Department for Transport

Road Traffic Estimates: Great Britain 2016

About this release

This release presents the latest annual estimates of traffic on Great Britain's roads. It looks at recent and long term trends in traffic broken down by vehicle type, road category and geographic area, in the context of related statistics. Traffic statistics are mostly presented in units of vehicle miles, which combines the number of vehicles on the road and how far they drive.

Annual traffic statistics are compiled using data from around 8,000 roadside 12-hour manual counts, continuous data from around 300 automatic traffic counters, and data on road lengths.

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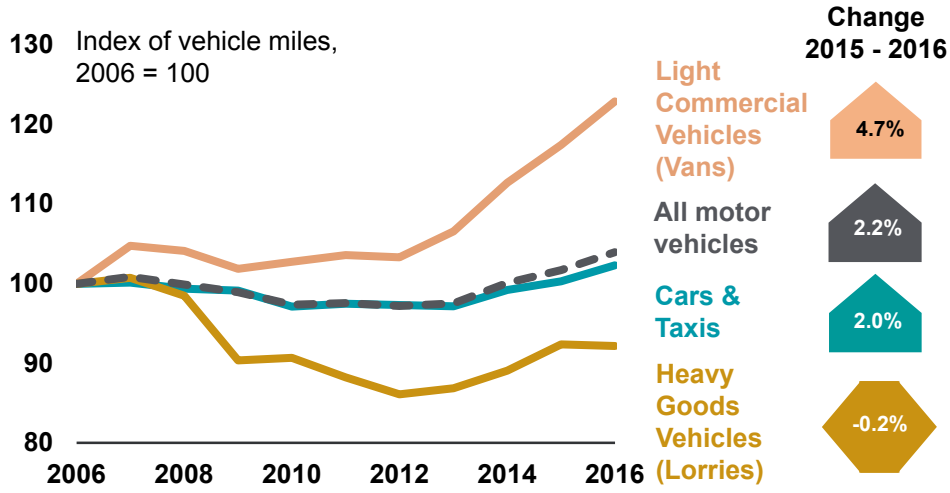
323.7 billion miles were driven on Great Britain's roads in 2016, a 2.2% increase from the previous year.

Vehicle miles travelled by selected vehicle types in Great Britain, 2006-2016



In 2016:

- **Car traffic** grew by 2% from 2015 to 252.6 billion vehicle miles (bvm); the highest annual car traffic estimate ever (page 9).
- **Van traffic** continued to grow more quickly than any other vehicle type, rising 4.7% from 2015 to 49.1 bvm (page 11).
- **Lorry traffic** showed little change from 2015, after having grown steadily for the previous three years (page 13).
- **Pedal cycle traffic** was 3.5 bvm, 23% above the figure ten years before (page 18).
- **Motorways** carried 67.8 bvm of traffic, 2% more than in 2015 and almost 10% more than 10 years ago (page 21).
- **The Strategic Road Network** carried 91.9 bvm of traffic; one-third of all motorised traffic in England (page 26).
- **Rural roads** saw a 2.6% rise in traffic from 2015, with traffic on both 'A' roads and minor roads reaching record levels (page 22).
- **Urban road** traffic increased by 1.8% from 2015, though it remained below the peak level seen in 2007 (page 23).

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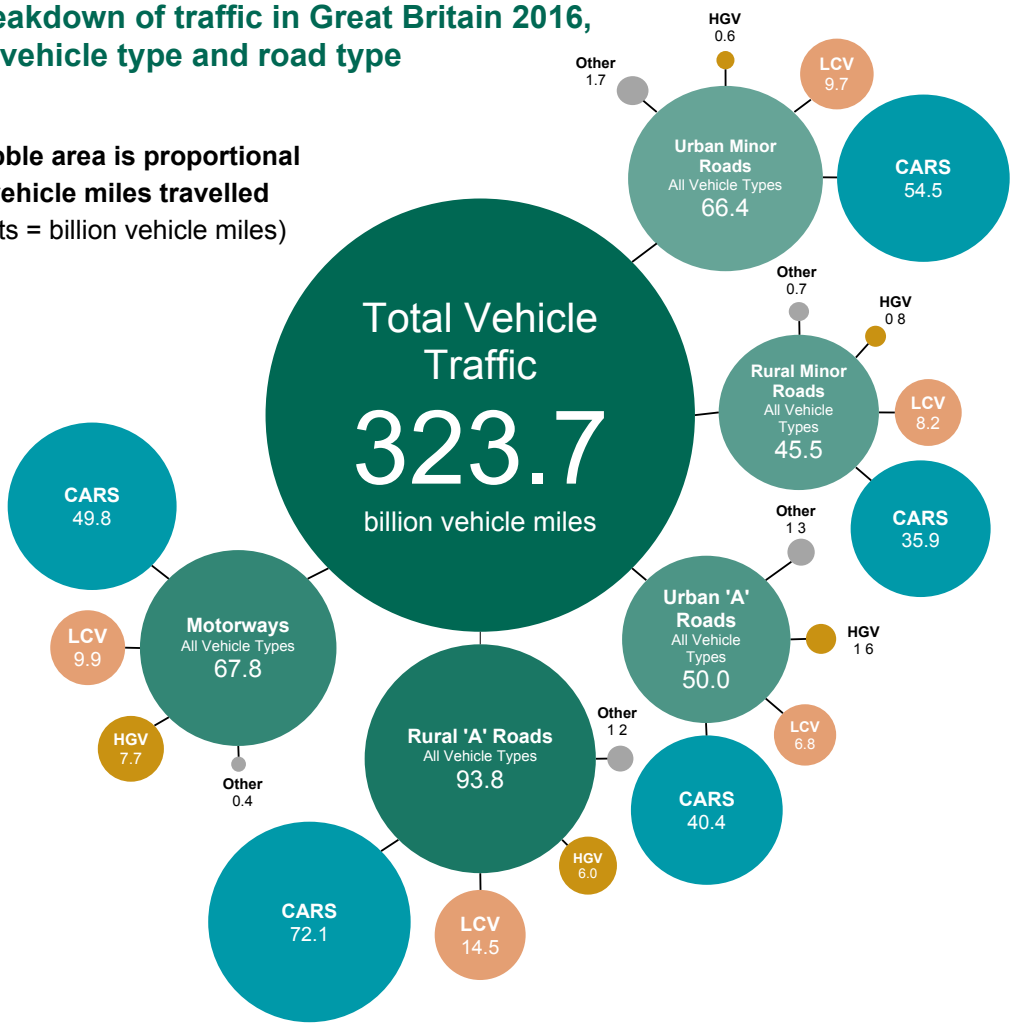
Summary statistics

The summary table below shows patterns in vehicle traffic across a range of years.

⇔ is used for changes of 0.5% or less	Vehicle Miles 2016	Percentage change from: Last Year 2015	5 Years Ago 2011	10 Years Ago 2006	20 Years Ago 1996
All Motor Vehicle Traffic	323.7 billion	↑ 2.2%	↑ 6.5%	↑ 4.0%	↑ 18.1%
Cars and Taxis	252.6 billion	↑ 2.0%	↑ 5.0%	↑ 2.3%	↑ 13.0%
Light Commercial Vehicles (LCV)	49.1 billion	↑ 4.7%	↑ 18.7%	↑ 22.9%	↑ 71.1%
Heavy Goods Vehicles (HGV)	16.6 billion	⇔ -0.2%	↑ 4.5%	↓ -7.8%	↑ 2.1%
Buses	2.5 billion	↓ -7.7%	↓ -14.7%	↓ -24.8%	↓ -20.7%
Motorcycles	2.8 billion	↑ 1.9%	↓ -2.0%	↓ -11.0%	↑ 21.0%
Pedal cycles	3.5 billion	↑ 6.3%	↑ 12.4%	↑ 23.4%	↑ 36.4%
Motorways	67.8 billion	↑ 2.0%	↑ 9.7%	↑ 9.7%	↑ 39.5%
Rural 'A' Roads	93.8 billion	↑ 2.8%	↑ 7.0%	↑ 5.2%	↑ 22.3%
Urban 'A' Roads	50.0 billion	↑ 0.7%	↑ 1.6%	↓ -2.4%	⇔ -0.5%
Rural Minor Roads	45.5 billion	↑ 2.4%	↑ 10.6%	↑ 7.9%	↑ 24.5%
Urban Minor Roads	66.4 billion	↑ 2.6%	↑ 4.1%	↓ -0.7%	↑ 7.3%
Strategic Road Network (SRN)	91.9 billion	↑ 2.4%	↑ 8.8%	↑ 8.6%	

Breakdown of traffic in Great Britain 2016, by vehicle type and road type

Bubble area is proportional to vehicle miles travelled
(units = billion vehicle miles)



Key definitions:

Traffic

Traffic refers to the total distance travelled by all vehicles over the year, measured in **vehicle miles.** This combines the number of vehicles on the road, and how far they drive.

Flow

Flow refers to the average number of vehicles travelling along a given stretch of the road network per day (24 hours).

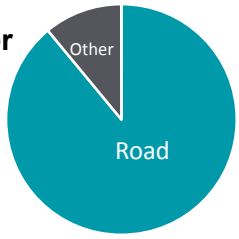
Billion

In this release 1 billion = 1000 million (10^9).

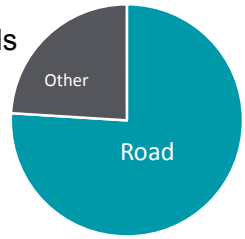
Introduction to Road Use

Road transport is the main transport mode for individuals and businesses.

89% of **passenger** miles are by road (2015)



76% of **freight** goods are moved by road (2015)



According to the 2015 National Travel Survey...

74% of adults have a driving licence - 80% of men, and 68% of women

75% of households have access to a car, with 33% having two or more.

64% of all personal trips are made by car

78% of distance travelled per person per year are personal trips by car

84% of people in England travel by car at least once or twice a week

In 2015, within the UK road freight sector...

... there were 44,565 road freight enterprises ...

22% increase on previous year

... contributing £11.9 billion to the UK economy.

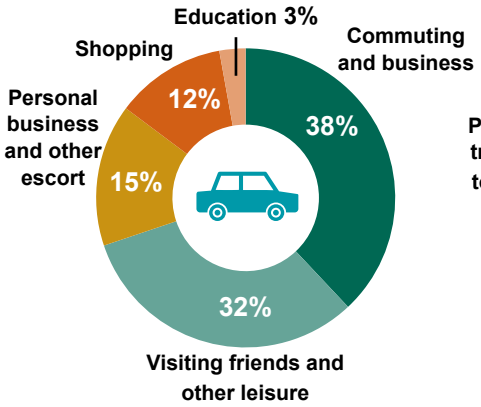
6.5% increase on previous year

How and why are roads used?

Roads are used for a wide variety of purposes:

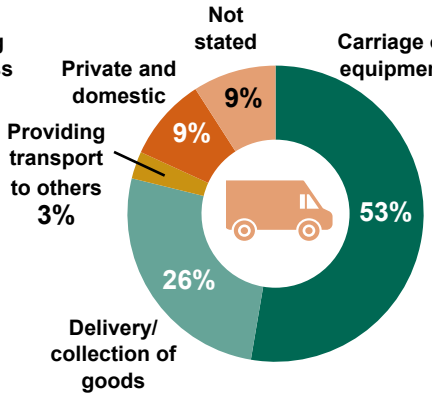
- The largest share of personal car mileage in England in 2015 was for commuting and business trips, followed by visiting friends and leisure trips.
- The last DfT survey of van usage (2008), showed most van mileage was driven carrying tools and equipment.
- Nearly one-quarter of the goods moved by British HGVs in the UK in 2015 comprised food products, beverages and tobacco.

Car driver mileage in England by trip purpose, 2015



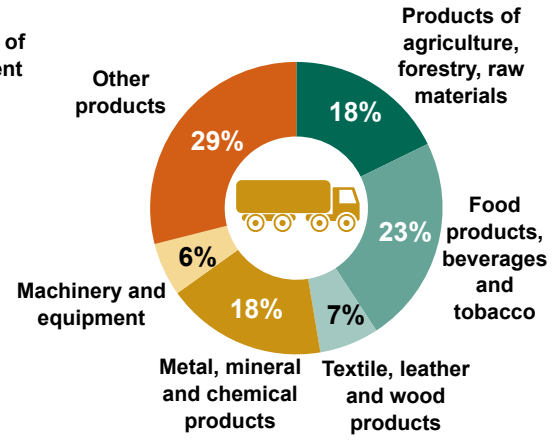
Source: National Travel Survey

Van mileage by primary use, 2008



Source: DfT Van baseline survey 2008

Share of goods moved by GB registered lorries, 2015



Source: DfT Road Freight Statistics

Further information

An overview of the statistics on roads, and how they are used, can be found in the DfT report 'Road use statistics'.

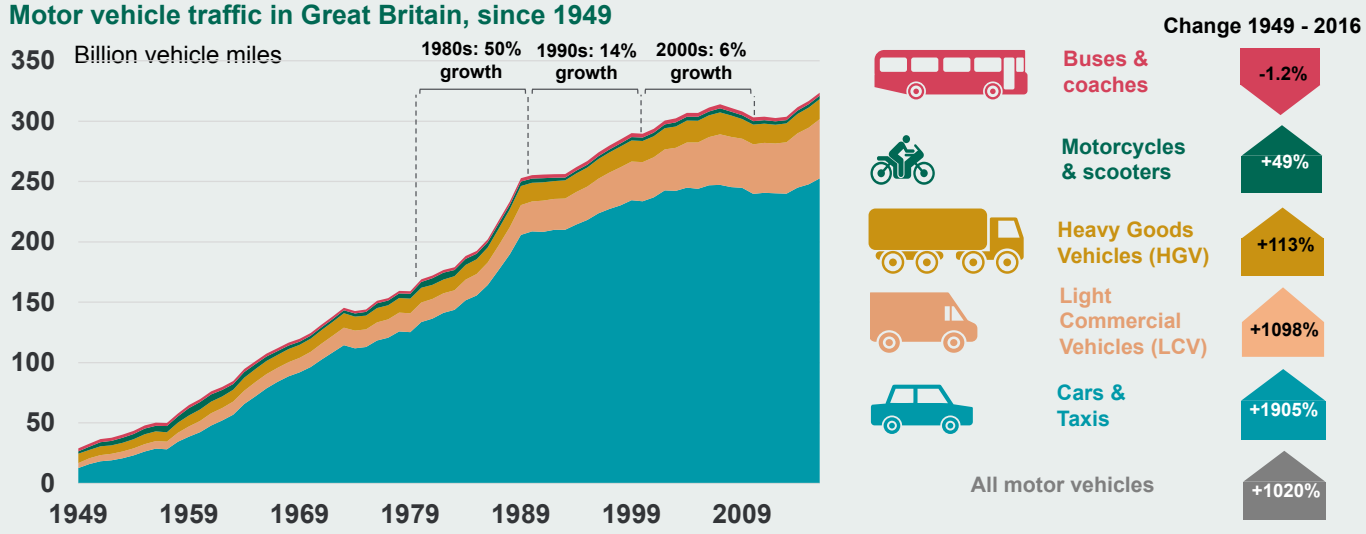
Long-term traffic trends, drivers and impacts

This section provides an overview of long term trends in road traffic, some of the key factors that have influenced these trends, and the wider impacts of road traffic.

Long-term traffic trends

Since 1949 motor vehicle traffic has increased more than ten-fold from 28.9 to 323.7 billion vehicle miles, largely driven by steady growth in car traffic.

Motor vehicle traffic in Great Britain, since 1949

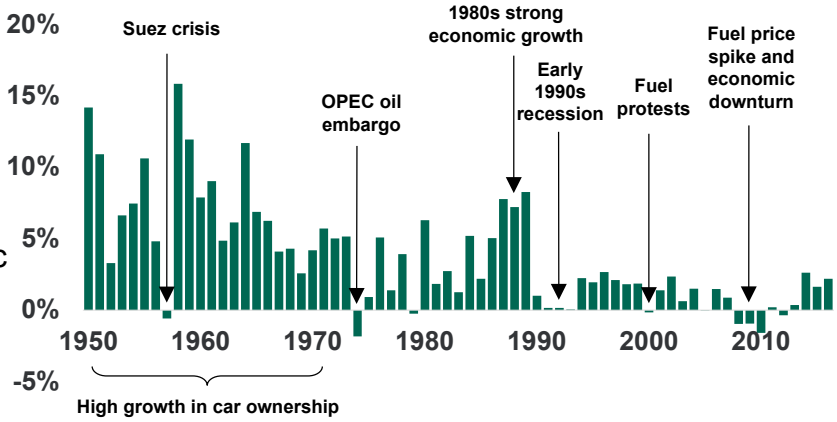


The level of traffic growth since 1949 has varied by vehicle type. Car traffic in 2016 was around 20 times higher than in 1949, whereas HGV traffic was only around twice as high and bus traffic was similar to the 1949 level.

This has altered the share of traffic by vehicle type over time, with the car traffic share rising from 43% in 1949 to 78% in 2016, and the HGV traffic share falling from 27% to 5% over the same period.

Year-on-year growth in motor vehicle traffic in Great Britain, since 1950

Percentage change from previous year

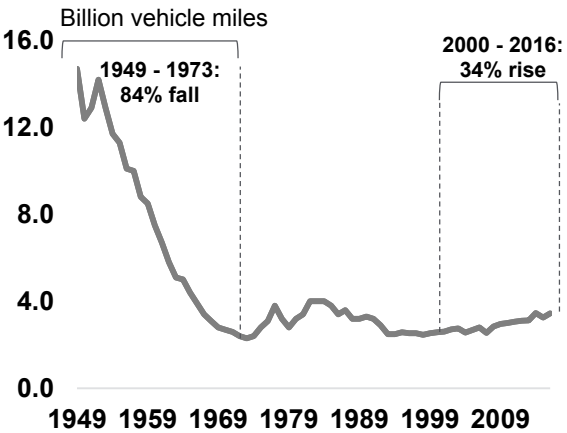


Traffic growth from year to year has not been constant, being punctuated by short periods of stasis or decrease due to various factors (discussed overleaf).

Over the last 20 years there has been a decline in the rate of traffic growth. Between 2007 and 2010, motor vehicle traffic fell for three consecutive years. This was followed by stability, then a resumption of growth to the 2016 record level of 323.7 billion vehicle miles.

In contrast to motor vehicle traffic, pedal cycle traffic fell rapidly during the 1950s and 1960s, followed by a period relative stability. Since 2000, there has been a steady rise to 3.5 billion cycle miles in 2016.

Pedal cycle traffic in Great Britain, since 1949



Factors affecting road traffic

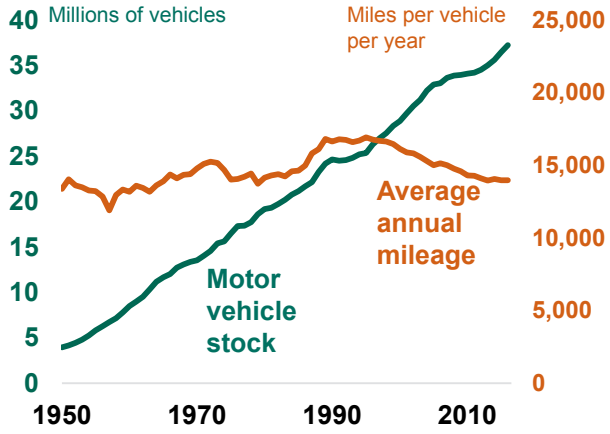
Components of road traffic

Changes in road traffic can result from a change in the number of vehicles, a rise or fall in how intensively each vehicle is used (average annual mileage), or a combination of the two.

The growth in motor vehicle traffic since 1949 has largely been due to an increasing number of licensed vehicles, although there have been fluctuations in average annual mileage.

The rest of this section discusses some of the key socioeconomic and demographic factors that underpin these components.

