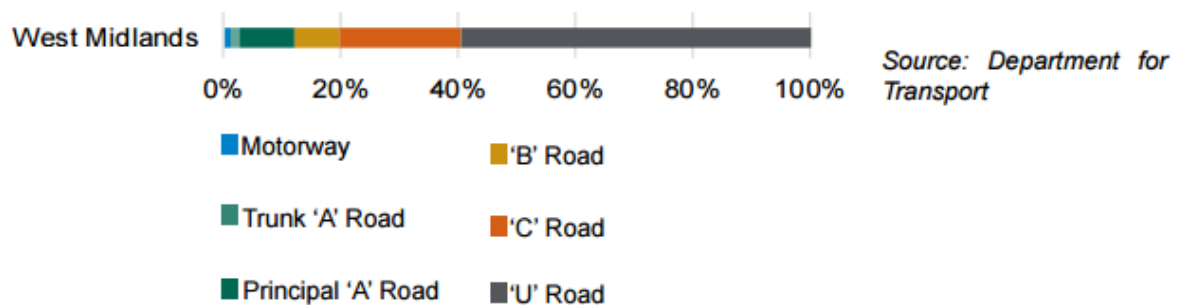


1. Background to the West Midlands

1.1 West Midlands and Future Transport

The West Midlands is at the heart of the UK's motorway network with the M6, M5, M40, M42 converging on and passing through the metropolitan area performing a crucial local and national economic function. Consideration of travel flows show that there is a complex mix of national, conurbation-wide and local journeys, covering a multitude of origins and destinations. There is a variety of road types covering urban, inter-urban, rural areas, providing a perfect encapsulation of all the potential environments within one co-located region.



Devolution and the creation of the West Midlands Combined Authority (WMCA) provide the West Midlands with an opportunity for transformation, with new powers and resources the area has an ambitious vision for the region in 2030.

Already home to hundreds of globally competitive businesses, provides a strong foundation for growth, along with a wealth of universities, science parks and research institutes, and supported by high quality rail, road and air links which will be strengthened by development of Birmingham Airport and the arrival of HS2. All which will contribute to an unanticipated change in the demand for travel which will inevitably create urban transportation challenges requiring innovative solutions.

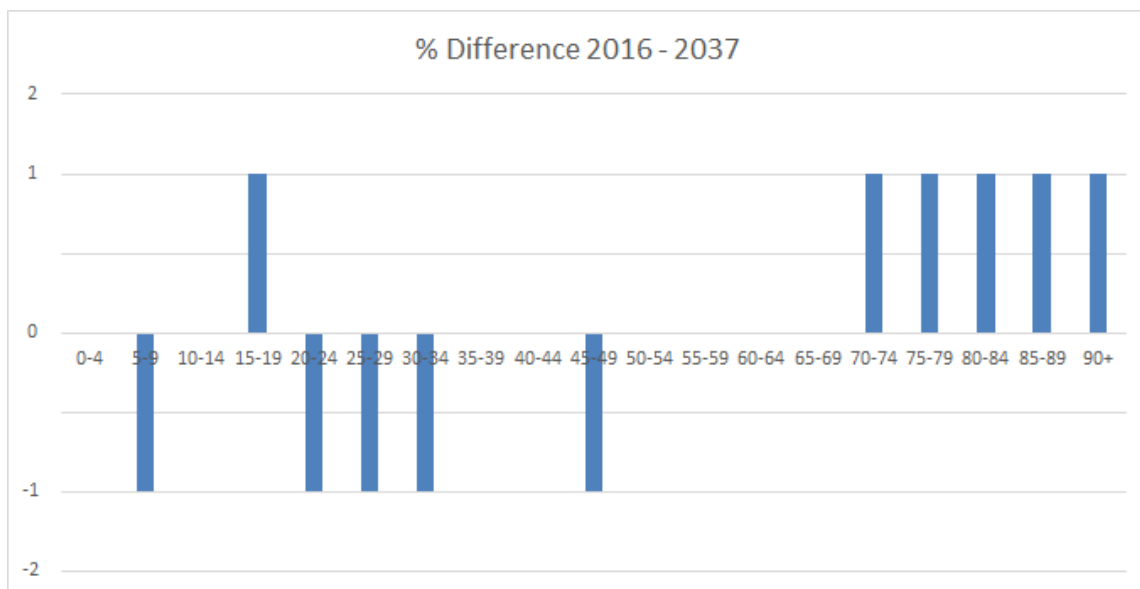
We need to meet the capacity and congestion challenges that greater demand for movement brings, at the same time we are seeking to reduce the environmental impacts from transport. The West Midlands recognises the major change this will bring and is gearing itself up to be at the forefront of innovative solutions. Operating as a UK hub the region is set to benefit economically and gain early results by introducing these technologies built upon the research and development taking place across the West Midlands.

