



# Reliability of journeys on Highways Agency roads: England, October to December 2013

## Main findings: Reliability of journeys broadly stable over last 9 months

**77.8% of journeys on the Highways Agency's network were 'on time' in the year ending December 2013, 0.4 percentage points higher than the year ending September 2013.**

- Reliability was at its peak in the year ending March 2012 with 81.5% of journeys 'on time'. Reliability then fell for 12 consecutive months before stabilising from March 2013, followed by a small increase in December 2013.
- The recent stabilisation of reliability levels may relate to a combination of improved weather conditions, particularly less rain, and increases in traffic on motorways and rural 'A' roads, relative to the previous year.

**Percentage of journeys on Highways Agency roads that are 'on time': monthly and annual averages from 2010/11 (Table [CGN0104](#))**



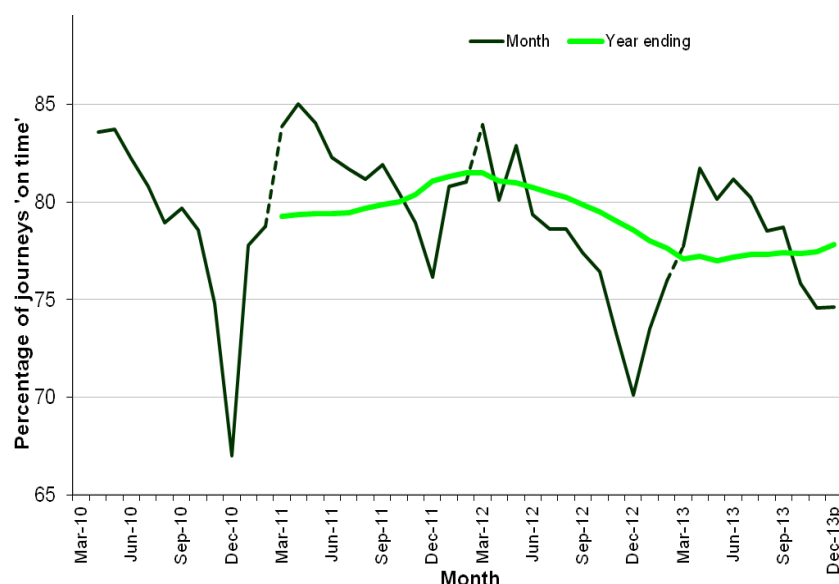
### What does 'on time' mean?

A 'journey' represents travel between adjacent junctions on the Highways Agency's network.

A 'journey' is 'on time' if it is completed within a set reference time, based on historic data on that particular section of road.

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## About this release

This statistical release presents information about the reliability of journeys on motorways and 'A' roads managed by the Highways Agency, known as the [strategic road network](#). The reliability of journeys on the Highways Agency's roads is measured by the percentage of 'journeys' that are 'on time', comparing journey times with historical data for individual sections of road, using data from in-vehicle Global Positioning Systems (GPS). This reliability measure is one of a number of indicators in the Department's [2012-2015 Business Plan](#).

## Further information:

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### Introduction

The Highways Agency's motorway and 'A' road network accounts for around 2% of all the roads in England, but carries around a third of all traffic.

The reliability of journeys on the Highways Agency's roads is a measure of how predictable journeys are on the network. For the statistics in this release, reliability is measured by the percentage of 'journeys' that are 'on time', where:

- A 'journey' represents travel between adjacent major junctions on the network.
- An 'on time journey' is defined as one which is completed within a set reference time, based on historic data on that particular section of road.

The data are based on journey times which are estimated using in-vehicle Global Positioning Systems (GPS) and traffic flows estimated using automatic traffic counters.

For further information, a useful introduction to the Department's congestion and reliability statistics, including the different measures, how they are published and the ways in which they are used is available here:

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/51125/An\\_introduction\\_into\\_the\\_Department\\_for\\_Transport\\_s\\_congestion\\_statistics.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/51125/An_introduction_into_the_Department_for_Transport_s_congestion_statistics.pdf)

### Latest statistics: Reliability broadly stable over last 9 months

77.8% of journeys on the Highways Agency managed network between January and December 2013 were 'on time'. This is a 0.4 percentage point increase on the year ending September 2013.

