



Department  
for Transport

## Travel time measures for local 'A' roads, England: 2016

**Average delay on local 'A' roads in England increased by 2.8% compared with the previous year.**

Average delay has continued to increase since the start of this series in 2014. However, the rate of increase has slowed over this period.



### About this release

This statistical release presents information about travel times on local highway authority managed 'A' roads in England.

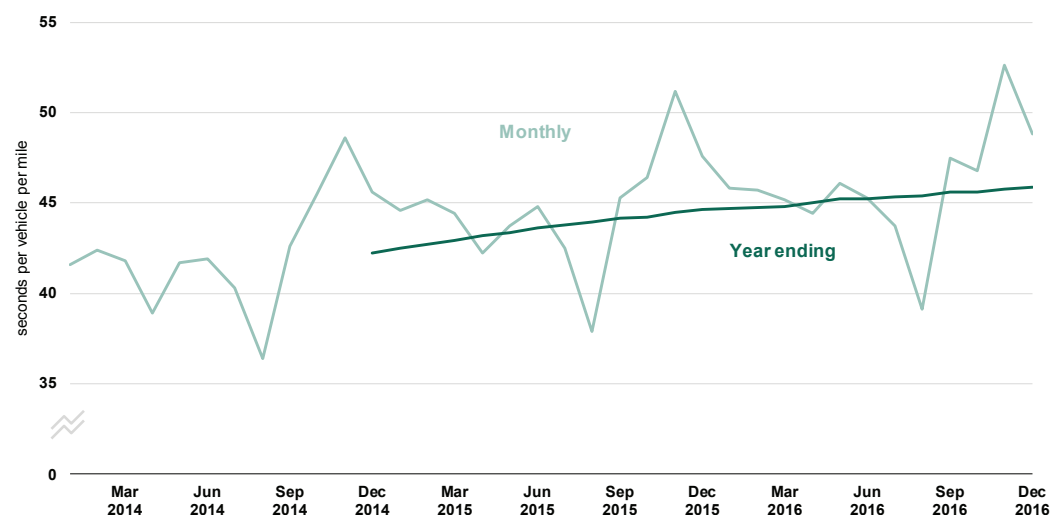
The travel times used to calculate the measures in this release are estimated using in-vehicle Global Positioning Systems (GPS) observations from a sample of fleet cars and light vans.

### In this publication



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**Figure 1: Average delay on local 'A' roads in England compared to free flow**  
(Table [CGN0502a](#))



### Key statistics

On local 'A' roads in England in 2016:

- The **average delay** is estimated to be **45.9 seconds per vehicle per mile** when compared to free flow, a **2.8% increase** compared to the previous year (2015).
- The **average speed** across all time periods in 2016 was **25.2 mph**, a **1.2% decrease** on the previous year.

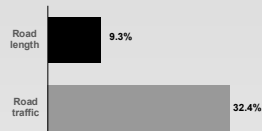
Average speeds have decreased steadily since the start of this series in 2014. Typically these decreases have been greater on urban classified roads than on rural roads, however in recent quarters the decreases have been greater on rural roads. Combining these statistics with similar statistics previously published suggests average weekday morning peak speeds have been falling steadily for the past 4 years.



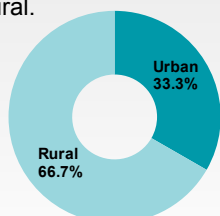
## Local 'A' road facts



The local 'A' road network accounts for around 9% of all English roads by length, but carries around a third of all traffic.



Almost one third of the English local 'A' road network is classified as urban with the remaining two-thirds classified as rural.



## Definition

DfT defines 'urban' roads to be those within a settlement of 10,000 people or more. This is consistent with the [Rural and Urban Area Classification 2004](#). All other roads are defined as 'rural'.

## Summary figures of average delay and speed on local 'A' roads

The summary table below (Figure 2) presents average delay and speed on local 'A' roads in England for specified time periods and by road type classification in 2016. The percentage change in average delays and speeds compared to the previous quarter (year ending September 2016) and last year (2015) is also shown.

