

# Local Transport and Connectivity Plan - Baseline Report January 2021

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## Executive Summary

This baseline report has been published in support of Oxfordshire County Council's updated Local Transport Plan. Local Transport Plans are statutory documents, required under the Transport Act 2008. We are calling ours the Local Transport and Connectivity Plan (LTCP), to better reflect our strategy both for digital infrastructure and for connecting the whole county.

The LTCP will set out an overarching vision for transport in the county and the policies and schemes that will be required to deliver the vision. This approach will ensure that we have outlined a clear long-term ambition for transport in the county. The new LTCP will take a more holistic approach and will recognise the broad range of factors affected by transport such as the environment, the economy, public health and place shaping. This approach seeks to ensure we deliver a plan that not only creates an efficient transport network but also a county that is a better place to live in.

As part of the LTCP development process, Oxfordshire County Council has collected a range of evidence to identify the current situation, challenges and opportunities for Oxfordshire's transport network. This has informed the LTCP vision development process and helps us understand why the vision and key themes are necessary for Oxfordshire. The evidence will also be used to underpin the detailed LTCP development process, informing the schemes and policies identified.

A detailed analysis of the evidence is conducted in this report. A summary of the key points from this analysis is provided below.

### Chapter 1 – Policy Context

- There are a range of strategies at the national, sub-national and local level that have informed and will be supported by the LTCP.

### Chapter 2 – Private Car

- There are high levels of car ownership across the county, except for Oxford.
- Since 1952 there has been a huge increase in car usage in the UK. This trend has been reflected in Oxfordshire, with vehicle miles continuing to increase.
- Congestion is affecting journey times across Oxfordshire. Steps are required to address this and ensure the county remains thriving and attractive.
- The number of Electric Vehicles in Oxfordshire is continuing to grow rapidly and so provisions for these vehicles will be required.

### Chapter 3 – Air Quality

- Air pollution is the largest environmental health risk in the UK and is negatively affecting Oxfordshire residents. Work to address the causes is essential.
- Road transport is responsible for the largest proportion of greenhouse gas emissions in the county. Addressing vehicle usage is therefore critical to reducing emissions and improving air quality.

**Chapter 4 – Buses**

- Although bus usage in the county has increased overall since 2010, it has been declining slightly year on year since 2013/14. Bus journeys per head of the population also remains below the national average. Work is therefore needed to address existing issues and further encourage bus use.
- Bus costs have increased significantly in the last 15 years.
- Bus reliability remains an issue in the county. Measures are required to address this and make bus travel more attractive.

**Chapter 5 – Walking and Cycling**

- Whilst Oxfordshire is in a good starting place with regards to current walking and cycling levels, more still needs to be done to encourage usage.
- The needs of different demographics need to be considered to ensure that Oxfordshire's transport system benefits all residents.
- In order to encourage further cycling, significant work is needed to address cyclist safety.

**Chapter 6 – Natural and Historic Environment**

- Oxfordshire has a rich and varied natural and historic environment, but certain habitats have been in decline in recent years. Increases in Oxfordshire's population and economic activity mean that this will need to be carefully managed for the future.

**Chapter 7 – Population**

- Oxfordshire's population is growing and with further growth proposed more effective solutions will be needed to transform transport in Oxfordshire.
- Oxfordshire has a high life expectancy but there are still significant inequalities across the county that transport can help to address.

**Chapter 8 – Health**

- Obesity levels in Oxfordshire are below the national average, but levels have been rising recently. Encouraging active and healthy travel is one way the LTCP can help address this trend.
- Oxfordshire has above average levels of physical activity but there is still a need to further improve this through measures to encourage active travel.

**Chapter 9 – Road Safety**

- Road safety has improved but remains average nationally. Further work to improve road safety is therefore required.
- Consideration of motorcyclists needs and safety will be required as part of the LTCP due to their vulnerability and overrepresentation in collisions.

**Chapter 10 – Deprivation**

- Overall Oxfordshire has low levels of deprivation, however there are pockets of deprivation in the county.

**Chapter 11 – Urban vs Rural**

- Oxfordshire has both urban and rural areas which will require different approaches.

**Chapter 12 – Economy**

- Oxfordshire has one of the UK's strongest economies, however housing and economic growth are placing strain on the existing transport network.
- Employment is high across Oxfordshire and the economy supports 417,000 jobs but pockets of deprivation exist that transport can help to address.
- Work is needed on Oxfordshire's transport network to relieve existing pressure and accommodate future growth while responding to climate change concerns.

**Chapter 13 – Digital Connectivity**

- Digital connectivity is good in Oxfordshire and can play a role in reducing travel demand. However, there is a need to expand full-fibre and gigabit broadband coverage.