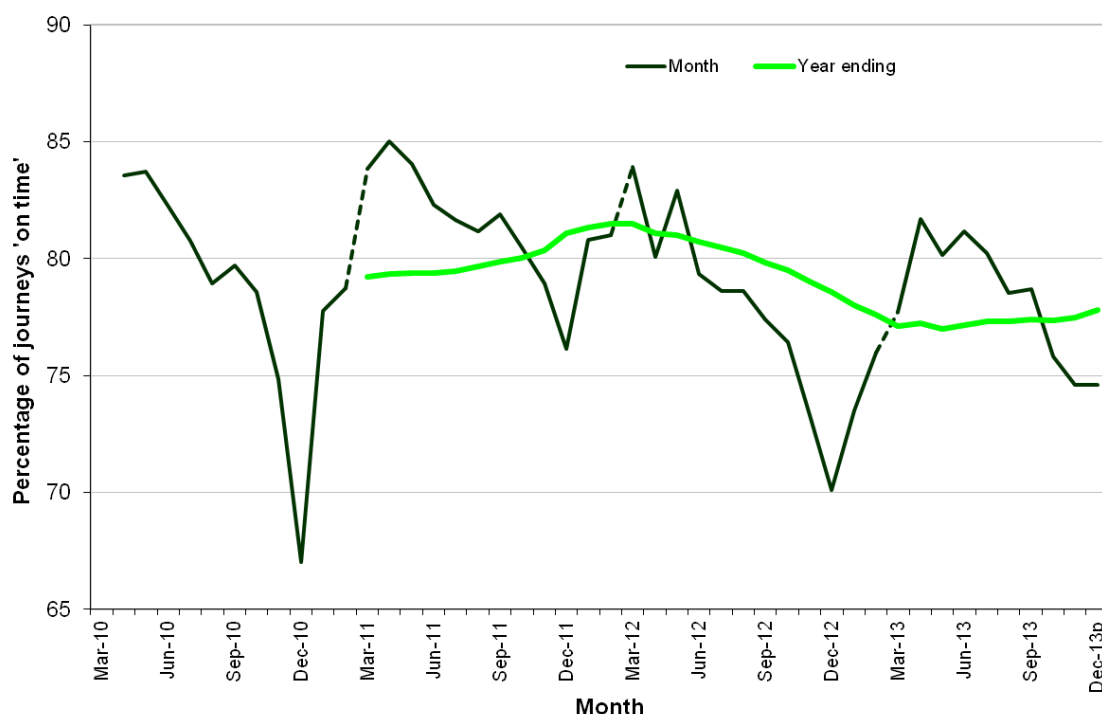
During the month of October 2013, the percentage of journeys 'on time' was 75.8% (down 0.6 percentage points from October 2012). In November 2013 it was 74.6% (up 1.3 percentage points from November 2012) and 74.6% during December 2013 (up 4.5 percentage points from December 2012).



The annual reliability measure (journeys on time) consistently increased from the year ending March 2011 up to March 2012, but decreased in each of the following twelve months to March 2013. The changes in reliability over this period are believed to be predominantly due to changes in rainfall and periods of heavy snowfall relative to the previous year.

The reliability measure has been broadly stable since the year ending March 2013, with a small increase in the year to December 2013. This relative stability is believed to relate to a combination of lower levels of rainfall (which in itself is likely to lead to improved reliability) and increases in traffic on motorways and rural 'A' roads (which may lead to lower levels of reliability), compared to the same months in the previous year.

## Percentage of journeys <sup>1</sup> on Highways Agency roads that are 'on time' <sup>2</sup>: monthly and annual averages from 2010/11 (Reliability web table [CGN0104](#))



1. 'Journeys' are defined as travel between adjacent junctions on the network.

2. An 'on time journey' is defined as one completed within a set reference time, based on historic data on that section of road.

3. Reference times are updated for the April data each year. Further information on the impact of updating reference times can be found in section 3 of this release.

4. Data to December 2012 were revised in March 2013 as a result of the implementation of planned methodology changes

p = provisional

[The footnotes above apply to all charts presented in this release.]

The reliability statistics for December 2013 are currently provisional while final checks on the raw data sources underpinning the statistics are carried out. They will be finalised in table [CGN0104](#) in March 2014, but are unlikely to change from the provisional estimates.

