2018

Northern Ireland Rural Road Analysis, 2012-2016

This bespoke analysis was commissioned by Safe and Sustainable Travel Division, DFI. The purpose of the research is to review collision data on rural roads and identify any emerging issues in relation to road users killed or seriously injured on these roads.

Bespoke Analysis

Analysis, Statistics & Research Branch

July 2018

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DEFINITIONS

KSI Collisions: Collisions involving personal injury occurring on the public highway (including footpaths) where someone was killed or seriously injured and in which a vehicle is involved.

Killed: Died within 30 days from injuries received in a collision.

Serious Injury: An injury for which a person is detained in hospital as an 'in-patient', or any of the following injuries whether or not the person is detained in hospital: fractures, concussion, internal injuries, crushing, burns, severe cuts and lacerations or severe general shock requiring medical treatment.

Rural roads: Roads with a speed limit greater than 40 miles per hour excluding motorways and dual carriageways

Urban roads: Road with speed limit of 40 miles per hour or less

Children: Under 16 years of age.

Young People: Aged between 16 and 24

Pedestrians: Include children on scooters, roller skates or skateboards; children riding toy cycles on the footpath; persons pushing bicycles or other vehicles or operating pedestrian-controlled vehicles; persons leading or herding animals; occupants of prams or wheelchairs; people who alight safely from vehicles and are subsequently injured; persons pushing or pulling a vehicle; persons other than cyclists holding on to the back of a moving vehicle.

Car Users: Drivers or passengers in a car, light goods vehicle, car driven as a taxi or hackney cab.

Motorcyclists: Drivers/riders of mopeds and motorcycles. Includes riders of two-wheeled motor vehicles, motorcycle combinations, scooters and mopeds.

Pedal cyclists: Drivers/riders of pedal cycles. Includes children riding toy cycles on the carriageway and the first rider of a tandem.

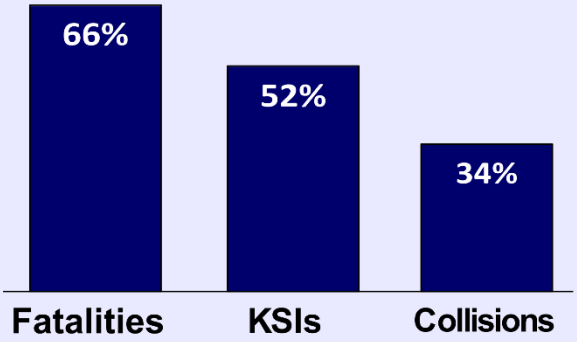
Rural Roads Problem Profile, 2012-2016

Northern Ireland Statistics and Research Agency
Gníomhaireacht Thuaisceart Éireann um Staitisticí agus Taighde

Rural Road Key Statistics

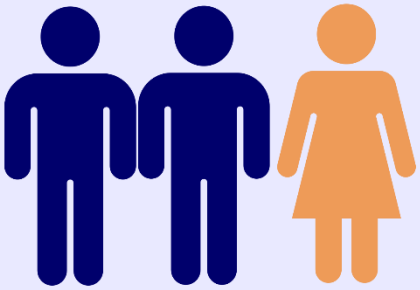
In 2012-2016 annual average	% change since 11-15	% change since 2004/08 baseline
43 fatalities	▲4%	▼54%
429 KSIs	▲4%	▼39%
21 child KSIs	▼5%	▼57%
126 young person KSIs	▲4%	▼43%
2037 Collisions	▲3%	▼3%

Proportion occurring on rural roads, 2012-2016



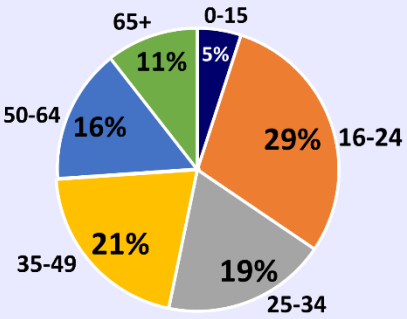
In the five years 2012-2016, **one-third of all collisions** occurred on rural roads. However, a much greater proportion of fatal and serious injuries occurred on rural roads: **two-thirds of fatalities and half of KSIs**.

KSIs on Rural Roads by gender, '12-'16



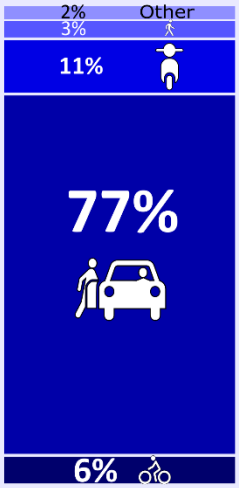
Two-thirds of KSIs recorded on rural roads were **male**

KSIs on Rural Roads by age, '12-'16



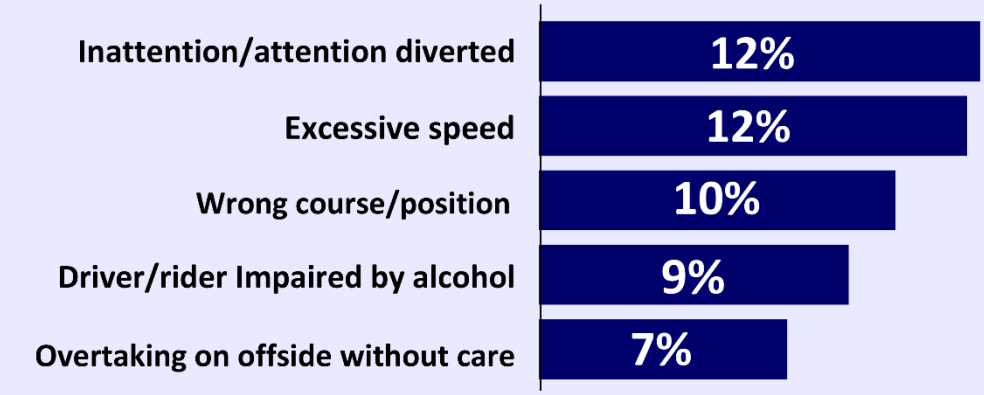
Three in ten KSIs recorded on rural roads were **aged 16-24**

KSIs on Rural Roads by Road User, '12-'16



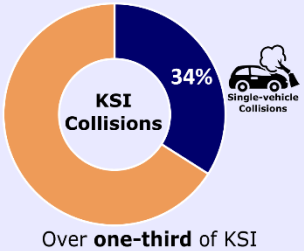
Over **three-quarters** of KSIs recorded on rural roads were **car users**

Top 5 causation factors of KSI collisions on Rural Roads,'12-'16



In the five years 2012-2016, **one in eight KSI collisions** on rural roads were caused by both **'Inattention'** and **'Excessive speed'**.

Collisions on Rural Roads, '12-'16



Over **one-third** of KSI collisions on rural roads were **single-vehicle collisions**

INTRODUCTION

Analysis, Statistics and Research Branch (ASRB) in DfI is responsible for producing the statistical content of the Northern Ireland Problem Profile. Historically, this document focused on the latest five year road casualty data and reported on a wide range of road user groups and behaviours. The document had grown in size over the years and was becoming cumbersome to update. It was therefore agreed at the Road Safety Strategy Research Coordination Group (RSSRCG) that ASRB would seek to develop a series of smaller documents which could form the shape of a live Problem Profile. It was agreed that the profile would be maintained and updated regularly to ensure relevance with existing and emerging road safety issues.

This profile of road traffic collisions and casualties on rural roads is the fifth[1] in the series. The report analyses official data sources and reports on trend information for road traffic collisions on rural roads from 2002; it looks at the age, gender and road user category of people who were killed or seriously injured on rural roads between 2012 and 2016 and compares this to the 2004-2008 baseline. In addition, comparisons are made with KSI casualties on urban roads to check for differences - the report takes into account vehicle kilometres travelled (VKT) on each road type to examine the relative risk per kilometre travelled on rural roads compared with urban. There is also analysis examining who is responsible for fatal and serious rural road collisions and the most frequent causation factors for these plus a breakdown concerning the time, month and season when rural road collisions occur. Other detail includes analysis on single vehicle collisions on rural roads and a mapping section which reports the number of collisions on rural roads by District Council and where the KSI casualties occur on the NI road network.

The Problem Profile supplements the NI Road Safety Strategy (NIRSS) to 2020 Annual Statistical Report. The NIRSS to 2020 sets out four road safety targets for Northern Ireland, and while none relate specifically to rural roads, any change in trends will help contribute to the overall targets:

By 2020, and compared with the base year (2004 to 2008 average), there will be:

- A reduction in the number of people killed in road collisions by at least 60 per cent.
- A reduction in the number of people seriously injured in road collisions by at least 45 per cent.
- A reduction in the number of children (aged 0 to 15) killed or seriously injured in road collisions by at least 55 per cent.
- A reduction in the number of young people (aged 16 to 24) killed or seriously injured in road collisions by at least 55 per cent.

The road safety strategy also contains a suite of key performance indicators (KPIs) that are used to monitor progress towards achieving the strategy targets. KPIs specific to Rural Roads are to monitor:

- The number of people killed in collisions on rural roads;
- The number of children (0-15) killed in collisions on rural roads;

These are then compared with the 2004 to 2008 baseline see if these indicators have increased or decreased since (see pages 25 and 26 for more detail on these).

[1] Previous profiles on cyclists, motorcyclists, pedestrians and older drivers can be found on the ASRB website: https://www.infrastructure-ni.gov.uk/topics/statistics-and-research/road-safety-research

TREND INFORMATION

Figure 1 below shows the number of people killed or seriously injured on rural roads over the fifteen year period 2002 to 2016 (Table A1 in the Appendix refers). The trend of rural road KSIs more or less matches the pattern of all KSI casualties with a series high in 2002 of 925, after which numbers fell to a series low of 387 in 2013. In recent years, the historic downward trend has plateaued with very little variability between 2011 and 2015. However, the most recent year represents a 28% increase in rural KSIs from 2015, although it is still substantially below the 2004-2008 baseline average of 706. It will be interesting to see if this most recent year indicates an upturn in KSI casualties, or whether it will prove to be a temporary spike and future years will return to a level similar to the years prior to 2016.

Figure 1: Number of people killed or seriously injured on rural roads 2002 - 2016

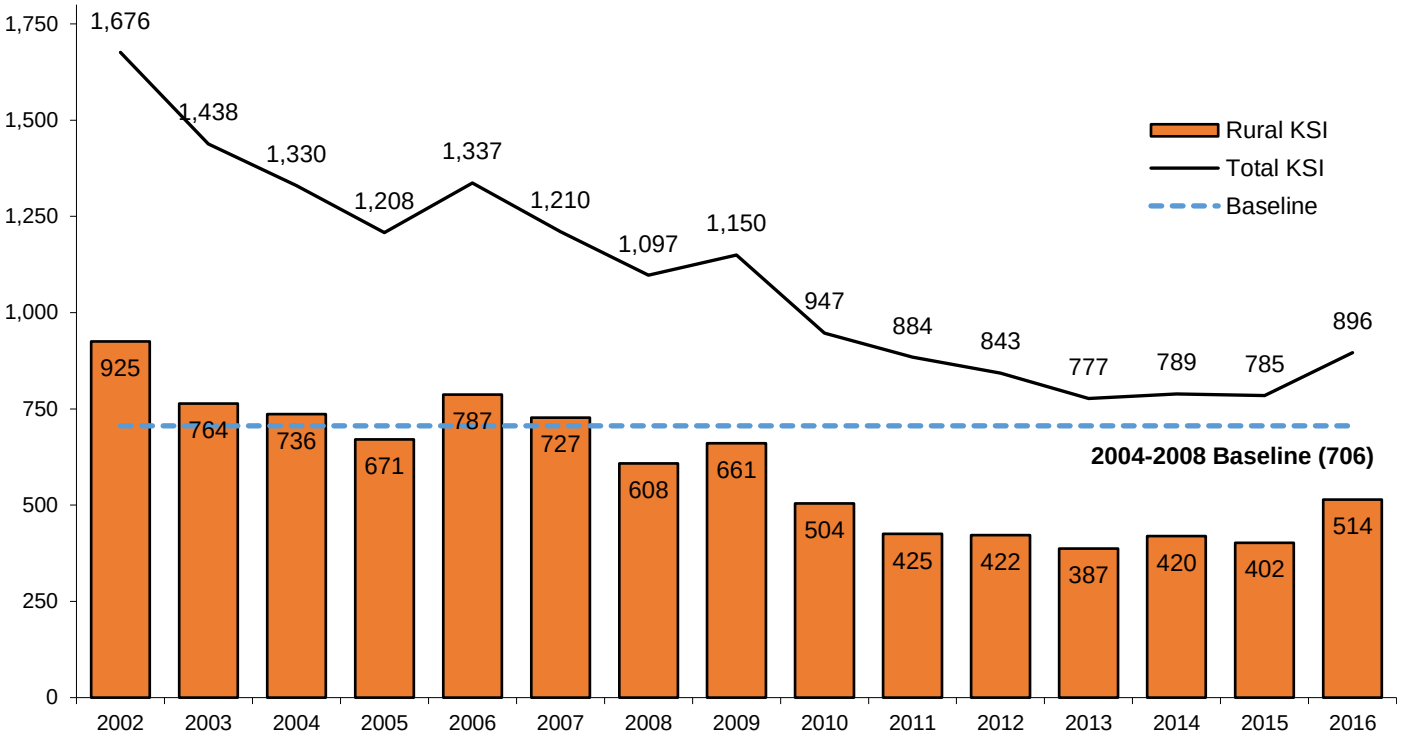
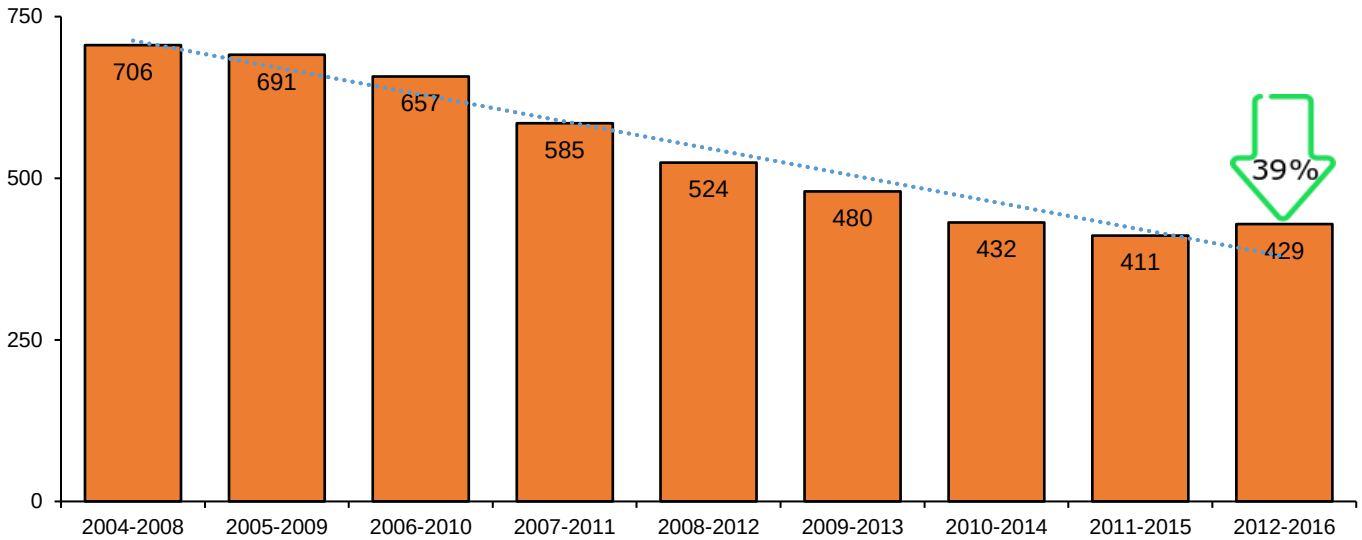
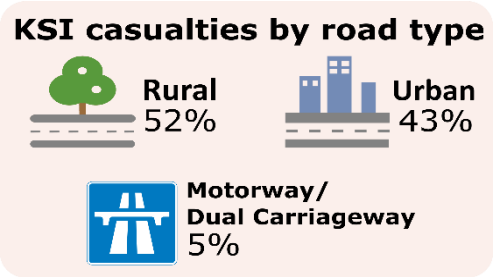


Figure 2: Number of people killed or seriously injured on rural roads 2004-2016 (5 year rolling average)

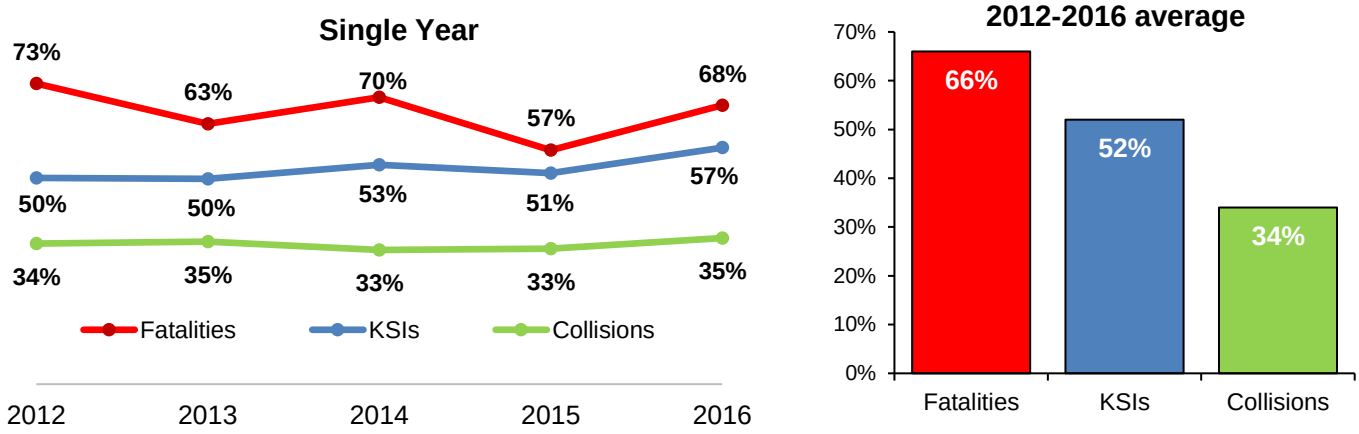


Examining a rolling 5 year average in Figure 2 above to see how the 2004 to 2008 average compares with 2012 to 2016, there has been a clear downward trend with the five year average showing a year on year decrease from the 706 baseline to the low of 411 for the period 2011 to 2015. The rise in KSI casualties in 2016 has pushed the average up for the first time in this trend series, but the 429 average on rural roads for 2012 to 2016 is 39% lower than the baseline, indicating that there are far fewer fatal and serious collisions recorded now (both on rural roads and overall) than that of 15 years ago. See Table A2 in the Appendix. It remains to be seen if this relatively low level of KSIs will continue on into the future.