Autonomous and connected vehicles are likely to have a significant role in a future transport system and bring transformational change into the urban environment, the major gains to be made in these areas are primarily via the reduction of vehicles in tandem with a move to full automation across all vehicles and the introduction of low or zero emission vehicles, increasing efficiency, safety and comfort, and providing mobility solutions to the public, both young and old. Autonomous vehicles promote low-carbon strategies for all types of territories, in particular for urban areas, including the promotion of sustainable multimodal urban mobility.

Connectivity has enabled a number of service providers to offer journeys comprising integrated train, bus and vehicle transportation and this is set to develop further in major cities, and in the freight operating sector. This will allow for a more efficient arrangement of transportation that improves road capacity and reduces the cost of transportation overall. Connectivity will allow for reduced congestion which will save time, increasing productivity and labour market flexibility. Connectivity will allow vehicle occupants to better use their time whilst in the vehicle.

1.2 Population

The West Midlands is facing population pressure both from rapid growth and also growth at both ends of the age spectrum. There is a large increase in the elderly population (as highlighted in the graph below), we also have an increase at the younger end too (15-19 year olds):



The youth and elderly populations have different needs but can be serviced by similar solutions in particular related to user-centric demand driven transport.

In the elderly group there is an increase in older drivers and a corresponding increase in disabled badges reflecting the desire for independence but also highlighting the impaired personal mobility that requires door to door services.

The younger group is an area where we are seeing a decline in the desire for car ownership and a reduction in the number of people holding driving licenses. The current thinking is that this group still have very personal transportation needs based on a door to door individual service but utilising a mixture of modes.

Autonomous vehicles will provide accessibility and empower those who are visually impaired and less mobile, offering a new lease of life, especially for those who either live in car-dependent areas or where there is limited public transport available. The diversity of the population in the West Midlands provides a perfect test bed to cater for different demographics.