Licensed motor vehicle stock and average annual mileage in Great Britain, from 1950



Source: DfT Road Traffic and Vehicle Licensing Statistics

Population growth and density

There has been a steady growth in population over the last 20 years, increasing the number of people needing to travel. Car is the main mode of transport for most people, with almost 90% of passenger mileage on roads, and over three-quarters of the goods that people use being transported by road. Population changes affect traffic levels.

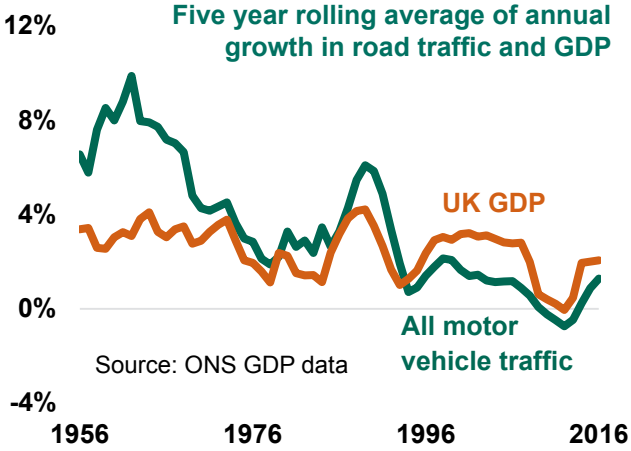
The geographic pattern of population growth is a key factor in how traffic is affected. The more rurally people live, the further they travel. The 2015 National Travel Survey showed that those living in rural hamlets and villages travel 90% further than those in urban conurbations.

Incomes, the economy, and employment

Fluctuations in road traffic levels tend to coincide with events such as changes in the economy (including GDP, see the chart to the right) and peoples' disposable incomes, which influence car ownership and the trip behaviour of car owners.

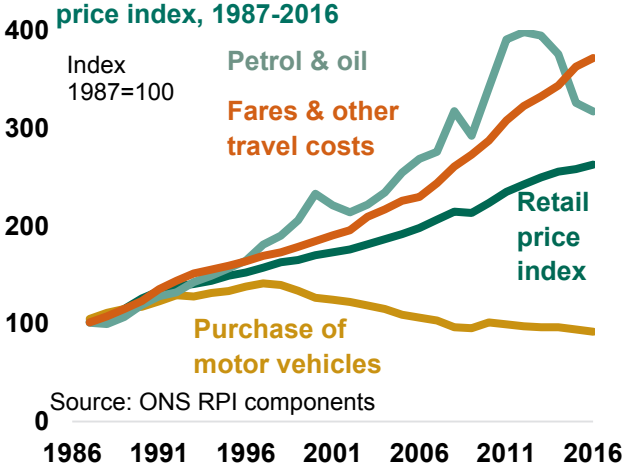
Over the long term, the cost of purchasing a motor vehicle has decreased, and this has contributed to increases in car ownership.

Five year rolling average of annual growth in road traffic and GDP



Source: ONS GDP data

Trends in the cost of motoring and retail price index, 1987-2016



Source: ONS RPI components

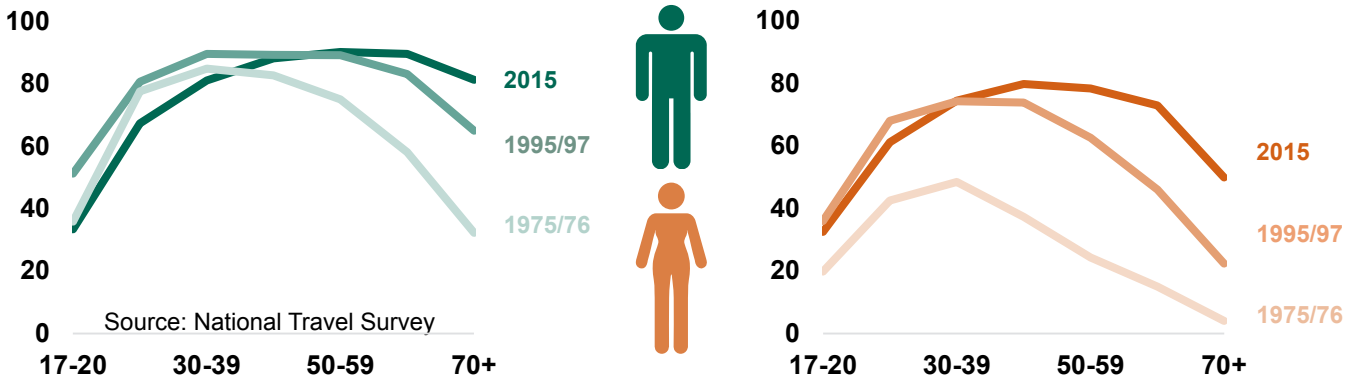
According to the National Travel Survey, only 14% of British households had access to a car in 1951, versus 75% in 2012. Scope for further growth in ownership remains as, in 2015, 48% of households in the lowest income quintile were without access to a car.

How heavily cars are used is influenced by the cost of fuel, as well as associated changes in the cost of alternative modes of transport (i.e. buses and trains).

Demography

Personal travel behaviour also varies with factors such as age and sex, due to changing needs at different life stages and cohort effects. The demography of the driving population has changed over time. In particular, females and older age groups are much more likely to hold a licence now than 30 years ago. The proportion of young adults (aged 17-20) with a full driving licence has decreased since the 1990s when it was highest for this age group.

Proportion of full driving licence holders by age, in 1975/6, 1995/7 and 2015



Impacts of road traffic

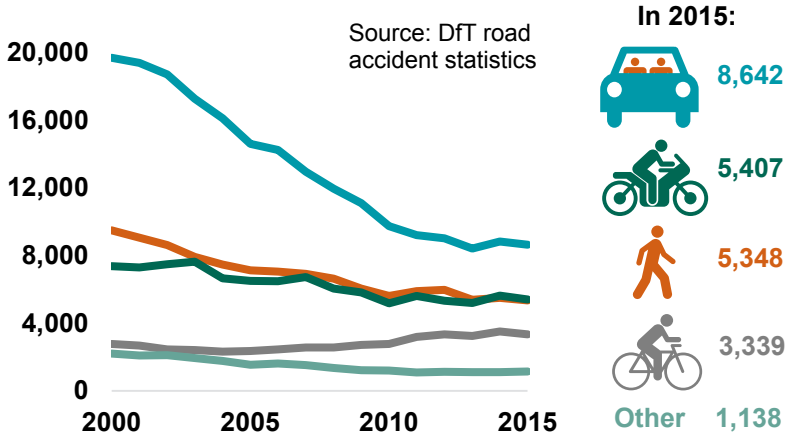
Whilst traffic levels can act as a barometer of trends in the economy and society, traffic itself also has a variety of impacts on human life and the environment.

Road Accidents

Increases in traffic tend to lead to greater numbers of interactions between road users. Therefore, all else being equal, a rise in traffic is expected to increase the total number of accidents. However, per mile travelled, the risk of being killed or seriously injured in a road accident has fallen almost every year from a peak of 165 deaths per billion vehicle miles (bvm) in 1949 to the lowest level of 5.4 deaths per bvm in 2015.

There are a range of reasons for the fall in fatality rates, including: improvements in education and training; improvements in vehicle technology and highway engineering; improvements to trauma care; the introduction of road safety policies, such as speed limits; enforcement of legislation; and behavioural change.

Number killed or seriously injured in Great Britain, 2000 to 2015



Journey times and reliability

It might be expected that an increase in traffic would result in worse congestion, and a decrease in traffic result in lighter congestion. However, the relationship is not that simple. The effect of an increase in traffic on congestion will depend on where and when the extra vehicle miles occur. For example, where congestion is most severe during the morning and evening rush-hour on weekdays, an increase in traffic at these peak times could have a large effect on congestion levels, but at other times of day may have little effect.

Another key factor is changes in the capacity of roads and junctions. For example, improving a junction may ease congestion while at the same time allowing an increase in traffic.

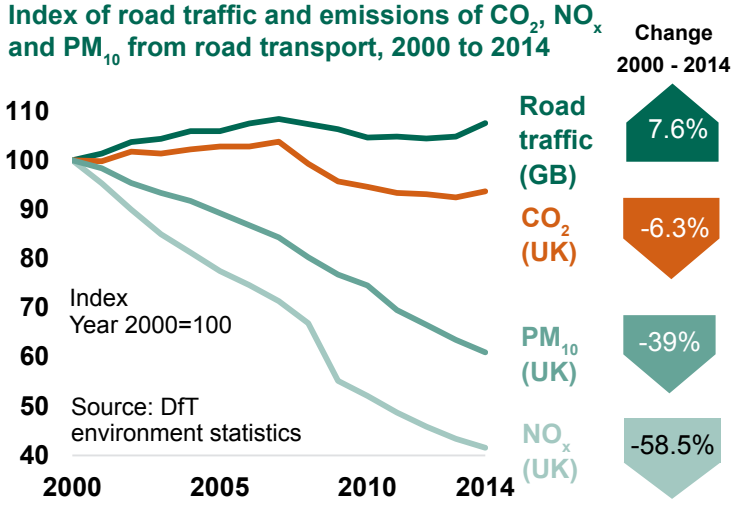
Greenhouse gas emissions and air quality

Road transport accounted for 22% of the UK's CO_2 emissions in 2015.

CO_2 emissions from road transport fell by 6.3% between 2000 and 2014, despite a 7.6% rise in vehicle miles travelled over the same period. Fuel efficiency has been improving, and sales of ultra-low emissions vehicles have risen rapidly in recent years. The number newly registered ultra-low emissions vehicles in 2016 was 41,819 compared to 4,313 in 2013, reducing the impact of each additional mile driven.

Another environmental impact of road traffic is emission of Nitrogen oxides (NO_x) and particulate matter smaller than 10µm in diameter (PM_{10}). Emissions of both of these pollutants from road transport in the UK fell between 2000 and 2014.

Index of road traffic and emissions of CO_2, NO_x and PM_{10} from road transport, 2000 to 2014



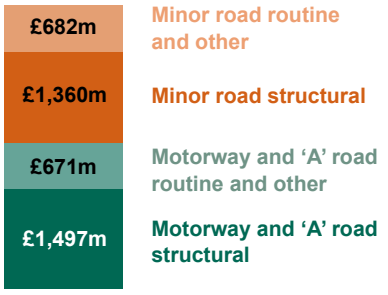
Road condition

Over time, road vehicles cause damage to the roads they drive along, with heavier vehicles having a disproportionately large impact.

In recent years, road conditions have been fairly stable. In 2015/16, 3% of the principal 'A' road network in England should have been considered for maintenance. This is slightly (1 percentage point) lower than in 2014/15.

In 2015/16, £4.5 billion was spent on the maintenance of roads in England. Of this, £1 billion was spent on motorways and 'A' roads managed by Highways England and £3.6 billion on local authority managed roads.

Maintenance expenditure by road class, England 2015/16



Source: DfT road condition statistics

Links to sources

The data sources used in this section include:

Transport Statistics Great Britain - www.gov.uk/government/collections/transport-statistics-great-britain

The National Travel Survey - www.gov.uk/government/collections/national-travel-survey-statistics

Annual Business Survey - www.ons.gov.uk/businessindustryandtrade/business/businessservices/bulletins/uknonfinancialbusinesseconomy/previousReleases

Office for National Statistics GDP data - www.ons.gov.uk/economy/grossdomesticproductgdp

Office for National Statistics RPI data - www.ons.gov.uk/economy/inflationandpriceindices

DfT road accident statistics - www.gov.uk/government/collections/road-accidents-and-safety-statistics

DfT environment statistics - www.gov.uk/government/collections/energy-and-environment-statistics

DfT road condition statistics - www.gov.uk/government/collections/road-network-size-and-condition

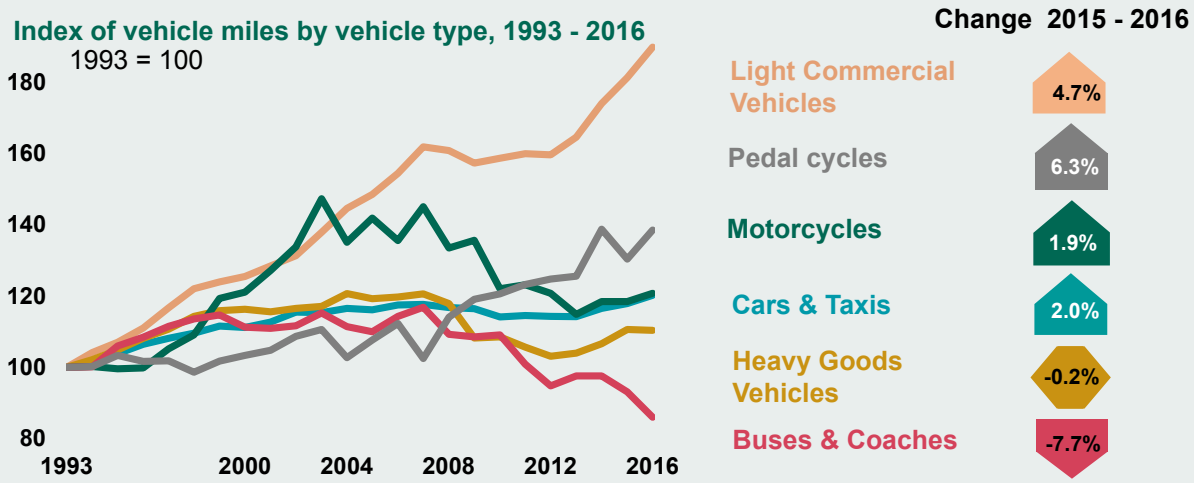
Further information on factors affecting traffic can be found in the Understanding the Drivers of Road Travel report, a review of the evidence on road demand.

Road Traffic by Vehicle Type

This section breaks down the latest traffic statistics and longer term trends in traffic by vehicle type.

Overview

Compared with 2015, van traffic grew fastest (4.7%) in 2016. Cars and taxis remain the dominant vehicle type, accounting for 78% of traffic in 2016.



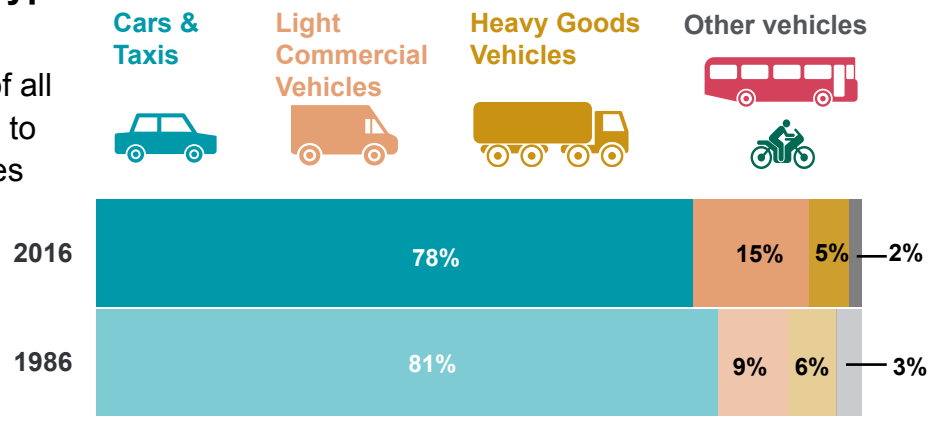
Between 2015 and 2016:

- **Van traffic** showed the fastest growth (in percentage terms) of any motor vehicle, rising by 4.7% to reach a record high of 49.1 billion vehicle miles in 2016.
- Distance travelled by **cars and taxis** and by **motorcycles** also increased, by 2.0% and 1.9% respectively. The 252.6 billion car and taxi miles travelled in 2016 is a new high, with the last two annual totals being above the previous peak in 2007 before the recent financial crisis.
- **Heavy goods vehicle** traffic remained broadly stable, after having grown steadily for the previous three years. The 2016 figure of 16.6 billion vehicle miles remains around 9% below the peak level seen in 2007.
- **Bus and coach traffic** saw the largest decrease of any vehicle type between 2015 and 2016, falling by 7.7% from 2.7 to 2.5 billion vehicle miles, continuing an overall decline seen since 2007.

Share of traffic by vehicle type:

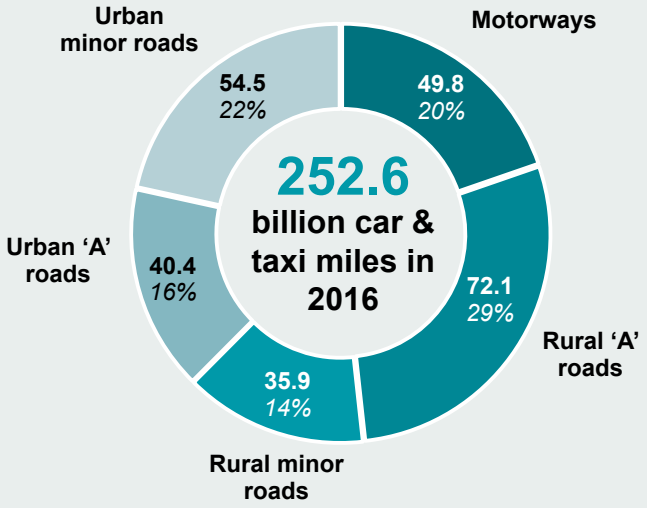
Since the 1980s, cars have accounted for around four-fifths of all motor vehicle traffic and continue to be the main contributor to changes in overall motor vehicle traffic.

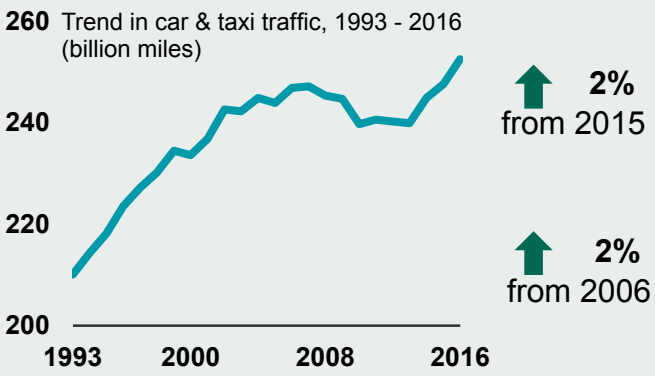
However, vans have become more important over the last decade, accounting for 15% of all motor vehicle traffic in 2016 compared to 9% in 1986.

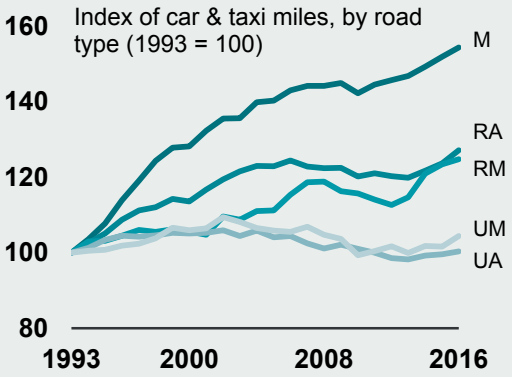


Cars & taxis

Compared with 2015, car and taxi traffic in Great Britain increased by 2.0%, to 252.6 billion vehicle miles in 2016. This is a new high, with the last two years exceeding the previous peak recorded before the recent recession.







Change in car & taxi miles travelled on...

