Department for Transport

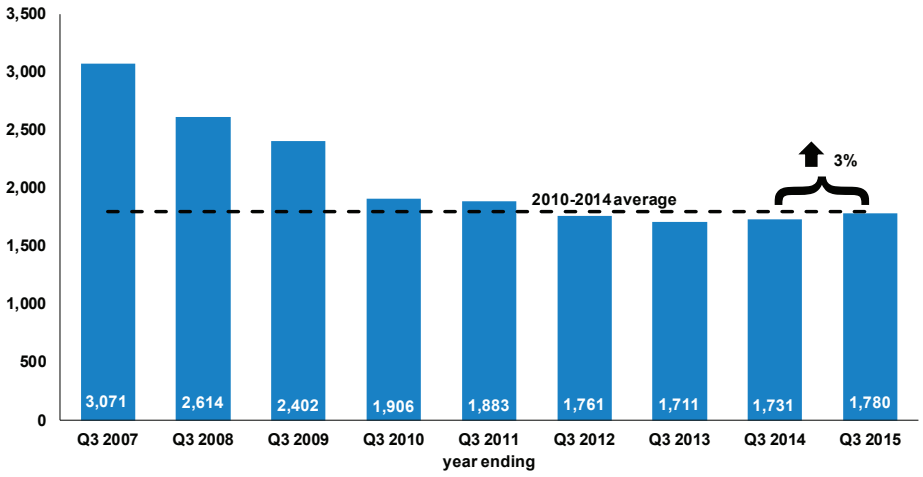
Reported Road Casualties in Great Britain: quarterly provisional estimates year ending September 2015

There were 1,780 road deaths in the year ending September 2015, up by 3 per cent compared with the year ending September 2014.

About this release

This publication provides the number of personal-injury road traffic accidents in Great Britain that were reported to the police for year ending September 2015. It also includes the number of people killed or injured in these accidents and which road user group they were in.

Road deaths: GB, rolling years ending Sept 2015, 2007-2015



In this publication

- A total of 23,700 people were **killed or seriously injured** (KSI casualties) in the year ending September 2015, down by 3 per cent from the previous year.
- There were 188,830 **casualties of all severities** in the year ending September 2015, down by 3 per cent from the previous year.
- **Motor traffic levels** rose by 2.2 per cent compared with the year ending September 2014.
- The overall **casualty rate per vehicle mile** decreased by 5 per cent over the same period.

What we can conclude: There has been a statistically significant decrease in the number of people injured (but not killed) in road traffic accidents between the years ending September 2014 and 2015. This indicates that there are a number of factors that have combined together to improve some aspects of safety on Britain's roads. However, it is not definitive evidence of a continued improvement in road safety.

What we cannot conclude: Although the number of people killed in road traffic accidents has increased between years, this change is small enough that it can be explained by the natural variation in deaths over time. Therefore there is not yet enough evidence to say that the number of road deaths is changing between years.

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Overall results

Rolling years ending September 2015

- In the year ending September 2015, there were 1,780 reported **road fatalities**, a 3 per cent increase from 1,731 in the previous year. **This increase is not statistically significant**. This means that the increase is probably to do with a combination of factors that have come about by chance, rather than any specific change.

- **Killed or seriously injured casualties (KSIs)** decreased by 3 per cent to 23,700 and the **total number of casualties** also decreased by 3 per cent to 188,830. **Both of these changes are statistically significant** at the 99% confidence level. This suggests that the decrease has been caused by more than randomness or natural variation, and is likely to relate to improvements in road safety.

- **Motor vehicle traffic** increased by 2.2 per cent over the same period.

The estimated number of casualties in the first half of 2015 have been **revised upwards**. As was highlighted in the previous publication, the data received from police forces for the provisional statistics have been less complete in 2015 than in previous years. It now appears that there were more accidents missing from the raw data used for the previous estimates than had been expected. As a result, the estimates for each of the first two quarters of the year have now been revised.

