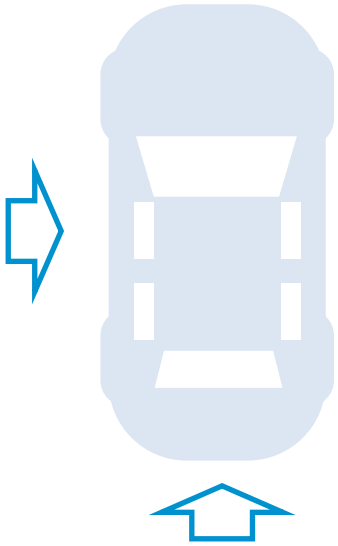
Figure 4-7 provides a breakdown of the number of fatal and serious collisions by first point of vehicle impact. Note: The analysis excludes pedestrians.

Fatal and serious collisions where the first point of vehicle impact was front (1,177) made up 46.1 per cent of fatal and serious collisions in 2015. The corresponding fatal and serious collision severity ratio (this is the percentage of fatal and serious collisions to total collisions for each individual category) was 14.6 per cent. It can also be seen that, although in the similar ball-park, the offside was slightly higher than the nearside impacts in terms of the number of fatal and serious collisions and severity ratios.

First point of impact:

1,177 fatal and serious collisions
14.6% of the 8,079 front collisions

295 fatal and serious collisions
14.2% of the 2,076 nearside collisions



350 fatal and serious collisions
14.8% of the 2,362 offside collisions

570 fatal and serious collisions
10.7% of the 5,344 back collisions

161 fatal and serious collisions had no recorded first point of impact

Note: Pedestrians excluded from analysis

Figure 4-7 Collisions by first point of impact

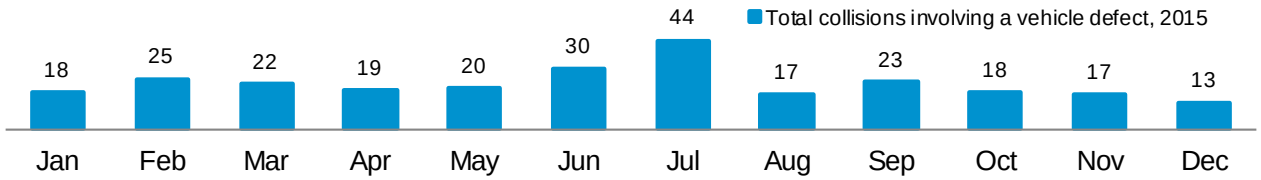
4.2.2. Collisions involving vehicle defects

This section evaluates the number of collisions where at least one vehicle within a collision had a defect which was a contributory factor. As shown previously in Figure 2-3, it is apparent that the economic situation is recovering and hence this section also assesses the corresponding historic trends in vehicle defects.

Figure 4-8 provides a summary of collisions involving vehicle defects dissected in various ways including specific factors classed as vehicle defects and their overall impact on fatal and serious collisions 2015. The trend over time of total collisions and to some extent the fatal and serious collisions indicate that collisions involving defective vehicles are on the decline. Total collisions have decreased by 40.3 per cent to 266 in 2015 compared to the baseline of 445.2. In comparison, overall collisions on the SRN decreased by only 25.8 per cent from the baseline value of 13,871.2 to 10,299 in 2015.

When considering the specific factors classed as vehicle defects, the most common for 2015 is tyres illegal, defective or under inflated, this contributed to 28 (50.0 per cent of) fatal and serious collisions involving a vehicle defect.

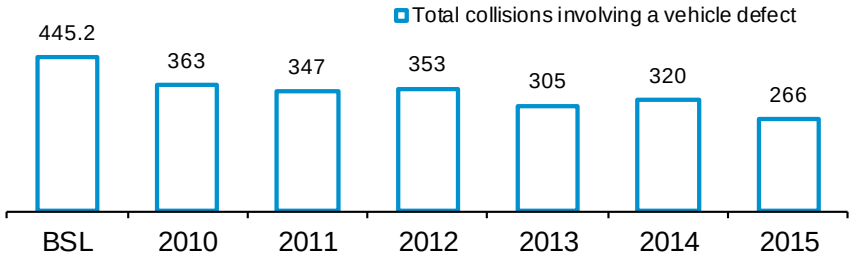
266 collisions involved a vehicle defect in 2015



44 collisions involved a vehicle defect in July 2015

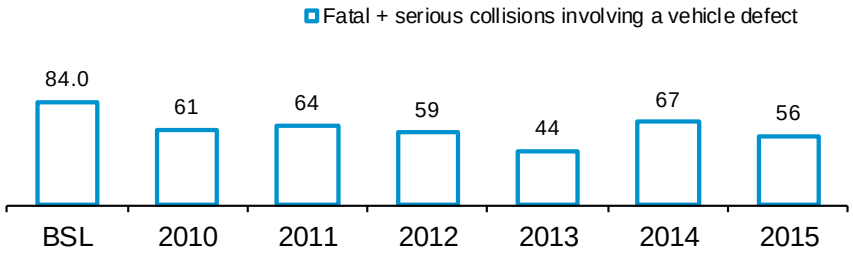
Total collisions

16.9% from 2014

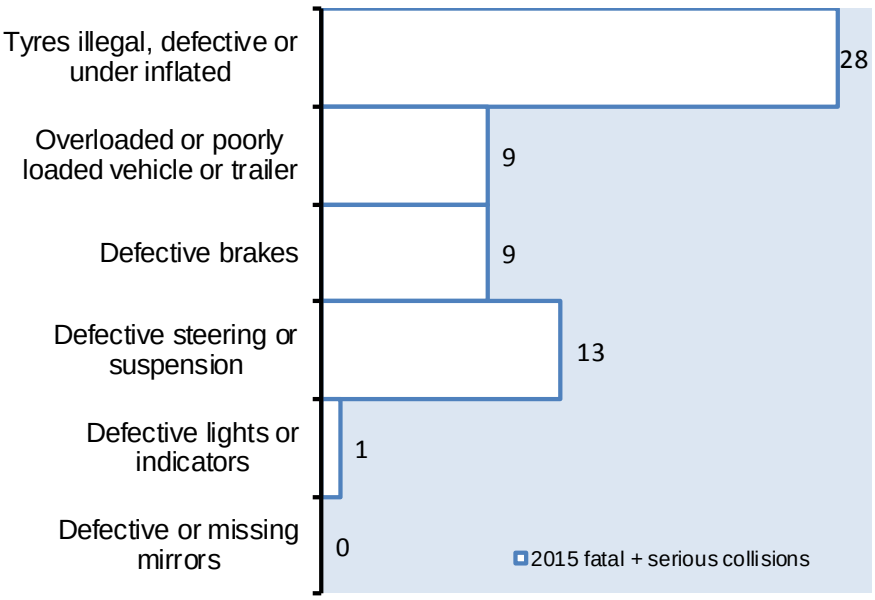


Fatal and serious collisions

16.4% from 2014



50.0% of fatal and serious collisions involving a vehicle defects involved 'Tyres illegal, defective or under inflated'



As more than one contributory factor can be recorded per collision; defects will not sum to 56 fatal and serious collisions

Figure 4-8 Summary of collisions involving a vehicle defect

4.3. People

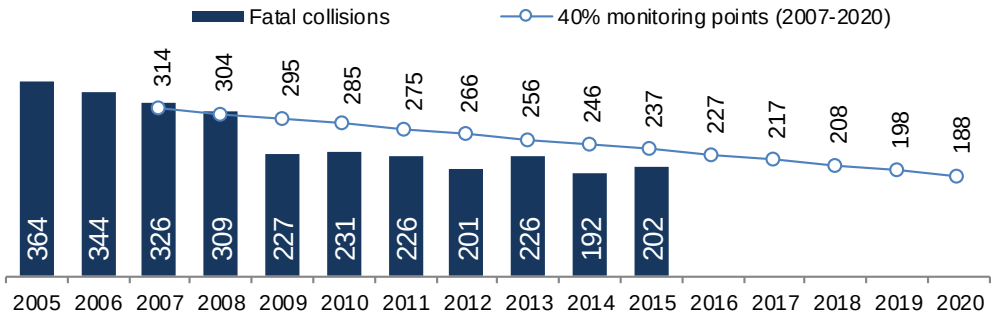
An assessment of the collisions on the SRN has been undertaken in this section. This includes analysis of trends, collisions by casualty age groups involved and an assessment of the human factors linked to collisions.

4.3.1. Collision severity trends

This section identifies underlying trends in the number of collisions occurring each year by severity between 2005 and 2015.

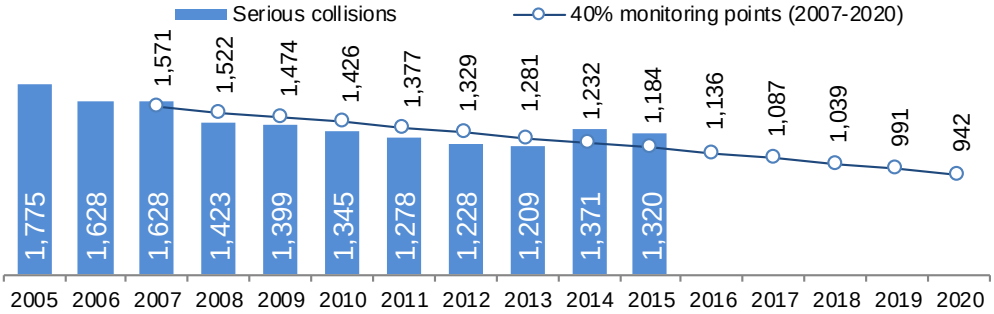
Fatal

5.2 per cent from 2014



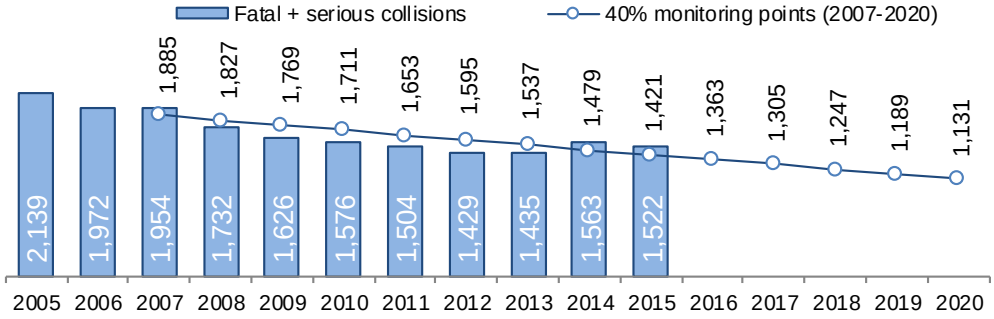
Serious

3.7 per cent from 2014



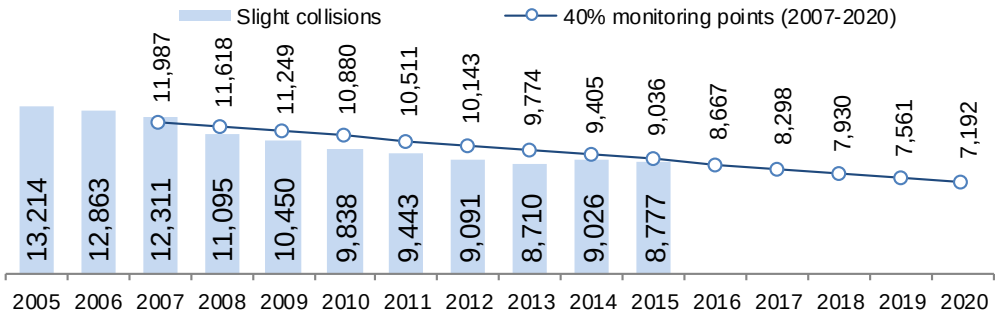
Fatal and serious

2.6 per cent from 2014



Slight

2.8 per cent from 2014



Total collisions

2.7 per cent from 2014

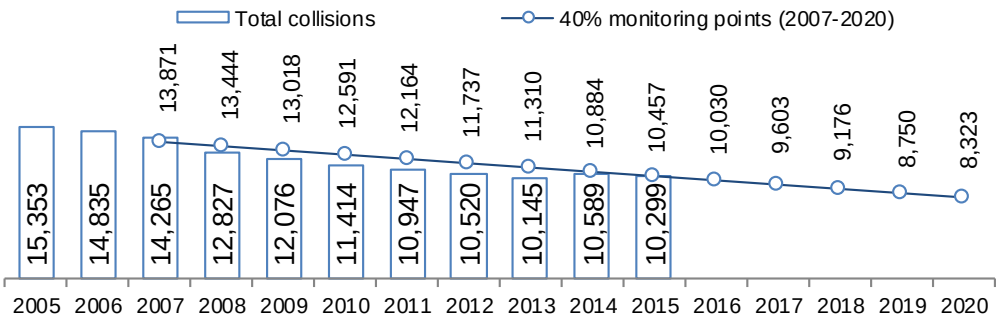


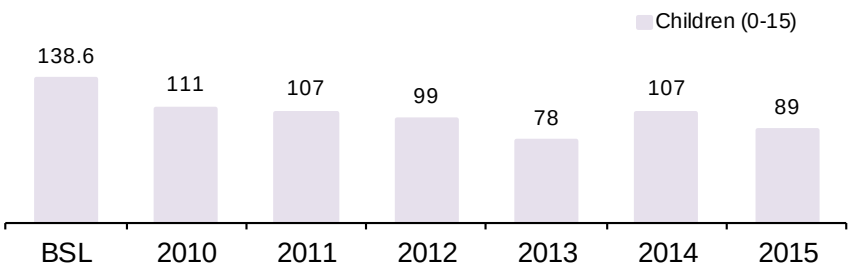
Figure 4-9 Collision trends by severity

Figure 4-9 provides an outline of collision trends for fatal, serious, fatal and serious, slight and total collisions between 2005 and 2015.

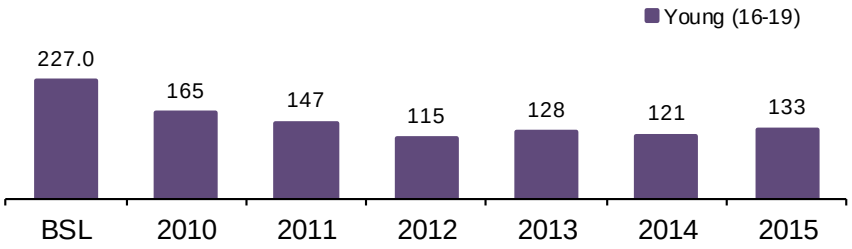
In summary, the largest percentage change between severities since 2014 was the number of fatal collisions which increased by 5.2 per cent (from 192 to 202); compared to a decrease of 3.7 per cent for serious collisions (from 1,371 to 1,320) and 2.6 per cent for fatal and serous collisions (from 1,563 to 1,522).

4.3.2. Collision by age of casualties involved

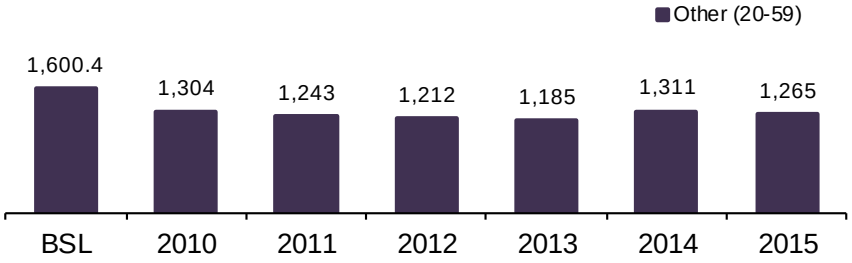
Children (0-15)
89 fatal and serious collisions
16.8 per cent from 107 in 2014



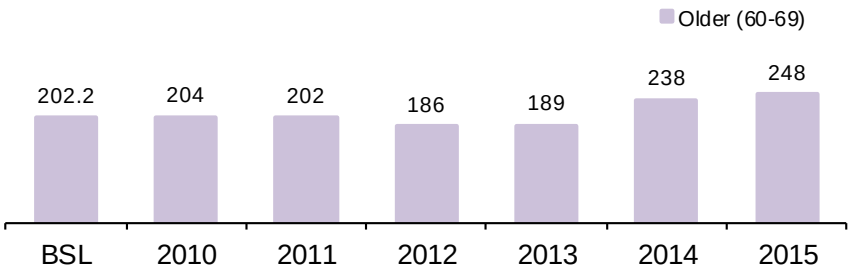
Young (16-19)
133 fatal and serious collisions
9.9 per cent from 121 in 2014



Other (20-59)
1,265 fatal and serious collisions
3.5 per cent from 1,311 in 2014



Older (60-69)
248 fatal and serious collisions
4.2 per cent from 238 in 2014



Elderly (70+)
187 fatal and serious collisions
17.6 per cent from 159 in 2014

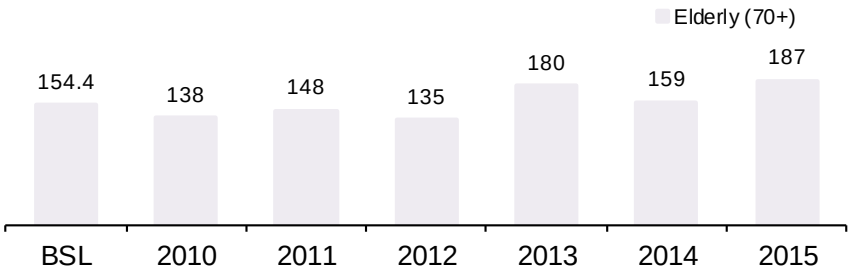


Figure 4-10 Fatal and serious collisions by age group and year

Figure 4-10 shows that fatal and serious collisions in younger age groups have decreased significantly compared to 2005-09 baseline average with young (16-19) group witnessing the greatest decrease by 41.4 per cent. In contrast the older groups depict an increase in fatal and serious collisions with the largest observed in older (60-69) group with a 22.7 per cent increase against 2005-09 baseline. This is closely followed by the elderly (70+) with a 21.1 per cent increase.

4.3.3. Collisions where human factors contributed

Human factors remain the largest single cause of fatal and serious collisions on the SRN. In 2015, there were 1,222 fatal and serious collisions involving at least one human factor representing 80.3 per cent of total fatal and serious collisions.

Figure 4-11 is an assessment of the contributing human factors which result in fatal and serious collisions on the SRN. These human factors broadly fall into 4 categories of contributory factors:

- Driver/rider error or reaction
- Impairment or distraction
- Injudicious action
- Behaviour or inexperience

The contributory factors within these groupings are provided in the table below[12]

Driver/Rider error or reaction	
Junction overshoot	Failed to judge other person's path or speed
Junction restart (moving off at junction)	Too close to cyclist, horse rider or pedestrian
Poor turn or manoeuvre	Sudden braking
Failed to signal or misleading signal	Swerved
Failed to look properly	Loss of control
Impairment or distraction	
Impaired by alcohol	Not displaying lights at night or in poor visibility
Impaired by drugs (illicit or medicinal)	Rider wearing dark clothing
Fatigue	Driver using mobile phone
Uncorrected, defective eyesight	Distraction in vehicle
Illness or disability, mental or physical	Distraction outside vehicle
Injudicious action	
Disobeyed automatic traffic signal	Exceeding speed limit
Disobeyed 'Give Way' or 'Stop' sign or markings	Travelling too fast for conditions
Disobeyed double white lines	Following too close
Disobeyed pedestrian crossing facility	Vehicle travelling along pavement
Illegal turn or direction of travel	Cyclist entering road from pavement
Behaviour or inexperience	
Aggressive driving	Learner or inexperienced driver/rider
Careless, reckless or in a hurry	Inexperience of driving on the left
Nervous, uncertain or panic	Unfamiliar with model of vehicle
Driving too slow for conditions or slow veh (e.g. tractor)	

[12] Full listing of contributory factors of all groupings is provided in Appendix Table F-1.

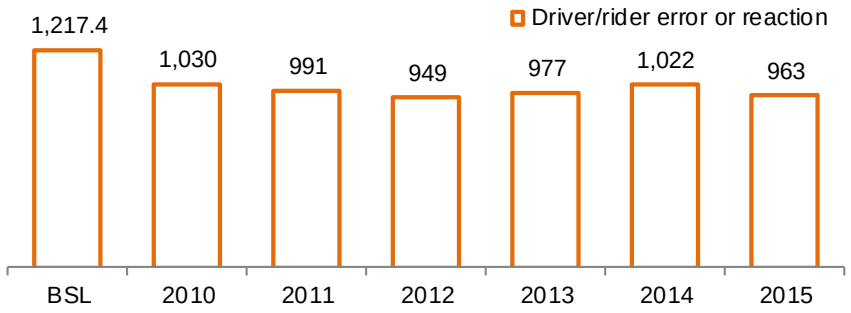
1,222 fatal and serious collisions where human factors were attributed

80.3 per cent of the 1,522 fatal and serious collisions in 2015

Driver/Rider error or reaction

963 fatal and serious collisions

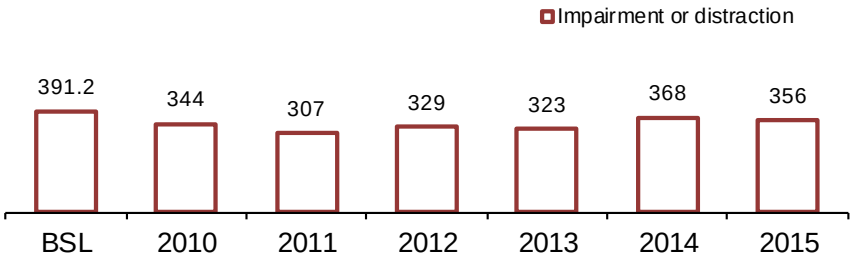
↓ 5.8 per cent from 1,022 in 2014



Impairment or distraction

356 fatal and serious collisions

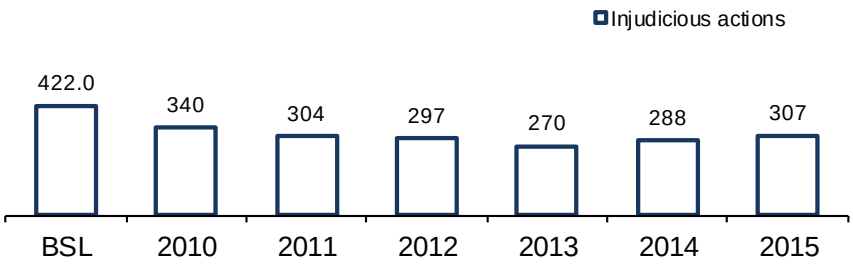
↓ 3.3 per cent from 368 in 2014



Injudicious actions

307 fatal and serious collisions

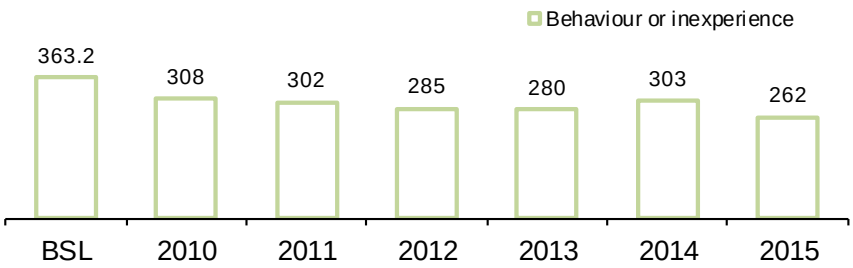
↑ 6.6 per cent from 288 in 2014



Behaviour or inexperience

262 fatal and serious collisions

↓ 13.5 per cent from 303 in 2014



Note:

(a) Figures show the number of fatal and serious collisions involving at least one contributory factor from the relevant group. The listing of each group is provided in previous page.

Figure 4-11 Fatal and serious collisions involving human contributory factors by group and year

Figure 4-11 shows that fatal and serious collisions involving at least one of the human factors above have decreased in three of the four depicted, with behaviour or inexperience decreasing by 13.5 per cent from 303 in 2014 to 262 in 2015.

Investigating the impairment or distraction human factor category further, Figure 4-12 details the number of fatal and serious collisions involving at least one driver using a mobile phone. From the figure it can be seen that since 2011, the number of fatal and serious collisions has increased by 54.5 per cent to 17 in 2015 from 11 in 2011, despite increased awareness and legislation.

Driver using mobile phone
17 fatal and serious collisions
30.8 per cent from 2014

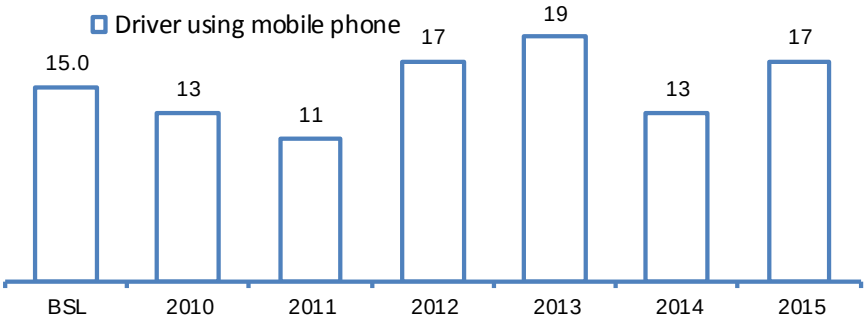


Figure 4-12 Fatal and serious collisions involving mobile phones by year

Table 4-1 highlights the top 20 human contributory factors by severity linked to collisions for 2015 (ranked by fatal and serious collisions). The top four contributory factors involved in fatal and serious collisions were all from the driver/rider error or reaction group. This group features heavily in all collisions.

From the table, it is evident that the impairment or distraction human factor category also remains a major issue. Individual factors such as fatigue; distraction in vehicle; illness or disability, mental or physical; and impaired by alcohol, contributed to 117, 93, 86 and 78 fatal and serious collisions respectively in 2015. This has followed almost the same profile as that for the corresponding casualties apart from few subtle variations in the ranking and contributory factors themselves.