	Motorways (M)	Rural 'A' roads (RA)	Rural minor roads (RM)	Urban 'A' roads (UA)	Urban minor roads (UM)
Since last year	↑ 1.6%	↑ 2.8%	↑ 1.1%	↑ 0.8%	↑ 2.7%
From 10 years ago	↑ 7.9%	↑ 2.2%	↑ 8.1%	↓ -3.9%	↓ -1.0%

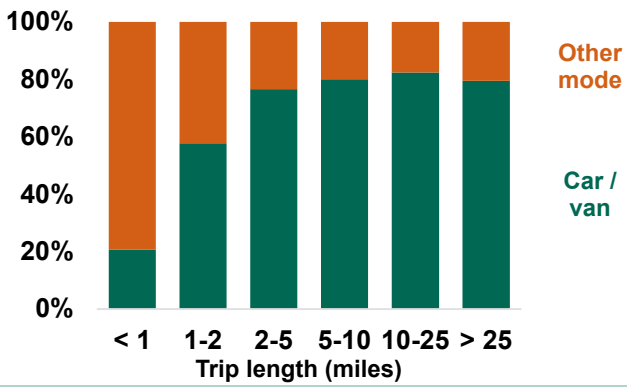
Car traffic increased on all road types between 2015 and 2016, reaching new highs on motorways and rural roads but remaining below the peak levels seen on urban roads in 2002.

The fastest growth in car traffic (in percentage terms) over the last 10 years has occurred on rural minor roads, whereas there has been an overall fall in car traffic on urban roads.

Over the longer term car traffic has shown the most marked increase on motorways, rising by 54% between 1993 and 2016, and showing only a small and brief dip during the recent recession.

The distribution of car miles travelled in 2016 across the different road types was relatively even compared to the distribution for motorcycles, buses and heavy goods vehicles (see other pages in this section). This reflects the car's versatility, being used for both short and long journeys and for a variety of journey purposes (right).

Percentage of trips by trip length in England, 2015 (NTS0308)



Trends in car use

Between 2002 and 2013, there was a fairly steady decline in car miles driven per person and per licensed car. However, from 2013 to 2015 car traffic grew more quickly than population and almost as quickly as car stocks, suggesting a slowing or reversal of the previous downward trends.

Long term trends

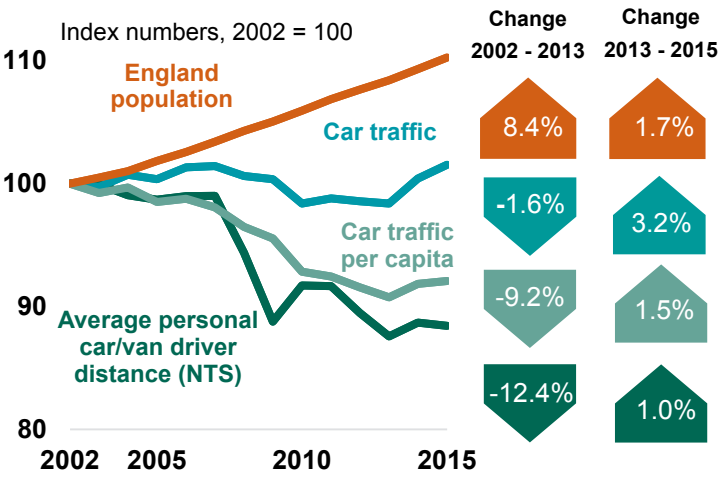
Between 2002 and 2013, changes in car traffic in England reflected a balance between a rising English population and a falling average personal car/van driver distance, as reported by the National Travel Survey (NTS).

Over the same period, the number of licensed cars in England rose rapidly; more quickly than car traffic. Household car/van ownership rates showed little change, but the number of households grew by 10%, driving the growth in vehicle numbers.

Taken together this suggests that, while personal access to cars remained similar between 2002 and 2013, people drove their cars fewer miles. Dividing car traffic by the number of cars suggests that annual mileage per car fell from around 9,500 miles to 8,300 over this period.

See pages 5-6 and further information for possible drivers of these trends.

Personal car travel in England, 2002-2015

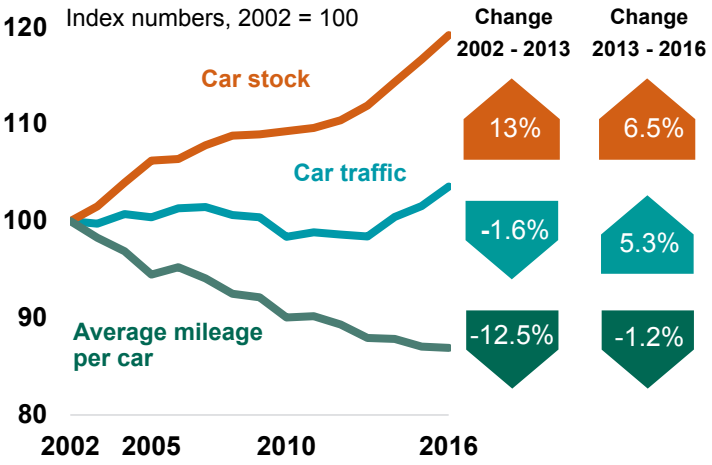


Recent trends

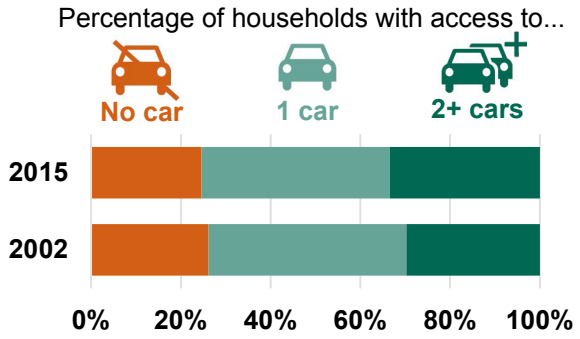
Between 2013 and 2015, growth in car traffic in England outstripped population growth, indicating an increase in average car driver distance. Recent estimates from the NTS show a similar pattern. Whether or not this continued into 2016 will be seen when population and NTS statistics for 2016 are published later in 2017.

Between 2013 and 2016, car traffic and car stock in England grew at similar rates, suggesting a stabilising of average mileage per car. This period saw a marked fall in fuel retail prices (of 25 and 30 pence per litre for petrol and diesel respectively), which may have influenced how often or how far car owners travelled by car.

Car stock and car traffic in England, 2002-2016



Car ownership rates in England (NTS0703)

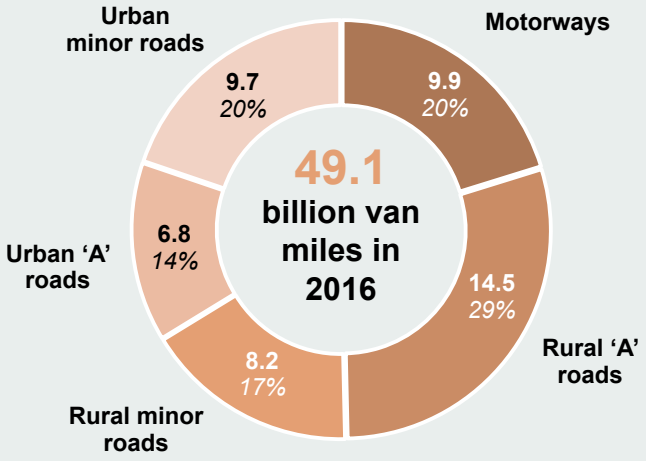


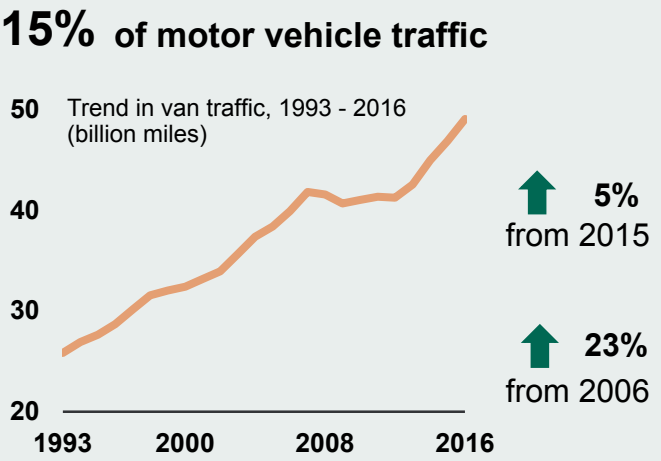
Sources and further information

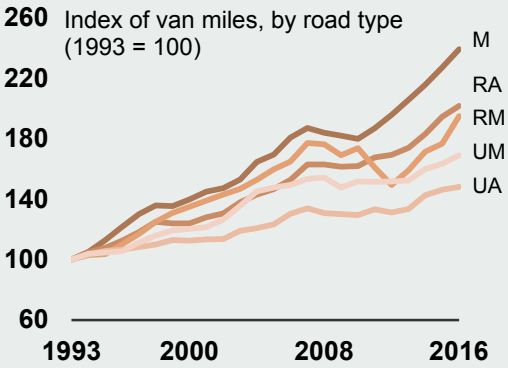
Figures on car stocks are sourced from Vehicles Statistics, personal travel from the National Travel Survey, population from the Office for National Statistics, fuel price data from the Department for Energy and Climate Change and household numbers from the Department for Communities and Local Government. Further discussion of factors influencing trends in travel can be found in the DfT reports 'Understanding the drivers of road travel' and 'Road use statistics'.

Light Commercial Vehicles (Vans)

Van traffic grew 4.7% between 2015 and 2016 to reach a record high of 49.1 billion vehicle miles; the fastest growth in percentage terms of any motor vehicle type. Total van mileage in 2016 was over 70% higher than 20 years ago.







Change in van miles travelled on...

	Motorways (M)	Rural 'A' roads (RA)	Rural minor roads (RM)	Urban 'A' roads (UA)	Urban minor roads (UM)
Since last year	↑ 5.3%	↑ 3.7%	↑ 10.3%	↑ 1.4%	↑ 3.5%
From 10 years ago	↑ 32.3%	↑ 32.1%	↑ 18.4%	↑ 13.8%	↑ 13.2%

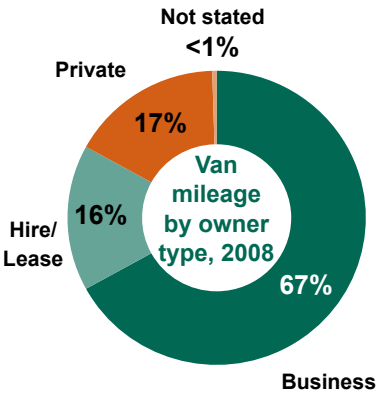
Van traffic rose to new record highs on all road types between 2015 and 2016. Rural minor roads saw the largest proportional increase in van traffic, of 10.3%, followed by motorways at 5.3%. Motorways and rural 'A' roads carried around half of all van traffic in 2016.

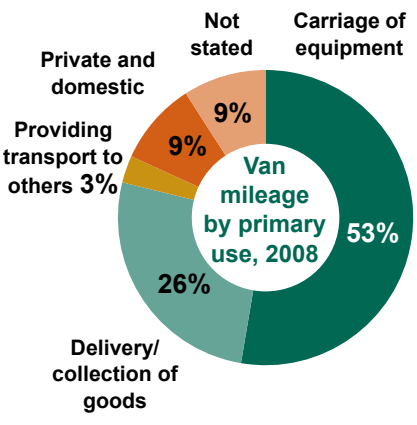
The rapid rise in van traffic over the last 20 years means that van traffic now makes up around 15% of total traffic, compared to 9% in 1986.

Who uses vans?

DfT carried out its most recent detailed survey of van owners and activity in 2008.

In 2008, almost three-quarters of vans were commercially owned. Commercially owned vehicles travelled twice as far as privately owned vans, and accounted for over 80% of the distance travelled by vans. Over half of van mileage in 2008 was to carry equipment.



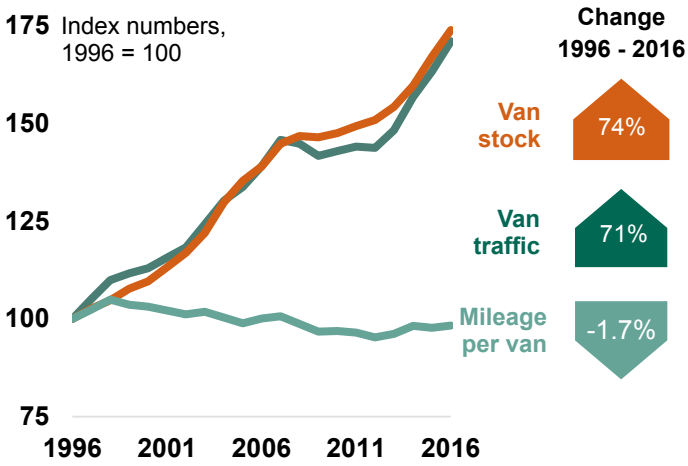


Source: DfT Van baseline survey 2008

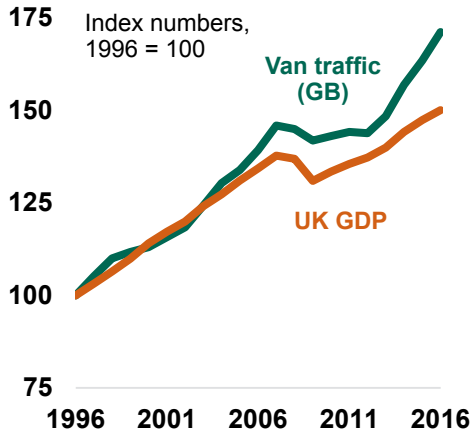
Why is van traffic rising so quickly?

Alongside the 71% increase in van miles between 1996 and 2016, the number of licensed vans rose 74% over the same period, from 2.2 to 3.8 million.

In contrast to the trend seen in average car mileage, the average annual mileage per van in Great Britain (estimated from van vehicle miles divided by van stock) has remained stable over the last 20 years, at around 13,000 miles per year.



Indices of Gross Domestic Product (GDP) and van traffic, 1996-2016



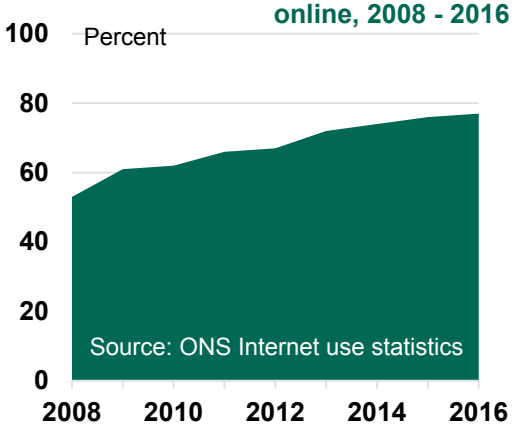
Over the last 20 years, trends in van traffic have followed changes in the economy closely. This is perhaps to be expected given the mainly commercial use of vans, and the variety of uses to which they are put, as recorded by the 2008 van survey. As businesses were established or expanded, the van fleet grew at the same rate.

Gross domestic product (GDP) resumed growth after the recent recession, but van traffic grew even faster than GDP between 2012 and 2016. This additional growth may be linked to a shift in the way consumers and businesses operate.

Drivers of this rapid growth are likely to include:

- Growth in internet shopping and home deliveries. In 2016, 77% of adults shopped online at least once, compared to 53% in 2008.
- Changes to company car taxation rules and vehicle excise duty in the early-to-mid 2000s, which may have made vans a cheaper alternative and so caused people to switch to vans from cars.
- Less strict regulation on driver training, driver's hours restrictions and roadworthiness testing for vans than for lorries, making it easier to find drivers for vans. This may encourage businesses to substitute vans for small lorries.

Percentage of people aged 16+ shopping online, 2008 - 2016



Vehicle Definition

Light Commercial Vehicle (LCV; a.k.a. van) Goods vehicles not exceeding 3.5 tonnes gross vehicle weight

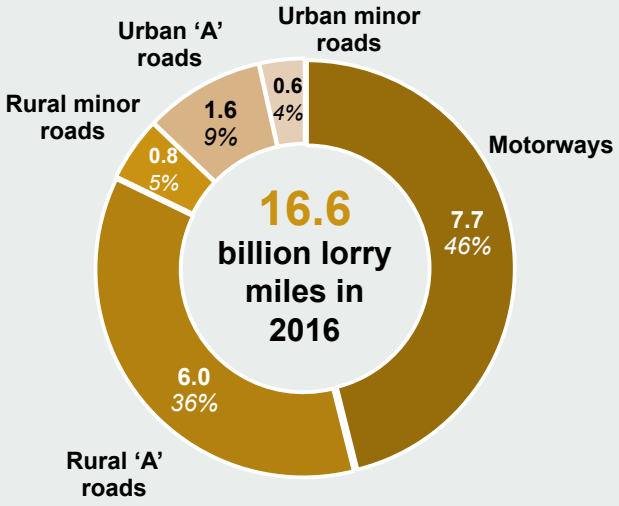
Sources and further information

2008 van baseline survey: In 2008, DfT undertook a postal survey of UK registered vans, to find out who owned vans, what they were used for, and how far they were driven. The DfT report can be found here.

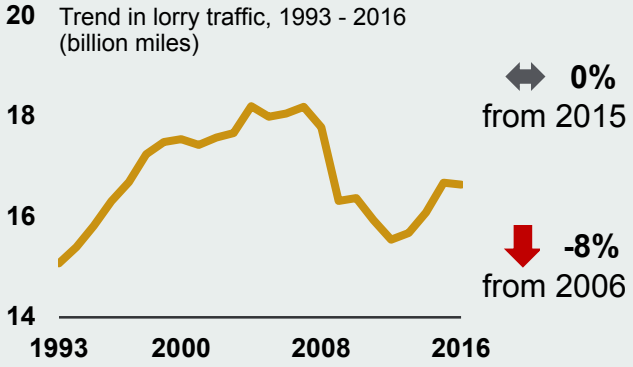
Gross Domestic Product and **Internet usage** data are sourced from the Office for National Statistics.

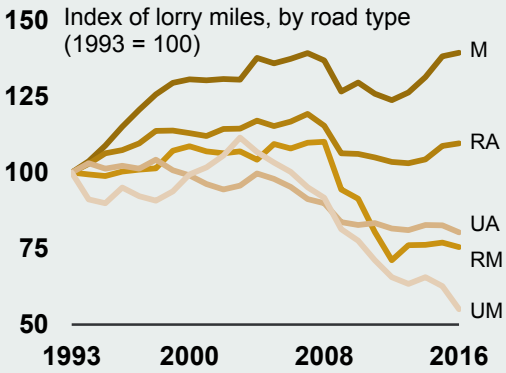
Heavy Goods Vehicles (HGVs, Lorries)

In 2016 lorries travelled 16.6 billion vehicle miles, a similar distance to 2015. The 2016 figure remains around 9% below the record level seen in 2007, but the 7.7 billion vehicle miles driven on motorways is a new high.



5% of motor vehicle traffic





Change in lorry miles travelled on...

	Motorways (M)	Rural 'A' roads (RA)	Rural minor roads (RM)	Urban 'A' roads (UA)	Urban minor roads (UM)
Since last year	↑ 0.8%	↑ 0.8%	↓ -1.9%	↓ -2.8%	↓ -12.2%
From 10 years ago	↑ 1.5%	↓ -6.1%	↓ -30.1%	↓ -15.7%	↓ -45.1%

Overall, lorry traffic remained broadly stable between 2015 and 2016 (-0.2% fall), after having risen by over 7% between 2012 and 2015.

However, the stable overall figure comprised a small rise in lorry traffic on motorways and rural 'A' roads, alongside decreases on other road types. This continues a general trend of higher growth rates on motorways and rural 'A' roads seen over the last 20 years. The 2016 figure of 7.7 billion vehicle miles on motorways equals the previous high seen in 2007, and together, motorways and rural 'A' roads carry 82% of lorry traffic.

Factors affecting trends in HGV traffic

In recent years, lorry traffic appears to be closely correlated with changes in the economy.

This can be seen in general terms by comparing the index of Gross Domestic Product (GDP) with lorry traffic (right). Both GDP and lorry traffic fell sharply during the recent recession, and have grown sharply since 2012.