The original estimates for the first two quarters of 2015 indicated year on year decreases across all severities of injury. Whilst decreases are still apparent for seriously and slightly injured casualties, there is now evidence for **increases in fatalities** between 2014 and 2015. The implications of this will be discussed in more detail in the section on background to trends.

Definition

Casualty: A person killed or injured in an accident. Casualties are sub-divided into killed, seriously injured and slightly injured.

A full list of the definitions used in this release can be found here.

2010-2014 average

The Department published Road safety statement: working together to build a safer road system in December 2015. We have updated the baseline to accompany the statement and have included the new baseline on all the tables. The new baseline period is the average for 2010-2014.

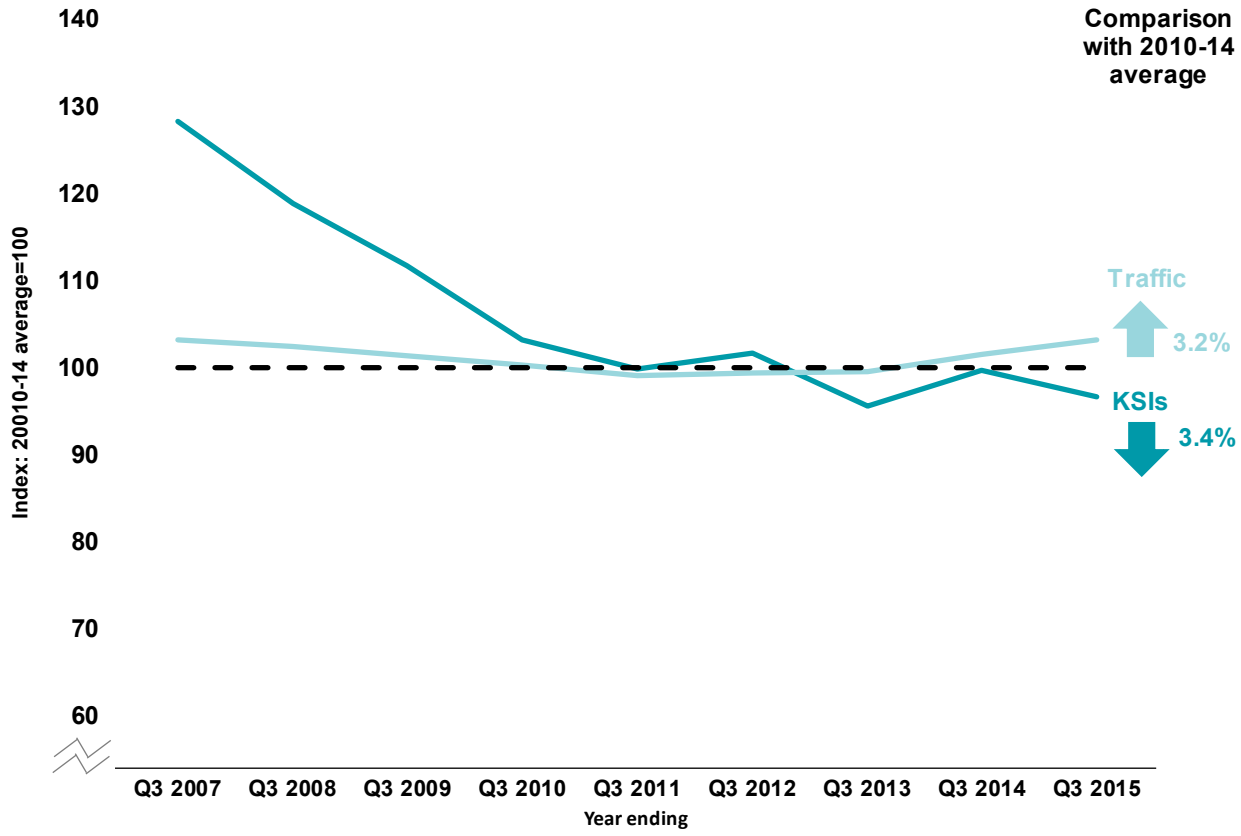
We will continue to include the 2005-09 average on tables in the short-term for convenience.

