



NISRA

Northern Ireland
Statistics and Research Agency

Gníomhaireacht Thuaisceart Éireann
um Staitisticí agus Taighde

Pedal cyclist killed and seriously injured (KSI) casualties in Northern Ireland, 2014-2018



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Published June 2020



Department for

Infrastructure

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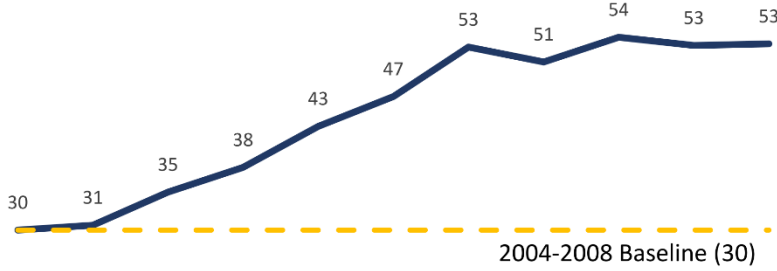
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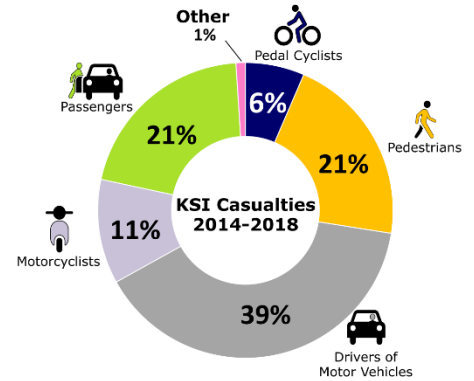
Trend Information



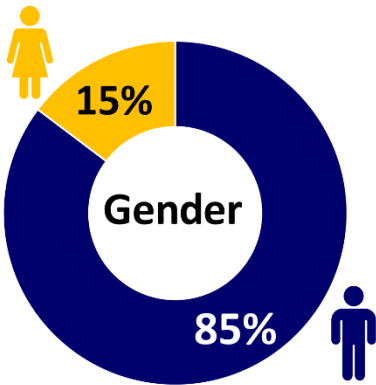
Year	Number of Casualties
2004-2008	30
2005-2009	31
2006-2010	35
2007-2011	38
2008-2012	43
2009-2013	47
2010-2014	53
2011-2015	51
2012-2016	54
2013-2017	53
2014-2018	53

Numbers of pedal cyclist KSI casualties increased up to 2010-2014, and numbers in recent years have remained at this level. The annual average number of **pedal cyclist KSI casualties in 2014-2018 (53) is 74% greater than the 2004-2008 baseline (30).**

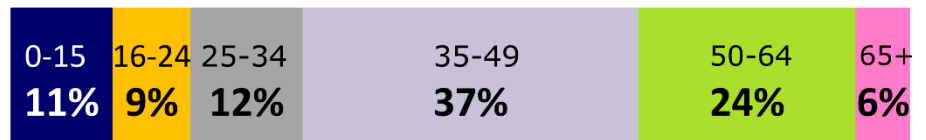
Road User Type



Pedal cyclists are vulnerable - 6% of all KSIs were pedal cyclists, while cyclist miles travelled accounted for just 1% of all miles travelled per person per year.



Age

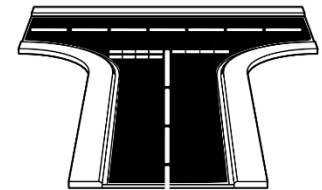


In 2014-2018, the vast majority of pedal cyclist KSIs were male - 85%. Persons aged 35-49 years made up the greatest proportion of cyclist KSI casualties (37%), followed by people aged 50-64 years (24%).

Where?



Pedal Cyclist KSIs



41% of pedal cyclist KSI casualties in 2014-2018 occurred at a **T or staggered junction**

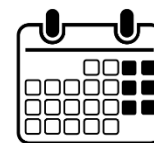
How?

Principal Causation Factor	KSIs	% KSIs
Inattention or attention diverted	48	18%
Turning right without care	27	10%
Crossing or entering road junction without care	25	9%
Emerging from minor road without care	22	8%

Base 265

Over **three-in-ten (31%)** of **pedal cyclist KSIs** were **responsible** for the collisions in which they were injured.

When?



Almost one-fifth (18%) of all pedal cyclist KSIs occurred between **9am and 1pm on a Saturday or Sunday**

BACKGROUND

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 grew in size over the years and was becoming cumbersome to update. It was therefore agreed at the Road Safety Research Group that ASRB would develop a series of smaller documents which could form the shape of a live problem profile, driven by current policy focus.

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.

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

Pedal Cyclist Problem Profile, 2014-2018

It is the remit of the DfI to promote and increase the number of people opting to travel more sustainably, particularly active travel (walking and cycling); however, pedal cyclist road traffic casualties continue to be a concern and are a potential barrier to increasing cyclist numbers.

This profile of pedal cyclist road traffic killed and seriously injured (KSI) casualties is the eighth¹ in the problem profile series, and is an update of the previous profile of cyclist casualties in 2002-2012. It will provide departmental officials with the current picture of pedal cyclist KSI casualties, and provide evidence to allow them to consider the best ways to try to reduce casualty numbers.

In terms of structure, the report will first look at trends in cyclist KSI casualty numbers from a 2004-2008 baseline until 2018. The profile of KSIs in 2014-2018 will then be examined (age, gender), followed by analysis of when and where cyclist collisions occur, principal cause of collision, and who is deemed responsible. A series of maps showing areas with the greatest number of cyclist KSIs will be included. Finally, cycling data from the Travel Survey for NI will be presented, including cycling frequency, reasons why cyclists feel unsafe when cycling on the road, and what would encourage people to cycle more often.

¹ Previous profiles on rural roads, cyclists, motorcyclists, pedestrians, drink-driving, and older drivers can be found on the ASRB website: <https://www.infrastructure-ni.gov.uk/topics/road-safety-research>

TREND INFORMATION

Figure 1 below presents annual pedal cyclist KSI numbers from 2004. In the early years of the NI Road Safety Strategy (NIRSS) to 2020, pedal cyclist KSI casualty numbers were fairly stable, falling in and around the baseline of 30. In 2010, casualty numbers increased by 53%, and despite large fluctuations, casualty numbers have largely remained at this increased level. Given the volatility in this trend, it makes sense to consider the 5-year rolling average in Figure 2 to get a better idea of the direction of travel. The annual average number of pedal cyclist KSI casualties in 2014-2018 (53) is 74% greater than the 2004-2008 baseline.

Figure 1: Pedal cyclist KSI casualties, 2004-2018

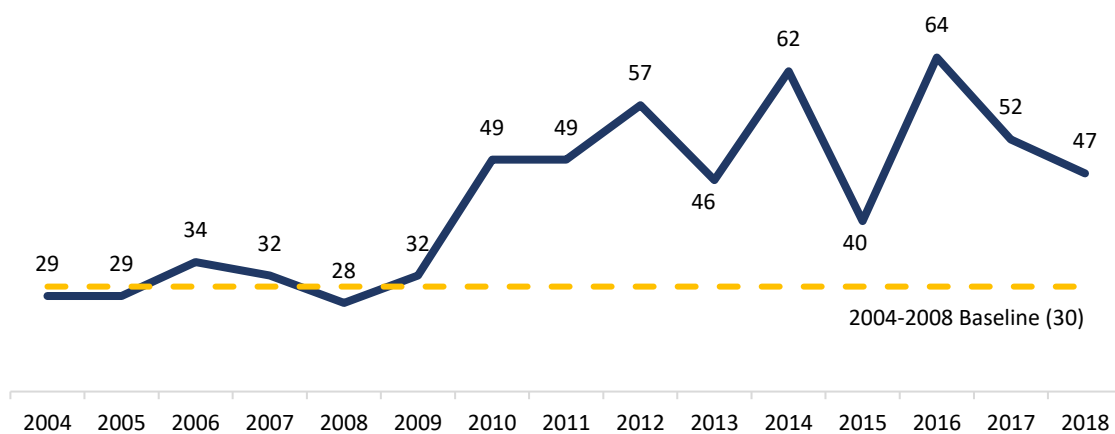
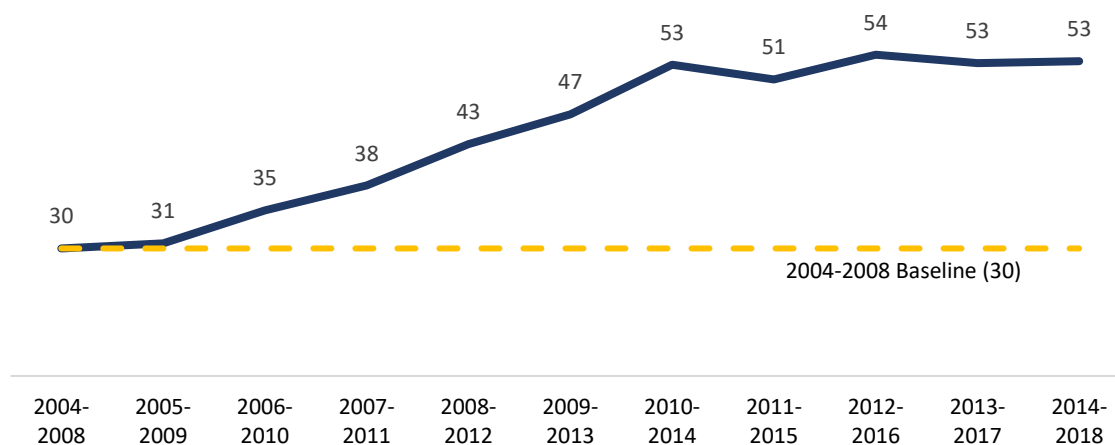


Figure 2: Pedal cyclist KSI casualties, 2004-2018 Rolling Average



After establishing that cyclist KSI numbers are currently greater than the baseline, we next look at how the proportion of cyclist KSIs has changed. In the five years 2014-2018 there were a total of 265 pedal cyclist KSI casualties, accounting for 6% of all KSIs. The equivalent proportion recorded in the UK over the same time period was much greater – 14% – See Table 9 in Annex A for a more detailed comparison.

