

Section 1: Roads, Vehicles and Congestion

Introduction

This section presents trends in the use of the road system, road condition, congestion and levels of expenditure on roads, together with information about public attitudes to congestion. It also covers trends in numbers of vehicles, car ownership and driving licences.

Road traffic in Great Britain has grown by 87 per cent since 1980, although it grew less since 1990 than in the 1980s. Many factors have affected traffic levels, including fuel prices, economic growth and an increase in car ownership and number of drivers. Nearly a third of households now have access to two or more cars, more than the proportion of households without access to a car. Men are still more likely to have a driving licence but the proportion of women holding a licence has been increasing at a faster rate.

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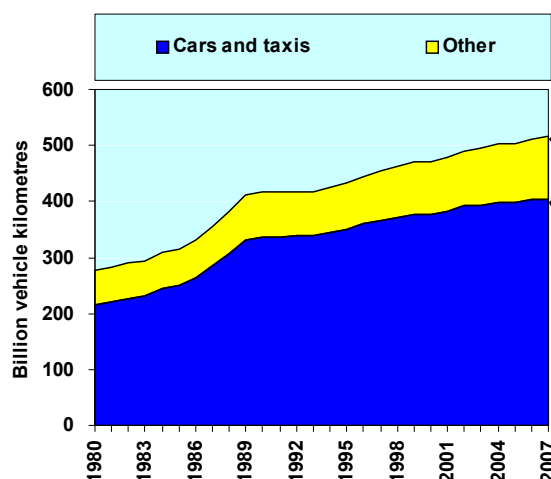
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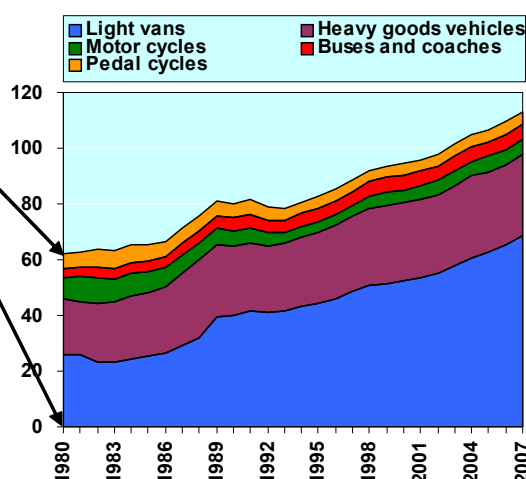
Road Traffic, Speed and Congestion

1.1 Road traffic

Trend 1.1a – Road traffic by mode: cars and other modes: 1980 to 2007, Great Britain



Trend 1.1b – Road traffic by modes other than car: 1980 to 2007, Great Britain

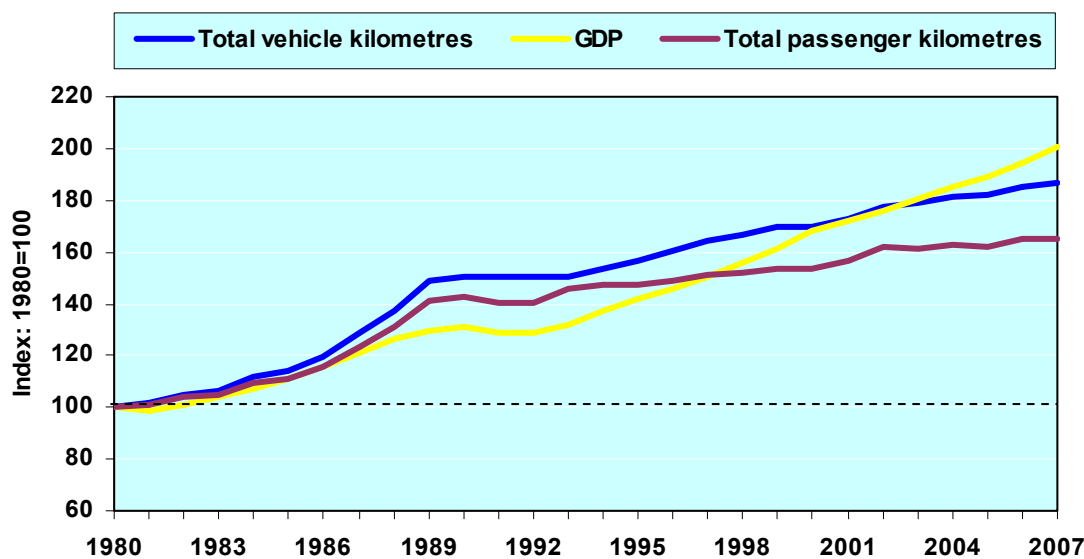


Source: Department for Transport

- Total road traffic increased by 87 per cent between 1980 and 2007, from 277 to 517 billion vehicle kilometres. Most of this growth occurred between 1980 and 1990; since 1990 traffic has increased by almost a quarter.
- The majority of the growth has been in car traffic, which has risen by 88 per cent since 1980, from 215 to 404 billion vehicle kilometres. Car traffic grew sharply in the 1980s, but has risen more slowly since. Car traffic increased between 2006 and 2007 by 1.5 billion vehicle kilometres.
- Light van traffic has increased more than two and a half times since 1980, from 26 to 68 billion vehicle kilometres. The distance travelled by heavy goods vehicles has also increased, from 20 to 29 billion vehicle kilometres, a rise of 49 per cent since 1980.
- Bus and coach traffic increased by 57 per cent between 1980 and 2007, from 3.5 to 5.5 billion vehicle kilometres. Motorcycle traffic halved between 1980 and 1995, but then increased by nearly a half between 1995 and 2007. Pedal cycle traffic grew in the early 1980s but fell by 37 per cent between 1984 and 1993, and then remained steady at 4 billion vehicle kilometres per year between 1993 and 1999. In 2007 it was 4¼ billion vehicle kilometres per year.

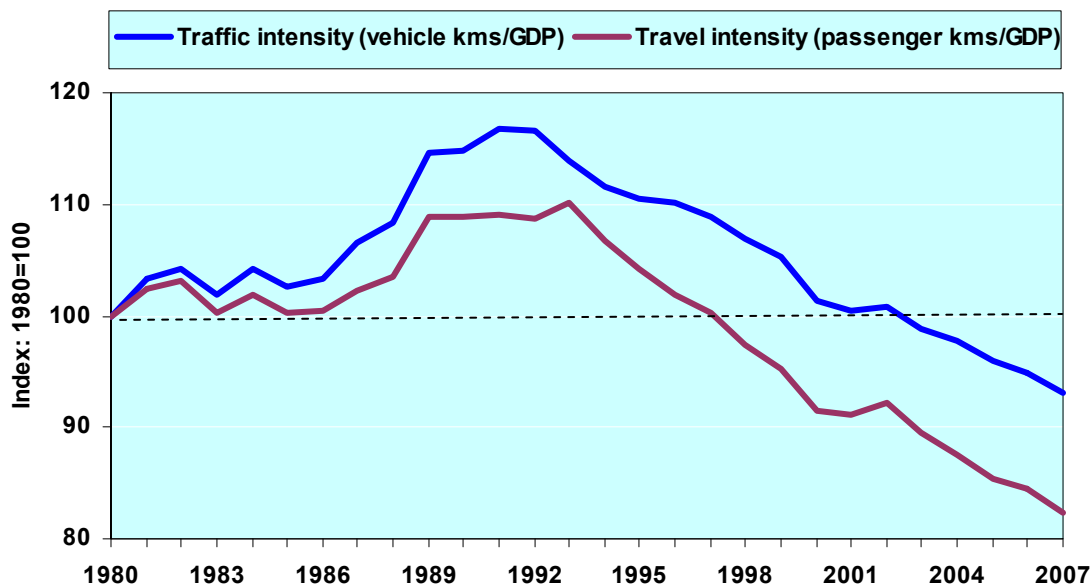
1.2 Road traffic and travel intensity

Trend 1.2a – Road traffic, passenger kilometres and GDP: 1980 to 2007, Great Britain