Table RAS45001: Reported road casualties by severity, GB: year ending September 2015

	Number/percentage change compared with previous 12 months				
ALL CASUALTIES	Oct-13 to Sep-14	Oct-14 to Sep-15 (P)	Percentage change	Statistical significance of change	Traffic [1] percentage change
Killed	1,731	1,780	↑3%	ns	↑2.2%
KSI [2]	24,464	23,700	↓3%	***	↑2.2%
Slightly injured	169,421	165,120	↓3%	***	↑2.2%
All casualties	193,885	188,830	↓3%	***	↑2.2%

P Provisional estimates
1 Motor traffic (excludes pedal cycles)
2 Killed or seriously injured
ns Not significant
*** significant at 99%

Chart 1: Killed and seriously injured casualties and traffic compared with the 2010-14 average, GB, year ending September 2007 to 2015



Figures for July to September 2015

- Between July and September 2015, 450 people were **killed in reported road accidents**, a 2 per cent decrease from 457 in the same quarter of 2014.
- **KSI casualties** decreased by 3 per cent to 6,290 and the total number of slightly injured casualties by 1 per cent to 42,640 in the third quarter of 2015.
- **Casualties of all severities** fell by 1 per cent to 48,940 in comparison with the same quarter in 2014.
- **None of these changes are statistically significant at the 95% confidence level.**
- **Motor traffic levels** increased by 1.8 per cent over the same period.

Tables

• Reported road casualties by severity (estimates): Great Britain, rolling annual totals, quarterly, table RAS45001.

• Road traffic (vehicle miles) by vehicle type in Great Britain, quarterly from 1993, table TRA2501.

• Reported road casualties by severity (estimates): Great Britain, quarterly and annual, table RAS45003.

Table RAS45002: Reported road casualties by severity: GB, Jul - Sept 2015

ALL CASUALTIES	Number/percentage change compared with same quarter last year				
	Q3 2014	Q3 2015 (P)	Percentage change	Statistical significance of change	Traffic [1] percentage change
Killed	457	450	↓2%	ns	↑1.8%
KSI [2]	6,492	6,290	↓3%	ns	↑1.8%
Slightly injured	42,972	42,640	↓1%	ns	↑1.8%
All casualties	49,464	48,940	↓1%	ns	↑1.8%

P Provisional estimates
1 Motor traffic (excludes pedal cycles)
2 Killed or seriously injured
ns Not significant

Casualty rates

- In the year ending September 2015, fatalities and traffic levels rose by 2.8 per cent and 2.2 per cent respectively. As a result, the **fatality rate per billion vehicle miles** increased by a little over half a per cent.

- Total casualties decreased by around 3 per cent. When combined with the rising traffic volume the **overall casualty rate** per billion vehicle miles decreased by 5 per cent in the year ending September 2015.

- In comparison with the third quarter of 2014, fatalities decreased by 2 per cent, KSIs by 3 per cent, and slight and overall casualties both fell by 1 per cent in the period July to September 2015. Over the same period, traffic levels increased by 1.8 per cent. As a result, the **fatality rate** and the **overall casualty** rate per billion vehicle miles both fell by 3 per cent.

Road user type

Rolling year ending September 2015

- There was a decrease in KSI casualties for **each of the road user types** in the year ending September 2015.

- The largest decreases in KSI casualties were for **pedal cyclists** (5 per cent – down to 3,340) and **pedestrians** (4 per cent – down to 5,300).