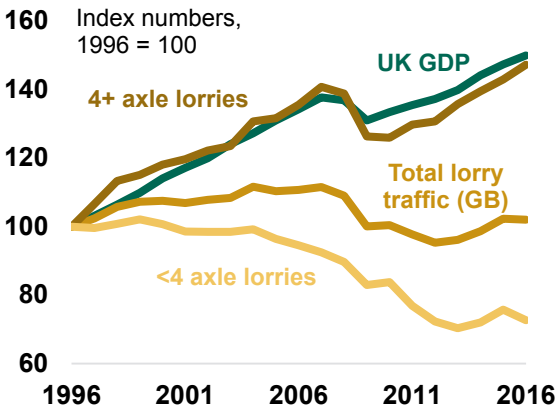
	UK GDP	GB Lorry traffic
Change 2007-2009	↓ -4.9%	↓ -10.3%
Change 2012-2016	↑ 9.3%	↑ 7.1%

Longer term trends

A key factor in understanding trends in lorry traffic over the longer term is that lorries comprise of a wide range of differently sized vehicles, able to carry differing quantities of goods.

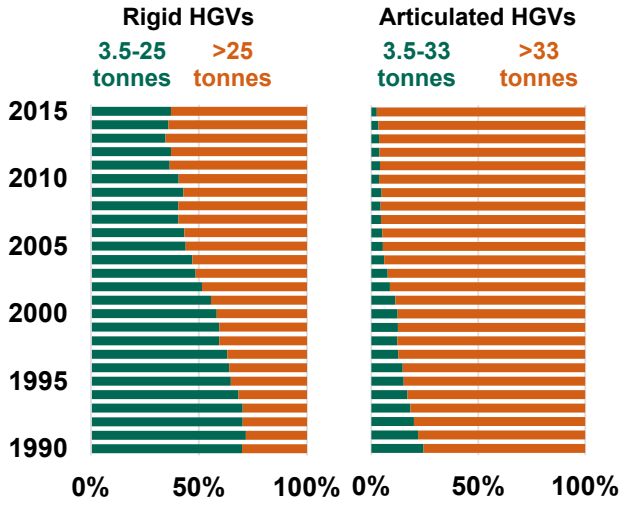
Between 1996 and 2016, total lorry vehicle mileage grew more slowly than UK GDP, but trends in lorry traffic differed markedly between different vehicle sizes. Traffic of lorries with four or more axles was 47% higher in 2016 than in 1996, whereas for lorries with less than four axles it had fallen by 27%.

Indices of Gross Domestic Product (GDP) and lorry traffic, 1996-2016



The statistics from DfT's annual freight survey show a similar trend, presenting freight transport by gross vehicle weight.

Percentage of goods moved by GB registered HGVs in the UK, by HGV weight, 1990 - 2015

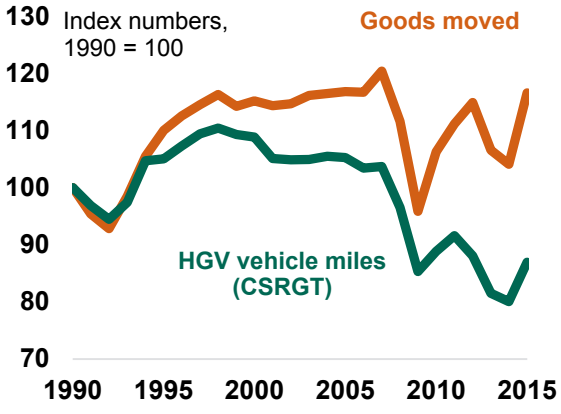


Between 1990 and 2015, heavier HGVs moved an increasing proportion of goods by road. As a result, road freight in HGVs is now more concentrated in heavier lorries than in the past, and fewer vehicle miles are being driven to transport the same weight of goods.

This gradual shift towards larger HGVs carrying a higher proportion of goods means that, over the long term, the trends in volume of goods moved (see box below right) and distance travelled by HGVs have diverged.

It could also partly explain the different trends in HGV traffic by road types. Freight is likely moved more efficiently by larger HGVs on major roads, than on narrow or busy minor and urban roads. It is also possible that vans are being used to perform work previously carried out by smaller HGVs.

Goods moved and vehicle miles travelled by GB registered HGVs in the UK, 1990 - 2015



Vehicle Definition

Heavy Goods Vehicle (HGV; a.k.a. lorry) Goods vehicles over 3.5 tonnes gross vehicle weight, including both articulated and rigid body types.

Data Source

The figures for HGV activity on this page come from DfT's Continuing Survey of Road Goods Transport (CSRGT) for British registered HGVs.It provides information on weight of goods lifted and moved by vehicle type and commodity type.

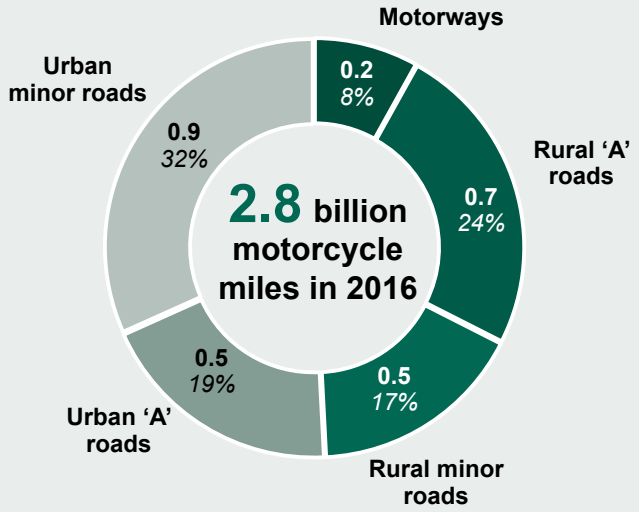
Goods lifted and goods moved

Goods lifted refers to the total weight of freight transported in a load, measured in **tonnes**.

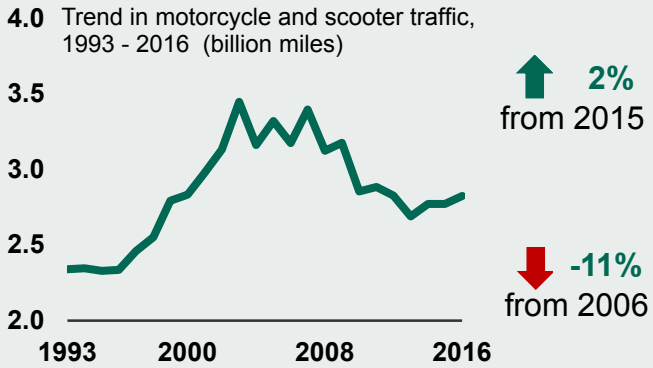
Goods moved is defined as the weight of goods in each load multiplied by the distance the load is transported, measured in **tonne miles** or **tonne kilometres**.

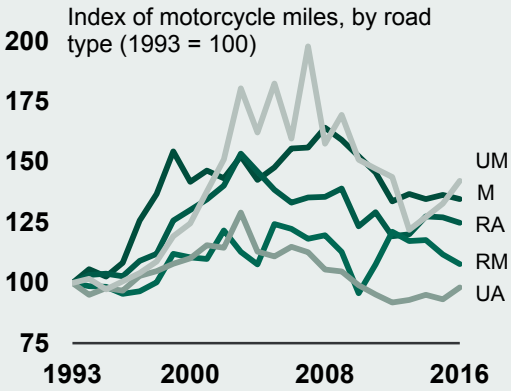
Motorcycles & scooters

Motorcycles and scooters travelled 1.9% further in 2016 compared to the previous year. Motorcycle traffic has declined over the last 10 years, from a peak in the mid-2000s.



0.9% of motor vehicle traffic



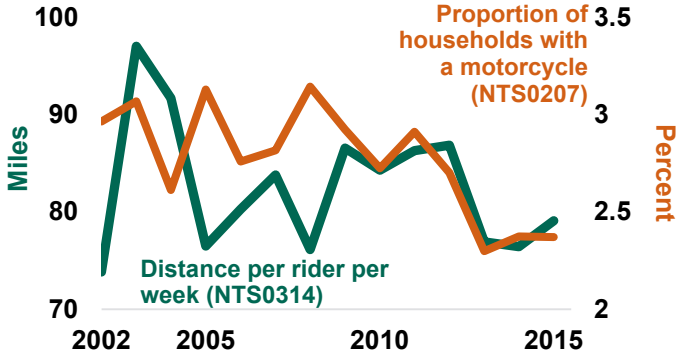


Change in motorcycle miles travelled on...

	Motorways (M)	Rural 'A' roads (RA)	Rural minor roads (RM)	Urban 'A' roads (UA)	Urban minor roads (UM)
Since last year	-1.2%	-1.7%	-3.5%	5.2%	7.1%
From 10 years ago	-13.5%	-6.2%	-11.8%	-14.6%	-11.0%

The small overall rise in motorcycle and scooter traffic between 2015 and 2016 was not equal across all road types. Small decreases occurred on motorways and rural roads, while larger rises were seen on urban roads. Urban roads carry over one-half of all motorcycle and scooter traffic.

Results from the National Travel Survey (NTS) indicate that average distance per motorcyclist in England (average distance ridden per motorcycle rider per week) has not had a downward trend over the last decade, although it has had year-to-year variability.

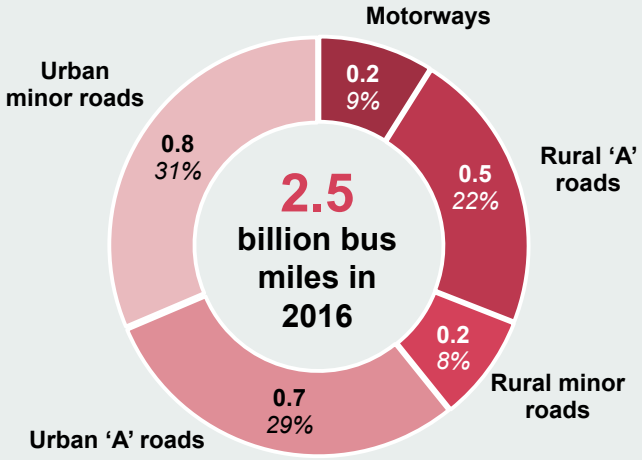


However, there was a downward trend in the proportion of households having access to a motorbike over the period, dropping from 3% in 2002 to 2.4% in 2015.

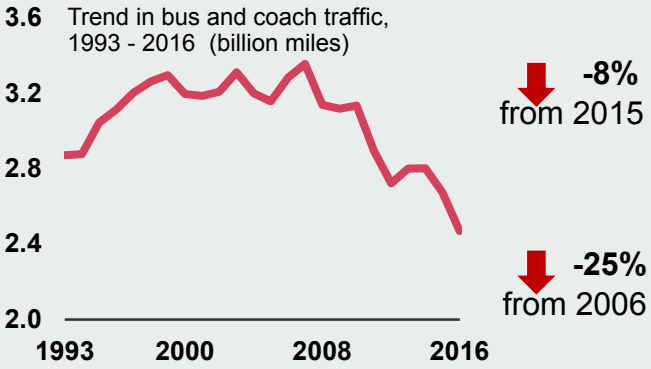
In other words, the distance ridden by those who ride has changed little, but it appears that fewer people are riding motorbikes.

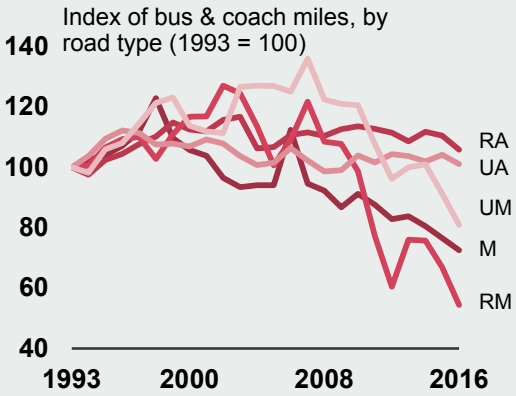
Buses & coaches

Bus and coach traffic fell by 7.7% between 2015 and 2016 - the largest decrease of any vehicle type. Over the last decade, bus and coach traffic has fallen by around one-quarter.



0.8% of motor vehicle traffic





Change in bus & coach miles travelled on...

	Motorways (M)	Rural 'A' roads (RA)	Rural minor roads (RM)	Urban 'A' roads (UA)	Urban minor roads (UM)
Since last year	-5.3%	-4.3%	-18.7%	-2.9%	-11.4%
From 10 years ago	-35.5%	-4.4%	-50.2%	-4.9%	-35.3%

Local bus mileage and passenger mileage

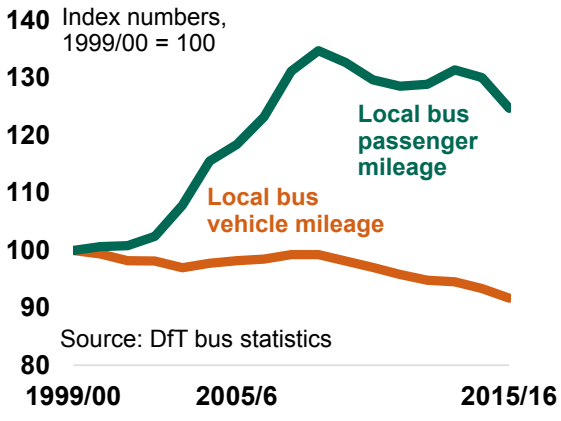
Changes in local bus services have a strong influence on the overall trend in bus and coach traffic, because local bus service mileage makes up a large proportion of the total (approximately 60%).

Between 1999/00 and 2015/16, mileage of local bus services in Great Britain fell by around 8%. However, over the same period bus passenger miles rose by nearly one-quarter, from 13.9 billion in 1999/00 to 17.3 billion in 2015/16.

The difference in trend between vehicle mileage and passenger mileage reflects an increase in the average number of passengers travelling on each bus, from 8.4 passengers per bus in 1999/00 to 11.4 passengers per bus in 2015/16.

The large number of passengers per bus (in comparison to occupancy of cars, motorcycles and pedal cycles) means that, although bus and coach vehicle mileage is a similar level as motorcycle and pedal cycles miles, it accounts for an order of magnitude more trips by people.

Local bus vehicle mileage and passenger mileage, Great Britain 1999/00 - 2015/16



Long term trends: by road type

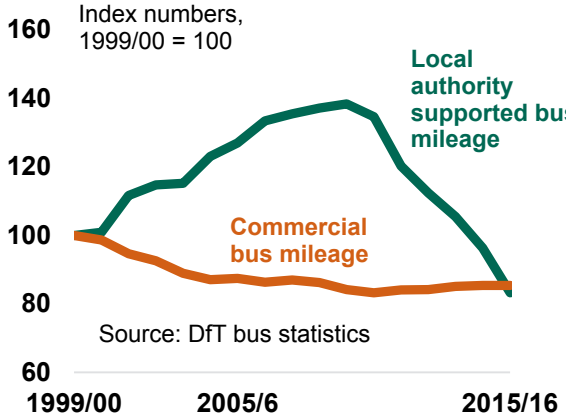
The majority (61%) of bus and coach miles in Great Britain are driven on urban roads, near to densely populated areas.

The largest decreases in bus traffic between 2015 and 2016 occurred on minor roads and motorways, continuing a trend seen for the last decade. Since 2006, bus traffic has fallen 50% and 35% on rural and urban minor roads respectively. In contrast, bus traffic on urban and rural 'A' roads has fallen only slightly over the same period.

The fall observed in bus and coach mileage over the last decade, and the contrasting patterns on 'A' roads and minor roads, may partly be explained by the trends in local bus service mileage.

Local bus mileage in Great Britain fell 7% in the 10 years since 2005/06. This was due to a decrease of 34% in local authority supported bus mileage in Great Britain outside London over the same period.

Supported and commercial bus mileage, Great Britain excluding London 1999/00 - 2015/16

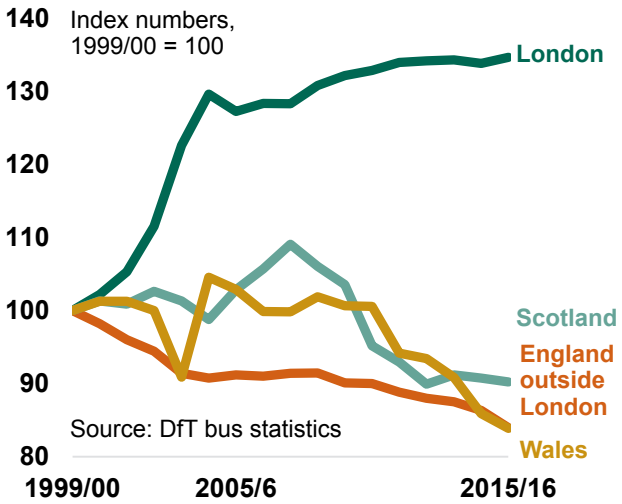


Increases in commercial bus mileage since 2010 have partially offset the decline in supported mileage, but these services may be more likely to use 'A' roads, causing a shift in mileage from minor to 'A' roads .

Long term trends: by location

Local bus services mileage trends since 1999/00 have not been consistent across the country.

Local bus vehicle mileage by country and London / non-London, 1999/00 - 2015/16



Local bus mileage in London rose rapidly until 2004/5, since when it has increased more slowly.

In the rest of Great Britain local bus mileage has seen an overall downward trend since 1999/00. The declines in Scotland and Wales have not been smooth, falling more rapidly since 2010.

DfT bus statistics

In addition to the estimates of bus and coach mileage published here, DfT also publishes statistics providing a wide range of information about local bus services, mainly based on data from bus operators.

The bus statistics provide contextual information to help interpret the bus and coach traffic estimates.

Mileage estimates are available from both sources, and whilst they are not exactly comparable, it is estimated that local bus mileage makes up roughly three-fifths (1.5 billion vehicle miles) of all bus and coach traffic.

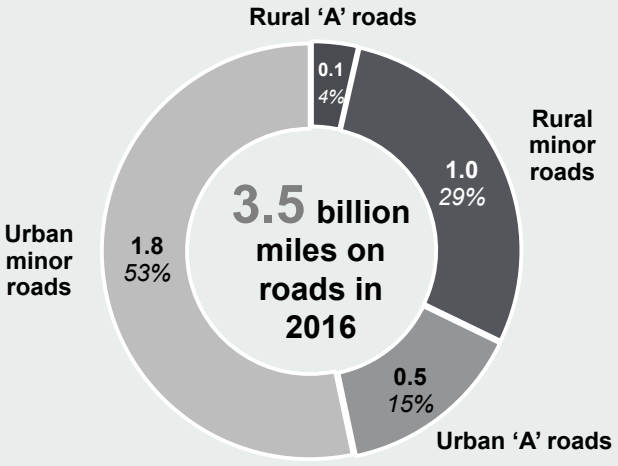
Vehicle definition

Buses and coaches are defined as vehicles designed to transport people, which have a van chassis or larger, but excluding minibuses.

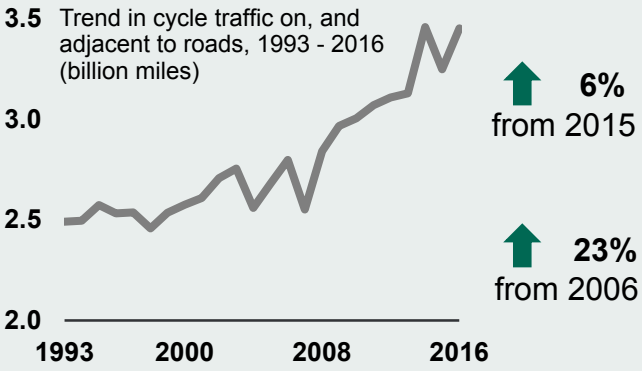
DfT road traffic statistics combine mileage of both public and private vehicles, because public and private vehicles cannot be distinguished in traffic counting surveys.