2. Call for Evidence.

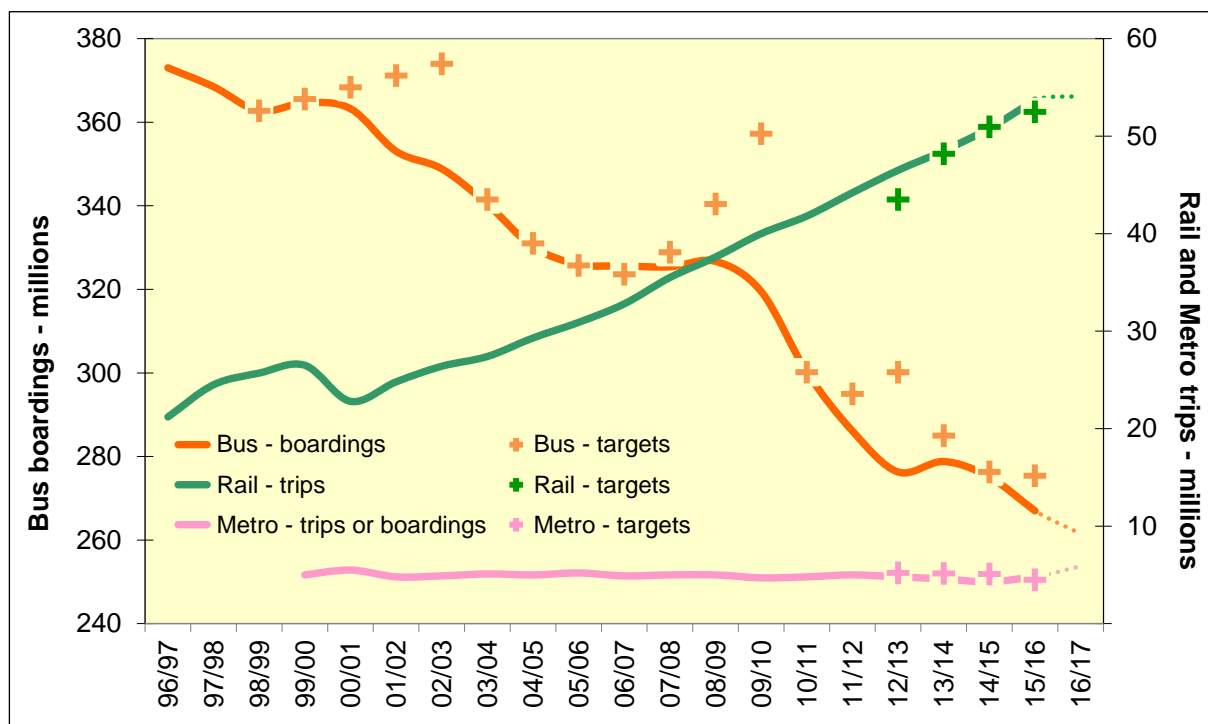
2.1 Changes not anticipated in last twenty years

The TfWM area has seen significant changes in personal travel demand in the last twenty years, and significant linked changes in the supply and use of transport services and networks by individuals and businesses – but these have not always been expected, or anticipated.

Looking for instance at the demand for public transport locally, TfWM and predecessor bodies were and are important actors in the public transport service delivery chain; promoting, developing, funding, and facilitating (although not operating), buses, trains and trams.

A lot of knowledge, experience, and skill is invested in these processes – and the forecasts, with appropriate sensitivity tests that are often part of them. But collectively, TfWM, private sector operators, highway authorities, and other stakeholders, have not always forecast public transport demand precisely.

Neither have outcomes always followed local targets as the chart below shows.



But the generally negative gaps between targets and outcomes for bus travel (the same has been seen with local cycling and walking targets), often reflect a desire to challenge trends, and create ambition, rather than a failure of forecasting.

But the positive gaps between targets and outcomes for rail (and Metro) do mirror gaps between forecasts and outcomes, with local Network Rail forecasts frequently lower than actual demand, although the gap has reduced over the period.

Neither have the usual uni-modal or multi-modal network modelling approaches been able to forecast the arrival of new telecoms technologies, with effects both ways on trip rates, and miles travelled, and impacts on destination choice.

Linked developments in transport supply, such as the increase in 'taxi' trips of all kinds (but especially private hire and remote hail models like Uber) from about 1% to 2% of all trips in the last twenty years (National Travel Survey West Midlands edit), or the increasing number and variety of car-sharing/hire models appearing locally.

2.2. Links to changes in personal activity – or other changes

Growth in rail use faster than established models often forecast will have had a number of causes, including those well-represented in conventional models; a larger population, rising values of time, regulated fares (not the case for buses), and traffic congestion and increased central area parking charges coupled with TfWM free Park and Ride spaces doubling over 20 years to more than 8,000. Lengthening commutes have seen the number of discrete travel to work areas identified in the Census for the region fell by 25% between 1991 and 2011.