The **proportion of pedal cyclist KSI casualties in NI steadily increased** from the NIRSS strategy baseline (2% in 2004-2008), until the five most recent five-year time periods, which reported between 6% and 7%. See Figures 3 and 4 below.

Figure 3: KSI casualties by road user type, 2014-2018²

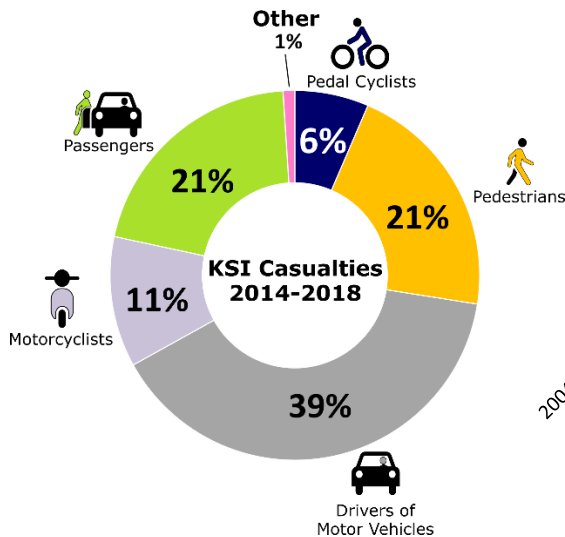
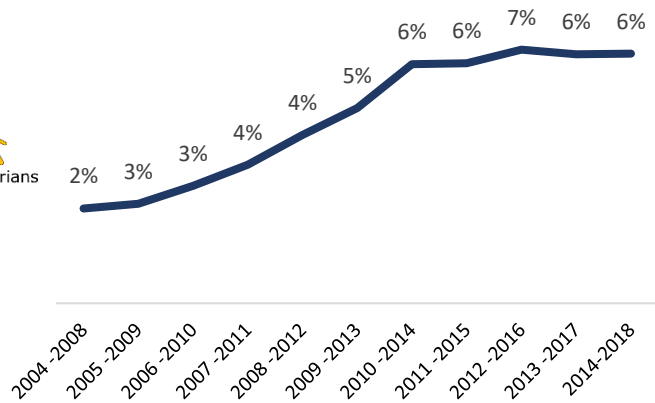


Figure 4: Proportion of KSI casualties that are pedal cyclists, 2004-2018



To add context to Figure 4 above, changes in KSI casualty numbers by road user type between 2004/08 and 2014/2018 are examined in Table 1 below. Pedal cyclist KSIs, in the five years 2014-2018, have increased by 74% in comparison to 2004-2008. By contrast, **all other road users have reported decreases in KSI casualty numbers**. However, it should be noted that the smaller numbers of pedal cyclist KSIs mean that movement in either direction will have a greater proportionate effect.

Table 1: Fatal and serious injuries by road user, 2004-2008 Vs 2014-2018

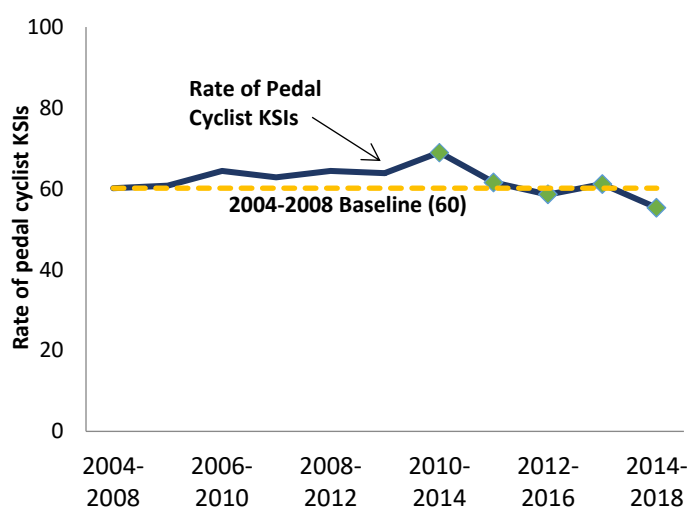
	KSI Casualties		% Change
	2004/08	2014/2018	
Pedestrians	1036	861	-17%
Drivers of motor vehicles	2,643	1,616	-39%
Motorcyclists	758	468	-38%
Pedal cyclists	152	265	74%
Passengers	1505	816	-46%
Pillion passengers	36	28	-22%
Other road users	52	42	-19%
Total	6,182	4,096	-34%

² Passengers includes a small number of 'Pillion passengers'.

Pedal Cyclist KSI casualty rate per KM travelled

There are two ways to look at casualty numbers. Firstly, as above, absolute counts can be examined and, although these are informative, they tell us very little about the levels of risk experienced by pedal cyclists or how this risk may be changing over time. The second approach therefore looks at the levels of risk that cyclists face, using an appropriate exposure metric (in this case distance travelled, as reported in the Travel Survey for Northern Ireland (TSNI)). So, rather than absolute numbers, we instead look at a KSI casualty rate in terms of the number of pedal cyclist KSI casualties per kilometres travelled. The rolling average is presented in Figure 5 below so that annual fluctuations are accounted for.

Figure 5: Rate of pedal cyclist KSIs per 100 million kilometres cycled (5 year rolling average), 2004-2018³



Cyclist KSIs have been increasing since the Strategy began (74% since 2004-2008). However, there has been a 90% increase in overall distance travelled by pedal cyclists over the same time period suggesting a slightly decreased risk. This is reflected in a small decrease of approaching 8% in the cycling KSI rate per kilometres travelled in 2014-2018 compared with the baseline.

Examining all the trend data presented above paints a somewhat mixed picture. The fact that pedal cycle KSI casualties have increased dramatically since the baseline is concerning, especially considering KSI casualty numbers for all other modes of travel have decreased. However, the rate of pedal cycle KSIs per KM travelled has decreased slightly since the baseline, meaning that the risk of serious injury while cycling has decreased.

Perhaps of greatest significance is the fact that pedal cyclist KSIs make up 6% of overall KSIs in 2014-2018, while cyclist miles travelled account for only 1% of all miles travelled per person per year.⁴ Cyclist KSI casualties are therefore over-represented in road traffic collision statistics – and this yields insight as to why **cyclists are deemed a vulnerable road user**, and worthy of departmental focus to lower KSI casualty numbers.

³ Statistically significant data points highlighted in green (based on statistically significant changes in distance travelled compared with the baseline). See Indicator Guidance booklet <https://www.infrastructure-ni.gov.uk/publications/road-safety-strategy-2020-indicator-guidance-booklet> for further information.

⁴ As reported in the Travel Survey for Northern Ireland, 2016-2018

WHO ARE PEDAL CYCLIST KSI CASUALTIES?

Gender

Pedal cyclist KSI casualty numbers in 2014-2018, for both males and females, have increased since the 2004-2008 baseline. However, they have experienced differing levels of increase: male KSI casualties increased by 78% (from 127 to 226) and female casualties increased by 56% (from 25 to 39). (Annex A Table 3a)

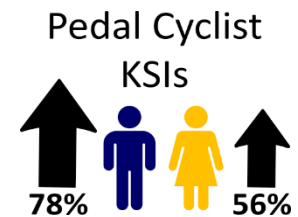
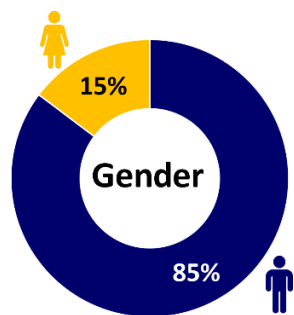


Figure 6: Proportion of pedal cycle KSI casualties by gender, 2014-2018



Most pedal cyclist KSI casualties are male. In 2014-2018, 85% (226) were male compared with 15% (39) female, and proportions are virtually unchanged since the baseline. In the same time period, there were nine pedal cyclist fatalities, all of which were male.

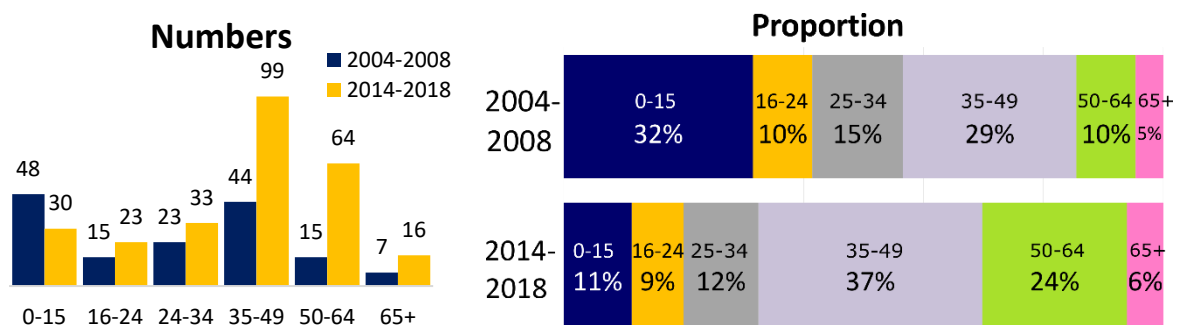
Data from the TSNI show that in the last five years approximately 85% of all miles cycled are by males and it is therefore unsurprising that the vast majority of cyclist KSIs are male. (Annex A Table 3b)

Age

The age profile of pedal cyclist KSIs in the most recent five years has changed considerably since the 2004-2008 baseline. There have been **large increases in pedal cyclist KSI casualties in older age groups**: cyclists aged 35-49 reported the greatest numbers of pedal cyclist KSIs in 2014-2018 (99), and pedal cyclist KSIs for **the age group 50-64 years increased by 327% in 2014-2018 compared with 2004-2008** (going from 15 to 64). Child pedal cyclists aged 0-15 was the only age band to report a reduction in KSIs, decreasing by 38% in the same time period. These changes mean that a greater proportion of pedal cyclist KSIs is now made up of casualties aged 35+: **in 2004-2008, 43% of pedal cyclist KSIs were aged 35+ and in 2014-2018 this had increased to 68%**. (Annex A Table 3c)

Data from the TSNI show that in the last five years, **the profile of total miles cycled by age group matches closely the profile of pedal cyclist KSIs**. Just over one-third (35%) of all miles cycled were by those aged 35-49 years – and this compares with 37% of pedal cyclist KSIs aged 35-49. Just under one-quarter (24%) of all miles cycled were by those aged 50-64 years, and the same proportion of pedal cyclist KSIs were recorded by this age group.