Table 4-1 Top 20 human contributory factors involved in collisions by severity, 2015

Rank	Contributory factor		Fatal + Serious	Fatal	Serious	Slight	Total collisions
1	405	Failed to look properly	438	49	389	2,776	3,214
2	406	Failed to judge other person's path or speed	315	37	278	2,389	2,704
3	410	Loss of control	298	45	253	1,121	1,419
4	403	Poor turn or manoeuvre	190	16	174	858	1,048
5	602	Careless, reckless or in a hurry	184	26	158	902	1,086
6	307	Travelling too fast for conditions	121	12	109	610	731
7	503	Fatigue	117	23	94	332	449
8	408	Sudden braking	114	5	109	901	1,015
9	308	Following too close	101	8	93	1,045	1,146
10	409	Swerved	100	10	90	478	578
11	509	Distraction in vehicle	93	23	70	308	401
12	505	Illness or disability, mental or physical	86	16	70	151	237
13	306	Exceeding speed limit	84	23	61	212	296
14	501	Impaired by alcohol	78	13	65	227	305
15	601	Aggressive driving	40	7	33	148	188
16	605	Learner or inexperienced driver/rider	34	4	30	203	237
17	502	Impaired by drugs (illicit or medicinal)	29	8	21	38	67
18	510	Distraction outside vehicle	28	6	22	135	163
19	401	Junction overshoot	18	1	17	82	100
20	404	Failed to signal or misleading signal	17	2	15	82	99

Key (CF groups):
Driver/Rider error or reaction
Impairment or distraction
Injudicious action
Behaviour or inexperience

Notes:

(a) Table reports number of collisions.
(b) Table ranked by fatal and serious collisions.
(c) As more than one contributory factor can be recorded per collision; columns will not sum to their respective totals.

Table 4-2 is an adaptation of the 'Fatal Four' driving offences:

- Speeding (CFs 306 and 307)
- Improper use of restraints (Casualty code "Seat belt in use – not used")
- Distractions in vehicle (including use of mobile phone) (CFs 508, 509 and 510)
- Impaired by drink and drugs (CFs 501 and 502)

It can be seen from Table 4-2 that collisions involving speeding increased across all severities in 2015 (excluding serious which remained unchanged). Fatal collisions involving this category were shown to have increased by 3.4 per cent. It is also shown that the number of fatal collisions involving all categories increased (three out of four) or remained unchanged (one of four).

Due to the recording of the use of seatbelts not being mandatory this category potentially shows the minimum number of collisions by severity of the collision. In terms of collisions, Table 4-2 does show that in 2015 a minimum of 129 total collisions had recorded 'improper use of or no restraints'; importantly this is a 60.7 per cent reduction from the values recorded in 2014. In fact apart for the number of fatal collisions (which remained unchanged) all other severities involving this category showed a decrease in numbers compared to that in 2014.

Table 4-2 Collisions involving speeding, restraints, distractions and drink/drugs, 2015

Category/ Severity	Speeding	Restraints[(a)]	Distractions	Drink/Drugs
Fatal	**30** ↑ 3.4%	**10** 0.0%	**24** ↑ 60.0%	**19** ↑ 46.2%
Serious	**152** 0.0%	**39** ↓ 36.1%	**79** ↑ 17.9%	**78** ↓ 9.3%
Fatal + Serious	**182** ↑ 0.6%	**49** ↓ 31.0%	**103** ↑ 25.6%	**97** ↓ 2.0%
Slight	**778** ↑ 0.4%	**80** ↓ 68.9%	**328** ↓ 8.1%	**256** ↑ 4.9%
Total	**960** ↑ 0.4%	**129** ↓ 60.7%	**431** ↓ 1.8%	**353** ↑ 2.9%

Notes:
(a) The recording of seatbelts is only required in STATS19 for fatalities who are occupants of vehicles in which the wearing of a seatbelt is mandatory. However police forces can choose to collect this data for all severities and hence any large variation in 'Restraints' is likely to come from the increase or decrease of the recording by police forces.
(b) Percentages represent the per cent change of 2015 values from 2014 values; percentages are only shown where the base is 15 or more, or remain unchanged.

5. Topics of Interest

The purpose of this section is to provide analysis and published data for a number of topics of interest. The topics are themes that affect the SRN and hence include more detailed analysis than the overall assessment of casualty trends in the previous sections.

This section includes the following topics of interest:

- Fatalities
- Serious injuries
- KSIs
- Slight injuries
- Young motorists
- Lighting on the SRN
- Weather effects on the SRN
- Roadworks
- Objects hit on and off the carriageway
- Junctions
- Tyres
- Goods vehicles (HGVs and LGVs)
- Powered Two Wheelers (PTWs)
- Hardshoulders and lay-bys
- Collision type
- Hotspot analysis
- Vulnerable and non-motorised users

5.1. Fatalities

This section provides an overview of fatalities on the SRN for 2015 along with comparisons to previous years as required.

In 2015, there were 224 fatalities on the SRN; this is an increase of 13 fatalities from the 2014 value of 211. This is an increase in the number of fatalities by 6.2 per cent from 2014 but remains below the 2015 monitoring point of 269 albeit is now above the 2020 monitoring point of 214 (Figure 5-1). The estimated cost of fatalities on the SRN in 2015 was £392.7m[13].

Figure 5-2 shows that in 2015, July had the most fatalities with 28 occurrences within the month. This was closely followed by December which had 24 fatalities.

Table 5-1 shows fatalities by casualty type, it can be seen that in 2015:

- 59.8 per cent of fatalities were car occupants (134 of 224)
- 12.9 per cent of fatalities were pedestrians (29 of 224)
- 12.9 per cent of fatalities were PTW users (29 of 224)

Table 5-1 also shows the number of pedestrian fatalities decreased by 29.3 per cent to 29 in 2015 from 41 in 2014 and PTW fatalities decreased by 3.3 per cent to 29 in 2015 from 30 in 2014.

Table 5-2 provides a breakdown of driver (and rider) fatalities by driver age. There was a reduction in the number of fatalities for the age group 60-69 years; 12.5 per cent from 2014, while fatalities in age groups 20-59 years and 70+ years have increased by 6.8 and 42.3 per cent respectively.

In 2015, as shown in Figure 5-3, only A-road single carriageway has a reduction in number of fatalities. The changes to fatalities by road classification are:

- A-road single carriageways decreased by 7.4 per cent from 54 in 2014
- A-road dual carriageways increased by 12.3 per cent from 2014
- A-roads as a whole witnessed an increase of 3.9 per cent from 2014
- Motorways increased to 92 fatalities in 2015 from 84 in 2014 (9.5 per cent)

Figure 5-4 indicates that 73 fatalities involved hitting an object off the carriageway. This is a decrease on the 2014 value of 76 and is 32.6 per cent of all fatalities in 2015. Of those fatalities that involved hitting an object off the carriageway in 2015, 28.8 per cent involved hitting a tree and 39.7 per cent involved hitting a barrier of some kind. This is equivalent to 9.4 per cent and 12.9 per cent of all fatalities (224) respectively.

Table 5-3 shows fatalities by junction detail. From the figure it can be seen that 21.0 per cent of fatalities occurred at junctions in 2015. The total number of fatalities occurring at junctions increased to 47 in 2015 from 40 in 2014; an increase of 17.5 per cent.

[13] Based on the average value of prevention per casualty at 2010 prices and 2015 values, DfT WebTAG: Unit A 4.1.1, December 2015

5.1.1.Fatal casualty infographics

224 fatalities

↑ 6.2 per cent from 2014

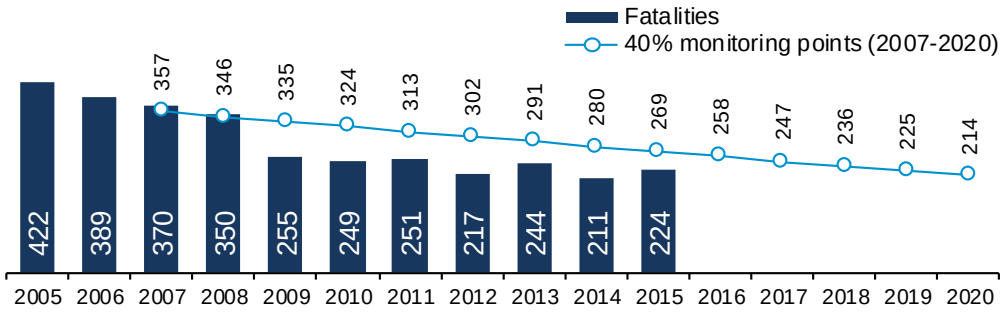


Figure 5-1 Breakdown of fatalities by year, SRN

28 fatalities occurred in July

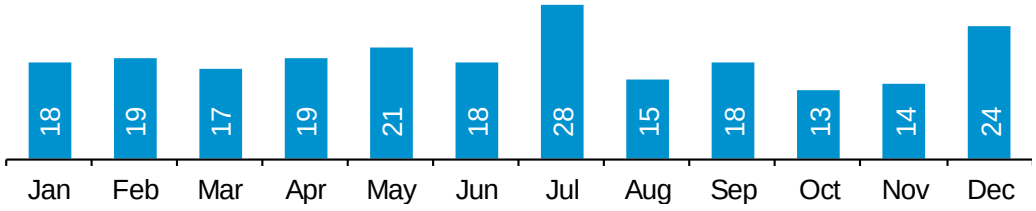


Figure 5-2 Breakdown of fatalities by month, 2015

Table 5-1 Fatalities by casualty type, 2015

Casualty Type	2015	% change from 2014
Car occupants	134	↑16.5%
PTWs	29	↓3.3%
Goods vehicle occupants (equal to or under 3.5 tonnes)	10	-
HGV occupants (over 3.5 tonnes)	12	-
Pedestians	29	↓29.3%
Pedal cyclists	6	-

59.8 per cent of total fatalities involved car occupants

Table 5-2 Breakdown of fatalities by casualty age group, 2015

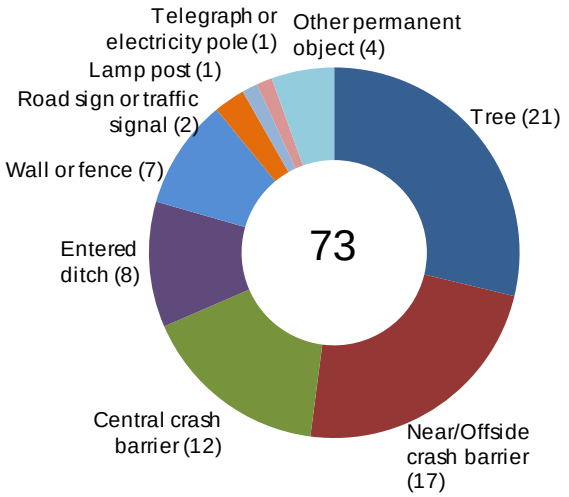
Children (0-15)	Young (16-19)	Other (20-59)	Older (60-69)	Elderly (70+)	? (Unknown)
2	7	157	21	37	-
-	-	↑6.8%	↓12.5%	↑42.3%	-

58.9 per cent of all fatalities occurred on A-roads

Single carriageways - the only road class to have a reduction in fatalities

82 ↑12.3%	132 ↑3.9%
A-road dual carriageway	A-road
50 ↓7.4%	92 ↑9.5%
A-road single carriageway	Motorway

Figure 5-3 Fatalities by road classification, 2015



73 fatalities involved hitting an object off the carriageway in 2015

12.9 per cent of all fatalities (224) involved hitting a crash barrier of some kind (29)

Figure 5-4 Fatalities by objects hit off carriageway, 2015

79.0 per cent of fatalities were not at a junction

Table 5-3 Breakdown of fatalities by junction detail, 2015

Junction detail	2015	% change from 2014
T or staggered	15	↓11.8%
Slip road	16	-
Roundabouts	4	-
Crossroads	1	-
Private drive or entrance	6	-
More than 4 arms (not roundabout)	1	-
Mini-roundabout	0	-
Other	4	-
Not at junction	177	↑3.5%

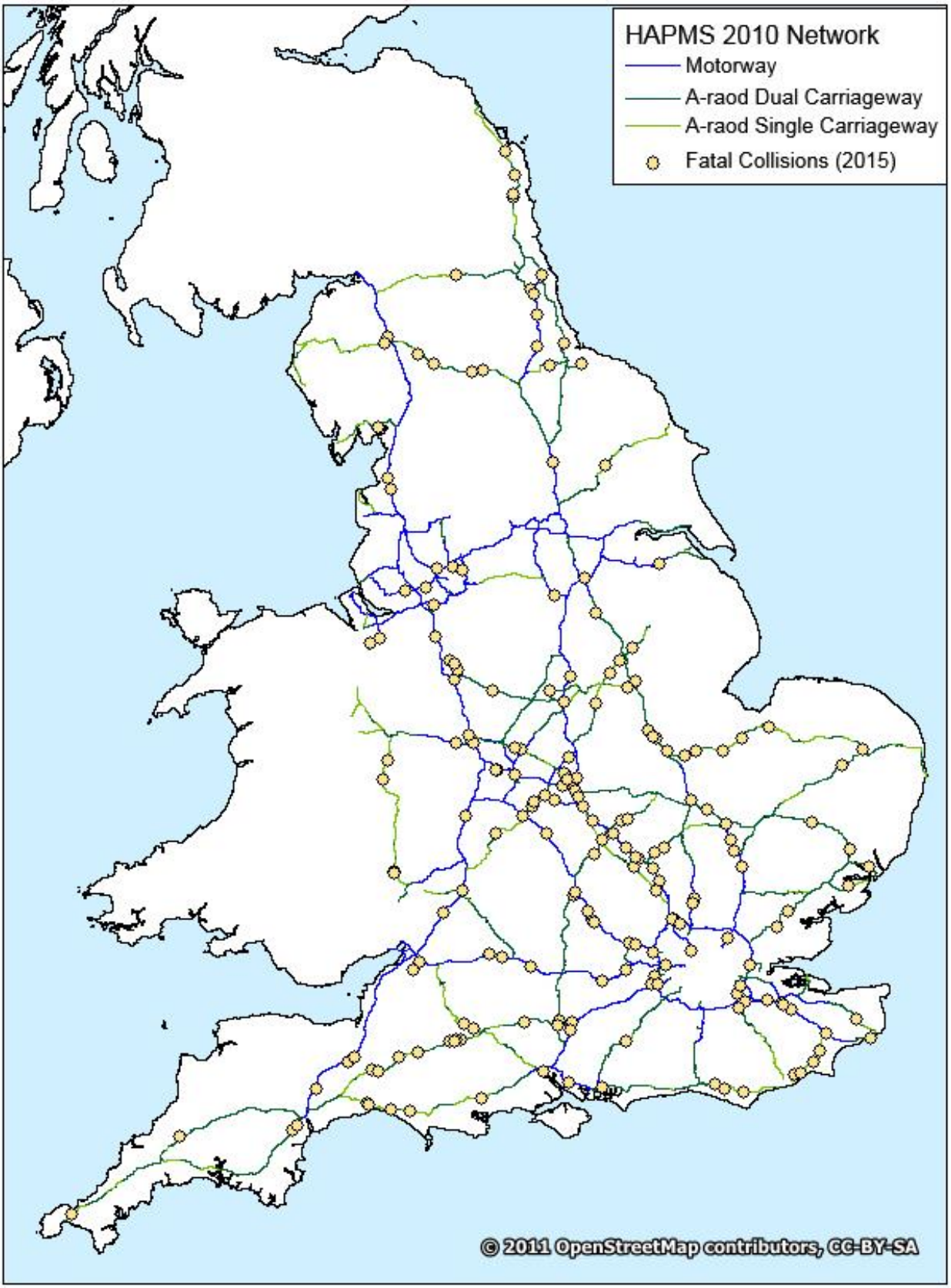


Figure 5-5 Fatal collision locations across the SRN

Due to the number of serious and slight being higher it is not practical to represent them on a map. Therefore there is no HAPMS 2010 Network figure in the corresponding sections for these severities.

5.2. Serious Injuries

This section provides an overview of seriously injured casualties on the SRN for 2015 along with comparisons to previous years as required.

In 2015, there were 1,560 seriously injured casualties on the SRN; this is a decrease of 82 seriously injured casualties from the 2014 value of 1,642 (Figure 5-6). Although there is a decrease in seriously injured casualties the value is still above the 2015 monitoring point of 1,481. The estimated cost of seriously injured on the SRN in 2015 was £307.3m[13].

Figure 5-7 shows that in 2015 May had the most seriously injured casualties with 156 occurrences within the month. This was followed by July and November each of which had 151 seriously injured casualties.

Table 5-4 shows seriously injured casualties by type, it can be seen that in 2015:

- 65.5 per cent of seriously injured were car occupants (1,022 of 1,560)
- 2.8 per cent of seriously injured were pedestrians (43 of 1,560)
- 18.5 per cent of seriously injured were PTW users (289 of 1,560)

Table 5-4 also shows the number of seriously injured pedal cyclists decreased by 27.7 per cent to 34 in 2015 from 47 in 2014, whilst the LGV occupants seriously injured increased by 13.2 per cent over this period.

Table 5-5 shows a breakdown of driver (and rider) serious injuries by driver age. It can be seen that most of the age groups witnessed a decrease in serious injuries, with children (0-15) having the greatest reduction by 34.5 per cent from 2014. The exception was elderly (70+) age group which showed a 3.0 per cent increase in seriously injured casualties from 2014.

In 2015, only motorways recorded an increase in seriously injured casualties (Figure 5-8). The changes to seriously injured casualties by road classification are:

- A-road single carriageways decreased by 6.3 per cent to 340 from 363 in 2014
- A-road dual carriageways decreased by 9.3 per cent to 583 from 643 in 2014
- A-roads as a whole witnessed a 8.3 per cent decrease from 2014
- Motorways increased by 0.2 per cent to 637 from 636 in 2014

In 2015, 502 seriously injured casualties involved hitting an object off the carriageway (Figure 5-9). This is a slight decrease on the 2014 value of 508 and is 32.2 per cent of all seriously injured casualties in 2015. Of those seriously injured casualties that involved hitting an object off the carriageway 45.8 per cent involved hitting a barrier of some kind and 17.9 per cent involved hitting a tree; this is 14.7 per cent and 5.8 per cent of all seriously injured casualties (1,560) respectively.

Table 5-6 shows seriously injured casualties by junction detail. It can be seen that 25.0 per cent of seriously injured casualties occurred at junctions in 2015. The total number of seriously injured casualties occurring at junctions decreased to 390 in 2015 from 434 in 2014; a decrease of 10.1 per cent. The majority of seriously injured casualties occurring at junctions can be attributed to T or staggered junctions or slip roads. Both have seen a decrease on their respective 2014 values.

5.2.1.Serious injury casualty infographics

1,560 serious injuries

5.0 per cent from 2014

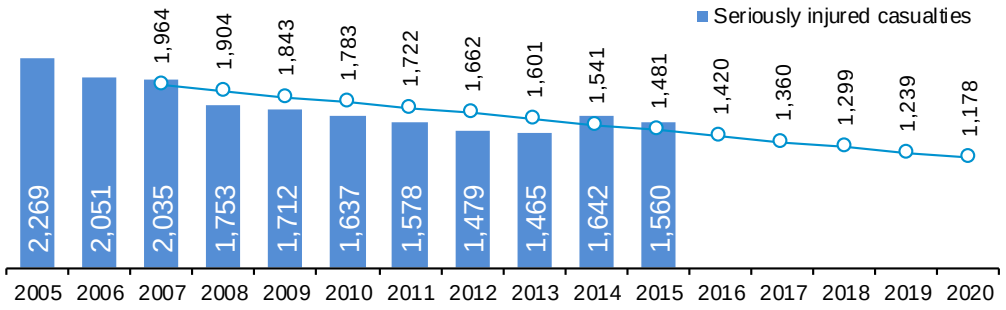


Figure 5-6 Breakdown of serious injuries by year, SRN

156 serious injuries occurred in May

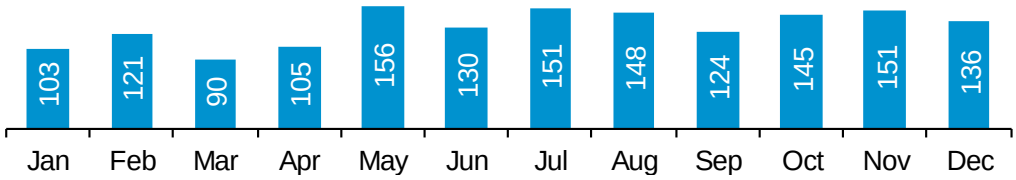


Figure 5-7 Breakdown of serious injuries by month, 2015

Table 5-4 Serious injuries by casualty type, 2015

Casualty Type	2015	% change from 2014
Car occupants	1,022	↓2.1%
PTWs	289	↓8.3%
Goods vehicle occupants (equal to or under 3.5 tonnes)	86	↑13.2%
HGV occupants (over 3.5 tonnes)	69	↓4.2%
Pedestians	43	↓35.8%
Pedal cyclists	34	↓27.7%

Goods vehicle occupants involved in serious injuries increased by 13.2 per cent

Table 5-5 Breakdown of serious injuries by casualty age group, 2015

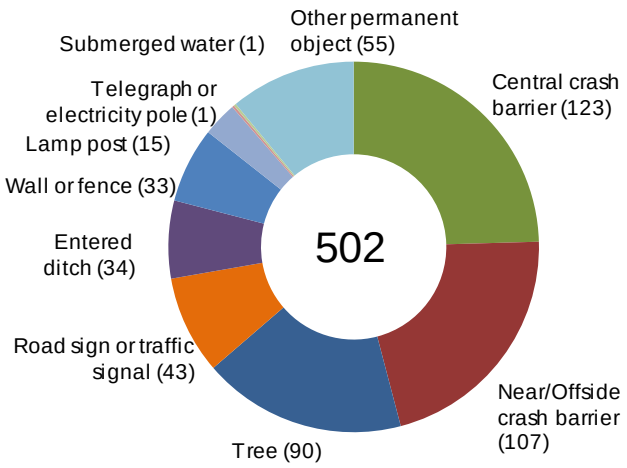
Children (0-15)	Young (16-19)	Other (20-59)	Older (60-69)	Elderly (70+)	? (Unknown)
38	85	1,110	175	137	15
↓34.5%	↓1.2%	↓6.1%	0.0%	↑3.0%	-

59.2 per cent of all seriously injured casualties occurred on A-roads

Motorways - the only road class to have an increase in seriously injured casualties

583 ↓9.3%	923 ↓8.3%
A-road dual carriageway	A-road
340 ↓6.3%	637 ↑0.2%
A-road single carriageway	Motorway

Figure 5-8 Serious injuries by road classification, 2015



502 seriously injured casualties involved hitting an object off the carriageway in 2015

14.7 per cent of all seriously injured casualties (1,560) involved hitting a crash barrier of some kind (230)

Figure 5-9 Serious injuries by objects hit off carriageway, 2015

Table 5-6 Breakdown of serious injuries by junction detail, 2015

Junction detail	2015	% change from 2014
T or staggered	119	↓15.0%
Slip road	110	↓6.0%
Roundabouts	93	↓21.8%
Crossroads	21	↑23.5%
Private drive or entrance	21	↑23.5%
More than 4 arms (not roundabout)	8	-
Mini-roundabout	0	-
Other	18	↓18.2%
Not at junction	1,170	↓3.1%

75.0 per cent of serious injuries were not at junctions

5.3. KSI

This section provides an overview of KSI casualties on the SRN for 2015 along with comparisons to previous years as required.

In 2015, there were 1,784 KSI casualties on the SRN; a decrease of 69 KSI casualties from the 2014 value of 1,853. However, it remains above the 2015 monitoring point of 1,750 (Figure 5-10). The estimated cost of KSI casualties on the SRN in 2015 was £700.0m[13].

It can be seen in Figure 5-11 that July with 179 had the most number of KSI casualties followed by May with 177.

Table 5-7 shows KSI casualties by type, it can be seen that in 2015:

- 64.8 per cent of KSI casualties were car occupants (1,156 of 1,784)
- 4.0 per cent of KSI casualties were pedestrians (72 of 1,784)
- 17.8 per cent of KSI casualties were PTW users (318 of 1,784)

Table 5-7 also shows the number of pedestrian KSI casualties decreased by 33.3 per cent to 72 in 2015 from 108 in 2014 and that goods vehicle (excluding HGV) KSI casualties increased by 10.3 percent to 96 in 2015 from 87 in 2014.

Table 5-8 shows a breakdown of driver (and rider) involved in KSI casualties by driver age. It can be seen that most of the age groups witnessing a decrease in KSI casualties, with children (0-15) having the greatest reduction of 37.5 per cent from 2014. The exception is the elderly (70+) age group where the KSI casualties increased by 9.4 from 2014.

In 2015, KSI casualties increased only on motorways (Figure 5-12). The changes to KSI casualties by road classification are:

- A-road single carriageways decreased by 6.5 per cent to 390 from 417 in 2014. This road class witnessed a decrease for the first time since 2012
- A-road dual carriageways decreased by 7.1 per cent to 665 from 716 KSI casualties in 2014
- A-roads as a whole witnessed a reduction of 6.9 per cent to 1,055 from 1,133 in 2014
- Motorways increased by 1.3 per cent to 729 from 720 in 2014

In 2015, 575 KSI casualties involved hitting an object off the carriageway (Figure 5-13). This is a decrease on the 2014 value of 584 and is 32.2 per cent of all KSI casualties in 2015. Of those KSI casualties that involved hitting an object off the carriageway; 45.0 per cent involved hitting a barrier of some kind and 19.3 per cent involved hitting a tree. This is equivalent to 14.5 per cent and 6.2 per cent of all KSI casualties (1,784) respectively.

Table 5-9 shows KSI casualties by junction detail. It can be seen that 24.5 per cent of KSI casualties occurred at junctions in 2015. The total number of KSI casualties occurring at junctions decreased to 437 in 2015 from 474 in 2014; a decrease of 7.8 per cent.

Similar to trends evident in seriously injured casualties, the table shows that the decrease in KSI casualties at junctions is primarily linked to T or staggered junctions and slip roads. Both junction types have a seen a decrease on their respective values from 2014.

