

Assessment of compliance with the Code of Practice for Official Statistics

Statistics on Road Reliability and Congestion

(produced by the Department for Transport)

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About the UK Statistics Authority

The UK Statistics Authority is an independent body operating at arm's length from government as a non-ministerial department, directly accountable to Parliament. It was established on 1 April 2008 by the *Statistics and Registration Service Act 2007*.

The Authority's overall objective is to promote and safeguard the production and publication of official statistics that serve the public good. It is also required to promote and safeguard the quality and comprehensiveness of official statistics, and good practice in relation to official statistics.

The Statistics Authority has two main functions:

1. oversight of the Office for National Statistics (ONS) – the executive office of the Authority;
2. independent scrutiny (monitoring and assessment) of all official statistics produced in the UK.

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ASSESSMENT AND DESIGNATION

The *Statistics and Registration Service Act 2007* gives the UK Statistics Authority a statutory power to assess sets of statistics against the *Code of Practice for Official Statistics*. Assessment will determine whether it is appropriate for the statistics to be designated as National Statistics.

Designation as National Statistics means that the statistics comply with the *Code of Practice*. The *Code* is wide-ranging. Designation can be interpreted to mean that the statistics: meet identified user needs; are produced, managed and disseminated to high standards; and are explained well.

Designation as National Statistics should not be interpreted to mean that the statistics are always correct. For example, whilst the *Code* requires statistics to be produced to a level of accuracy that meets users' needs, it also recognises that errors can occur – in which case it requires them to be corrected and publicised.

Assessment reports will not normally comment further on a set of statistics, for example on their validity as social or economic measures. However, reports may point to such questions if the Authority believes that further research would be desirable.

Assessment reports typically provide an overview of any noteworthy features of the methods used to produce the statistics, and will highlight substantial concerns about quality. Assessment reports also describe aspects of the ways in which the producer addresses the 'sound methods and assured quality' principle of the *Code*, but do not themselves constitute a review of the methods used to produce the statistics. However the *Code* requires producers to "seek to achieve continuous improvement in statistical processes by, for example, undertaking regular reviews".

The Authority may grant designation on condition that the producer body takes steps, within a stated timeframe, to fully meet the *Code's* requirements. This is to avoid public confusion and does not reduce the obligation to comply with the *Code*.

The Authority grants designation on the basis of three main sources of information:

- i. factual evidence and assurances by senior statisticians in the producer body;
- ii. the views of users who we contact, or who contact us, and;
- iii. our own review activity.

Should further information come to light subsequently which changes the Authority's analysis, it may withdraw the Assessment report and revise it as necessary.

It is a statutory requirement on the producer body to ensure that it continues to produce the set of statistics designated as National Statistics in compliance with the *Code of Practice*.

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1 Summary of findings

1.1 Introduction

- 1.1.1 This is one of a series of reports¹ prepared under the provisions of the *Statistics and Registration Service Act 2007*². The Act requires all statistics currently designated as National Statistics to be assessed against the *Code of Practice for Official Statistics*³. The report covers the set of statistics reported in *Reliability of journeys on Highways Agency's motorway and 'A' road network*⁴ (*Reliability Statistics*), produced by the Department for Transport (DfT).
- 1.1.2 The Act also allows departments to request an assessment of other official statistics in order for them to gain National Statistics status. In response to such a request, the report also covers the set of statistics on congestion reported in *Congestion on local authority managed 'A' roads*⁵ (*Congestion Statistics*).
- 1.1.3 Section 3 of this report adopts an 'exception reporting' approach – it includes text only to support the Requirements made to strengthen compliance with the *Code* and Suggestions made to improve confidence in the production, management and dissemination of these statistics. This abbreviated style of report reflects the Head of Assessment's consideration of aspects of risk and materiality⁶. The Assessment team nonetheless assessed compliance with all parts of the *Code of Practice* and has commented on all those where some remedial action is recommended.
- 1.1.4 This report was prepared by the Authority's Assessment team, and approved by the Board of the Statistics Authority on the advice of the Head of Assessment.