Further tables give further detail of the key results presented in this statistical release and statistics on other related topics. They are available here:

<https://www.gov.uk/government/organisations/department-for-transport/series/road-congestion-and-reliability-statistics#statistical-data-sets>

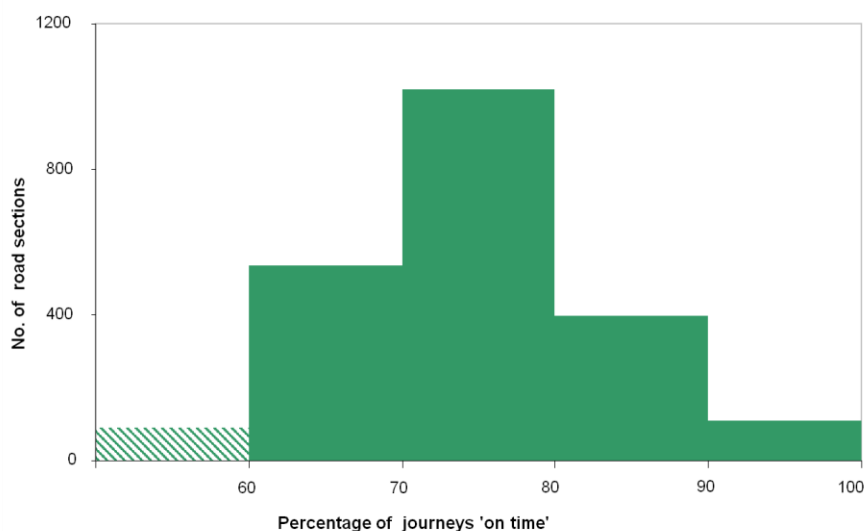
### Increase in vehicle fleet used to estimate journey times

For data in this quarter (i.e. data from October 2013), there has been an increase of around 25,000 vehicles in the fleet used to estimate journey times to produce the reliability statistics. The size of the vehicle fleet used has always changed from month to month, due to usage and sales, but the change in October was much larger than usual. Analysis of the additional vehicles was carried out before they were added, and showed that they are broadly representative of the pre-October 2013 fleet in terms of vehicle type and journey times. However, they have increased coverage (reducing imputation levels) and, consequently, improved the quality of the reliability statistics.

## Experimental Statistics: Reliability statistics for individual road sections

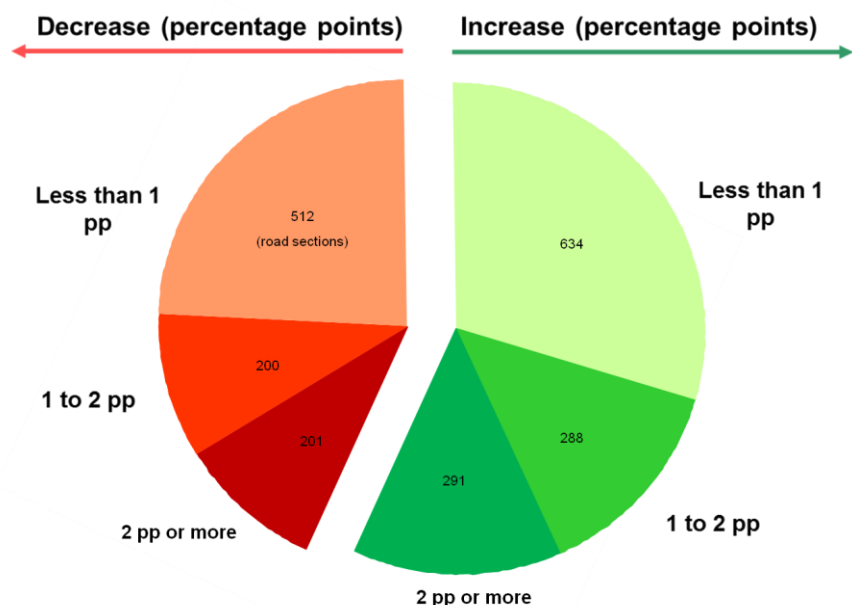
This section contains reliability statistics for individual road sections on the Highways Agency's network. These statistics are currently 'badged' as 'Experimental' and are undergoing evaluation. We are keen to receive feedback on the new statistics and supporting analyses for individual road sections presented below. This will help us determine their value and to inform whether the analyses are published in future releases. Please contact us using the details provided on the cover page of this release.