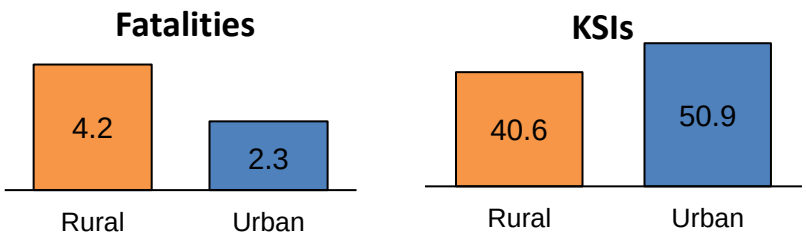
Looking at the trend of casualties by severity of injury over the last five years, Figure 3 below shows that while just over a third of all collisions occurred on rural roads, typically more than half of all KSI casualties took place on these roads (averaging 52% for the 5 year period), ranging from a low of 50% in 2012 and 2013 to a high of 57% in 2016. Taking fatalities on their own, more people were killed on rural roads than urban for every single year in the time series with 2012 (73%) showing the highest level and 2015 (57%) the lowest proportion of deaths occurring on rural roads. On average, two-thirds of all fatalities in Northern Ireland occurred on rural roads. See Table A3 in Appendix.

Figure 3: Proportion of fatalities, KSI casualties & overall collisions occurring on rural roads 2012 - 2016



In addition to absolute numbers, a casualty rate in terms of kilometres travelled can be examined. This takes account of the level of exposure each road user experiences on rural and urban roads, and hence determines the relative risk. See Figure 4 below.

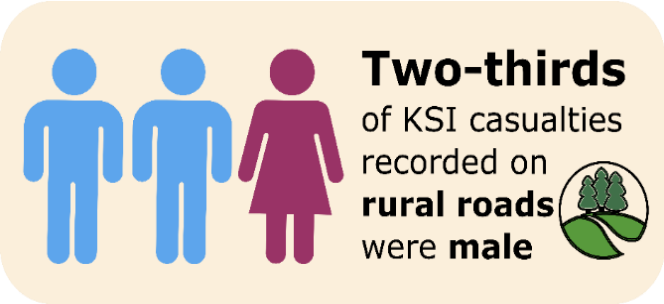
Figure 4: Rate of fatalities and KSIs per billion vehicle kilometres travelled (VKT), 2012-2016



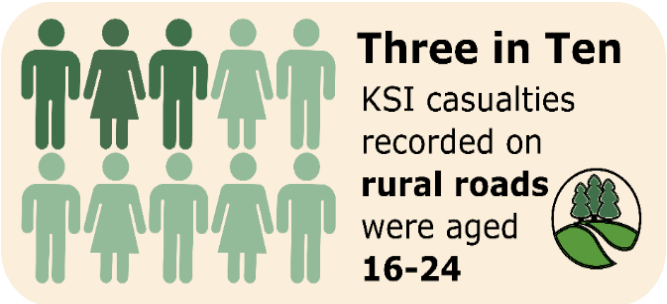
The relative risk on urban and rural roads is different depending on the severity of the injury. The data (refer to Table A4 in the Appendix) would indicate that you are at almost double the risk of being killed on a rural road than urban road when taking into account the vehicle kilometres travelled. This is perhaps because collisions on rural roads are likely to occur at higher speeds, and therefore the risk of being killed is greater. However, it would appear that urban roads are slightly more risky than rural in terms of sustaining a serious injury.

Note: The most recent year of VKT data available is 2014. Readers should note that the 2014 estimate has been applied to 2015 and 2016

AGE AND GENDER



In terms of gender, rural KSI casualties tend to be mostly male. During 2012 to 2016, almost two thirds (65%) of those killed or seriously injured on rural roads were male, while just over one-third (35%) were female. These proportions are similar to the base period, 2004-2008, where males and females on rural roads accounted for 67% and 33% respectively. See Table A5 in the Appendix.



Those aged 16 to 24 are the most represented casualty age group on rural roads, with almost three in ten (29%) of those who were killed or seriously injured falling within this age range. This is similar to the 2004-2008 base period in which 32% of KSI casualties on rural roads were from the young age group.

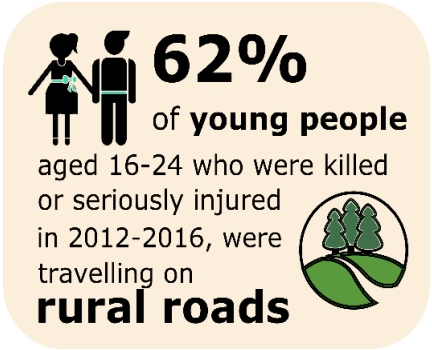
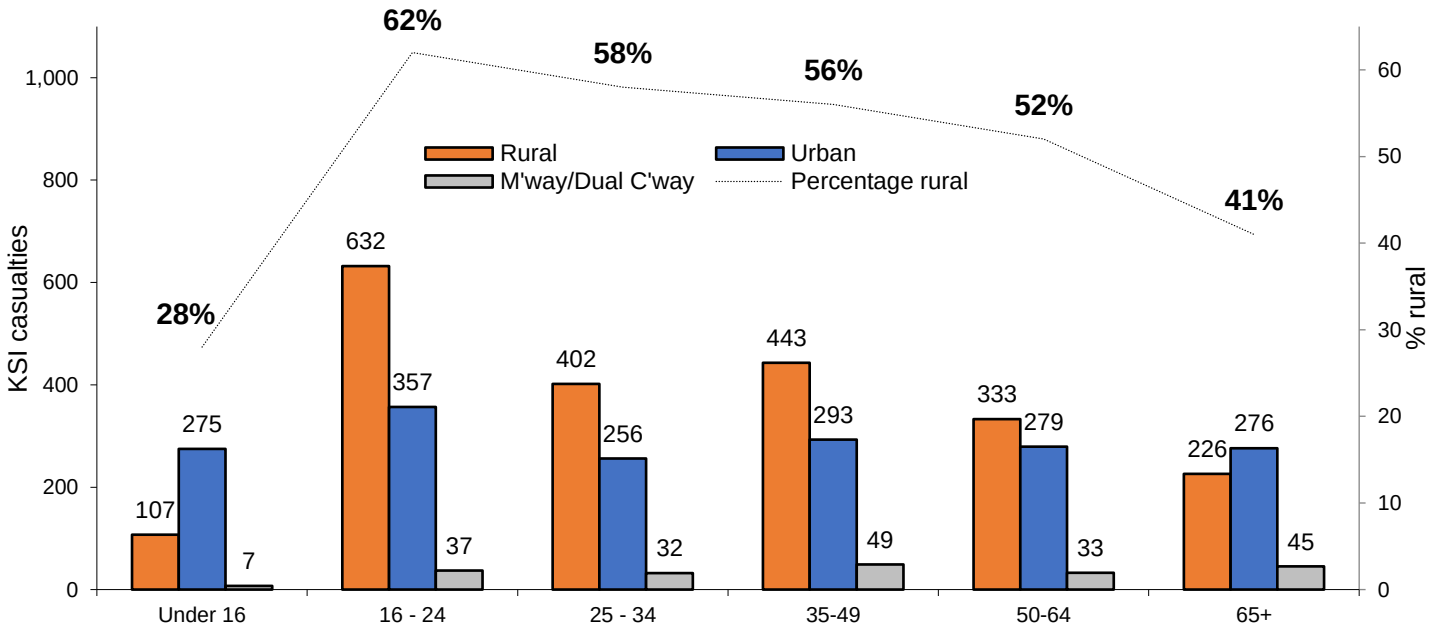


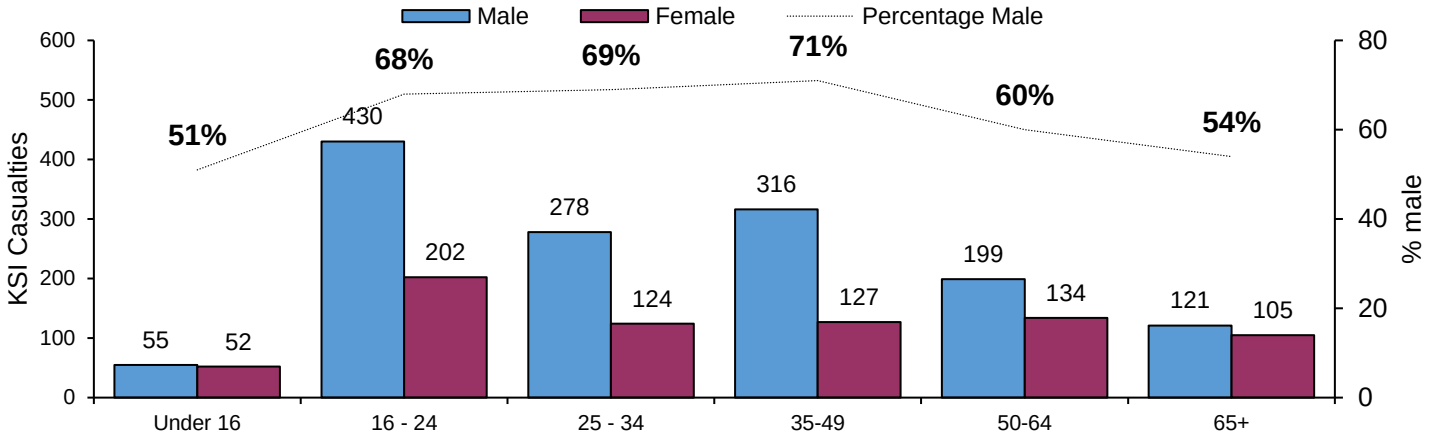
Figure 5 presents a breakdown of KSI casualties by age group and road type, and the proportion (**in bold**) that occurred on rural roads. Of the 1,026 overall KSI casualties amongst 16 to 24 year olds, 632 (62%) occurred on rural roads making this the most over-represented group. Young females in particular accounted for the largest proportion – out of 299 female 16 to 24 year old KSI casualties recorded during this five year period, 202 (68%) took place on rural roads. In contrast, the only age categories not to have more KSI casualties on rural roads between 2012 and 2016 were children (under the age of 16) and older people (those aged 65+) with 28% and 41% respectively. See Appendix Table A6.

Figure 5: KSI casualties by age group and road type, 2012-2016

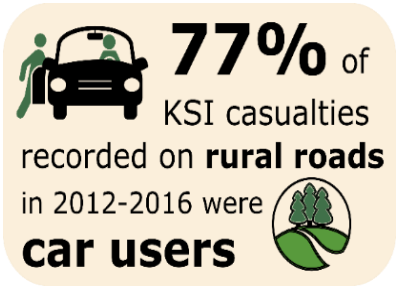


Focusing then only on the KSI casualties that occur on rural roads, a breakdown of casualty numbers by age and gender is presented in Figure 6 with the percentage represented by males shown **in bold** above. More males than females were killed or seriously injured over the 2012 to 2016 period for each age group, with males aged 16-24 recording the greatest overall number (430). The proportion of males ranged from 51% for children (aged under 16) to 71% for those aged 35 to 49. Table A7 in the Appendix refers.

Figure 6: KSI casualties by gender occurring on rural roads 2012-2016

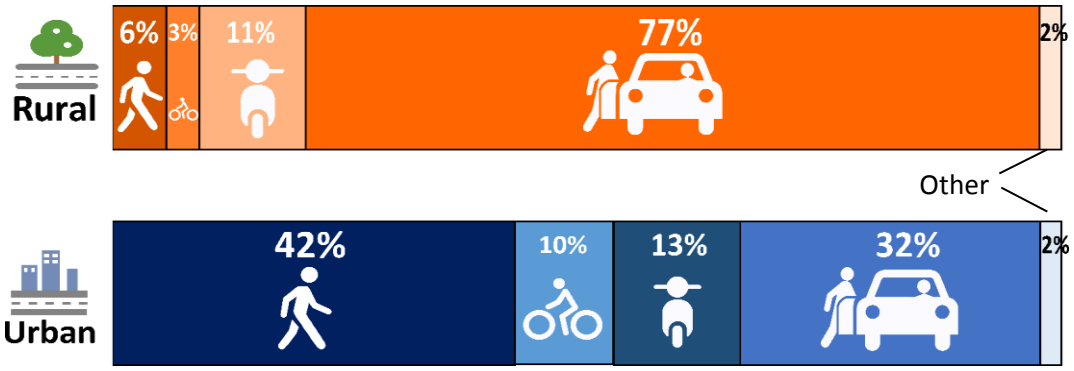


ROAD USER



In terms of road user, it is interesting to note that the breakdown for rural and urban roads are quite different. Of the 2,145 people killed or seriously injured on rural roads between 2012 and 2016, 1,658 were car users, representing over three quarters (77%) of the total. In comparison, on urban roads (where speed limit is 40 miles per hour or less) only one-third of the KSIs were car users (32%), with pedestrians accounting for the greatest proportion (42%). See Figure 7 below and Table A8 in the Appendix.

Figure 7: Proportion of KSI casualties by road user category and road type 2012-2016



Looking at rural roads in isolation to consider the proportion of road users by gender, there were more males killed or seriously injured than females on rural roads for each road user category, ranging from 59% male for car users to 94% for motorcyclists. See Figure 8. However, to put this in context, this is the pattern that is observed for all KSI casualties and there does not appear to be any difference generally in the proportion of road users by gender for each road type amongst the main categories. Figure 9 shows that apart from other road users (which are small in number), the proportion of male KSIs occurring on rural and urban roads is broadly similar. Data is available for this in Table A9 in the Appendix.

Figure 8: KSI casualties on rural roads by road user category and gender 2012-2016

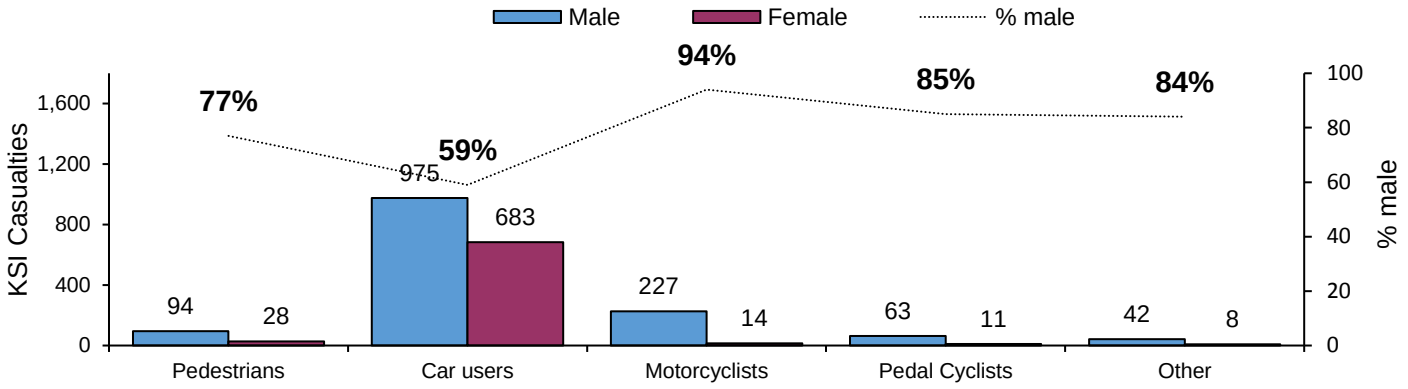
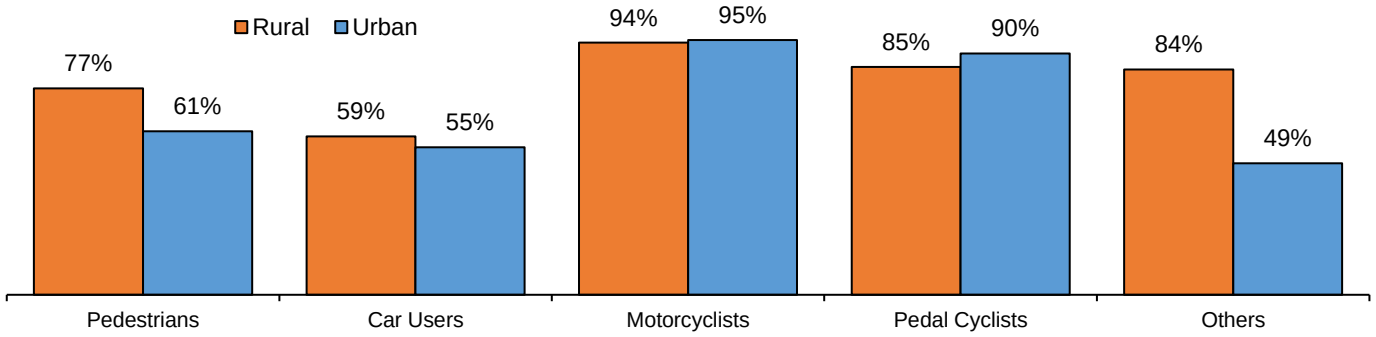


Figure 9: Proportion of male KSI casualties by road user category and road type 2012-2016



Considering the breakdown of road users by age group, the vast majority of KSI casualties (77%) that occur on rural roads are car users and therefore it stands to reason that the breakdown by age of KSIs amongst car users are highly representative of the overall age split of KSI casualties for rural roads. Those aged 16 to 24 are the most represented age group amongst car users (34%) which explains why young people make up the greatest proportion of KSI casualties overall (29%) between 2012 and 2016. In contrast, the 65 plus and under 16 age groups are the least represented KSI amongst car users. These age groups tend to be more prevalent amongst pedestrians (which account for only 6% of KSIs on rural roads), and as a result they had the fewest KSIs on rural roads - just 11% and 5% respectively. Figures 10 and 11 present a comparison of overall rural road KSI casualties with car user KSIs by age group for 2012 to 2016.