**Figure 2: Summary of recent changes in average delay compared to free flow and average speed on local 'A' roads in England**

(Tables [CGN0501a](#) and [CGN0502a](#))

	Latest 2016	Last quarter change from Year ending September 2016	Last year change from 2015
<b>Average delay (seconds per vehicle per mile)</b>			
<b>All day (24 hour period)</b>	<b>45.9</b>	<b>⬆️ 0.6%</b>	<b>⬆️ 2.8%</b>
<b>Peak times</b>			
Weekday morning (7am-10am)	54.4	⬆️ 0.7%	⬆️ 2.3%
Weekday evening (4pm-7pm)	64.9	⬆️ 0.6%	⬆️ 2.9%
<b>Road classification</b>			
Urban roads	75.5	⬆️ 0.3%	⬆️ 2.1%
Rural roads	20.6	⬆️ 1.3%	⬆️ 4.3%
<b>Average speed (miles per hour)</b>			
<b>All day (24 hour period)</b>	<b>25.2</b>	<b>⬇️ -0.2%</b>	<b>⬇️ -1.2%</b>
<b>Peak times</b>			
Weekday morning (7am-10am)	23.8	⬇️ -0.3%	⬇️ -1.1%
Weekday evening (4pm-7pm)	22.2	⬇️ -0.3%	⬇️ -1.4%
<b>Road classification</b>			
Urban roads	18.5	⬇️ -0.1%	⬇️ -1.1%
Rural roads	36.5	⬇️ -0.3%	⬇️ -1.1%

## Introduction to average delay



Delay (or 'time lost') is calculated by subtracting derived 'free flow' travel times from observed travel times for individual road sections.

Average delay is calculated by aggregating delay estimates from individual road sections and weighting observations by associated traffic flows so that it is representative of traffic volumes on the roads.

## Free flow



Free flow travel times (used to calculate the average delay measure) are currently calculated using the 85th percentile speed observation, for each individual road section. These are 'capped' at national speed limits.

## Average delay on local 'A' roads

### National overview of average delay

The **average delay on local 'A' roads in England** across all time periods in **2016** is estimated to be **45.9 seconds per vehicle per mile (spvpm)** compared to free flow. This is a **2.8% increase** compared with 2015.

Over the two year period, between 2014 and 2016, average delay compared to free flow has increased by 8.6%. Over the same period, traffic on the 'A' road network in Great Britain is estimated to have increased by 3.8%.

Average delay is presented across all 24 hours of the day and on a per vehicle per mile basis. Average delay is commonly used as a measure of relative congestion as it takes account of different free flow speeds (often associated with different speed limits), allowing road sections to be compared more easily.

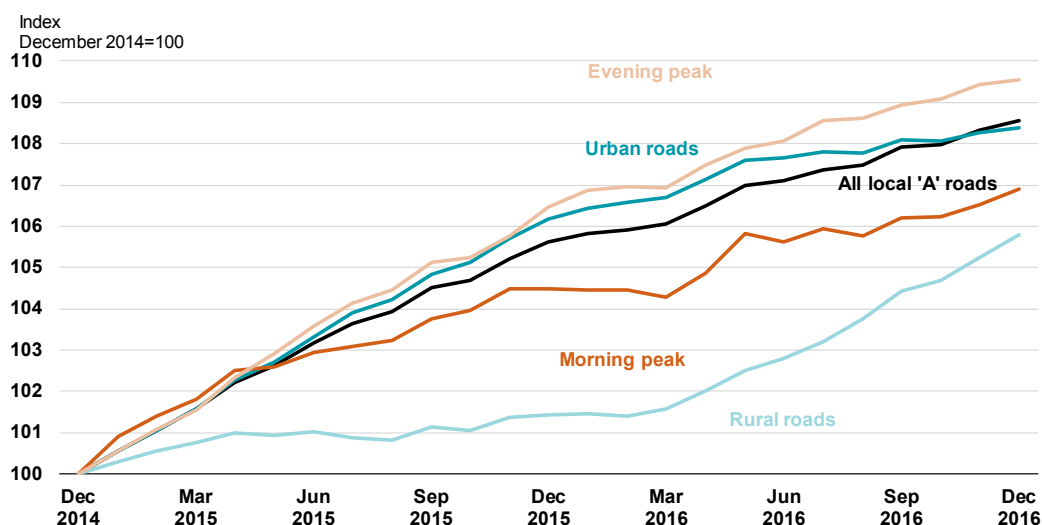
It is important to note that road users often do not expect to encounter free flow conditions (particularly during peak times) and consciously build in additional time for their journey based on their own experience. As a result, drivers may perceive delay relative to their expected (or average) journey time rather than free flow conditions.

### Average delay at peak times and in urban and rural areas

Average delay on local 'A' roads during the weekday morning peak (7am-10am) and the weekday evening peak (4pm-7pm) was 54.4 spvpm and 64.9 spvpm respectively compared to free flow in 2016 (see Figure 3).