### Experimental Statistics: Percentage of journeys 'on time' for each road section on Highways roads: year ending December 2013<sup>p</sup>



The 'hashed' area of the chart represents the number of road sections where the percentage of journeys 'on time' was less than 60%. Road sections with insufficient data have been excluded.  
p = provisional

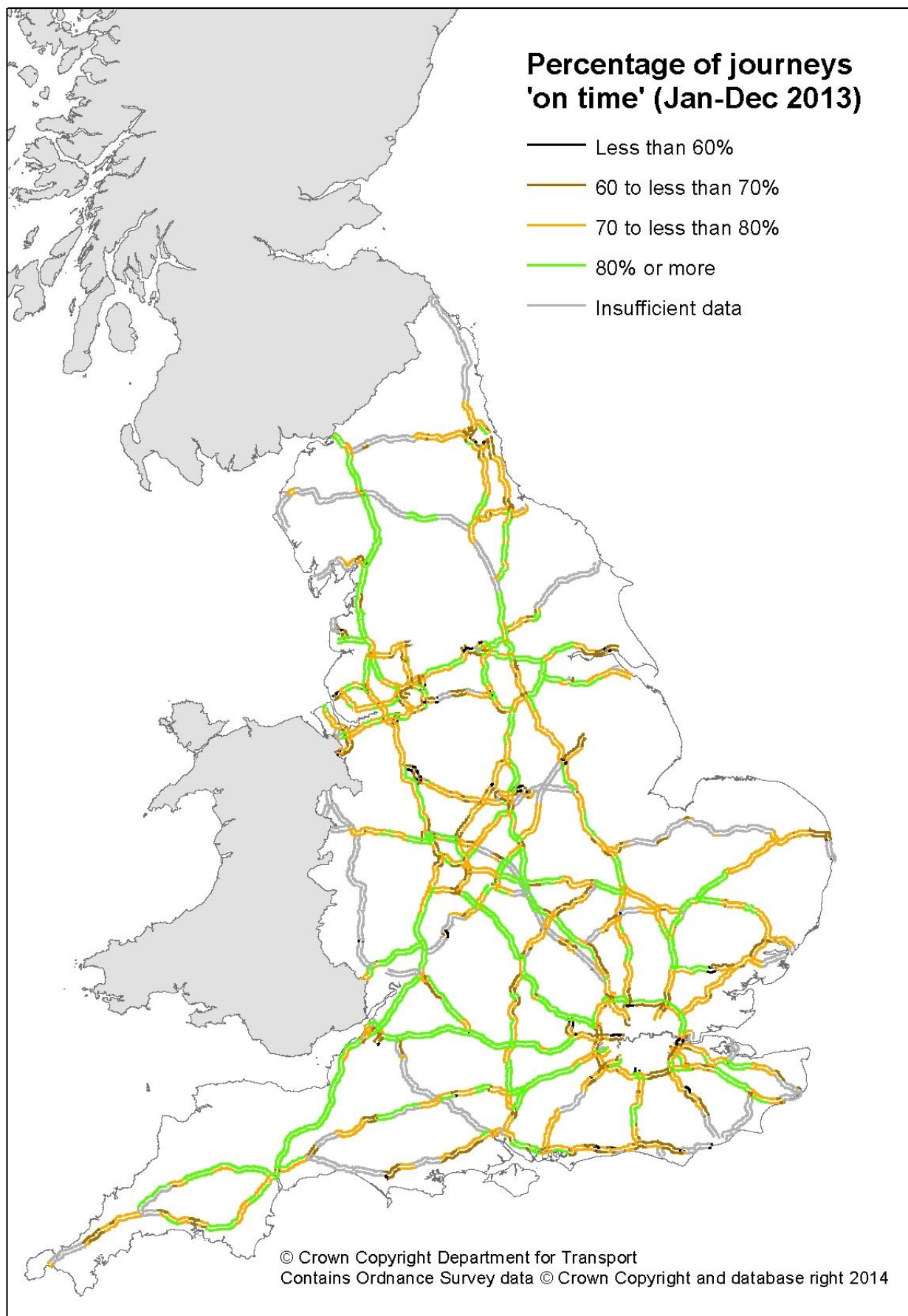
### Experimental Statistics: Percentage point change in journeys 'on time' for each road section on Highways Agency roads: from year ending September 2013 to year ending December 2013<sup>p</sup>