Figure 10: KSI casualties by age group occurring on rural roads 2012-2016

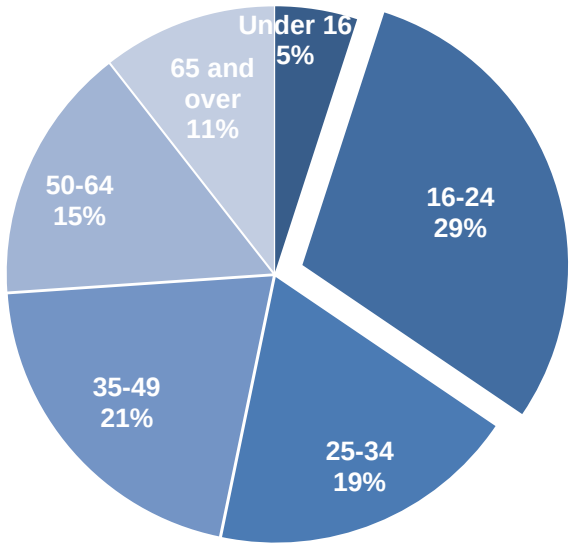
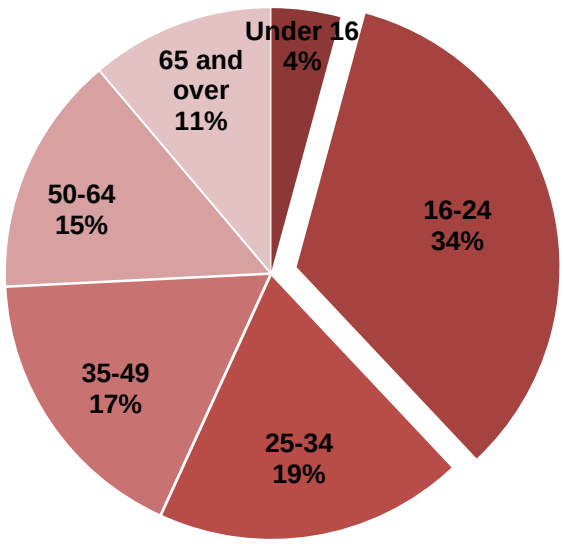
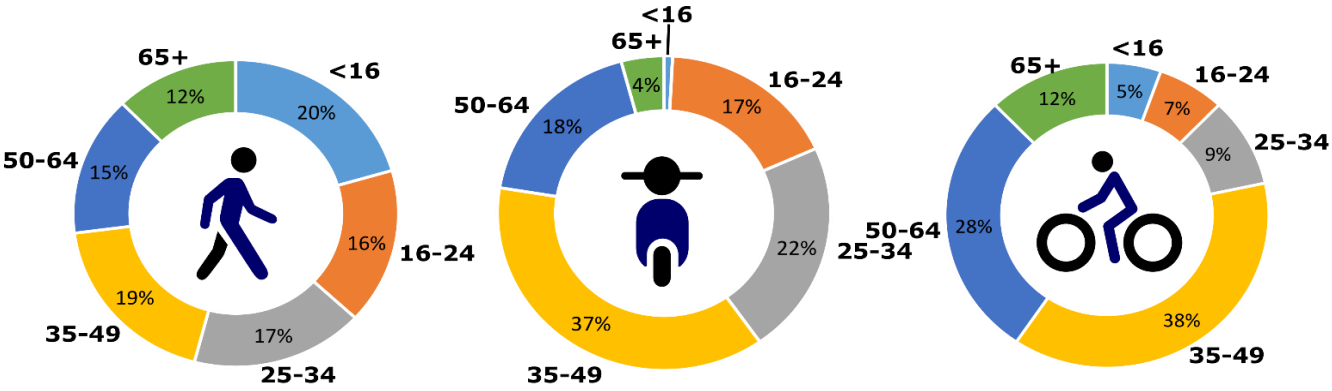


Figure 11: Car user KSI casualties by age group on rural roads 2012-2016



Examining the other main road user categories, there is not much difference in proportion by age group on rural roads for pedestrians, whereas for both pedal cyclists and motorcyclists, the 35 to 49 age group have the greatest proportion of KSI casualties occurring on rural roads with 38% and 37% respectively. However, these age groups are overrepresented for pedal cyclists and motorcyclists on urban roads also. See Table A10 in the Appendix for further detail.

Figure 12: Proportion of pedestrian, motorcyclist and pedal cyclist KSI casualties on rural roads by age group 2012-2016



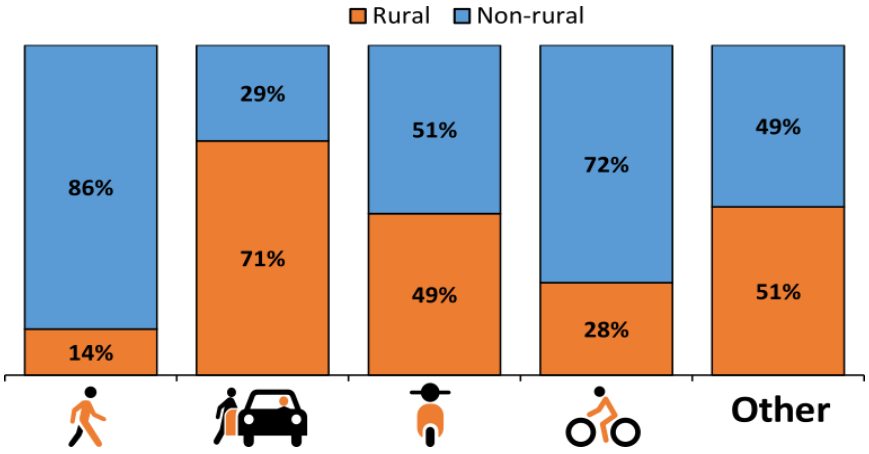
We have examined the proportion that each road user group makes up of the total KSI casualties on rural roads (Figure 7), but to look at this another way, what percentage of KSI casualties for each road user occurs on rural roads? Figure 13 presents this breakdown below using the figures in Table 1. Car user KSI casualties are the most represented with 71% of KSIs for this group occurring on rural roads (1,658 out of 2,347) while just 14% of pedestrians were killed or seriously injured on rural roads during this period (122 out of 880 pedestrian KSIs).

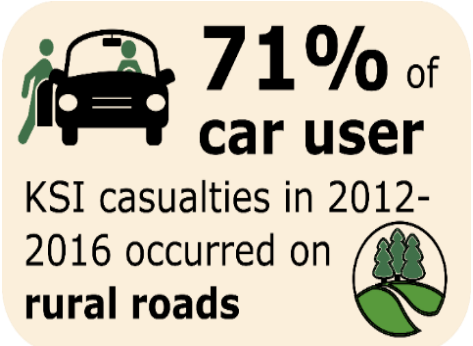
Table 1: Proportion of KSI casualties by road user category and road type 2012-2016

	Rural	% rural	Urban	% urban	Total[1]
Pedestrian	122	14%	738	86%	**880**
Car	1,658	71%	550	29%	**2,347**
Motorcyclist	241	49%	232	51%	**495**
Pedal Cyclist	74	28%	181	72%	**269**
Other	50	51%	39	49%	**99**
Total	**2,145**		**1,740**		**4,090**

[1] Total includes KSI casualties occurring on motorway/dual carriageway

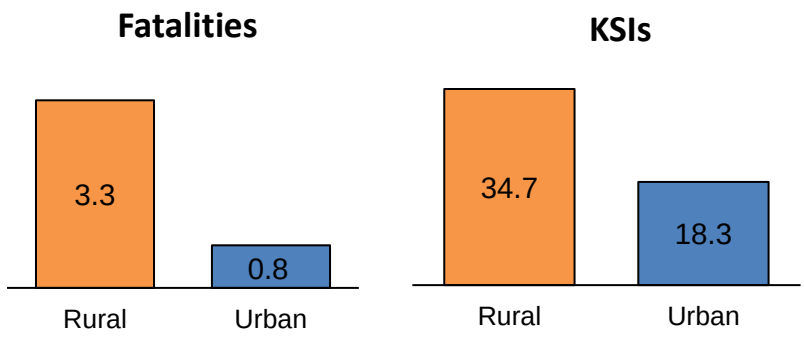
Figure 13: Proportion of KSI casualties by road user category and road type 2012-2016





Examining the relative risk on urban and rural roads using vehicle kilometres travelled for car users (Figure 14 below, Table A11 in Appendix) can offer further insight in to the large proportion of car user KSIs that occur on rural roads. The data would indicate that you are at almost four times greater the risk of being killed, and almost double the risk of being seriously injured in a car on a rural road than urban road. Again, this is perhaps because collisions on rural roads are likely to occur at higher speeds, and therefore the risk of being killed or sustaining serious injuries is greater than collisions which occur in built up areas.

Figure 14: Rate of car user fatalities and KSIs per billion car user kilometres travelled 2012-2016



Note: The most recent year of VKT data available is 2014. Readers should note that the 2014 estimate has been applied to 2015 and 2016. Additionally, the urban/ rural VKT split on minor roads is not available for cars. Instead, the urban/rural ratio for all vehicles kilometres travelled on minor roads has been applied to the car VKT total. Cars account for almost 90% of all vehicle kilometres travelled, therefore this approximation was deemed appropriate.

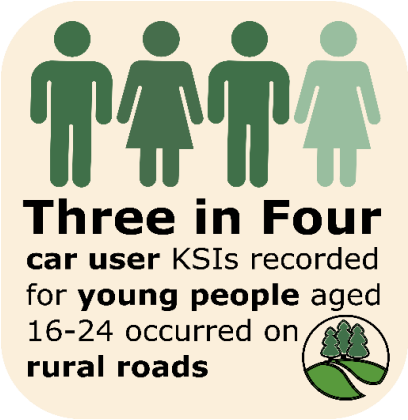
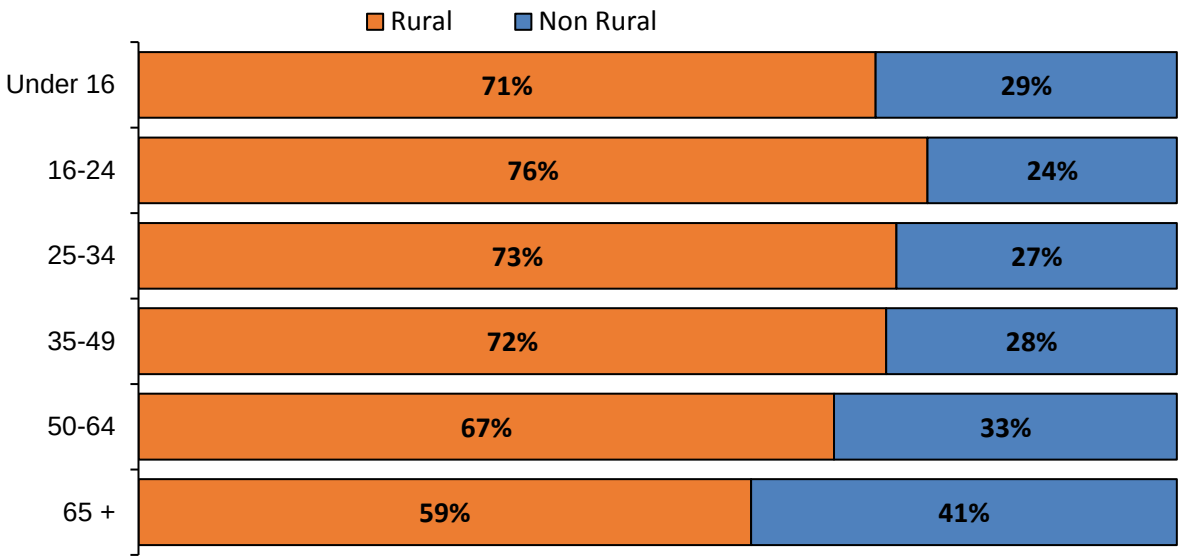


Figure 15 below shows car user KSIs, which represent the majority of rural KSIs, broken down by age group to see the proportions which occur on rural roads. Table A12 refers. As shown previously in Figure 13, overall 71% of car users KSIs occur on rural roads. Young people aged 16-24 are therefore over-represented, with 76% of young people car user KSIs recorded on these roads. In contrast, older car users were under represented on rural roads and had a greater percentage (41%) of car user KSI casualties occurring on urban roads than the other age groups. Nevertheless, regardless of age category, the proportion of car user KSI casualties are much higher on rural roads.

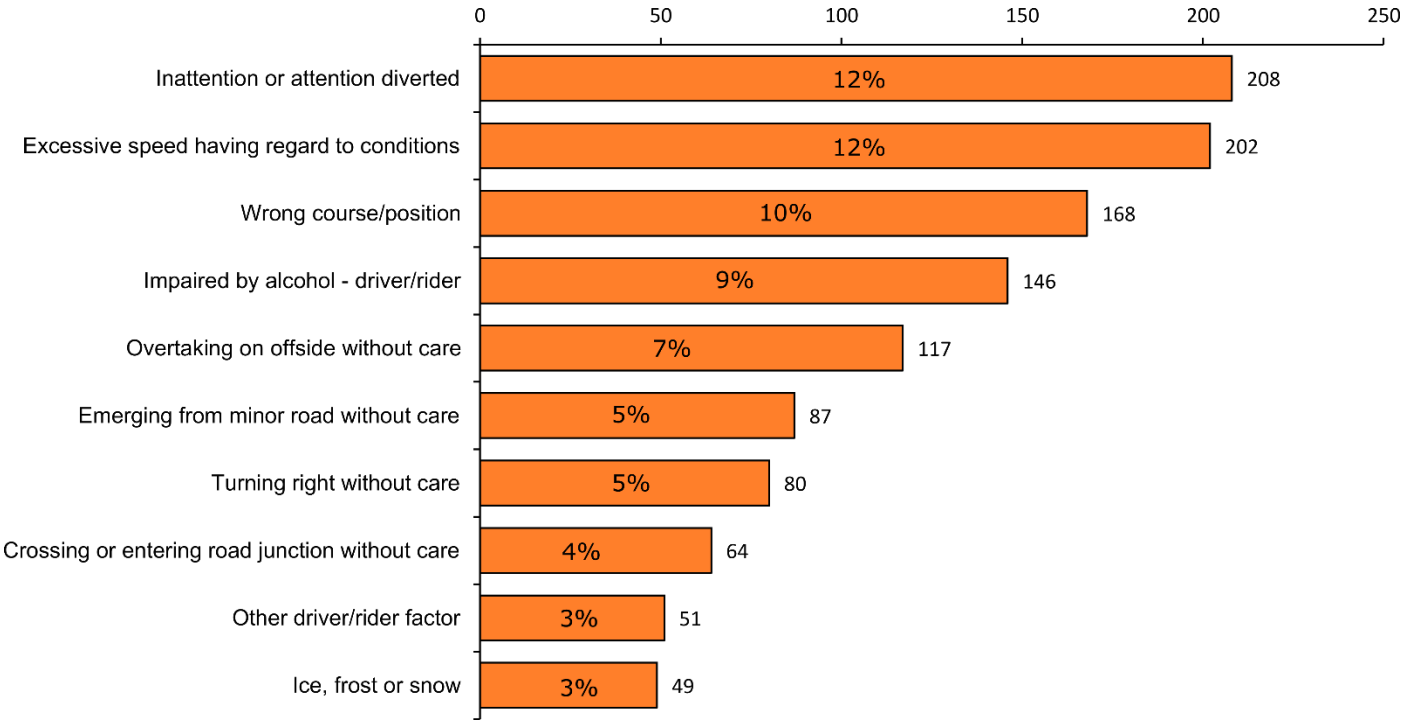
Figure 15: Proportion of car user KSI casualties by age group and road type 2012-2016



CAUSATION FACTOR

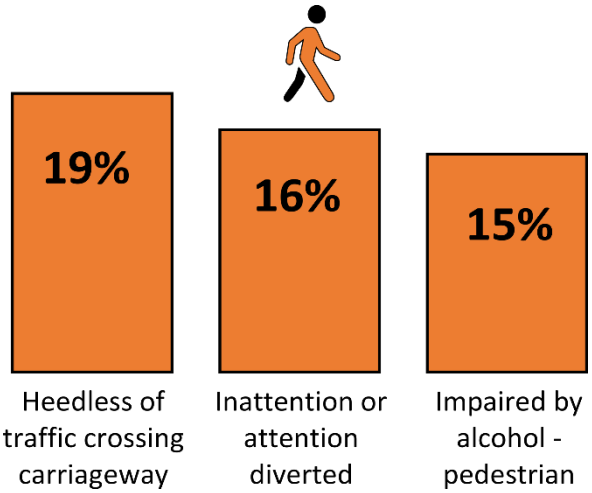
The most common principal causation factors for KSI collisions on rural roads between 2012 and 2016 were 'inattention or attention diverted' (208 KSI collisions), followed by 'excessive speed having regard to conditions' (202 KSI collisions) and 'Wrong course/position' (168 KSI collisions). These 3 categories made up over one-third (35%) of the causation factors for fatal and serious collisions during this time period. See Table A13 in the Appendix. Despite accounting for the most KSI casualties on urban roads and being ranked fifth overall, 'Heedless of traffic crossing carriageway', was only ranked 18th in the number of fatal and serious injuries by causation factor occurring on rural roads.
In terms of fatalities, 'Impaired by alcohol – driver/rider' accounted for the most deaths on rural roads over the last 5 years with 38 people killed (18%) in which the death was attributed to excess alcohol.

Figure 16: Top 10 causation factors of fatal and serious collisions on rural roads 2012-2016



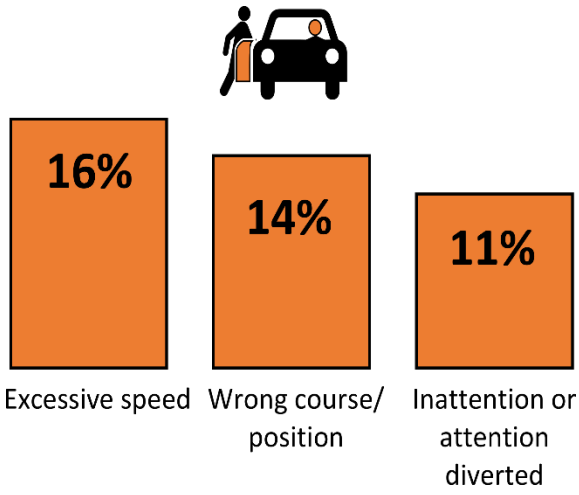
Pedestrian – 122 KSIs, 2012-2016

'Heedless of traffic crossing carriageway', which accounted for 6 people killed and 17 seriously injured on rural roads, was ranked highest for KSI casualty causation amongst pedestrians on rural roads. 'Inattention or attention diverted', which comprised 20 KSI casualties, and 'Impaired by alcohol – pedestrian' (18 KSI casualties) completed the top 3 causation factors. Pedestrian impairment by alcohol was the biggest cause of death amongst pedestrians on rural roads during the time period with 8 pedestrian deaths primarily attributed to this factor. See Table A14 in Appendix.