5.3.1.KSI casualty infographics

1,784 KSI casualties

↓ 3.7 per cent from 2014

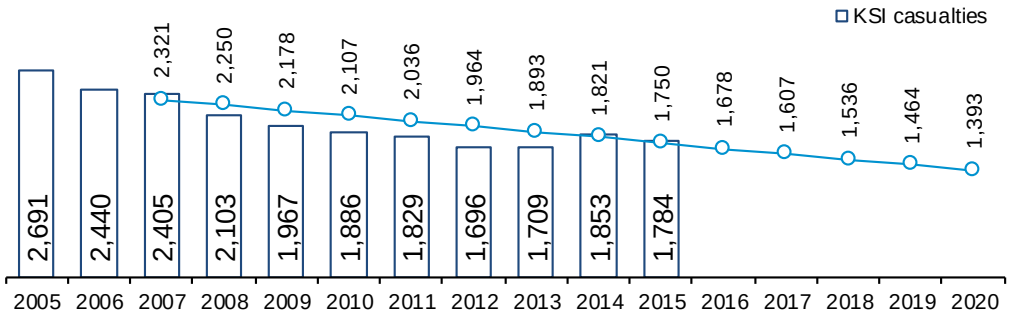


Figure 5-10 Breakdown of KSI casualties by year, SRN

179 KSI casualties occurred in July

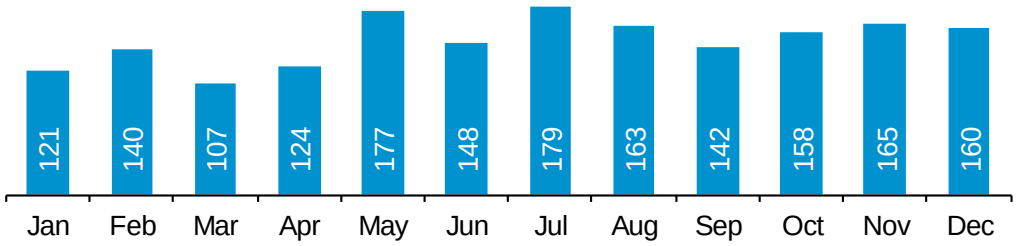


Figure 5-11 Breakdown of KSI casualties by month, 2015

Table 5-7 KSI casualties by casualty type, 2015

Casualty Type	2015	% change from 2014
Car occupants	1,156	↓0.3%
PTWs	318	↓7.8%
Goods vehicle occupants (equal to or under 3.5 tonnes)	96	↑10.3%
HGV occupants (over 3.5 tonnes)	81	↓1.2%
Pedestians	72	↓33.3%
Pedal cyclists	40	↓21.6%

Pedestrian KSI casualties had the greatest percentage decrease (33.3 per cent) of all the casualty types

Table 5-8 Breakdown of KSI casualties by casualty age group, 2015

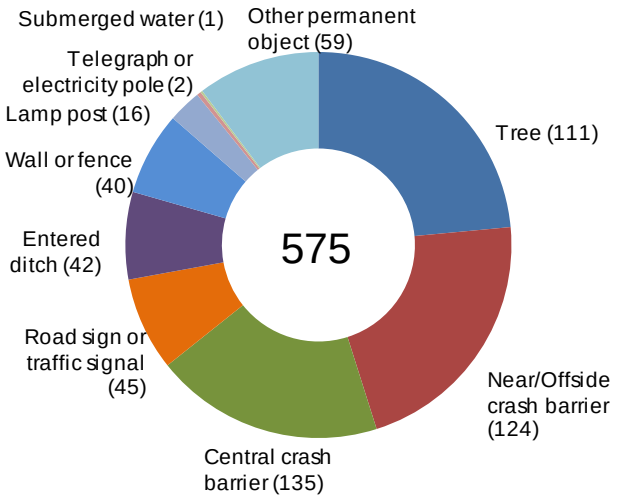
Children (0-15)	Young (16-19)	Other (20-59)	Older (60-69)	Elderly (70+)	? (Unknown)
40	92	1,267	196	174	15
↓37.5%	↓2.1%	↓4.7%	↓1.5%	↑9.4%	-

59.1 per cent of all KSI casualties occurred on A-roads

Motorway - the only road class to have an increase in KSI casualties

A-road dual carriageway	A-road
665 ↓7.1%	1,055 ↓6.9%
A-road single carriageway	**Motorway**
390 ↓6.5%	729 ↑1.3%

Figure 5-12 KSI casualties by road classification, 2015



575 KSI casualties involved hitting an object off the carriageway in 2015

14.5 per cent of all KSI casualties (1,784) involved hitting a barrier of some kind (259)

Figure 5-13 KSI casualties by objects hit off carriageway, 2015

75.5 per cent of KSI casualties were not at a junction

Table 5-9 Breakdown of KSI casualties by junction detail, 2015

Junction detail	2015	% change from 2014
T or staggered	134	↓14.6%
Slip road	126	↓3.1%
Roundabouts	97	↓20.5%
Crossroads	22	↑10.0%
Private drive or entrance	27	↑50.0%
More than 4 arms (not roundabout)	9	-
Mini-roundabout	0	-
Other	22	↓12.0%
Not at junction	1,347	↓2.3%

5.4. Slight Injuries

This section provides an overview of slightly injured casualties on the SRN for 2015 along with comparisons to previous years as required.

In 2015, there were 14,587 slightly injured casualties on the SRN; a decrease of 374 slightly injured casualties from the 2014 value of 14,961 and remains just 0.2 per cent below the 2015 monitoring point of 14,611 (Figure 5-14). The total cost of slightly injured casualties on the SRN in 2015 was £221.5m[13].

Figure 5-15 shows that in 2015 July and August had the most slightly injured casualties with 1,385 and 1,374 occurrences within each month respectively.

Table 5-10 shows slightly injured casualties by type, it can be seen that in 2015:

- 85.2 per cent of slightly injured were car occupants (12,428 of 14,587)
- 6.2 per cent of slightly injured were good vehicle occupants (under 3.5 tonnes or unknown weight) (901 of 14,587)
- 3.6 per cent of slightly injured were PTW users (531 of 14,587)

Table 5-11 shows the number of drivers (or rides) slightly injured in a collision by driver age in 2015. It can be seen that there was a slight increase in young (16-19) and an increase in elderly (70+) by 0.8 and 5.3 per cent respectively from 2014. All the other age groups show a decrease, with children (0-15) having the greatest reduction by 11.5 per cent from 2014.

In 2015, the number of slightly injured casualties decreased across all road classes (Figure 5-16). The changes to slightly injured casualties by road classification are:

- A-road single carriageways decreased by 3.3 per cent to 1,895 from 1,959 in 2014
- A-road dual carriageways decreased by 1.6 per cent to 5,440 from 5,531 in 2014
- A-road as a whole decreased by 2.1 per cent to 7,335 from 7,490 in 2014
- Motorways decreased 2.9 per cent to 7,252 from 7,471 in 2014

The number of slightly injured casualties involving hitting an object off the carriageway decreased to 3,016 in 2015 (Figure 5-17) from 3,359 in 2014. This is equivalent to 20.7 per cent of all slightly injured casualties in 2015. Of those slightly injured casualties that involved hitting an object off the carriageway 62.1 per cent involved hitting a barrier of some kind and 11.6 per cent involved hitting a tree. This is 12.8 per cent and 2.4 per cent of all seriously injured casualties (14,587) respectively.

Table 5-12 shows slightly injured casualties by junction detail. It can be seen that 27.8 per cent of slightly injured casualties occurred at junctions in 2015. The total number of slightly injured casualties occurring at junctions decreased to 4,051 in 2015 from 4,293 in 2014; a decrease of 5.6 per cent. The majority of slightly injured casualties occurring at junctions were at roundabouts or slip roads. Both have, however, decreased from the corresponding 2014 value by 8.0 and 5.1 per cent respectively.

5.4.1. Slight injury casualty infographics

14,587 slight injuries

2.5 per cent from 2014

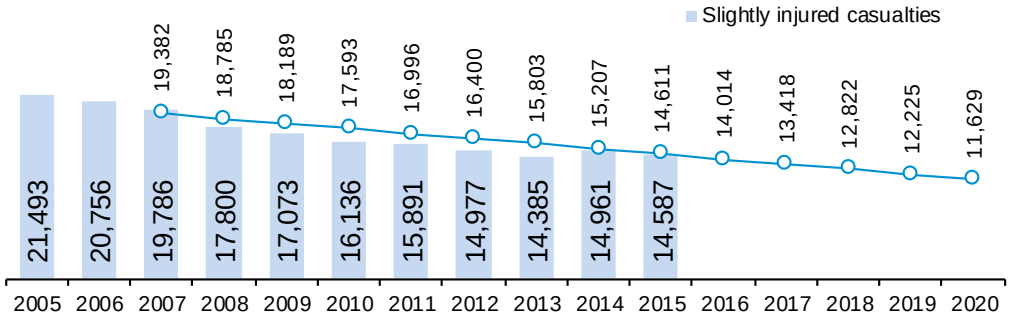


Figure 5-14 Breakdown of slightly injured casualties by year, SRN

1,385 slight injuries occurred in July

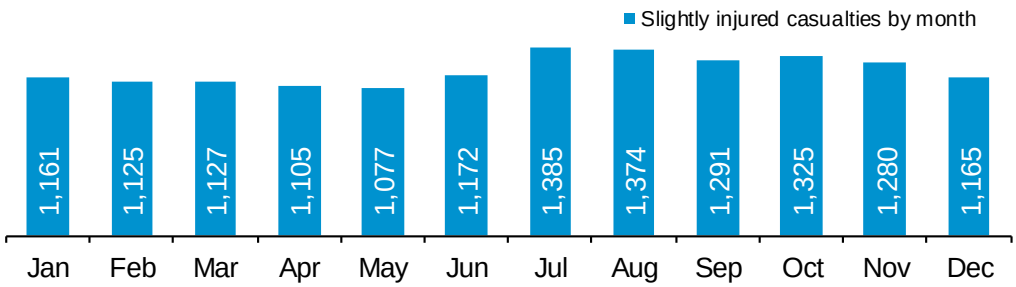


Figure 5-15 Breakdown of slightly injured casualties by month, 2015

Table 5-10 Slightly injured casualties by casualty type, 2015

Casualty Type	2015	% change from 2014
Car occupants	12,428	2.3%
PTWs	531	7.2%
Goods vehicle occupants (equal to or under 3.5 tonnes)	901	5.1%
HGV occupants (over 3.5 tonnes)	354	15.9%
Pedestians	84	13.5%
Pedal cyclists	113	11.7%

Over 85.2 per cent of the slight injuries involved car occupants

Table 5-11 Breakdown of slightly injured casualties by casualty age group, 2015

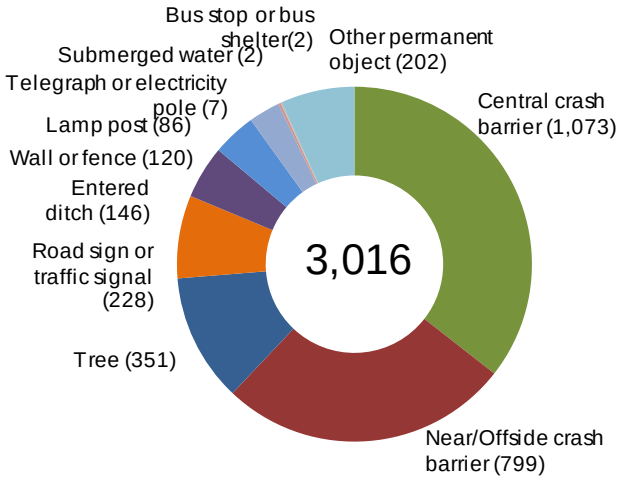
Children (0-15)	Young (16-19)	Other (20-59)	Older (60-69)	Elderly (70+)	? (Unknown)
804	858	11,132	1,009	655	129
11.5%	0.8%	2.6%	0.2%	5.3%	7.9%

50.3 per cent of all slightly injured casualties occurred on A-roads

All the road classes witnessed a reduction in slightly injured casualties

5,440 ↓1.6%	7,335 ↓2.1%
A-road dual carriageway	A-road
1,895 ↓3.3%	7,252 ↓2.9%
A-road single carriageway	Motorway

Figure 5-16 Slightly injured casualties by road classification, 2015



3,016 slightly injured casualties involved hitting an object off the carriageway in 2015

12.8 per cent of all slightly injured casualties (14,587) involved hitting a barrier of some kind (1,872)

Figure 5-17 Slightly injured casualties by objects hit off carriageway, 2015

Table 5-12 Breakdown of slightly injured casualties by junction detail, 2015

Junction detail	2015	% change from 2014
T or staggered	792	↑1.3%
Slip road	1,318	↓5.1%
Roundabouts	1,468	↓8.0%
Crossroads	184	↓12.8%
Private drive or entrance	120	↓19.5%
More than 4 arms (not roundabout)	37	↑94.7%
Mini-roundabout	9	↓47.1
Other	123	↓6.1%
Not at junction	10,536	↓1.2%

72.2 per cent of slight injuries were not at junctions

5.5. Young Motorist

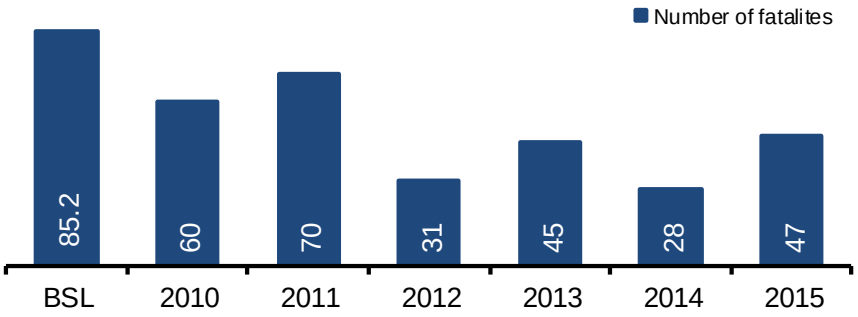
This section investigates casualty trends where a collision involved at least one young motorist aged between 17 and 24 years. The number of casualties involving a young motorist still remains at approximately one quarter of total casualties (4,738 out of 16,371), which is disproportionally high for a single age group.

5.5.1. Casualties involving young motorists by severity

The historic number of casualties by severity between 2010 and 2015 together with the baseline average are shown in Figure 5-18 and Figure 5-19. As shown in Figure 5-18 the number of young motorists involved in fatalities increased significantly in 2015 from the previous year by 67.9 per cent. Furthermore, the number of KSI casualties Figure 5-18 and total casualties Figure 5-19 increased by 16.3 and 3.5 per cent respectively.

47 fatalities involving young motorists

67.9 per cent from 2014 (28)



427 KSI casualties involving young motorists

16.3 per cent from 2014 (367)

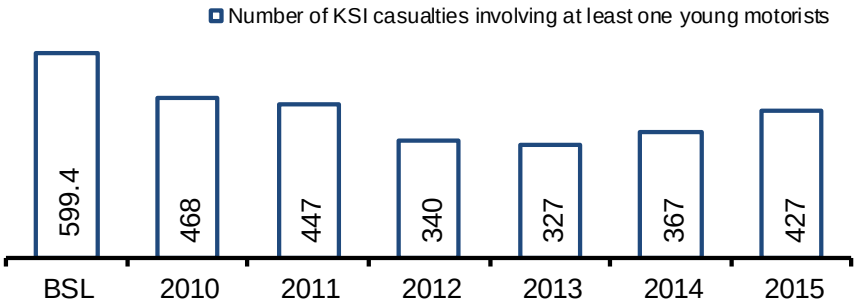


Figure 5-18 Fatalities and KSI casualties involving young motorists by severity

4,738 casualties involving young motorists

3.5 per cent from 2014 (4,579)

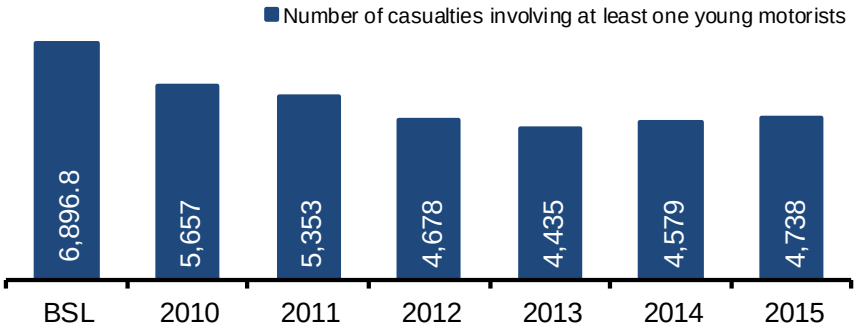


Figure 5-19 Casualties involving young motorists by severity

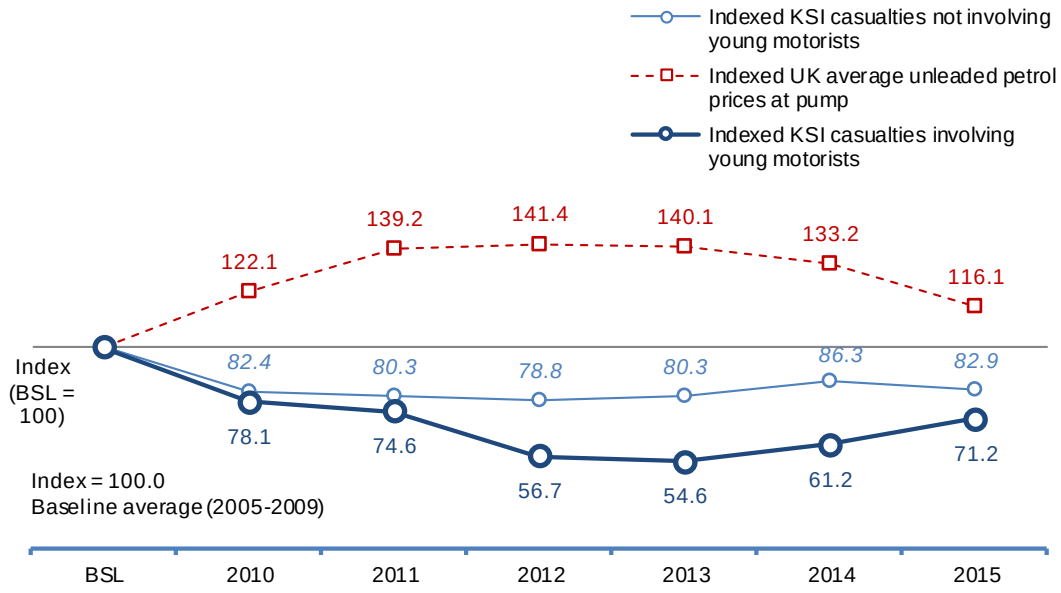
5.5.2.Cost of motoring effect on casualties involving young motorists

Figure 5-20 compares the change of UK average petrol prices and KSI casualties involving young motorists, indexed to their respective baseline averages (2005-2009). It can be observed that the two parameters potentially correlate, with an increase in petrol prices typically corresponding with a decrease in KSI casualties involving young motorists.

Figure 5-20 also shows that KSI casualties involving young motorists have decreased by 3.4 index points since 2011 although it has been steadily increasing from 2013. The KSI casualties not involving young motorists however increased by 2.6 index points over the same period (2011 to 2015) and its trajectory is not as closely correlated to the fuel prices. Therefore correlating the changes in petrol prices against the number of casualties involving young motorists shows that petrol prices may be influential in reducing this type of casualty.

Between 2005 and 2015 the cost of one litre of petrol has increased from 86.7 pence in 2005 to 111.1 pence in 2015.

Average UK cost of petrol at pump
111.1 pence
28.1 per cent since 2005



Notes:
(a) KSI casualties not involving young motorists represent the number of KSI casualties where no young motorists were involved.
(b) Data sourced from gov.uk, Department of Energy & Climate Change[14].

Figure 5-20 Index of changes in UK average petrol price and KSI casualties involving/not involving young motorists

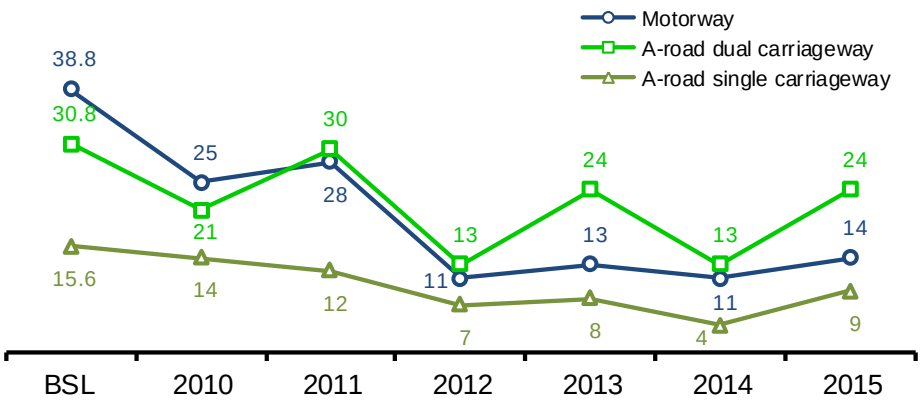
[14] UK fuel prices sourced from Table 4.1.2 Average annual retail prices of petroleum products and a crude oil price index UK

5.5.3.Casualties involving young motorists by road classification

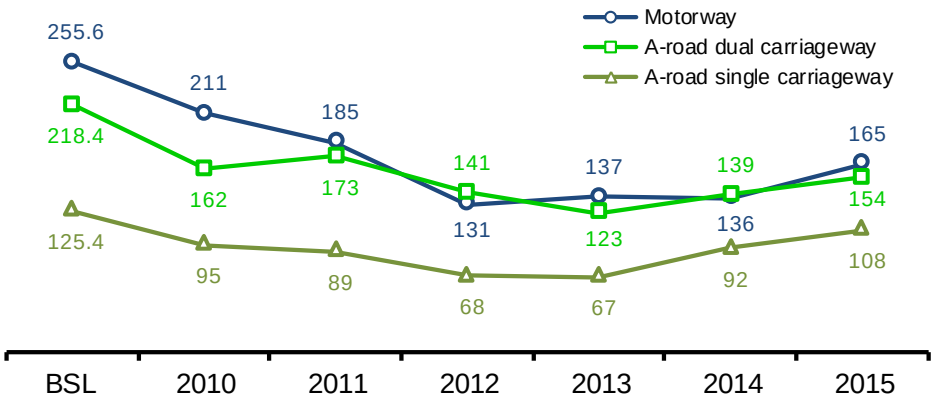
Appendix Table K-3 provides the number of casualties involving young motorists by road classification and severity. The trend over time of the number of casualties tabulated in Appendix Table K-3 is presented in Figure 5-21 by road classification and severity.

The figure shows that there was an increase of 11 fatalities and an increase of 15 KSI casualties occurring on A-road dual carriageways. The figure also shows that the number of total casualties involving young motorists on Motorways and A-road dual carriageways has increased between 2014 and 2015 in contrast with A-road single carriageways where there was a slight decrease.

Fatalities involving young motorist
67.9 per cent since 2014 (28)



KSI casualties involving young motorist
16.3 per cent since 2014 (367)



Casualties involving young motorist
3.5 per cent since 2014 (4,579)

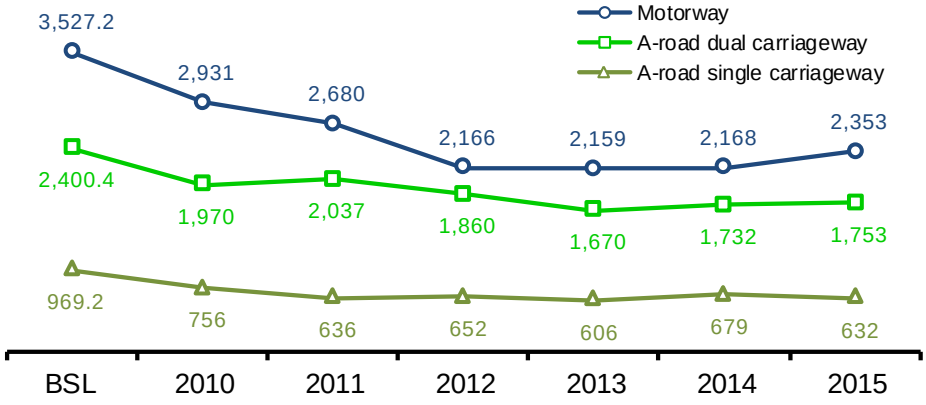


Figure 5-21 Casualties involving young motorist by severity and road class

5.5.4. Contributory factors associated with young motorists

Contributory factors involved in collisions with young motorists are provided in Appendix Table K-12. Of note; the factors listed in the appendix table are the total number of collisions where at least one of the factors was present in the collision and are not necessarily attributed directly to the young motorist. The top five factors recorded at least once in a collision involving a young motorist are:

- failed to look properly
- failed to judge other person's path or speed
- loss of control
- following too close
- sudden braking

The number of KSI casualties involving young motorists for the top 10 contributory factors are highlighted in Table 5-13. The top 10 contributory factors include factors from the "injudicious action", "driver/rider error or reaction", "impairment or distraction" and "behaviour or inexperience" groupings.

The two contributory factors related to the highest number of KSI casualties involving young motorists were "loss of control" or "failed to look properly" which contributed to 73 and 56 KSI casualties respectively.

Of note, 9 of the top 10 contributory factors listed in Table 5-13 also appear in the top 10 contributory factors attributed to all KSI casualties in 2015 (Appendix Table I-5); the exception being impaired by alcohol.