2010-2014 average

Car occupant casualties in the year ending Sept 2015 compared with the 2010-2014 average:

KSI	↓ 5%
All casualties	↓ 6%

2010-2014 average

Pedestrian casualties in the year ending Sept 2015 compared to the 2010-2014 average:

KSI	↓ 7%
All casualties	↓ 4%

- **Motorcycle user** and **car occupant** KSI casualties both decreased by 3 per cent to 5,350 motorcyclists and 8,580 car occupants.

- **Child (aged 0-15)** KSI casualties decreased by 8 per cent to 1,900 in the year ending September 2015 and **child pedestrian** KSIs decreased by 6 per cent. Child casualties of all severities decreased by 5 per cent compared with the previous year to 15,940.

Table RAS45006: KSI casualties by road user type: GB, year ending September 2015

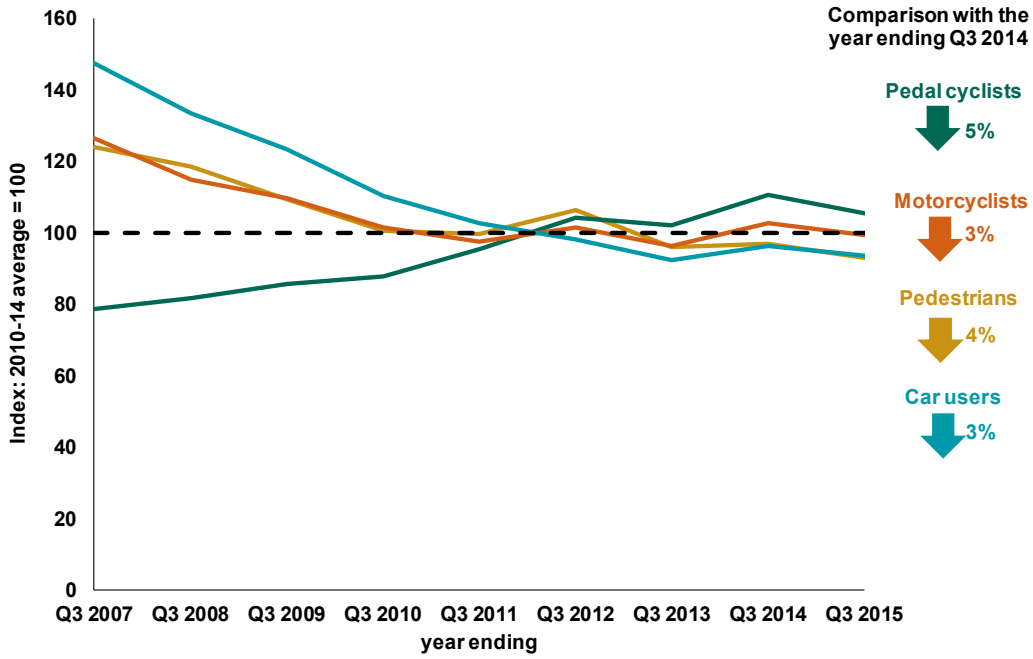
ROAD USER TYPE	Number/Percentage change compared with previous 12 months		
	Oct-13 to Sep-14	Oct-14 to Sep-15 (P)	Percentage change
	8,826	8,580	↓3%
	5,529	5,350	↓3%
	3,509	3,340	↓5%
	5,528	5,300	↓4%
All	24,464	23,700	↓3%

2010-2014 average

Motorcycle user casualties in the year ending Sept 2015 compared to the 2010-2014 average:

KSI	↓ 1%
All casualties	↑ 3%

Chart 2: Reported killed or seriously injured casualties by road user type, GB: rolling years ending Q3, 2007-2015



2010-2014 average

Pedal cyclist casualties in the year ending Sept 2015 compared to the 2010-2015 average:

KSI	↑ 4%
All casualties	↑ 1%

Figures for July to September 2015

- Aside from **car occupants**, KSI casualties decreased for **all road user groups** in the third quarter of 2015 compared with the same quarter of 2014.
- The greatest decrease was for **pedal cyclists**, which decreased by 10 per cent in comparison with the previous year.
- **Car occupant casualties** went against the overall trend, with a 2 per cent increase in KSI casualties and 3 per cent increase in overall casualties in comparison with July to September 2014.