Figure 7: Pedal cyclist KSI casualties by age (years), 2014-2018 Vs 2004-2008



Gender and Age

As seen in Figure 7 above, a smaller proportion of pedal cyclist KSIs, in comparison with the 2004-2008 baseline, is now made up of younger casualties and a greater proportion made up of older casualties. When the data are split by gender and age, further insight is provided. Despite the greater numbers of male pedal cyclist KSI casualties (figure 6), **the trends for both males and females casualties, split by age, are generally the same**: both genders have seen reducing numbers since the baseline in the youngest age category (0-15 years), with all other age groups reporting increasing pedal cyclist KSI numbers between 2004/08 and 2014/18. The age bands 35-49 years and 50-64 years have seen the greatest proportionate increases for both males and females. (Figure 8a & Annex A Table 3a)

Figure 8b shows the proportional split of pedal cyclist KSIs in 2014-2018 by age and gender. This again shows that, despite the greater numbers of male pedal cyclist KSI casualties, the trends for male and female casualties, split by age, are similar.

Comparing KSIs to miles travelled shows that **in general, the split of all miles cycled by age and gender matches closely the profile of pedal cyclist KSI casualties**. Males and females aged 35-64 years each cycled 60% and 57%, respectively, of their miles totals - and this compares with 62% and 59%, respectively, of pedal cyclist KSIs as shown in Fig 8b below. As such, it is clear that **no gender or age group is over- or under-represented** in the collisions data.

Figure 8a: Pedal cyclist KSI casualties by gender and age (years), 2014-2018 Vs 2004-2008

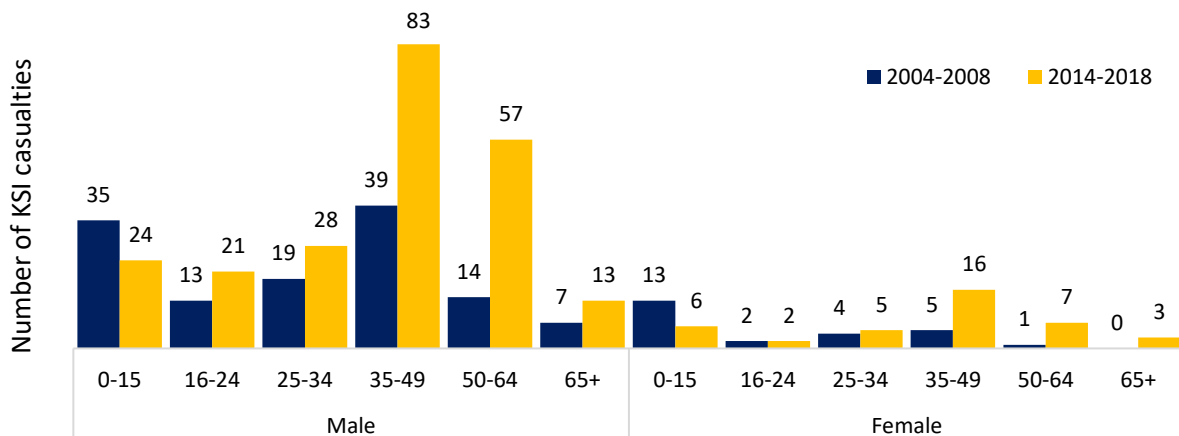
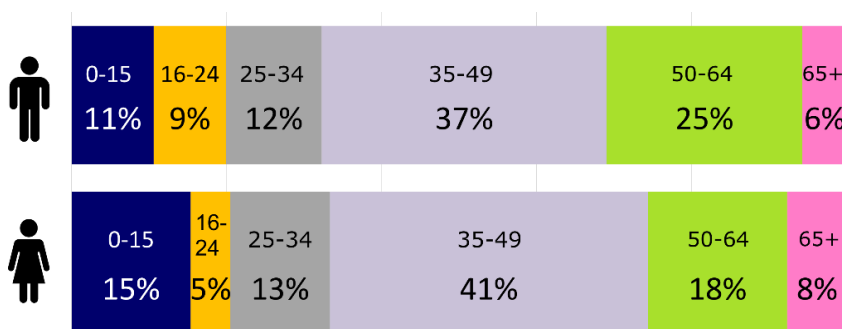


Figure 8b: Proportion of pedal cyclist KSI casualties by gender and age (years), 2014-2018



WHEN DO PEDAL CYCLIST KSIs OCCUR?

Pedal cyclist KSIs can occur at any time of the day and every day of the week; however, there are certain times of the day when they are more likely to occur, and this differs comparing weekdays with weekend. While pedal cyclist KSIs that occur on weekdays tend to be more evenly spread throughout the day-time, **almost one fifth (18%) of all pedal cyclist KSI casualties injured in the last five years occurred between the hours of 9am and 1pm on a Saturday or Sunday.**

Table 2: Pedal cyclist KSI casualties by time of the day and day of the week, 2014-2018

Time	Day of the Week							Total
	Mon	Tue	Wed	Thu	Fri	Sat	Sun	
0501- 0700	2	1	2	2	0	0	0	7
0701- 0900	3	4	5	8	4	3	3	30
0901- 1100	3	1	3	6	2	13	10	38
1101- 1300	3	1	7	4	6	10	14	45
1301- 1500	4	5	4	2	2	4	4	25
1501- 1700	6	6	5	3	6	7	5	38
1701- 1900	5	9	5	9	3	6	1	38
1901- 2100	4	6	9	5	2	7	2	35
2101- 2300	0	2	0	3	2	0	2	9
2301- 0100	0	0	0	0	0	0	0	0
0101- 0300	0	0	0	0	0	0	0	0
0301- 0500	0	0	0	0	0	0	0	0
Total	30	35	40	42	27	50	41	265

Key

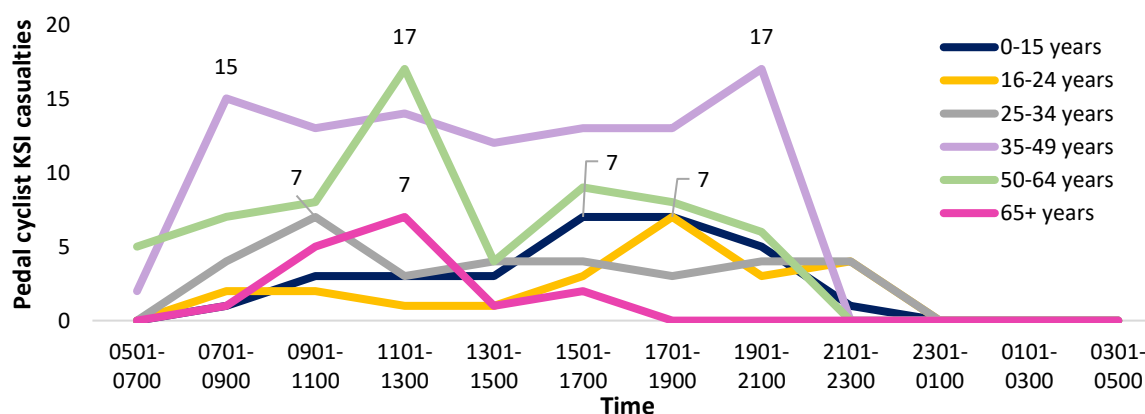
	1-2
	3-5
	6-8
	9-11
	12+



Almost one-fifth (18%) of all pedal cyclist KSIs occurred between 9am and 1pm on a Saturday or Sunday

The split of pedal cyclist KSIs by age and time reveals that persons aged 50-64 years are particularly vulnerable between 11am and 1pm, and the 17 KSIs that occurred during this time were equally likely to happen on a weekday or at the weekend. Cyclist KSI casualties aged 35-49 were spread out more evenly across the day; however, there were small peaks between 7am-9am and 7pm-9pm. Further analysis shows that these KSIs occurred on weekdays. (Annex A Table 4b)