Table 5-13 Top 10 contributory factors for KSI casualties involving young motorists, 2015

Rank	Contributory factor		2015	Percentage of KSI casualties
1	410	Loss of control	73	17.1%
2	405	Failed to look properly	56	13.1%
3	406	Failed to judge other person's path or speed	46	10.7%
4	602	Careless, reckless or in a hurry	45	10.5%
5	503	Fatigue	35	8.2%
6	509	Distraction in vehicle	34	7.9%
7	307	Travelling too fast for conditions	24	5.6%
8	403	Poor turn or manoeuvre	24	5.6%
9	409	Swerved	23	5.4%
10	501	Impaired by alcohol	20	4.7%

Key (CF groups):
Driver/Rider error or reaction; Injudicious action; Behaviour or inexperience; Impairment or distraction

Notes:
(a) Table reports the number of KSI casualties involving at least one young motorist where the specified contributory factor was recorded at least once.
(b) In 2015, there was a total of 427 KSI casualties involving young motorists.

5.6. Lighting

This topic of interest provides data for monitoring the effect of lighting on road safety. Since 2010[15], parts of the SRN (generally excluding junctions) which previously were designed with lighting are now operating without lights during the hours of darkness.

Appendix Table L-1 to Table L-8 provide an overview of historic trends against lighting levels. These trends include; collisions and casualties by lighting condition, road name, road classification, contributory factors, and severity.

5.6.1. Comparison between number of casualties and lighting levels

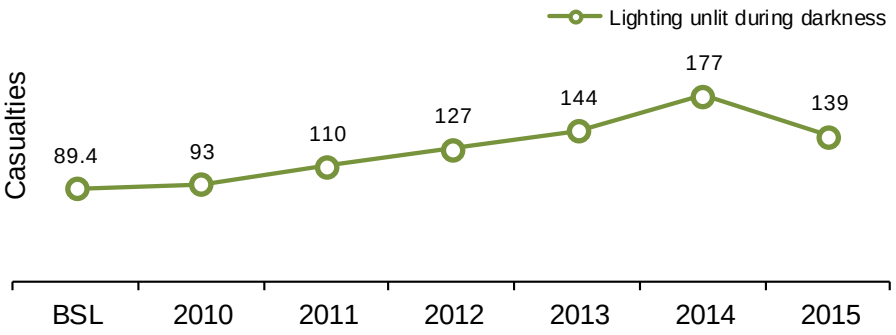
The proportion of casualties in 2015 (Figure 5-22) occurring within unlit sections of the SRN during darkness was relatively low. In total, there were 139 casualties reported in unlit sections during darkness out of the total 16,371 casualties. In comparison, the number of casualties reported as occurring in lit sections during darkness was over 11 times greater at 1,984.

Figure 5-22 shows that casualties on lit sections during darkness follow a similar trend to those in Figure 3-11 for total casualties. However, the number of casualties on unlit sections during darkness has been steadily rising since 2010 to 2014. Between 2010 and 2014, the number of casualties on unlit sections during darkness has increased by 90.3 per cent from 93 to 177 casualties. From the figure it can be seen that 2015 is the first year since 2010 where the number of casualties on unlit section during darkness witnessed a decrease; a 21.5 per cent reduction compared to 2014 value.

The number of motorway casualties occurring within unlit sections has decreased by 33.3 per cent from 123 in 2014 to 82 in 2015 (Appendix Table L-3). Between 2010 and 2015, the increase was equivalent to 110.3 per cent (39 to 82 casualties).

[15] Midnight Switch-Off for Motorway Lighting, Highways Agency (now Highways England), Accessed via http://webarchive.nationalarchives.gov.uk/20120810121037/http://www.highways.gov.uk/knowledge/30236.aspx

Lighting unlit during darkness
49.5 per cent from 2010



Lighting lit during darkness
18.1 per cent from 2010

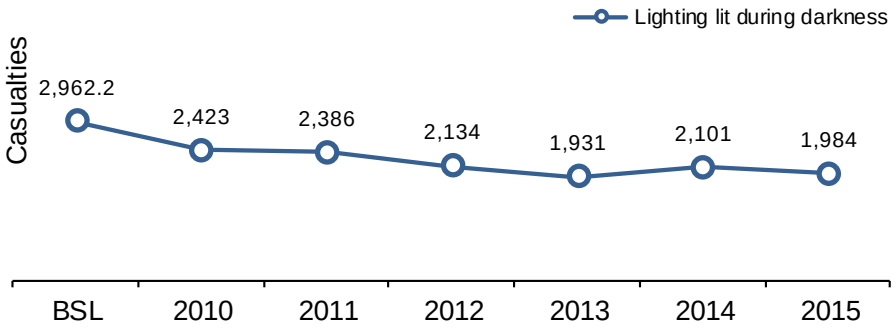


Figure 5-22 Casualties by lighting conditions between 2010 and 2015

5.6.2. Casualties on specific roads during darkness

An extract of the number of casualties occurring in darkness (all categories of darkness including sections of road that are lit and unlit) on specific roads are shown in Table 5-14. The expanded list is provided in Appendix Table L-5. As shown in Table 5-14, casualties increased on majority of the top 10 roads, with the greatest increase of 42.3 per cent reported on the A19; an increase to 111 casualties in 2015 from 78 in 2014. Other notable increases were on the M62 and A1 where the increase was 22.8 and 21.1 per cent respectively.

Table 5-14 Casualties during darkness by top 10 road names

Rank	Road name	BSL	2010	2011	2012	2013	2014	2015	2015 per cent change from 2014
1	M1	569.6	427	356	363	326	321	344	↑ 7.2
2	M25	464.8	354	367	371	305	306	322	↑ 5.2
3	M6	434.0	340	362	253	297	330	309	↓ 6.4
4	M4	233.4	184	202	182	192	176	176	- 0.0
5	A1	274.4	219	146	160	190	128	155	↑ 21.1
6	A5	131.0	112	119	141	135	128	143	↑ 11.7
7	M62	198.8	151	125	158	113	114	140	↑ 22.8
8	A1(M)	123.6	116	119	114	143	109	125	↑ 14.7
9	A38	138.6	116	104	125	121	152	124	↓ 18.4
10	A19	90.6	118	63	81	85	78	111	↑ 42.3

5.7. Weather

This topic of interest analyses the effects of weather on the SRN. The number of casualties in 2015 recorded as occurring during weather events (rain, snow, and fog or mist) equalled 2,510 and was equivalent to 15.3 per cent of the total 16,371 casualties on the SRN. Fine weather conditions were recorded in over 82.8 per cent of casualties.

Appendix Table M-1 to Table M-12 provide additional breakdowns of collisions and casualties by weather group, road classification, contributory factors, severity, age group, vehicle type and skidding.

5.7.1. Casualties by weather type

Figure 5-23 shows the number of total casualties by weather group and years between 2010 and 2015. Between 2014 and 2015, the following changes occurred in total casualty numbers during weather events:

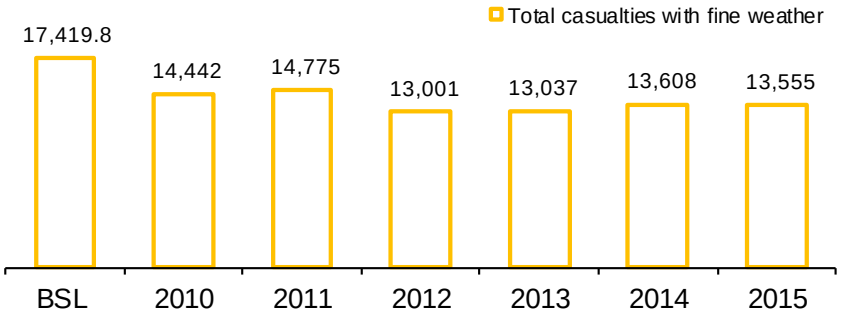
- The number of casualties during snow increased by 65.2 per cent to 114 in 2015 from 69 in 2014
- The number of casualties during rain had the greatest decrease; 13.5 per cent to 2,222 from 2,570 in 2014
- Total casualties during fog or mist was nearly the same of the two timescales; 174 in 2015

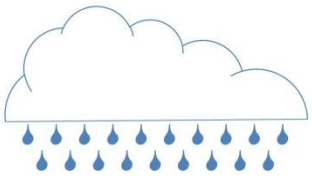
Appendix Table M-1 provides that:

- The only increase in KSI casualties was during snow, which increased to 10 in 2015 from 4 in 2014
- The largest decrease in KSI casualties was during rainfall, which decreased by 16.7 per cent to 219 in 2015 from 263 in 2014

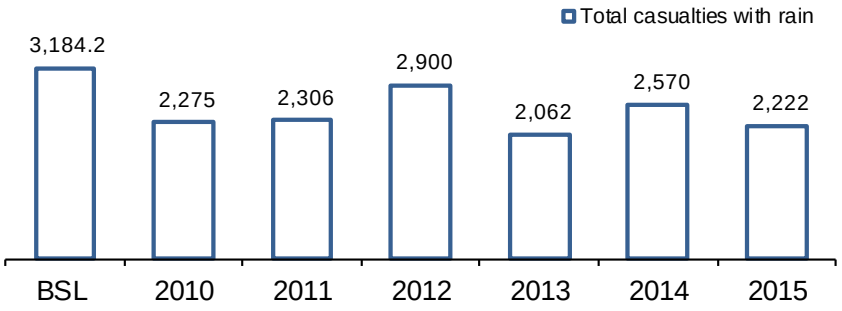
Appendix Table M-3 provides breakdowns of casualties by weather groups and road classifications by year.

Fine

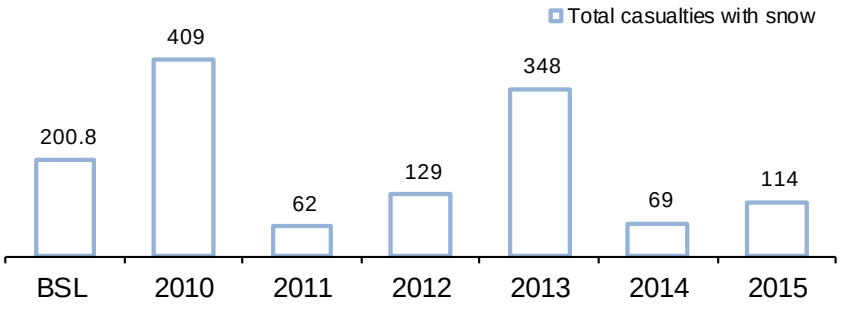


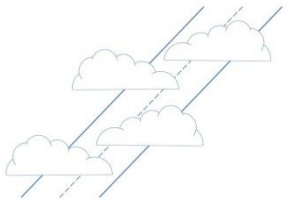


Rain



Snow





Fog or mist

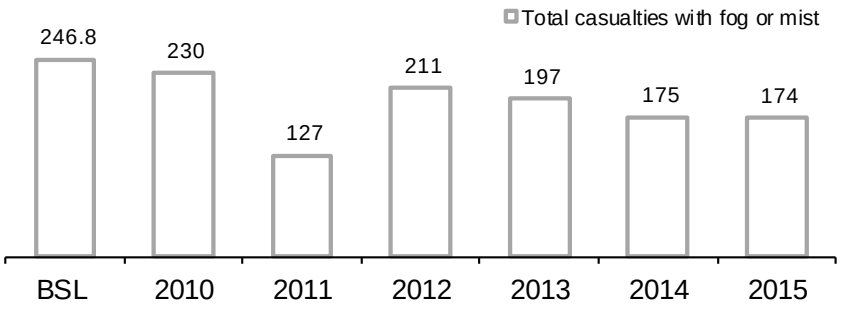


Figure 5-23 Casualties by weather group and year

5.7.2. Casualties against measured temperature and rainfall

The distribution of casualties during rainfall by month in 2015 is shown in Figure 5-25. It can be seen that the highest number of casualties per month occurred during November with 400, followed by December with 332 casualties.

There is a fair correlation, especially from August onwards, between Figure 5-25 and Figure 5-27, which shows the mean UK rainfall by month for 2015.

The assessment of casualties against measured air temperature and rainfall is provided in Figure 5-24, Figure 5-26 and Figure 5-27. From the figures it can be observed that in 2015:

- **Quarter 1 (Jan to Mar)** – typically casualty values were at their lowest annually (*approx.* 1,260 per month) corresponding with low temperatures (4°C to 6°C) and fairly high rainfall
- **Quarter 2 (Apr to Jun)** – typically casualty values remain low (*approx.* 1,268 per month) through increasing air temperature and decreasing rainfall
- **Quarter 3 (Jul to Sep)** – typically casualty values are at their highest (*approx.* 1,511 per month) corresponding with high temperatures (12°C to 16°C) and low/moderate rainfall, the period corresponds with the school summer holiday
- **Quarter 4 (Oct to Dec)** – typically casualty values remain high (*approx.* 1,418 per month) following Quarter 3 corresponding with declining temperatures (reducing from approximately 11°C in October to 9°C in December) with high rainfall

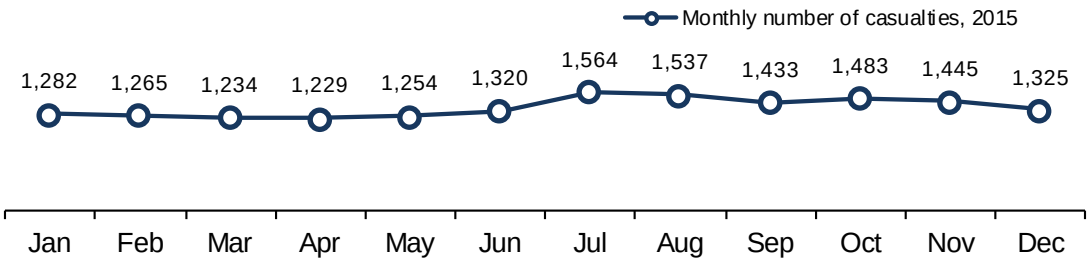


Figure 5-24 Number of total casualties by month, 2015

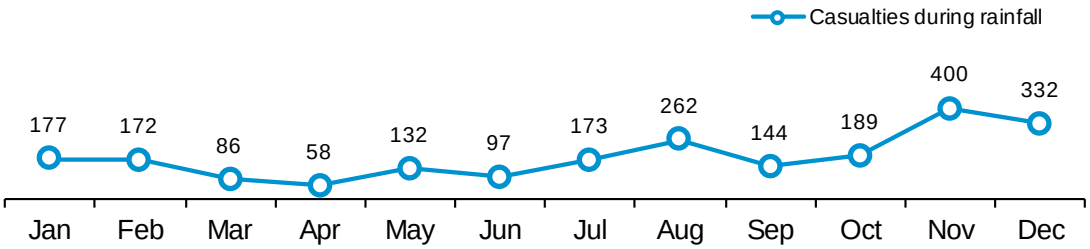


Figure 5-25 Total number of casualties during rainfall by month, 2015

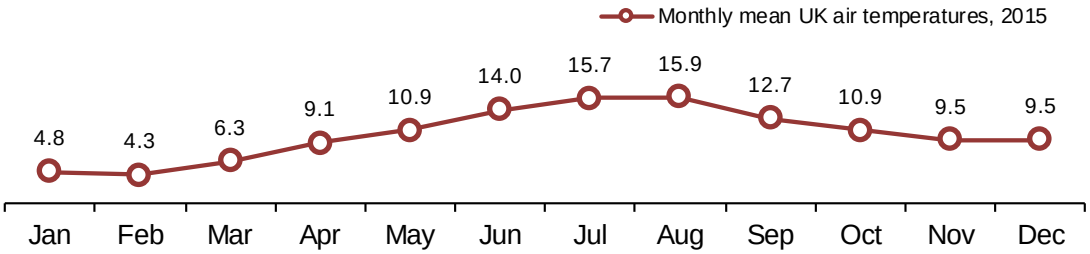


Figure 5-26 Mean UK air temperatures (degrees Celsius) by month, 2015

Notes:
(a) Temperature data sourced from DECC Energy Weather: Digest of United Kingdom energy statistics (DUKES).
(b) Accessed from https://www.gov.uk/government/statistics/weather-digest-of-united-kingdom-energy-statistics-dukes

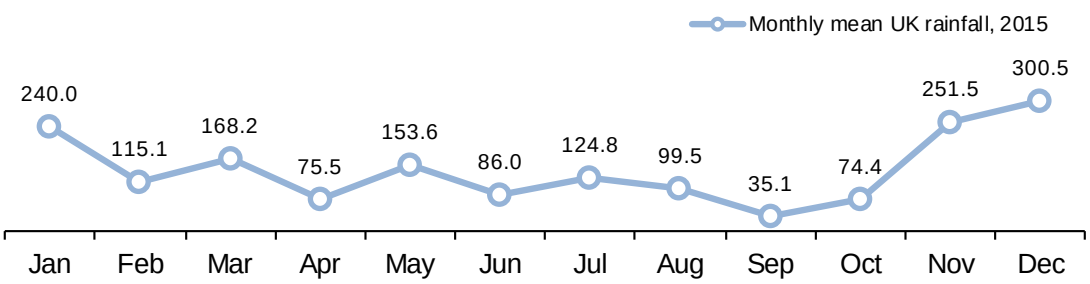


Figure 5-27 Mean UK rainfall (millimetres) by month, 2015

Notes:
(a) Rainfall data sourced from DECC Energy Trends Statistics.
(b) Accessed from https://www.gov.uk/government/statistics/energy-trends-section-7-weather

5.7.3. Collisions by weather related contributory factors

Table 5-15 shows the number of collisions involving specific weather related contributory factors. It shows that other than "Travelling too fast for conditions", the number of collisions involving specific weather related contributory factors have all decreased from 2014 to 2015. The increase against the "Travelling too fast for conditions" is also only slight; with a 0.7 per cent increase.

Table 5-15 Number of collisions involving specific weather related contributory factors, 2014 and 2015

Contributory factor		2014	2015	2015 per cent change from 2014
103	Slippery road (due to weather)	878	693	↓ 21.1
307	Travelling too fast for conditions	726	731	↑ 0.7
706	Dazzling sun	168	130	↓ 22.6
707	Rain, sleet, snow, or fog	217	182	↓ 16.1
708	Spray from other vehicles	102	59	↓ 42.2

Appendix Table M-9 and Table M-10 provide greater breakdown of the number of casualties and collisions attributed to the weather related contributory factors.

5.8. Roadworks

This topic of interest provides a summary on changes to the number of casualties at roadworks. Further details of collisions and casualties involving roadworks by road classification, junction detail, vehicle type, driver age, pedestrian involvement, contributory factors, severity and severity ratios is provided in Appendix Table N-1 to Table N-20.

Roadworks are essential to the SRN as they ensure roads are safe and serviceable during their lifetimes, as well as increase capacity, through additional lanes or easing of bottlenecks.

In the past decade, Highways England has sought methods to keep road users and road workers safe within roadworks. One example is the introduction of average speed cameras to enforce a safe speed limit through works to protect road users and road workers.

5.8.1. Trends in casualties at roadworks

The trends of the number of casualties within roadworks on the SRN between 2005 and 2010 had levels typically around 900 casualties per year (2005-09 baseline average of 869.0). However, as seen in Figure 5-28, the numbers of casualties at roadworks indicate a drop by 33.6 per cent from 900 to 598 between 2010 and 2011 and a further 20.7 per cent drop between 2011 and 2012. Since then the number of casualties have been on the rise through to 2015; a 56.3 per cent increase.

Casualties at roadworks

↑ 8.0 per cent from 2014 (686 to 741)

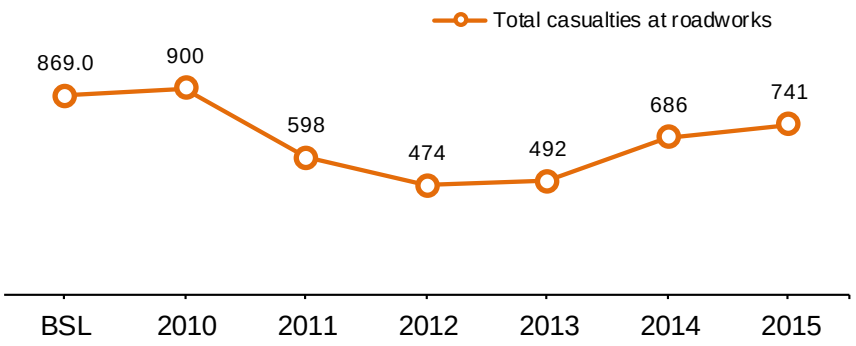


Figure 5-28 Trend in casualties at roadworks

5.8.2. Comparison of casualties at roadworks against roads spending

A comparison between casualties occurring at roadworks against capital and current expenditure on national roads[16] is highlighted in Figure 5-29 for May 2006 to April 2015[17].

From the figure it can be seen that since May 2009, the number of casualties occurring in roadworks follows closely the amount of capital and current expenditure on national roads as would be expected.

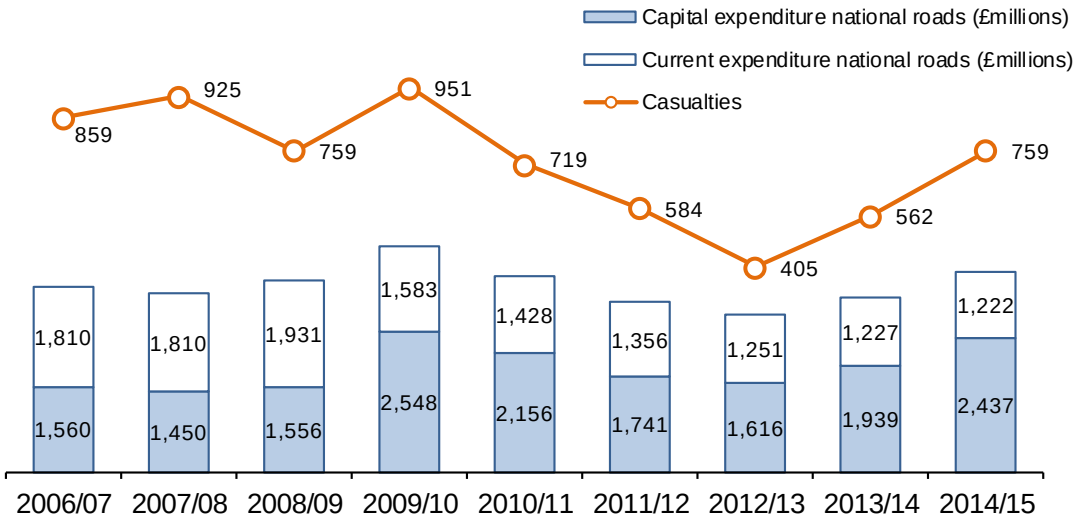


Figure 5-29 Casualties at roadworks against expenditure on national roads (£millions) between 2006/07 to 2014/15

It is anticipated the spending profile on construction activities will continue to increase over the next three years as a number of smart motorway schemes and other major projects commence construction. Therefore, based on the current correlation, there is the potential for casualties resulting from collisions within roadworks to continue to increase as seen in year 2014/15.

5.8.3. Contributory factors in collisions at roadworks

The top ten contributory factors involved in collisions in roadworks during 2015 are listed in Table 5-16. The table indicates the number of collisions where a specific factor is reported at least once. In 2015, the most common factor reported was “Failed to look properly”, which was reported in 147 collisions.

Out of the top ten contributory factors attributed to collisions at roadworks, only one was not listed in the top ten contributory factors reported for overall collisions on the SRN. This was “Temporary road layout (e.g. contraflow)” and this is no surprise given the potential linkage of it to roadworks and ranked 5th in the below table.

[16] For this report, annual values of capital and current expenditure on “national roads” are used as an approximation of overall national roadworks activity on major routes of which the SRN is assumed to constitute the vast majority. Values obtained from Table TSGB1303 “UK Public Expenditure on Transport by function”, sourced from DfT, 2015.
[17] Casualty numbers adjusted to match the May to April timeline.

Table 5-16 Top ten contributory factors for collisions at roadworks, 2015

Rank.	Contributory factor		2015	Percentage of collisions at roadworks, 2015
1	405	Failed to look properly	147	32.7%
2	406	Failed to judge other person's path or speed	120	26.7%
3	308	Following too close	59	13.1%
4	408	Sudden braking	43	9.6%
5	107	Temporary road layout (e.g. contraflow)	31	6.9%
6	403	Poor turn or manoeuvre	29	6.5%
7	410	Loss of control	28	6.2%
8	602	Careless, reckless or in a hurry	28	6.2%
9	307	Travelling too fast for conditions	23	5.1%
10	503	Fatigue	19	4.2%

Key (CF groups):
Driver/Rider error or reaction; Injudicious action; Impairment or distraction; Road environment; Behaviour or inexperience

Notes:
(a) Table reports the number of collisions at roadworks where the specified contributory factor was recorded at least once.
(b) In 2015, there was a total of 449 collisions at roadworks.

Figure 5-30 displays the number of collisions involving either excess speed or tailgating. These contributory factors are more specifically reported as "Exceeding speed limit", "Travelling too fast for conditions" and "Following too close". The figure shows that the post 2010 values are significantly better than the baseline and 2010 values. From the figure it can be seen that there was an increase of 11 collisions linked to the "Following too close" factor between 2013 and 2014 and thereafter a decrease of 7 collisions to 2015. However, in 2015 there is a slight increase of 2 collisions against the "Travelling too fast for conditions" contributory factor.

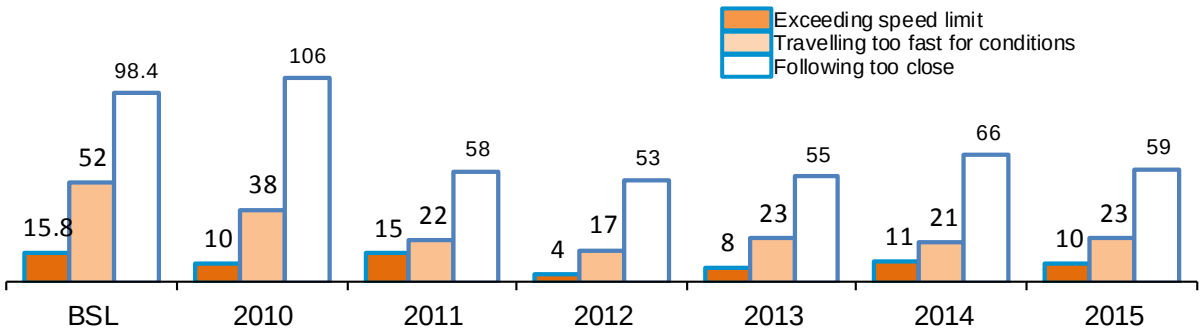


Figure 5-30 Collisions at roadworks involving excess speed and tailgating by year

5.9. Objects hit

An assessment of collisions and casualties resulting from hitting objects on and off the carriageway is included in this section. Appendix Table O-1 to Table O-12 provide further breakdowns of collisions and casualties involving objects hit on and off carriageways by objects hit, road classification, contributory factors and severity.