**Figure 3: Average delay (indexed) on local 'A' roads in England: Rolling 12-month average from 2014**

(Table [CGN0502a](#))



## Geographical network

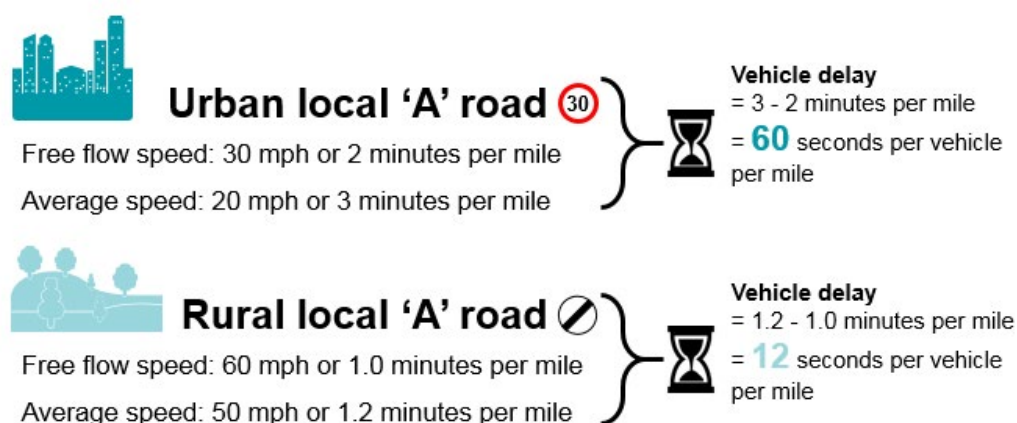


These travel time measures are based on data matched to the Ordnance Survey ITN mastermap representation of the local 'A' road network in England.

On urban classified local 'A' roads, average delay was 75.5 spvpm in the 2016, compared to 20.6 spvpm on rural classified local 'A' roads. Compared with two years ago (2014), this represents a rise in average delay of 8.4% on urban local 'A' roads and 5.8% on rural local 'A' roads (see Figure 3).

It is important to note that urban roads generally have lower free flow speeds than rural roads. As a result, a fixed absolute decrease in observed speeds will generally translate into a higher level of delay on urban roads relative to rural roads (see Figure 4).

**Figure 4: Illustrative example of average delay on urban and rural local 'A' roads**



## DfT's road congestion statistics



For further information, a concise [introduction to the Department's road congestion and travel time statistics](#) is available.

### Local highway authority overview of average delay

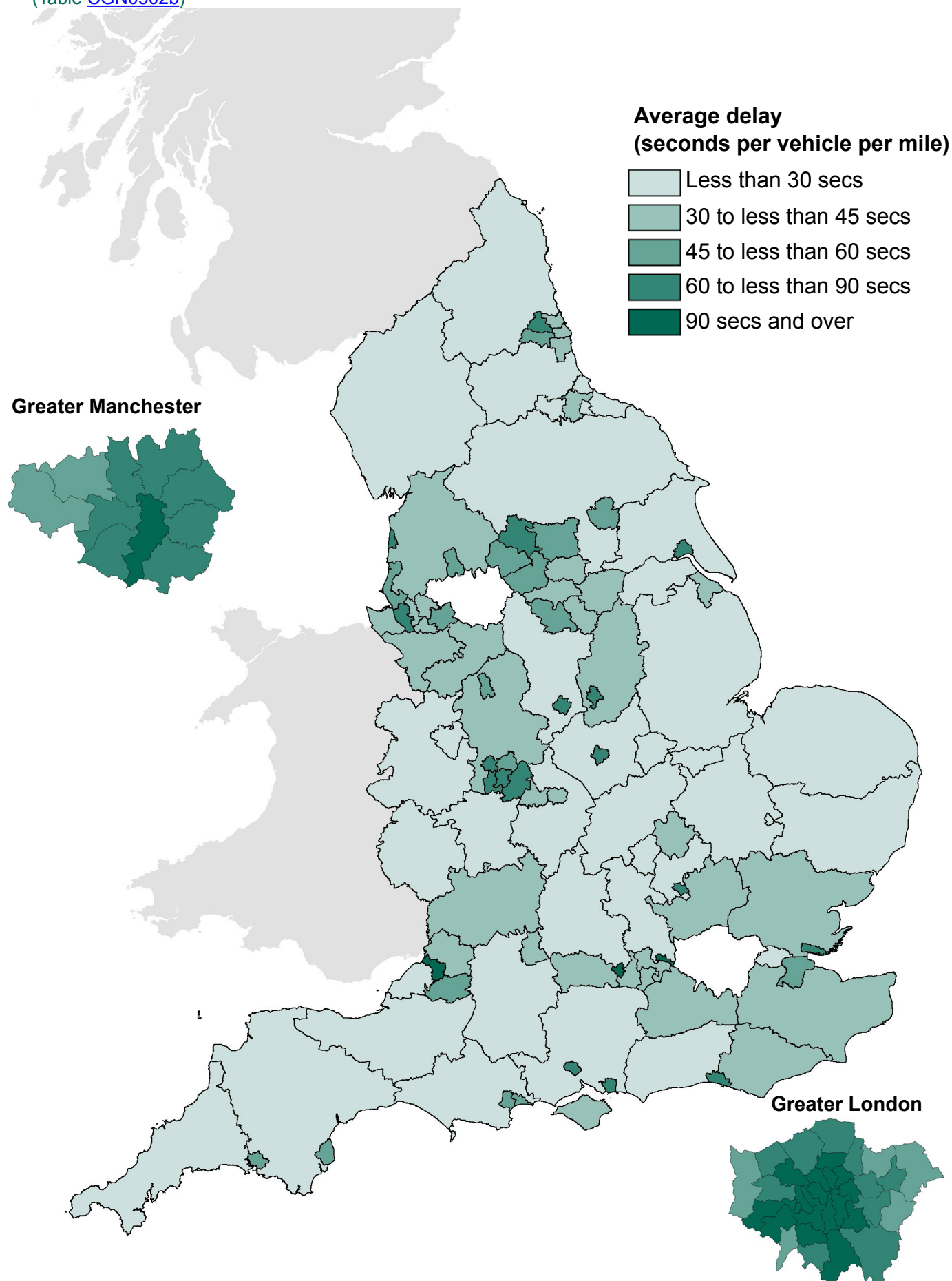
The **average delay on local 'A' roads in England** across 24 hours in **2016** in each local highway authority is shown in Figure 5. Overall, levels of average delay are generally higher in local highway authorities in and close to major urban centres e.g. London and Manchester.