Source: Department for Transport and Office for National Statistics

Trend 1.2b – Road traffic and travel intensity: 1980 to 2007, Great Britain



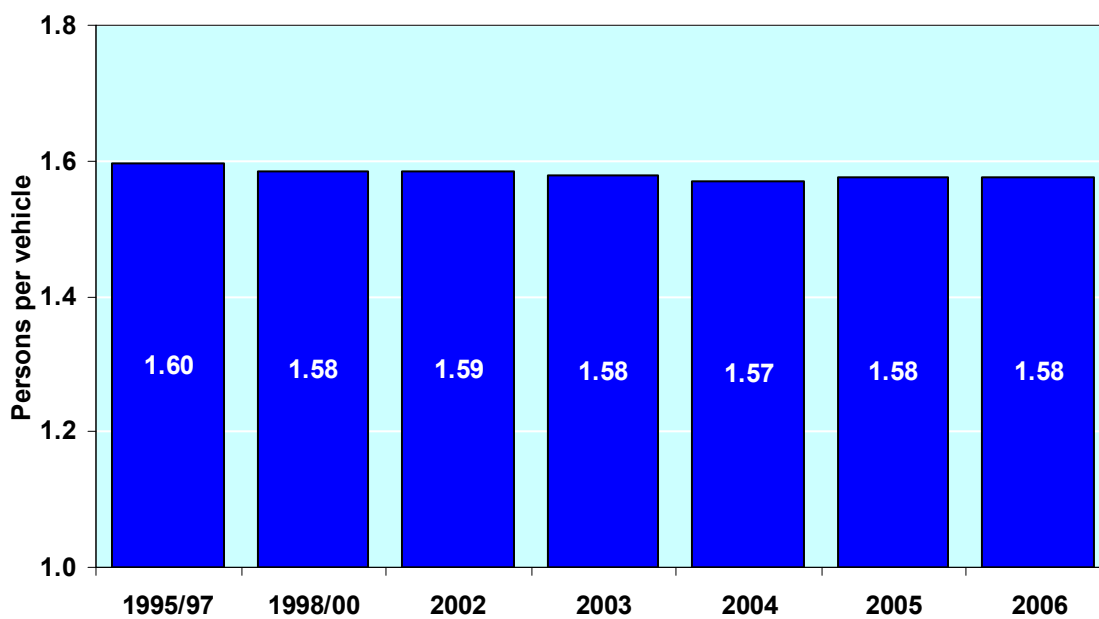
Source: Department for Transport and Office for National Statistics

- The challenge in achieving sustainable development is to ensure continuing economic growth while reducing adverse environmental and social impacts. Measures of traffic and travel intensity illustrate the extent to which economic growth and traffic growth have been decoupled. The comparison here is with gross domestic product (GDP), a measure of the size of the economy.

- Between 1980 and 1992, traffic (measured in vehicle kilometres) and overall travel (measured in passenger kilometres) grew at a faster rate than GDP. Since 1992, GDP has increased by 55 per cent compared with rises in road traffic and overall travel of 24 per cent and 18 per cent respectively.
- The traffic and travel intensity chart shows these relative changes more clearly; since 1992 there has been some decoupling of traffic and travel growth from economic growth.

1.3 Car occupancy

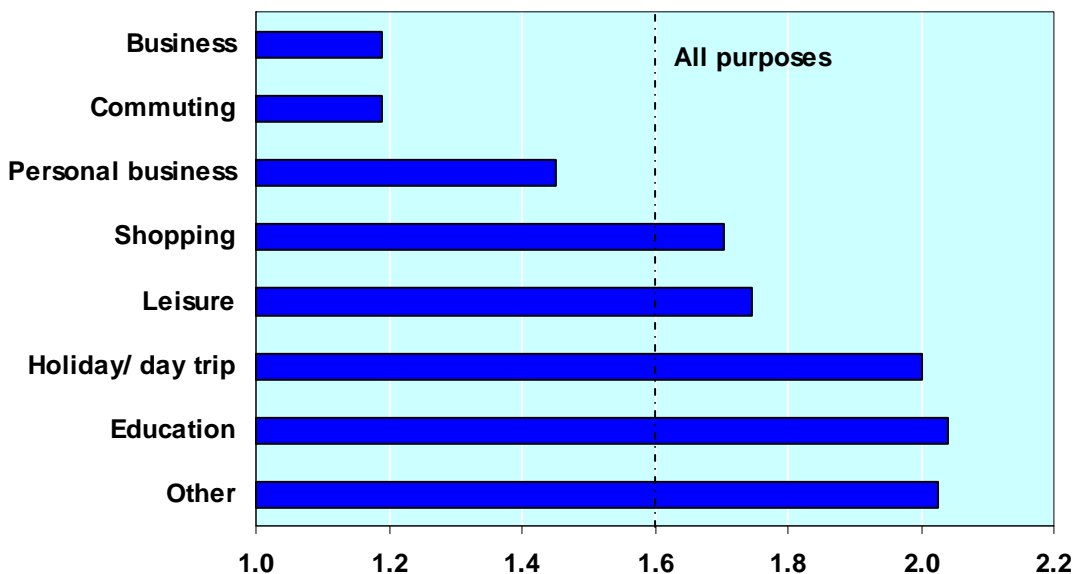
Trend 1.3a – Average car occupancy: 1995/97 to 2006, Great Britain



Source: Department for Transport

- The average number of occupants per car has fallen slightly, from 1.60 in 1995/97 to 1.58 in 2006.
- In 2006, 60 per cent of cars on the road had only one occupant. 85 per cent of both commuting and business car trips had only the one occupant.

Trend 1.3b – Average car occupancy by trip purpose: 2006, Great Britain



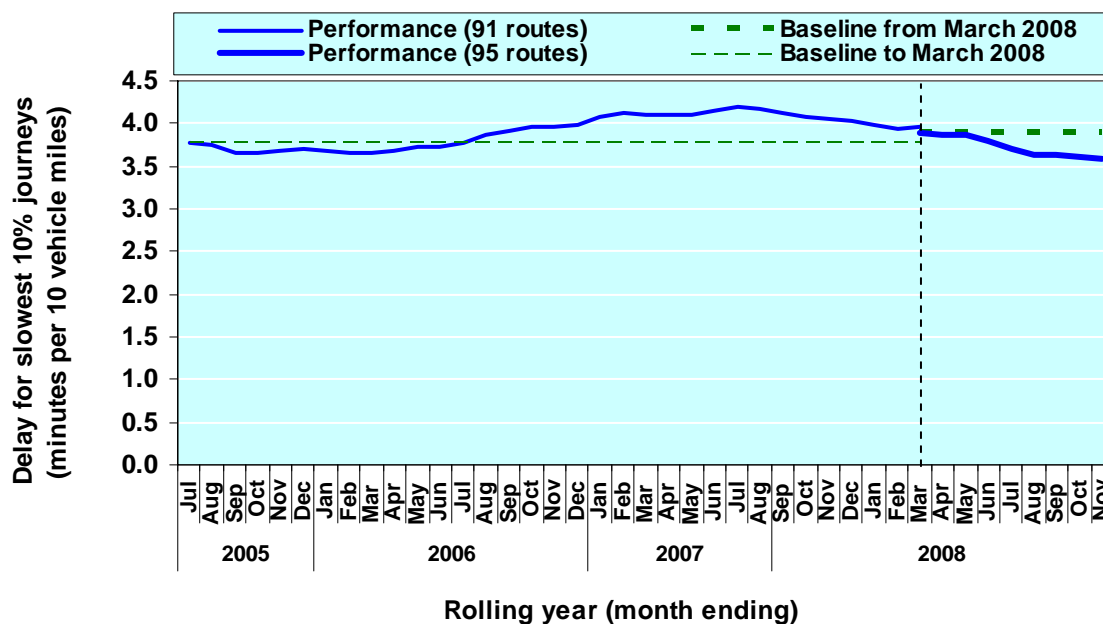
Source: Department for Transport

- Car occupancy varies according to the purpose of the trip. The highest occupancy rates in 2006 were for holiday/day trips and education (2.0 persons per car). The lowest rates were for commuting and business travel (1.2 persons per car).