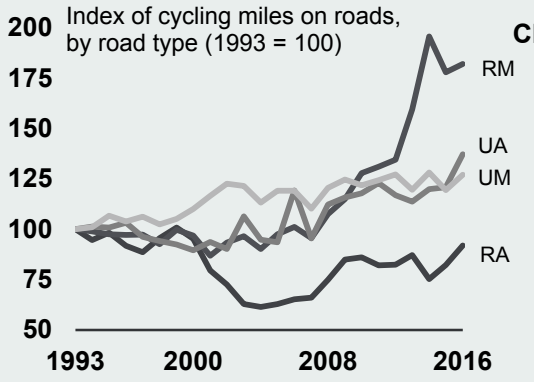
Pedal cycles

Pedal cycles travelled 3.5 billion miles on roads* in 2016, 6.3% further than in the previous year, and over one-third more than 20 years ago.



1% of all traffic on roads





Change in cycling miles travelled on...

	Rural 'A' roads (RA)	Rural minor roads (RM)	Urban 'A' roads (UA)	Urban minor roads (UM)
Since last year	↑ 11.9%	↑ 2.3%	↑ 13.6%	↑ 6.3%
From 10 years ago	↑ 41.1%	↑ 80.1%	↑ 15.1%	↑ 6.6%

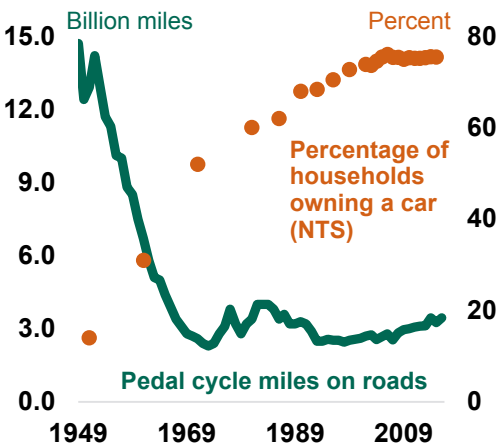
Between 2015 and 2016, cycle traffic rose on all road types to reach 3.5 billion vehicle miles; a similar level to 2014, which was the highest figure since 1987. Although over four-fifths of the road cycle miles ridden in 2016 were on minor roads, the largest proportional increases in cycle traffic were on 'A' roads.

Long-term trends in cycle traffic

Year-to-year changes in cycle traffic can be volatile due to factors such as the weather, so long-term changes are more reliable indicators of underlying trends.

Despite the recent growth in cycle traffic, cyclists in 2016 travelled only around one quarter of the 14.7 billion miles ridden in 1949. Cycle traffic fell most quickly during the 1950s and 1960s, coinciding with a large rise in car ownership. The lowest annual cycle mileage on Great Britain's roads was seen in 1973, at 2.3 billion miles.

Pedal cycle traffic and car ownership (NTS) in Great Britain, 1949 - 2015



*Cycling on roads

DfT road traffic statistics report activity of cyclists on public highways, and on cycle paths and footpaths adjacent to them.

Cycle activity elsewhere (for example on canal towpaths, byways or bridleways) is not included in road traffic statistics.

Statistics from the National Travel Survey (NTS) and Active Lives Survey also provide information on cycling.

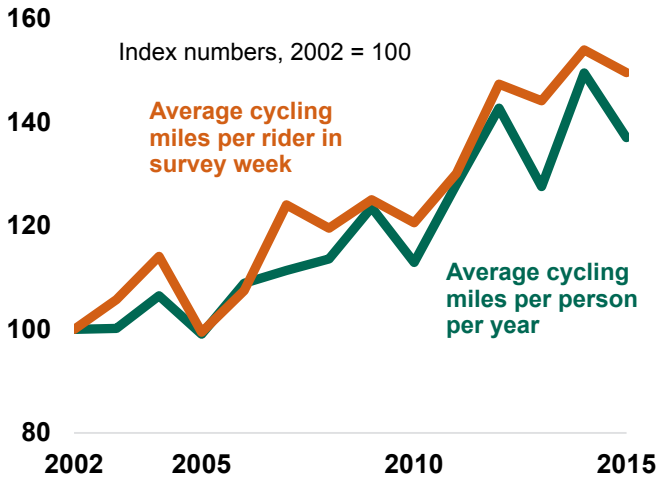
Understanding trends in cycle traffic

Information on cycling from other sources such as the National Travel Survey (NTS) provides context for the trends in the estimates of cycle traffic from the road traffic statistics.

Between 2002 and 2015, average cycle mileage per person per year (including both people who cycle and those who do not) in England rose by 37%, though the trend is somewhat erratic.

When only considering respondents who cycled at least once during the survey week, the average distance cycled during the week has grown at a similar rate to the whole of England average. This suggests that people who cycle have been cycling further, but that the proportion of the population who cycle has not changed substantially.

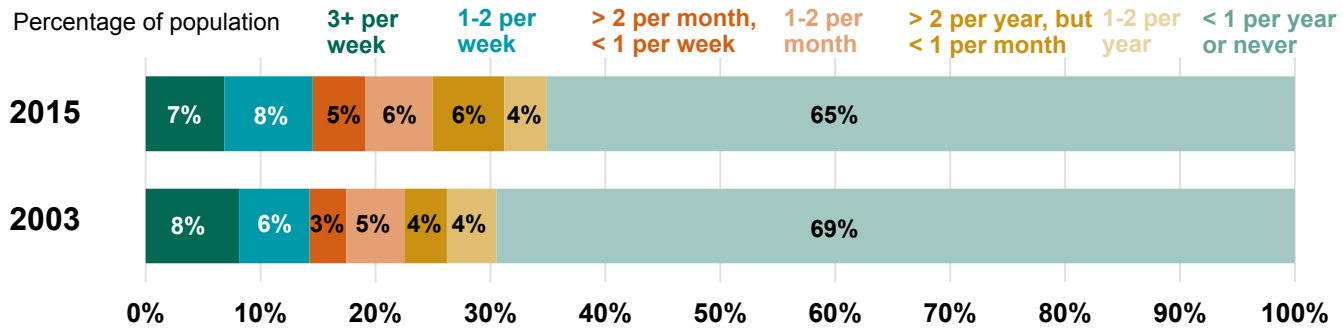
Average cycle miles per capita and per active cyclist in England, 2002-2015 (NTS)



This picture is broadly supported by NTS figures on cycling frequency (below), which show that the proportion of people cycling at least once per week stayed roughly constant between 2003 and 2015, rising just one percentage point from 14% to 15%.

In general, cycling activity is quite unevenly distributed within the population, with 65% of people rarely or never cycling, but almost half of those cycling doing so more than once per week.

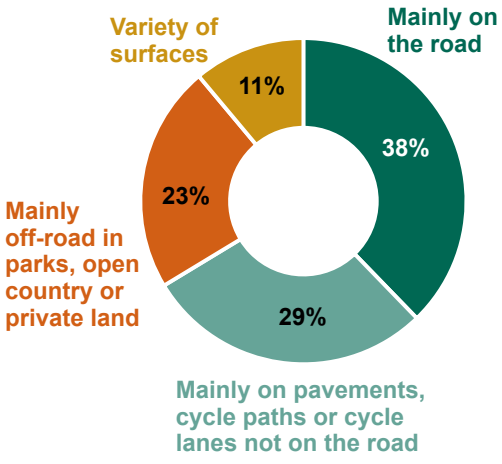
Cycle trip frequency in England, 2003 and 2015 (NTS0313)



Both road traffic estimates and NTS statistics show that cycle traffic has been growing over the last decade, but the NTS figures suggest higher levels of growth than the road traffic estimates.

Some of this difference could be due to off-road cycling, which is not covered in the traffic statistics data collection. In 2015, nearly one-quarter of NTS respondents reported mainly cycling off-road.

Main cycling location in the last 12 months, England 2015 (NTS0315)



Note on National Travel Survey figures

The number of actively cycling respondents in the National Travel Survey is relatively low, so figures on average cycling miles per capita and per rider are expected to fluctuate from year to year as a result of sampling error.

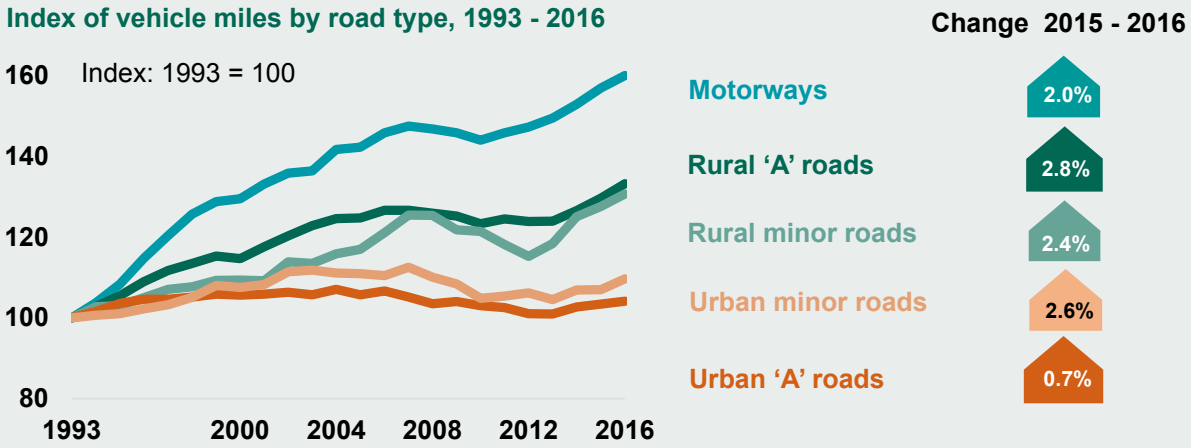
As such, interpretation should focus on long-term trends rather than year-to-year changes.

Traffic by Road Type

This section breaks down the traffic statistics by road type. Figures are presented split by the classification of the road (Motorway, 'A', 'B', 'C', unclassified), by the urban/rural setting of the road.

Overview

Between 2015 and 2016, motor vehicle traffic increased on all road types. Traffic on motorways and rural roads reached new all time highs in 2016.



Between 2015 and 2016:

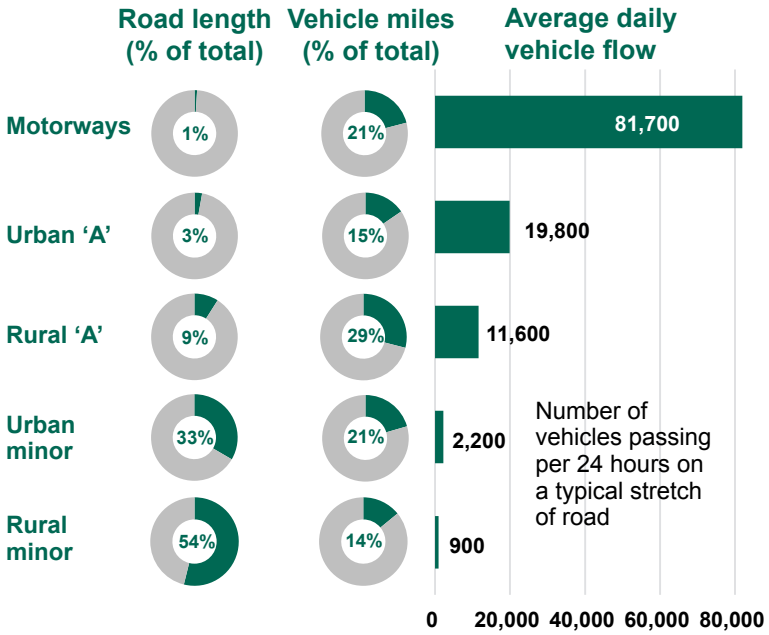
- **Traffic on motorways, rural 'A' roads and rural minor roads** grew by 2.0%, 2.8% and 2.4%, respectively, to reach new all time highs.
- **Traffic on urban 'A' and urban minor roads** grew by 0.7% and 2.6% respectively, but on both road types remains below the peak levels seen in the mid 2000s.

Share of traffic by road type:

Vehicle activity is very unevenly distributed across Great Britain's road network.

In 2016, 65% of the motor vehicle miles travelled were on motorways and 'A' roads, despite comprising only 13% of the road network by length.

On an average day in 2016, 87 times more vehicles travelled along a typical stretch of motorway than a typical stretch of rural minor road ('B' roads, 'C' roads, and unclassified roads).



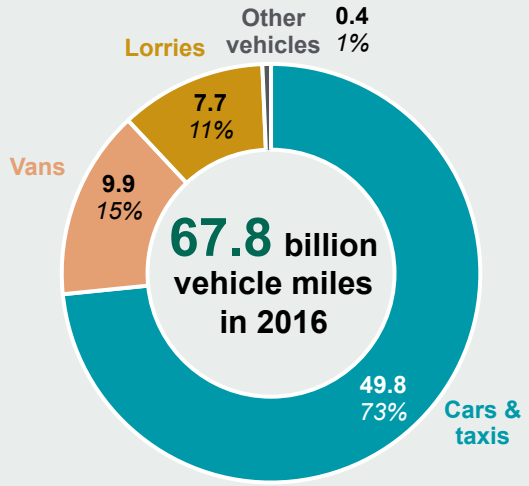
Definitions

Rural and Urban: 'Urban' roads are those within a settlement of 10,000 people or more, following the 2001 Census definition of urban settlements. All other roads are defined as 'rural'. See here.

Minor and Major: Major roads include motorways and 'A' roads. Minor roads comprise 'B' roads, 'C' roads, and unclassified roads.

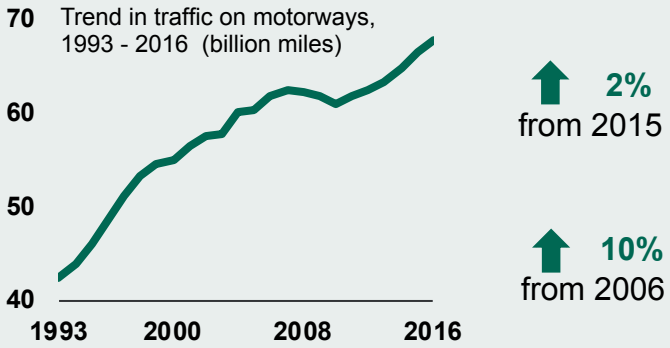
Motorways

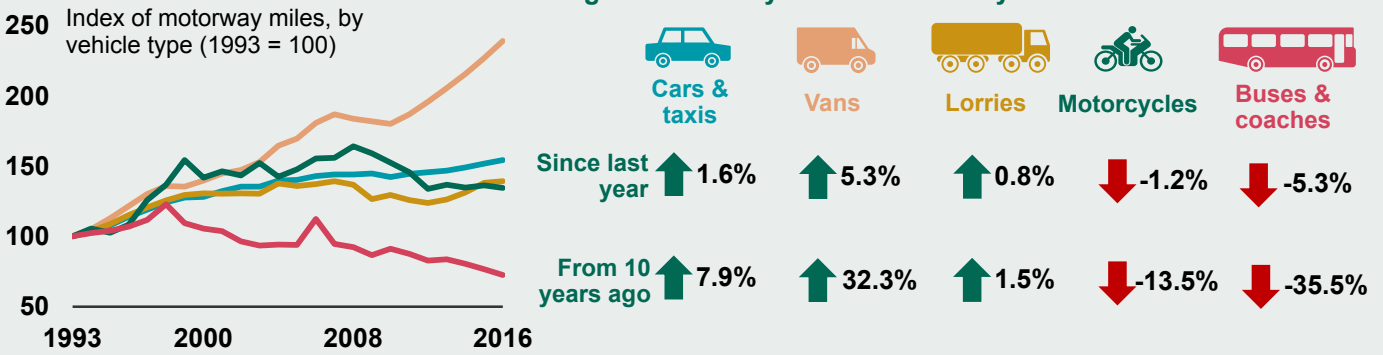
In 2016, 67.8 billion vehicle miles were travelled on Great Britain's motorways, 2% more than in 2015 and 10% more than 10 years ago.



1% of road length

21% of vehicle miles

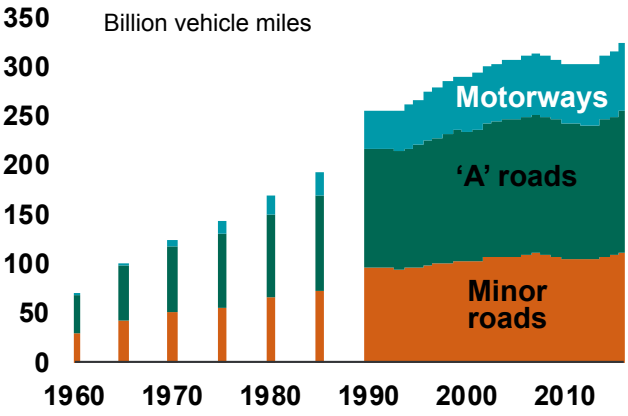




The overall increase in motorway traffic over the last decade comprises of differing trends by vehicle type. Van traffic has grown by almost one-third, whilst motorcycle and bus and coach traffic have both fallen.

Motorways are vital for the movement of freight, carrying almost half (46.1%) of all lorry traffic in 2016, compared to one-fifth of car traffic.

Motor vehicle traffic by road type, 1960 to 2016 (TRA0102)



The proportion of total vehicle miles driven on motorways has increased over time, from 0.6% in 1960 to 21% in 2016. This has resulted from motorways increasing in length from 95 miles in 1960 to 2,268 miles in 2016, as well as an increase in average vehicle flow over the same period from 11,500 to 81,700 vehicles per day.

Traffic on motorways appeared to be less severely affected by the recent recession than traffic on other road types.

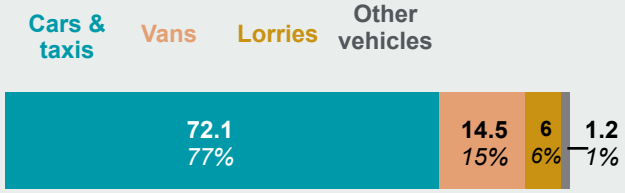
Rural roads

Compared with 2015, traffic increased by 3% on rural 'A' and by 2% on rural minor roads in 2016, with traffic reaching new record levels on both road types.

Rural 'A' roads

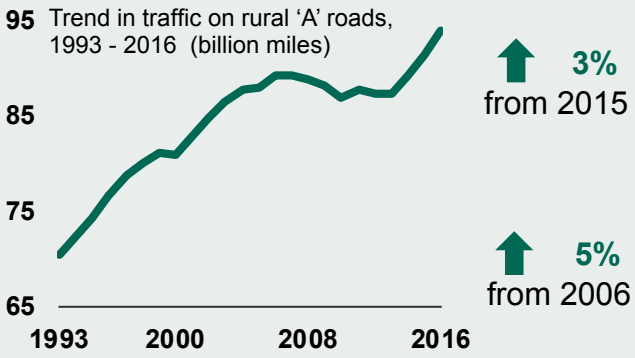
93.8 billion vehicle miles in 2016

of which...



9% of road length

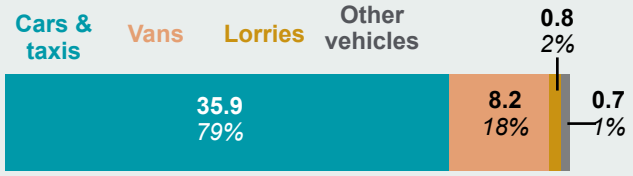
29% of vehicle miles



Rural minor roads

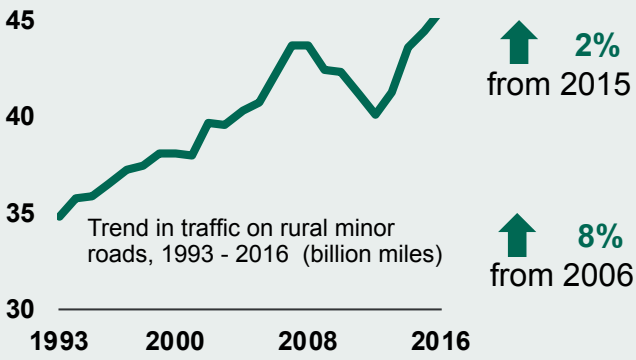
45.5 billion vehicle miles in 2016

of which...



