In 2016/17, light rail use in England continued to rise with record numbers of passenger journeys and vehicle miles since comparable records began in 1983.

There were 267.7 million passengers journeys made on the eight light rail and tram systems in England, a 6.2% increase compared with the previous year.

The Docklands Light Railway and London Tramlink comprised 57% of all light rail journeys.

Vehicle mileage increased by 2.9% to 21.6 million miles mostly due to developments of the Midland Metro and Nottingham Express Transit systems.
Table 1 summarises the latest light rail annual figures. Figures for England are shown for each tram system in London and England outside London.

**Table 1: Summary of the latest annual light rail figures (2016/17) compared with the previous year (2015/16)**

<table>
<thead>
<tr>
<th>System</th>
<th>Passenger Journeys</th>
<th>Vehicle Miles</th>
<th>Passenger Revenue</th>
<th>Revenue % Change in 2016/17 prices</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>England</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>London systems</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Docklands Light Railway</td>
<td>122.3m</td>
<td>3.8m</td>
<td>£170.4m</td>
<td>3.2%</td>
</tr>
<tr>
<td>London Tramlink</td>
<td>29.5m</td>
<td>2.0m</td>
<td>£25.5m</td>
<td>9.6%</td>
</tr>
<tr>
<td><strong>England outside London systems</strong></td>
<td>115.9m</td>
<td>15.9m</td>
<td>£166.5m</td>
<td>7.3%</td>
</tr>
<tr>
<td>Nottingham Express Transit</td>
<td>16.4m</td>
<td>1.9m</td>
<td>£17.8m</td>
<td>28.1%</td>
</tr>
<tr>
<td>Midland Metro</td>
<td>6.2m</td>
<td>1.2m</td>
<td>£10.3m</td>
<td>17.6%</td>
</tr>
<tr>
<td>Sheffield Supertram</td>
<td>12.6m</td>
<td>1.5m</td>
<td>£13.5m</td>
<td>16.2%</td>
</tr>
<tr>
<td>Tyne and Wear Metro</td>
<td>37.7m</td>
<td>3.5m</td>
<td>£50.5m</td>
<td>-1.3%</td>
</tr>
<tr>
<td>Manchester Metrolink</td>
<td>37.8m</td>
<td>7.2m</td>
<td>£67.3m</td>
<td>5.8%</td>
</tr>
<tr>
<td>Blackpool Tramway</td>
<td>5.1m</td>
<td>0.6m</td>
<td>£7.1m</td>
<td>15.4%</td>
</tr>
</tbody>
</table>

**Map 1: Location and latest annual change in passenger journeys of each light rail and tram system in England**

- Blackpool Tramway: -6.5%
- London Tramlink: 9.3%
- Sheffield Supertram: 9.0%
- Manchester Metrolink: 10.2%
- Midland Metro: 29.0%
- Nottingham Express Transit: 35.0%
- Tyne and Wear Metro: 3.9%
- Docklands Light Railway: 4.6%
Passenger journeys on light rail systems increased by 6.2% in 2016/17 to 267.7 million when compared with the previous year (see chart 1). Since 2006/07, light rail passenger journeys have increased by 49.9%.

Chart 1: Light rail passenger journeys by system: England, annually from 1983/84 (table LRT0101)

In 2016/17, there was a 7.2% increase in passenger journeys in England outside London to 115.9 million journeys (see chart 2). Opening of extensions to both Nottingham Express Transit in 2015 and the Manchester Metrolink system in 2017 were the main drivers of this growth. (see background notes for further information).

In London, light rail passenger journeys increased by 5.5% to 151.8 million. Passenger journeys on Docklands Light Railway (DLR) increased by 4.6% continuing the year-on-year increasing trend seen since the early 1990s. Passenger journeys on London Tramlink increased by 9.3% compared with 2015/16 due to two additional vehicles procured to support service developments and the introduction of a new service (see background notes for further information).

Over the past 10 years, growth in passenger journeys has mainly occurred in London. Since 2006/07, there has been a 71.5% rise in passenger journeys in London compared with a 28.6% increase in England outside London.
Chart 2: Light rail passenger journeys: London and England outside London, annually from 2004/05 (table LRT0101)

Percentage change from 2015/16 to 2016/17

**Journey length**
The average light rail journey in 2016/17 was 4.3 miles in England. On the two London systems, average journey length was lower (3.4 miles) than England outside London (5.4 miles).