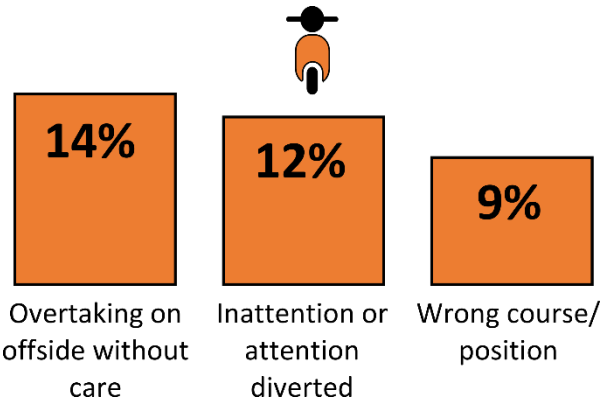
Car User – 1,658 KSIs, 2012-2016

The top 3 causation factors amongst car users killed or seriously injured on rural roads were 'excessive speed having regard to conditions' (266 KSI casualties), 'Wrong course/ position' (227 KSI casualties) and 'Inattention or attention diverted' (186 KSI casualties). Unsurprisingly, these were the top 3 causation factors on rural roads overall with excessive speed also ranked highest amongst those car users aged 16 to 24. Of the 559 young car users killed or seriously injured on rural roads between 2012 and 2016, over a quarter had the principal causation factor attributed to excessive speed (145 KSI casualties, 26%). 'Impaired by alcohol-driver/rider' was the principal causation factor assigned to the most deaths of car users during 2012 to 2016 with 31 fatalities recorded attributed to this factor. See Table A15 in Appendix.



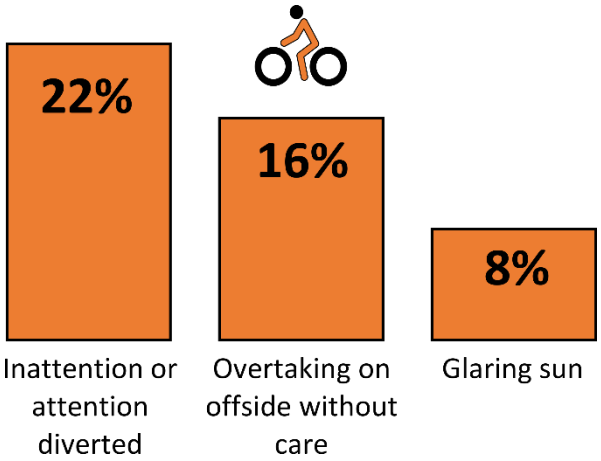
Motorcyclist – 241 KSIs, 2012-2016

'Overtaking on offside without care' was ranked highest for KSI casualties on rural roads amongst motorcyclists between 2012 and 2016 with five riders killed and 28 seriously injured attributed to this factor. 'Inattention or attention diverted' (29 KSI casualties) and 'Wrong course/position' (22 KSI casualties) were ranked second and third respectively. 'Emerging from minor road without care' accounted for the most KSI casualties amongst those riders aged 35 to 49 (the most represented age group amongst motorcyclists) while 'Excessive speed having regard to conditions' accounted for the most motorcyclist deaths in this 5 year period with seven fatalities.
See Appendix Table A16.



Pedal Cyclist – 74 KSIs, 2012-2016

'Inattention or attention diverted' (16 KSI casualties), 'Overtaking on offside without care' (12 KSI casualties) and 'Glaring Sun' (6 KSI casualties) were the top 3 causation factors for pedal cyclists on rural roads between 2012 and 2016. See Table A17 in Appendix.



SINGLE VEHICLE COLLISIONS

There were 808 fatal or serious single vehicle collisions recorded between 2012 and 2016, 239 fewer than the 1,047 recorded for the baseline period of 2004 to 2008 (a decrease of 23%). The majority of fatal and serious single vehicle collisions recorded occurred on rural roads (574, 71%), with urban roads comprising 24% and motorways/dual carriageways making up the remaining 5%. In terms of the proportions that single vehicle KSI collisions made up of the total number of collisions for each road type, one-third (34%) of KSI collisions on rural roads were single-vehicle collisions, while the equivalent proportions on motorways and urban roads was 23% and 12%, respectively. See Tables A18 and A19 in the Appendix for further detail.

Figure 17: Single vehicle fatal and serious collisions by road type

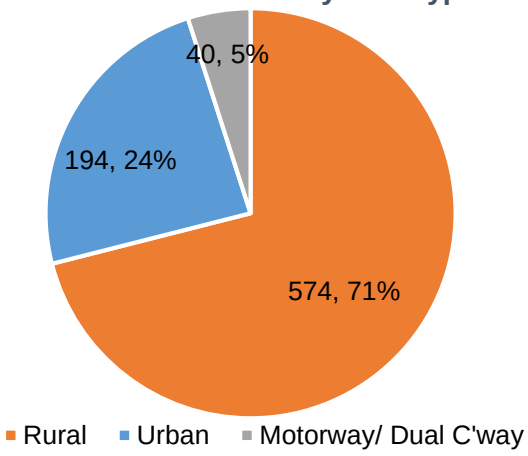
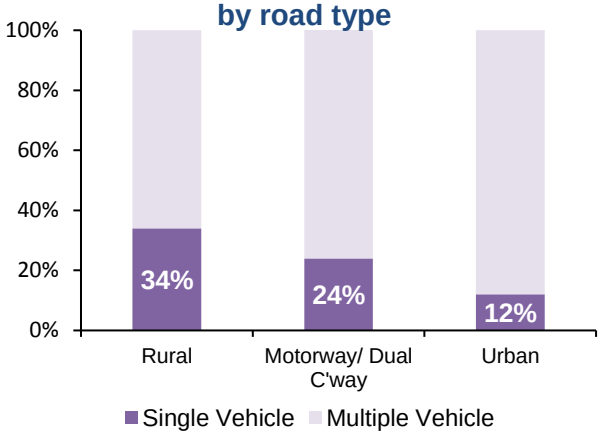


Figure 18: Proportion of fatal and serious single vehicle collisions by road type

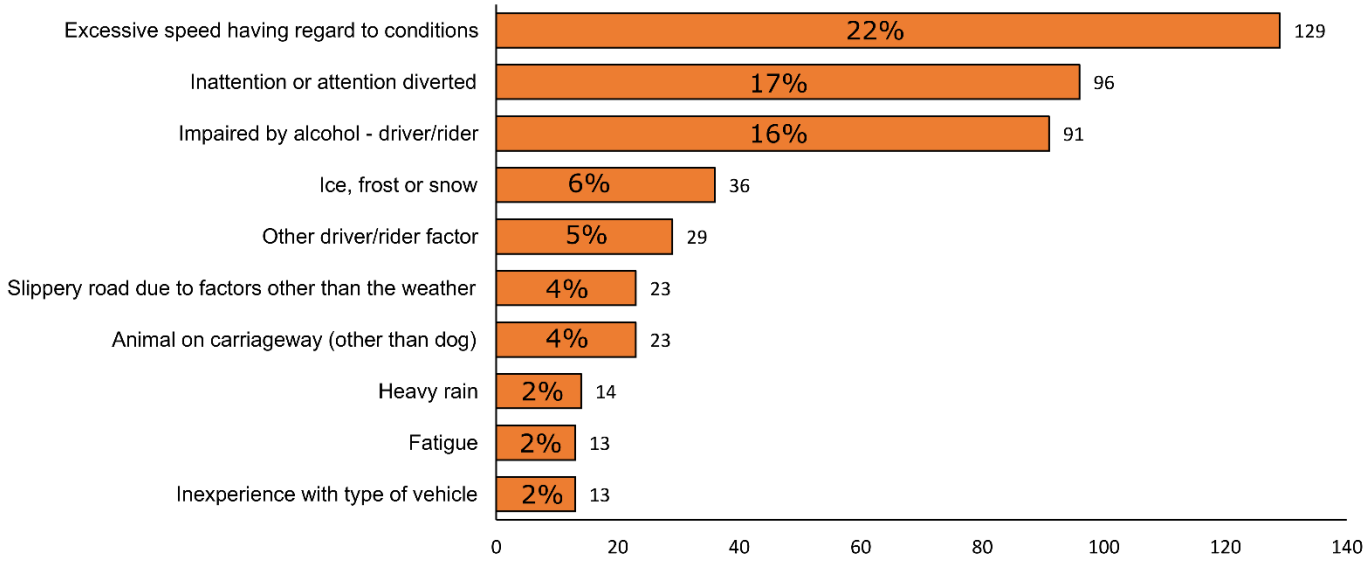


The 574 fatal or serious single vehicle collisions which occurred on rural roads involved 686 KSI casualties of which 464 (68%) were male. This is similar to the male/female split for all casualties. However, over two fifths of the single vehicle KSI casualties (45%) were aged 16 to 24, while in contrast, young people represent 29% of all KSI casualties on rural roads. Table A20 refers in Appendix. Young people are therefore heavily overrepresented in single vehicle collisions occurring on rural roads. Excessive speed is also overrepresented as a causation factor amongst single vehicle collisions on rural roads. Over one fifth (22%) of the single-vehicle collisions on rural roads were primarily attributed to speeding, while the equivalent figure for all KSI collisions on rural roads was 12%. Inattention or attention diverted (17%) and impaired by alcohol driver/rider (16%) were the second and third most frequently reported causation factors respectively, and together with excessive speed these three factors accounted for over half (55%) of all single-vehicle KSI collisions on rural roads between 2012 and 2016. Table A21 in the Appendix shows the top ten causation factors for single vehicle collisions on rural roads.

Single-vehicle KSI collisions Vs All KSI collisions

Rural Collisions 2012-2016	Single-vehicle KSI collisions	All KSI collisions
Casualties aged **16-24**	45%	29%
Primary causation **speeding**	22%	12%

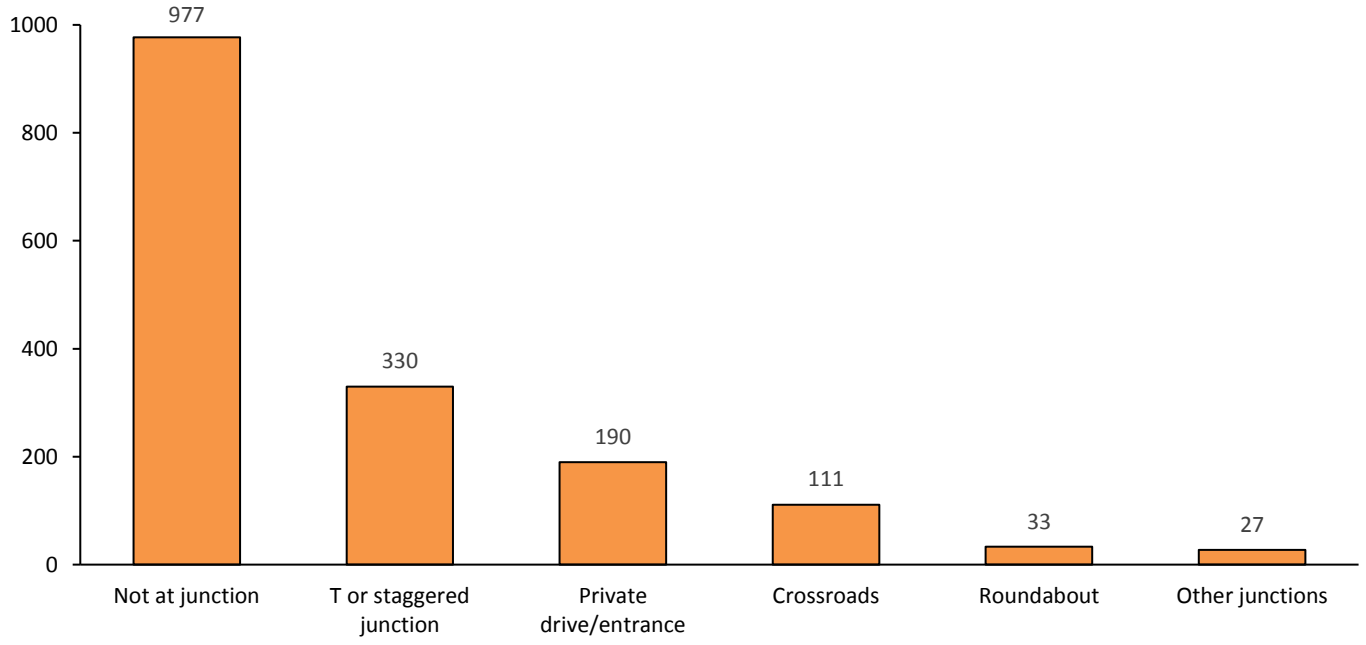
Figure 19 Main causes of single vehicle fatal and serious collisions



COLLISIONS AT JUNCTIONS

Looking briefly at collisions occurring at junctions on rural roads, 691 (40%) out of the 1,668 fatal and serious collisions occurred at a junction. This is fewer proportionately than urban roads (69%) but perhaps is indicative of country roads having fewer junctions. Of the 691 rural road junction collisions, 330 (48%) occurred at a T or staggered junction, 190 at a private drive/entrance (28%) and 111 at a crossroads (16%). See Figure 20 and Table A22. Unsurprisingly, the top 3 causation factors used for rural road collisions occurring at junctions are all junction related. These are emerging from minor road without care (86, 12%), turning right without care (76, 11%) and crossing or entering road junction without care (64, 9%). Appendix Table A22 refers.

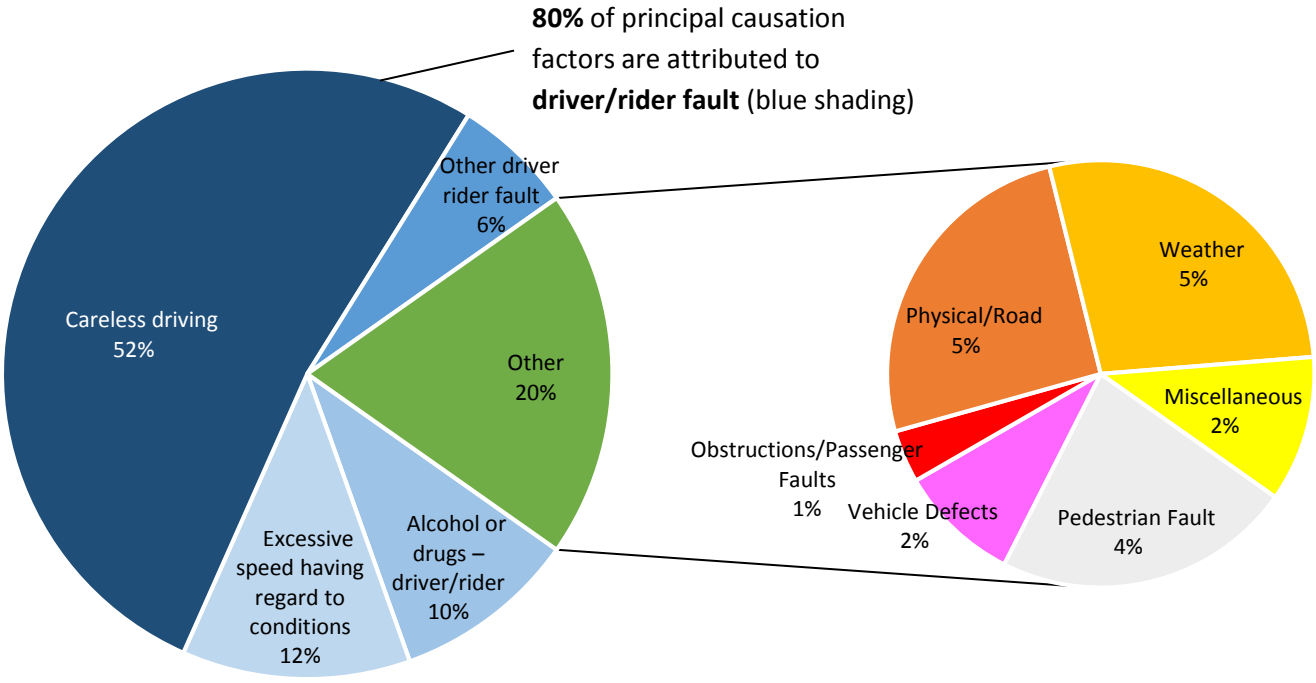
Figure 20 Rural road collisions by junction type



RESPONSIBILITY

Figure 21 (Appendix Table A23) breaks down the principal causation factor for KSI collisions on rural roads. Of the 1,668 fatal and serious collisions recorded on rural roads between 2012 and 2016, 1,342 (80%) were attributed to a driver/rider involved in the collision. This is shown in blue shading below. Careless driving[1] was the principal causation for half (52%) of all KSI collisions, which equates to almost two thirds (65%) of the KSI collisions in which a driver/rider was at fault. Of the remaining 20% of collisions which were not attributed to driver/rider fault, weather (e.g. ice, frost or snow, heavy wind, glaring sun) accounted for the most, closely followed by physical road conditions (e.g. road surface in need of repair) and pedestrian fault (all approximately 5%).

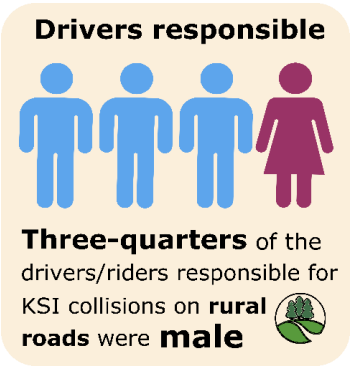
Figure 21: Fatal and serious collisions on rural roads by causation factor type 2012-2016



[1] This is a composite causation factor comprised of several causation factors including 'inattention or attention diverted' and 'driving too close'.

Who is responsible?

The 1,342 fatal and serious collisions occurring on rural roads between 2012 and 2016, where the causation factor was driver rider fault, involved 1,373 drivers (note that more than one driver can be responsible for each collision). Males were responsible for over three-quarters of fatal and serious collisions in which a gender is known, with more males than females responsible for each of the different age groups. Drivers aged between 17 and 24 had the highest proportion responsible (30%) by age group (see Figure 22) with young drivers also having the highest proportion of males to females (78%). The gender of the driver is unknown in a small number of KSI collisions (59) – these are mainly hit and run drivers.