54% of road length

14% of vehicle miles



In 2016, rural 'A' and rural minor roads carried over 40% of all motor vehicle traffic between them; slightly more than the vehicle miles travelled on urban roads. However, the average daily flow on rural roads (11,600 vehicles on rural 'A' roads; 900 vehicles on rural minor roads) was far below that on urban roads (19,800 on urban 'A' roads; 2,200 on urban minor roads).

Over the last decade, traffic on rural roads has risen substantially, by 5% and 8% on 'A' roads and minor roads, respectively. This rapid growth in rural traffic in recent years contrasts with a relatively flat trend in urban traffic. The differences between traffic on urban and rural roads are discussed further on page 24.

Trends by vehicle type

On rural 'A' roads, among motor vehicles, van traffic has grown most in percentage terms (32%) since 2006, whilst HGV and bus and coach traffic has decreased over the same period.

On rural minor roads, van traffic again rose most quickly (18%) of any motor vehicle between 2006 and 2016, followed by cars (8%). There was also very strong growth in pedal cycle traffic, which rose by 80% over the same period, in particular between 2012 and 2014, possibly as a result of the exposure from the Olympics and Tour de France events. Pedal cycles in 2016 made up 2.1% of all traffic on rural minor roads, compared to 1.3% in 2006.

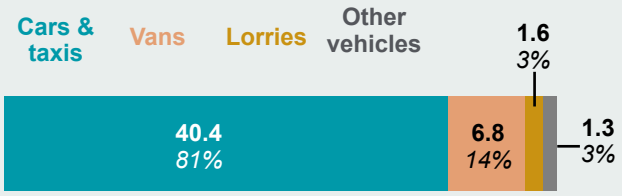
Urban roads

Compared with 2015, there were small increases in traffic on urban roads in 2015, growing by 0.7% on urban 'A' roads and by 2.6% on urban minor roads.

Urban 'A' roads

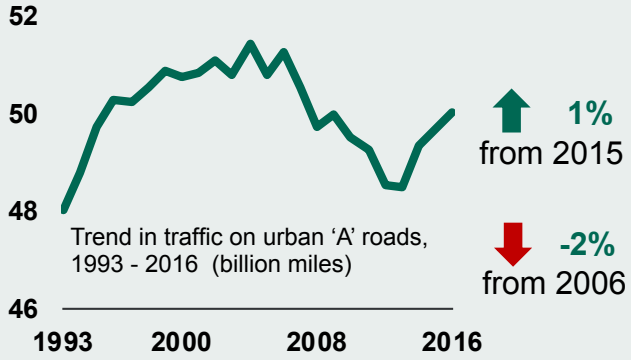
50.0 billion vehicle miles in 2016

of which...



3% of road length

15% of vehicle miles



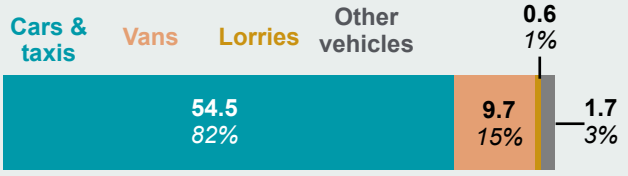
1% from 2015

-2% from 2006

Urban minor roads

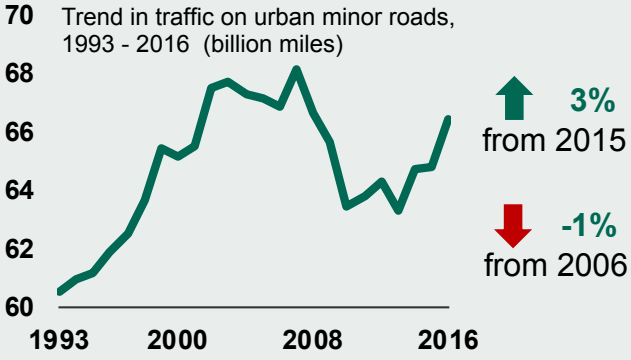
66.4 billion vehicle miles in 2016

of which...



33% of road length

21% of vehicle miles



3% from 2015

-1% from 2006

Urban traffic fell sharply during the recent recession, and remains below the levels seen in 2004. However, this pattern has varied amongst vehicle types, with van traffic on urban roads rising 13% from 10 years ago, compared to a fall of 26% in HGV traffic over the same period.

Traffic on urban roads has also shown varying trends geographically, with London showing larger drops in traffic than elsewhere in Great Britain. Urban roads carried almost 90% of the traffic in the Greater London region in 2016.

The 2% fall in urban 'A' road traffic between 2006 and 2016 comprised of a 10% drop on these roads in London, against little change (-0.3%) outside London.

On urban minor roads, traffic in London fell 4%, compared to a very small decrease (0.3%) in the rest of Great Britain.

Percentage change in traffic on urban roads in Great Britain (GB) within and outside of London, 2006-2016

Why have trends in urban and rural traffic differed?

Between 2000 and 2016, traffic on rural roads rose markedly, while traffic on urban roads fell slightly.

Patterns vary among vehicle types:

- **Car traffic** rose by 13% overall on rural roads and fell by around 3% on urban roads.
- **Van traffic** rose on all road types but saw larger increases on rural roads.
- **Lorry traffic** fell on all road types except for motorways, but decreases were smaller on rural road types compared to the equivalent urban road types.

Percentage change in traffic, 2000 - 2016

	Cars & taxis	Vans	Lorries	Other motor vehicles
Motorways	20.4%	71.0%	6.7%	-20.2%
Rural 'A' roads	12.0%	62.9%	-2.9%	-4.9%
Rural minor roads	18.2%	44.5%	-30.6%	-26.7%
Urban 'A' roads	-4.5%	31.8%	-19.0%	-7.8%
Urban minor roads	-1.5%	40.5%	-44.6%	-10.9%

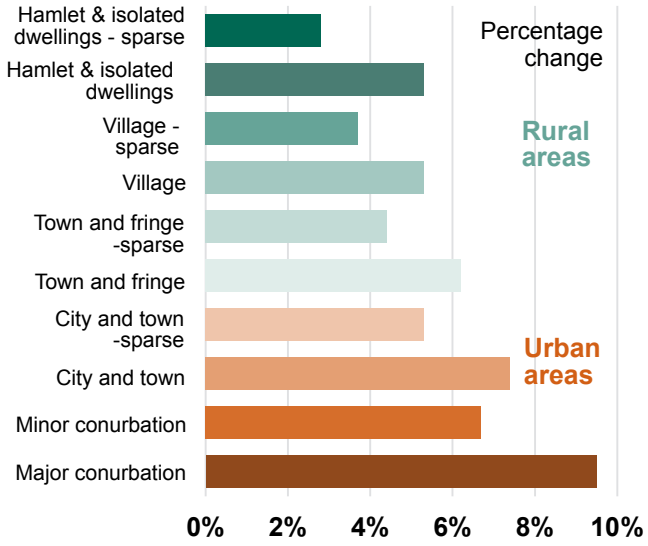
Car trends

Cars have contributed around two-thirds of the observed changes to traffic on rural and urban roads between 2000 and 2016.

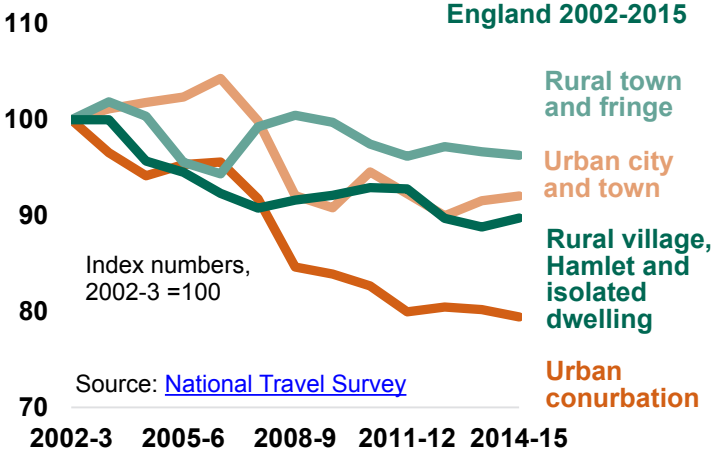
Population and personal car travel

In England, the 2015 National Travel Survey showed that the average annual mileage per person fell most for residents in urban conurbations, but to a lesser extent for more rural residents. As a greater proportion of the distance driven by rural residents is likely to occur on rural roads, this trend would tend to lead to a relative shift in car traffic towards rural roads.

Population growth in England and Wales by rural-urban classification (ONS), 2001 - 2011



Average personal car/van driver distance by area type, England 2002-2015



Source: National Travel Survey

However, differing population growth in rural and urban areas may have offset how changes in per person car travel have affected total car traffic.

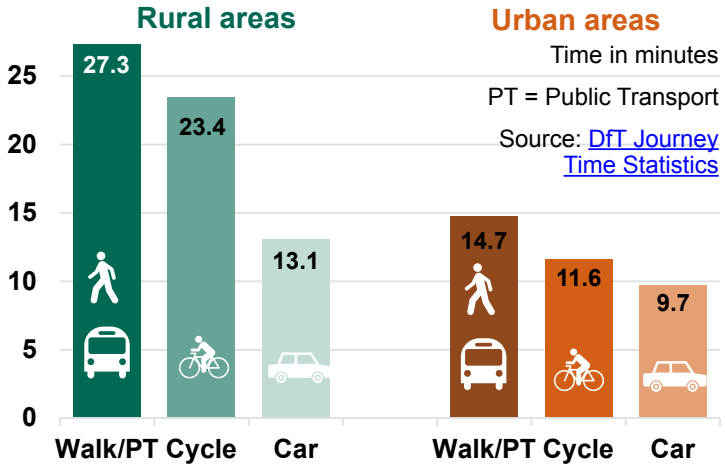
Population growth between 2001 and 2011 was generally higher in urban areas than in rural areas (left), perhaps explaining why the reduction in car traffic in urban areas was not as large as might be expected from the drop in per person car travel in these areas.

Mode choice and car traffic

In urban areas, factors such as congestion on urban roads and better cycling and public transport links can make car travel a less attractive option than in rural areas. Compared with using a car, reaching key services using public transport takes over twice as long on average in rural areas, but only about 50% longer in urban areas (below).

This could have caused a shift in people's travel behaviour away from using cars towards public transport and other modes. Between 2002/3 and 2014/15 there was indeed a decline in average annual distance travelled by urban residents: this was 569 miles for a car driver, and 294 miles for a car passenger. However, distance travelled by other modes rose only 23 miles over the same period, suggesting that they are simply travelling less far.

Average minimum travel time to key services by transport mode and area type, England 2014



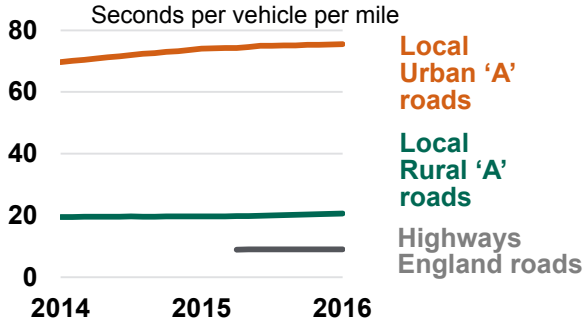
Car trip destinations and routing

Another factor that could influence traffic trends on urban and rural roads is a change in the type of car trips people make, or the route they take to get between a given origin and destination.

There are no long-term data sources yet available which directly address this question. However, it is possible to look at factors which might cause drivers to choose rural routes over urban ones, such as congestion levels.

In 2016 in England, delays on locally managed urban 'A' roads were greater than on rural 'A' roads or on Highways England managed roads (right), and have also risen more since 2014.

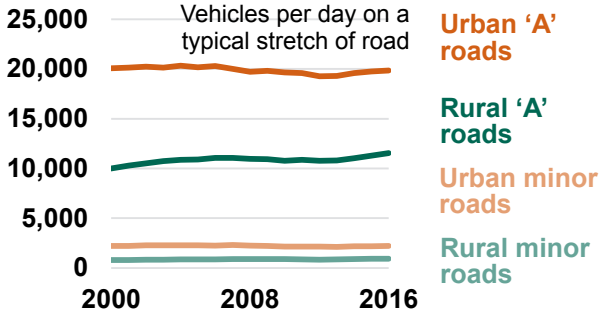
Average delay on major roads, England 2014 - 2016



Source: DfT Road Congestion Statistics

Average daily flows on urban roads are much higher than on rural roads (right), so urban roads likely have less spare capacity to buffer changes in traffic without increasing congestion. Changes in road space for private cars on urban roads could affect delays even without traffic growth, for example through the creation of bus and cycle lanes.

Average annual daily vehicle flow, 2000 - 2016



Freight trends

The decline in lorry traffic on urban roads (a reduction of 0.8 billion vehicle miles between 2000 and 2016) has been offset by the corresponding increase in van traffic on these roads (an increase of 4.5 billion vehicle miles over the same period).

As discussed in the van and lorry sections of this report (see p.14), anecdotal evidence suggests that freight is moved more efficiently by larger lorries on motorways and rural dual-carriageways than on narrow or busy urban roads; large lorries are often restricted to certain routes. To some extent, vans may have replaced lorries for use in urban areas.

The Strategic and Local Road Networks in England

This section explores how traffic differs across the different road networks in England.

Overview

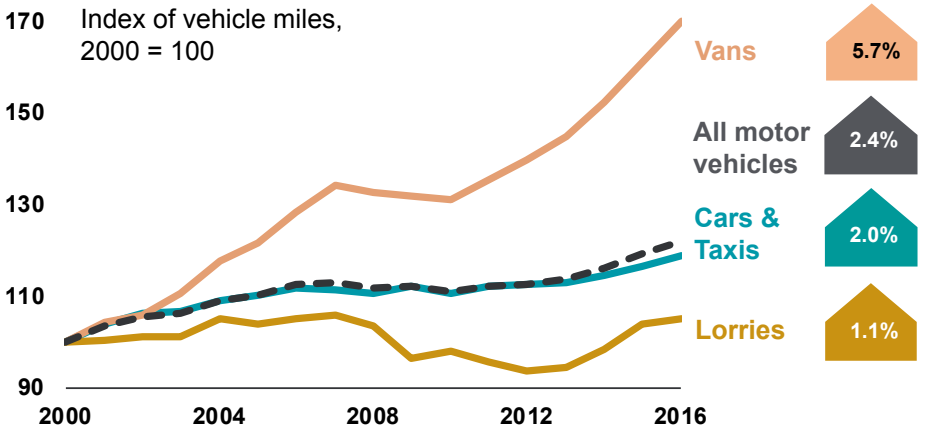
Compared with 2015, traffic increased by 2.4% on England's Strategic Road Network and 2.1% on the Local Road Networks in 2016.

Billion vehicle miles travelled in 2016:		Change 2015 - 2016:	AADF (Number of vehicles passing per 24 hours on a typical stretch of road)
Strategic Road Network	91.9	2.4%	56,700
Local Major Road Network	89.2	1.6%	13,900
Local Minor Road Network	95.9	2.5%	1,600

In 2016 on the Strategic Road Network:

- Although the SRN makes up only 2.4% of England's road network, it carried 33% of all motorised traffic in England.
- **Car traffic** grew by 2% from 2015, to 67.8 billion vehicle miles.
- **Van traffic** grew more quickly than any other vehicle type, rising 5.7% from 2015 levels to 13.6 billion vehicle miles.
- **Lorry traffic** also grew by 1.1% to 9.8 billion vehicle miles, so that 68% of all lorry miles driven were on the SRN.

Vehicle miles travelled by selected vehicle types on the Strategic Road Network in England, 2000-2016

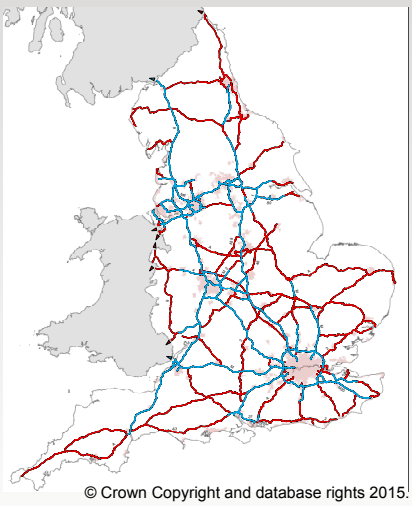


About the SRN

The Strategic Road Network (SRN) is made up of the motorways and major trunk roads in England that are managed by Highways England (HE; previously the Highways Agency). These roads are depicted in the map.

In 2016 the SRN comprised approximately 4,400 miles of road (2.4% of the English network).

The majority of other roads in England are maintained by one of the 152 local highways authorities.



In 2016 on the Local Road Networks:

The local motorway and 'A' road network (major roads) carried 32% of traffic despite being only 9% of England's road length. The remaining third of traffic was on England's 'B' and 'C' classified and unclassified road network, which makes up 88% of roads in England.

Strategic Road Network

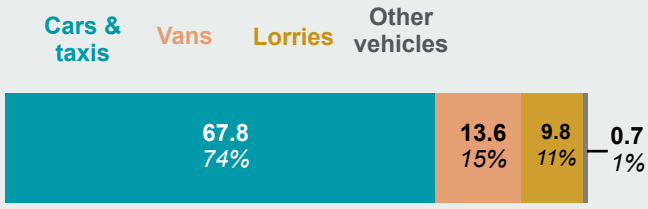
(Motorways and 'A' roads managed by Highways England)

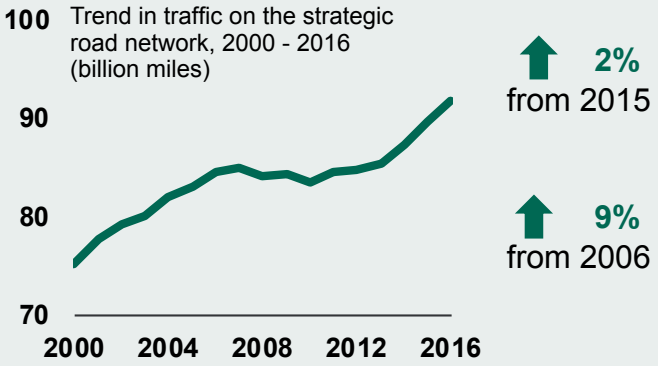
2% of road length

33% of vehicle miles

91.9 billion vehicle miles in 2016

of which...





Trend in traffic on the strategic road network, 2000 - 2016 (billion miles)

2% from 2015

9% from 2006

Local Major Road Network

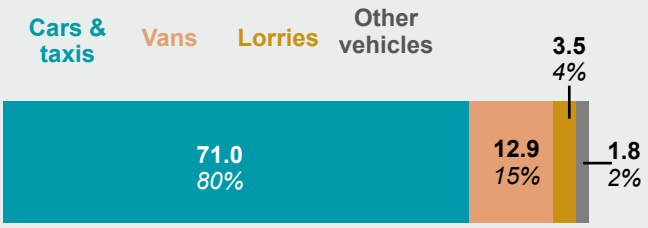
(Motorways and 'A' roads managed by local authorities)

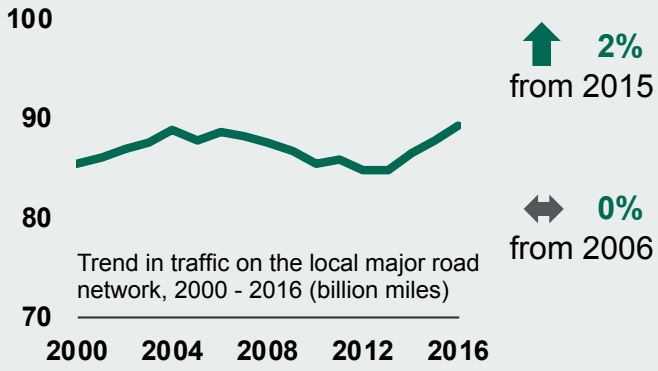
9% of road length

32% of vehicle miles

89.2 billion vehicle miles in 2016

of which...