1.2 Decision concerning designation as National Statistics

- 1.2.1 The Statistics Authority judges that the statistics covered by this report are readily accessible, produced according to sound methods and managed impartially and objectively in the public interest, subject to any points for action in this report. The Statistics Authority confirms that the statistics published in *Reliability Statistics* are designated as National Statistics, subject to DfT implementing the enhancements listed in section 1.5, and has determined that the statistics published in *Congestion Statistics* can be designated as new National Statistics products, also subject to DfT implementing the enhancements listed in section 1.5, and reporting them to the Authority by June 2012.

¹ <http://www.statisticsauthority.gov.uk/assessment/assessment-reports/index.html>

² http://www.opsi.gov.uk/Acts/acts2007/pdf/ukpga_20070018_en.pdf

³ <http://www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html>

⁴ <http://www.dft.gov.uk/statistics/releases/reliability-of-journeys-on-highways-agencys-motorway-a-road-network-september-2011>

⁵ <http://www.dft.gov.uk/statistics/releases/congestion-on-local-authority-managed-a-roads-2010-11>

⁶ <http://www.statisticsauthority.gov.uk/assessment/assessment/guidance-about-assessment/criteria-for-deciding-upon-the-format-of-an-assessment-report.pdf>

1.2.2 DfT has informed the Assessment team that it has started to implement the Requirements listed in section 1.5. The Statistics Authority welcomes this.

1.3 Summary of strengths and weaknesses

1.3.1 The statistics team has contact with the main users of congestion statistics through two user groups, as well as regular meetings with users in DfT and the Highways Agency. The statistical releases are designed to meet the specific needs of the users in local government and DfT. The statistics are supported by detailed information about the methods used to produce them. However the average speed and journey reliability measures have not been related to the broader concept of 'congestion'. The measures cover roads managed by specific authorities and do not measure the congestion for all types of road in England.

1.4 Detailed recommendations

1.4.1 The Assessment team identified some areas where it felt that DfT could strengthen its compliance with the *Code*. Those which the Assessment team considers essential to enable designation as National Statistics are listed in section 1.5. Other suggestions, which would improve the statistics and the service provided to users but which are not formally required for their designation, are listed at annex 1.

1.5 Requirements for designation as National Statistics

| | |
|----------------------|---|
| Requirement 1 | Publish information about the uses made of <i>Congestion Statistics</i> and <i>Reliability Statistics</i> and users' experiences of the statistics (para 3.1). |
| Requirement 2 | Indicate the reason for scheduled revisions in <i>Reliability Statistics</i> (para 3.2). |
| Requirement 3 | Improve the commentary in the releases so that it aids user interpretation of the statistics (para 3.3). |
| Requirement 4 | Publish a definition of congestion and demonstrate how the different concepts of average speed and journey reliability can be related to it, to aid user interpretation of the statistics (para 3.4). |

2 Subject of the assessment

- 2.1 The Department for Transport (DfT) publishes statistics about Road Reliability and Congestion in two series: *Reliability of journeys on Highways Agency's motorway and 'A' road network (Reliability Statistics)*, and *Congestion on local authority managed 'A' roads (Congestion Statistics)*. Reliability of journeys is one of ten performance measures against which the Highways Agency (HA)⁷ reports in its *Annual Report*⁸ and is also one of the performance measures in DfT's *Business Plan 2011-15*⁹.
- 2.2 *Reliability Statistics* replaced DfT's previous publication *Congestion on Inter-Urban Roads*¹⁰ in June 2011. However, the publication was suspended soon afterwards due to data quality problems¹¹, before resuming as a monthly publication in November 2011.
- 2.3 *Reliability Statistics* presents the proportion of 'journeys' that are 'on-time' on HA-managed roads. A journey reflects travel between two adjacent motorway or 'A' road junctions (a 'link'). DfT defines an on-time journey as one that is completed within a set reference time, which has been determined based on historic data for the particular stretch of road and time period. Reference times allow for various factors, including roadworks and day types (such as working days and school holidays), and are detailed in a methodology note that accompanies the release¹².
- 2.4 *Reliability Statistics* is derived from Highways Agency Traffic Information System (HATRIS)¹³ which contains data from: automatic number plate recognition (ANPR) cameras, in-vehicle GPS and inductive loops built into the road surface (measuring the time taken to cross the two sensors). Not all of these sources are available on every part of the network and each source has its own biases. Some links use different sources over time, so that the data can't be compared between months. At a national, cross network, level, however, the source-mix is considered to be fairly consistent so DfT views the trends reported in *Reliability Statistics* as being sufficiently robust. DfT has validated these trends against those produced if only GPS data (the largest single source) were used in isolation on every link. HA and DfT have a development project underway to further investigate sub-national comparability, with the aim of making *Reliability Statistics* available by type of road, route and junction-to-junction link.