Object hit on carriageway
126 KSI casualties from objects hit on carriageway
2.3 per cent from 2014 (129)

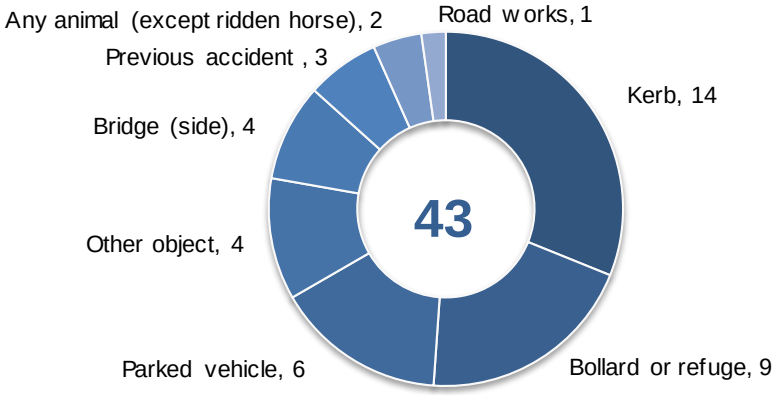
Object hit off carriageway
575 KSI casualties from objects hit off carriageway
1.5 per cent from 2014 (584)

5.9.1. Casualties resulting from hitting objects on carriageway

Figure 5-31 highlights the number of KSI casualties resulting from hitting objects on the carriageway by road classification. As shown in the figure, the number of KSI casualties has decreased on motorways and A-road dual carriageways. However, the number of KSI casualties on A-road single carriageways has doubled from 11 in 2014 to 22 in 2015. Of note, the object hit on carriageway for motorways which resulted in the most KSI casualties was parked vehicles; this could be the result of vehicles driving in to the back of stationary traffic in queues, slips etc.

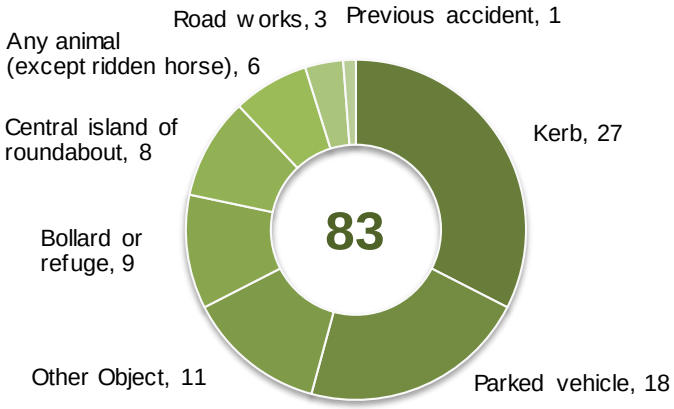
Motorways

43 KSI casualties from objects hit on carriageway
↓ 2.3 per cent from 2014 (44)



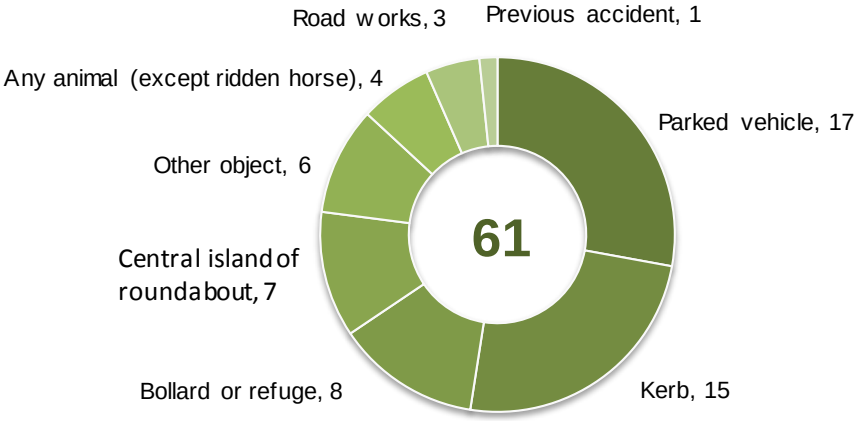
A-road

83 KSI casualties from objects hit on carriageway
↓ 2.4 per cent from 2014 (85)



A-road dual carriageway

61 KSI casualties from objects hit on carriageway
↓ 17.6 per cent from 2014 (74)



A-road single carriageway

22 KSI casualties from objects hit on carriageway
↑ 100.0 per cent from 2014 (11)

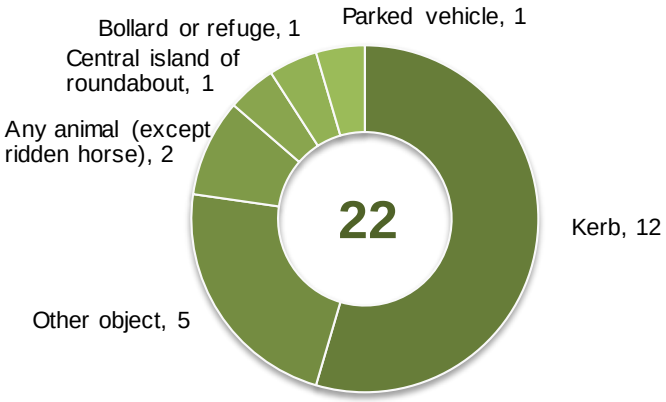


Figure 5-31 KSI casualties resulting from hitting objects on the carriageway by road class, 2015

Assessing the contributory factors involved in collisions where vehicles have hit objects on the carriageway shows that the top 5 factors by number of collisions in 2015 are:

- Loss of control
- Failed to look properly
- Careless, reckless or in a hurry
- Poor turn or manoeuvre
- Failed to judge the other person's path or speed

Data listing the top 20 contributory factors attributed to casualties and collisions including past years and BSL are provided Appendix Table O-9 and Table O-10 respectively.

5.9.2. Casualties resulting from hitting objects off carriageway

Figure 5-32 highlights the number of KSI casualties resulting from hitting objects off the carriageway. The figure shows that safety barriers are involved in a high number of KSI casualties, especially for motorways and A-road dual carriageways. In 2015, the number of KSI casualties resulting from hitting objects off carriageway (575) was nearly one third (32.2 per cent) compared to total KSI casualties (1,784).

Assessing the contributory factors attributed to collisions where vehicles have hit objects off the carriageway shows that the top 5 factors by number of collisions in 2015 are:

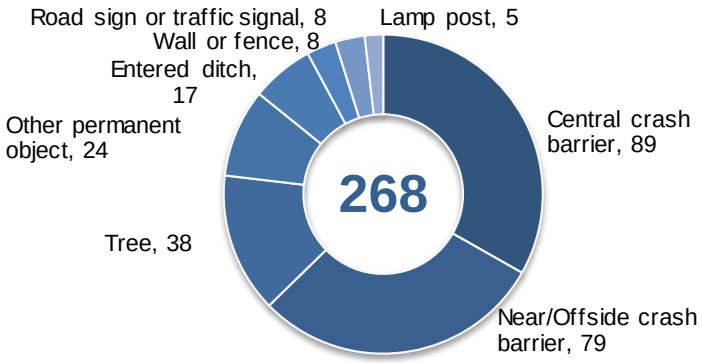
- Loss of control
- Failed to look properly
- Failed to judge other person's path or speed
- Poor turn or manoeuvre
- Careless, reckless or in a hurry

Data listing the top 20 contributory factors attributed to casualties and collisions including past years and BSL are available in Appendix Table O-11 and Table O-12 respectively.

Motorways

268 KSI casualties from objects hit off carriageway

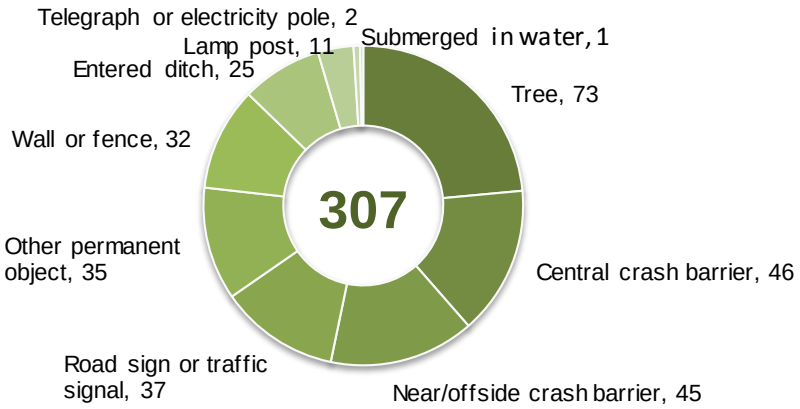
1.8 per cent from 2014 (273)



A-road

307 KSI casualties from objects hit off carriageway

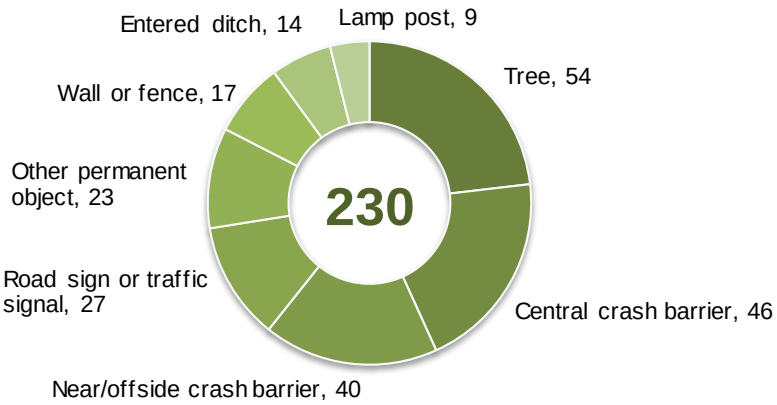
1.3 per cent from 2014 (311)



A-road Dual

230 KSI casualties from objects hit off carriageway

0.4 per cent from 2014 (231)



A-road Single

77 KSI casualties from objects hit off carriageway

3.75 per cent from 2014 (80)

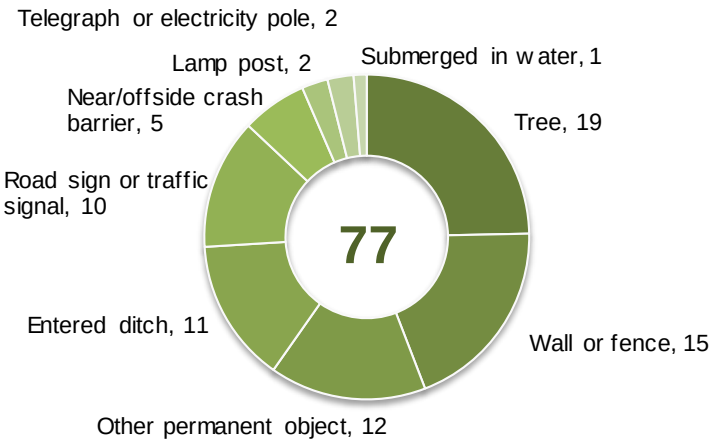
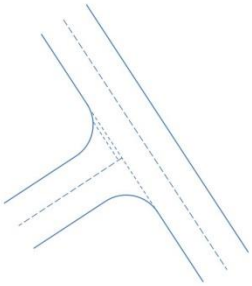


Figure 5-32 KSI casualties resulting from hitting objects off the carriageway by road class, 2015

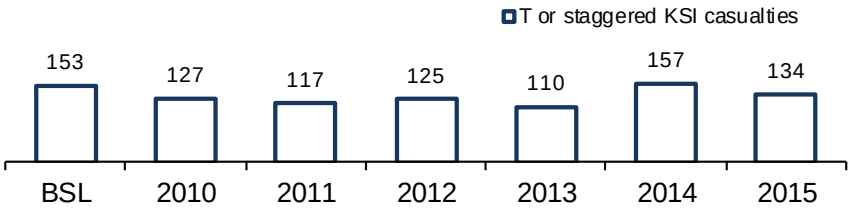
5.10. Junctions

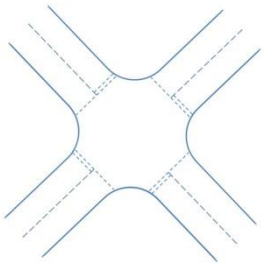
This topic of interest focuses on collisions and casualties occurring at or in the proximity of junctions. For additional statistics on junctions refer to Appendix Table P-1 to Table P-14 which provide breakdowns of collisions and casualties by junction detail, junction control, road name, road classification, vehicle type, driver age, contributory factors and severity.

5.10.1. KSI casualties by junction detail

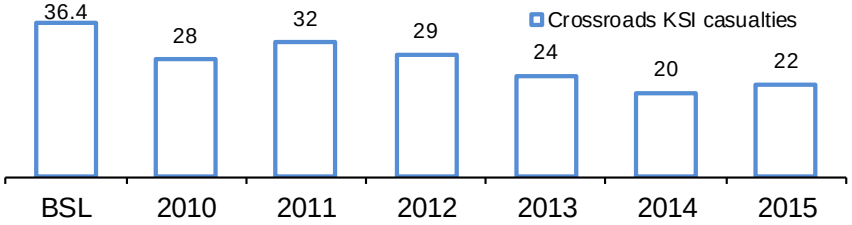


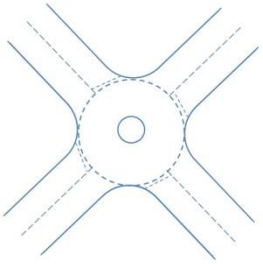
T or staggered



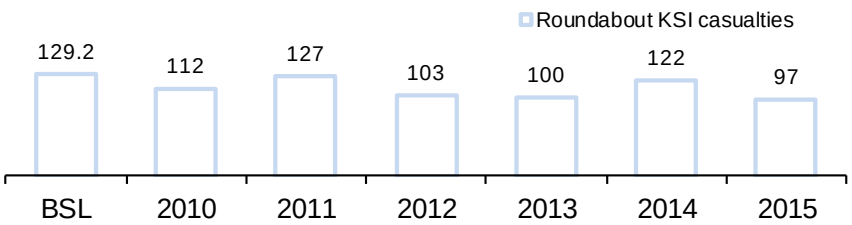


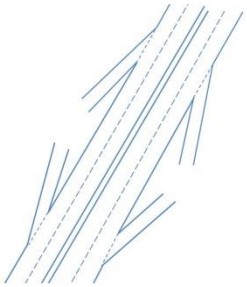
Crossroads



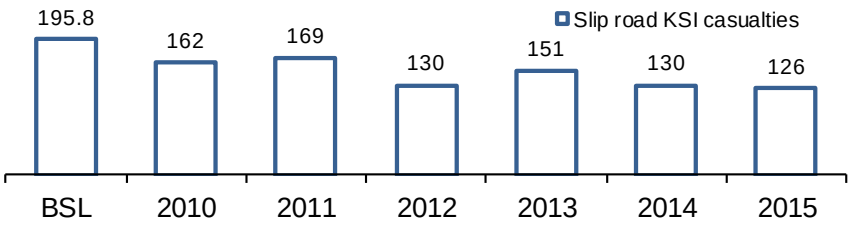


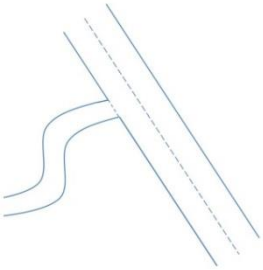
Roundabouts





Slip roads





Private drive

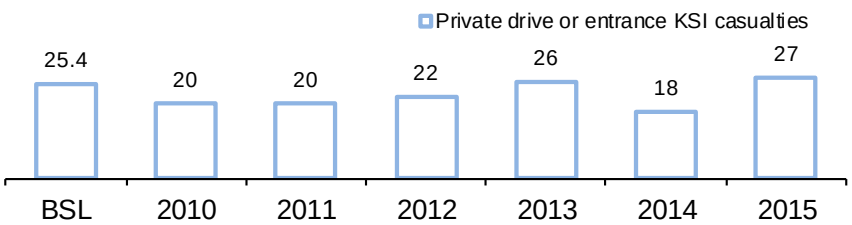


Figure 5-33 KSI casualties by junction detail and year

From Figure 5-33 it can be observed that the number of KSI casualties occurring on roundabouts and T or staggered junctions have decreased by 20.5 and 14.6 per cent respectively since 2014.

5.10.2. Motorway collision proximity to slip road junctions

This subsection investigates the influence of collision proximity to motorway slip road junctions on the SRN in 2015. Currently only collisions that are within 20 metres of a junction are recorded as "at a junction" and this covers all types of junctions and road classes. However, it is anticipated that the sphere of influence of motorway slip roads on collisions could be much larger in distance than 20 metres due to higher speeds and hence could be underestimated in current statistics.

The analysis involved calculating each collision's distance from its position to a specific point defining the position of the closest associated junction. Each junction was designated as either a merge point (where an on-slip joins the main carriageway) or a diverge point (where an off-slip splits from the main carriageway). Both types are illustrated in Figure 5-34. Note: distance is expressed as chainage in kilometres.

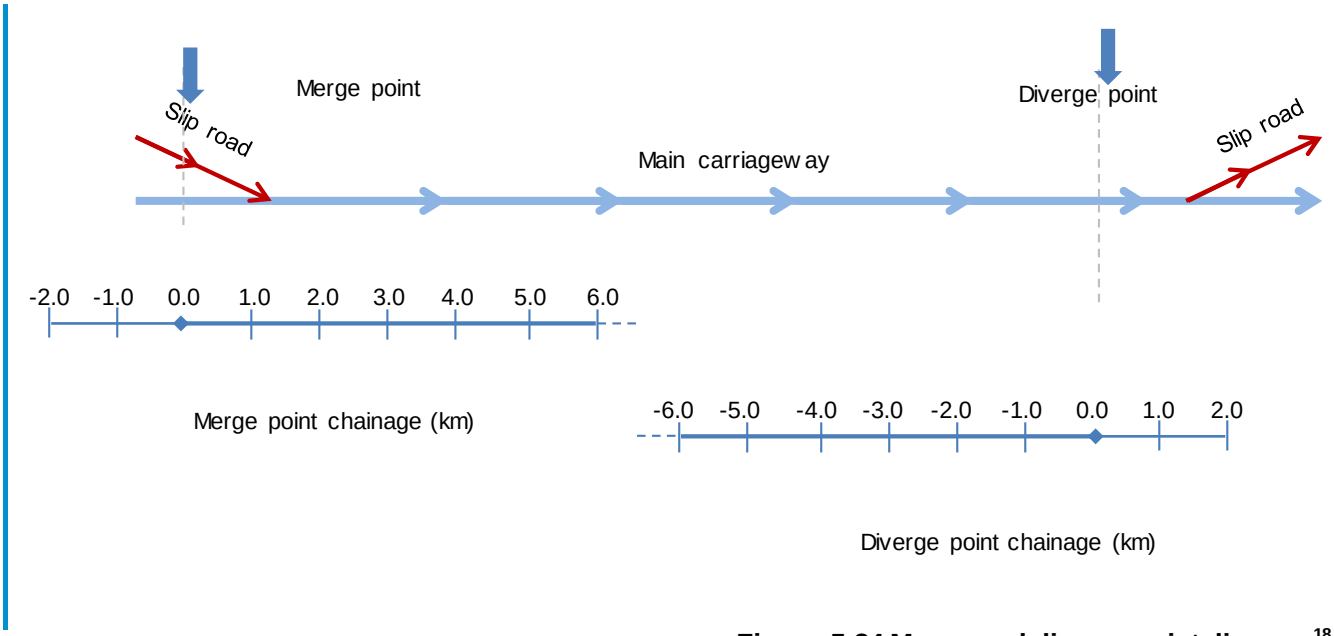


Figure 5-34 Merge and diverge point diagram[18]

The analysis includes collisions that occurred on main carriageway or slip road sections of motorways in 2015, however excludes collisions occurring at complex interchanges, for example the famous 'spaghetti junction'. As a result the number of collisions in the sample being analysed totalled 2,316 (48.0 per cent of all motorway collisions of 4,826). With regards to junction point type, 1,063 were associated with merge points and 1,253 were associated with diverge points.

Figure 5-35 shows the distribution by percentage of sampled motorway collisions from their respective merge points (at 0.0km) combined into a single figure. It can be seen from Figure 5-35 that the

[18] Chainage is the distance (in kilometres) between any two points along the road and is typically measured along the centre line of the road. This measure accounts for the curvature of the road.

frequency of collisions increases from approximately 1.0km before a merge point and peaks directly after between the merge point and 0.5km.

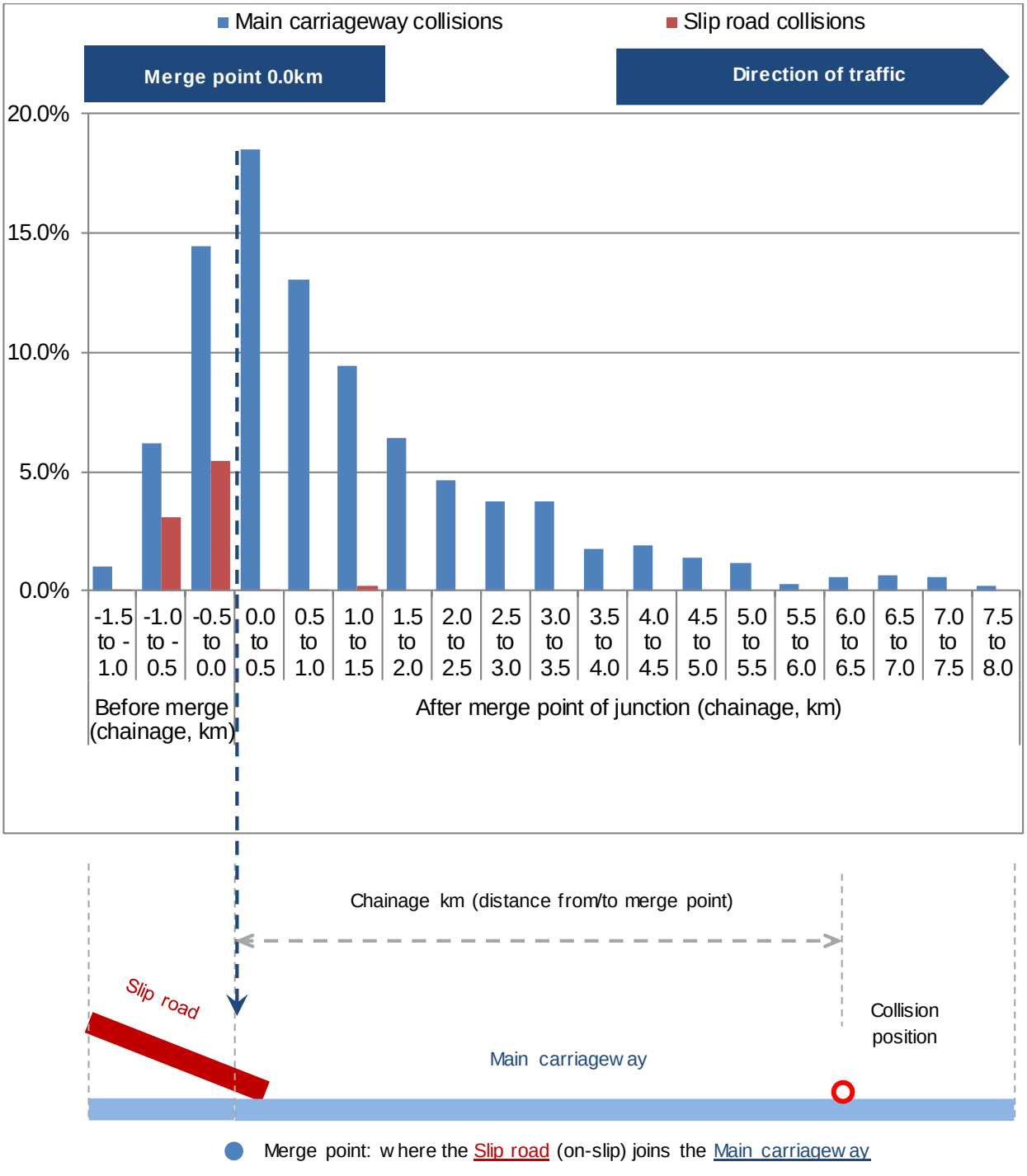


Figure 5-35 Combined distribution of collisions from respective merge points

Assessment of the whole distribution reveals that the frequency of collisions remains high until approximately 3.5km after the merge point; with 89.2 per cent of collisions associated with merge points occurring between -1.0km and 3.5km.

Directly before (-0.5km to 0.0km) and after (0.0km to 0.5km) the merge point there appears to be a significant influence from slip road junctions with 14.5 per cent and 18.5 per cent of the sampled collisions occurring on main carriageways respectively, and 5.5 per cent and 0.1 per cent occurring on the slip roads respectively.

The frequency of the combined collisions occurring between 3.5km to 5.5km from merge points in 2015 was equivalent to 17 collisions per 0.5km section. If sections of motorway between -1.0km and 3.5km from the merge point were to be improved to the same combined rate, based on the sample collisions alone this would result in an estimated reduction of 765 collisions in the vicinity of slip road merge points.

It can be seen from Table 5-17 that the majority of the top 10 contributory factors for casualties that occur between -1.0km and 3.5km of a merge point are from the "Driver/Rider error or reaction" grouping. It can also be seen that "Following too close" and "Travelling too fast for conditions" were associated with 14.9 per cent and 8.8 per cent of casualties in the sample that occurred between -1.0km and 3.5km of a merge point respectively.