Looking at fatal collisions on their own, 146 male drivers (81%) out of 180 were responsible, with the 17 to 24 age group again being the most represented. Approximately a third of drivers responsible came from this age group. See Figure 22 below and Table A24 in the Appendix.

Figure 22: KSI collisions on rural roads by age group of driver responsible 2012-2016

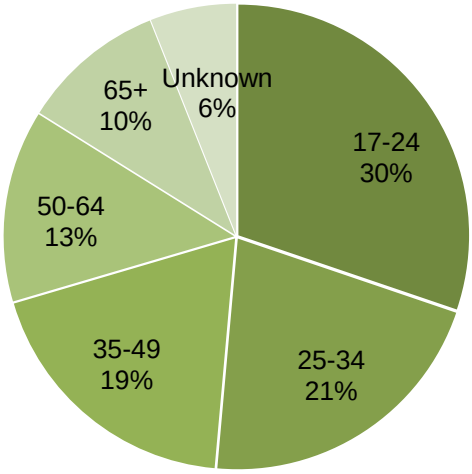
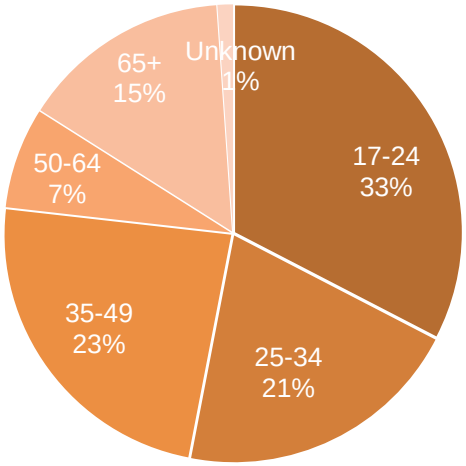


Figure 23: Fatal collisions on rural roads by age group of driver responsible 2012-2016



TIME AND MONTH

When do rural fatal and serious collisions occur?

One in seven KSI collisions recorded at the **weekend** on **rural roads** occurred in **the early hours** (12am - 4am)*

*the equivalent proportion for weekdays is one in seventeen

Taking the week as a whole, the greatest number of fatal and serious collisions occurred between 5pm and 6pm (138 collisions, 8%). However, there were contrasts between the pattern of collisions at weekends and during the working week. The morning time of 6am to 10am accounted for just under one-fifth (19%) of all fatal and serious collisions between Monday and Friday, compared with 8% for the same hours on Saturday and Sunday. At weekends there was a greater tendency for fatal and serious collisions on rural roads to occur in the early hours of the morning, with 15% of weekend collisions occurring between midnight and 4am in comparison with 6% for the same hours between Monday and Friday. Finally, there was a peak in fatal and serious collisions on rural roads occurring between 3pm and 7pm between Monday and Friday (accounting for approximately 30%) while for weekends there was a much more even spread over this time period with similar numbers of KSI collisions reported between 10 am and 6pm.

Figure 24: Weekday fatal and serious collisions on rural roads by hour 2012-2016

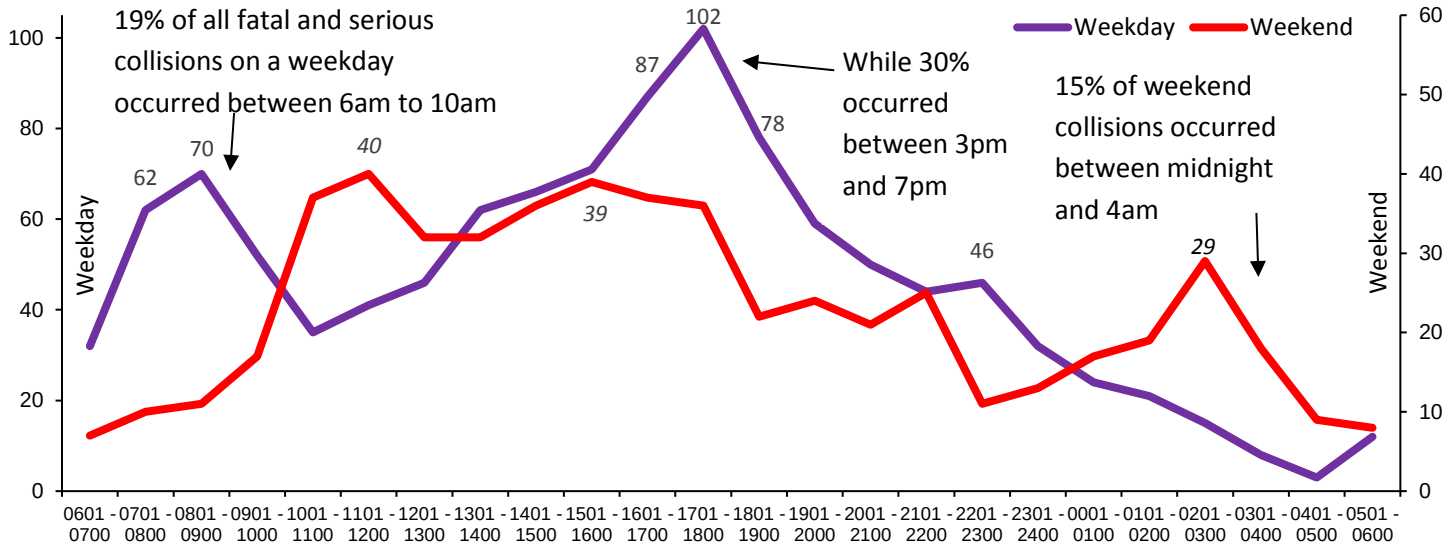


Table 2: Weekday fatal and serious collisions on rural roads by hour 2012-2016

	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Total	
0601 - 0700	13	4	2	6	7	5	2	39	0601 - 0700
0701 - 0800	13	14	14	10	11	6	4	72	0701 - 0800
0801 - 0900	14	10	18	11	17	7	4	81	0801 - 0900
0901 - 1000	12	10	11	12	7	11	6	69	0901 - 1000
1001 - 1100	5	6	6	11	7	21	16	72	1001 - 1100
1101 - 1200	11	7	5	6	12	19	21	81	1101 - 1200
1201 - 1300	10	11	8	9	8	16	16	78	1201 - 1300
1301 - 1400	13	15	13	9	12	14	18	94	1301 - 1400
1401 - 1500	15	17	7	9	18	18	18	102	1401 - 1500
1501 - 1600	13	15	18	15	10	23	16	110	1501 - 1600
1601 - 1700	16	16	17	13	25	14	23	124	1601 - 1700
1701 - 1800	16	22	18	18	28	18	18	138	1701 - 1800
1801 - 1900	12	17	17	18	14	14	8	100	1801 - 1900
1901 - 2000	8	12	16	14	9	12	12	83	1901 - 2000
2001 - 2100	5	10	14	9	12	12	9	71	2001 - 2100
2101 - 2200	7	5	7	9	16	8	17	69	2101 - 2200
2201 - 2300	9	6	10	11	10	6	5	57	2201 - 2300
2301 - 2400	6	7	5	4	10	8	5	45	2301 - 2400
0001 - 0100	5	3	4	8	4	5	12	41	0001 - 0100
0101 - 0200	8	4	3	1	5	12	7	40	0101 - 0200
0201 - 0300	4	3	3	2	3	13	16	44	0201 - 0300
0301 - 0400	2	1	2	2	1	8	10	26	0301 - 0400
0401 - 0500	2	0	0	1	0	2	7	12	0401 - 0500
0501 - 0600	2	2	2	5	1	5	3	20	0501 - 0600
Total	221	217	220	213	247	277	273	1,668	

No of KSI Collisions
0-4
5-8
9-12
13-16
17-22
23+

Saturday and Sunday accounted for the most fatal and serious collisions on rural roads through the week with 277 (17%) and 273 (16%) respectively while Monday was highest for fatal collisions on rural roads with 36 (18%). The worst combined day and hour for rural fatal and serious collisions was Friday between 5pm and 6pm with 28 closely followed by Friday between 4pm and 5pm with 25. Sunday afternoon between 4pm and 5pm was also noticeably high.

In terms of month, August and December both had the greatest number of KSI collisions on rural roads with 159 recorded, while February had the fewest with 105, closely followed by October with 112. Table A25 refers.

Figure 25: Rural fatal and serious collisions by month of year and day of week 2012-2016

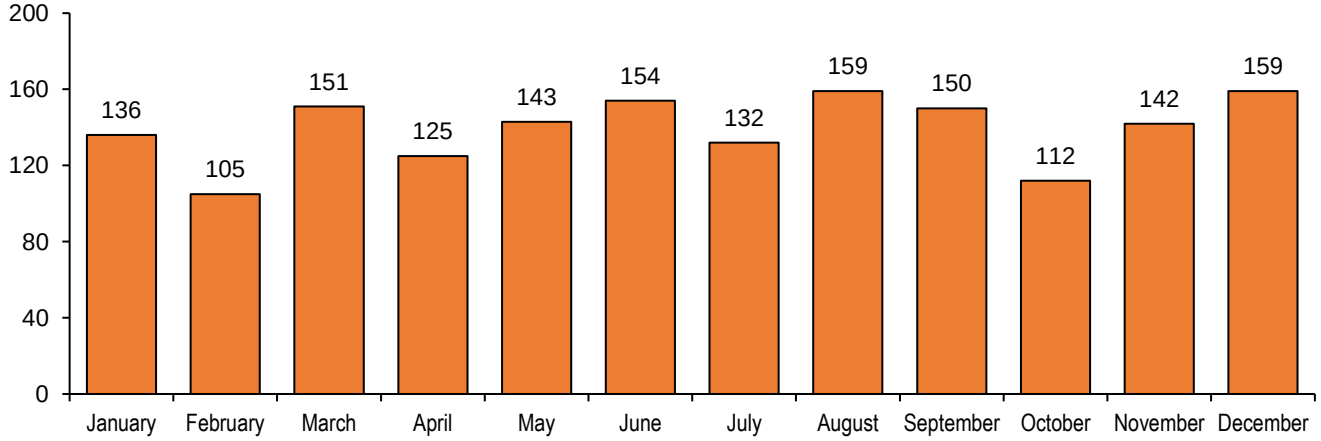


Figure 26: Rural fatal and serious collisions by season 2004-2008 average compared with 2012-2016

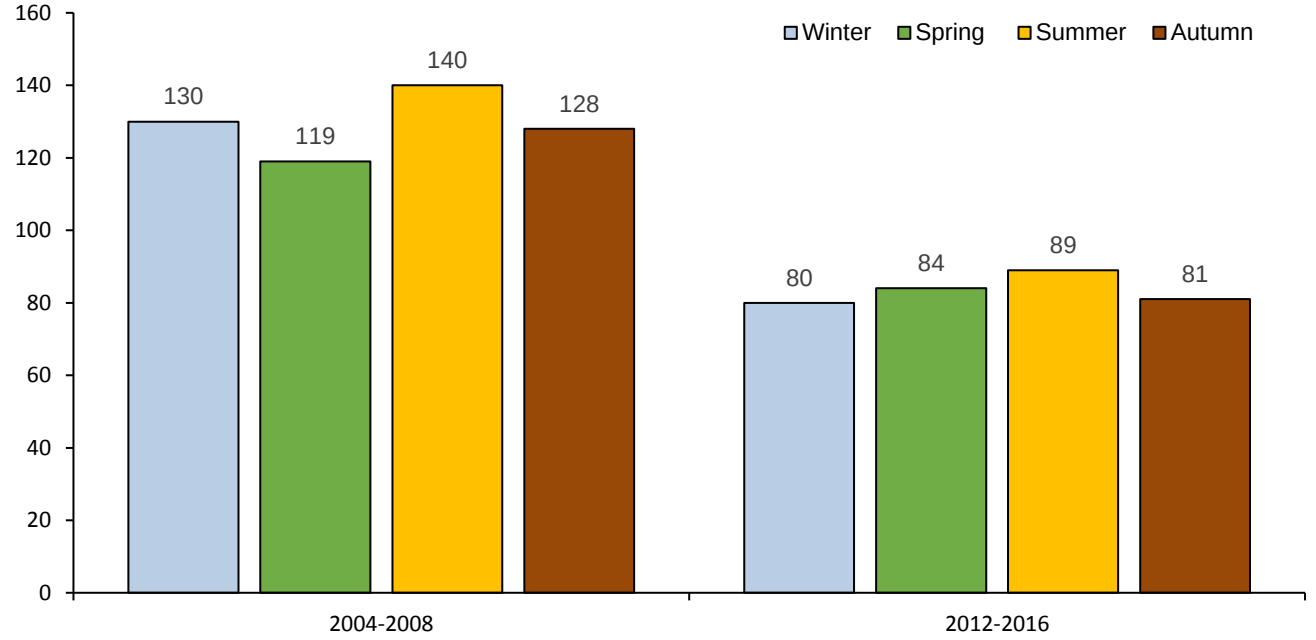
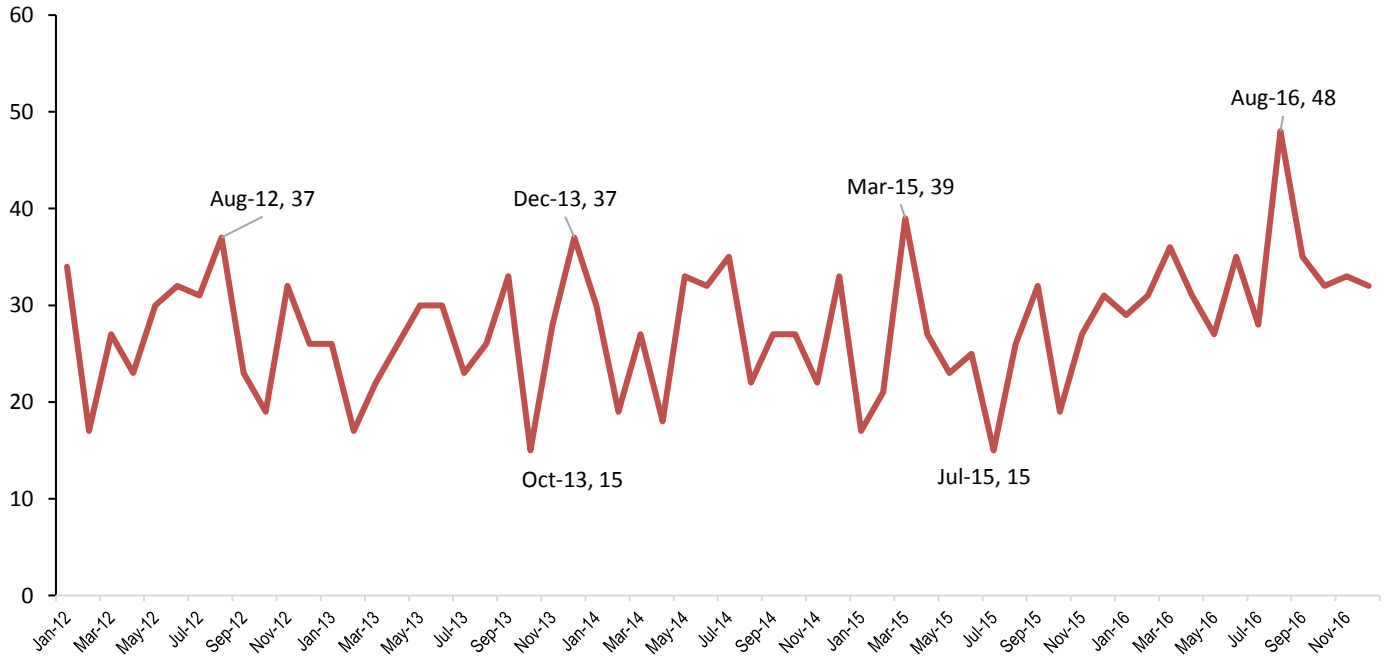


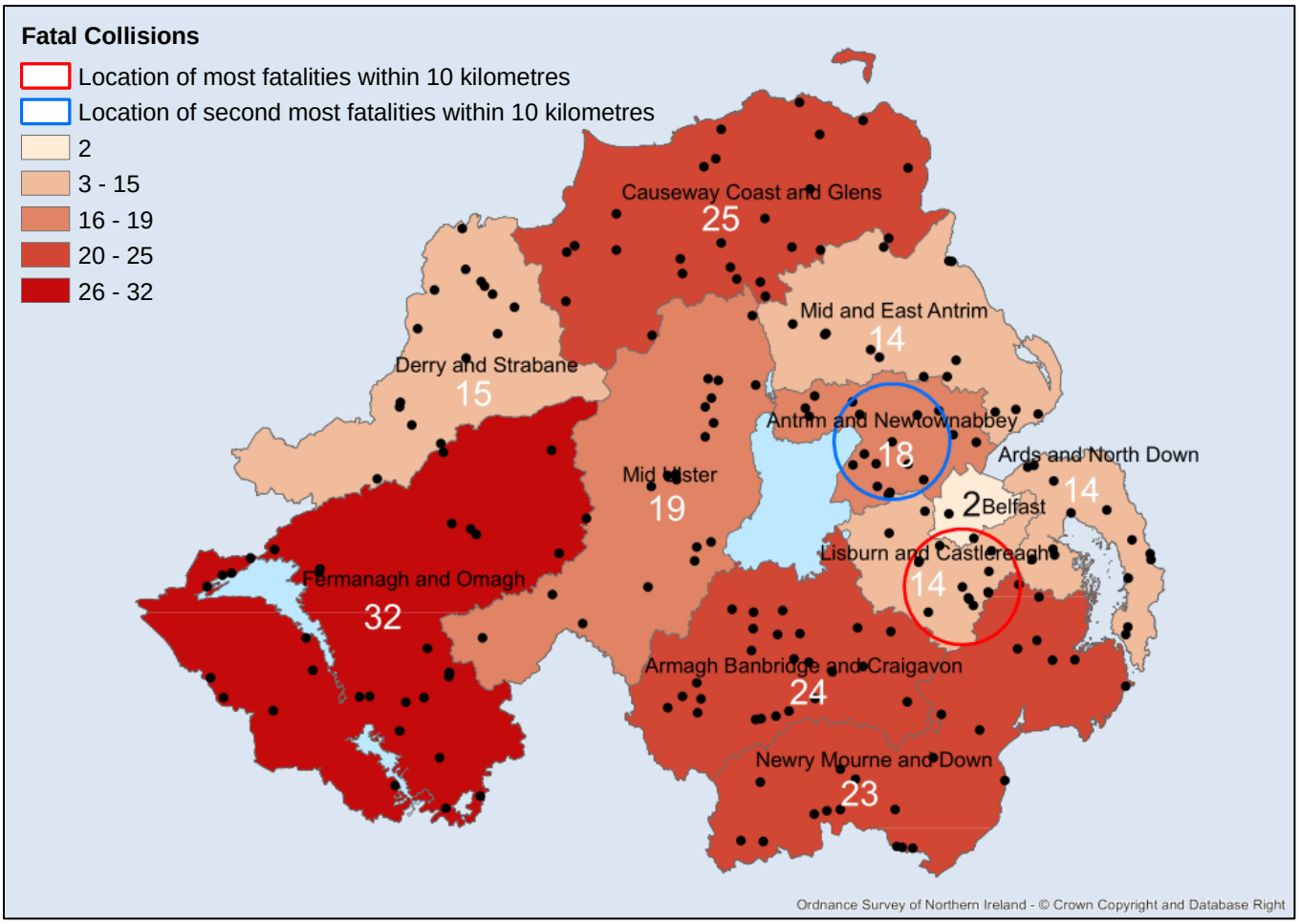
Figure 26 (Tables A26 and A27 in Appendix) shows a five year average for both the baseline period of 2004 to 2008 and 2012 to 2016. Comparing the two periods shows just how much collisions have fallen from the baseline, with each season in 2012 to 2016 considerably below the levels experienced in 2004 to 2008. Although summer (comprising June, July and August) averaged the most rural fatal and serious collisions for each period, Figure 26 indicates that no seasonal pattern can be established, and that the number of collisions on rural roads fluctuate from one month to the next. This is demonstrated by the summer months of July 2015 having the joint fewest number of KSI collisions between 2012 and 2016 while August 2016 had the most with 48.