Average Congestion and Speed

1.4 Congestion

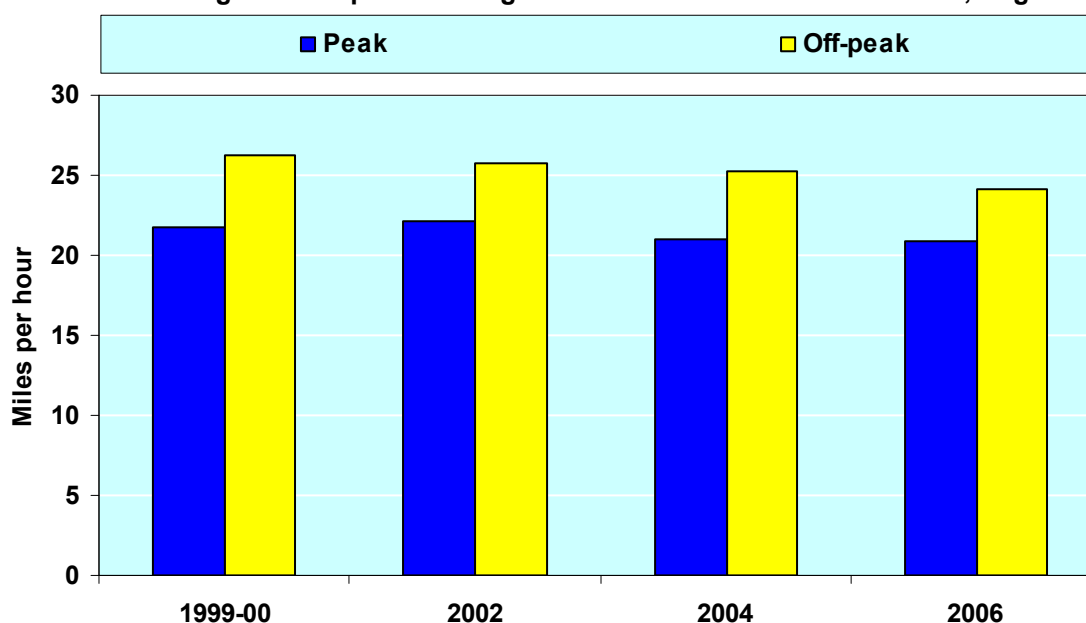
Trend 1.4a – Journey time reliability measure for the Strategic Road Network, England



Source: Department for Transport
The data in this chart are outside the scope of National Statistics

- The Strategic Road Network (SRN) in England consists of all motorways and trunk ‘A’ roads managed by the Highways Agency, as well as the M6 Toll. Congestion for these purposes is defined as the average vehicle delay in minutes per 10 miles (derived from the differences between observed journey times and a reference journey time) experienced on the slowest 10% of journeys for each monitored route. Chart 1.4a shows the monthly trend on a rolling 12 month basis.
- Provisional figures for the year ending November 2008 show that average vehicle delay on the slowest 10% of journeys fell to 3.58 from 3.90 minutes per 10 miles since the year ending March 2008, a decrease of 8.1 per cent. This covers a period of 8 months and represents an annual decrease of 11.9 per cent.
- The Government has a Public Service Agreement (PSA) to deliver reliable and efficient transport networks that support economic growth. One of the four indicators used to measure success against this PSA is reliability, measured using average vehicle delay on the SRN’s slowest 10% of journeys. The baseline is the year ending March 2008, and the measure will be monitored for the period up to the year ending March 2011. Reliability performance will be assessed in the context of an expected increase in traffic of 1-2% per year. There is no specific numerical target.
- For the Spending Review 2004, there was a PSA target that the average vehicle delay on the SRN’s slowest 10% of journeys should be less in the year ending March 2008 than in the baseline period August 2004 – July 2005.
- Improvements in data quality have allowed an additional five routes to be included for the year ending March 2008 onwards, but recent deterioration of data on one route (M1 J6a-13) has led to it being temporarily excluded. As a result the total number of routes included has been increased from 91 to 95 routes for the year ending March 2008 onwards. There is now a small discontinuity with earlier periods.

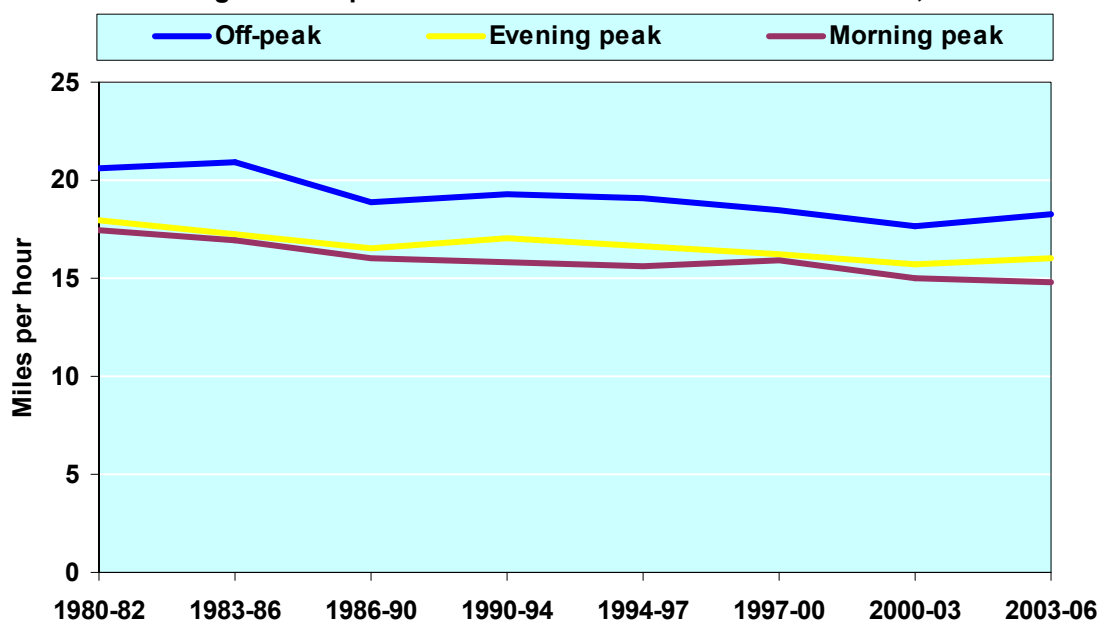
Trend 1.4b – Average traffic speeds in English urban areas: 1999-2000 to 2006, England



Source: Department for Transport
 The data in this chart are outside the scope of National Statistics

- Since 1993, the Department for Transport has been running traffic speed surveys for urban areas in England. These surveys covered major roads in the 18 largest urban areas in England outside London. Results from the surveys are based on data collected on weekdays and not during school holidays.
- Comparisons of average speeds over time are made using road links that were surveyed in successive surveys. These like-for-like comparisons ensure consistency and concentrate on real changes in speeds rather than external influences such as changes in the road network.
- The average peak time traffic speeds in English urban areas in 2006 was 20.9 mph, virtually unchanged from 2004, and slightly below speeds in 1999/2000, when the average was 21.8 mph.
- Traffic speeds at off peak times have fallen over the last seven years. In 2006, the average off-peak traffic speed was 24.1 mph, a fall of 4 per cent from 2004 and 8 per cent since 1999/2000.