2010-2014 average

Child (aged 0-15) casualties in the year ending Sept 2015 compared to the 2010-2014 average:

KSI	↓ 16%
All casualties	↓ 10%

- **Child KSI casualties** decreased by 10 per cent to 510 and **child casualties of all severities** decreased by 3 per cent in the third quarter of 2015. **Child pedestrian** KSI casualties decreased by 6 per cent to 320.

Road type

Rolling years ending September 2015

- Fatal accidents on **major roads (motorways and A roads)** increased by 2 per cent in the year ending September 2015. Fatal accidents on **minor roads (B, C and unclassified roads)** rose by 5 per cent over the same period.

- In contrast, the total number of fatal or serious accidents fell by 4 per cent on **major roads** and 2 per cent on **minor roads** between the years ending September 2014 and 2015.

- On roads with a speed limit over 40 mph (**non-built-up roads**) fatal accidents fell by 2 per cent, and fatal or serious accidents decreased by 4 per cent in the 12 months to September 2015. However, there was a 10 per cent increase in fatal accidents on roads with a speed limit of up to and including 40 mph (**built-up roads**).

Definitions

Built-up roads: Accidents on "built-up roads" are those which occur on roads with speed limits (ignoring temporary limits) of 40 mph or less.

Non built-up roads refer to speed limits over 40 mph.

Major roads: includes motorways and A roads.

Figures for July to September 2015

- Fatal or serious accidents on **major roads** and **minor roads** decreased by 4 and 2 per cent respectively in the third quarter of 2015.

- Whilst fatal accidents on **minor roads** decreased by 3 per cent in comparison with the third quarter of 2014, the number of fatal accidents on **major roads** increased by 7 per cent.

- Fatal accidents on **non-built-up roads** decreased by 9 per cent in the third quarter of 2015. However, fatal accidents on **built-up roads** increased by 14 per cent. Fatal or serious accidents on **non-built-up** and **built-up** roads decreased by 4 and 3 per cent respectively compared with the same quarter of 2014.

Tables

• Reported road accidents, by road type (estimates): Great Britain, rolling annual totals, updated quarterly, table RAS45009.

• Reported road accidents by road type (estimates): Great Britain, latest available quarter, table RAS45010.

Revisions to the provisional figures for January to June 2015

Although the provisional figures for previous quarters are always revised in latter publications, the revisions for the first two quarters are larger and more significant than usual. This is as a result of police forces provided more data on outstanding accidents from earlier in the year than had been expected. The key outcome of this is that there has been year-on-year increases in fatalities rather than the decreases originally published.

Uncertainty in the provisional estimates

As was noted earlier, the casualty estimates for the first two quarters of 2015 have been **revised upwards**. This is as a result of additional accident records being submitted by some police forces.

The provisional statistics are based on data supplied by police forces with some **imputation** to account for **months that are either missing entirely or for which more data are expected** later in the year. It has become apparent in the course of the year that more records have been supplied at a later date for some months for 2015 than were for 2014. This has resulted in the Department **underestimating** how many casualties there have been during the year.

The imputation is carried out by taking the ratio of returns received in time for last year's quarterly publication against the final totals for that month at the end of the year. For instance, in 2014 roughly 97 per cent of all accidents for the second quarter of the year had been submitted at the time of publishing the provisional figures for that quarter. Therefore we uprate the 2015 returns by 3.09 per cent to take into account the expected number of records yet to be submitted. The amount the figures are uprated by will be too low if there are significantly more than the expected 3 per cent of records missing. This is what has happened this year.