**Light rail passenger journeys per head**
In England, the average number of light rail journeys per head was 15.5 in 2016/17, compared with 11.5 journeys per head in 2006/07. The main factor for this growth has been a 65.9% increase in passenger journeys per head on the DLR since 2006/07. As the population increases it is expected that the number of light rail journeys would increase as a result. The increase in journeys per head, however, shows that there has been a real increase in passenger journeys above that expected by population increase.

**Definition**
Passenger journeys per head were calculated as passenger journeys divided by the number of people in the respective Passenger Transport Executives/higher tier authority. Population figures were based on the ONS 2015 mid-year population estimates.

Chart 3: Light rail passenger journeys per head: London and England outside London, annually from 2004/05 (table LRT0109)

**Detailed statistics**
on passenger journeys per head can be found in table LRT0109.
Average passenger journeys per head in London in 2016/17 were 29.1% higher than in England outside London (see chart 3).

Average passenger journeys per head in England outside London increased by 6.4% in 2016/17. Nottingham Express Transit and Blackpool Tramway had increases in passenger journeys per head of 33.1% and 4.6% respectively. Passenger journeys per head ranged between 2.2 on Midland Metro to 51.5 journeys on Nottingham Express Transit.

**Light rail concessionary journeys**

In England, 12.5% of all light rail passenger journeys were concessionary remaining similar to 2015/16 (12.6%). The proportion of journeys that were concessionary ranged from 5.5% on the DLR to 32.2% on the Sheffield Supertram (see chart 4).

**Chart 4: Proportion of concessionary journeys on each light rail system:**
England 2016/17 (table [LRT0102](#))

Concessionary travel represents a relatively small proportion of passenger journeys when compared with buses (34%). All light rail and tram schemes in England currently offer free off-peak travel to older and disabled residences in their local authority area. This is on a statutory basis in London and a discretionary basis elsewhere whereas this is statutory on buses everywhere in England.

**Definition**
Concessionary journeys are those carried out by holders of a concessionary travel pass. These are issued by local authorities for use on buses as part of the English National Concessionary Travel Scheme. Local authorities outside of London can offer free travel on light rail systems as a discretionary extra to this scheme. In London, this is a statutory requirement.

**Detailed statistics**
on concessionary light rail journeys can be found in table [LRT0102](#).

Further information on concessionary revenue can be found in table [LRT0302](#).

**Detailed statistics**
on concessionary bus journeys can be found in table [BUS0105](#).
Vehicle mileage in England increased by 2.9% in 2016/17, largely driven by a 4% increase in England outside London. Following on from the 2015 extension, vehicle mileage on Nottingham Express Transit increased by 19.5% to 1.9 million miles in 2016/17 (see chart 5).

Chart 5: Light rail vehicle miles: England, annually from 1983/84 (table LRT0106)

Vehicle mileage on light rail systems, along with passenger journeys, has increased since 2006/07: a 49.9% increase in passenger journeys has been met by a 53.8% increase in vehicle miles (see chart 6).

Chart 6: Light rail passenger journeys and vehicle miles index: England, annually from 2004/05 (tables LRT0101 and LRT0106)
In London vehicle mileage has increased by 33.5% since 2006/07 to 5.7 million miles whereas in England outside London mileage has increased by 62.7% to 15.9 million miles (see chart 5).

**Light rail revenue**

Light rail and tram revenue increased by 5.5% in real terms to £362.4 million in 2016/17 when compared with 2015/16. Average revenue per journey decreased in real terms from £1.36 to £1.35 between 2015/16 and 2016/17. Revenue on the Docklands Light Railway increased by 3.2%, in real terms, to £170.4 million.

**Average vehicle occupancy on light rail and tram systems**

The average number of passengers per tram in England increased by 4% to 53 passengers per tram when compared with the previous year. This is 7% lower than the maximum occupancy reached in 2011/12 (57 passengers per tram).

Tram occupancy increased for all systems except Tyne and Wear Metro and Blackpool Tramway. Tyne and Wear Metro's tram vehicle occupancy fell by 4.2% from the previous year due to a fall in passenger kilometres. Blackpool Tramway's vehicle kilometres was greater than the increase in passenger kilometres.