Road sections with insufficient data have been excluded.  
p = provisional

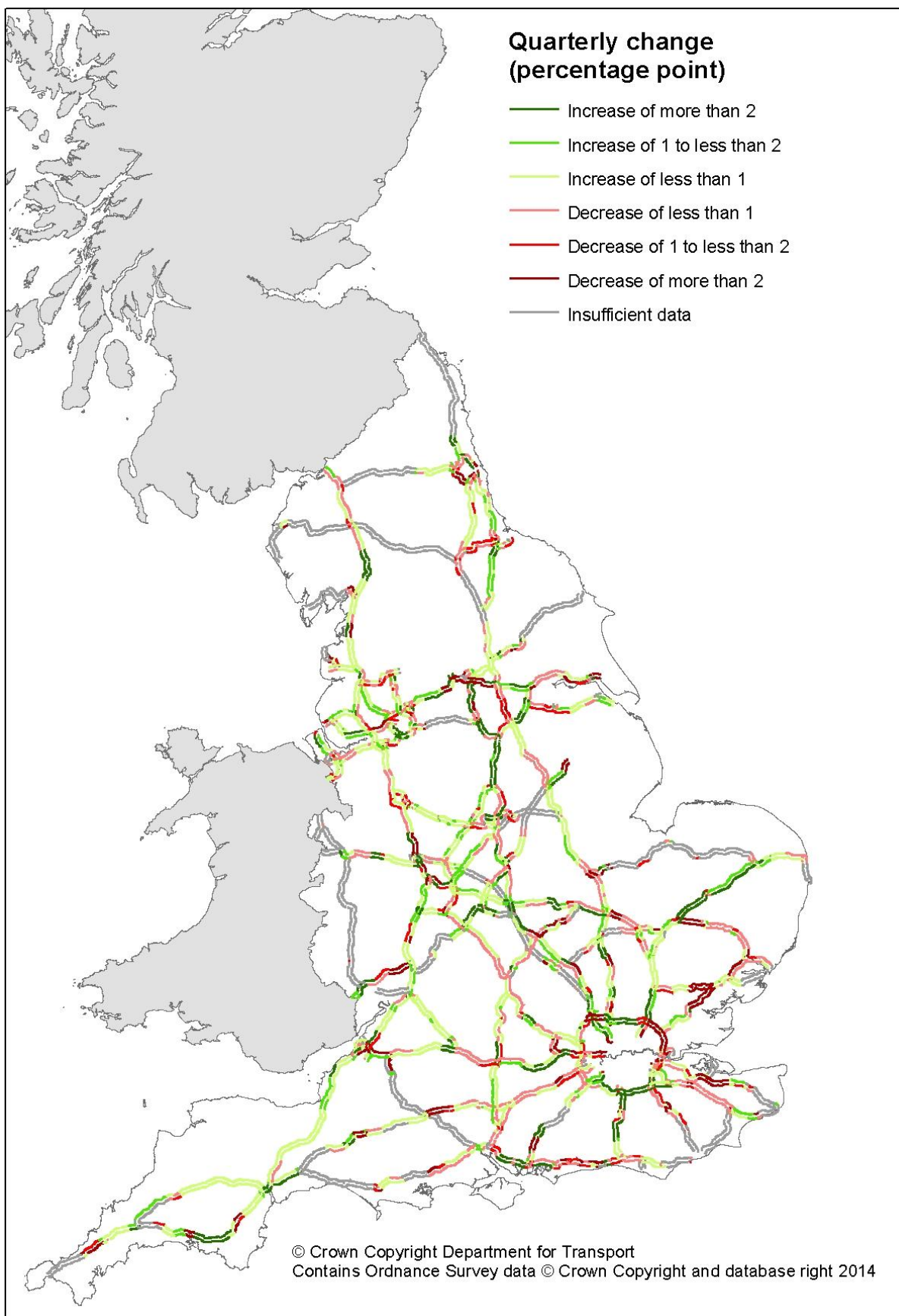


**Experimental Statistics: Percentage of journeys on Highways Agency roads that are 'on time': by individual road section, year ending December 2013<sup>p</sup>**



*Insufficient data* - Individual road sections where the level of national imputation is high or corresponding references are of poor quality.  
If you require a copy of this map in different colours please contact the congestion statistics team.  
p = provisional

**Experimental Statistics: Percentage point change in journeys 'on time' for each road section on Highways Agency roads: from year ending September 2013 to year ending December 2013 <sup>p</sup>**



*Insufficient data* - Individual road sections where the level of national imputation is high or corresponding references are of poor quality.  
If you require a copy of this map in different colours please contact the congestion statistics team.  
p = provisional

## Background information

### Strengths and weaknesses of the data

As a measure that is based on comparing current journey times on the network to road users' previous experiences on similar types and times of day, these statistics are very useful in monitoring how predictable journey times on the network are. However, they do not directly measure whether congestion, in a physical sense, has improved or deteriorated over time.