Trend in traffic on the local major road network, 2000 - 2016 (billion miles)

2% from 2015

0% from 2006

Local Minor Road Network

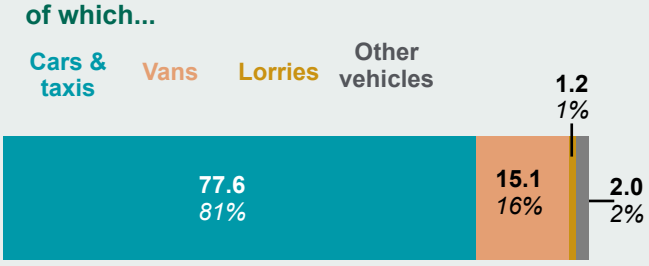
('B' and 'C' classified and unclassified roads managed by local authorities)

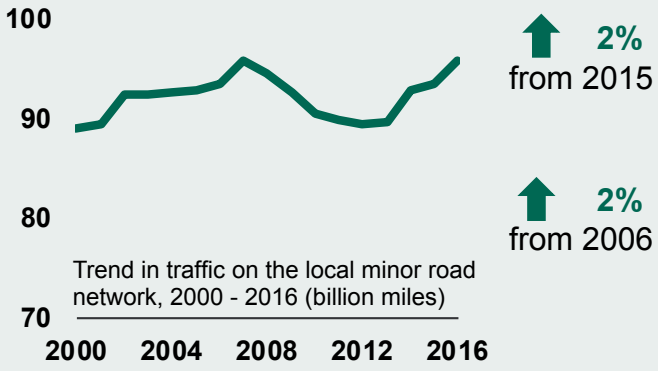
88% of road length

35% of vehicle miles

95.9 billion vehicle miles in 2016

of which...





Trend in traffic on the local minor road network, 2000 - 2016 (billion miles)

2% from 2015

2% from 2006

"Detrunking" and traffic trends over time on the SRN and local roads

Between 1999 and 2012, the length of the SRN reduced by 12.6%.This was a result of the detrunking prgramme, where the management of parts of the SRN transferred from Highways England (then Highways Agency) to the relevant local authorities.

DfT produces two kinds of time-series broken down by management to facilitate interpretation of trends over time:

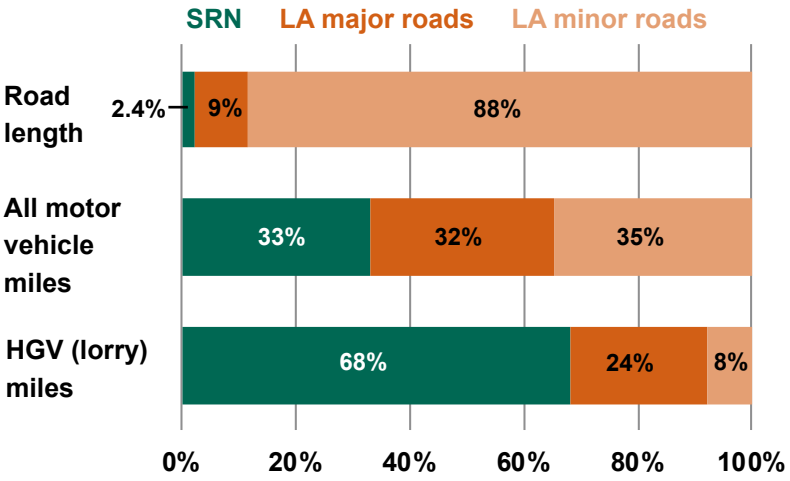
- Figures in tables TRA41 figures refer to the management status of a road on 1st April in each of the historic years;
- Figures in tables TRA42 figures refer to the management status of a road as of 1st April 2016 ("static management"), to remove the effect of changing road length on vehicle miles.

All of the trends over time presented in this section use "static management" figures, as published in tables TRA42.

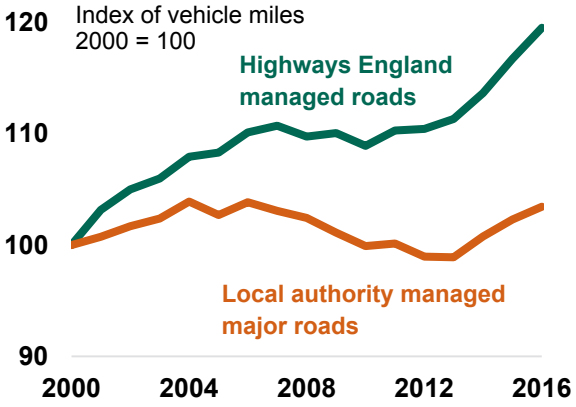
Despite making up only 2.4% of the road network by length in England, one third of all vehicle miles were driven on the SRN in 2016.

The SRN is particularly important for freight, with one third of van miles and over two-thirds of lorry miles in England being driven on the SRN in 2016.

Road length and vehicle miles in England, 2016



Motor vehicle traffic in England by road management, 2000-2016



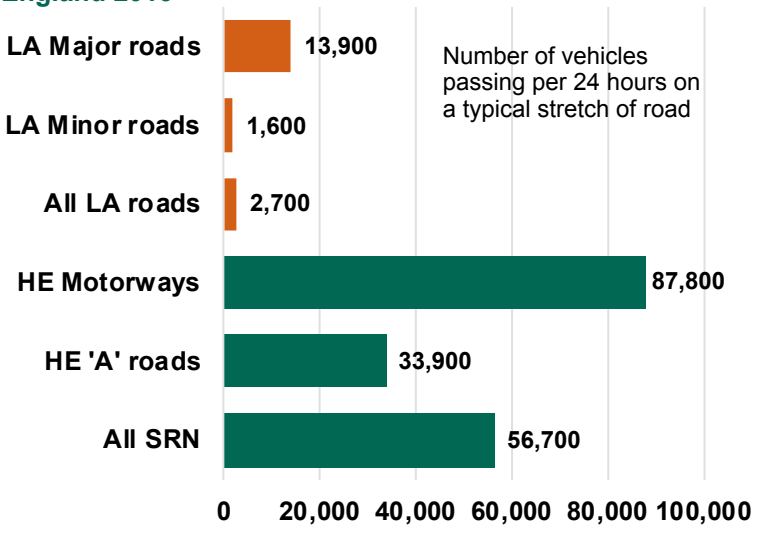
Traffic on the SRN rose quickly after a period of stasis during the recent recession. Traffic increased 10.1% between 2010 and 2016.

In comparison, traffic fell more on all local roads during the recession and recovered slower. Traffic increased 5.1% between 2010 and 2016, so that in 2016 it was back at pre-recession levels.

Over 56 thousand vehicles travel along a typical stretch of the strategic road network each day. This is about four times greater than the number for a typical stretch of locally managed major roads, at 13,900.

The difference in average vehicle flow between the SRN and local roads was widened by the “detrunking” program of the last two decades, which transferred a subset of trunk roads (in general, those with lower flow) to local authority management.

Average daily vehicle flow by road type and management, England 2016

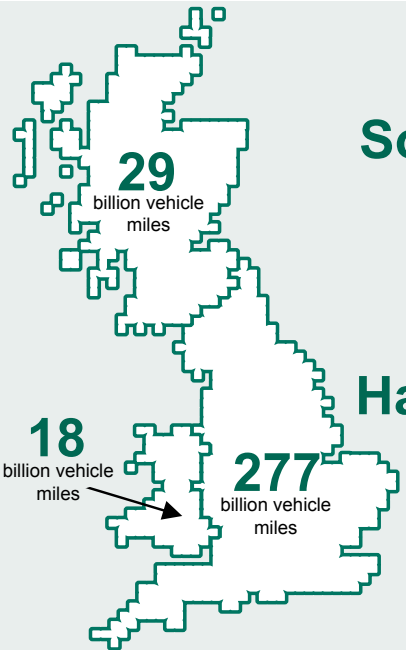


Useful Links

Strategic Road Network Statistics - www.gov.uk/government/statistics/strategic-road-network-statistics
DfT report ‘Use of the Strategic Road Network’ - www.gov.uk/government/statistics/use-of-the-strategic-road-network
Highways England homepage - www.gov.uk/government/organisations/highways-england
Forecasts from DfT’s National Transport Model - www.gov.uk/government/publications/road-traffic-forecasts-2015

Geographical Variation in Traffic

This section explores how levels and trends in traffic differ between different roads and areas of Great Britain.



In 2016, the busiest areas in Great Britain were:

South East region with traffic levels of

55 billion vehicle miles

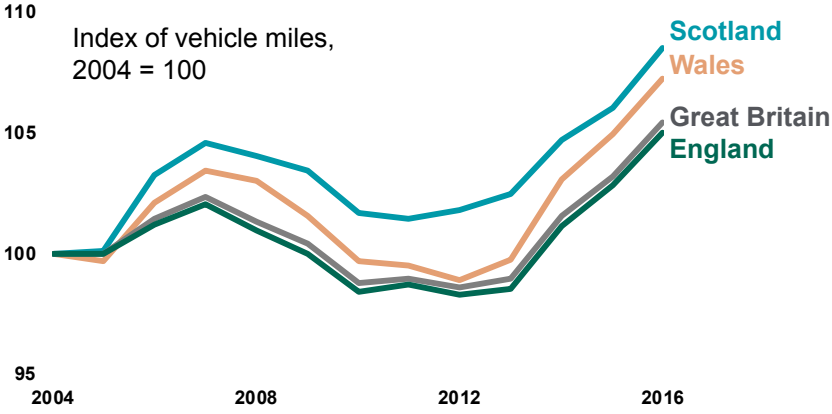
Hampshire authority with traffic levels of

10 billion vehicle miles

M25 Western links (A1(M) to M23) motorway section with an average daily flow of

170 thousand vehicles per day

Road traffic trends by the countries of Great Britain



At the national level in 2016, 86% of Great Britain's traffic was on England's roads.

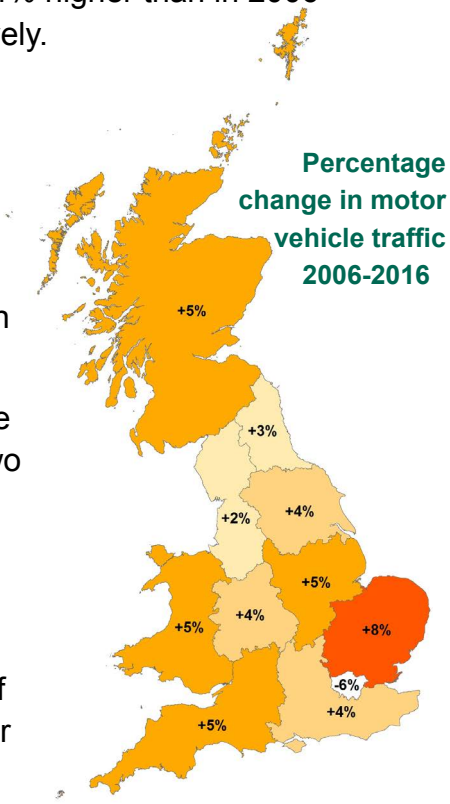
Over the last ten years, traffic growth has been fastest in Scotland and slowest in England, with 2016 figures 5% and 4% higher than in 2006 respectively.

Road traffic trends by regions of Great Britain

The South East region had the highest traffic levels in 2015, with 55 billion vehicle miles driven on its roads. This was 17% of all traffic in 2016. The South East has 12% of road length in Great Britain.

Of the five local authorities with the highest levels of traffic, three are in the South East region (Hampshire, Kent, Surrey) and the other two are in East of England region (Essex, Hertfordshire). These are all authorities with relatively large road networks, and they all contain some of the major motorways of Great Britain.

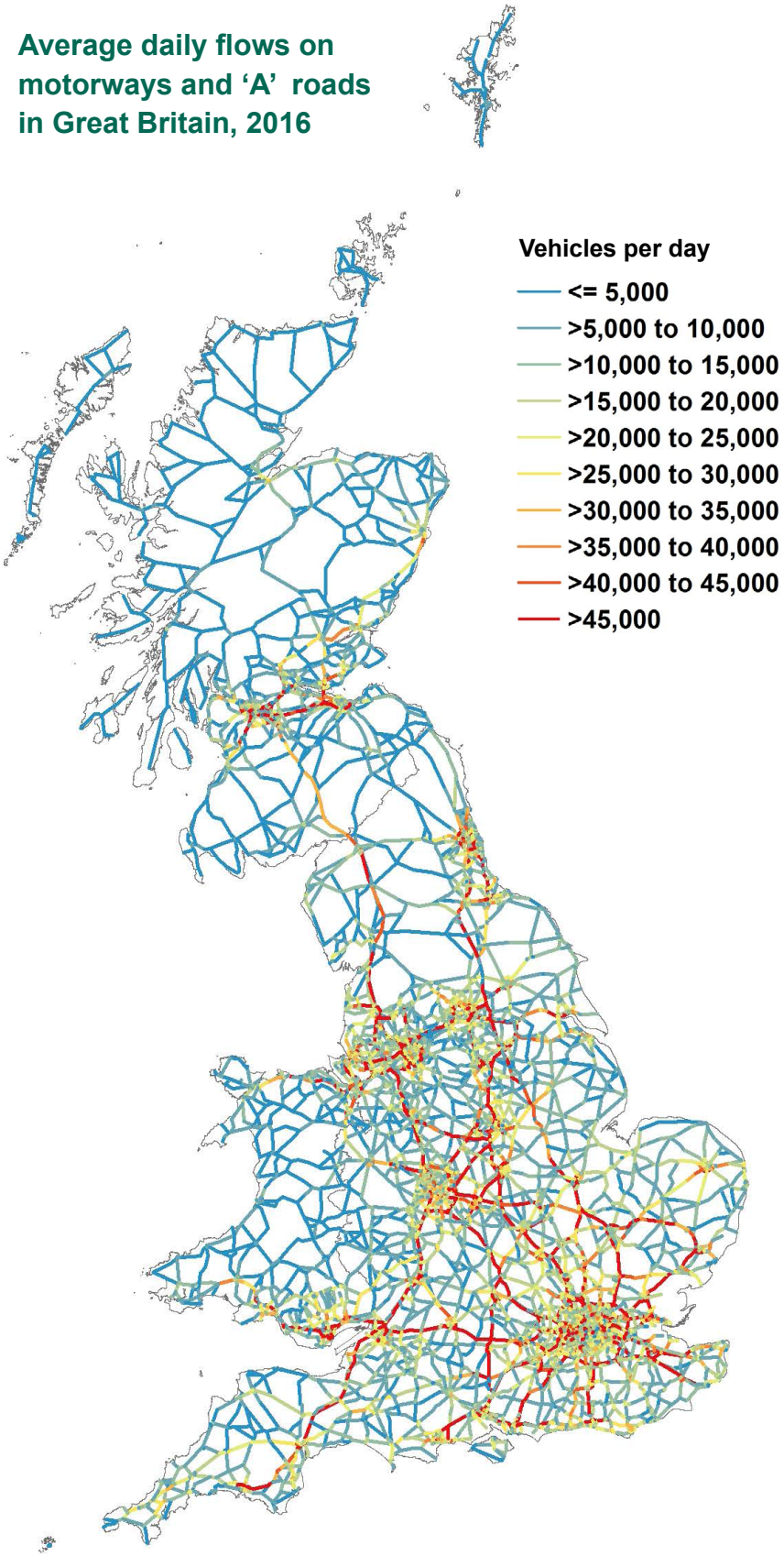
Compared to 2015, all regions saw an increase in their traffic levels in 2016 of between 1% and 3%. Over the last ten years, the East of England region has seen the highest traffic growth (8%) and Greater London is the only region to have had a fall in traffic (-6%).



Road-level traffic data for Great Britain

The DfT statistics produce an estimate of traffic flow (see definition on page 2), for an average day in a given year, for each junction-to-junction link on the motorway and 'A' road network in Great Britain. The 2016 average flows for these roads are represented on the map.

Average daily flows on motorways and 'A' roads in Great Britain, 2016



Average daily flows on motorway and 'A' road links in 2016 ranged from less than 5,000 vehicles to over 200,000.

Major roads with the lowest flow levels tended to be rural 'A' roads (shown in blue on the map).

The busiest roads (shown in red on the map) were in general the motorways and 'A' roads that make up the Strategic Road Network in England, or equivalent trunk road networks in the devolved administrations.

The road links with the highest average daily traffic flows in 2016 were sections of the M25 and M1.

Five busiest road sections

Vehicles per day in 2016

1. M25 J14-15	**214,000**
2. M25 J13-14	**205,000**
3. M25 J15-16	**197,000**
4. M1 J7-8	**196,000**
5. M25 J12-13	**195,000**

Road-level data

The street level traffic estimates for all junction-to-junction links of motorways and 'A' roads in Great Britain are available to view and download at the traffic counts website -

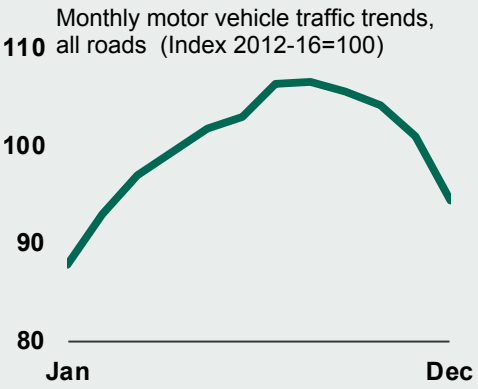
www.dft.gov.uk/traffic-counts

Daily, weekly and seasonal traffic patterns

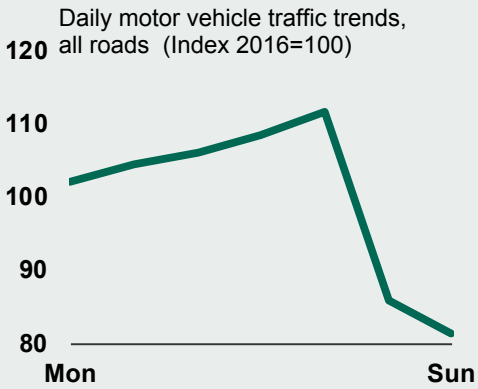
This section presents statistics on how traffic varies across the year.

On average, across all road types in Great Britain:

August is the busiest month



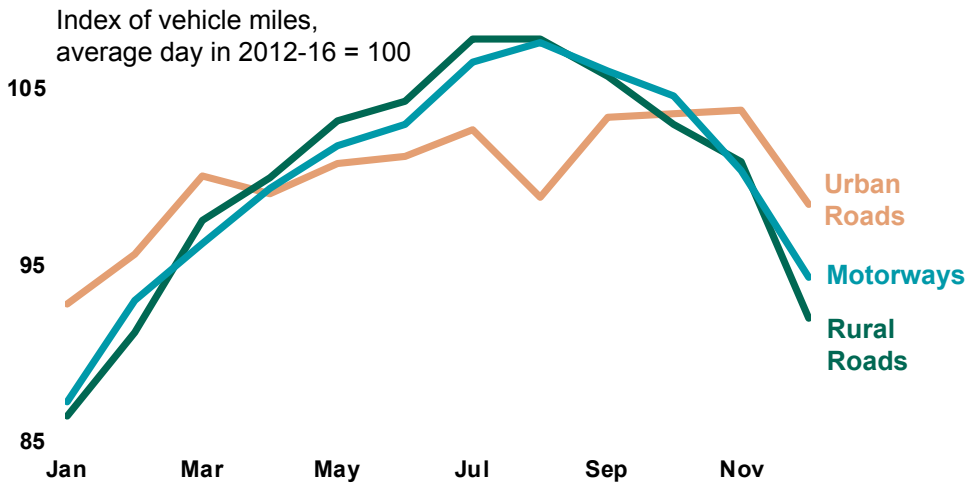
Friday is the busiest day of the week



4pm to 6pm are the busiest hours in weekdays

11am to 1pm are the busiest hours at weekends

Monthly motor vehicle traffic trends by road type, 2012-16



Data source

Statistics about temporal variation in traffic flow are compiled using data from DfTs network of automatic traffic counters (ATCs).