Trend 1.4c – Average traffic speeds in Greater London: 1980-82 to 2003-06, Greater London



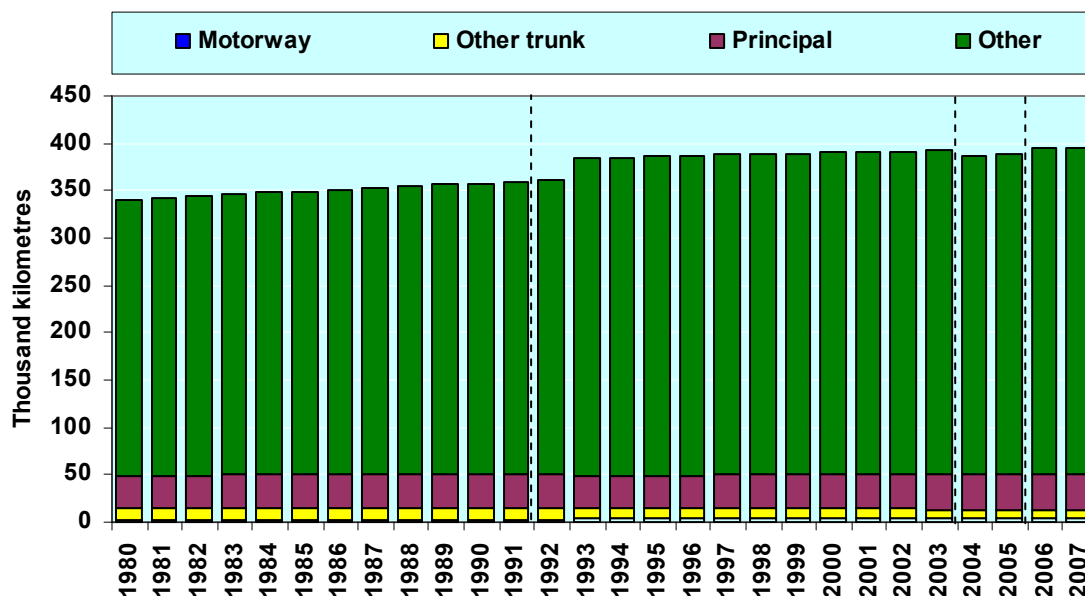
Source: Transport for London
 The data in this chart are outside the scope of National Statistics

- Transport for London, who are responsible for most of the road network in London, run separate speed surveys covering the Greater London area. Average traffic speeds in London were lower in the period 2003-06 than in 1980-82. However, average speeds during the evening peak and off-peak increased between 2000-03 and 2003-06.
- The Department for Transport has an urban congestion Public Service Agreement (PSA) target. The target is for ten largest urban areas in England to meet the congestion targets set in their local transport plan by 2010-11. These urban area targets relate to movement on main roads into city centres during the weekday morning peak. The most recent report against performance was in the 2009 Autumn Performance Report, and the next report is due in the 2009 Departmental Annual Report.

Road Length and Condition

1.5 Road length

Trend 1.5 – Road length by road type: 1980 to 2007, Great Britain

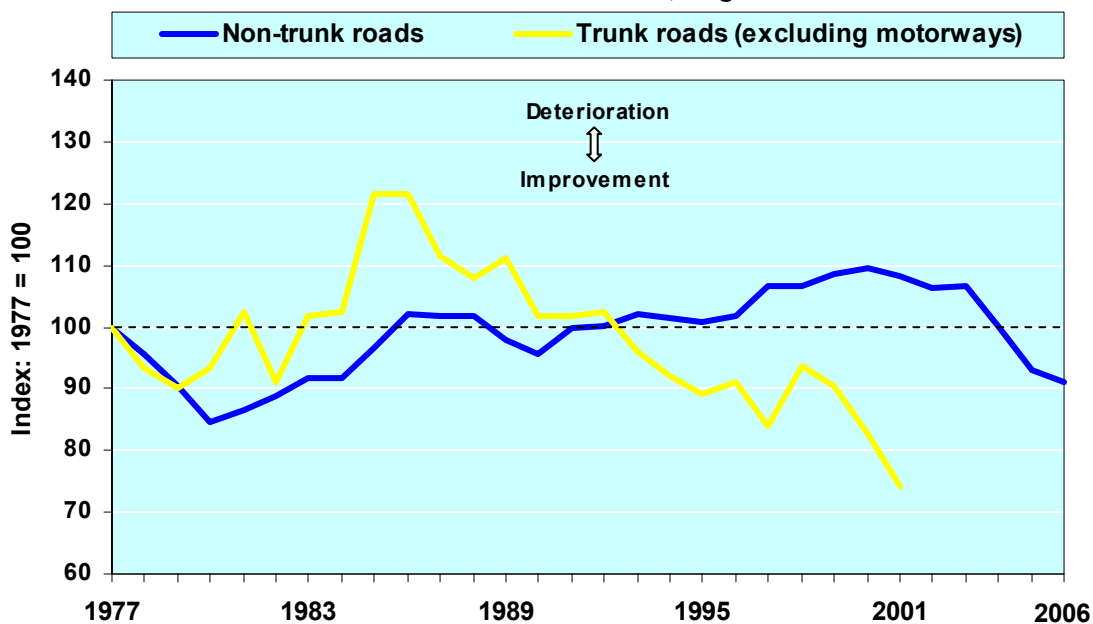


Source: Department for Transport

- The growth in traffic levels has been much greater than the increase in total road length. New information in both 2004 and 2006 has enabled better estimates of minor road lengths to be made and the estimates from 2004 cannot be compared directly with prior estimates. There is an additional discontinuity in 1993 due to a change in methodology.
- In 2007, motorways accounted for less than 1 per cent of road length, trunk roads (excluding motorways) 2 per cent, and other major roads 10 per cent. Minor roads (B, C and unclassified roads) made up 87 per cent of road length. There has been little change in these proportions since 1980. The length of the trunk road network has been particularly affected by the detrunking programme, with a number of roads being re-categorised as 'principal'.
- In 2007, motorways carried 20 per cent of traffic, trunk roads (excluding motorways) 12 per cent and other major roads 31 per cent. Minor roads carried 37 per cent of traffic.