Assuming that delays in supplying data do not get worse, this problem should not be evident for the provisional 2016 figures. The 2016 estimates will be based on the proportion of 2015 data missing at the time of publication. Therefore we will assume that a higher proportion of accidents are missing from the data next year than we have done this year. There is, however, a risk that if the data supply performance returns to pre-2015 levels then the provisional 2016 estimates might overestimate casualty figures.

Data that are being received from the new CRASH system will help us to understand the scale of missing records as we can now tell how many outstanding records any police force using CRASH has for any given month. This will provide better uprating ratios that should improve the accuracy of the provisional estimates.

Definition

CRASH: Collision Recording and Sharing system. This is a new centralised system used by some police forces to record road traffic collisions.

To help deal with these problems in this publication we have imputed figures for whole months for more forces than usual. In particular we have been able to identify and remove months from forces using CRASH for which we have received significantly fewer records than are expected. This effectively means that we have ignored the underreported totals for certain forces, and instead based their estimate on last year's final figures

for the force and month. This figure is then adjusted by the overall changes in accidents recorded throughout Britain.

The effect of the uncertainty on the estimates

Now more complete records have been received for the first two quarters of the year, the **casualty estimates have been revised upwards**. These revisions have had the most substantial effect on **fatality numbers**. The two previous quarterly releases stated that casualties of all severities had reduced in comparison with the previous year. The latest data now shows that although the number of seriously injured and slightly injured casualties are still down in comparison with 2014 (albeit by less than originally thought), the **number of fatalities rose in the years ending March, June and September 2015**.

The current estimate for the year ending September 2015 in comparison with the previous 12 months indicates that there were **2.8 per cent more deaths**, 3.1 per cent fewer killed or seriously injured (KSI) casualties, and 2.5 per cent fewer slightly injured casualties.

Weather and other factors affecting the estimates

The weather across the UK as a whole during the third quarter of 2015 was fairly close to the long term average (LTA). Average temperatures were slightly below the LTA and rainfall was slightly higher than the LTA, however, neither factors deviated by enough to make much difference to casualty figures.

A similar story is true across the whole 12 months ending September 2015. Adjusting for weather effects results in an **insignificant decrease in fatalities** (down to 1,770 from 1,780), a **very small increase in KSI casualties** (up to 23,730 from 23,700), and **less than 0.25 per cent increase in slightly injured casualties**.

More significant, though, are the weather adjustments for the year ending September 2014. The better than average weather during those 12 months resulted in an estimated 3 per cent **more deaths** and 2.2 per cent **more KSI casualties** than might have been expected under average conditions.

Once these adjustments are made, as shown in Table 4, the **rise in fatalities increases** to 5.4 per cent. Nevertheless, this increase is still **not large enough to be statistically significant**.

Long term average (LTA)

The Met Office use 30 year averages for UK temperature and precipitation to assess changes in the latest temperature and precipitation data. Currently the 1981-2010 average is used for comparison: www.metoffice.gov.uk/climate/uk/summaries/2015/annual.

Weather data

Weather data is available from the Met Office here.

Table 4: Published and weather-adjusted casualties by severity, GB

	Fatalities		KSI		Slightly injured		Total casualties	
	Published	Weather-adjusted	Published	Weather-adjusted	Published	Weather-adjusted	Published	Weather-adjusted
Year ending Sep 2014	1,731	1,680	24,464	23,930	169,421	167,600	193,885	191,530
Year ending Sep 2015	1,780	1,770	23,700	23,730	165,120	165,510	188,830	189,240
Percentage change between years	*2.8%*	*5.4%*	*-3.1%*	*-0.8%*	*-2.5%*	*-1.2%*	*-2.6%*	*-1.2%*

The Shoreham air crash happened on the 22nd August 2015. The crash killed eleven people on the ground and injured a number of others, including the pilot. These casualties were a mixture of pedestrians and vehicle users. Following the accident a decision was made by Sussex Police, West Sussex County Council and the Department for Transport to **exclude any road casualties** from the statistics. The decision was based on the fact that this incident was **not as a result of a failure in road safety**. Instead the casualties will be **counted as part of aviation safety statistics** collated by the Civil Aviation Authority.