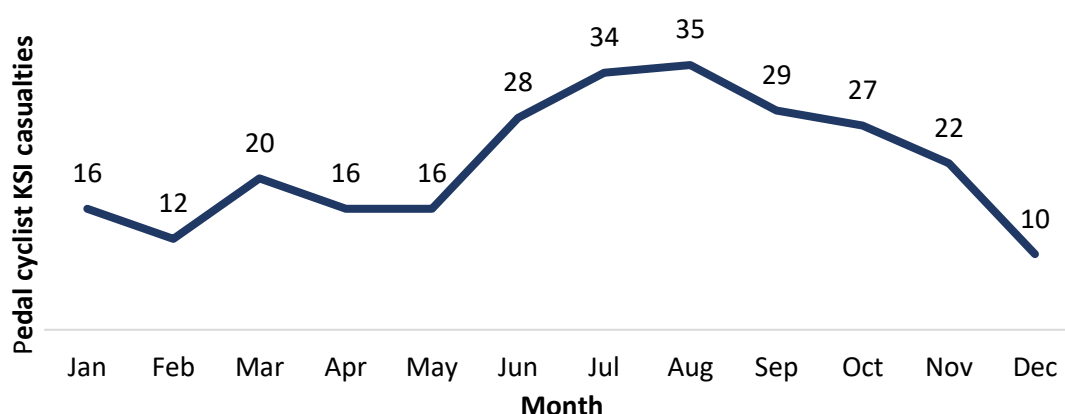
Figure 9: Pedal cyclist KSI casualties by age and time of collision, 2014-2018



Analysis of pedal cyclist KSI casualties in 2014-2018 by month of the year reveals that **numbers increased in the summer months**, with July and August recording the greatest numbers of cyclist KSIs (69, or 26%). Numbers remained relatively high in to the autumn months, before falling again in winter, with December recording the fewest pedal cyclist KSIs (10, or 4%). (Annex A Table 4c)

This is unsurprising, as you would expect that people are more likely to cycle as the days get longer and/or the weather nicer – and with more people on their bikes, the number of KSI casualties will also increase. **Almost nine-in-ten (86%) of pedal cyclist KSI casualties in 2014-2018 were injured in daylight.**

Figure 10: Pedal cyclist KSI casualties by month of the year, 2014-2018



WHAT CAUSES PEDAL CYCLE KSIs?

Details of factors that contribute to road traffic collisions are recorded by the Police Service of Northern Ireland (PSNI). The factors are somewhat subjective, having been recorded by the police officer at the scene of the collision; however, causation factors are validated by the statistics branch of PSNI and the data are considered robust, especially in the case of fatal and serious collisions. Principal causation of collisions in which pedal cyclist KSI casualties were injured are examined below. It should be noted that causation relates to the behaviour or actions of the person(s) responsible for the collision, which may or may not be the pedal cyclist casualty.

In the five years 2014-2018, **the most frequently reported principal causation of collisions in which pedal cyclist KSI casualties were injured was ‘Inattention or attention diverted’**, which accounted for just under one-fifth (18%) of all pedal cyclist KSIs. The most frequently reported causation factors are shown in table 3 below.

As seen previously, 85% of all pedal cyclist KSIs in 2014-2018 were male and 15% were female, and so the proportions presented for causation of female pedal cyclist KSIs should be treated with caution due to the small numbers involved. Despite this, ‘Inattention or attention diverted’ was the principal reported causation for both male and female pedal cyclist KSI casualties (19% for males; 15% for females).

Table 3: Top ten principal causes of pedal cyclist KSI casualties by gender, 2014-2018

Principal Causation Factor	KSIs	% KSIs	Male	%	Female	%
			KSIs	Male	KSIs	Female
Inattention or attention diverted	48	18%	42	19%	6	15%
Turning right without care	27	10%	24	11%	3	8%
Crossing or entering road junction without care	25	9%	21	9%	4	10%
Emerging from minor road without care	22	8%	21	9%	1	3%
Overtaking on offside without care	18	7%	14	6%	4	10%
Emerging from private road/entrance without care	13	5%	10	4%	3	8%
Wrong course/position	12	5%	7	3%	5	13%
Driving too close	12	5%	10	4%	2	5%
Turning left without care	10	4%	9	4%	1	3%
Other driver/rider factor	8	3%	8	4%	0	0%
All other factors	70	26%	60	27%	10	26%
Total	265	100%	226	100%	39	100%

For the most part, the principal causes of pedal cyclist KSIs by age band do not differ much in comparison to the population overall. In the majority of age bands, ‘Inattention or attention diverted’ is most frequently reported (‘Emerging from minor road without care’ was most frequently reported for those aged 16 to 24 years). (Annex Table 5b).

However, when pedal cyclist KSI casualties are examined by responsibility there are differences reported by age. See Table 4 below.

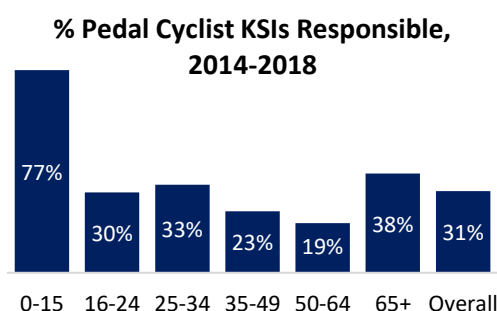
In the five years 2014-2018, three-in-ten (31%) pedal cyclist KSI casualties were responsible for the collisions in which they were injured. However, this proportion is far greater for those in the youngest age group: **over three-quarters (77%) of pedal cyclist KSIs aged 0-15 years were responsible** for their collisions. Interestingly, the two age bands that reported the most casualties had the lowest levels of responsibility – 23% for those age 35-49 years and 19% for those aged 50-64 years.



77% of pedal cyclist KSIs aged **0-15** years were **responsible** for their injuries.

Table 4: Pedal cyclist KSIs by responsibility and age, 2014-2018

	0-15	16-24	25-34	35-49	50-64	65+	Total
Casualty responsible	23	7	11	23	12	6	82
Casualty not responsible	7	16	22	76	52	10	183
Total	30	23	33	99	64	16	265

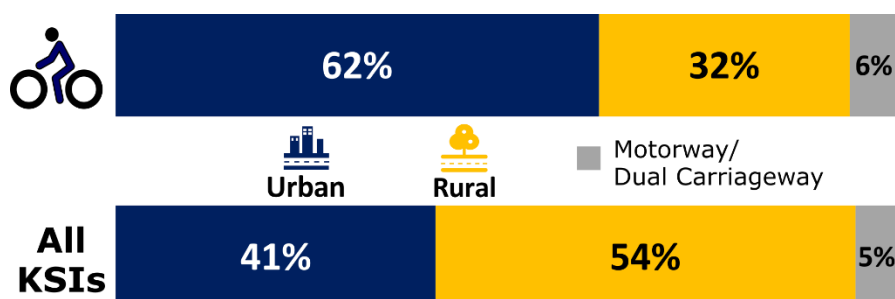


WHERE DO PEDAL CYCLIST KSIs OCCUR?

Three-fifths (62%) of pedal cyclist KSI casualties in 2014-2018 occurred on urban⁵ roads, with a further 32% occurring on rural roads. This is not surprising, as you may expect that people are more likely to cycle in built up, urban areas. In comparison, a much smaller proportion of all KSI casualties occurred on urban roads (41%), and over half (54%) occurred on rural roads. (Annex Table 6a)

The baseline period of 2004-2008 reported an even greater difference in proportions, however, with 68% of pedal cyclist KSIs occurring on urban roads compared with 37% of all KSIs that occurred on urban roads.

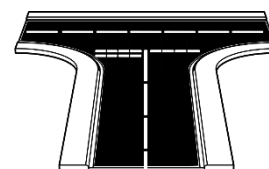
Figure 11: Pedal cyclist KSI casualties by location compared with all KSI casualties, 2014-2018



It is interesting to note, that of the nine pedal cyclist fatalities recorded in the five years 2014-2018, four occurred in collisions on dual carriageways. This is probably because collisions on dual carriageways will occur at higher speeds, and therefore the risk of being killed is greater. This is further evidenced by the fact that of the 16 pedal cyclist KSIs recorded on dual carriageways, one-quarter received fatal injuries. See Table 5 below. Analysis of junction detail for pedal cyclist KSI casualties shows that two-in-five (41%) occurred at a T or staggered junction.

Table 5: Pedal cyclist KSIs by severity of injury and carriageway type, 2014-2018

	Round-about	One way street	Dual carriage-way	Single carriage-way	Slip road	Total
Killed	0	0	4	5	0	9
Seriously injured	21	4	12	218	1	256
Total	21	4	16	223	1	265



41% of pedal cyclist KSI casualties in 2014-2018 occurred at a **T or staggered junction**

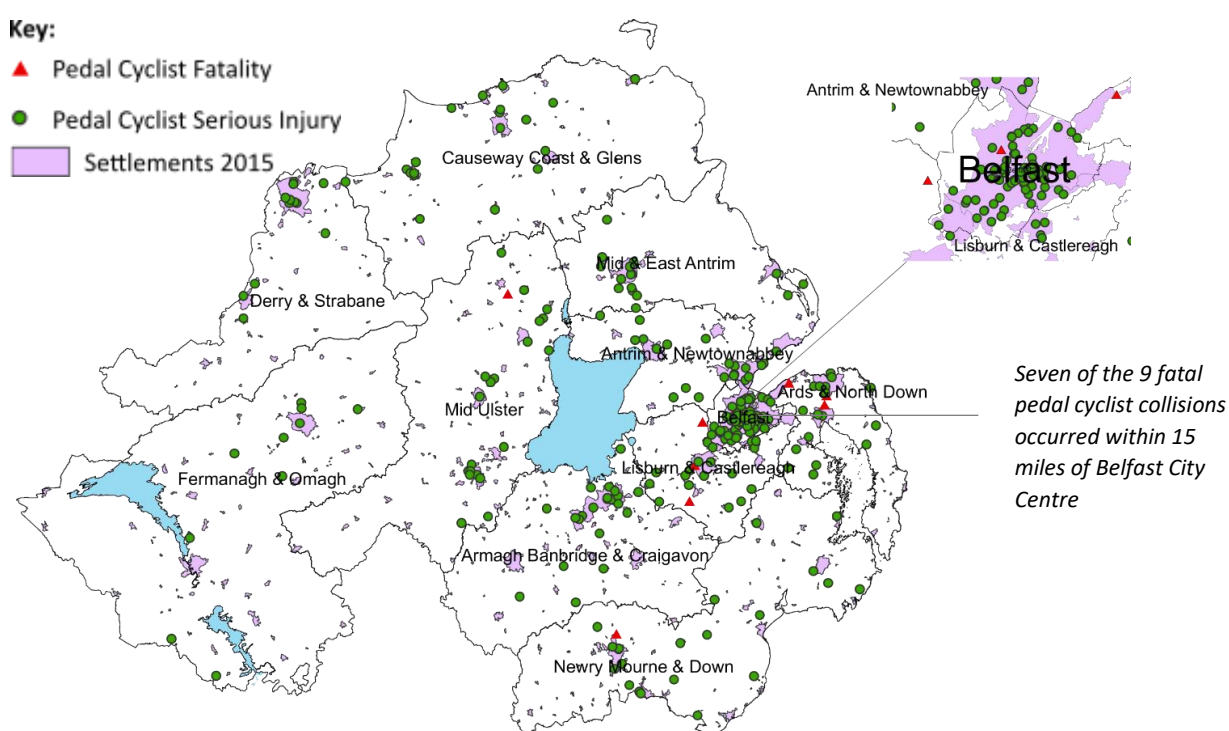
⁵ Urban roads are roads with a speed limit less than or equal to 40mph; rural roads are roads with a speed limit greater than 40mph (excluding motorways and dual carriageways).