1.6 Road condition

Trend 1.6 – Road condition defects index: 1977 to 2006, England and Wales



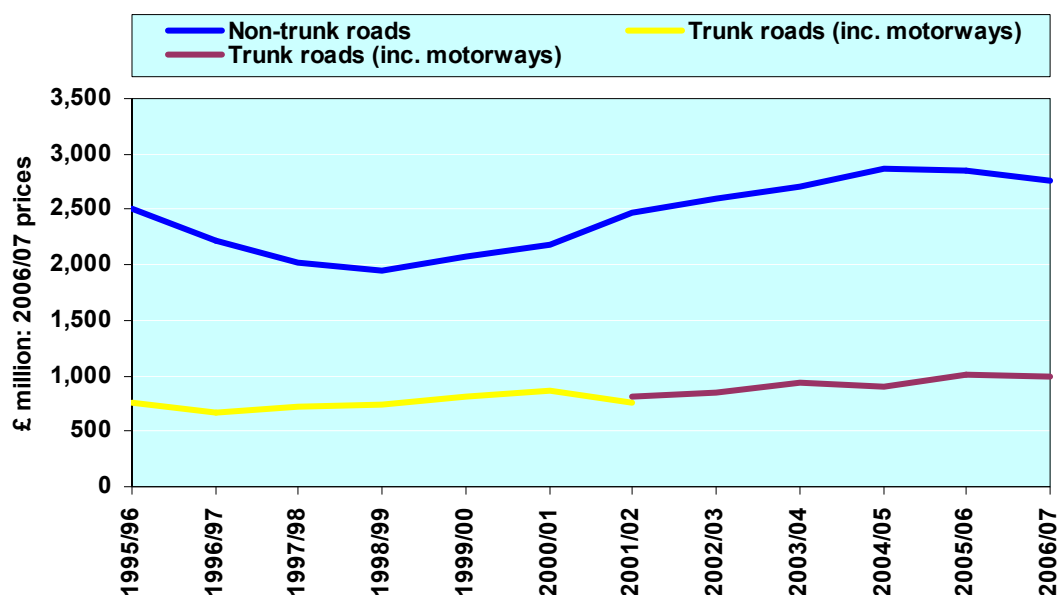
Source: Department for Transport

- The chart above shows the condition of roads compared to a base line year in 1977. The defects index used is a composite measure of road condition based on physical defects visible at the surface; a higher value of the index represents worse condition.
- The visual condition of local roads deteriorated between 1980 and 2000, but there has been a significant improvement in condition since 2000, especially between 2003 and 2005.
- The visual condition of trunk roads (excluding motorways) deteriorated until 1985, before significantly improving up to 2001. Due to changes in surveying techniques, the defects index can no longer be produced for these roads.

Expenditure on Road Building and Maintenance

1.7 Expenditure and investment in roads

Trend 1.7a – Expenditure on road maintenance: 1994/95 to 2006/07, England and Wales

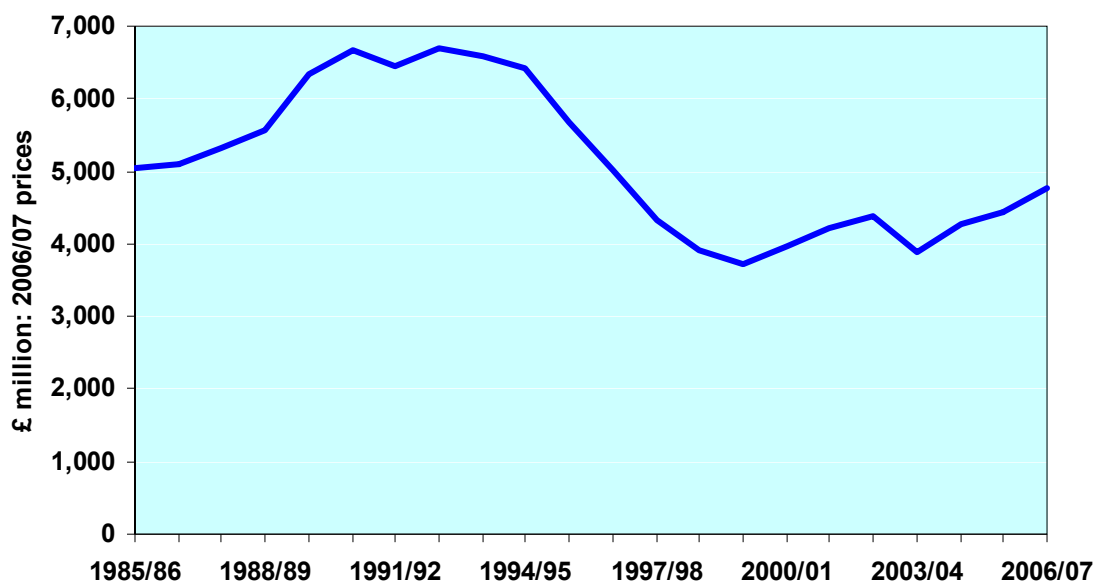


Highways Agency data (for England) are now collected on a resource accounting basis and cannot be compared with data prior to 2001/02. Figures were calculated using both systems in 2001/02. Data for Wales were not affected by this change.

Source: Compiled by Department for Transport

- Maintenance includes both structural and routine maintenance.
- Maintenance expenditure on non-trunk roads fell by 22 per cent in the mid-1990s (from £2.5 billion in 1995/96 to £2.1 billion in 1998/99), but has increased in most years since then to £2.75 billion in 2006/07.
- Maintenance expenditure on trunk roads (including motorways) also fell in the mid-1990s, but has increased in most years since then. Between 2001/02 and 2006/07, maintenance expenditure on trunk roads increased by 22 per cent to £0.99 billion at 2006/07 prices.

Trend 1.7b – Investment in road infrastructure: 1985/86 to 2006/07, Great Britain



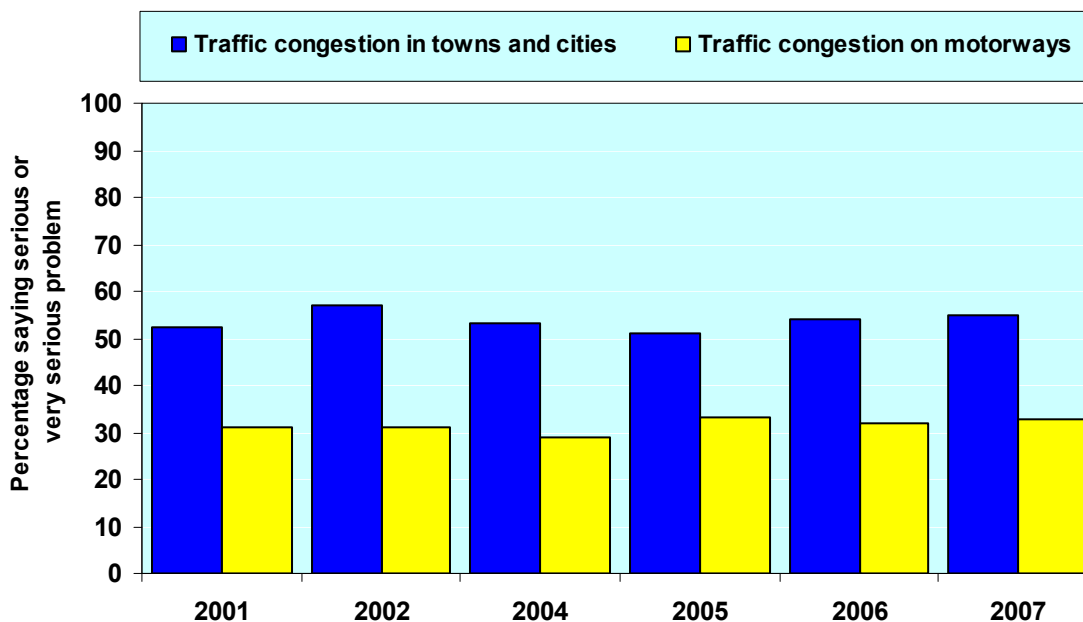
Source: Compiled by Department for Transport
The data in this chart are outside the scope of National Statistics

- Investment includes expenditure on new construction, improvement and structural maintenance. Note that as maintenance expenditure also includes structural maintenance, there is some overlap between the expenditure figures used to produce Trend 1.7a and Trend 1.7b. As a part of the Spending Review 2002 settlement, expenditure on renewal maintenance was reclassified from capital to resource.
- Investment in roads infrastructure increased in the late 1980s and early 1990s and reached a peak in 1992/93 of £6.7 billion at 2006/07 prices. Investment fell between 1992/93 and 1999/2000, but has risen since then by 28 per cent to £4.8 billion in 2006/07.
- Private investment in road infrastructure has continued to remain a relatively small proportion of total investment. In the late 1990s, it had risen to account for nine per cent of total road infrastructure investment, mainly because of a number of large Design Build Finance Operate (DBFO) schemes, but fell to around 1.2 per cent in 2001/02. Since 2002/03, it has been difficult to separate exactly private from public expenditure due to the complexity of some of the joint funding arrangements, but private investment has increased again.