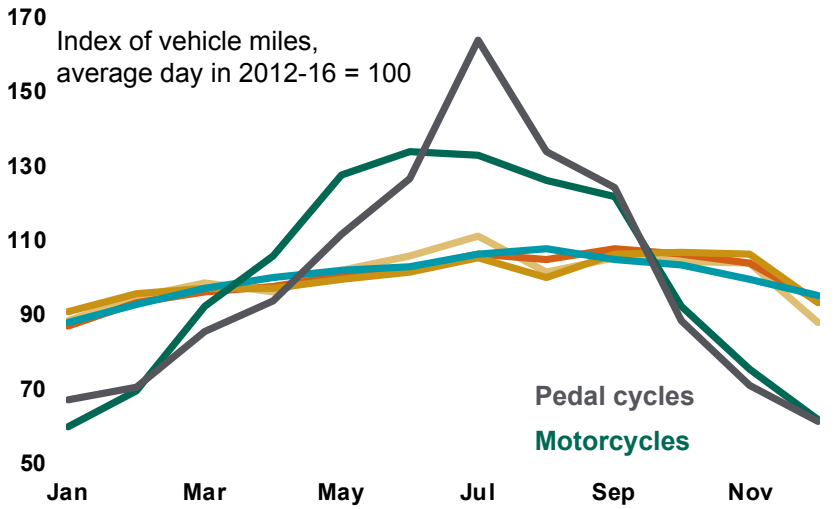
ATCs count and classify vehicles passing over them 24 hours a day, on every day of the year, so are well suited to provide data on flow variation across a range of timescales.

On average between 2012 and 2016, motor vehicle flow was lowest in January on all road types. Flow was highest on motorways in August, and highest on rural roads in July. On urban roads, flow was highest on average in November. A dip in urban road traffic is evident in August, likely due to this being the school holidays when traffic associated with the school run and commuting is reduced.

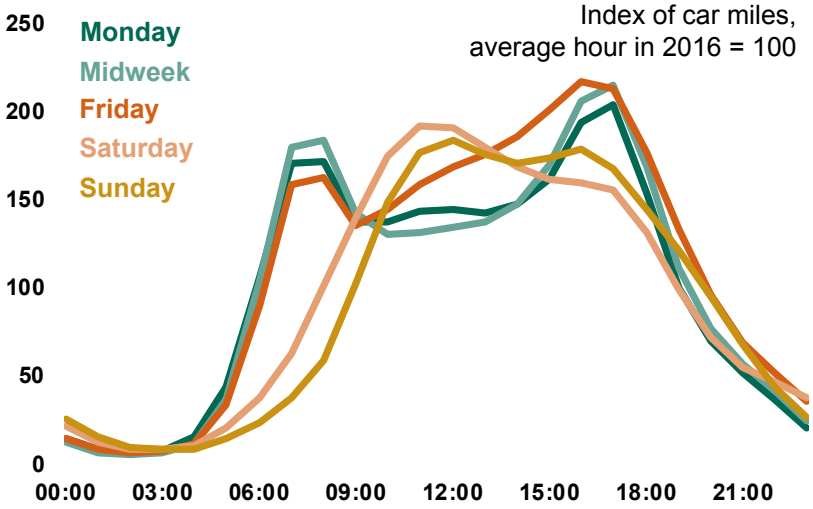
Most vehicle types (cars, vans, heavy goods vehicles, buses and coaches) followed these patterns by road type.

However, motorcycles and pedal cycles had much more seasonal travel patterns. The miles travelled by these vehicle types in the summer months were over 75% higher than in the winter months.

Monthly vehicle traffic trends on all roads by vehicle type, 2012-16



Daily car traffic trends on all roads



On an average weekday in 2016, car traffic was highest in the afternoon peak, between 4pm and 6pm.

This pattern was observed across the different road types (motorways, rural roads, urban roads).

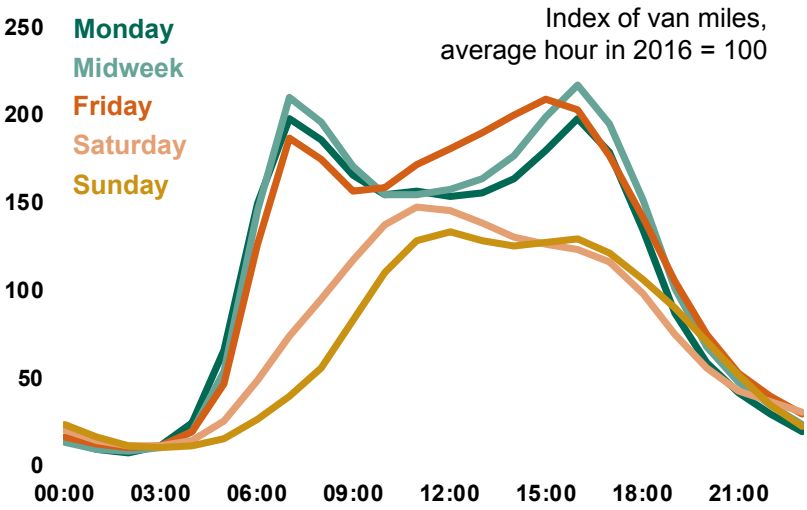
On an average weekend in 2016, car traffic was highest in the middle of the day, between 11am and 1pm. The weekend peaks were at a similar level to the weekday morning peak.

Motorways had a slightly different pattern on Sundays, where the peak traffic flow was on average between 4pm and 5pm.

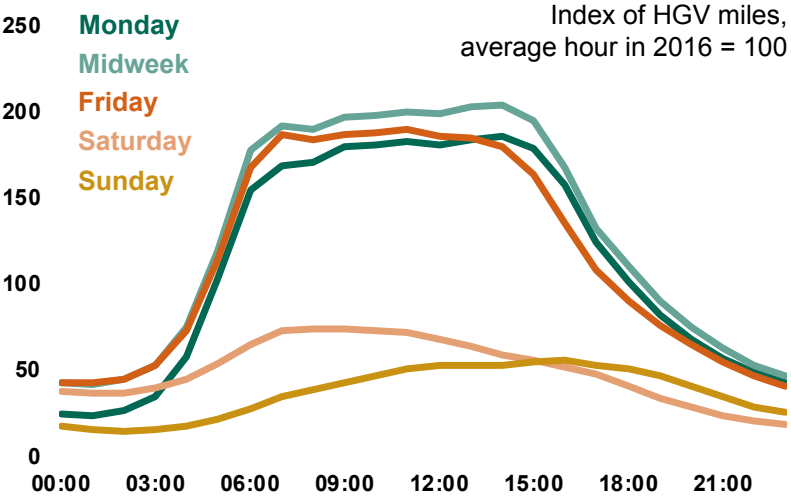
Daily van traffic trends on all roads

On average in 2016, vans had similar daily travel patterns to cars. The main differences between van and car daily patterns were:

- Weekday morning and afternoon peaks were a similar level for vans, whereas the afternoon peak is higher for cars.
- The afternoon peak for vans was an hour earlier, between 3pm and 5pm, on average.
- The proportion of vans on the road at weekends was generally lower than weekdays, even at the peak periods.



Daily HGV traffic trends on all roads



HGV travel patterns, for an average weekday in 2016, showed a more constant level of traffic in the middle of the day than cars and vans. There were much lower numbers of HGVs on the roads at the weekends than on weekdays.

On motorways, HGV weekday peaks were in the early afternoon (1pm to 3pm), except on Friday when the highest HGV traffic was at 11am to 12pm.

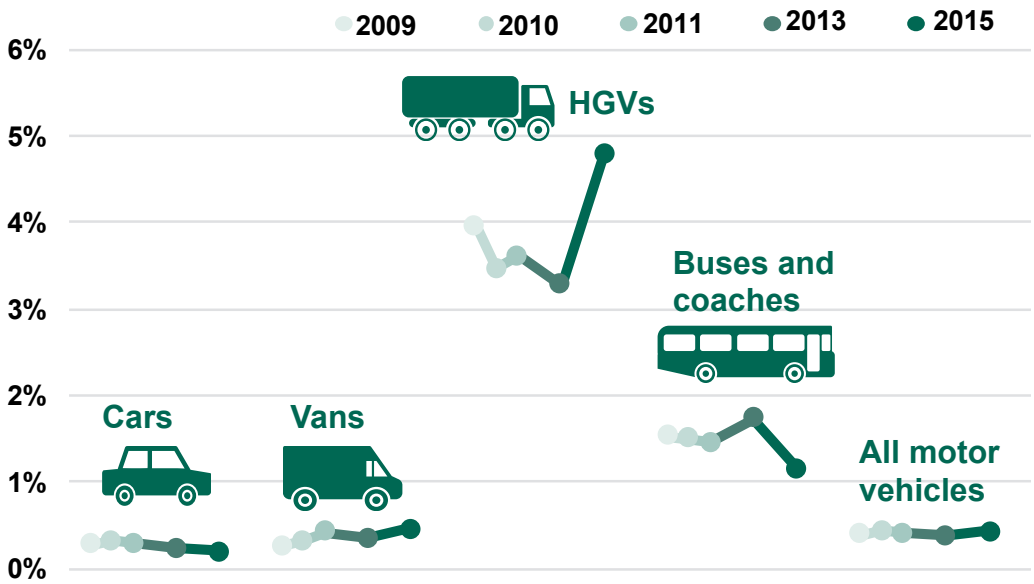
On other types of road, the highest weekday levels of HGV traffic were in the morning (8am to 11am).

Foreign Registered Vehicles

The statistics presented elsewhere in this release include the activity of both British and foreign-registered vehicles in Great Britain. This section discusses the proportion of vehicles in traffic which are registered outside the UK. The latest figures available cover the year 2015. See the 'data source' box for more information.

In 2015, 0.4% of all traffic on British roads was estimated to be accounted for by foreign registered vehicles. HGV traffic has the highest proportion of foreign registered vehicles. In 2015, 4.8% of HGV traffic was estimated to be foreign registered, an increase of 1.5 percentage points compared to 2013, the largest increase of any vehicle type.

Percentage of foreign vehicles in traffic, by vehicle type



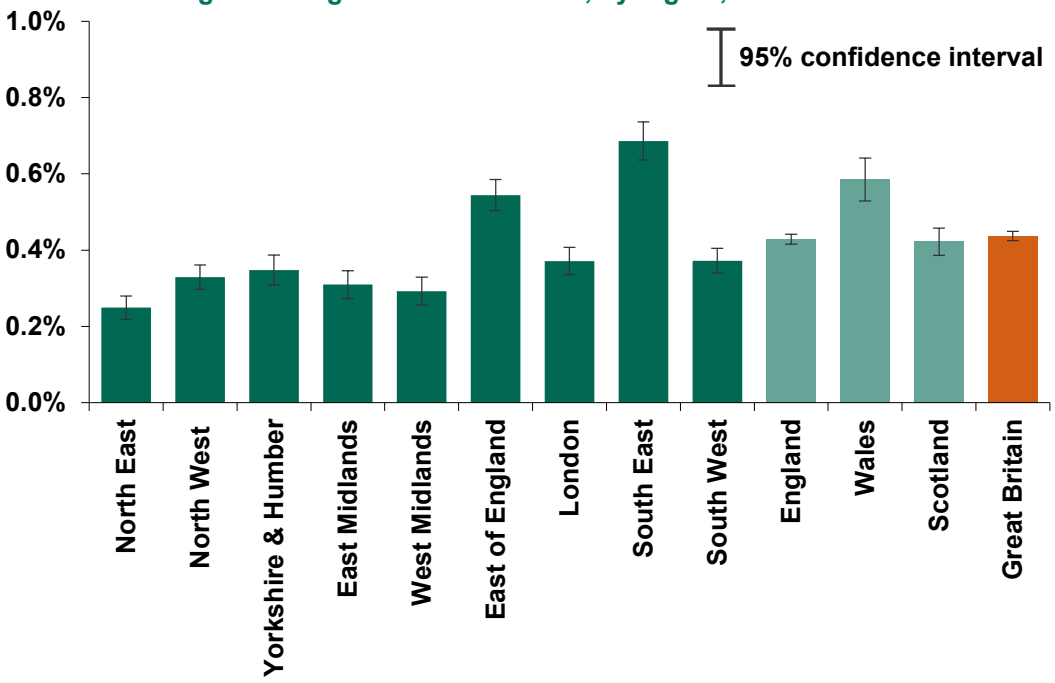
Data source

Estimates of the proportion of traffic from vehicles which are registered outside of the UK are published on the Department for Transport website every second year.

Every other June, a roadside survey using Automatic Number Plate Recognition cameras captures registration marks of over a million vehicles. Registration marks originating outside the UK, the Isle of Man and the Channel Islands are identified and used to estimate the rate of foreign registered vehicles on Britain's roads.

The South East region had the highest proportion of foreign registered vehicles of any region within Great Britain. This likely reflects that the South East is the region of arrival and departure for many motor vehicles coming from Europe through ports and the channel tunnel.

Percentage of foreign vehicles in traffic, by region, 2015



Further Information

Online traffic data

The complete series of data tables associated with this release, including tables mentioned in the text, can be found on the following pages:

► **TRA01**: Traffic volume (miles) - www.gov.uk/government/statistical-data-sets/tra01-traffic-by-road-class-and-region-miles

► **TRA02:** Traffic volume (kilometres) - www.gov.uk/government/statistical-data-sets/tra02-traffic-by-road-class-and-region-kms

► **TRA03:** Average annual daily flow and temporal traffic distributions - www.gov.uk/government/statistical-data-sets/tra03-motor-vehicle-flow

► **TRA04:** Pedal cycle traffic - www.gov.uk/government/statistical-data-sets/tra04-pedal-cycle-traffic

► **TRA31:** Heavy goods vehicle traffic - www.gov.uk/government/statistical-data-sets/tra31-heavy-goods-vehicle-traffic

► **TRA32:** Foreign registered vehicles in GB traffic - www.gov.uk/government/statistical-data-sets/tra32-foreign-registered-vehicles-in-traffic

► **TRA41:** Strategic Road Network traffic - www.gov.uk/government/statistical-data-sets/tra41-strategic-road-network-traffic

► **TRA42:** Strategic Road Network traffic based on a static road management status - www.gov.uk/government/statistical-data-sets/tra42-traffic-based-on-a-static-road-management-status

► **TRA89:** Road traffic by region and local authority - www.gov.uk/government/statistical-data-sets/tra89-traffic-by-local-authority

Quarterly traffic data

► **TRA25:** All quarterly traffic estimates - www.gov.uk/government/statistical-data-sets/tra25-quarterly-estimates

Traffic counts website

► This website provides street-level traffic data for every junction-to-junction link on the 'A' road and motorway network in Great Britain, free for the general public - www.dft.gov.uk/traffic-counts/

Related data

► **DfT Road traffic forecasts** - www.gov.uk/government/publications/road-traffic-forecasts-2015

► **DfT Road congestion and reliability statistics** - www.gov.uk/government/collections/road-congestion-and-reliability-statistics

► **DfT National Travel Survey Statistics** - www.gov.uk/government/collections/national-travel-survey-statistics

► **DfT Road accidents and safety statistics** - www.gov.uk/government/collections/road-accidents-and-safety-statistics

► **DfT Vehicles statistics -** www.gov.uk/government/collections/vehicles-statistics

► **DfT report 'Use of the Strategic Road Network'** - www.gov.uk/government/statistics/use-of-the-strategic-road-network

► **DfT report 'Understanding the drivers of road travel'** - www.gov.uk/government/publications/understanding-the-drivers-of-road-travel-current-trends-in-and-factors-behind-roads-use

► **DfT Road use statistics 2016 report** - www.gov.uk/government/statistics/road-use-statistics-2016

► **Transport Statistics Great Britain 2015 -** www.gov.uk/government/statistics/transport-statistics-great-britain-2015

Background information

Users and uses of road traffic estimates

We continuously review the content of these statistics to ensure they are meeting users' needs. We welcome feedback via email and the team can be contacted at roadtraff.stats@dft.gsi.gov.uk.

A summary of the feedback we have received from users in a previous consultation can be found in 'Meeting customers' needs: Users and uses of road traffic statistics and data'. We continue to welcome any feedback on these statistics.

Road traffic data are a key source of management information on the country's infrastructure. Main uses of road traffic statistics include:

► **National Atmospheric Emissions Inventory (NAEI)**

Road traffic statistics are used to produce the National Atmospheric Emissions Inventory (NAEI), a legal requirement for EU Air Quality Directives, and for the UN Framework Convention on Climate Change.

► **Transport Modelling**

The Department for Transport's National Transport Model uses most traffic and speeds outputs to make forecasts and to inform policy decisions on a broad range of issues.

► **Local transport planning**

Local Authorities (including Transport for London) and devolved governments use the data for transport planning, road engineering and policy monitoring at a regional or local level.

► **Road accident and safety statistics**

Road accident and safety statistics use annual and quarterly traffic estimates to produce road safety and accident rates, as required for the Strategic Framework on Road Safety.

► **The Department for Communities and Local Government**

This department uses traffic data on major roads to contribute towards the funding settlement for local authorities.

► **Public Users**

The Department for Transport receives over 200,000 visits to the traffic counts website (www.dft.gov.uk/traffic-counts/) and its underlying datasets, which provide street-level traffic data for every junction-to-junction link on the 'A' road and motorway network in Great Britain.

Next release

The next annual traffic statistics release is expected to be published in May 2018, reporting 2017 traffic figures.

Provisional figures for 2017 will be published on a quarterly basis during 2017-18. The next provisional figures, for the year to end Mar 2017, are due to be released in May 2017.

Feedback

We welcome further feedback on any aspects of the Department's road traffic statistics including content, timing, and format via email to roadtraff.stats@dft.gsi.gov.uk

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: www.gov.uk/government/publications/pre-release-access-lists-for-road-traffic-speeds-and-congestion-series

Traffic statistics methodology: strengths and weaknesses

Annual estimates make use of data from around 8,000 manual traffic counts in addition to continuous data from a national network of around 300 automatic traffic counters. These data sources produce accurate estimates on traffic levels in Great Britain by vehicle type and by road type.

A detailed explanation of the methodology used to produce DfT road traffic statistics can be found online in **Annual road traffic estimates: methodology note** at www.gov.uk/government/publications/road-traffic-statistics-guidance.

Whilst road traffic data is accurate at a high level of aggregation, it should be noted that:

► Although we produce traffic breakdowns by local authorities, traffic at this level is not robust, due to the sample size of the minor road data and must be treated with caution.

► Estimates for pedal cycle traffic only include cycling on roads, or paths directly adjacent to the road, and do not include estimates of cycling on other routes such as canal paths. Therefore, they may not give a complete representation of cycling.

► During June, every second year, a roadside survey is carried out collecting information about vehicles travelling on the road which identifies vehicles with registration marks originating outside United Kingdom. This information has been used to produce estimates of the rate of foreign registered vehicles on Britain's roads, which are presented in tables TRA32. These figures are designated as official statistics but not as National Statistics and should be treated with caution as the sample size is relatively small (over 7,000 observations of foreign registered vehicles out of 1.1 million total observations). Particular attention should be paid to the confidence interval associated with each statistic and in some cases statistics have not been produced as the sample size is too small. This survey is next due to be carried out in 2017 and therefore the next estimates of foreign vehicle traffic will be published in 2018.

► The Road Traffic statistics series consistently reports higher levels of vehicle kilometres for HGVs than the Road Freight statistics series. This can mainly be attributed to difference in data collection. A methodology note on this issue has been published and can be found in our statistical guidance notes online here: www.gov.uk/government/publications/road-traffic-statistics-guidance.