**Chart 7: Light rail estimated vehicle occupancy: England annually from 2004/05 (table LRT0108)**

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**Detailed statistics**

- **on passenger and concessionary revenue at 2016/17 prices by system can be found in tables LRT0301 and LRT0302 respectively.**

**Definition**

- Average vehicle occupancy is calculated as passenger miles divided by vehicle miles to estimate persons per vehicle.

**Detailed statistics**

- on average vehicle occupancy can be found in table LRT0108.
Public transport journeys

The eight light rail systems accounted for 3.1% of all journeys made by public transport in Great Britain in 2015/16. This has fallen from 10% of public transport journeys in 1950.

Chart 8: Percentage of public transport journeys that are on trams: Great Britain, from 1950

Accident Statistics


Chart 9: Passenger Injuries on trams, metros and other non-Network Rail networks: Great Britain, from 2005/06

There were 44 passenger injuries on trams, metros and non-Network Rail networks in 2015/16. This is down 18.5% compared to 2014-15.

Next update

The Office of Rail and Road will publish their next release on passenger injuries on trams, metros and other non-Network Rail networks in Great Britain for 2016/17 in September 2017.
The Department for Transport collects information on light rail and tram system use, infrastructure and revenue. Transport Focus measures the passenger experience of using light rail systems, gathering satisfaction levels at both overall and individual level. Comparing these two datasets allows a more complete understanding of light rail systems as a whole.

Passenger experience on five light rail systems in England outside of London were surveyed by Transport Focus. The five English systems surveyed were: Blackpool Tramway, Manchester Metrolink, Midland Metro, Nottingham Express Transit and Sheffield Supertram.

In 2016, overall journey satisfaction across all systems surveyed (England and Scotland) increased slightly to 93% from 92% in 2015, which was higher than both the National Rail Passenger Survey (81%) and Bus Passenger Survey (87%). This increase was driven by a significant increase in Midland Metro passenger satisfaction. Overall satisfaction ranged from 90% on Manchester Metro to 97% on Nottingham Express Transit.

Value for money remained the same as the previous year at 69% in 2016 and was higher than bus passengers (65%) and much higher than rail passengers (47%) in 2016.

### Table 2: Passenger satisfaction, passenger journeys and passenger journeys per head by light rail system in 2016 and the change compared with the previous year (table LRT0109)

<table>
<thead>
<tr>
<th>Light Rail System</th>
<th>Overall Journey Satisfaction</th>
<th>Passenger Journeys (millions)</th>
<th>Passenger Journeys per Head</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nottingham Express Transit</td>
<td>97%</td>
<td>16.4</td>
<td>51.5</td>
</tr>
<tr>
<td>Blackpool Tramway</td>
<td>95%</td>
<td>5.1</td>
<td>4.6</td>
</tr>
<tr>
<td>Midland Metro</td>
<td>92%</td>
<td>6.2</td>
<td>2.2</td>
</tr>
<tr>
<td>Sheffield Supertram</td>
<td>91%</td>
<td>12.6</td>
<td>9.2</td>
</tr>
<tr>
<td>Manchester Metrolink</td>
<td>90%</td>
<td>37.8</td>
<td>13.7</td>
</tr>
</tbody>
</table>

1 Source: Transport Focus

Transport Focus found that passenger satisfaction with all of the key factors that make a satisfactory journey (length of time a journey took and punctuality) increased in 2016.
Overall journey satisfaction in 2016 tended to increase with decreasing total passenger journeys i.e. the highest overall journey satisfaction was associated with fewer people travelling. Also, overall journey satisfaction increased with increased passenger journeys per head i.e. passenger satisfaction increased as each passenger undertook more journeys. Furthermore, high value for money satisfaction tended to be associated with higher passenger journeys per head and lower total passenger journeys.

User profiles (National Travel Survey data)

The National Travel Survey (NTS) gathers data on personal travel behaviour across England. NTS data can be used to analyse users of light rail systems.

Why people travel on light rail systems

Commuting, leisure and shopping are the most common purposes for journeys using light rail systems (see chart 10). Commuting and business purposes accounted for 41% of stages on light rail systems, nearly double the proportion of stages that commuting and business accounted for across all modes (21%).