Figure 27: Fatal and serious collisions on rural roads for each month 2012-2016



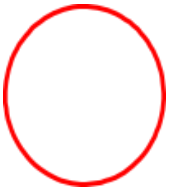
MAPPING – WHERE DO RURAL ROAD COLLISIONS OCCUR?

Map 1 - Fatal collisions on rural roads by District 2012-2016

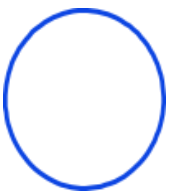


The above map shows the 200 fatal collisions which occurred on rural roads between 2012 and 2016 and the total number that occurred for each District Council. Fermanagh and Omagh had the most with 32 while Belfast City had the fewest with 2. This is perhaps unsurprising given that Fermanagh and Omagh has the most rural roads in terms of kilometres covered while Belfast has the least[1].

The map also highlights the two worst areas for fatal collisions on rural roads within a 10 kilometre radius. The red circle shows the worst area, with 14 fatal collisions falling within this radius; the blue circle was second highest with 13[2]. See below for more detail:



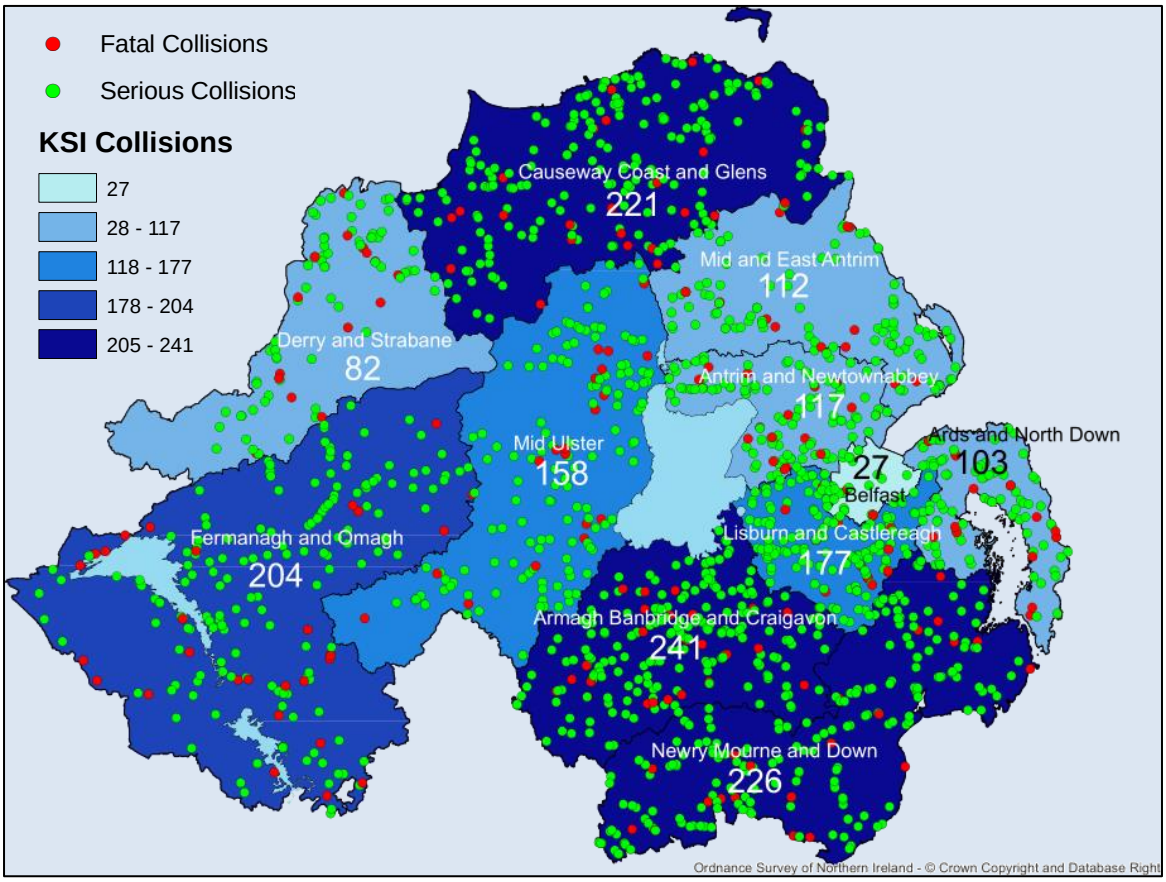
Thirteen of the 14 fatal collisions took place in Lisburn and Castlereagh with the other in Newry and Mourne. The circle comprises four collisions which occurred on the A49 Old Ballynahinch Road/ Magheraknock Road and also four on the A24 Carryduff Road/ Ballynahinch Road/Saintfield Road. Other collisions within the radius include one each on the Dromara Road, Ballinderry Road, McKinstry Road, Milltown Road, Knockmore Road and Ballygowan Road.



These 13 fatal collisions all took place within Antrim and Newtownabbey District council and all happened on separate roads within the District with the exception of two collisions on the Moira Road close to its junction with the Ballydonaghy Road. These occurred less than 500 metres apart from each other.

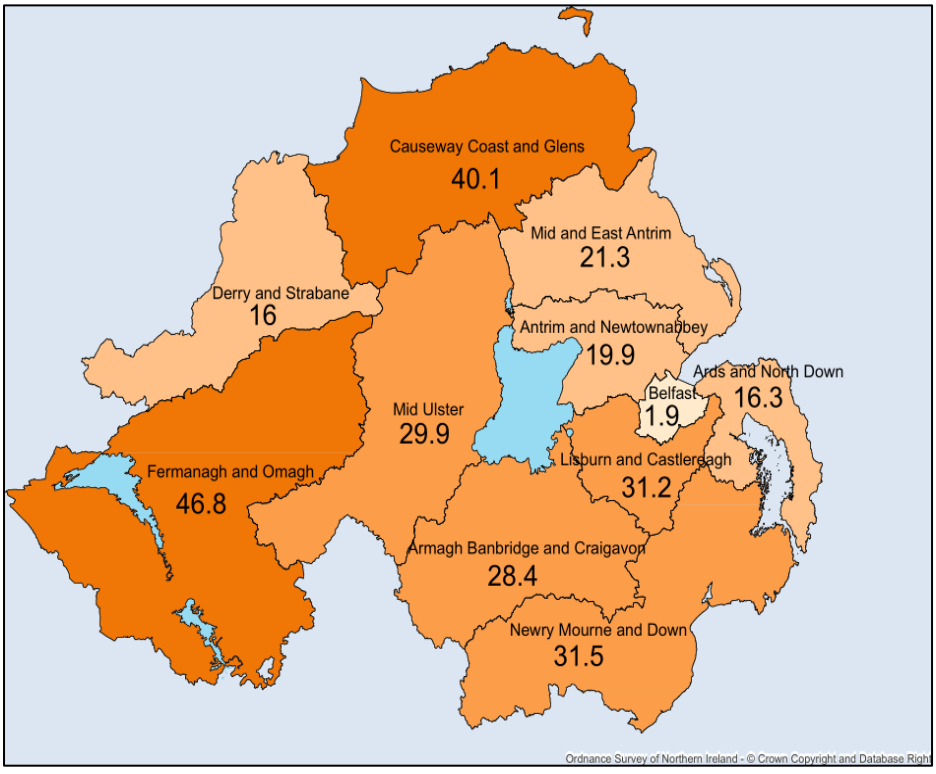
[1] Using the speed limit of road according to the OSNI Road Network
[2] Using the criteria that each circle must be comprised of different collisions

Map 2 - Fatal and serious collisions on rural roads by District 2012-2016



The above map displays the location of the 1,668 fatal and serious collisions which occurred between 2012 and 2016 with fatal collisions depicted in red and serious collisions in green. The District with the most KSI collisions was Armagh, Banbridge and Craigavon with 241 closely followed by Newry, Mourne and Down with 226 while Belfast City had the fewest with 27(due to there being so few rural roads within the District).

Map 3 – Rate of KSI casualties on rural roads per 100,000 population by District, 2012-2016



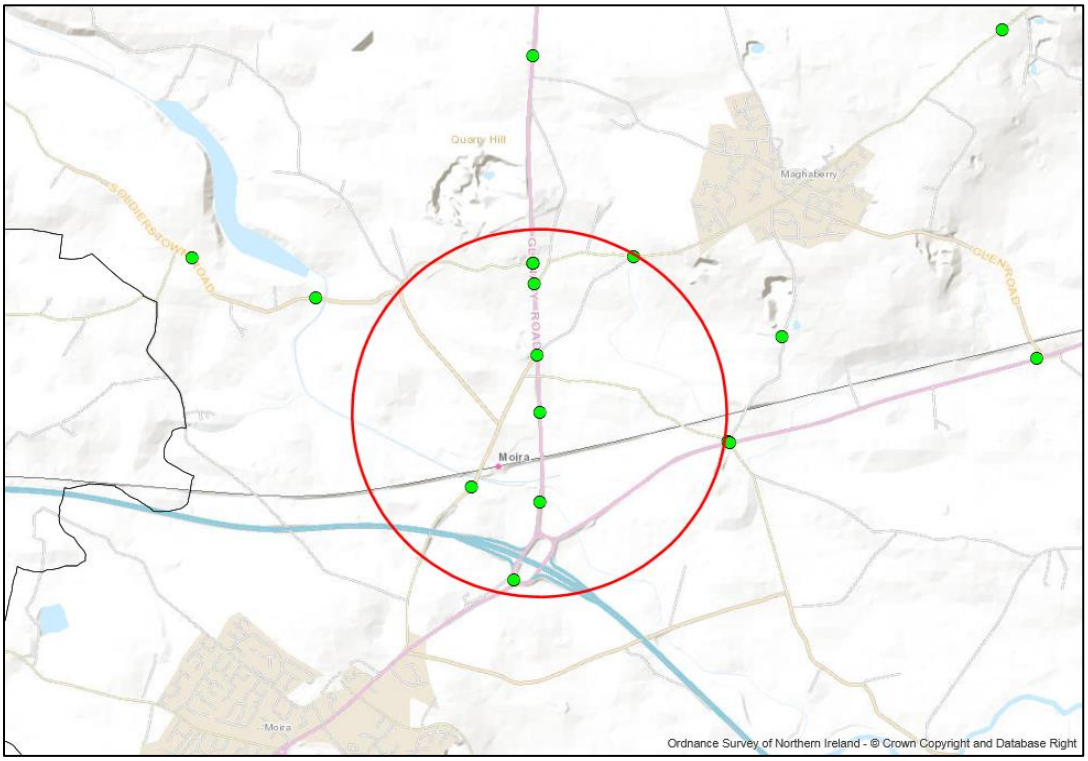
Map 3 takes into account the different population densities for each District by calculating the five year average of those killed or seriously injured between 2012 and 2016 against the 2016 mid-year population estimate (Source: NISRA population statistics). While Armagh, Banbridge & Craigavon and Newry, Mourne and Down remained relatively high, Fermanagh and Omagh District had the highest KSI casualty rate per population averaging 47 people killed or seriously injured on rural roads per 100,000 population by year over the five year period. Table A28 in Appendix refers.

Map 4 – Top 5 sites for KSI collisions within a kilometre radius, 2012-2016

Looking at the collision sites which have the most fatal and serious collisions within a one-kilometre radius identifies the five areas circled on the map above. All five of these areas were in the south, with three in Armagh, Banbridge and Craigavon, and two in Lisburn and Castlereagh. Each will be examined below.

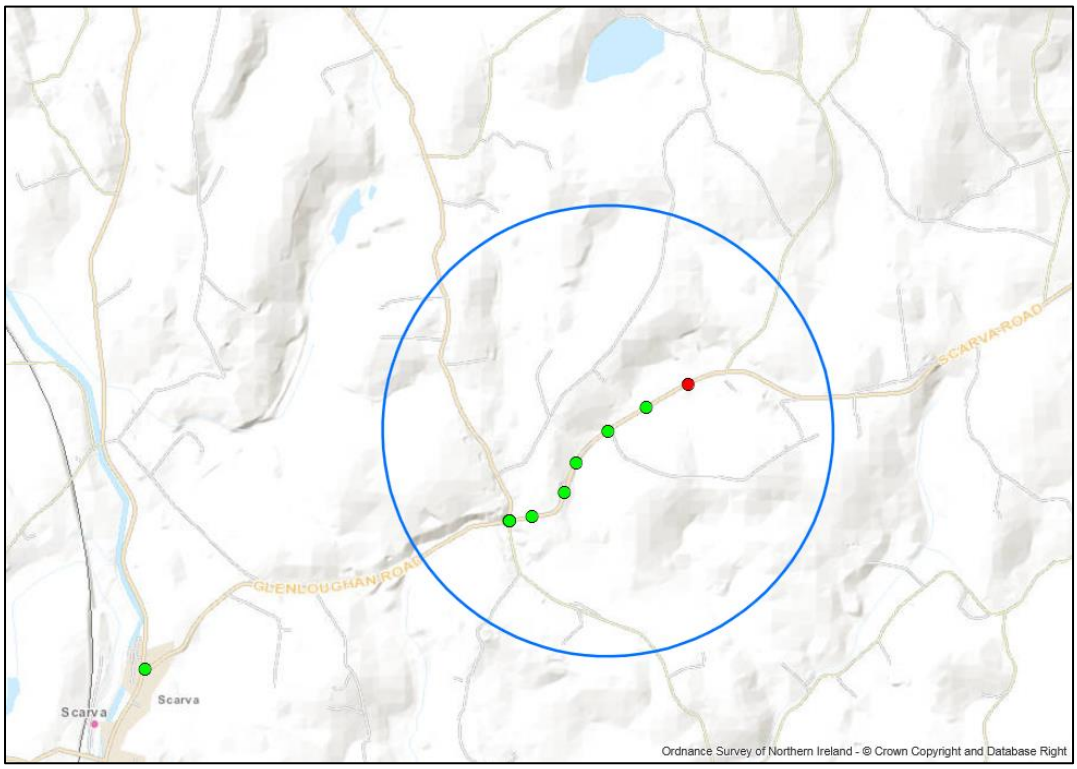
Top 5 sites for KSI collisions within a kilometre radius, 2012-2016

Map 5 - Moira roundabout/A26 Glenavy Road



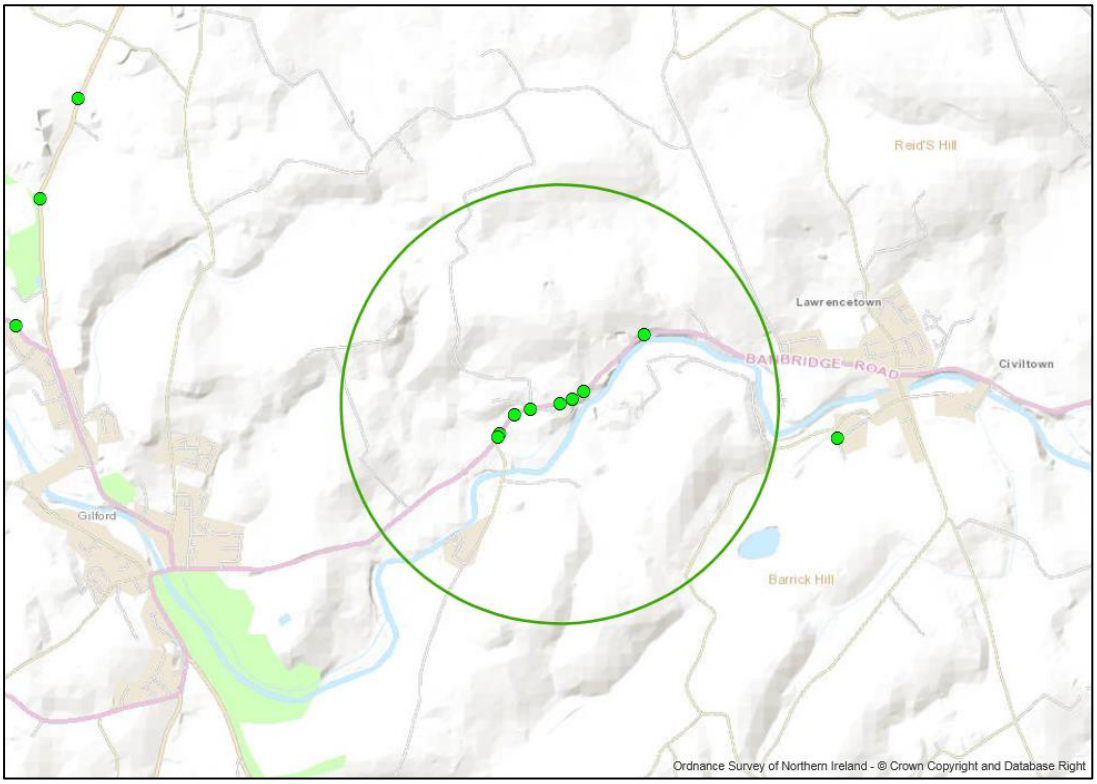
There were 9 serious collisions which fell within this one-kilometre area. One was close to the junction with the Moira Roundabout, and six occurred on the A26 Glenavy Road. There was also one serious collision on Station Road and one on Maghaberry Road.