Table 5-17 Top 10 contributory factors for casualties associated with collisions within -1.0km and 3.5km of a junction merge point

Rank	Contributory factor		2015	Percentage of casualties between -1.0km and 3.5km, 2015
1	405	Failed to look properly	479	30.2%
2	406	Failed to judge other person's path or speed	456	28.7%
3	308	Following too close	237	14.9%
4	410	Loss of control	231	14.6%
5	408	Sudden braking	184	11.6%
6	307	Travelling too fast for conditions	139	8.8%
7	403	Poor turn or manoeuvre	135	8.5%
8	602	Careless, reckless or in a hurry	130	8.2%
9	409	Swerved	99	6.2%
10	503	Fatigue	92	5.8%

Key (CF groups):
Driver/Rider error or reaction
Injudicious action
Impairment or distraction
Behaviour or inexperience

Notes:
(a) Table reports the number of casualties associated with merge points with a chainage between -1.0km and 3.5km where the specified contributory factor was recorded at least once.
(b) In 2015, there were a total of 1,587 casualties associated with merge points with a chainage between -1.0km and 3.5km.

Similarly, Figure 5-36 shows the distribution by percentage of sampled motorway collisions from their respective diverge points (at 0.0km) combined into a single figure.

Figure 5-36 shows that the frequency of collisions increases from approximately 3.0km before a diverge point and peaks significantly between 0.5km before and the diverge point itself (17.4 per cent of sample collisions). The frequency of collisions remains high until approximately 1.0km after the diverge point; with 86.8 per cent of collisions associated with diverge points occurring between -3.0km and 1.0km.

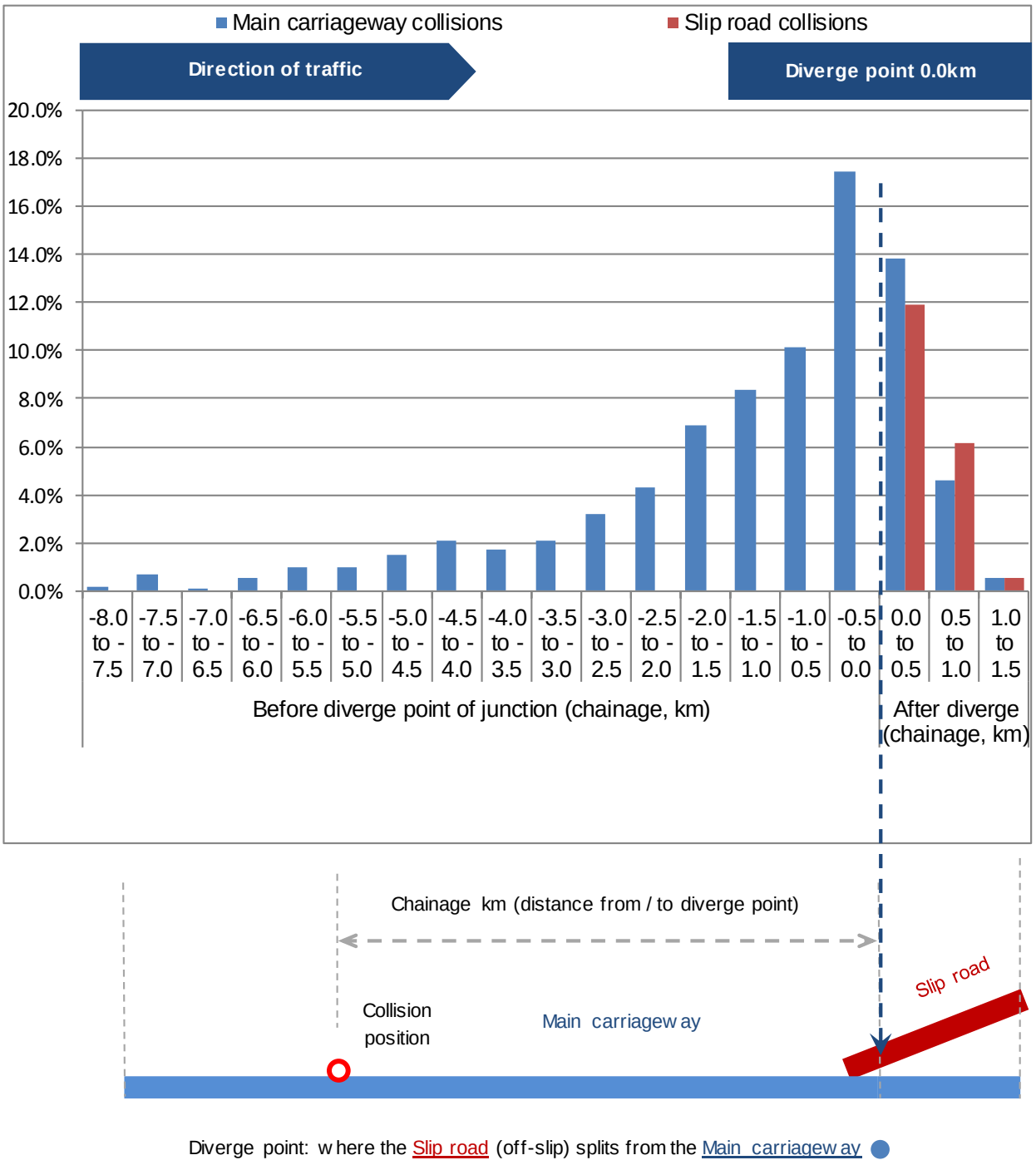


Figure 5-36 Combined distribution of collisions from respective diverge points

The frequency of the combined collisions occurring between -6.0km to -3.0km from diverge points in 2015 was equivalent to 20 collisions per 0.5km section. If sections of motorway between -3.0km and 1.0km from the diverge point were to be improved to the same combined rate, based on the sample collisions alone this would result in an estimated reduction of 899 collisions in the vicinity of slip road diverge points.

Table 5-18 shows the top contributory factors for casualties associated with diverge points that have a chainage between -3.0km and 1.0km. It can be seen from the table that 6 out of the top 10 are from

the “Driver/Rider error or reaction” grouping. It can also be seen that “Following too close”, “Travelling too fast for conditions” and “Slippery road (due to weather)” were associated with 16.7 per cent, 8.1 per cent and, 5.9 per cent of casualties in the sample respectively.

Table 5-18 Top 10 contributory factors for casualties associated with collisions within -3.0km and 1.0km of a junction diverge point

Rank	Contributory factor		2015	Percentage of casualties between -3.0km and 1.0km, 2015
1	405	Failed to look properly	572	32.0%
2	406	Failed to judge other person’s path or speed	530	29.6%
3	308	Following too close	299	16.7%
4	410	Loss of control	238	13.3%
5	408	Sudden braking	199	11.1%
6	602	Careless, reckless or in a hurry	195	10.9%
7	307	Travelling too fast for conditions	144	8.1%
8	403	Poor turn or manoeuvre	141	7.9%
9	409	Swerved	125	7.0%
10	103	Slippery road (due to weather)	105	5.9%

Key (CF groups):
Driver/Rider error or reaction; Road environment; Injudicious action; Behaviour or inexperience

Notes:
(a) Table reports the number of casualties associated with diverge points with a chainage between -3.0km and 1.0km where the specified contributory factor was recorded at least once.
(b) In 2015, there were a total of 1,788 casualties associated with diverge points with a chainage between -3.0km and 1.0km.

5.11. Tyres

This topic of interest examines collisions and casualties where 'Tyre illegal, defective or under inflated' is listed as at least one of the contributory factors (also referred to as tyres in this section for ease). This indicates a lack of preparation or carelessness on the part of the driver or rider to ensure the roadworthiness of their vehicle, and therefore casualties associated with it as the main factor can be considered as preventable.

Appendix Table Q-1 to Table Q-10 provide additional breakdowns of collisions and casualties involving illegal, defective or under inflated tyres by road name, road surface condition, weather condition, casualty type, contributory factors and severity.

5.11.1. Casualties resulting from illegal, defective or under-inflated tyres

The number of total casualties resulting from illegal, defective or under inflated tyres by year is reported in Figure 5-37. The number of reported casualties related to illegal, defective or under inflated tyres has generally improved since 2010 with a reduction of 42.5 per cent from 374 to 215 in 2015.

Figure 5-38 shows the number of KSI casualties related to illegal, defective or under inflated tyres had been decreasing since 2011; although there has been an increase of 86.2 per cent from 2013 to 2014, there is a decrease in KSI casualties in 2015 by 38.9 per cent from 2014.

215 casualties involving illegal, defective or under inflated tyres
19.5 per cent from 2014 (267)

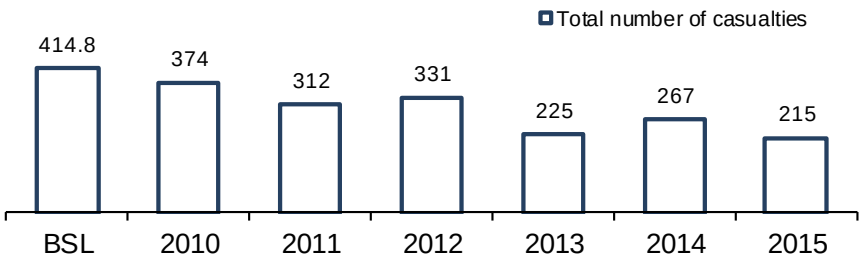


Figure 5-37 Casualties involving illegal, defective or under-inflated tyres by year

33 KSI casualties involving illegal, defective or under inflated tyres
38.9 per cent from 2014 (54)

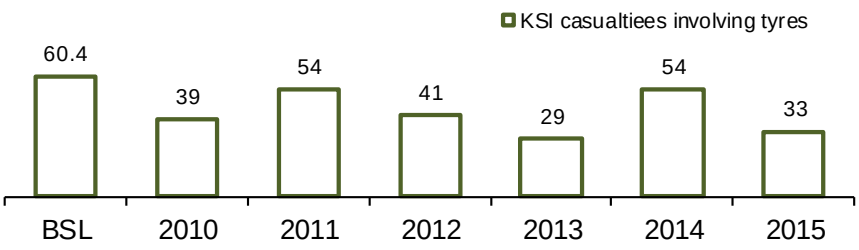


Figure 5-38 KSI casualties involving illegal, defective or under-inflated tyres by year

5.12. Goods Vehicles

This section considers the traffic and casualty statistics associated with goods vehicles. Heavy Goods Vehicles (HGVs) and Other Goods Vehicles (Other GVs or LGVs) rely heavily on the SRN to deliver goods to businesses in the UK and for export and import goods to and from foreign markets.

HGVs are classified and generally reported as goods vehicles where the vehicle gross weight is greater than 3.5 tonnes, whereas LGVs are those with the gross weight equal to or less than 3.5 tonnes. For the purposes of this report goods vehicles with unclassified gross weight are also classed under LGVs (or Other GVs).

Appendix Table R-1 to Table R-14 provide additional breakdowns of collisions and casualties involving HGVs and LGVs by road name, casualty age, contributory factors and severity.

5.12.1. Changes in HGV and LGV traffic levels

Figure 5-39 outlines the change in traffic levels of HGVs and LGVs by year. The table shows that in 2015, the amount of HGV traffic (96.96 HMVM) was significantly less than LGVs (129.22 HMVM). The difference between HGV and LGV traffic levels has more than doubled from 13.66 HMVM in 2010 to 32.26 HMVM in 2015.

Furthermore, analysing the percentage changes from 2010 as presented in Figure 5-40 highlights that LGV traffic is growing steadily year on year at least since 2010. Assessing the index percentages in the figure shows that traffic levels for LGVs are increasing typically 3 to 5 index points per year respectively. In contrast, the level of HGV traffic has decreased between 2010 and 2012, but increased by 4.8 index points since (2012 to 2014) with a significant increase from 2014 to 2015 by 5.4 index points and witnessing the highest traffic levels since at least 2010.

HGV Estimated traffic (HMVM)

↑ 5.5 per cent from 2014 (91.88 to 96.96)

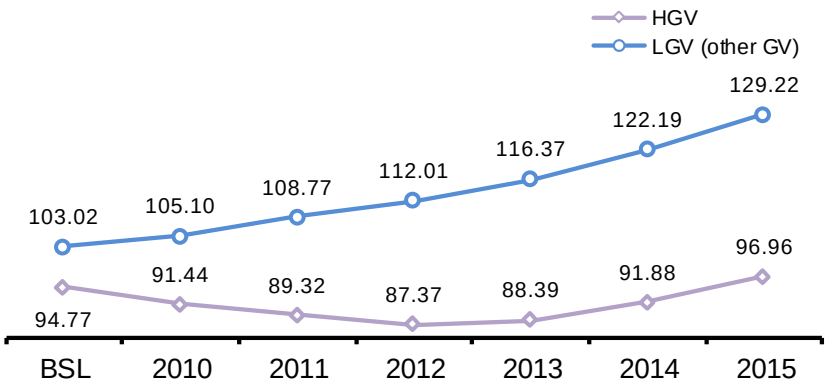


Figure 5-39 Estimated traffic levels for HGV and LGV (Other GV) on the SRN

LGV (other GV) traffic

↑ 5.7 per cent from 2014 (118.61 to 125.43)

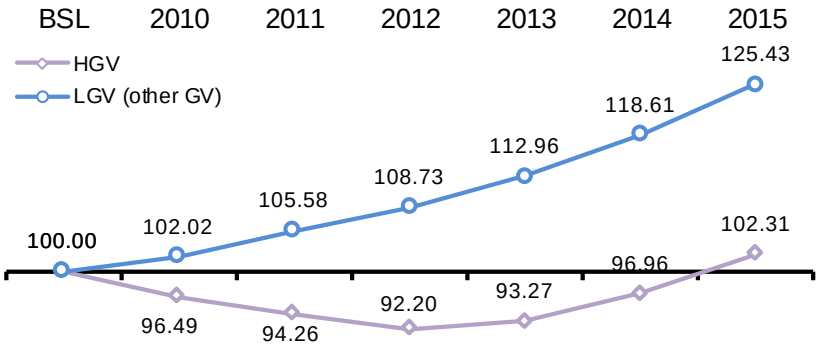


Figure 5-40 Index changes of estimated traffic levels for HGV and LGV (Other GV) on the SRN

It was anticipated, that due to the mandatory Driver Certificate of Professional Competence (CPC) [19] which came into force in September 2014, the levels of HGV traffic would fall further however this was not evident. LGV traffic levels are expected to increase further and since LGVs can be driven by less experienced and less qualified drivers who do not require the CPC there is a road safety concern.

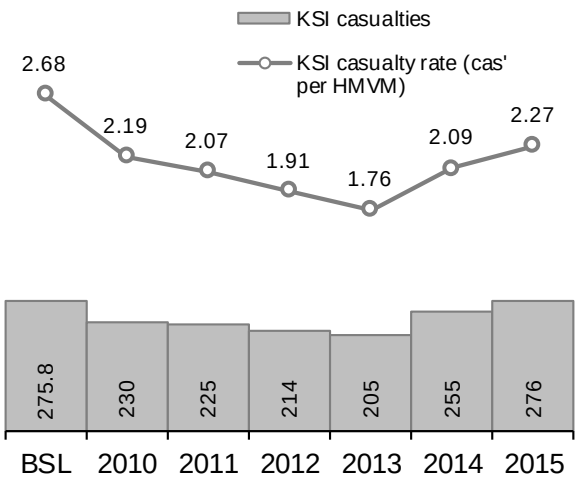
5.12.2. Comparison of casualties and casualty rates involving goods vehicles

Comparison of casualties and casualty rates involving either LGVs or HGVs is provided in Figure 5-41 and Figure 5-42 respectively.

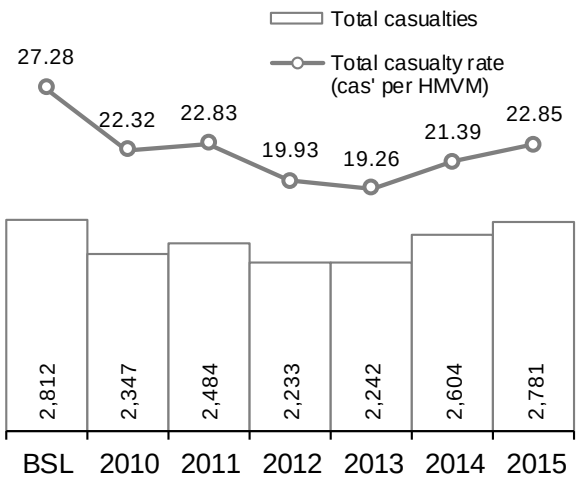
As shown by the figures, the likelihood of KSI or total casualties involving a HGV is greater than where the casualty involves a LGV. Comparing KSI casualty rates for 2015 shows that the KSI casualty rate for HGVs (4.53 KSI casualties per HMVM) is approximately 2 times that of the value for LGVs (2.27 KSI casualties per HMVM).

[19] https://www.gov.uk/driver-certificate-of-professional-competence-cpc/overview

Based on evidence provided in the two figures, it appears that casualties associated with LGVs continue to increase. HGV total casualty rates decreased from 2013 to 2015, however, KSI casualties and rates increased in 2015.



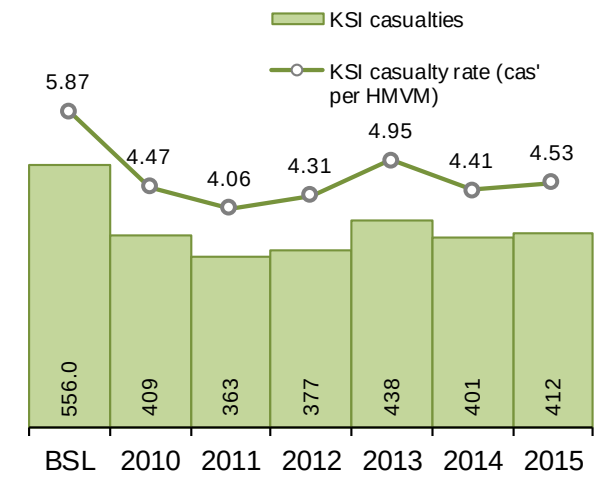
(a) KSI casualties and KSI rate involving LGVs



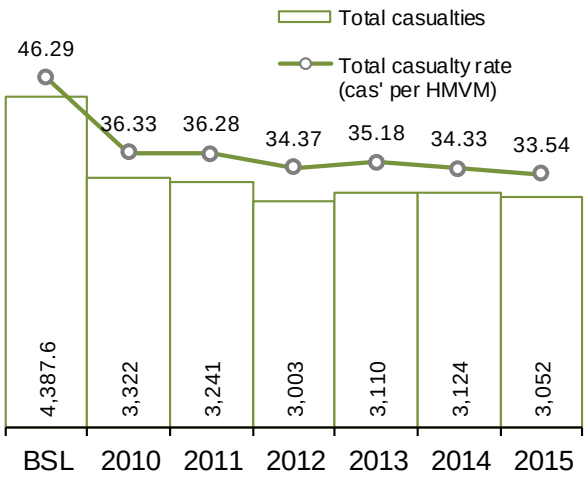
(b) Total casualties and total rate involving LGVs

Notes:
(a) Figure reports number of KSI and total casualties involving at least one LGV in a collision.
(b) Casualty rates based on traffic values provided in Figure 5-39.

Figure 5-41 Number of KSI and total casualties involving at least one LGV



(a) KSI casualties and KSI rate involving HGVs



(b) Total casualties and total rate involving HGVs

Notes:
(a) Figure reports number of KSI and total casualties involving at least one HGV in a collision.
(b) Casualty rates based on traffic values provided in Figure 5-39.

Figure 5-42 Number of KSI and total casualties involving at least one HGV

5.12.3. HGV and LGV casualties by road classification and name

As seen in Figure 5-43 the number of KSI casualties involving at least one LGV increased over all road classifications from 2014 to 2015. The number of KSI casualties on A-road single carriageways has been increasing since 2010; the increase of 4.5 per cent from 67 in 2014 to 70 in 2015 continued to follow this trend.

The number of KSI casualties involving at least one HGV on A-roads steadily decreased between 2005 and 2011 since which, as seen in Figure 5-44 it has seen an increase to 2013 prior to a dip in 2014 and 2015.

The number of KSI casualties on motorways has increased by 23.5 per cent since 2012 from 183 to 226) with the increase of 7.1 per cent from 211 in 2014 to 226 in 2015.

96 KSI casualties involving LGVs on A-road dual carriageways
↑ 10.3 per cent from 2014 (87)

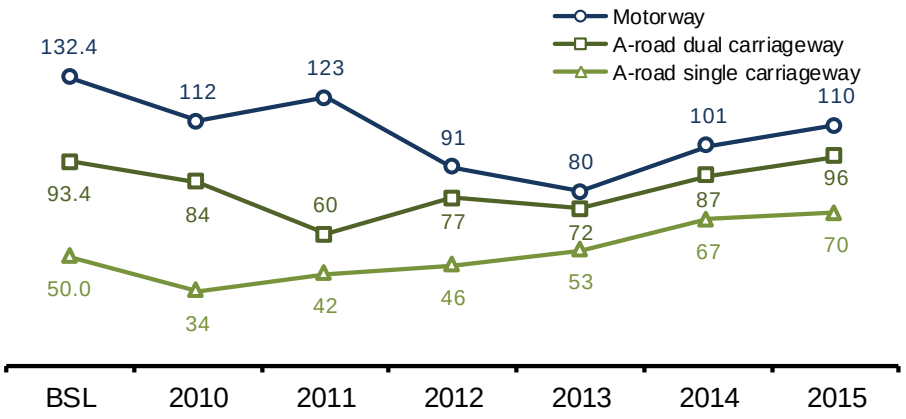


Figure 5-43 Number of KSI casualties involving at least one LGV

226 KSI casualties involving HGVs on Motorways
↑ 7.1 per cent from 2014 (211)

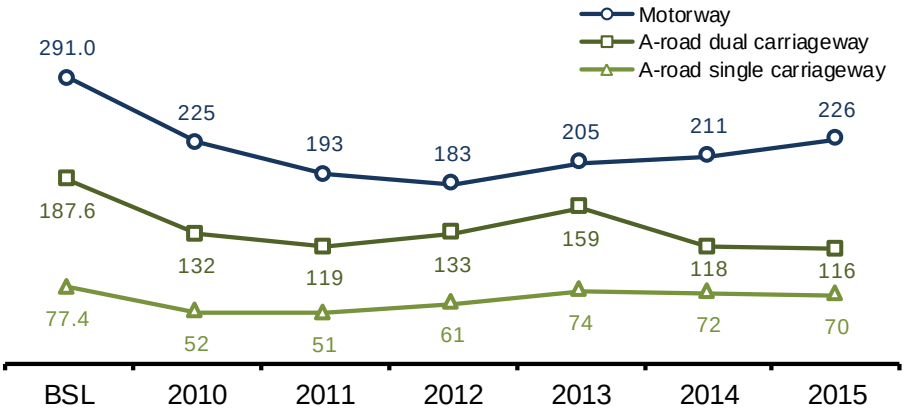


Figure 5-44 Number of KSI casualties involving at least one HGV

Table 5-19 shows the number of casualties involving LGVs by top 10 roads; the M6 had the most casualties in 2015 involving LGVs (237) up 2.2 per cent from 232 in 2014. In addition there were notable rises in casualties involving LGVs between 2014 and 2015 on the M25 (21.7 per cent), M4 (16.3 per cent), M62 (12.7 per cent) and M40 (15.8 per cent).

Casualties involving LGVs by top 20 road names are provided in Appendix Table R-3.

From Table 5-20 it can be seen that considerably more casualties involving HGVs happen on the M1, M25 and the M6 than any other road on the SRN. For each of these roads over 9.0 per cent of all casualties were in an incident involving a HGV. The M25 has slightly more than half the HGV traffic of the M6 however a similar number of casualties involving HGVs occurred on the M25 to the M6.

Casualties involving HGVs by top 20 road names are provided in Appendix Table R-5.

Table 5-19 Casualties involving LGVs by top 10 roads

Rank.	Road Name	BSL (2005-2009)	2010	2011	2012	2013	2014	2015	2015 change from BSL (2005-2009)	2015 change from 2013	2015 change from 2014
1	M6	244.4	90	216	162	157	232	237	-3.0%	51.0%	2.2%
2	M25	192.2	155	202	185	143	180	219	13.9%	53.1%	21.7%
3	M1	275.4	183	192	216	169	171	163	-40.8%	-3.6%	-4.7%
4	A1	149.8	101	107	79	90	106	118	-21.2%	31.1%	11.3%
5	M4	87.0	84	94	73	92	86	100	14.9%	8.7%	16.3%
6	M62	113.4	88	194	90	53	79	89	-21.5%	67.9%	12.7%
7	M40	64.8	49	47	34	47	76	88	35.8%	87.2%	15.8%
8	A5	49.6	53	71	52	63	64	80	61.3%	27.0%	25.0%
9	A27	66.6	64	64	51	85	60	69	3.6%	-18.8%	15.0%
10	A19	45.0	65	27	52	34	56	63	40.0%	85.3%	12.5%

Notes:
(a) Table reports the number of casualties involving at least one LGV.
(b) Ranked by 2015.

Table 5-20 Casualties involving HGVs by top 10 roads

Rank	Road Name	BSL (2005-2009)	2010	2011	2012	2013	2014	2015	2015 change from BSL (2005-2009)	2015 change from 2013	2015 change from 2014
1	M1	494.8	358	292	315	292	333	336	-32.1%	15.1%	0.9%
2	M25	522.4	351	377	331	376	322	315	-39.7%	-16.2%	-2.2%
3	M6	468.6	382	323	321	334	337	314	-33.0%	-6.0%	-6.8%
4	A1	205.0	146	151	118	152	112	130	-36.6%	-14.5%	16.1%
5	M62	151.2	170	110	117	103	112	128	-15.3%	24.3%	14.3%
6	A14	174.6	144	118	98	86	98	104	-40.4%	20.9%	6.1%
7	M20	103.6	47	52	88	80	98	95	-8.3%	18.8%	-3.1%
8	M40	132.4	105	83	60	77	66	90	-32.0%	16.9%	36.4%
9	A1(M)	90.0	78	71	67	66	75	87	-3.3%	31.8%	16.0%
10	M4	119.4	112	94	100	85	101	73	-38.9%	-14.1%	-27.7%

Notes:
(a) Table reports the number of casualties involving at least one HGV.
(b) Ranked by 2015.