⁷ HA is an executive agency of DfT; it is responsible for the strategic road network in England, comprised of motorways and all-purpose trunk roads (the major 'A' roads). Other 'A' roads in England are managed by local authorities (LAs).

⁸ http://www.highways.gov.uk/aboutus/documents/04_Reliability_of_journeys.pdf

⁹ <http://www.dft.gov.uk/publications/dft-business-plan-indicators-impact-01/>

¹⁰

<http://webarchive.nationalarchives.gov.uk/20110507043012/dft.gov.uk/pgr/statistics/datatablespublications/roads/congestion/>

¹¹ *Reliability* was removed from DfT's website soon after publication when HA identified that the underlying data for one stretch of road had been incorrectly calibrated. The problem was found to be more extensive on investigation and led to the further delay in republishing the statistics.

¹² Methodology for calculation of reliability: <http://www.dft.gov.uk/statistics/series/congestion-and-reliability/>

¹³ <http://www.hatris.co.uk/index.php>

- 2.5 *Congestion Statistics* was first published in November 2010 and is released quarterly. *Congestion Statistics* presents monthly statistics on the average speed achieved by vehicles on 'A' roads managed by LAs, measured during the weekday morning peak (7-10am), when congestion is expected to be at its worst. The statistics are classed as provisional until they are finalised and published alongside annual estimates in November each year. The statistics are based on GPS location reports from around 70,000 probe vehicles. Location report data are purchased by DfT from Trafficmaster.
- 2.6 The main users of *Congestion Statistics* are LAs, which use them for monitoring the levels of road congestion in their local areas. DfT also provides LAs with the raw GPS data for their areas, purchased from Trafficmaster. DfT provide LAs with the associated metadata and database code that are used to derive the published statistics from the raw datasets. This also allows the calculation of average speeds outside the weekday morning peak. The main users of *Reliability Statistics* are staff in DfT and HA responsible for developing and monitoring policy relating to the road network. The journey reliability statistics are also used to measure progress against an impact indicator in DfT¹⁴ and HA's¹⁵ business plans. DfT reports progress on the indicator to HM Treasury quarterly.
- 2.7 DfT told us that the staff cost of producing *Congestion Statistics* and *Reliability Statistics* is £40,000 per annum. This amount does not include the cost of purchasing the journey time dataset

¹⁴ <http://www.dft.gov.uk/publications/dft-business-plan-indicators-impact-01/>

¹⁵ http://www.highways.gov.uk/aboutus/documents/04_Reliability_of_journeys.pdf

3 Assessment findings

- 3.1 DfT consulted users in advance of the introduction of its new *Congestion Statistics* bulletin. It contacted users in local government traffic management units directly, as well as users in the Central and Local (Government) Information Partnership – Transport Statistics (CLIP-TS)¹⁶ and the Transport Statistics User Group¹⁷. The minutes for these groups are published on their websites. As part of the designation as National Statistics, DfT should publish information about the uses made of *Congestion Statistics* and *Reliability Statistics* and users' experiences of the statistics¹⁸ (Requirement 1). We suggest that DfT identify users beyond those it regularly works with, and document their statistical needs and their wishes in terms of engagement. A number of users told us that they use the detailed data underlying *Congestion Statistics* to compile their own statistics, such as average speeds for other time periods (than the morning 'peak'). We suggest that DfT identify the types of analysis sought by users and consider whether they would be suitable for inclusion in *Congestion Statistics*.
- 3.2 DfT presents the latest information in both releases as provisional. It includes a table in *Congestion Statistics* which indicates the percentage difference between the provisional and revised statistics. Following advice from the Assessment team, DfT included information about the extent of change in the LA statistics for *Congestion Statistics*, and for the HA managed roads in *Reliability Statistics*. However, DfT doesn't give the reason for revisions in *Reliability Statistics*. As part of the designation as National Statistics, DfT should indicate the reasons for scheduled revisions in *Reliability Statistics*¹⁹ (Requirement 2).
- 3.3 The statistics are supported by detailed information²⁰ about methods, and tables which provide information about the quality of the statistics. The releases have brief commentary that describes the main findings, illustrated by charts, and with some contextual information. However:
- the releases don't relate the measures of average speed and journey reliability to the wider concept of congestion;
 - they do not explain clearly the proportion of roads that are HA or LA-managed or the proportion of road use that they account for;
 - they present statistics for selected roads, determined by the authority responsible for the road management, but do not describe congestion at a national level; and
 - it is not made sufficiently clear in *Congestion Statistics* whether the statistics include August, as the notes indicate that the data exclude school holiday periods but the regional chart refers to quarters ending August.