MAPPING

NORTHERN IRELAND

The below map shows pedal cyclist KSIs in Northern Ireland in 2014-2018, plotted on the 2015 settlements overlay (displayed in purple) as defined by NISRA⁶. The majority of these KSIs occurred in the east of the country, with Belfast reporting the most. There are clusters in towns and cities, with approximately 58% of pedal cyclist KSIs between 2014 and 2018 occurring in urban settlements (those having a population of more than 5,000 people)⁷. This means that 42% of cyclist KSIs occur in rural areas, with 37% of the total occurring in open countryside. A further breakdown by settlement band is available in Table 7 in the Annex.

Map 1 – Pedal Cyclist KSIs in Northern Ireland with settlement overlay, 2014-2018



Clusters around towns and cities are not unexpected as these are more heavily populated areas. Map 2 below therefore aims to take account of the differing population densities by plotting the rate of pedal cyclist KSI casualties in each Local Government District in 2014-2018 per 100,000 population. Belfast reports the highest rate of cyclist KSIs per population (4.2), and interestingly, the LGDs that border Belfast have the next highest rates: Antrim & Newtownabbey (3.2); Lisburn & Castlereagh and Ards & North Down (both with 2.9). These latter two Districts also both had the highest rate of pedal cyclist fatalities per 100,000 population (0.4). The west of the country (Derry & Strabane and Fermanagh & Omagh) reported the lowest cyclist KSI rate with 1.7 each. See Table 6 below for the rates for each LGD.

⁶ <https://www.nisra.gov.uk/sites/nisra.gov.uk/files/publications/settlement15-guidance.pdf>

⁷ This differs from the 62% reported in Figure 11 on page 12. The map above refers to urban settlements (>=5000 people), while Figure x refers to urban roads (<= 40 mph).

Map 2 – Rate of Pedal Cyclist KSIs per 100,000 population, 2014-2018

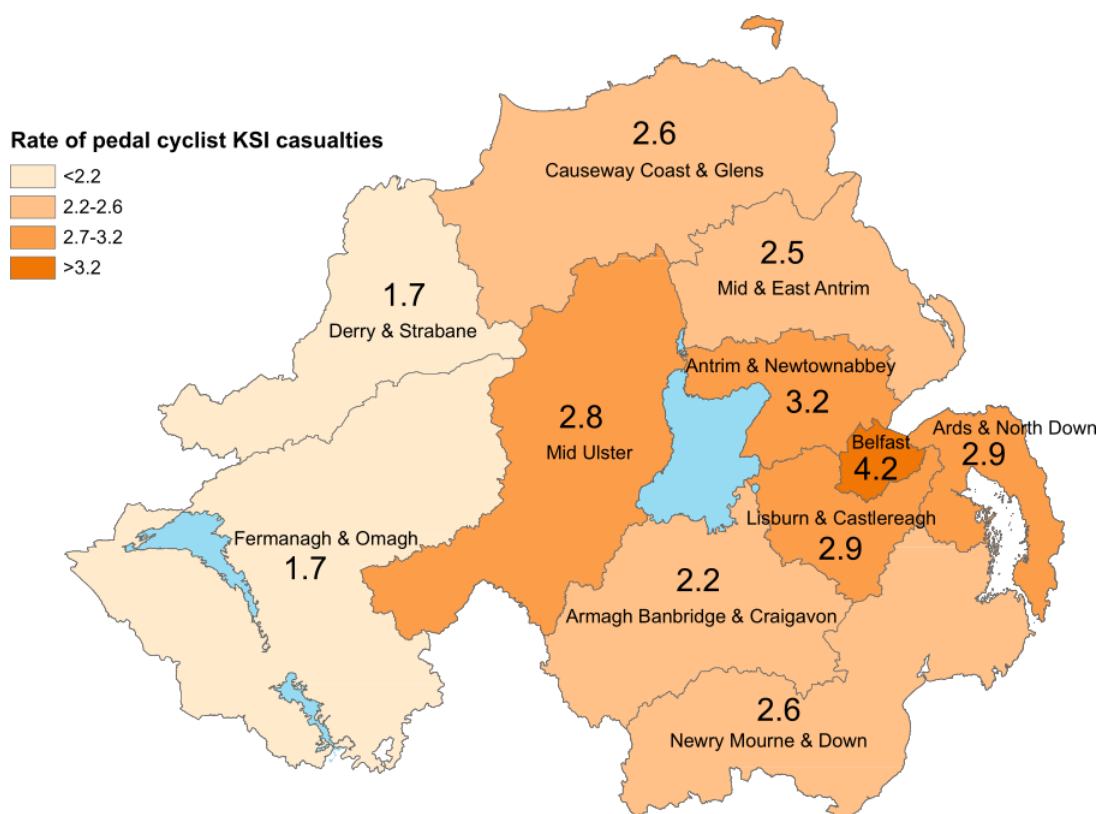


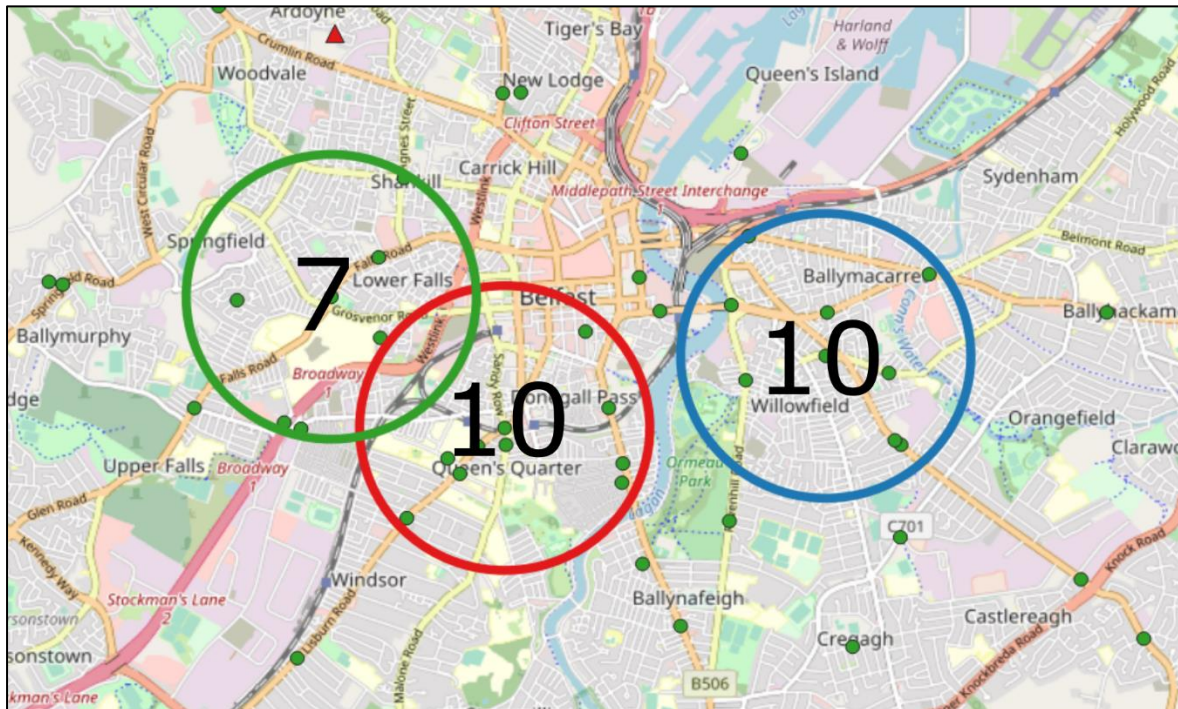
Table 6: Pedal cyclist KSI casualties by LGD and rate of pedal cyclist fatalities and KSIs, 2014-2018

	Pedal cyclists Killed	Pedal cyclist KSI Collisions	Pedal cyclist KSI Casualties	Rate of pedal cyclist fatalities per 100,000 population	Rate of pedal cyclist per 100,000 population
Antrim & Newtownabbey	0	22	23	0.0	3.2
Ards & North Down	3	23	23	0.4	2.9
Armagh, Banbridge & Craigavon	0	23	24	0.0	2.2
Belfast	1	71	71	0.1	4.2
Causeway Coast & Glens	0	19	19	0.0	2.6
Derry City & Strabane	0	13	13	0.0	1.7
Fermanagh & Omagh	0	10	10	0.0	1.7
Lisburn & Castlereagh	3	21	21	0.4	2.9
Mid & East Antrim	0	17	17	0.0	2.5
Mid Ulster	1	21	21	0.1	2.8
Newry, Mourne & Down	1	22	23	0.1	2.6
Total	9	262	265	0.1	2.8

PEDAL CYCLIST KSI COLLISION HOTSPOTS

Examining collision sites which have the greatest numbers of pedal cyclist KSI casualties within a 1 kilometre radius for the five year period 2014-2018 identifies three locations within Belfast City LGD⁸. These are shown in the map below:

Map 3 –Pedal Cycle KSI collisions within Belfast City LGD, 2014-2018



Queen's Quarter

There were 10 pedal cyclists seriously injured within the red circle on the map. This area takes in Queen's University, Belfast City Hospital and Botanic Station and covers the main thoroughfares to the City Centre including the Lisburn Road, Ormeau Road, Malone Road and Donegall Road. It contains a big student population and has a high proportion of businesses (both public and private) so there is a lot of commuter traffic. Five of the ten KSI collisions which occurred between 2014 and 2018 were within the vicinity of the Lisburn Road and three of these occurred on or in the vicinity of the Ormeau Road.