5.12.4. Contributory factors

Table 5-21 shows that the most common contributory factor assigned to LGV drivers was "Failed to look properly". Of note, for the 2,781 casualties where a LGV was involved 9.4 per cent of the LGV drivers were recorded as "Following too close".

The contributory factor "Poor turn or manoeuvre" which is in the "Vision affected by" group was in the top three contributory factors assigned to HGV drivers in 2015 as shown in Table 5-22. "Failed to look properly" was assigned to 31.7 per cent of HGV drivers in 2015.

Table 5-21 Top 10 contributory factors assigned to LGV drivers by casualties involved, 2015

Rank	Contributory factor		2015	Percentage of casualties involving LGVs, 2015
1	405	Failed to look properly	513	18.4%
2	406	Failed to judge other person's path or speed	509	18.3%
3	308	Following too close	262	9.4%
4	602	Careless, reckless or in a hurry	200	7.2%
5	408	Sudden braking	174	6.3%
6	403	Poor turn or manoeuvre	139	5.0%
7	307	Travelling too fast for conditions	118	4.2%
8	410	Loss of control	107	3.8%
9	503	Fatigue	83	3.0%
10	509	Distraction in vehicle	82	2.9%

Key (CF groups):
Driver/Rider error or reaction; Impairment or distraction; Injudicious action; Behaviour or inexperience

Notes:
(a) Table reports the number of casualties where the specified contributory factor was recorded against at least one LGV driver.
(b) In 2015, there was a total of 2,781 casualties involving at least one LGV.

Table 5-22 Top 10 contributory factors assigned to HGV drivers by casualties involved, 2015

Rank	Contributory factor		2015	Percentage of casualties involving HGVs, 2015
1	405	Failed to look properly	966	31.7%
2	406	Failed to judge other person's path or speed	582	19.1%
3	403	Poor turn or manoeuvre	273	8.9%
4	710	Vehicle blind spot	266	8.7%
5	308	Following too close	176	5.8%
6	602	Careless, reckless or in a hurry	162	5.3%
7	408	Sudden braking	104	3.4%
8	307	Travelling too fast for conditions	66	2.2%
9	409	Swerved	63	2.1%
10	410	Loss of control	57	1.9%

Key (CF groups):
Driver/Rider error or reaction; Vision effected by; Injudicious action; Behaviour or inexperience

Notes:
(a) Table reports the number of casualties where the specified contributory factor was recorded against at least one HGV driver.
(b) In 2015, there was a total of 3,052 casualties involving at least one HGV.

5.13. Powered Two Wheeler (PTW) Users

This topic of interest analyses the number of PTW occupant (motorcyclist) casualties occurring on the SRN. Additional data on this topic is provided in Appendix Table S-1 to Table S-10.

In 2015, PTW occupants accounted for 12.9 per cent of fatalities (29 of 224) and 17.8 per cent of KSI casualties (318 of 1,784) on the SRN.

5.13.1. Casualties by severity

Figure 5-45 highlights the changes in PTW occupant fatalities and KSI casualties since 2010. From the figure it can be seen that the number of fatalities and the number of KSI casualties have decreased in 2015 relative to the baseline and 2014 values. The change from 2014 is:

- 3.3 per cent decrease in fatalities to 29 in 2015 from 30 in 2014
- 7.8 per cent decrease in KSI casualties to 318 in 2015 from 345 in 2014

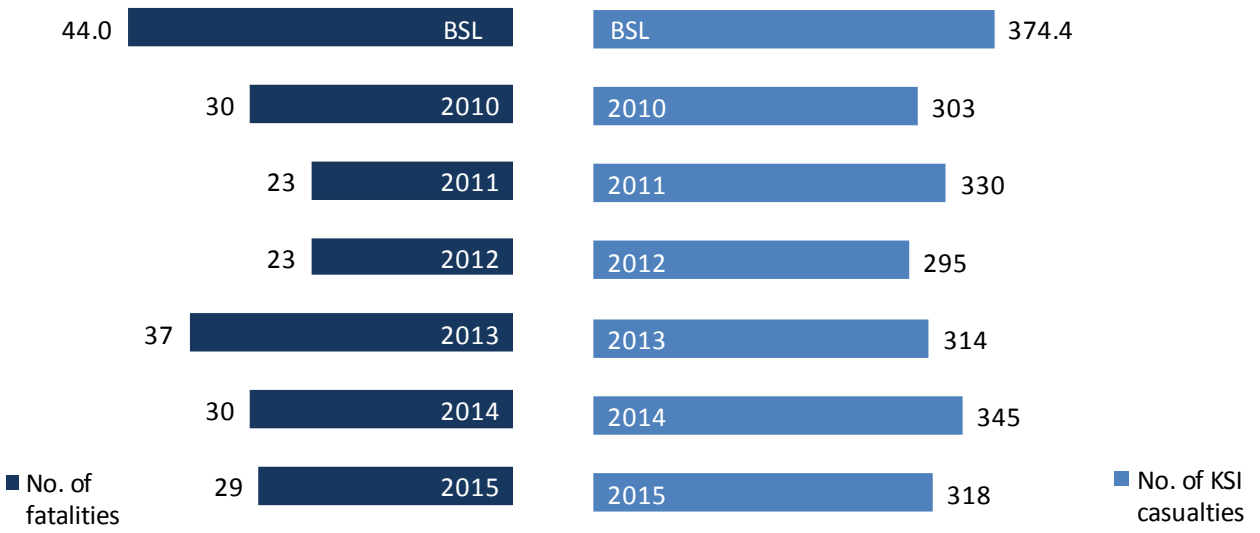


Figure 5-45 Number of PTW occupant fatalities and KSI casualties by year

Assessing the trends in the above figure shows that the number of PTW occupant fatalities and KSI casualties, although depicting a decrease against the baseline, the values have been fluctuating since 2010 with no significant overall change.

5.13.2. Casualties by road classification and name

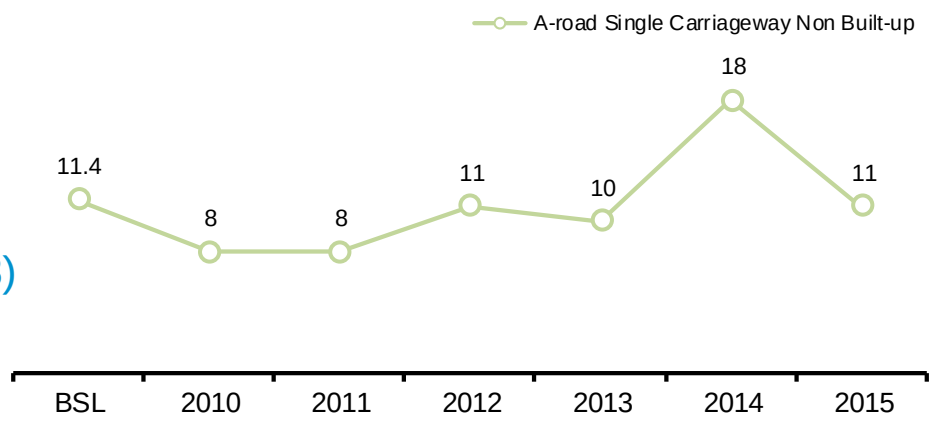
The trend of the number of fatalities on non-built-up (NBU) A-road single carriageways and non-built-up A-road dual carriageways are shown in Figure 5-46. The figure shows that the number of fatalities involving PTWs on NBU A-road single carriageways decreased by 38.9 per cent to 11 fatalities in 2015 from 18 in 2014.This reduction brings the value back in line with the pre-2014 and baseline values following the spike in 2014. The number of fatalities involving PTWs on NBU A-road dual carriageways increased by 50.0 per cent to 12 in 2015 from 8 in 2014. The trend indicates that the number of fatalities for this road type is fluctuating around an average of 10 since 2010.

Figure 5-47 shows the number of KSI casualties involving PTWs by road classification. Each road type indicated an increase in the number of KSI casualties from 2013 to 2014 followed by a decrease to 2015. For example there was a decrease of 7.3 per cent in the number of KSI casualties involving PTWs on A-road dual carriageways which followed the increase of 17.0 per cent from 2013 to 2014.

Fatalities involving PTWs on NBU A-road single carriageways

11 fatalities

7 from 2014 (18)



Fatalities involving PTWs on NBU A-road dual carriageways

12 fatalities

4 from 2014 (8)

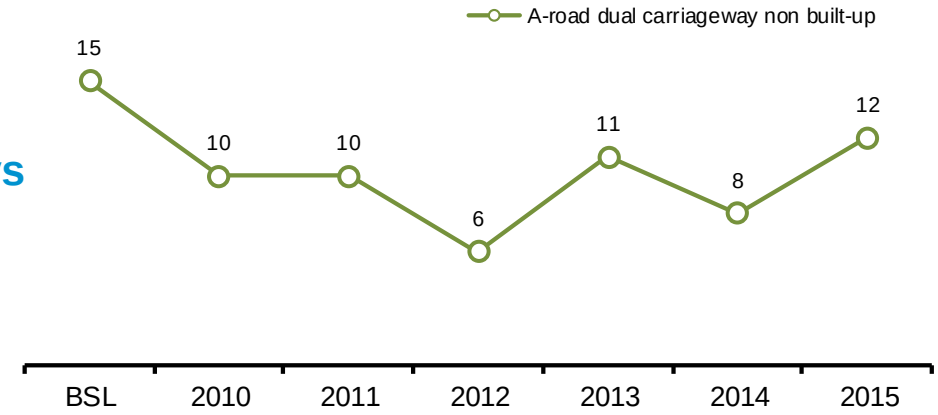


Figure 5-46 Fatalities involving PTWs on non-built-up A-road single and dual carriageways by year

153 KSI casualties involving PTWs on A-road dual carriageways

7.3 per cent from 2014 (165)

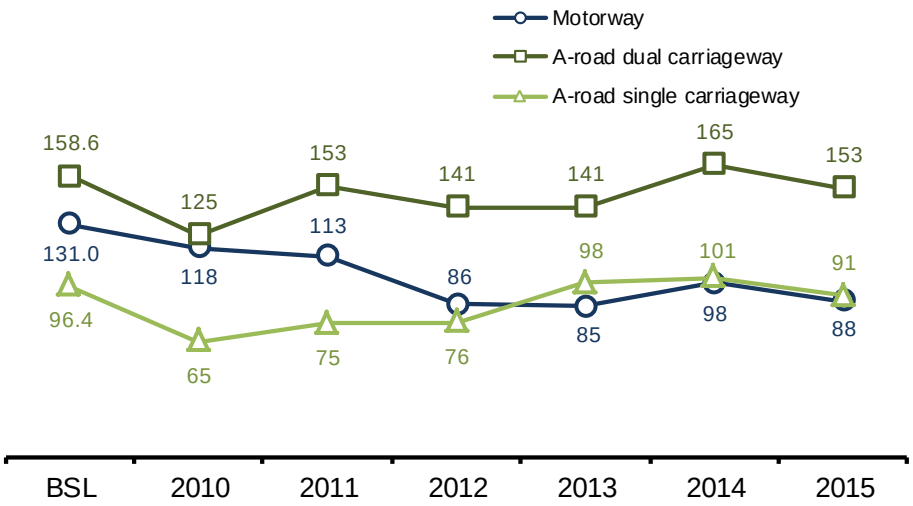


Figure 5-47 KSI casualties involving PTWs by road class and year

Table 5-23 Casualties involving PTWs by top 10 roads

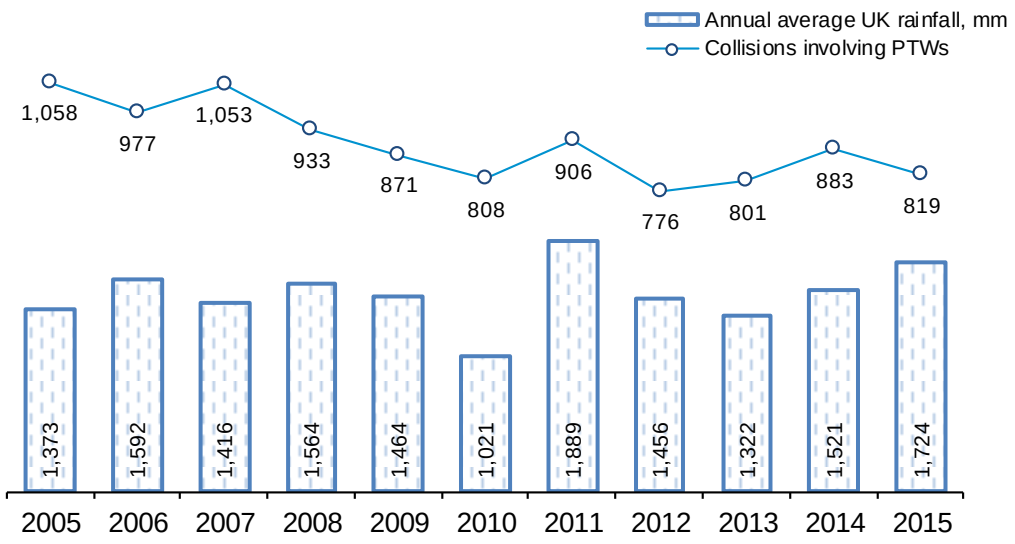
									2015 change from		
Rank	Road Name	BSL (2005-2009)	2010	2011	2012	2013	2014	2015	BSL (2005-2009)	2013	2014
1	A5	57.2	53	63	44	54	60	67	17.1	24.1	11.7
2	A27	44.0	38	46	28	51	54	62	40.9	21.6	14.8
3	M25	68.6	62	73	45	35	52	44	-35.9	25.7	-15.4
4	A259	18.0	19	7	13	16	22	42	133.3	162.5	90.9
5	A46	31.4	22	21	24	18	24	37	17.8	105.6	54.2
6	A3	19.0	18	27	15	27	23	35	84.2	29.6	52.2
7	A38	33.6	27	35	45	30	38	33	-1.8	10.0	-13.2
8	A2	21.8	18	21	23	24	34	29	33.0	20.8	-14.7
9	A12	33.6	23	27	14	21	26	29	-13.7	38.1	11.5
10	A30	24.8	15	16	26	21	19	26	4.8	23.8	36.8

Notes:
(a) Values in the table report the number of casualties where at least one PTW was recorded as being involved.
(b) Ranked by 2015.

Table 5-23 lists casualties involving PTWs by top ten roads. It can be seen that although the A27, which has less than half the PTW traffic of the M25, has 18 more casualties than M25.

5.13.3. Collisions involving rainfall

Figure 5-48 illustrates the incidence of collisions involving PTWs during rainfall against annual average UK rainfall, in mm, between 2005 and 2015. The figure shows there is partial correlation between the two parameters and is most evident between 2010 and 2014. Figure 5-49 shows the collisions involving PTWs during rainfall against monthly average UK rainfall, in mm, during 2015. It can be seen that the majority of collisions occur during the summer months, with August having a peak of 103 collisions in contrast with January which is the month with the lowest number of collisions (41). However, there is no obvious meaningful correlation shown for these two parameters.



Annual average rainfall sourced from DECC Energy Trends Statistics. Accessed from https://www.gov.uk/government/statistics/energy-trends-section-7-weather

Figure 5-48 Collisions involving PTWs against annual average UK rainfall between 2005 and 2015

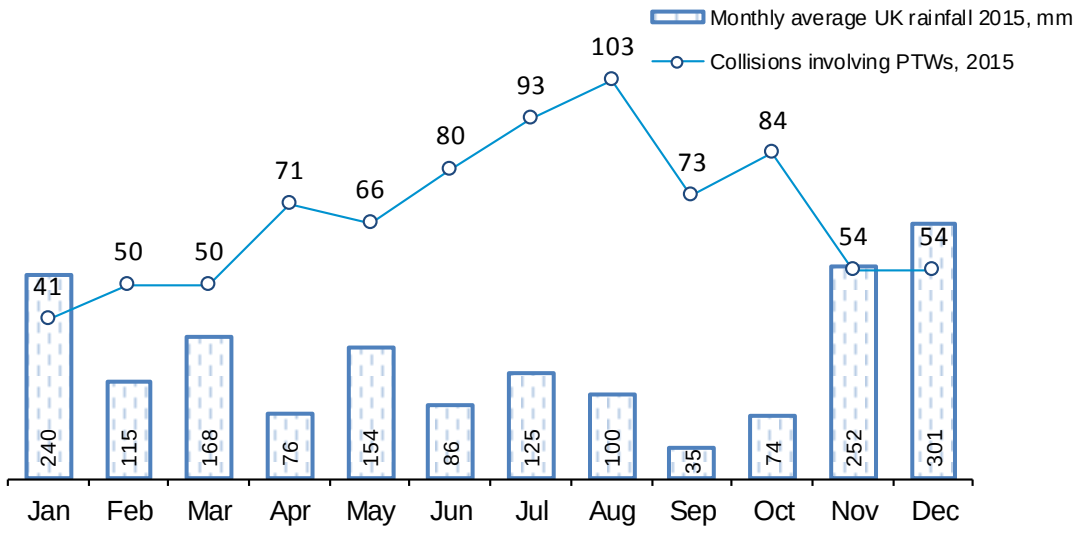


Figure 5-49 Collisions involving PTWs against monthly average UK rainfall during 2015

5.14. Hardshoulders

This section provides collision and resulting casualty information involving motorway hardshoulders and A-road lay-bys.

Appendix Table T-1 to Table T-10 provide further statistics relating to collisions and casualties involving hardshoulders and lay-bys by road name, road classification, casualty age, contributory factors and severity.

5.14.1. Comparison between motorway hardshoulders and A-road lay-bys

Figure 5-50 shows the total number of casualties directly located on either motorway hardshoulders or A-road lay-bys at point of impact by road classification and year.

The figure shows that in 2015, 99 casualties occurred on motorways and 146 casualties occurred on A-roads; 97 of which were on A-road dual carriageways.

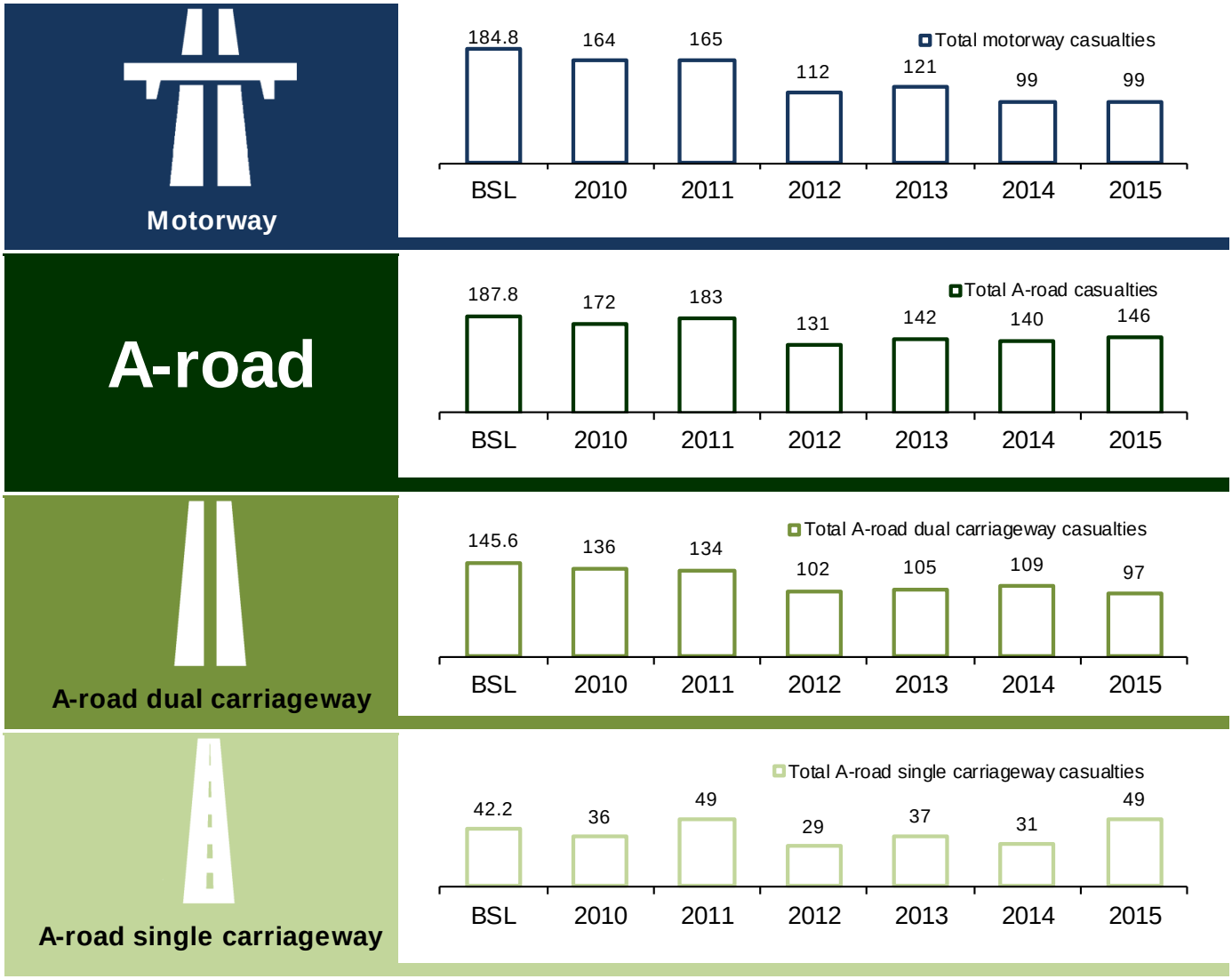


Figure 5-50 Casualties involving either a hardshoulder or lay-by by road classification and year

5.14.2. Hardshoulder and lay-by casualties resulting from fatigue or distraction inside the vehicle

The top 20 contributory factors ranked by 2015 total casualties involving hardshoulders and lay-bys are provided in Appendix Table T-9.

Figure 5-51 focuses specifically on the number of casualties involving hardshoulders and lay-bys linked to distraction inside the vehicle and fatigue. In the Appendix table, these factors are ranked sixth and ninth respectively. These factors are potentially attributed to the driver of the vehicle inadvertently drifting into the hardshoulder or lay-by and colliding with a stationary vehicle.

Fatigue
76.8 per cent from 2005 (69)

Distraction in vehicle
10.0 per cent from 2005 (20)

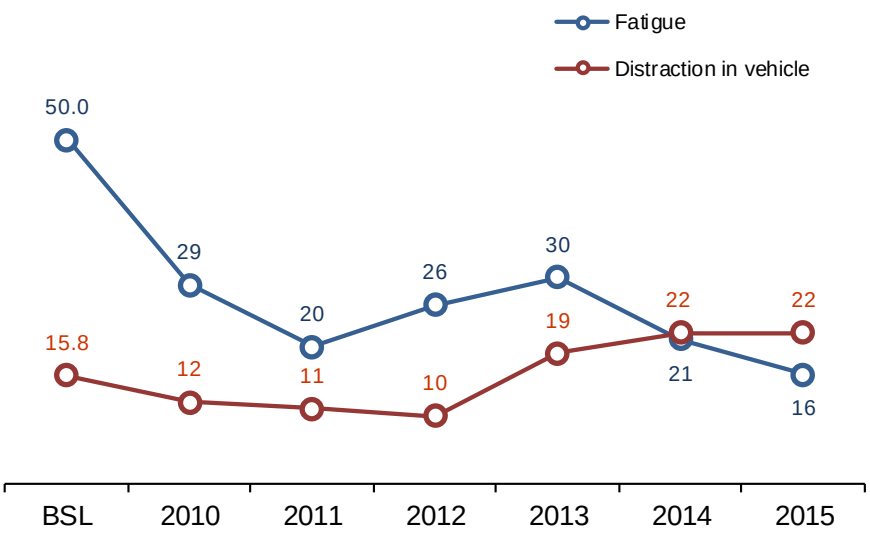


Figure 5-51 Casualties involving either a hardshoulder or lay-by resulting from fatigue or distraction inside the vehicle by year

Figure 5-51 shows that the number of casualties involving hardshoulders or lay-bys resulting from fatigue has decreased by 23.8 per cent from 21 in 2014 to 16 in 2015.

The number of casualties where distraction was involved remained the same for 2015 as 2014. These have remained over the baseline since 2013.

This is the second time (since the baseline), that more casualties have been attributed to a distraction inside a vehicle than fatigue.

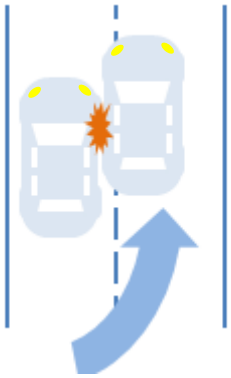
5.15. Collisions Type

This topic of interest analyses the number of collisions occurring on the SRN by collision type. Additional statistics on this is provided in Appendix Table U-1 to Table U-26.

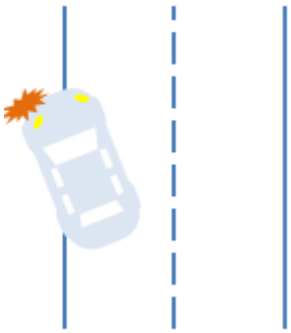
The four most common types of collision are:

- Shunt
- Single vehicle run off
- Overtakes
- Head on

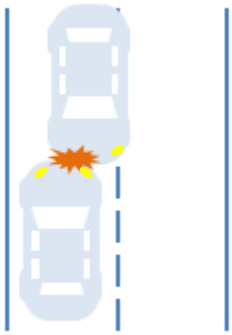
A brief description of each of the four most common types of collision can be found in Figure 5-52.