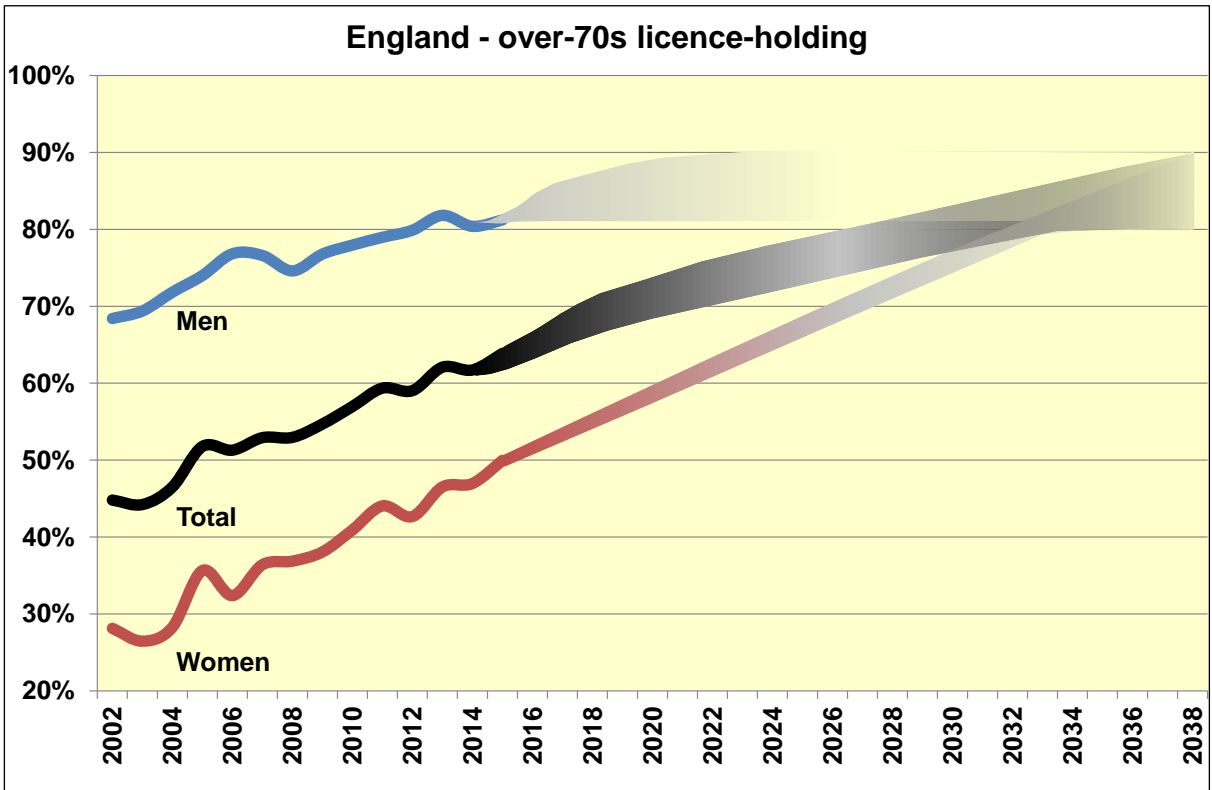
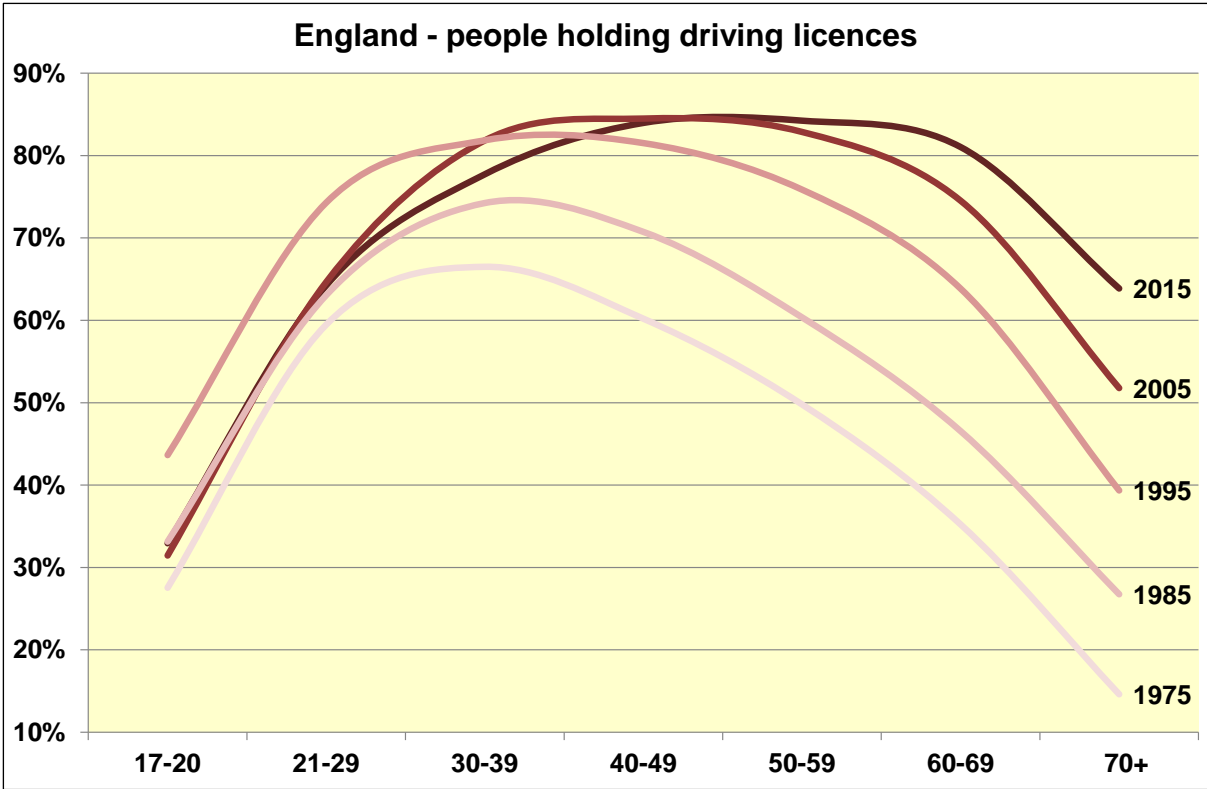
It is not clear how to separate the growth due to additional causes but the changing makeup of central area employment and working practices around flexitime and use of telecoms (easier on the train than in a car) are thought important in explaining faster rail growth than forecast.