East Belfast

There were also 10 pedal cycle KSIs within a 1 kilometre radius in the east of the city (blue circle) which again has a high proportion of traffic commuting to the City Centre. Three of these occurred on the Newtownards Road, two on the Albert Bridge/Albert Bridge Road, two on the Beersbridge Road and three on the Castlereagh Road.

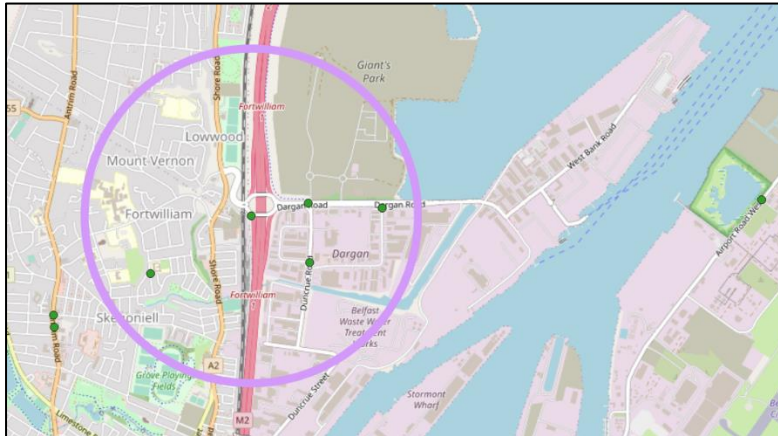
West Belfast

The green circle depicts seven pedal cyclists who were seriously injured in west Belfast with two of these occurring around the Broadway roundabout and two on the Falls Road.

⁸ Please note that it is possible to draw a further 2 circles which contain 10 collisions within a 1km radius in Belfast City centre. These would both have fallen between the red and blue circles; however, the current map is presented using the criteria that each circle must be comprised of different collisions.

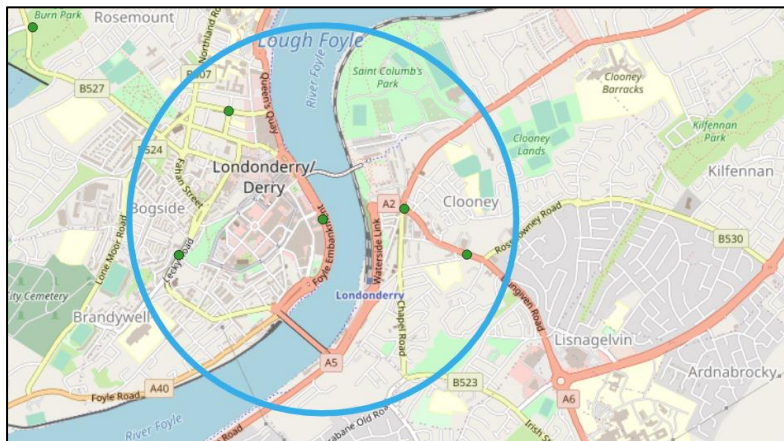
Other areas which had a relatively high number of pedal cyclists killed or seriously injured within a one kilometre radius are presented below:

Map 4 – Belfast docks and Industrial Estate



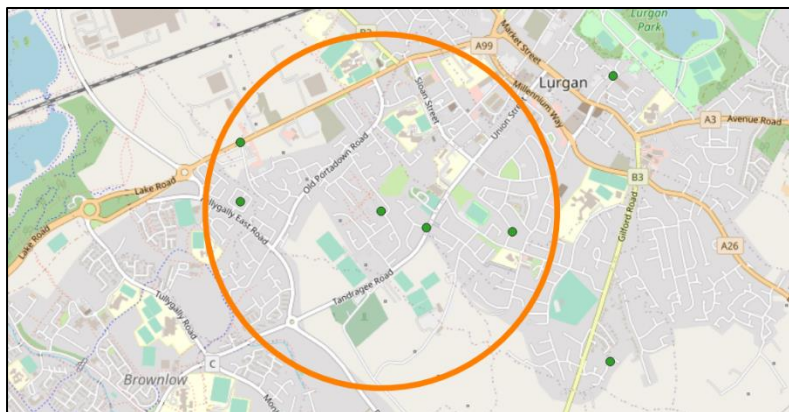
There were 5 pedal cyclists seriously injured within the vicinity of the docks and the Industrial Estate in North Belfast in the five year period 2014-2018.

Map 5 – Derry/Londonderry



Outside of Belfast, there were also 5 pedal cyclists seriously injured within a kilometre of Derry City centre during this period. Three of these occurred in the Cityside (west of the Foyle) and the other two were in the Waterside area of the City.

Map 6 – Lurgan



The final location outside of Belfast which had at least 5 pedal cycle KSI collisions within a 1 kilometre radius occurring between 2014 and 2018 were on the roads that link Lurgan to Craigavon. There were 5 pedal cyclists seriously injured in this area.

CYCLING BEHAVIOURS – TRAVEL SURVEY FOR NI

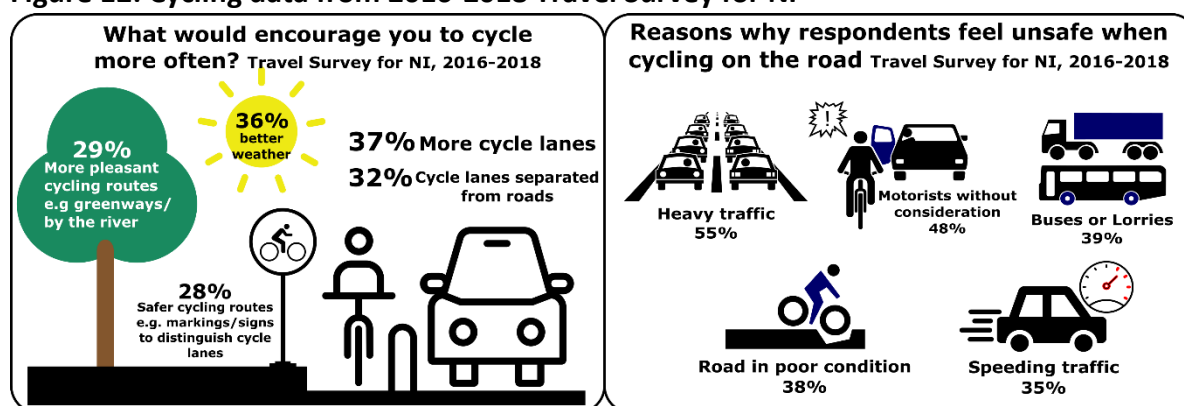
As well as reducing pedal cyclist KSI casualty numbers, if the DfI is to increase numbers of people who choose to cycle, it will need to understand current cycling habits, including what would encourage people to cycle more often, and importantly, the reasons **why cyclists feel unsafe while cycling on the road**. These questions are asked on the Travel Survey for Northern Ireland (TSNI). To date, results have been published for five TSNI reporting cycles, but results are very similar for all periods and so only the most recent data (2016-2018) are included below.

In 2016-2018 there were 5,344 respondents to the TSNI, and nearly one quarter (24%) had cycled in the last 12 months. Of those who had cycled in the last 12 months, more than two fifths (43%) had cycled once a week or more and an additional 27% cycled at least once a month (but less than once a week). One-in-seven (14%) reported that they cycle every day (including those that cycle every working day/school day but not at weekends), more than three times as many as those who only cycle once a year (4%).

Cyclists⁹ were then asked what would encourage them to cycle more often. The top responses were ‘More cycle lanes’ (37%), ‘Better weather’ (36%) and ‘Cycle lanes separated from roads’ (32%). Just under three-in-ten (29%) said ‘More pleasant cycling routes’; and 28% said ‘Safer cycling routes (e.g. more markings, signs to distinguish cycle lanes)’.

Cyclists were then asked which situations made them feel unsafe when cycling on the road. Approximately 7% said they always felt safe when cycling on the road, while 6% said they never cycle on the road – this means that **87% of cyclists gave a reason(s) for feeling unsafe while cycling**. The most common reason cited for feeling unsafe was that there was **heavy traffic**, with 55% of respondents giving this answer. Just under half (48%) felt unsafe because of **motorists driving without consideration of cyclists** (e.g. dangerous overtaking). Other common reasons included buses or lorries on the road (39%), poor road condition (38%), and traffic travelling above the speed limit (35%).

Figure 12: Cycling data from 2016-2018 Travel Survey for NI



A full list of responses can be found in Tables 8a-8d in Annex A.

⁹ aged 16 and over who stated that they had cycled in the last 12 months, and were giving a face-to-face interview.