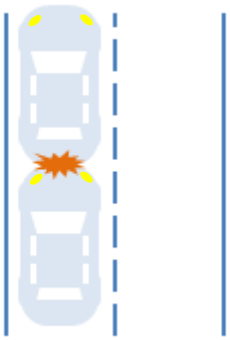
Overtake collision:
A collision involving at least one vehicle recorded as overtaking another vehicle.



Single vehicle run off:
A collision involving a single vehicle (excludes collisions involving pedestrians).



Head on:
A collision involving at least two vehicles moving in opposite directions at point of impact, where both vehicles first point of impact was recorded as "Front". Vehicles that were parked, or where the vehicle movement was unknown are not included.



Shunt:
A collision involving at least two vehicles moving in the same direction at point of impact, where one vehicle's first point of impact was recorded as "Front" and the other vehicle's as "Back". Vehicles that were parked, or where the vehicle movement was unknown are not included.

Figure 5-52 Diagrams of collision types

5.15.1. Casualties by collision type and severity

Table 5-24 provides a breakdown of the number of casualties by severity and collision type. When considering the fatalities, of the four collision types only single vehicle run off showed a decrease from 2014 to 2015; a 20.0 per cent decrease. Furthermore it is only this collision type where decreases were seen across all severities.

The figure shows that shunts are the most common type of collision. This was the only collision type that the number of casualties increased across all severities in 2015; albeit the increases were all below 7.0 per cent with the increase in slight injuries being marginal at 0.6 per cent.

Table 5-24 Casualties by collision type, 2015

Severity/ Collision type	Killed	Seriously injured	KSI	Slightly injured	Total
Head on	**28** ↑ 64.7%	**113** ↓ 9.6%	**141** ↓ 0.7%	**260** ↑ 16.6%	**401** ↑ 9.9%
Shunt	**34** ↑ 3.0%	**415** ↑ 6.9%	**449** ↑ 6.7%	**7,182** ↑ 0.6%	**7,631** ↑ 1.0%
Overtake	**16** ↑ 6.7%	**108** ↓ 12.9%	**124** ↓ 10.8%	**595** ↓ 9.8%	**719** ↓ 10.0%
Single vehicle run off	**36** ↓ 20.0%	**321** ↓ 9.3%	**357** ↓ 10.5%	**1,622** ↓ 14.9%	**1,979** ↓ 14.2%

Notes:
(a) Percentages represent the per cent change of 2015 values from 2014 values.
(b) Casualties may fall within more than one collision type and hence may be counted more than once.
(c) See Figure 5-52 for definitions of collisions types.

5.15.2. KSI casualties by collision type and road classification

A breakdown of KSI casualties by collision type and road classification can be found in Table 5-25.

KSI casualties from shunt collisions increased across all road classifications from 2014 to 2015 in contrast with single vehicle run off which decreased across all road classifications.

Table 5-25 KSI casualties by road class and collision type, 2015

Road classification/ collision type	Motorway	A-road	A-road dual carriageway	A-road single carriageway
Head on	**7** 0.0%	**134** ↓ 0.7%	**16** –	**118** ↓ 7.1%
Shunt	**254** ↑ 5.4%	**195** ↑ 8.3%	**149** ↑ 5.7%	**46** ↑ 17.9%
Overtake	**36** ↓ 16.3%	**88** ↓ 8.3%	**43** ↑ 34.4%	**45** ↓ 29.7%
Single vehicle run off	**168** ↓ 6.1%	**189** ↓ 14.1%	**154** ↓ 14.9%	**35** ↓ 10.3%

Notes:
(a) Percentages represent the per cent change of 2015 values from 2014 values.
(b) Casualties may fall within more than one collision type and hence may be counted more than once.
(c) See Figure 5-52 for definitions of collisions types.

5.16. Hotspot Analysis

This section provides a summary of hotspot analyses[20] carried out on collisions between 2013 and 2015. Figure 5-53 shows the locations of the top 20 hotspots by road class. Appendix Table V-1 to Table V-4 provide more detailed maps of each hotspot.

Figure 5-53 shows that the majority of motorway hotspots are located in the south east whereas hotspots for both A-road dual carriageway and single carriageway are distributed more evenly across the SRN. The information in the Appendix also shows that the majority of hotspots are located in the proximity of junctions.

The basic principles behind the hotspot analysis are provided in the notes section of the hot spot Appendix (Table V-1). Evaluation of the method shows that hotspots are more likely to be identified in areas of the network where the road layout contains multiple converging and diverging routes.

[20] Hotspot analysis finds the locations with the highest amount of collisions within a 0.5km radius.

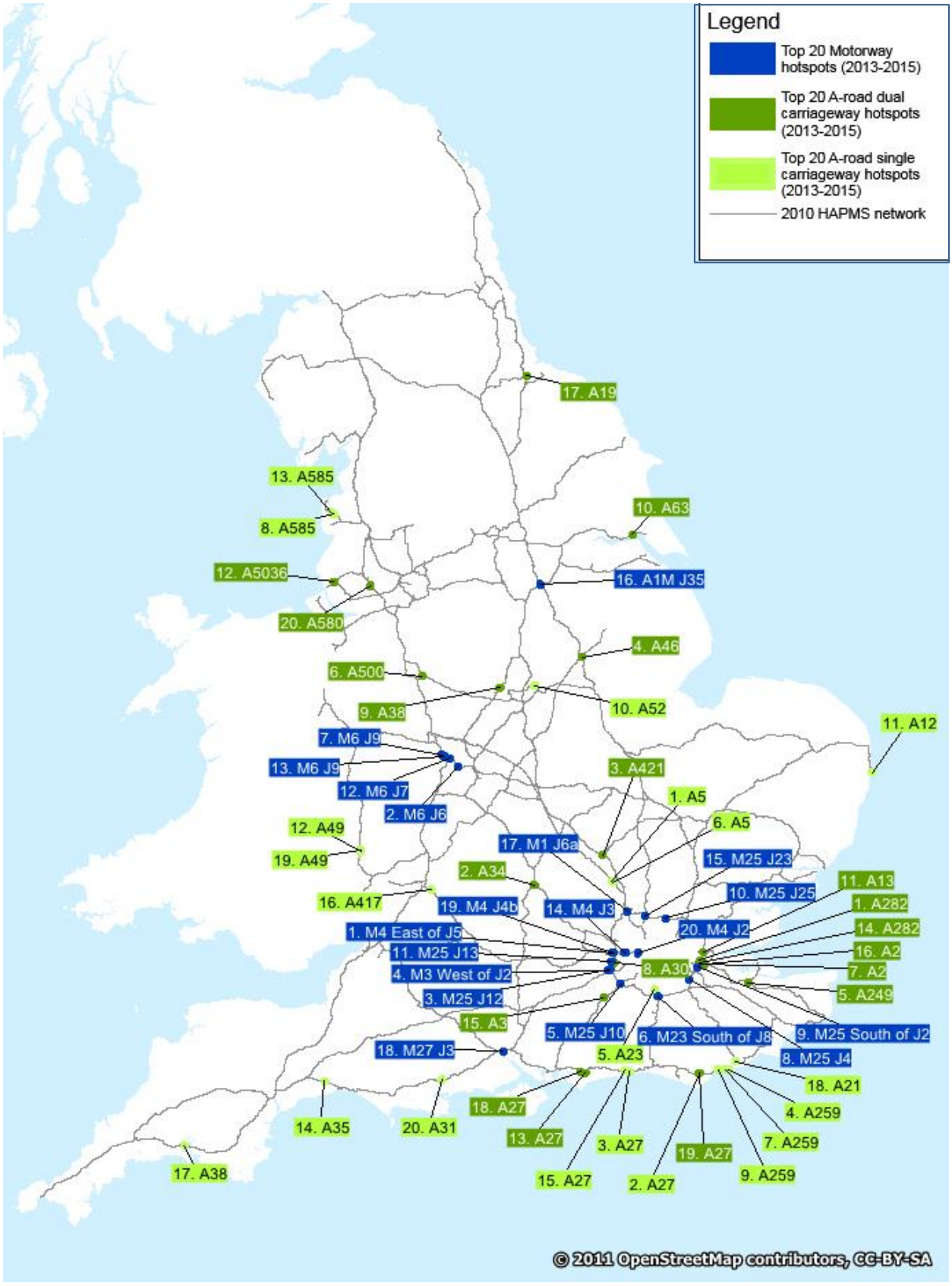


Figure 5-53 Top 20 hotspots for collisions between 2013 and 2015 by road class

Table 5-26 shows the top ten contributory factors for motorway collision hotspots between 2013 and 2015. It can be seen from Table 5-26 that "Failed to look properly" was the top contributory factor in 2015 for casualties within the top ten motorway hotspots.

Table 5-26 Top ten contributory factors for casualties involved in collisions within the top ten motorway hotspots

Rank	Contributory factor		2013	2014	2015	Percentage of casualties in top 10 hotspots, 2015
1	405	Failed to look properly	85	87	80	16.9%
2	406	Failed to judge other person's path or speed	72	88	79	16.7%
3	308	Following too close	52	41	40	8.5%
4	408	Sudden braking	48	48	30	6.4%
5	403	Poor turn or manoeuvre	29	27	25	5.3%
6	602	Careless, reckless or in a hurry	26	25	23	4.9%
7	410	Loss of control	25	40	19	4.0%
8	307	Travelling too fast for conditions	17	22	17	3.6%
9	409	Swerved	9	18	13	2.8%
10	509	Distraction in vehicle	4	9	11	2.3%

Key (CF groups):
Driver/Rider error or reaction; Injudicious action; Impairment or distraction; Behaviour or inexperience

Notes:
(a) Table reports the number of casualties involved in collisions on the top ten motorway hotspots where the specified contributory factor was recorded at least once.
(b) In 2015, there was a total of 472 casualties involved in collisions within the top ten motorway hotspots.

Table 5-27 shows the top ten contributory factors for A-road dual carriageway collision hotspots between 2013 and 2015. "Following too close" is the third most common contributory factor and was attributed to 7.2 per cent of casualties involved in collisions within the top ten A-road dual carriageway hotspots. "Failed to look properly" was the most common contributory factor and was attributed to 24.1 per cent of casualties in 2015.

Table 5-27 Top ten contributory factors for casualties involved in collisions within the top ten A-road dual carriageway hotspots

No.	Contributory factor		2013	2014	2015	Percentage of casualties in top 10 hotspots, 2015
1	405	Failed to look properly	85	102	91	24.1%
2	406	Failed to judge other person's path or speed	70	83	69	18.3%
3	308	Following too close	22	28	27	7.2%
4	602	Careless, reckless or in a hurry	31	34	27	7.2%
5	403	Poor turn or manoeuvre	36	35	23	6.1%
6	408	Sudden braking	21	24	18	4.8%
7	301	Disobeyed automatic traffic signal	14	14	16	4.2%
8	103	Slippery road (due to weather)	11	11	12	3.2%
9	410	Loss of control	19	11	10	2.7%
10	501	Impaired by alcohol	5	4	8	2.1%

Key (CF groups):
Driver/Rider error or reaction; Injudicious action; Behaviour or inexperience; Road environment; Impairment or distraction

Notes:
(a) Table reports the number of casualties involved in collisions on the top ten A-road dual carriageway hotspots where the specified contributory factor was recorded at least once.
(b) In 2015, there was a total of 377 casualties involved in collisions within the top ten A-road dual carriageway hotspots.

Table 5-28 shows the top ten contributory factors for A-road single carriageway collision hotspots between 2013 and 2015. The top two contributory factors were the same across for all three road classification, however, the third in this case is shown as "Careless reckless or in a hurry" whereas it was "Following too close" in the case of the other two road classifications.

Interestingly the contributory factor "Failed to look properly (pedestrians)" was attributed to 2.7 per cent of casualties in 2015 that were within the top ten A-road single carriageway hotspots. As would be expected this did not appear in the top 10 of the other two road classifications.

Table 5-28 Top ten contributory factors for casualties involved in collisions within the top ten A-road single carriageway hotspots

No.	Contributory factor		2013	2014	2015	Percentage of casualties in top 10 hotspots, 2015
1	405	Failed to look properly	52	40	54	29.7%
2	406	Failed to judge other person's path or speed	37	34	36	19.8%
3	602	Careless, reckless or in a hurry	18	18	16	8.8%
4	403	Poor turn or manoeuvre	12	19	11	6.0%
5	408	Sudden braking	9	5	8	4.4%
6	308	Following too close	10	9	7	3.8%
7	605	Learner or inexperienced driver/rider	4	5	6	3.3%
8	802	Failed to look properly (pedestrians)	5	8	5	2.7%
9	701	Stationary or parked vehicle(s)	4	1	5	2.7%
10	307	Travelling too fast for conditions	9	2	4	2.2%

Key (CF groups):

Driver/Rider error or reaction; Vision affected by; Injudicious action; Behaviour or inexperience; Pedestrian

Notes:

(a) Table reports the number of casualties involved in collisions on the top ten A-road single carriageway hotspots where the specified contributory factor was recorded at least once.

(b) In 2015, there was a total of 182 casualties involved in collisions within the top ten A-road single carriageway hotspots.

5.17. Vulnerable and Non-motorised Users

This section provides KSI casualty information involving vulnerable and non-motorised users including contributory factors associated with the individual user groups.

5.17.1. KSI casualties by year

Figure 5-54 shows the distribution of vulnerable[21] and non-motorised[22] user KSI casualties by year including the baseline. It can be seen that vulnerable user KSI casualties decreased by 14.7 per cent to 430 from 504 in 2014; this is also an 18.0 per cent reduction on the baseline. It can also be seen that non-motorised user KSI casualties decreased by 29.6 per cent to 112 KSI casualties from 159 in 2014; this is a 25.3 per cent reduction on the baseline.

Vulnerable users

14.7% from 2014

Non-motorised user

29.6% from 2014

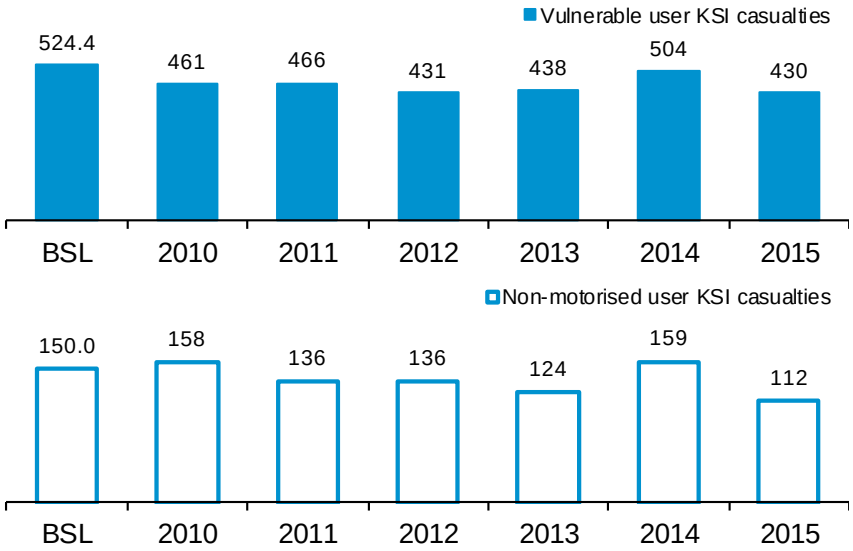
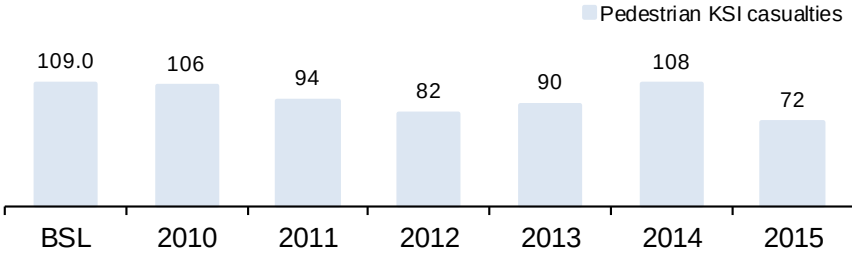


Figure 5-54 Vulnerable and non-motorised user KSI casualties by year

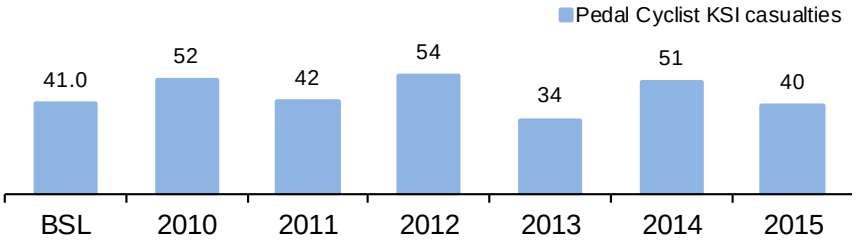
[21] Vulnerable users include pedestrians, pedal cyclists and PTW users
[22] Non-motorised users include pedestrians and pedal cyclists

Figure 5-55 shows the distribution of KSI casualties across the vulnerable and non-motorised user categories. It can be seen that out of the vulnerable user categories PTW users make up the largest proportion with 318 KSI casualties in 2015; this is 74.0 per cent of all vulnerable user KSI casualties in 2015. From Figure 5-55 it can also be seen that the number of pedal cyclist KSI casualties have fluctuated from 2010. The 2015 value (40) is only 2.4 per cent (1 KSI casualty) below the baseline (41.0).

Pedestrians
33.3% from 2014



Pedal cyclists
21.6% from 2014



PTW users
7.8% from 2014

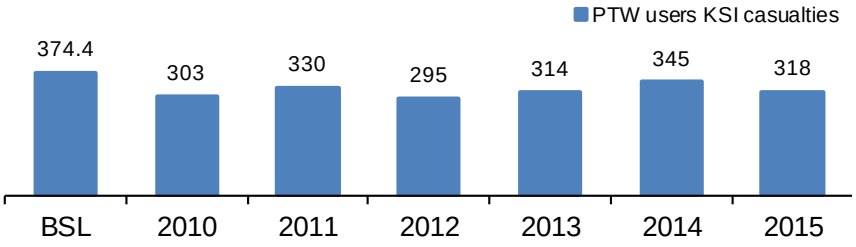


Figure 5-55 Vulnerable and non-motorised user KSI casualties by subordinate categories by year

5.17.2. KSI casualties by road type

Figure 5-56 shows the distribution of the 2015 vulnerable and non-motorised user KSI casualties along with their subordinate categories by road classification. It can be seen that the majority of both vulnerable and non-motorised user KSI casualties occurred on A-roads in 2015; with 73.7 per cent of vulnerable and 77.7 per cent of non-motorised user KSI casualties occurring on A-roads in 2015. It can also be seen from Figure 5-56 that there was a reduction in vulnerable and non-motorised user KSI casualties across all road classes in 2015.

2015 KSI casualties (% change from 2014)	Motorway	A-road	A-road dual carriageway	A-road single carriageway
Vulnerable users	113 3.4%	317 18.1%	204 17.7%	113 18.7%
Non-motorised users	25 10.7%	87 33.6%	57 34.5%	30 31.8%
Pedestrians	24 11.1%	48 40.7%	29 40.8%	19 40.6%
Pedal cyclists	1 -	39 22.0%	28 26.3%	11 -
PTW users	88 1.1%	230 10.2%	147 8.7%	83 12.6%

Figure 5-56 Vulnerable and non-motorised user KSI casualties by road classification

5.17.3. Contributory factors

Table 5-29 provides the top ten contributory factors assigned to pedestrian casualties. The values represent the number of KSI casualties where the specified contributory factor was recorded against at least one pedestrian casualty. Table 5-30 and Table 5-31 provide the same information but for where record is against at least one pedal cyclist and PTW respectively.

"Failed to look properly" was in the top two contributory factors for KSI casualties across all three vulnerable user categories. As expected the top ten contributory factors in Table 5-29 were all from the 800 grouping which comprise contributory factors related to pedestrians. The common groupings for the other two user categories were Driver/Rider error or reaction; Behaviour or inexperience; and Injudicious action.

Table 5-29 Top 10 contributory factors assigned to pedestrian casualties by KSI casualties involved

Rank	Contributory factor		2013	2014	2015
1	802	Failed to look properly	19	36	18
2	806	Impaired by alcohol	18	17	13
3	805	Dangerous action in carriageway (eg. playing)	14	26	12
4	809	Pedestrian wearing dark clothing at night	17	18	11
5	810	Disability or illness, mental or physical	17	10	9
6	808	Careless, reckless or in a hurry	9	9	9
7	803	Failed to judge vehicle's path or speed	18	20	7
8	807	Impaired by drugs (illicit or medicinal)	7	7	5
9	801	Crossing road masked by stationary or parked vehicle	5	3	3
10	804	Wrong use of pedestrian crossing facility	2	4	2

Key (CF groups):
Pedestrian

Notes:
(a) Table reports the number of KSI casualties where the specified contributory factor was recorded against at least one pedestrian casualty.
(b) Table sorted by 2015 values.

Table 5-30 Top 10 contributory factors assigned to pedal cyclists by KSI casualties involved

Rank	Contributory factor		2013	2014	2015
1	405	Failed to look properly	8	8	7
2	507	Rider wearing dark clothing	1	6	4
3	406	Failed to judge other person's path or speed	3	3	4
4	310	Cyclist entering road from pavement	1	3	3
5	410	Loss of control	0	3	2
6	403	Poor turn or manoeuvre	5	2	2
7	301	Disobeyed automatic traffic signal	0	0	2
7	307	Travelling too fast for conditions	0	0	2
9	602	Careless, reckless or in a hurry	6	3	1
10	501	Impaired by alcohol	2	2	1

Key (CF groups):
Driver/Rider error or reaction; Impairment or distraction; Injudicious action; Behaviour or inexperience

Notes:
(a) Table reports the number of KSI casualties where the specified contributory factor was recorded against at least one pedal cyclist.
(b) Table sorted by 2015 values.

Table 5-31 Top 10 contributory factors assigned to PTWs by KSI casualties involved

Rank	Contributory factor		2013	2014	2015
1	406	Failed to judge other person's path or speed	57	63	56
2	405	Failed to look properly	39	65	53
3	410	Loss of control	65	70	52
4	403	Poor turn or manoeuvre	35	30	41
5	602	Careless, reckless or in a hurry	31	32	34
6	307	Travelling too fast for conditions	17	26	24
7	408	Sudden braking	25	33	21
8	306	Exceeding speed limit	13	26	19
9	308	Following too close	16	15	18
10	605	Learner or inexperienced driver/rider	14	18	13

Key (CF groups):
Driver/Rider error or reaction | Behaviour or inexperience | Injudicious action

Notes:
(a) Table reports the number of KSI casualties where the specified contributory factor was recorded against at least one PTW.
(b) Table sorted by 2015 values.

Table 5-32 provides the top ten contributory factors for KSI casualties where the collision involved at least one pedestrian casualty. Table 5-33 and Table 5-34 provide the same information but for where the collision involved at least one pedal cyclist and PTW respectively.

"Failed to look properly" was the top contributory factor(s) for KSI casualties across all three vulnerable user categories. The majority (7 of 10) of the top ten contributory factors involving pedestrian casualties were in the pedestrian contributory factor group. Driver/Rider error or reaction is the grouping common across all three user categories and comprise half the top ten contributory factors in the involving pedal cyclists and PTWs. This is followed by Injudicious action grouping.

Table 5-32 Top 10 contributory factors for KSI casualties involving pedestrian casualties

Rank	Contributory factor		2013	2014	2015
1	802	Failed to look properly	19	36	20
2	405	Failed to look properly	21	14	15
3	806	Impaired by alcohol	18	17	13
4	805	Dangerous action in carriageway (eg. playing)	14	26	12
5	809	Pedestrian wearing dark clothing at night	17	18	11
6	810	Disability or illness, mental or physical	17	10	9
7	808	Careless, reckless or in a hurry	9	9	9
8	803	Failed to judge vehicle's path or speed	18	20	8
9	503	Fatigue	5	2	8
10	410	Loss of control	9	4	7

Key (CF groups):
Driver/Rider error or reaction | Impairment or distraction | Pedestrian

Notes:
(a) Table reports the number of KSI casualties involving at least one pedestrian casualty where at least one of the specified contributory factors was recorded.
(b) Table sorted by 2015 values.

Table 5-33 Top 10 contributory factors for KSI casualties involving pedal cyclists

Rank	Contributory factor		2013	2014	2015
1	405	Failed to look properly	22	24	22
2	406	Failed to judge other person's path or speed	10	10	9
3	407	Too close to cyclist, horse rider or pedestrian	4	11	7
4	602	Careless, reckless or in a hurry	6	9	6
5	507	Rider wearing dark clothing	1	7	4
6	403	Poor turn or manoeuvre	7	4	4
7	310	Cyclist entering road from pavement	1	3	3
8	501	Impaired by alcohol	3	2	3
9	307	Travelling too fast for conditions	0	1	3
10	410	Loss of control	1	4	2

Key (CF groups):
Driver/Rider error or reaction | Impairment or distraction | Injudicious action | Behaviour or inexperience

Notes:
(a) Table reports the number of KSI casualties involving at least one pedal cyclist where at least one of the specified contributory factors was recorded.
(b) Table sorted by 2015 values.

Table 5-34 Top 10 contributory factors for KSI casualties involving PTWs

Rank	Contributory factor		2013	2014	2015
1	405	Failed to look properly	115	134	127
2	406	Failed to judge other person's path or speed	87	93	86
3	403	Poor turn or manoeuvre	66	54	71
4	410	Loss of control	69	74	54
5	602	Careless, reckless or in a hurry	42	58	53
6	408	Sudden braking	31	40	30
7	307	Travelling too fast for conditions	26	26	28
8	306	Exceeding speed limit	14	28	22
9	308	Following too close	19	19	22
10	605	Learner or inexperienced driver/rider	14	21	15

Key (CF groups):
Driver/Rider error or reaction | Injudicious action | Behaviour or inexperience

Notes:
(a) Table reports the number of KSI casualties involving at least one PTW where at least one of the specified contributory factors was recorded.
(b) Table sorted by 2015 values.