Likewise the impacts of new telecoms technologies on travel demand have partly been via changes in personal activity, with these encouraging interaction with a more spatially widespread but more selective set of employment, education, leisure, retail and other activities and relationships – generating trips further afield where affordable (suited rail more than bus), even if these replace a number of shorter trips (walk trips are down one-third since 1996/7). And new telecoms also facilitate substitution of trips, for cost and time reasons familiar to transport modelling (e.g. a video call instead of a visit, a home delivery or download rather than a trip to a shop).

As well as changes in personal activity, further changes, which are not so well-represented in established models, may help explain recent local travel trends.

One important change is in the distribution of income across different groups of the population, even as average incomes rise, which few models cover in detail. And the real-terms reduction in incomes of younger people locally (as wages and vacancies reduce), and real-terms rise in incomes for older people (at least those with pensions), are important causes of negative trends in bus use and in walking.

Younger people become less likely to travel so far (or at all), by bus, on foot, or by car (local average person trips by car have plateaued in recent years although traffic growth continues – population growth and goods vehicles). But as the charts below show, the rising older generation grew up with cars, and drive rather than walk or take the bus (local bus trips by older people have halved since 1990).



2.3 Spatial variation

These changes in opportunity also affect travel demand in less direct, but also important ways – for example, younger people are less able to form new households, and the overcrowding that can result within the home is mirrored outside where parking is at a premium, especially in the inner suburbs where incomes are under most pressure. Owning a car would be difficult for many local young people even if cost were not a problem – there is nowhere to keep it, and each extra car adds disproportionately to congestion whether on the move or parked. Taxi/Private Hire are more common choices now, and affordable where groups travel together.

But a lack of access to cars means bus services are still much more than a back-up service in many inner areas (often those areas originally planned by Districts around tram, and later, bus routes) and breaking down trend data shows that bus use is not falling so quickly in these areas – decline is happening in outer areas where more older people live, and around the smaller towns and cities, where walking and cycling are often the second place mode after car – but bus is the number two mode for work journeys in Birmingham.

2.4. Temporal variation

Change in travel demand by time of day, week, and year, includes the familiar phenomena of peak spreading, but also a growth in travel demand at weekends and holidays, visible in rising road and rail trips, and there are calls for improved rail services at these times. Meanwhile, bucking the trend of declining use, bus services over the Christmas period have been improved and are increasingly busy.

Travel by day of the week has also changed over the period, reflecting perhaps the changes in personal activity prompted by changing working practices – Mondays and especially Fridays are now noticeably less busy on rail services than midweek days.

2.5. Responding to uncertainty

Locally, causes of recent changes in travel demand beyond those at the centre of conventional models include new ways of working, and new technologies, and their impacts on personal activity patterns. They also include new variations on taxi (remote hailing) and car travel (car clubs and other sharing models), underpinned by new telecoms, and responding to changing levels and distribution of income.

A direct contribution to declining walk and bus trips, and increased rail and taxi travel trends is reinforced by indirect effects of these causes on household location and opportunity.

Incorporating these causes in forecasts, reflecting the uncertainty around their future direction, and leaving space for further unknown or unresolved developments, like the impact of Clean Air Zones (CAZ), or evolution of Connected and Autonomous Vehicles (CAV), is challenging – but TfWM takes the challenge seriously; using more detailed models better able to reflect changes in income by group, studying growth in

traffic congestion and ways to promote credible alternatives to single-occupancy car travel, working with younger people on their specific transport needs, and proactively contributing to efforts on CAZ and the development of CAV.

3. Customer Insight – Identify what people want from future travel

Current Customer Insight research is looking at the following areas to inform improved delivery and prioritisation of schemes/services and the further development of policy and strategy.

More information can be provided on the outcomes of the surveys if of interest.

Customer Satisfaction Surveys:

- Annual Customer Satisfaction with bus/Rail/Metro and Ring and Ride users: to monitor customer satisfaction with key modes of travel, benchmarking TfWM against other PTE's and local authorities.
- Annual customer satisfaction surveys amongst road users including car users, pedestrians and cyclists, to monitor satisfaction with issues such as safety, general maintenance and congestion.

Users Profiles:

- Regular user profile surveys amongst Bus/Rail/Metro users to better understand key public transport markets in terms of changing demographics, changes in travel patterns, changes in types of ticketing and information used and changes in attitudes towards modes.

Smarter Travel:

- Use/potential use of new ways of paying including Smartcards and contactless payments.
- Regular digital media survey to track use and changes in use of digital media amongst our key markets.

Scheme monitoring and evaluation:

- LSFT Monitoring, looking at success of sustainable travel interventions as part of LSTF programme looking specifically at the effect of Work Place Travel Planning, Education Travel Planning, Station Travel Plans and Personal Journey Planning in encouraging travel by more sustainable modes.
- Before and After surveys following investment on the network, evaluating the success of developments such as Park and Ride expansions, bus station developments, changes to services on the bus and Rail network and city centre re-developments.

Passenger priorities survey:

- Regular survey to look at changing passenger requirements, what passengers expect from public transport journeys and what could be done to increase usage.