ANNEX A – TABLES

Table 1: Pedal cyclist KSI casualties, 2004-2018

	Killed	Seriously injured	KSI
2004	2	27	29
2005	4	25	29
2006	1	33	34
2007	2	30	32
2008	2	26	28
2009	0	32	32
2010	0	49	49
2011	2	47	49
2012	2	55	57
2013	4	42	46
2014	3	59	62
2015	0	40	40
2016	3	61	64
2017	2	50	52
2018	1	46	47

Table 2a: KSI casualties by road user type, 2004-2008 Vs 2014-2018

	Killed			Seriously Injured			KSIs		
	2004/ 08	2014/ 18	% Diff	2004/ 08	2014/ 18	% Diff	2004/ 08	2014/ 18	% Diff
Pedestrians	109	83	-24%	927	778	-16%	1,036	861	-17%
Drivers of motor vehicles	262	140	-47%	2,381	1,476	-38%	2,643	1,616	-39%
Motorcyclists	90	37	-59%	668	431	-35%	758	468	-38%
Pedal cyclists	11	9	-18%	141	256	82%	152	265	74%
Passengers	148	59	-60%	1,357	757	-44%	1,505	816	-46%
Pillion passengers	3	2	-33%	33	26	-21%	36	28	-22%
Other road users	5	9	80%	47	33	-30%	52	42	-19%
Total	628	339	-46%	5,554	3,757	-32%	6,182	4,096	-34%

Table 2b: KSI casualties by road user type, 2014-2018

	Killed		Seriously injured		KSI	
	#	%	#	%	#	%
Pedestrians	83	24%	778	21%	861	21%
Drivers of motor vehicles	140	41%	1,476	39%	1,616	39%
Motorcyclists	37	11%	431	11%	468	11%
Pedal cyclists	9	3%	256	7%	265	6%
Passengers	59	17%	757	20%	816	20%
Pillion passengers	2	1%	26	1%	28	1%
Other road users	9	3%	33	1%	42	1%
Total	339		3,757		4,096	

Table 2c: Pedal cyclist KSIs as a proportion of all KSIs, 2002-2018 (Rolling Average)

	2002 - 2006	2003 - 2007	2004 - 2008	2005 - 2009	2006 - 2010	2007 - 2011	2008 - 2012	2009 - 2013	2010 - 2014	2011 - 2015	2012 - 2016	2013 - 2017	2014- 2018
Pedal cyclists	160	162	152	155	175	190	215	233	263	254	269	264	265
Total	6,989	6,523	6,182	6,002	5,741	5,288	4,921	4,601	4,240	4,078	4,090	4,088	4096
% Cyclist	2%	2%	2%	3%	3%	4%	4%	5%	6%	6%	7%	6%	6%

Table 3a: Pedal cyclist KSIs by age and gender, 2004-2018

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2004- 2008	2014- 2018	2014- 2018 %	Miles Walked %
Male																			
0-15	5	7	13	5	5	7	7	9	7	2	8	3	6	3	4	35	24	11%	6%
16-24	2	4	1	2	4	1	6	7	8	1	4	4	7	2	4	13	21	9%	8%
25-34	4	6	3	4	2	3	2	7	8	11	6	5	7	4	6	19	28	12%	17%
35-49	6	3	13	8	9	6	20	14	13	12	23	11	18	19	12	39	83	37%	38%
50-64	2	1	3	5	3	4	8	5	11	10	11	9	15	11	11	14	57	25%	23%
65+	3	3	0	0	1	3	1	0	5	5	2	1	4	2	4	7	13	6%	6%
Total	22	24	33	24	24	24	44	42	52	41	54	33	57	41	41	127	226	100%	100%
Female																			
0-15	4	3	0	4	2	4	2	1	2	2	3	1	0	1	1	13	6	15%	14%
16-24	0	1	0	1	0	1	0	1	0	1	1	0	1	0	0	2	2	5%	7%
25-34	1	0	1	2	0	1	1	2	0	1	1	3	0	1	0	4	5	13%	16%
35-49	1	1	0	1	2	0	0	1	3	0	2	2	4	6	2	5	16	41%	26%
50-64	1	0	0	0	0	2	2	1	0	1	1	0	1	2	3	1	7	18%	31%
65+	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0	3	8%	3%
Total	7	5	1	8	4	8	5	7	5	5	8	7	7	11	6	25	39	100%	100%
Total																			
0-15	9	10	13	9	7	11	9	10	9	4	11	4	6	4	5	48	30	11%	8%
16-24	2	5	1	3	4	2	6	8	8	2	5	4	8	2	4	15	23	9%	8%
25-34	5	6	4	6	2	4	3	9	8	12	7	8	7	5	6	23	33	12%	16%
35-49	7	4	13	9	11	6	20	15	16	12	25	13	22	25	14	44	99	37%	35%
50-64	3	1	3	5	3	6	10	6	11	11	12	9	16	13	14	15	64	24%	24%
65+	3	3	0	0	1	3	1	1	5	5	2	2	5	3	4	7	16	6%	6%
Total	29	29	34	32	28	32	49	49	57	46	62	40	64	52	47	152	265	100%	100%

Table 3b: Pedal cyclist KSIs by gender, 2014-2018

Gender	KSIs		Miles Cycled
	#	%	%
Male	226	85%	85%
Female	39	15%	15%
Total	265		100%

Table 3c: Pedal cyclist KSIs by age, 2014-2018

Age	KSIs		Miles Cycled
	#	%	%
0-15 years	30	11%	8%
16-24 years	23	9%	8%
25-34 years	33	12%	16%
35-49 years	99	37%	35%
50-64 years	64	24%	24%
65+ years	16	6%	6%
Total	265		100%

Table 4a: Pedal cyclist KSI casualties by time of the day and day of the week, 2014-2018

Time	Day of the Week							Total
	Mon	Tue	Wed	Thu	Fri	Sat	Sun	
0501- 0700	2	1	2	2	0	0	0	7
0701- 0900	3	4	5	8	4	3	3	30
0901- 1100	3	1	3	6	2	13	10	38
1101- 1300	3	1	7	4	6	10	14	45
1301- 1500	4	5	4	2	2	4	4	25
1501- 1700	6	6	5	3	6	7	5	38
1701- 1900	5	9	5	9	3	6	1	38
1901- 2100	4	6	9	5	2	7	2	35
2101- 2300	0	2	0	3	2	0	2	9
2301- 0100	0	0	0	0	0	0	0	0
0101- 0300	0	0	0	0	0	0	0	0
0301- 0500	0	0	0	0	0	0	0	0
Total	30	35	40	42	27	50	41	265

Key	
	1-2
	3-5
	6-8
	9-11
	12+

Table 4b: Pedal cyclist KSI casualties by age and time of the day, 2014-2018

Time	Age (years)						Total
	0-15 years	16-24 years	25-34 years	35-49 years	50-64 years	65+ years	
0501-0700	0	0	0	2	5	0	7
0701- 0900	1	2	4	15	7	1	30
0901- 1100	3	2	7	13	8	5	38
1101- 1300	3	1	3	14	17	7	45
1301- 1500	3	1	4	12	4	1	25
1501- 1700	7	3	4	13	9	2	38
1701- 1900	7	7	3	13	8	0	38
1901- 2100	5	3	4	17	6	0	35
2101- 2300	1	4	4	0	0	0	9
2301- 0100	0	0	0	0	0	0	0
0101- 0300	0	0	0	0	0	0	0
0301- 0500	0	0	0	0	0	0	0
Total	30	23	33	99	64	16	265

Key

	1-2
	3-5
	6-8
	9-11
	12+

Table 4c: Pedal cyclist KSI casualties by month of the year and light conditions, 2014-2018

Month	Darkness	Daylight	Total	% Daylight
Jan	8	8	16	50%
Feb	2	10	12	83%
Mar	1	19	20	95%
Apr	1	15	16	94%
May	0	16	16	100%
Jun	0	28	28	100%
Jul	0	34	34	100%
Aug	1	34	35	97%
Sep	4	25	29	86%
Oct	8	19	27	70%
Nov	9	13	22	59%
Dec	4	6	10	60%
Total	38	227	265	86%

Table 4d: Pedal cyclist KSI casualties by month and age, 2014-2018

Month	Age						Total
	0-15	16-24	25-34	35-49	50-64	65+	
Jan	1	1	2	6	6	0	16
Feb	0	0	0	5	4	3	12
Mar	3	2	2	5	8	0	20
Apr	2	1	4	7	2	0	16
May	3	1	1	7	3	1	16
Jun	5	3	5	10	3	2	28
Jul	6	4	2	13	8	1	34
Aug	6	3	5	12	6	3	35
Sep	2	3	2	12	9	1	29
Oct	2	1	4	11	6	3	27
Nov	0	3	3	8	7	1	22
Dec	0	1	3	3	2	1	10
Total	30	23	33	99	64	16	265

Table 5a: Top Ten principal causes of pedal cyclist KSI casualties by gender, 2014-2018

Principal Causation Factor	KSIs	% KSIs	Male KSIs		Female KSIs	
			#	%	#	%
Inattention or attention diverted	48	18%	42	19%	6	15%
Turning right without care	27	10%	24	11%	3	8%
Crossing or entering road junction without care	25	9%	21	9%	4	10%
Emerging from minor road without care	22	8%	21	9%	1	3%
Overtaking on offside without care	18	7%	14	6%	4	10%
Emerging from private road/entrance without care	13	5%	10	4%	3	8%
Wrong course/position	12	5%	7	3%	5	13%
Driving too close	12	5%	10	4%	2	5%
Turning left without care	10	4%	9	4%	1	3%
Other driver/rider factor	8	3%	8	4%	0	0%
All other factors	70	26%	60	27%	10	26%
Total	265	100%	226	100%	39	100%