Map 6 B10 Scarva Road, Banbridge



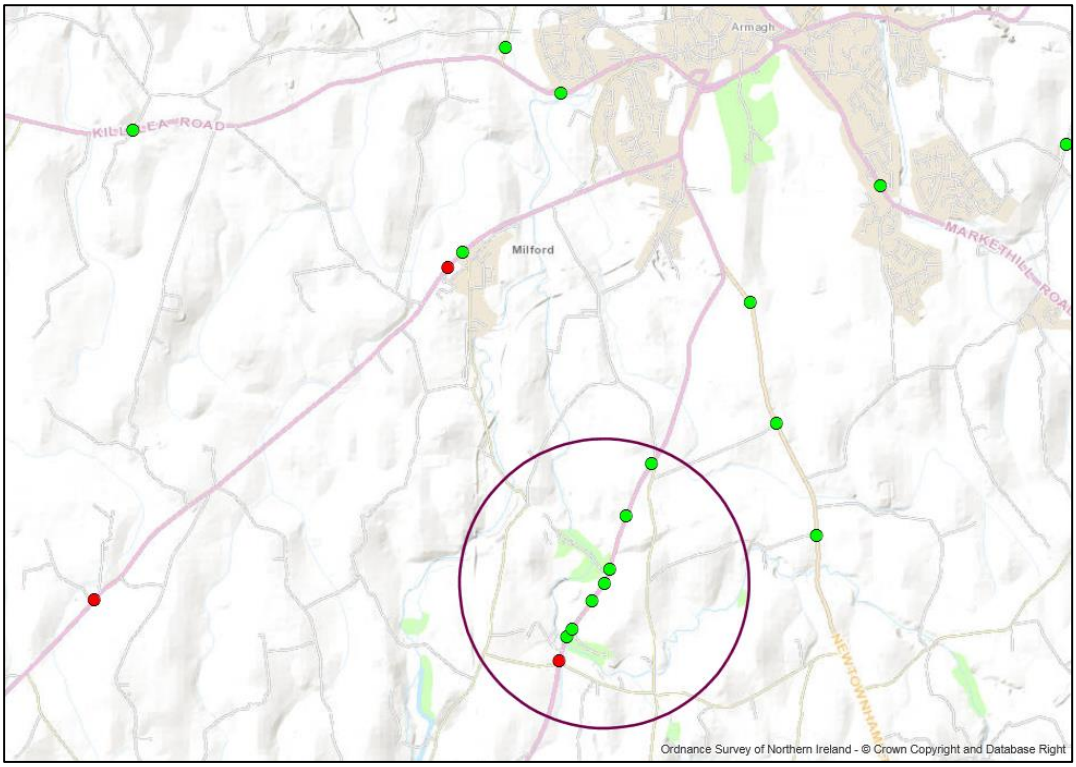
There were 7 serious collisions and 1 fatal collision on the Scarva Road close to Banbridge. Two of the serious collisions on the Scarva Road occurred with its junction with the Loughbrickland Road.

Map 7 A50 Banbridge Road, Tullylish



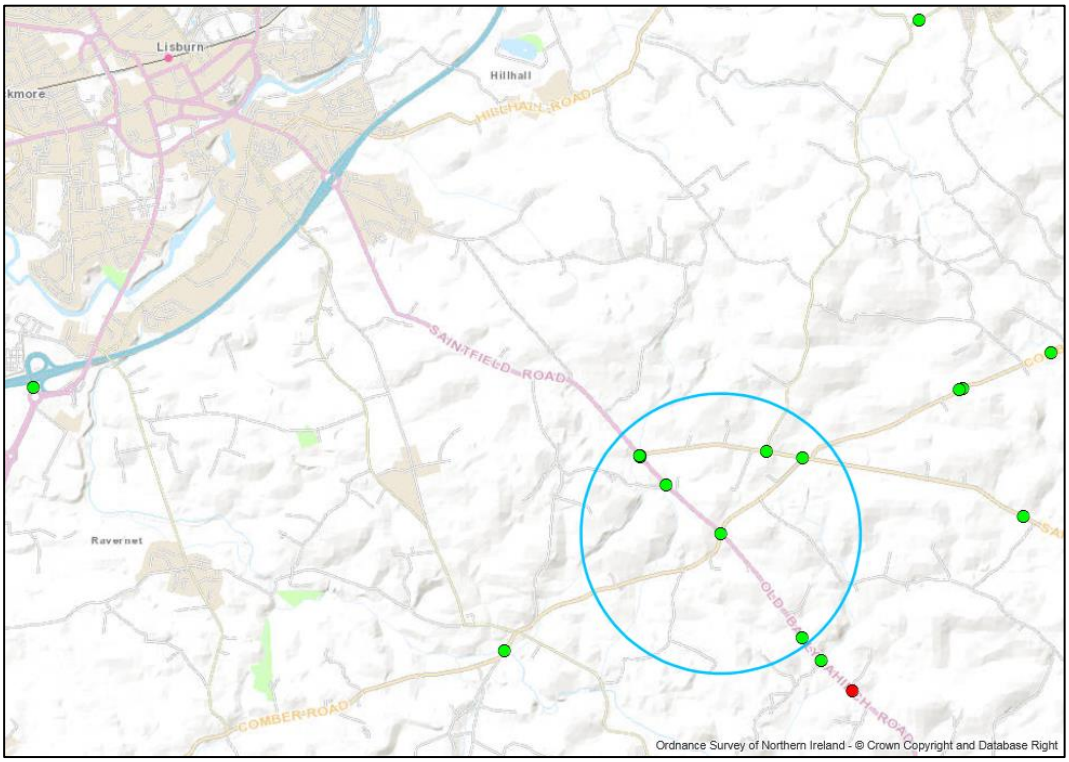
There were 8 serious collisions on the Banbridge Road, Tullylish which runs between Gilford and Lawrencetown. Seven of the 8 collisions occurred within 500 metres of each other.

Map 8 A29 Keady Road, Armagh



There were seven serious collisions and one fatal collision within a 1 kilometre radius on the A29 Keady Road, Armagh. These all occurred north of its junction with the Drumconwell Road.

Map 9 A49 Old Ballynahich Road/ Saintfield Road, Lisburn



There were eight serious collisions within this radius close to Lisburn. Six of the collisions occurred on the Old Ballynahinch Road, three of them occurring at its junction with the Saintfield Road. The other two collisions occurred on the Saintfield Road with one each at its junctions with the Tullyard Road and the Comber Road.

NIRSS KEY PERFORMANCE INDICATORS

Monitoring the number of people killed and children killed in collisions on rural roads are two of the Key Performance Indicators in Northern Ireland's Road Safety Strategy to 2020.

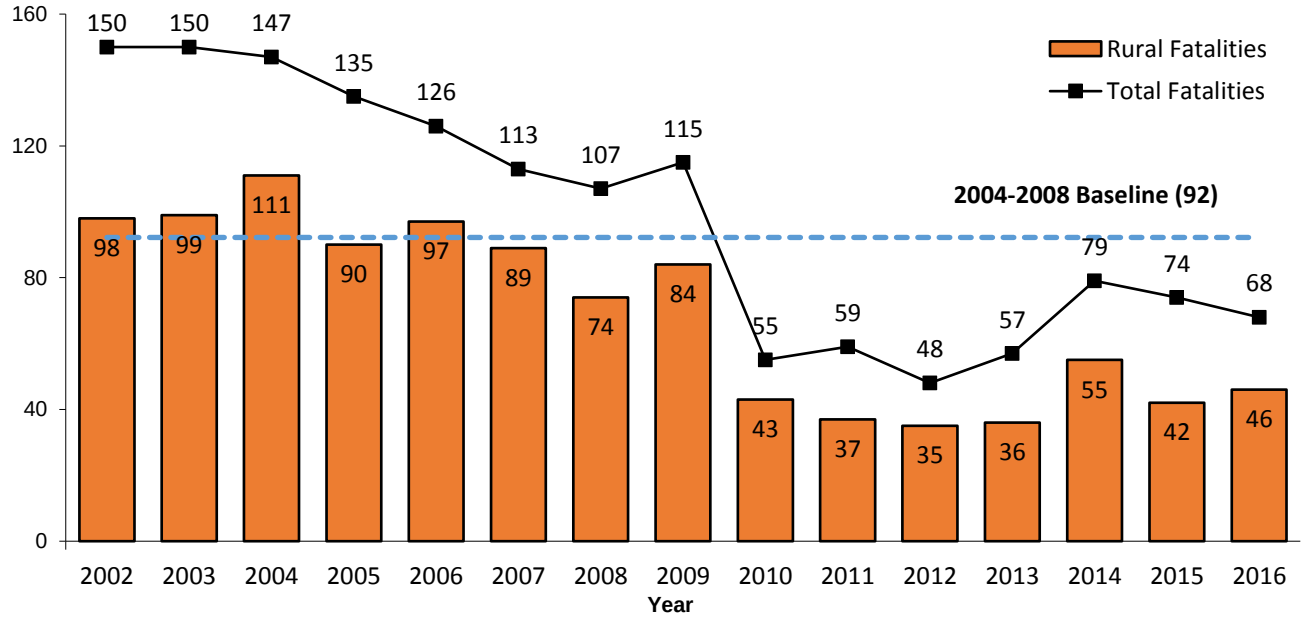
Table 3: Number of fatalities occurring on rural roads 2002 - 2016

Year	Fatalities on rural roads	Total fatalities	% of rural fatalities	% change from baseline (base=92.2)
2002	98	150	65	
2003	99	150	66	
2004	111	147	76	
2005	90	135	67	
2006	97	126	77	
2007	89	113	79	
2008	74	107	69	
2009	84	115	73	-9%
2010	43	55	78	-53%
2011	37	59	63	-60%
2012	35	48	73	-62%
2013	36	57	63	-61%
2014	55	79	70	-40%
2015	42	74	57	-54%
2016	46	68	68	-50%

Fatalities on Rural Roads

- The five year average 2004-2008 (baseline) was 92.2. This is more than double the number of people killed in the most recent 5 years, with an average of 42.8 people killed for 2012-2016. In fact, the 68 fatalities overall recorded in 2016 is 26% below the rural baseline.
- There was an unprecedented drop in the total number of fatalities between 2009 and 2010, with the numbers falling by 52% between the two years. This was similarly matched with the fall in fatalities on rural roads which fell by 49%.

Figure 28: Number of fatalities occurring on rural roads 2002 - 2016



Child Fatalities on Rural Roads

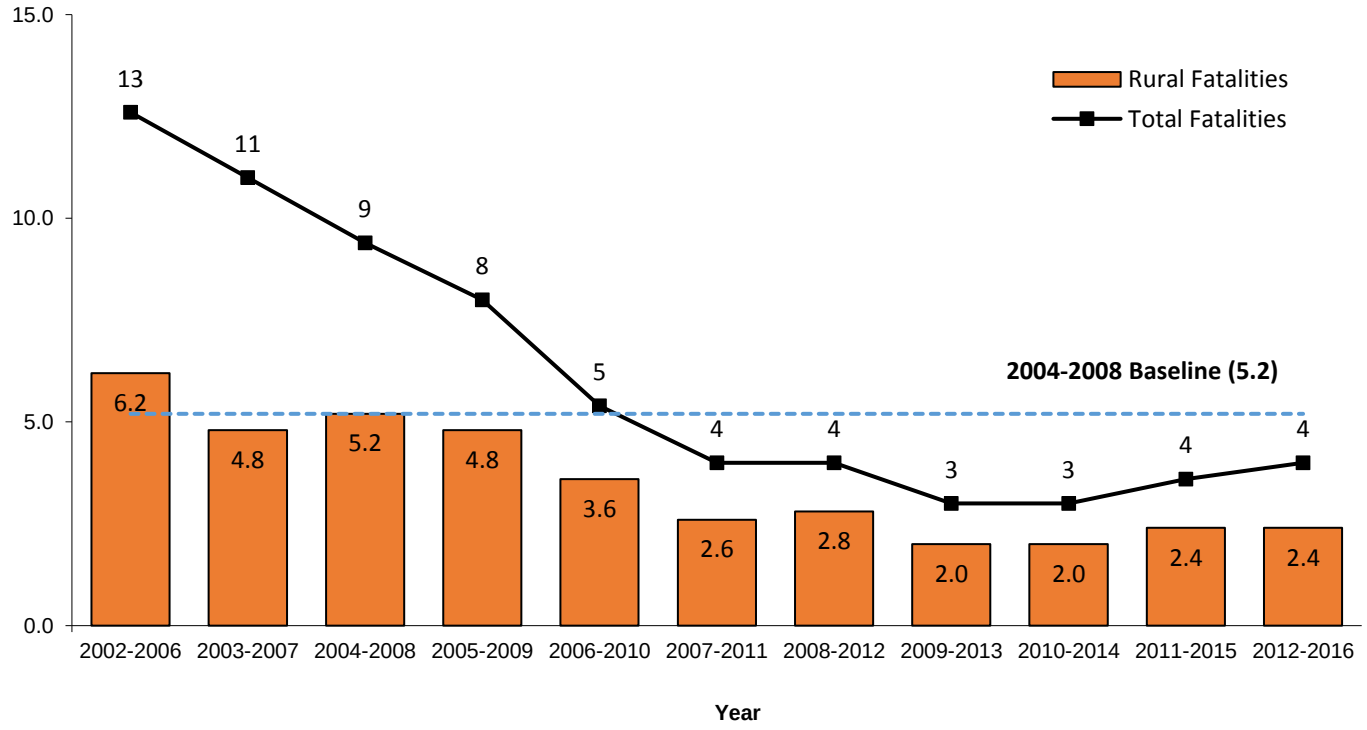
- There were 26 children (under the age of 16) killed on rural roads over the five year period 2004-2008 equating to an average of 5.2 per year. This makes up over half the number of children killed (55%) on Northern Ireland's roads over this time period.
- The number of children killed for each of the last 5 years on rural roads is lower than the baseline figure, with the one death in 2016 representing a decrease of 81% from the 2004-2008 average.

Table 4: Number of child fatalities occurring on rural roads 2002 - 2016

Year	Fatalities on rural roads	Total fatalities	% of fatalities occurring on rural	% change from baseline (base=5.2)
2002	9	13	69	
2003	4	15	27	
2004	4	11	36	
2005	8	15	53	
2006	6	9	67	
2007	2	5	40	
2008	6	7	86	
2009	2	4	50	-62%
2010	2	2	100	-62%
2011	1	2	50	-81%
2012	3	5	60	-42%
2013	2	2	100	-62%
2014	2	4	50	-62%
2015	4	5	80	-23%
2016	1	4	25	-81%

- Given the small number of child fatalities over the last few years and the volatility of the indicator, it makes sense to consider the 5 year rolling average to get a better idea of the direction of travel. The numbers have more than halved since the 2004-2008 baseline, averaging two children killed over the last four rolling five year periods. See figure 28 below:

Figure 29: Number of child fatalities occurring on rural roads 2002 - 2016



SUMMARY

Here are the key statistics that can be derived from fatal and serious collisions occurring on rural roads between 2012 and 2016.

- Despite an increase of 112 rural road collisions from 2015 to 2016, the five year average has fallen by 39% from the 2004 to 2008 baseline.
- Collisions on rural roads account for a third of all collisions but make up over half the number of people killed or seriously injured and two thirds of all fatalities.
- When taking into account the relative risk of vehicle kilometres travelled for the time period, there is almost double the risk of a fatality occurring on a rural road compared with an urban road, although less likelihood of a serious injury being sustained on a rural road. However, examining this for car users only reveals that there is four times the risk of being killed and double the risk of a serious injury occurring on a rural road as opposed to roads in built up areas.
- In terms of casualty profile, KSI casualties are:
    - Most likely to be male. Males accounted for almost two thirds of those killed or seriously injured between 2012 and 2016 with more male KSI casualties than females for each age group.
    - Seventy-one percent of car users were killed or seriously injured on country roads with KSI casualties amongst car occupants accounting for 77% of the total number of road users killed or seriously injured on rural roads.
    - With so many car users being killed or seriously injured on rural roads, the age breakdown of car users is very similar proportionately to the age breakdown overall with the young people aged 16 to 24 being the most frequently reported.
- The most common principal causation factors for KSI collisions on rural roads between 2012 and 2016 was ‘inattention or attention diverted’ (208 KSI collisions, 12%), followed by ‘excessive speed having regard to conditions’ (202 KSI collisions, 12%) and ‘Wrong course/position’ (168 KSI collisions, 10%).
- The majority (71%) of single vehicle collisions occurred on rural roads with single vehicle collisions representing over a third of the number of collisions occurring on country roads. KSI casualties amongst young people and excessive speed were overrepresented amongst single vehicle collisions on rural roads.
- Forty percent of collisions on rural roads occurred at a junction with most occurring at a T or staggered junction.
- In terms of responsibility, four fifths of rural road KSI collisions were attributed to a driver or rider with careless driving accounting for almost two thirds in which a driver/rider was at fault. Drivers aged 17 to 24 accounted for the greatest proportion responsible by age group (30%).
- Saturday (277, 17%) and Sunday (273, 16%) had the most fatal and serious rural collisions by day of the week with a relatively high proportion occurring between midnight and 4am. Three in ten weekday collisions occurred between 3pm and 7pm with Friday between 5pm and 6pm being the worst combined day and hour for rural road KSI collisions.
- Although the greatest number of collisions occurred in the summer, there was no apparent seasonal effect for rural road collisions with numbers fluctuating from one month to the next.
- The two sites which had the most fatalities within a 10 kilometre radius were in the Lisburn & Castlereagh and Antrim & Newtownabbey Districts. Five sites, all in the south of the province, were identified as being the worst locations for KSI collisions with two of these in Lisburn & Castlereagh and three in Armagh, Banbridge and Craigavon. See mapping section on page 20 for more detail.
- Examining the Key Performance Indicators for rural road collisions shows that the average fatalities for 2012-2016 have fallen 54% from the 2004- 2008 baseline, while the number of children killed for each of the last 5 years is lower than the baseline figure of five.