¹⁶ <http://www.clip.local.gov.uk/lgv/core/page.do?pagelId=31640>

¹⁷ <http://www.tsug.org.uk/>

¹⁸ In relation to Principle 1, Practices 2 and 5 of the *Code of Practice*

¹⁹ In relation to Principle 2, Practice 6 of the *Code of Practice*

²⁰ <http://www.dft.gov.uk/statistics/series/congestion-and-reliability/>

As part of the designation as National Statistics, DfT should improve the commentary in the releases so that it aids user interpretation of the statistics²¹ (Requirement 3). We suggest that in meeting this requirement DfT should consider the points detailed in annex 2.

- 3.4 The statistics use different concepts to present aspects of congestion for roads managed by LAs, on the one hand, and the HA, on the other – making comparison difficult. As part of the designation as National Statistics, DfT should publish a definition of congestion and demonstrate how the different concepts of average speed and journey reliability can be related to it, to aid user interpretation of the statistics²² (Requirement 4). We suggest that in meeting this requirement DfT produce a commentary that sets out other factors (such as roadworks and bad weather) that can impact on ‘congestion’. We further suggest that DfT produce national-level estimates of congestion for ‘A’ roads managed by both HA and LAs.

²¹ In relation to Principle 8, Practices 2, 3 and 4 of the *Code of Practice*

²² In relation to Principle 8, Practices 1, 2, 3 and 4 of the *Code of Practice*

Annex 1: Suggestions for improvement

A1.1 This annex includes some suggestions for improvement to DfT’s congestion statistics, in the interest of the public good. These are not formally required for designation, but the Assessment team considers that their implementation will improve public confidence in the production, management and dissemination of official statistics.

- | | |
|---------------------|--|
| Suggestion 1 | Identify users beyond those regularly worked with, document their statistical needs, and their wishes in terms of engagement (para 3.1). |
| Suggestion 2 | Identify the types of analysis sought by users and consider whether they would be suitable for inclusion in <i>Congestion Statistics</i> (para 3.1). |
| Suggestion 3 | Consider the points detailed in annex 2, in seeking to improve the statistical releases (para 3.3). |
| Suggestion 4 | Produce a commentary that sets out other factors (such as roadworks and bad weather) that can impact on congestion (para 3.4). |
| Suggestion 5 | Produce national-level estimates of congestion for ‘A’ roads managed by both HA and LAs (para 3.4). |

Annex 2: Compliance with Standards for Statistical Releases

A2.1 In October 2010, the Statistics Authority issued a statement on *Standards for Statistical Releases*²³. Whilst this is not part of the *Code of Practice for Official Statistics*, the Authority regards it as advice that will promote both understanding and compliance with the *Code*. In relation to *Congestion Statistics* and *Reliability Statistics*, this annex comments on compliance with the statement on standards.

A2.2 In implementing any Requirements of this report (at paragraph 1.5) which relate to the content of statistical releases, we encourage the producer body to apply the standards as fully as possible.

Appropriate identification of the statistics being released

A2.3 The titles of the releases make clear the time period covered but do not state the geographic coverage. The releases also do not make clear that they are published quarterly. The title, *Congestion on local authority managed 'A' roads*, doesn't accurately reflect the statistics given in the release; the statistics measure average speeds rather than congestion.

A2.4 The releases clearly show the responsible department. *Congestion Statistics* is published as Official Statistics; *Reliability Statistics* was published as National Statistics. The name and contact information for the responsible statistician is given at the beginning of both releases.

A2.5 The releases set out the information provided and the sources used.

Include commentary that is helpful to the non-expert and presents the main messages in plain English

A2.6 The commentary in both releases is brief but straightforward, with definitions of the main statistics given. Both releases give the headline results on the first page. They could explain more clearly that the annual period examined is a calendar year.