Outcomes for the end of 2015

Although there has been an increase in the number of fatalities in the 12 months ending September 2015, there are indications that there might end up being **fewer deaths** in 2015 than there were in 2014.

The reasons for this lie in the quarter-on-quarter comparisons. The fourth quarter of 2014 had a very high number of fatalities. With 514 deaths, this was the **highest number of fatalities in a single quarter** since 2009. A straight comparison between the first three quarters of 2014 and 2015 (i.e. just nine months, rather than a full 12 months) shows that the two years have an **almost identical number of fatalities** (around 1,260). Though there were almost 5 per cent fewer KSI casualties and 3.8 per cent fewer slightly injured casualties in 2015.

Therefore, the **fourth quarter** of 2015 is key to how the two years will compare. As noted above, the final quarter of 2014 had an unusually high number of fatalities. This was discussed in the Main Results: 2014 publication, and although we did not have definitive explanation for the phenomenon, we did note that an abnormal proportion of the deaths were pedestrians during that particular quarter. It seemed most likely that the underlying causes were a mixture of warmer than average temperatures and a quirk of natural variation.

The fourth quarter of 2015 was marked by two weather-related events, both interlinked. First, with an average UK temperature of 8.7°C, the quarter was the **warmest final quarter on record**, just over 2°C warmer than the long term average. However, those warm temperatures brought with them very moist air, which resulted in considerable rainfall across Britain. December, in particular, brought **severe rainstorms** to the country. With a total of 230mm of rain across the UK, December 2015 was the **wettest single month on record**, and had close to **double the long term average** for a December. November was also slightly above the long term average, though October was much drier than average.

The key outcome of the rainfall was extensive, and, in some parts, repeated, **flooding** across northern Britain. Flooding inevitably closes roads and discourages people from taking unnecessary (or even any) road trips. We would therefore hypothesise that the net effect of the precipitation and flooding during the latter part of the fourth quarter would have **led to fewer casualties than might otherwise have occurred**.

However, it is important to note that this is simply a **hypothesis rather than a forecast** of what the final figures will show. Other factors will also influence what happened. For instance, the warmer and drier weather in October and the very mild (though wet) November may have encouraged more pedestrians, motorcyclists and pedal cyclists to have used the roads, elevating the casualty numbers for these months. Similarly, the higher risk resulting from slippery and waterlogged roads in December could have offset the reductions from less travel. Given the complexity of the relationships between factors it is impossible to predict what the final figures for 2015 will be.

The other factor that is relevant is how **complete the data** used to create these statistics are. Although we have tried to make the estimates more robust in this quarter, there is still a **large number of forces with missing months' data**. In particular, we have no data for **Dorset** police from June onwards. The **Metropolitan Police Service** and **City of London Police*** have not yet supplied any data for September at all. The following forces have all supplied data for specific months, but we have omitted the figures as we have reason to believe that those months are particularly incomplete: **Staffordshire** (July to September), **Essex** (September), **West Midlands** (September) and **Kent** (September). Finally, only unvalidated data have been provided for the **Metropolitan Police Service** and **City of London** for August, a sub-section of **Kent** for July to September, and a sub-section of **Avon & Somerset** from March to September. All of this makes the **current estimates even more uncertain**: though it should be noted that once the gaps have been filled in it **could result in lower casualty estimates** rather than higher ones. There is also a risk that if any of these forces continue to have severe delays then we will have to postpone the publication of the 2015 final year statistics (scheduled for June).

Tables

• Reported road casualties by police force area, rolling annual totals, updated quarterly, table RAS45011.