Chart 10: Purpose for using light rail systems by the proportion of stages, England average 2008/15, (LRT0401a)

Differences in why people travel on light rail systems between England outside London and London include:

► London light rail systems are used more for commuting and business purposes than systems in England outside London (56% of stages compared with 30%).
► Leisure and shopping purposes comprise a higher proportion of stages in England outside London (at 26% and 22%) than in London (17% and 12% respectively).
► Light rail systems are used more for education purposes in England outside London than in London (12% compared with 10%).

National Travel Survey

The National Travel Survey is a household survey carried out on over 16,000 individuals in England every year. For more information see https://www.gov.uk/government/collections/national-travel-survey-statistics

Definition

In the National Travel Survey light rail includes the Tyne & Wear Metro, Docklands Light Railway, Manchester Metrolink, Glasgow Subway, Sheffield Supertram, Blackpool Tramway, London Tramlink, Nottingham Express Transit (NET) and Midland Metro. It has been possible to distinguish these modes since 1998, but the number of cases is small so eight years worth of data were combined to achieve a large enough sample size (2008 to 2015).

All modes includes walks, car, rail, light rail, local bus, bicycle and other. See here for more information.

What is a stage?

Every trip can consist of one or more stages. A new stage is defined when there is a change in the mode of transport.
Who travels on light rail systems?

Young adults carry out the highest proportion of light rail stages of all age groups with 25% of light rail stages being carried out by 21-29 year olds. Above this age, the proportion of light rail stages carried out generally decreases as age increases.

17 to 29 year olds carried out 35% of all light rail stages, more than double the proportion of stages carried out by 17 to 29 year olds across all modes (17%) (see chart 11).

Chart 11: Age profile of users of light rail systems and all modes, England 2008/15 (LRT0401b)

Differences between England outside London and London include:

► On London light rail systems, users aged between 21 and 49 years old carry out 70% of light rail stages compared with 46% on systems in England outside London.

► Children (0 to 16 year olds) carry out a higher proportion of stages on light rail systems in England outside London than on systems in London (15% compared with 7%).

► People aged 60+ carry out a higher proportion of stages on light rail systems in England outside London than on systems in London (17% compared with 11%)

For all light rail systems, men and women on average carry out the same number of stages per person per year (4.1). There is a larger difference between genders on London systems with men making 3.9 stages per person per year compared with 3.2 for women. For all modes, women travel more than men in terms of the number of stages per person per year.
Duration of light rail stages
For all modes, most stages (45%) are less than 15 minutes. This compares with light rail systems where 27% are less than 15 minutes and most are between 15 to less than 30 minutes long (see chart 12). Light rail stages in England outside London had a higher proportion of stages lasting 30 minutes and longer than in London (31% compared with 20%).

Chart 12: Proportion of stages by stage time on light rail systems and for all modes, England 2008/15 (LRT0401d)

Light rail use and household car availability
The highest proportion (45%) of stages on light rail systems were carried out by individuals from households with no cars, compared with 16% for all transport modes. For all modes, people travel more as household car availability increases whereas for light rail as household car availability increases, the proportion of stages decreases.

Chart 13: Proportion of stages by household car availability on light rail systems and the average for all modes, England 2008-2015 (LRT0401e)

In London, 50% of all light rail stages are carried out by individuals from households with no cars compared with 42% in England outside London. The proportion of stages carried out by individuals from households with two or more cars in England outside London is 24% compared with 9% in London.
There are a number of definitional differences between the NTS data on users of light rail systems in the LRT0401 tables and the data on passenger journeys, vehicle kilometres etc sourced directly from operators of light rail and tram systems. These include:

- The LRT0401 tables give stages per person per year, as the NTS captures travel information of people, and the journeys that they make. The data from operators of light rail and tram systems counts passenger journeys and not the number of individuals. We know from this data that 267.7 million passenger journeys were undertaken on the eight light rail and tram systems in England in 2016/17, but we don’t know the number of individuals that made these journeys (some individuals will have made more than one journey over 2016/17).