Table 5b: Top Ten principal causes of pedal cyclist KSI casualties by age, 2014-2018

Principal Causation Factor	Age						Total
	0-15	16-24	25-34	35-49	50-64	65+	
Inattention or attention diverted	8	3	10	15	8	4	48
Turning right without care	1	3	2	12	8	1	27
Crossing or entering road junction without care	1	0	0	13	7	4	25
Emerging from minor road without care	3	5	1	8	5	0	22
Overtaking on offside without care	0	2	1	6	8	1	18
Emerging from private road/entrance without care	4	1	0	2	5	1	13
Driving too close	0	0	3	5	4	0	12
Wrong course/position	1	0	1	7	3	0	12
Turning left without care	1	0	2	7	0	0	10
Other driver/rider factor	2	2	1	3	0	0	8
All other causations	9	7	12	21	16	5	70
Total	30	23	33	99	64	16	265

Table 5c: Pedal cyclist KSI casualties by age and collision responsibility, 2014-2018

Principal Causation Factor	Age						Total
	0-15	16-24	25-34	35-49	50-64	65+	
Casualty responsible	23	7	11	23	12	6	82
Casualty not responsible	7	16	22	76	52	10	183
Total	30	23	33	99	64	16	265
% Responsible	77%	30%	33%	23%	19%	38%	31%

Table 6a: Pedal cyclist KSIs by Location, 2014-2018

Location	Pedal cyclist KSIs		All KSIs	
	#	%	#	%
Urban	164	62%	1,677	41%
Rural	85	32%	2,201	54%
Motorway/ Dual Carriageway	16	6%	218	5%
Total	265		4,096	

Table 6b: Pedal cyclist KSIs by carriageway type and severity, 2014-2018

	Roundabout	One way street	Dual carriageway	Single carriageway	Slip road	Total
Killed	0	0	4	5	0	9
Seriously injured	21	4	12	218	1	256
Total	21	4	16	223	1	265

Table 6c: Pedal cyclist KSI casualties by severity and speed of the road, 2014-2018

Severity	Speed Limit of the road (mph)					Total
	30	40	50	60	70	
Killed	1	0	2	4	2	9
Seriously injured	151	14	6	77	8	256
Total	152	14	8	81	10	265

Table 7: Pedal Cyclist KSI casualties by settlement band, 2014-2018

Settlement Band	Classification	Examples	Urban/Rural	KSIs	%
A	Belfast	Belfast City	Urban	64	24%
B	Derry City	Derry City	Urban	8	3%
C	Large Town	Bangor, Lisburn, Ballymena	Urban	62	23%
D	Medium Town	Cookstown, Dungannon, Limavady	Urban	10	4%
E	Small Town	Ballynahinch, Comber, Portstewart	Urban	8	3%
F	Intermediate Settlement	Cullybacky, Moira, Waringstown	Rural	4	2%
G	Village	Doagh, Magheralin, Sion Mills	Rural	5	2%
H	Population less than 1,000	Ballybarnes, Gulladuff, Lisbane	Rural	6	2%
-	Open countryside	-	Rural	98	37%
Total				265	-

Table 7b: Pedal cyclist KSI casualties by LGD and rate of pedal cyclist fatalities and KSIs, 2014-2018

	Pedal cyclists Killed	Pedal cyclist KSI Collisions	Pedal cyclist KSI	Rate of pedal cyclist fatalities per 100,000 population	Rate of pedal cyclist per 100,000 population
Antrim & Newtownabbey	0	22	23	0	3.2
Ards & North Down	3	23	23	0.4	2.9
Armagh, Banbridge & Craigavon	0	23	24	0	2.2
Belfast	1	71	71	0.1	4.2
Causeway Coast & Glens	0	19	19	0	2.6
Derry City & Strabane	0	13	13	0	1.7
Fermanagh & Omagh	0	10	10	0	1.7
Lisburn & Castlereagh	3	21	21	0.4	2.9
Mid & East Antrim	0	17	17	0	2.5
Mid Ulster	1	21	21	0.1	2.8
Newry, Mourne & Down	1	22	23	0.1	2.6
Total	9	262	265	0.1	2.8

Table 8a: Cycled in the last 12 months by age and sex, 2016-2018

Age group	Percent who have cycled in the last 12 months		
	Male	Female	All persons
0-15	60%	57%	59%
16-29	27%	10%	18%
30-59	31%	18%	24%
60+	9%	3%	5%
All persons	30%	18%	24%

Source: Travel Survey for Northern Ireland, 2016-2018

Table 8b: How often do you cycle? 2016-2018

Frequency of cycling journeys (if cycled in last 12 months)	%
Every day**	14%
At least once a week	29%
At least once every 2-3 weeks	13%
At least once a month	14%
Once every 2-3 months	16%
Once every 6 months	9%
Once a year	4%
Varies according to time of year+	2%
Base	1,235

Source: Travel Survey for Northern Ireland, 2016-2018

* This question is only asked if the respondent is a cyclist i.e. has cycled in the last 12 months. Includes all cycle journeys whether for leisure or with a purpose (e.g. travelling to work). Only journeys where the bicycle is ridden independently are included i.e. it is not counted if the child is riding on a child seat on an adult's bicycle or if the child's bicycle is attached to an adult's bicycle.

** "Every day" is selected if the respondent cycles every working day/school day but not at weekends as well as if they cycle every day.

+ Spontaneous answer

Table 8c: What would encourage you to cycle more often? 2016-2018*

Incentives to cycle more often	%
More cycle lanes	37%
Better weather	36%
Cycle lanes separated from roads	32%
More pleasant cycling routes (e.g. greenways, by the river)	29%
Safer cycling routes **	28%
Time of year e.g. I cycle more often during summer	26%
Motorists who are more considerate to cyclists ***	24%
Less traffic	22%
Better maintained roads	21%
Keeping cycle lanes clear (e.g. no parked cars)	19%
Slower traffic	13%
Better lighting on roads at night	12%
More bicycle docks so bicycle can be secured	9%
I already cycle as much as I can +	7%
Nothing would encourage me to cycle more often +	6%
If I did not have things to carry	6%
If I did not have children with me	5%
Changing and showering facilities at destination	5%
Living closer to services	4%
If I was not worried about crime/personal safety	4%
Other	2%
Sample size	529

Source: Travel Survey for Northern Ireland, 2016-2018

Percentages sum to more than 100% due to multiple responses.

*This question asked of those who had cycled during the last 12 months, and aged 16 and over giving a face to face interview.

** Full answer option - Safer cycling routes (e.g. more markings, signs to distinguish cycle lanes)

*** Full answer option - Motorists who are more considerate to cyclists (e.g. taking more care when overtaking)

+ Spontaneous answer

Table 8d: Which situations make you feel unsafe when cycling on the road? 2016-2018

Reasons for feeling unsafe	%
Heavy traffic e.g. rush hour traffic	55%
Motorists driving without consideration of cyclists **	48%
Buses or lorries	39%
If road condition is poor (e.g. potholes)	38%
Traffic travelling above the speed limit	35%
Bad weather (e.g. wet or windy conditions)	32%
Not enough cycle lanes	29%
Narrow roads	25%
Normal traffic even if travelling within the speed limit	21%
If the roads are not well lit at night	20%
Cycle lanes not kept clear (e.g. parked cars)	18%
Roadworks	14%
Worry about crime/ personal safety	10%
I always feel safe cycling on the road +	7%
I never cycle on the road +	6%
Other	0%
Sample size	529

Source: Travel Survey for Northern Ireland, 2016-2018

Percentages sum to more than 100% due to multiple responses.

*This question asked of those who had cycled during the last 12 months, and aged 16 and over giving a face to face interview.

** Full answer option - Motorists driving without consideration of cyclists (e.g. dangerous overtaking)

+ Spontaneous answer

Table 9: Pedal Cyclist KSIs as a proportion of all SIs by country (UK), 2014-2018

	Pedal Cyclist KSIs	All KSIs	% Pedal Cyclist
England	16,540	113,503	15%
Wales	591	5,752	10%
Scotland	826	9,013	9%
NI	265	4,096	6%
UK	18,222	132,364	14%

ANNEX B – GLOSSARY

Term	Explanation
Car Occupants	Persons in a car, light goods vehicle, car driven as taxi or hackney cab.
Car Users	Persons in a car, light goods vehicle, car driven as taxi or hackney cab.
Casualty	A person who sustains a slight, serious or fatal injury.
Children	Persons under 16 years of age.
Collisions	Collisions involving personal injury occurring on the public highway (including footpaths) in which a vehicle is involved. Collisions are categorised as either 'Fatal', 'Serious' or 'Slight' according to the most severely injured casualty.
Drivers under the age of 25	Drivers aged under 25 of either a car, car used as taxi, hackney cab, or Light Goods Vehicle (LGV).
Killed	Died within 30 days from injuries received in a collision.
Motorcyclists	Drivers/riders of mopeds and motorcycles. Includes riders of two-wheeled motor vehicles, motorcycle combinations, scooters and mopeds.
Not wearing a seatbelt	Occupants of either a car, car used as taxi, hackney cab, or Light Goods Vehicle (LGV) who were not using a restraint. <i>Please note: This includes those who are exempt from wearing a restraint.</i>
Novice Driver	Driver who has passed their Category B driving test within 24 months
Pedal cyclists	Drivers/riders of pedal cycles. Includes children riding toy cycles on the carriageway and the first rider of a tandem.
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.
Rural roads	Roads with a speed limit of greater than 40mph. <i>Please note: This data excludes motorways.</i>
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, crushings, burns, severe cuts and lacerations or severe general shock requiring medical treatment.
Slight Injury	An injury of a minor character such as a sprain, bruise or cut not judged to be severe or slight shock requiring roadside attention.
Young People	Persons aged 16 – 24 years.