The average delay for each local highway authority can be found in Table [CGN0502b](#).

Average delay has increased in each region in the last year. The average delay for each region can also be found in Table [CGN0502b](#).

**Figure 5: Average delay on local 'A' roads by local highway authority area in 2016**

(Table [CGN0502b](#))



## Introduction to average speed



This measure reflects the average speed of vehicles on local 'A' roads across the entire day (24 hour period).

The measure weights speed observations from a sample of vehicles by associated traffic flows so that it is representative of traffic volumes on the roads in different locations and at different times of day (as for average delay).

## Technical Note



The average delay and average speed figures presented in this release are calculated using travel time data from cars and light vans and across the entire local 'A' road network.

As such, it would not be appropriate to use these averages to represent 'typical' delays or speeds for any individual road section, time of day or vehicle class.

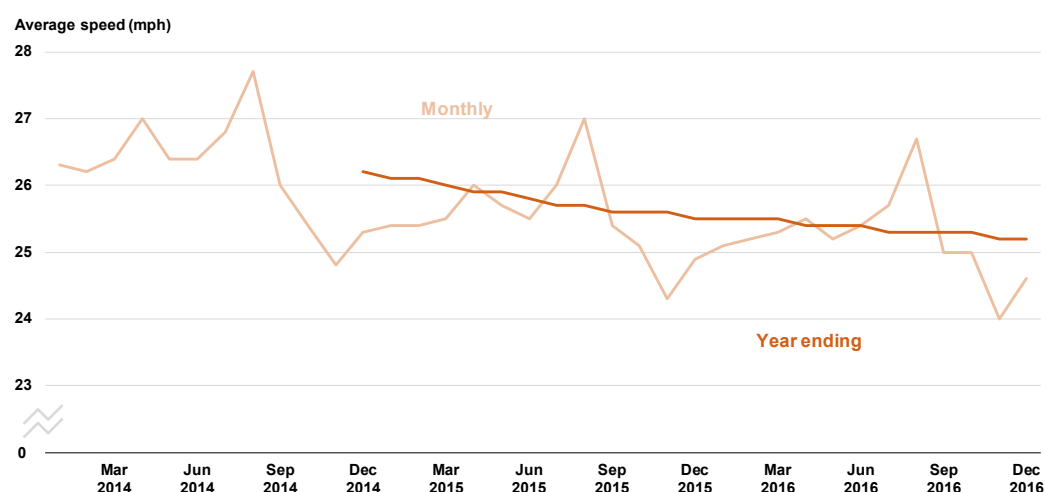
## Average speed on local 'A' roads

### National overview of average speed

The **average speed on local 'A' roads in England** across 24 hours in the **2016** is estimated to be **25.2 mph**. This is a **1.2% decrease** compared with the previous year.