- In the NTS, a boarding is when someone changes from one tram to another tram, using the same ticket. If a new ticket is required this would be counted as a new stage of the trip. Therefore, a person who uses one ticket and changes tram once (uses two trams) would be recorded as one stage in the NTS and two boardings. However, in some of the data provided by operators of light rail and tram systems this would be counted as two passenger journeys e.g. London Tramlink which counts a boarding using automatic door counts when passengers go in and out of a tram.

- In the NTS, journeys in the course of work are excluded. So while journeys for commuting are counted, journeys made by the tram driver, for example, are excluded. No information on whether these kind of journeys are included in the data provided by operators of light rail and tram systems is provided so it is possible that a small number may be included.

- The NTS tables only include stages carried out by people living in areas with light rail systems i.e. Blackpool, London, Greater Manchester, West Midlands, South Yorkshire, Nottinghamshire and Tyne and Wear. Therefore, stages undertaken by people living outside these areas and using the light rail system will not be included. The reason the analysis is limited in this way is to give a more realistic estimate of journeys per person per year (rather than basing the analysis on the whole population, many of whom would not have easy access to a tram or light rail system).

- In contrast to the NTS figures, the passenger journey figures sourced from operators of light rail and tram systems will include all journeys regardless of where the individual undertaking the journey lives, including tourists from outside England.
Factors impacting on annual light rail figures:

- Tyne and Wear Metro was affected by ongoing modernisation with lines closed for longer periods, affecting overall patronage and leisure travel in particular.

- London Tramlink, a new Elmers End - Wimbledon service commenced operation in April 2016 utilising new additional platform at Wimbledon and 4 additional trams. Two further new trams entered service late 2016. There has been no significant impact on passenger patronage recorded since the Sandilands, Croydon tram crash incident in November 2016.

- The Midland Metro tram line extension through Birmingham City Centre to New Street Station became fully operational from 30th May 2016.

- Nottingham Express Transit this year (2016/17) benefitted from a full year of fully opened network following the phase 2 extension on 23 August 2015, which added 10.9 miles and 27 new stops to the network.

- In 2016, the Sheffield Supertram had taken delivery of seven Stadler Citylink trams which are currently under test/mileage accumulation.

- Blackpool Tramway increased the level of service throughout the year to meet demand. This reflects the fact that there has been a modal shift to the tram from buses, as one of the main bridges in the town for road traffic had been closed for the winter period.

- Manchester Metrolink’s Second City Crossing (2CC) was opened in February 2017. Incorporating some additional tracks and a new stop ‘Exchange Square.’

Manchester Metrolink mileage figures represent total mileage of each tram ‘set’ and when one train is formed of two sets, the kilometres travelled will be counted twice. Therefore, figures for the years after 2011/12 are not directly comparable with earlier ones (or with other systems) as the proportion of double sets has increased in recent years.
Users and uses of these statistics

These statistics are collected to provide information on light rail systems within England to monitor trends in passenger journeys, service provision and revenue. They help to provide a comprehensive picture of public transport use in Great Britain.

Within DfT they are used as background information in the development of light rail policy, for ministerial briefing and to answer public enquiries. Outside DfT, known users include researchers, academics and Parliamentary groups with the main known use as context for reports related to light rail.

Feedback received from users suggests that they are generally satisfied with these statistics. However, we welcome feedback on the content, format or timing of the statistics by email to bus.statistics@dft.gsi.gov.uk or on 020 7944 3094.

Strengths and weaknesses of the data

These figures are compiled from data provided by operators of the eight light rail and tram systems in England. Passenger journey figures are derived from different sources (most commonly ticket machine data), vehicle mileage is based on scheduled timetables less known lost mileage, and revenue figures are from operators’ financial records.

A complete response has been received for many years. Data requested should be readily available to operators, or easy for them to extract. Returns are validated by comparison with previous years and seeking explanation where differences are large or unexpected. This means that figures for each system should be broadly comparable over time, and therefore we consider them appropriate for the uses outlined above.

As the figures are provided by eight operators, there are some differences in the methods used to count journeys or to estimate passenger or vehicle kilometres, which may affect comparisons between different systems. Although the effect of this is difficult to assess we consider it is unlikely to materially affect comparisons. On occasions operators may revise their methodology which could impact on the trends shown. As a result year-on-year changes should be treated with caution, though the effect on broad patterns is likely to be minimal.