Attitudes of Road Users

1.8 Road user attitudes

Trend 1.8 – Public attitudes to traffic problems: 2001 to 2007, Great Britain



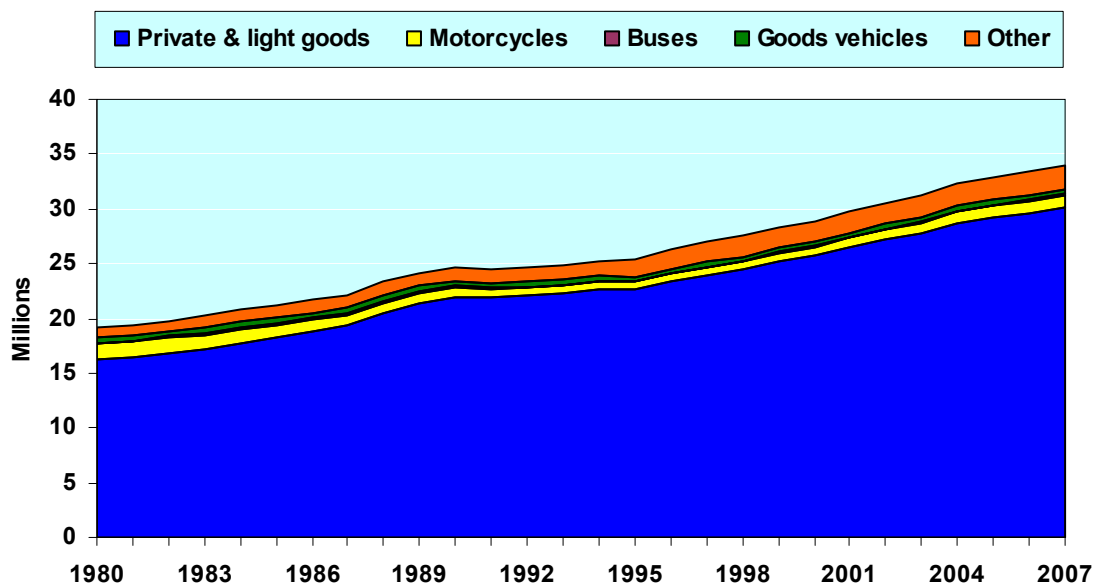
Source: British Social Attitudes Survey (by NatCen)
 The data in this chart are outside the scope of National Statistics

- According to the British Social Attitudes Survey, congestion on motorways is a serious issue for nearly a third of people. However, they are more concerned about congestion in towns and cities, with over a half reporting it as a serious issue for them. There has been a slight fluctuation in attitudes over time, but no consistent trend.

Vehicle Stock and Car Ownership

1.9 Motor vehicles currently licensed

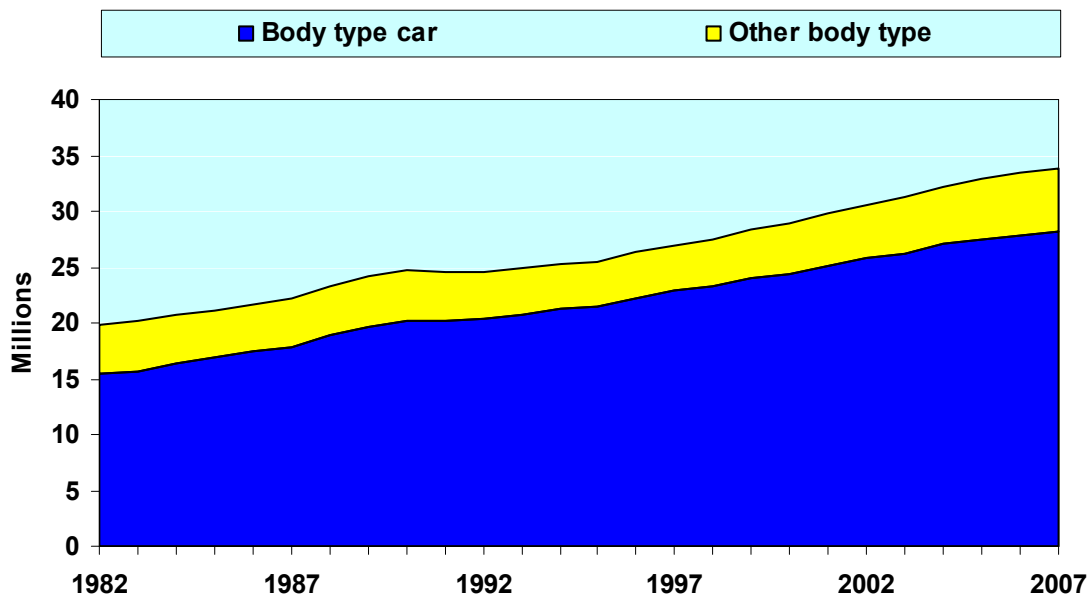
Trend 1.9a – Motor vehicles currently licensed by taxation class: 1980 to 2007, Great Britain



Source: Department for Transport

- The number of licensed vehicles increased by 77 per cent between 1980 and 2007, from 19.2 to 34.0 million. The rise has been steady throughout this time, apart from a brief period of stability between 1989 and 1991.
- Changes in the vehicle taxation system make precise comparisons over the last twenty years difficult. However, almost all of the overall increase is accounted for by the 85 per cent increase in vehicles in the 'private and light goods' tax class between 1980 and 2007. The number of motorcycles fell by 17 per cent and buses by 1 per cent. The number of goods vehicles fell by 12 per cent.

Trend 1.9b – Motor vehicles currently licensed by body type: 1982 to 2007, Great Britain

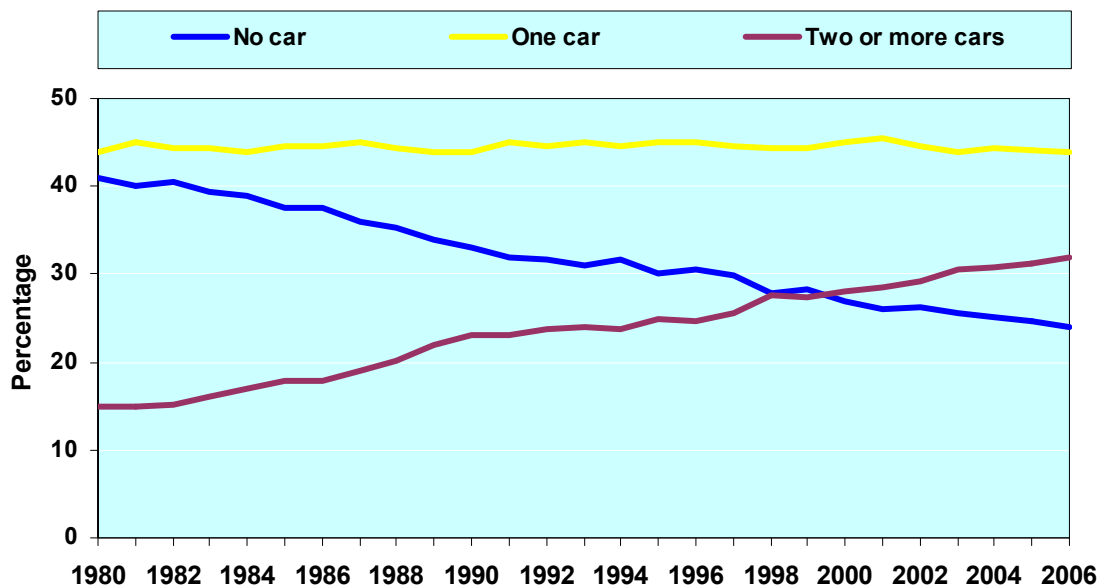


Source: Department for Transport

- Across all the vehicle taxation classes, the number of licensed cars has increased steadily from 15.5 million in 1982 to 28.2 million in 2007, an 83 per cent increase.
- About 9 per cent of licensed cars were registered as company cars in 2007; this proportion has shown little change in recent years.