**Figure 6: Average speed on local 'A' roads in England**

(Table [CGN0501a](#))



Between the start of this series in 2014 and 2016, average speeds (across the entire 24 hour period) have decreased by 3.8%.

### Average speed at peak times and in urban and rural areas

Average speeds on local 'A' roads during the weekday morning peak (7am-10am) and the weekday evening peak (4pm-7pm) were 23.8 mph and 22.2 mph respectively in 2016.

Since 2014, decreases in average speed have been observed during both the weekday morning peak (7am-10am) and the weekday evening peak (4pm-7pm). Combining these statistics with similar statistics previously published suggests that average weekday morning peak speeds have been falling steadily for the past 4 years.

On urban classified local 'A' roads, average speeds were 18.5 mph in 2016, compared to 36.5 mph on rural local 'A' roads. Comparing these figures to 2014, the decrease in average speeds has been greater on urban roads (4.3%) than rural roads (1.9%).

### Local authority overview of average speed

The **average speed on local 'A' roads in England** across 24 hours in each local highway authority and region as well as the latest percentage change compared to the previous year can be found in Table [CGN0501b](#).



### Related information



Information on traffic volume and flow used in weighting average speeds is available at:

[Road traffic statistics](#)

Attitudes on road congestion can be found in the British Social Attitudes Survey, which is available at: [British Social Attitudes Survey: 2015](#).

### Context and user feedback

The measures presented in this statistical release were developed to provide a more complete picture of travel times on local 'A' roads and also to align with measures recently introduced for the [Strategic Road Network](#) (motorways and 'A' roads managed by Highways England). This allows us to compare travel times on local and strategic roads more easily.

As a result of the feedback provided, we have published statistics at a local highway authority and regional levels. We will continue to review the content and presentation of these statistics, which we expect to develop further over time.

Please contact us using the details at the bottom of the front page with any feedback you have, or if you would like further information.

### Methodology and technical detail

1. Users should exercise some caution when interpreting the statistics in this paper, particularly when looking over short periods of time. Average delay and average speeds are likely to be affected by a range of factors such as traffic levels, weather, roadworks, or changes to speed limits.
2. The underlying datasets used to produce the statistics in this release are similar to those used for the previous [average speeds on local A roads during the weekday morning peak statistics](#). The data are based on travel times estimated using Global Positioning Systems (GPS) and traffic flows estimated using Department for Transport's traffic count information.
3. The statistics in this release use travel time information from car and light commercial vehicles (LCV) only. We have not included HGV travel time information due to low sample sizes. Over 100,000 cars and LCVs each month were used to calculate the measures. Measures are weighted by associated expected traffic flows to ensure that they represent traffic volumes on the roads in different locations and at different times of day.
4. All measures use real, observed travel time data with a good temporal match where available. Where there is insufficient data for individual road sections for a particular time period, travel times are imputed using corresponding monthly and hourly averages from individual road sections with similar road characteristics.
5. For the average delay measure, free flow travel times are derived by taking the 85th percentile speed across all car and LCV observations over a year, 'capped' to current national car speed limits (i.e. 60 mph for single carriageway and 70 mph for dual carriageway). As such, there may be cases where derived free flow speeds are greater than the legal speed limit on some road sections.



6. The Department for Transport publishes a separate statistics series on [free flow vehicle speeds](#) on roads in Great Britain. That series focusses more on the speeds at which drivers choose to travel and their compliance with speed limits. Free flow speeds presented in that release are calculated in a different way and using a different data source to the free flow speeds used in this release.

## National Statistics



National Statistics are produced to high professional standards set out in the National Statistics [Code of Practice](#). They undergo regular quality assurance reviews to ensure they meet customer needs.

Details of ministers and officials who receive pre-release access to these statistics up to 24 hours before release can be found [here](#).

7. Users should exercise caution when reviewing the statistics over short periods of time when temporary factors such as road works or bad weather may have had an impact on the measures reported. This is particularly important when interpreting the data for relatively small areas where a small change on one or two roads may have a relatively large effect on the overall speeds or delays presented. In addition, users should be cautious when comparing road travel time measure outputs reported for different local authorities or regions as a measure of the relative levels of congestion within these areas. Physical differences in the types of roads in these areas and their speed limits will also have a large bearing on travel times.

8. In addition to these travel time statistics, the Department also publishes [Journey Time statistics](#). These provide estimates of journey times to key local services (food stores, health care, education, town centres & employment centres) and to key strategic locations (e.g. transport hubs like major airports).

## Next update

The next release in this series is expected to be published in May 2017. This will contain monthly, and annual (year ending) figures, for the period April 2016 to March 2017. This will include new figures for the period January to March 2017.

## Department for Transport (DfT) statistics Twitter feed



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