In all, if the current estimates for the first three quarters of the year prove to be broadly correct, if there around **fewer than 515 deaths** in the final three months of 2015, there should be an **overall reduction** in comparison with 2014. As noted earlier, there has not been more than the 514 fatalities in Q4 2014 in a single quarter since 2009. But, also as noted earlier, the contrasting weather patterns and flooding during the final quarter of 2015 mean that any outcome is possible.

Strengths and weaknesses of the data

- The quarterly figures are based on estimates. No single quarter's figures should be taken in isolation as an indication of long-term trend, as there are seasonal fluctuations particularly in the smaller categories of road user. The 2015 Q3 results are based on complete (January to September 2015) figures provided by 37 police authorities (though four forces include at least one month of unvalidated data) with partial data for six authorities. Adjustments are made to take account of missing data. Table RAS45011 provides a list of which police authorities are included in these figures. As described in the document above, there is considerable uncertainty in the adjustments.

* In the original release Wiltshire Police were named as not supplying data for August. This was an error and Wiltshire have supplied data for the whole year to September.

- Comparison of road accident reports with death registrations shows that very few, if any, road accident fatalities are not reported to the police. However, it has long been known that a considerable proportion of non-fatal casualties are not known to the police, as hospital, survey and compensation claims data all indicate a higher number of casualties than suggested by police accident data.

- The data used as the basis for these statistics are therefore not a complete record of all personal injury road accidents, and this should be kept in mind when using and analysing the figures. However, police data on road accidents (STATS19), whilst not perfect, remain the most detailed, complete and reliable single source of information on road casualties covering the whole of Great Britain, in particular for monitoring trends over time.

- Following requests from users, we have started to include casualty rates in the quarterly release i.e. casualty rates per mile. They are based on provisional casualty and traffic estimates and are subject to revision at the end of the year.

- Provisional traffic estimates do not include pedal cycling estimates. We have attempted to adjust for this in the figures by adding in approximately 1% extra vehicle miles. This ratio is based on the relationship between all motor vehicle traffic and pedal cycle traffic for 2012 to 2014.

- Estimates are based on information reported to the Department for Transport 17 weeks after the end of the third quarter 2015. Figures are based on information available on 24 January 2016.

Further information...

A full list of the definitions used in this publication can be found here: www.gov.uk/government/uploads/system/uploads/attachment_data/file/462818/reported-road-casualties-gb-notes-definitions.pdf.

Further information on Reported Road Casualties Great Britain, including information about the variables collected on the STATS19 form, historical publications and factsheets, can be found at: www.gov.uk/government/publications/road-accidents-and-safety-statistics-guidance.

Background notes

- The Reported Road Casualties Great Britain Quarterly Provisional Estimates web page provides further detail of the key findings presented in this statistical release. The tables are available at: www.gov.uk/government/statistics/reported-road-casualties-in-great-britain-provisional-estimates-jul-to-sep-2015
- A note on methodology can be found at: www.gov.uk/government/publications/road-accidents-and-safety-statistics-guidance

- National Statistics are produced to high professional standards as set out in the Code of Practice for Official Statistics. They undergo quality assurance reviews to ensure that they meet customer needs. The first assessment report (report number 4) and letter confirming that the statistics have been designated as National Statistics are available at: www.statisticsauthority.gov.uk/assessment/assessment/assessment-reports/index.html. The statistics were reassessed during 2013 and the report, number 258, was published at the link above on the 25th July 2013.
- Details of Ministers and officials who receive pre-release access to these statistics up to 24 hours before release can be found here: www.gov.uk/government/publications/road-accident-and-safety-statistics-pre-release-access-list
- The latest annual road safety publication, Reported road casualties Great Britain: annual report 2014, is available at: www.gov.uk/government/statistics/reported-road-casualties-great-britain-annual-report-2014. Final figures for 2015 will be published in Main Results 2015, due in June 2016.

Next release

The next release of reported road casualty statistics, will be of the final 2015 figures. This will be published in June 2016.