1.10 Household car ownership

Trend 1.10 – Household access to a car: 1980 to 2006, Great Britain

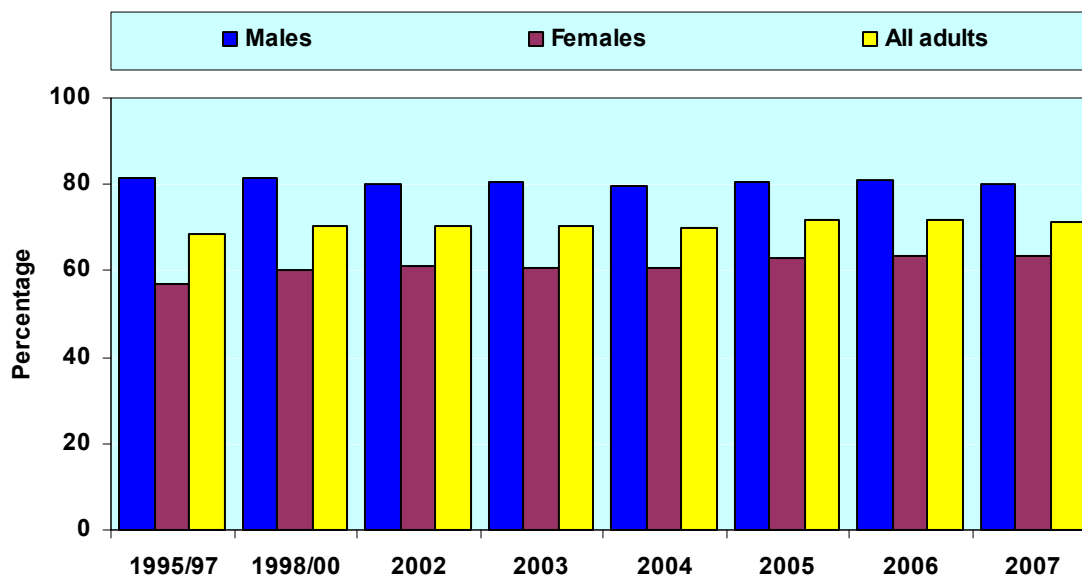


Source: Department for Transport

- The substantial increase in the number of licensed cars is reflected in an increase in the proportion of households having access to one or more cars. In 1980, 41 per cent of households did not have access to a car. By 2006, this had fallen to 24 per cent.
- The proportion of households having access to one car has remained stable over the last 27 years, at around 45 per cent.
- In contrast, the proportion of households with access to two cars increased from 13 to 26 per cent. A further 6 per cent of households had access to three or more cars in 2006, compared with 2 per cent in 1980. This means that the proportion of households with access to two or more cars is now higher than the proportion of households without access to a car.

1.11 People with a driving licence

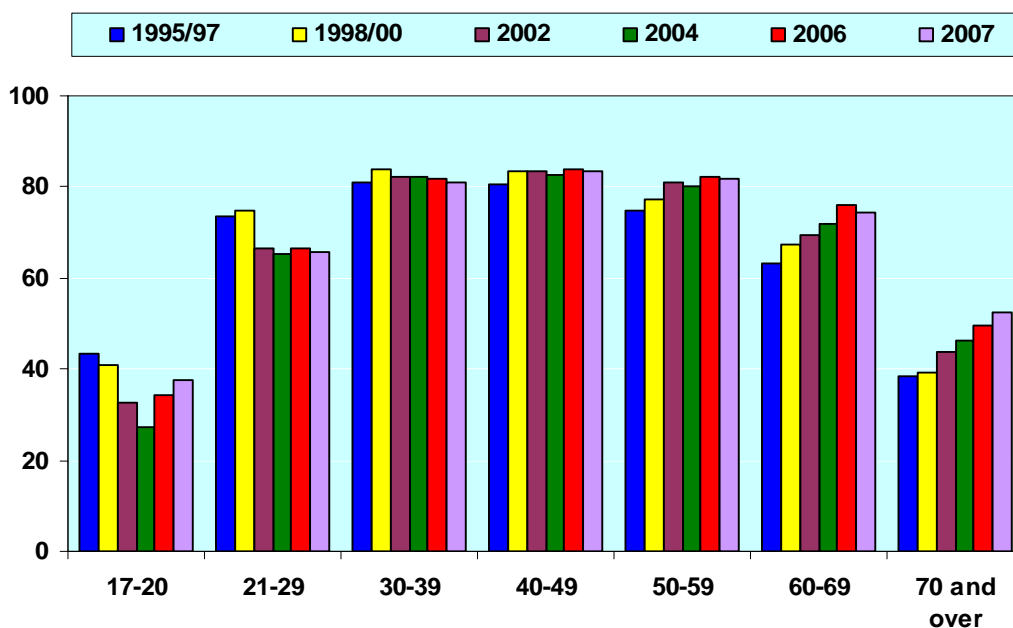
Trend 1.11a – Males and females holding a driving licence: 1995/97 to 2007, Great Britain



Source: Department for Transport

- In 2007, 71 per cent of all adults aged 17 and over (an estimated 33.8 million people) held a full car driving licence, compared with 69 per cent (30.3 million) in 1995/1997.
- Overall, 63 per cent of women in 2007 held licences, compared with 80 per cent of men. The proportion of women holding licences has grown steadily in recent years while the proportion of men holding a licence has remained fairly stable, causing the gap in licence holding between men and women to narrow over time.

Trend 1.11b – Adults holding a driving licence by age: 1995/97 to 2007, Great Britain



Source: Department for Transport

- The number of older drivers has increased, as the cohorts of middle aged drivers reach retirement age. From 1995/97 to 2007, the proportion of people aged 70 and over who held a full driving licence increased from 38 per cent to 52 per cent. Some of this increase is due to past changes in the number of women obtaining driving licences. As the younger women with driving licences get older, the percentage of older adults with licences has increased.
- Over the same period, there was a decline in licence holding among young adults, with the proportion of 17-20 year olds who held a licence falling from 43 per cent to 38 per cent. Possible reasons for this decline include the cost of lessons, insurance and buying a car, the increasing difficulty of passing the driving test (including the theory test introduced in 1996) and the fact that more young people are students and unable to afford cars.