APPENDIX

A1: Proportion of fatal, KSI casualties & overall collisions occurring on rural roads 2002 – 2016

Year	Fatalities on rural roads	% of rural fatalities	KSIs on rural roads	% of rural KSIs	Collisions on rural roads	% of rural collisions
2002	98	65%	925	55%	2,381	35%
2003	99	66%	764	53%	2,124	35%
2004	111	76%	736	55%	2,132	38%
2005	90	67%	671	56%	1,924	39%
2006	97	77%	787	59%	2,081	37%
2007	89	79%	727	60%	2,173	36%
2008	74	69%	608	55%	2,211	36%
2009	84	73%	661	57%	2,257	36%
2010	43	78%	504	53%	2,005	35%
2011	37	63%	425	48%	1,921	34%
2012	35	73%	422	50%	1,969	34%
2013	36	63%	387	50%	2,012	35%
2014	55	70%	420	53%	1,981	33%
2015	42	57%	402	51%	2,019	33%
2016	46	68%	514	57%	2,206	35%

A2: Number of people killed or seriously injured on rural roads 2004 – 2016 (5 year rolling average)

Year	Number of KSI casualties (5 year average)	% change from baseline (base=706)	% change from last period
2004-2008	706		
2005-2009	691	-2%	-2%
2006-2010	657	-7%	-5%
2007-2011	585	-17%	-11%
2008-2012	524	-26%	-10%
2009-2013	480	-32%	-8%
2010-2014	432	-39%	-10%
2011-2015	411	-42%	-5%
2012-2016	429	-39%	4%

A3: Proportion of fatalities, KSIs and collisions by type of road 2012-2016

	Fatalities	%	KSI	%	KSI Collisions	%	All Collisions	%
Rural	***214***	***66***	***2,145***	***52***	**1,668**	49	***10,187***	***34***
Urban	79	24	1,740	43	1,596	47	17,761	59
Motorway/ Dual	33	10	205	5	170	5	2,104	7
Total	**326**	**-**	**4,090**	**-**	**3,434**		**30,052**	

A4: Rate of fatalities and KSI casualties per 100,000 vehicle kilometres travelled (VKT) by road type 2012-2016

	Rural					Urban				
Year	Fatalities	KSI	VKT	Rate Fatal	Rate KSI	Fatalities	KSI	VKT	Rate Fatal	Rate KSI
2012	37	449	11.0	3.4	40.7	10	379	6.8	1.5	56.0
2013	38	421	11.4	3.3	36.9	18	348	6.8	2.6	50.9
2014	62	451	11.4	5.5	39.7	17	332	6.9	2.5	48.5
2015	51	438	11.4	4.5	38.5	20	332	6.9	2.9	48.5
2016	51	538	11.4	4.5	47.3	14	349	6.9	2.0	50.9
2012-2016	47.8	459.4	11.3	4.2	40.6	15.8	348	6.8	2.3	50.9

[1] This information is sourced from the Department for Infrastructure's Annual Road Traffic Estimates: Vehicle Kilometres Travelled in Northern Ireland, 2014. Note that this data is based on roads exceeding 40 miles per hour which includes dual carriageways but excludes motorways. 2015 and 2016 rates use the vehicle kilometres travelled for 2014.

A5: KSI casualties occurring on rural roads by gender 2012 - 2016

	2004-2008	2012	2013	2014	2015	2016	2012-2016
Male	2,380	274	252	294	250	331	1,401
Female	1,149	148	135	126	152	183	744
Total	**3,529**	**422**	**387**	**420**	**402**	**514**	**2,145**
% Male	*67%*	*65%*	*65%*	*70%*	*62%*	*64%*	*65%*

A6: Number of KSI casualties by age group and road type 2012-2016

	Rural	Urban	Motorway/Dual Carriageway	Total
Under 16	107	275	7	**389**
16-24	632	357	37	**1,026**
25-34	402	256	32	**690**
35-49	443	293	49	**785**
50-64	333	279	33	**645**
65 and over	226	276	45	**547**
Unknown	2	4	2	**8**
Total	**2,145**	**1,740**	**205**	**4,090**

A7: Rural KSI casualties by age group and gender as a proportion of the total 2012-2016

	Rural			Total			%		
Age Group	Male	Female	Total	Male	Female	Total	Male	Female	Total
Under 16	55	52	**107**	249	140	**389**	22	37	**28**
16-24	430	202	**632**	727	299	**1,026**	59	68	**62**
25-34	278	124	**402**	486	204	**690**	57	61	**58**
35-49	316	127	**443**	554	231	**785**	57	55	**56**
50-64	199	134	**333**	400	245	**645**	50	55	**52**
65+	121	105	**226**	268	279	**547**	45	38	**41**
Unknown	2	0	**2**	5	3	**8**	-	-	**-**
Total	**1,401**	**744**	**2,145**	**2,689**	**1,401**	**4,090**	**52**	**53**	**52**

A8: Proportion of KSI casualties by road user category and road type 2012-2016

	Rural	% by category	Urban	% by category	Total[1]
Pedestrian	122	6%	738	42%	**880**
Car	1,658	77%	550	32%	**2,347**
Pedal Cyclist	74	3%	181	10%	**269**
Motorcyclist	241	11%	232	13%	**495**
Other	50	2%	39	2%	**99**
Total	**2,145**		**1,740**		**4,090**

[1] Total includes KSI casualties occurring on motorway/dual carriageway

A9: KSI casualties occurring on rural roads by gender and road user class 2012 – 2016

	Rural				Urban			
	Male	Female	Total	% male	Male	Female	Total	% male
Pedestrians	94	28	**122**	77%	448	290	**738**	61%
Car users	975	683	**1,658**	59%	302	248	**550**	55%
Motorcyclists	227	14	**241**	94%	220	12	**232**	95%
Pedal Cyclists	63	11	**74**	85%	162	19	**181**	90%
Other	42	8	**50**	84%	19	20	**39**	49%
Total	**1,401**	**744**	**2,145**	**65%**	**1,151**	**589**	**1,740**	**66%**

A10: KSI casualties on rural roads by road user category and age group 2012-2016

	Age Group						
	< 16	16-24	25-34	35-49	50-64	65+	Total
Pedestrians	25	20	21	23	18	15	**122**
Car users	70	559	312	288	242	185	**1,658**
Motorcyclists	2	42	53	90	44	10	**241**
Pedal Cyclists	4	5	7	28	21	9	**74**
Other	6	6	9	14	8	7	**50**
Total	**107**	**632**	**402**	**443**	**333**	**226**	**2,145**

A11: Rate of fatalities and KSI casualties per 100,000 vehicle kilometres travelled (VKT) by road type 2012-2016

	Rural					Urban				
Year	Fatalities	KSI	VKT	Rate Fatal	Rate KSI	Fatalities	KSI	VKT	Rate Fatal	Rate KSI
2012	28	336	9.8	3.4	**40.7**	2	117	6.0	1.5	**56.0**
2013	28	315	10.2	3.3	**36.9**	5	107	6.1	2.6	**50.9**
2014	35	330	10.1	5.5	**39.7**	7	112	6.1	2.5	**48.5**
2015	40	346	10.1	4.5	**38.5**	5	97	6.1	2.9	**48.5**
2016	37	418	10.1	4.5	**47.3**	4	122	6.1	2.0	**50.9**
2012-2016	33.6	349	10.1	3.3	**34.7**	4.6	111	6.1	0.8	**18.3**

[1] This information is sourced from the Department for Infrastructure's Annual Road Traffic Estimates: Vehicle Kilometres Travelled in Northern Ireland, 2014. Readers should note that the 2014 estimate has been applied to 2015 and 2016. Additionally, the urban/rural VKT split on minor roads is not available for cars. Instead, the urban/rural ratio for all vehicles kilometres travelled on minor roads has been applied to the car VKT total. Cars account for almost 90% of all vehicle kilometres travelled, therefore this approximation was deemed appropriate.

A12: Car users killed or seriously injured by age group for each road type 2012-2016

	Rural	Urban	Motorway/Dual Carriageway	Total	% rural
Under 16	70	26	3	99	71%
16-24	559	151	29	739	76%
25-34	312	90	25	427	73%
35-49	288	88	25	401	72%
50-64	242	100	21	363	67%
65 and over	185	93	34	312	59%
Unknown	2	2	2	6	-
Total	**1,658**	**550**	**139**	**2,347**	

A13 Principal causation factors of fatal and serious collisions on rural roads 2012-2016

Overall Rank[1]	Causation Factor	Killed	Serious	Total KSI	KSI Collisions
2	Excessive speed having regard to conditions	36	260	**296**	202 (12%)
1	Inattention or attention diverted	22	236	**258**	208 (13%)
4	Wrong course/position	28	229	**257**	168 (10%)
3	Impaired by alcohol - driver/rider	38	153	**191**	146 (9%)
8	Overtaking on offside without care	14	137	**151**	117 (7%)
6	Emerging from minor road without care	4	101	**105**	87 (5%)
7	Turning right without care	6	91	**97**	80 (5%)
9	Crossing or entering road junction without	5	80	**85**	64 (4%)
10	Other driver/rider factor	8	61	**69**	51 (3%)
18	Ice, frost or snow	4	51	**55**	49 (3%)
	Top 10 total	165	1,399	**1,564**	1,172 (70%)
	Total	**214**	**1,931**	**2,145**	**1,668**

[1] The overall rank shows the ranking of causation factor regardless of road type

A14: Top five causation factors for pedestrian KSI casualties on rural roads 2012-2016

Causation Factor	Killed	Serious	Total KSI
Heedless of traffic crossing carriageway	6	17	**23 (19%)**
Inattention or attention diverted	4	16	**20 (16%)**
Impaired by alcohol pedestrian	8	10	**18 (15%)**
Walking or running into carriageway	0	8	**8 (7%)**
Other driver/rider factor	2	5	**7 (6%)**
Total	**28**	**94**	**122**

A15: Top five causation factors for car user KSI casualties on rural roads 2012-2016

Causation Factor	Killed	Serious	Total KSI
Excessive speed having regard to conditions	27	239	**266 (16%)**
Wrong course/position	24	203	**227 (14%)**
Inattention or attention diverted	15	171	**186 (11%)**
Impaired by alcohol – driver/rider	31	140	**171 (10%)**
Overtaking on offside without care	8	93	**101 (6%)**
Total	**149**	**1,509**	**1,658**

A16: Top five causation factors for motorcyclist KSI casualties on rural roads 2012-2016

Causation Factor	Killed	Serious	Total KSI
Overtaking on offside without care	5	28	**33 (14%)**
Inattention or attention diverted	1	28	**29 (12%)**
Wrong course/position	2	20	**22 (9%)**
Emerging from minor road without care	0	22	**22 (9%)**
Excessive speed having regard to conditions	7	12	**19 (8%)**
Total	**26**	**215**	**241**

A17: Top five causation factors for pedal cyclist KSI casualties on rural roads 2012-2016

Causation Factor	Killed	Serious	Total KSI
Inattention or attention diverted	1	15	**16 (22%)**
Overtaking on offside without care	0	12	**12 (16%)**
Glaring sun	1	5	**6 (8%)**
Turning right without care	0	5	**5 (7%)**
Emerging from minor road without care	0	5	**5 (7%)**
Total	**3**	**71**	**74**

A18: Single vehicle fatal and serious collisions by road type 2012 - 2016

	2004-2008	2012	2013	2014	2015	2016	2012-2016
Rural	750	103	115	121	97	138	**574**
Urban	242	47	43	30	36	38	**194**
Motorway/Dual C'way	55	6	9	8	10	7	**40**
Total	**1,047**	**156**	**167**	**159**	**143**	**183**	**808**
% Rural	*72%*	*66%*	*69%*	*76%*	*68%*	*75%*	*71%*

A19: Single vehicle fatal and serious collisions by road type as a proportion of total 2012 - 2016

	Single Vehicle KSI Collisions	Total KSI Collisions	%
Rural	574	1,668	**34%**
Urban	194	1,596	**12%**
Motorway/Dual C'way	40	170	**24%**
Total	**808**	**3,434**	**24%**

A20: Single vehicle KSI casualties on rural roads by age and gender 2012 - 2016

	Rural		
Age Group	**Male**	**Female**	**Total (% by age group)**
Under 16	11	9	**20 (3%)**
16-24	210	96	**306 (45%)**
25-34	94	44	**138 (20%)**
35-49	88	28	**116 (17%)**
50-64	40	30	**70 (10%)**
65+	20	15	**35 (5%)**
Unknown	1	0	**1**
Total	**464**	**222**	**686**

A21 Principal causation factors of fatal and serious single vehicle collisions on rural roads 2012-2016

Causation Factor	Killed	Serious	Total KSI	KSI Collisions
Excessive speed having regard to conditions	18	160	**178**	129 (22%)
Inattention or attention diverted	13	94	**107**	96 (17%)
Impaired by alcohol - driver/rider	19	86	**105**	91 (16%)
Ice, frost or snow	3	35	**38**	36 (6%)
Other driver/rider factor	2	38	**40**	29 (5%)
Slippery road due to factors other than the weather	0	27	**27**	23 (4%)
Animal on carriageway (other than dog)	1	25	**26**	23 (4%)
Heavy rain	0	15	**15**	14 (2%)
Inexperience with type of vehicle	2	12	**14**	13 (2%)
Fatigue	2	11	**13**	13 (2%)
Top 10 total	60	503	**563**	467 (81%)
Total	**71**	**615**	**686**	**574**

A22 Rural road collisions by junction type – 2012 to 2016

Causation Factor	Total KSI	%
Not at or within 20m of junction	**977**	59
T or staggered junction	**330**	20
Private drive/entrance	**190**	11
Crossroads	**111**	7
Roundabout	**33**	2
Multiple junction	**13**	1
Slip Road	**7**	<1
Unknown	**5**	<1
Mini roundabout	**1**	<1
Other junction	**1**	<1
Total	**1,668**	

A23 Fatal and serious collisions on rural roads by responsibility – 2012 to 2016

	Fatal Collisions	KSI Collisions	Killed	KSI Casualties
Driver/Rider Fault				
Alcohol or drugs – driver/rider	37	163	42	212
Excessive speed having regard to conditions	30	202	36	296
Careless driving	89	871	92	1,125
Other driver rider fault	17	106	17	138
Total	**173**	**1,342**	**187**	**1,771**
Passenger Fault	0	2	0	2
Pedestrian Fault	17	74	17	77
Vehicle Defects	0	30	0	37
Obstructions	1	11	1	13
Physical/Road	3	83	3	105
Weather	5	90	5	100
Miscellaneous	1	36	1	40
Total	**200**	**1,668**	**214**	**2,145**

A24: Fatal and serious collisions and KSI casualties on rural roads by age and gender of drivers/riders responsible 2012-2016

	Fatal Collisions				Fatal and serious collisions			
	Male	Female	Unknown	Total	Male	Female	Unknown	Total
17-24	48	11	0	**59**	323	93	0	**416**
25-34	30	7	0	**37**	225	67	0	**292**
35-49	38	5	0	**43**	201	61	0	**262**
50-64	10	3	0	**13**	131	54	0	**185**
65+	20	7	0	**27**	95	44	0	**139**
Unknown	1	0	1	**2**	22	2	59	**83**
Total	**147**	**33**	**1**	**181**	**997**	**321**	**59**	**1,377**

A25: Fatal and serious collisions on rural roads by month and day of year 2012-2016

Month	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Total
January	18	19	12	16	23	25	23	**136**
February	18	13	12	14	18	16	14	**105**
March	23	19	26	23	14	20	26	**151**
April	15	16	23	15	12	19	25	**125**
May	8	20	22	20	27	27	19	**143**
June	22	16	24	11	25	27	29	**154**
July	19	21	12	14	14	24	28	**132**
August	23	26	15	20	28	23	24	**159**
September	30	13	14	20	20	24	29	**150**
October	19	13	14	18	18	18	12	**112**
November	12	21	22	14	25	26	22	**142**
December	14	20	24	28	23	28	22	**159**
Total	**221**	**217**	**220**	**213**	**247**	**277**	**273**	**1,668**

A26: Fatal and serious collisions on rural roads by month and year 2012-2016

Month	2012	2013	2014	2015	2016	Total
January	34	26	30	17	29	**136**
February	17	17	19	21	31	**105**
March	27	22	27	39	36	**151**
April	23	26	18	27	31	**125**
May	30	30	33	23	27	**143**
June	32	30	32	25	35	**154**
July	31	23	35	15	28	**132**
August	37	26	22	26	48	**159**
September	23	33	27	32	35	**150**
October	19	15	27	19	32	**112**
November	32	28	22	27	33	**142**
December	26	37	33	31	32	**159**
Total	**331**	**313**	**325**	**302**	**397**	**1,668**

A27: Fatal and serious collisions on rural roads by season and year 2012-2016

Season[1]	2004-2008	2012	2013	2014	2015	2016	2012-2016 (Average)
Winter	130	77	80	82	69	92	**400 (80)**
Spring	119	80	78	78	89	94	**419 (83.8)**
Summer	139	100	79	89	66	111	**445 (89)**
Autumn	128	74	76	76	78	100	**404 (80.8)**
Total	**516**	**331**	**313**	**325**	**302**	**397**	**1,668**

[1] Winter is taken as, December, January, February Spring as March, April, May Summer as June, July and August and Autumn as September, October, November

A28: Fatal and serious collisions on rural roads by District Council 2012-2016

	Fatal Collisions	KSI Collisions	KSI Casualties (Average)	2016 Mid-Year Population Estimate	Rate per 100,000 population
Antrim & Newtownabbey	18	117	140 (28)	141,032	19.9
Armagh City, Banbridge & Craigavon	24	241	299 (59.8)	210,260	28.4
Belfast	2	27	33 (6.6)	339,579	1.9
Causeway Coast & Glens	25	221	288 (57.6)	143,525	40.1
Derry City & Strabane	15	82	120 (24)	150,142	16.0
Fermanagh & Omagh	32	204	271 (54.2)	115,799	46.8
Lisburn & Castlereagh	14	177	220 (44)	141,181	31.2
Mid & East Antrim	14	112	147 (29.4)	137,821	21.3
Mid Ulster	19	158	217 (43.4)	145,389	29.9
Newry, Mourne & Down	23	226	280 (56)	177,816	31.5
Ards & North Down	14	103	130 (26)	159,593	16.3
Total	**200**	**1,668**	**2,145**	**1,862,137**	**23.0**