For example, journeys on a particular stretch of road could be very slow moving at certain times of the day with lots of congestion evident. However, if the effects of this congestion were fairly predictable and journey times were similar day to day, these journeys would be considered reliable. Similarly, journeys on another stretch of road could be fairly fast moving on average, but equally would be considered unreliable if conditions varied wildly from day to day, with some journeys experiencing very little congestion while others were affected severely.

### Methodology and technical detail

The statistics used to monitor journey time reliability on Highways Agency's motorway and 'A' road network are compiled from in-vehicle GPS data and from flows estimated using automatic traffic counters.

Real, observed, journey time data with a good temporal match are used to estimate reliability for each section of road. Where no data of this quality are available for a particular section of road or time period, reliability levels are imputed. Imputation is predominantly based on corresponding monthly day-time and night-time averages for individual sections of road. Where there are insufficient data for individual road sections, national day-time and night-time averages are used to impute reliability levels. A monthly breakdown of the amount of data requiring imputation is available at: <https://www.gov.uk/government/publications/road-traffic-speeds-and-congestion-statistics-guidance>

Reliability data for individual road sections are not published where the level of national imputation used in that estimate is greater than 20%, or where corresponding references are of very poor quality.

Reference journey times are updated annually for the start of each financial year and are predominantly based on journey time data from the previous calendar year. This ensures that reliability levels are measured relative to the latest conditions experienced on each part of the network. Differences observed when comparing reliability for months in different financial years will partly reflect a change relating to the updated references used. The impact of reference changes on the national reliability measure have previously been up to around +/- 1 percentage points for these (types of) comparisons. However, the impact of the recent reference update, used to estimate reliability from April 2013, is believed to be a greater change of around 1.6 percentage points in national performance. This will be due in part to the slightly slower reference journey times in 2012, resulting from the unusually wet weather that year.

The estimates of journey reliability for individual road sections may reflect the impact of a number of factors, including roadworks. Where the time and location of roadworks are published in advance at: <http://www.highways.gov.uk/traffic-information/traffic-information-services/scheduled-roadworks/> the estimated impact of those works will be taken into account in the reliability estimates provided.

The historic reliability data series to December 2012 was revised in the March 2013 release, as a result of planned methodology changes. Further information on these changes can be found at: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/230524/methodology-changes-qa-march-2013.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/230524/methodology-changes-qa-march-2013.pdf)

Full guidance on the methods used to compile the reliability statistics presented in this release can be found here:

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/230513/methodology-for-calculation-of-reliability-on-ha-network.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/230513/methodology-for-calculation-of-reliability-on-ha-network.pdf)

## National Statistics

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

<http://www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html>

In July 2012, the United Kingdom Statistics Authority confirmed the designation of the national level statistics in this publication as National Statistics, in accordance with the Statistics and Registration Service Act 2007 and signifying compliance with the Code of Practice for Official Statistics.

Details of ministers and officials who receive pre-release access to these statistics up to 24 hours before release can be found here:

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/230511/pre-release-list-traffic-congestion-reliability.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/230511/pre-release-list-traffic-congestion-reliability.pdf)

## Experimental Statistics

The statistics for individual road sections in this publication are labelled as *Experimental Statistics*. These new official statistics are labelled as *Experimental* so that users and stakeholders can be involved in their development at an early stage. It is accepted and expected that the quality of *Experimental Statistics* improves in the light of stakeholder use and feedback – to the point that they can be formally designated as National Statistics.

## Next Release

The next release of journey time reliability statistics will be published on 8 May 2014. It will contain provisional information about the reliability of journeys on the Highways Agency's motorway and 'A' road network in the year ending March 2014, as well as the final figures for January and February 2014. We will continue to update and publish our reliability statistics on a monthly basis. Provisional figures for January and February will be published in tables [CGN0104](#) and [CGN0106](#) on 13 March 2014 and 10 April 2014 respectively. These figures will be finalised the month following publication, but are unlikely to change from the provisional estimates.

## Request for feedback

We are always keen to receive feedback from users of transport statistics. If you have any comments about how the statistics in this release are presented or analysed, please contact us using the details listed on the first page of this release.