Section 1: Roads, Vehicles and Congestion

1.1 Road traffic

- Vehicle kilometres: Average vehicle flows are derived from manual and automatic roadside traffic counts. Traffic estimates, expressed as vehicle kilometres, are calculated by combining the average vehicle flow data with information on road lengths. A vehicle kilometre is equivalent to one vehicle times one kilometre travelled. Vehicle kilometres are calculated by multiplying the Annual Average Daily Flow by the corresponding length of road. For example, the traffic generated by one vehicle travelling one kilometre a day for a year would be 365 vehicle kilometres.
- Cars and taxis: Includes estate cars, light vans with windows to the rear of the driver's seat, passenger vehicles with 9 or fewer seats, three-wheeled cars, motorised invalid carriages and Sports Utility Vehicles (SUVs). Cars towing caravans or trailers are counted as one vehicle.
- Motorcycles: Includes motorcycle combinations, scooters and mopeds.
- Buses and coaches: Public service vehicles and works buses which have a gross vehicle weight over 3,500 kgs.
- Light vans: Goods vehicles up to 3,500 kgs gross vehicle weight. Includes all car based vans and those of the next larger carrying capacity such as transit vans. Also included are ambulances, pickups, milk floats and pedestrian controlled motor vehicles. Most of this group are delivery vans of one type or another.
- Heavy goods vehicles: Goods vehicles over 3,500 kgs. gross vehicle weight. Includes tractors (without trailers), road rollers, box vans and similar large vans and similar large vans. A two axle motor tractive unit without trailer is also included.
- Pedal cycles: Includes all non-motorised cycles.

1.2 Road traffic and travel intensity

- Passenger kilometres: This is the total distance travelled annually by passengers by all modes of transport. 1 passenger kilometre = 1 person travelling 1 kilometre. For vehicles with multiple occupancy the distance travelled is multiplied by the number of people in the vehicle.
- Gross Domestic Product: This series is produced by the Office for National Statistics and the series used here has the four letter code ABMI. It is a measure of the value of total economic activity taking place in the UK. GDP is calculated at constant prices based on a fixed year. The Office for National Statistics regularly update the fixed year used which produces revisions of the complete series. The GDP series in Trend 1.2a and the traffic and travel intensity series in Trend 1.2b are therefore frequently revised back to 1980.

1.3 Car occupancy

- The data used to produce these charts comes from the National Travel Survey (NTS). The NTS is described in Section 2.

1.4 Congestion

- For congestion monitoring purposes, the Strategic Road Network has been split into 103 recognisable routes (for instance A46 Leicester – Lincoln). Each route has two directions, so strictly there are 206 route-directions. Currently 95 of the 103 routes are used to monitor network performance due to data quality considerations on the remaining routes.

- Baseline period: August 2004 – July 2005 (later for 7 routes, due to data quality issues). Target period: April 2007 – March 2008 and the measure will be monitored for the period up to the year ending March 2011.
- The slowest 10 per cent of journeys: These journeys are selected for each 15-minute departure period between 06:00 to 20:00 for each day of the week, on each of the 91 routes. The indicator therefore reflects journeys experienced on all types of route on all days at all times.
- Average vehicle delay: This is derived from the differences between observed journey time and a reference journey time (the time that could theoretically be achieved when the traffic is free-flowing), weighted by traffic flows for each route of the network.
- The methodology is quite complex and a full explanation of the measure, the routes covered and the steps taken by the Highways Agency to reduce congestion on the network are available at:
<http://www.dft.gov.uk/pgr/statistics/datatablespublications/roadtraffic/speedscongestion/congestiononthe strategicroad5359>
- These data are 'experimental statistics' that are under development and we are currently testing their ability to meet customer needs. We believe they are robust enough to give a reasonable indication of overall trends, but while the series are experimental their quality cannot be assured to the rigorous standards required by National Statistics.

1.5 Road length

- Figures for road lengths are as at 1 April of each year. Road length information is obtained from Ordnance Survey, the Highways Agency, English highway authorities and other organisations.
- Trunk roads in England are maintained by the Highways Agency, and in Scotland and Wales by the Scottish Executive and Welsh Assembly Government respectively. All other roads are maintained by local highway authorities.
- Motorways: A special type of trunk road reserved for certain classes of traffic and carrying predominantly long distance traffic.
- Trunk roads: Major roads comprising the national network of through routes. Most motorways and many of the long distance rural 'A' roads are trunk roads, with the latter open to all classes of traffic. Trunk roads other than motorways are class 'A' roads, as are most principal roads (see below).
- Principal roads: Local authority owned and maintained 'A' roads and a small number of motorways, which are not part of the trunk road network.
- Minor roads: Local authority maintained class 'B', 'C' and Unclassified roads. These roads carry less traffic than 'A' roads and act as distributor roads and residential roads.

1.6 Road condition

- Road condition: Results are derived from the National Road Maintenance Condition Survey. The defects index is a composite measure of road condition produced by combining a number of carriageway physical defects visible at the surface; a higher value of the defects index representing worse condition. The index is derived by adding together individual defects weighted by their relative costs of repair at constant prices. Results are expressed in terms of an index number with a base of 1977 = 100. Motorways are excluded from the survey.

1.7 Expenditure and investment in roads

- Maintenance expenditure: This includes expenditure on both structural and routine maintenance. Data are provided by the Highways Agency and the National Assembly for Wales (trunk roads) and local authorities in England and Wales (non-trunk roads). The figures include expenditure on new construction, improvement and structural maintenance. Information is also obtained from the private sector.
- Since maintenance expenditure also includes structural maintenance there is some overlap between the expenditure figures used to produce Trend 1.7a and Trend 1.7b.
- The Gross Domestic Produce (GDP) deflator has been used to adjust these figures to 2006/07 prices.
- Highways Agency data (for England) are now collected on a resource accounting basis and cannot be compared with data prior to 2001/02. Figures were calculated on both systems in 2001/02. Data for Wales were not affected by this change.

1.8 Road user attitudes

- This is based on the results of the British Social Attitudes Survey carried out by the National Centre for Social Research (NatCen). The survey covers a representative sample of adults aged 18 or over living in private households in Great Britain. Each respondent takes part in a face to face interview supplemented by a self-completion questionnaire. DfT funds the addition of a transport section to the survey designed to monitor changes in public opinion and attitude about transport issues.

1.9 Motor vehicles currently licensed

- Estimates of numbers of vehicles currently licensed are produced from information provided by the Driver and Vehicle Licensing Agency (DVLA). There have been a number of changes in taxation classes over the years. In addition the registration and data collection systems have also changed. Therefore the individual data points, especially for earlier years, should be treated as indicative rather than exact. Vehicles are classified both by taxation class and by body type.
- Tax classes:
 - *Private and Light Goods (PLG)*: Primarily consists of cars and light vans but can include other vehicles used only for private purposes.
 - *Motorcycles*: Includes motorcycles, scooters and mopeds.
 - *Buses*: Public transport vehicles with more than eight seats.
 - *Goods vehicles*: Vehicles with a gross weight of over 3,500 kgs gross vehicle weight and used for carrying goods.
 - *Other vehicles*: Includes vehicles exempt from vehicle excise duty and all other tax classes - crown and exempt vehicle, and special vehicles groups.
- Body type:
 - The main body type is 'car'. This includes a large proportion of vehicles in the PLG tax class, but will also include most of the exempt tax class vehicles.
 - Vehicles included in the 'other' category include taxis, motorcycles, 3-wheelers, light goods vehicles, heavy goods vehicles, buses and coaches and agriculture vehicles.

1.10 Household car ownership

- The series of mid-year estimates of the percentage of households with regular use of a car or van is based on data from the National Travel Survey, the Family Expenditure Survey and the General Household Survey. Estimates of household car ownership in 1991 and 2001 are also available from the Census. The census estimates differ only a little from the composite estimates.

1.11 People with a driving licence

- Information about the percentage of driving licence holders is based on data from the National Travel Survey (see Section 2).