A2.7 *Congestion Statistics* describes the patterns in the average speed but doesn't relate the concept of 'congestion' to these statistics. This release gives the figures for 'A' roads managed by LAs and gives links to additional tables on DfT's website for 'A' roads managed by Transport for London. It is not made clear why the statistics don't include the 'A' roads managed by HA and the relationship with *Reliability Statistics*.

A2.8 *Reliability Statistics* gives figures that include the 'A' roads managed by HA. The releases don't explain the differences between these and other roads and how these might impact the statistics. They don't give the proportion of roads that are managed by each agency and any details about other roads not covered by the statistics.

A2.9 *Reliability Statistics* measures the percentage of journeys on roads managed by HA that are on-time compared with a reference period. 'Reliability' is not a

²³ <http://www.statisticsauthority.gov.uk/news/standards-for-statistical-releases.html>

clear term for this concept and requires explanation for it to be understood. A journey represents travel between two adjacent junctions on the HA motorway and 'A' road network. This is explained within the release.

A2.10 The releases include charts to illustrate the main findings, over time and for *Congestion Statistics*, by region.

Use language that is impartial, objective and professionally sound

A2.11 The statistics are described in an impartial way. The comparisons are professionally sound.

Include information about the context and likely uses

A2.12 *Congestion Statistics* highlights some factors that might have impacted upon the trend and provides links to further information about traffic volume and flow, road conditions, and public attitudes to road congestion and to transport, although these could be expanded upon in the main body of the report. *Reliability Statistics* doesn't highlight the factors mentioned in *Congestion Statistics* or say whether or not the reasons also affect journey reliability.

A2.13 The releases don't set out the main uses of the statistics although a separate background document describes the uses within local government of *Congestion Statistics* and in DfT and HA of *Reliability Statistics*. It's not clear if there are wider interests in the statistics by users in the commercial or voluntary sectors.

A2.14 *Reliability Statistics* says that the statistics are used to monitor an impact indicator in DfT's business plan. It doesn't state the indicator or provide a link.

Include, or link to, appropriate metadata

A2.15 Both releases are accompanied by detailed information about methods and some explanation about the data sources. These descriptions include information about the completeness of the data, imputation of missing values and the calculation of the weighted and unweighted average speeds and the journey reliability measure.

A2.16 Information is not given about whether equivalent statistics exist for the rest of the UK. Statistics are given for local areas and regions for *Congestion Statistics*. DfT gives a brief explanation about the lack of journey reliability statistics at a local level but it doesn't make sufficiently clear the nature of these limitations in the data sources. The release includes a link to information about journey time reliability at a sub-national level based published by HA.

Annex 3: Summary of assessment process and users' views

A3.1 This assessment was conducted from November 2011 to January 2012.

A3.2 The Assessment team – Penny Babb and Neil Wilson – agreed the scope of and timetable for this assessment with representatives of DfT in November. The Assessment team met DfT during December to collate evidence to support the assessment of compliance with the *Code of Practice*, taking account of the written evidence provided and other relevant sources of evidence.

Summary of users contacted, and issues raised

A3.3 Part of the assessment process involves our consideration of the views of users. We approach some known and potential users of the set of statistics, and we invite comments via an open note on the Authority's website. This process is not a statistical survey, but it enables us to gain some insights about the extent to which the statistics meet users' needs and the extent to which users feel that the producers of those statistics engage with them. We are aware that responses from users may not be representative of wider views, and we take account of this in the way that we prepare assessment reports.

A3.4 The Assessment team received 20 responses from the user consultation. The respondents were grouped as follows:

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|------------------|----|
| DfT | 1 |
| Highways Agency | 2 |
| Local government | 17 |

A3.5 The users in local government use *Congestion Statistics* to monitor the traffic patterns on the roads in their area and to inform local transport policies. A number of them reported using the raw Trafficmaster data to examine the patterns at times other than the morning peaks. The users were generally content with the presentation and accessibility of the statistics and with the metadata. Some users said that they would like statistics for other time periods and during holiday times.

A3.6 The users of *Reliability Statistics* said that the statistics meet their needs. They suggested that there may be a need for further commentary. The local government users were interested in using *Reliability Statistics* but need sub-national information.

A3.7 The users were satisfied with their engagement with the producer team.