**Chapter 14 – Road and Rail Links**

- Oxfordshire lies on a well-connected and busy transport corridor, but it lacks links to and from the East and is reliant on the A34 for internal vehicle journeys.
- Planned rail investment such as East-West rail will help improve longer-distance connectivity, but further investment in public transport is also likely to be needed if such transport movements are to be more sustainably enabled in the future.

**Chapter 15 – Freight**

- Solutions will need to be found that balance freight issues with the need for an efficient network. LGV growth is projected to significantly increase and the impacts of this will need to be considered.

**Chapter 16 – Highway Maintenance**

- The county has a lower proportion of roads in 'good' condition than the national average, but less in 'poor' condition. The high proportion of C and unclassified roads and limited funding makes highway maintenance a challenge.

**Chapter 17 – Young People**

- Young people currently travel less than previous generations. It is uncertain how these trends will progress highlighting the need for the LTCP to be resilient and consider a range of future travel demand scenarios.

## Introduction

This baseline report has been published in support of Oxfordshire County Council's updated Local Transport Plan. Local Transport Plans are statutory documents, required under the Transport Act 2008. We are calling ours the Local Transport and Connectivity Plan (LTCP), to better reflect our strategy both for digital infrastructure and for connecting the whole county.

The LTCP will set out an overarching vision for transport in the county and the policies and schemes that will be required to deliver the vision. The new LTCP will take a more holistic approach and will recognise the broad range of factors affected by transport such as the environment, the economy, public health and healthy places. This approach seeks to ensure we deliver a plan that not only creates an efficient transport network but also a county that is a better place to live in.

As part of the LTCP development process, Oxfordshire County Council has collected a range of evidence to identify the current situation, challenges and opportunities for Oxfordshire's transport network. This has informed the LTCP vision development process and will also be used to underpin the schemes and policies identified as the full LTCP is developed. The evidence reviewed is over a number of years, and it will be important to continue to take account of further evidence as it becomes available, particularly on the potential longer-term impacts on travel of the Covid-19 situation.

A key overall conclusion from this analysis is the need for increased modal shift to more sustainable ways of travelling around, particularly walking and cycling for all journey purposes. This is required to address the high levels of car usage and the associated negative impacts this is having on the county such as air pollution, congestion and physical inactivity. Whilst the evidence shows that Oxfordshire is in a good starting point for achieving this, more work is required to ensure the county remains a thriving, attractive and healthy place to live.

The report covers 17 chapters which are structured in the following way:

- Chapter 1: Policy Context
- Chapter 2: Private Car
- Chapter 3: Air Quality
- Chapter 4: Buses
- Chapter 5: Walking and Cycling
- Chapter 6: Natural and Historic Environment
- Chapter 7: Population
- Chapter 8: Health
- Chapter 9: Road Safety
- Chapter 10: Deprivation
- Chapter 11: Urban vs Rural
- Chapter 12: Economy
- Chapter 13: Digital Connectivity
- Chapter 14: Road and Rail Links
- Chapter 15: Freight
- Chapter 16: Highway Maintenance
- Chapter 17: Young People

## Chapter 1 – Policy Context

It is important to recognise the policy context within which the LTCP sits. This section provides an overview of the policies and strategies influencing the LTCP at a national, sub-national and local level. Whilst this is not an exhaustive list, it does highlight the key policies at each level.

### National

#### Local Transport Act 2008

Local Transport Plans (LTP) are statutory documents required under the Transport Act 2008. LTP's are forward looking plans that outline a clear plan for achieving transport aspirations within a local transport authority's administrative area. Whilst the Transport Act requires the production of an LTP, there is not up to date prescriptive guidance regarding how an LTP is produced or what it should include.

#### Industrial Strategy

The UK Industrial Strategy aims to create an economy that boosts productivity and earning power throughout the UK. As part of this the strategy sets out four Grand Challenges to put the United Kingdom at the forefront of the industries of the future. Two of these challenges, Clean Growth and Future of Mobility, have strong links to the LTCP.

#### Transport Investment Strategy

The Transport Investment Strategy sets out how the government's investment decisions will respond to today's challenges, driving progress towards fulfilling the aims of the Industrial Strategy. This document provides context for the levels of funding available and the rationale behind government investment in transport.

#### Transport Decarbonisation Plan

The government are currently developing a Transport Decarbonisation Plan. Through this the government will set out the policies and plans needed to tackle transport emissions. The government have already set out six strategic priorities for the plan which have been used to inform development of the LTCP.

#### Gear Change

The Gear Change plan describes the vision to make England a great walking and cycling nation. It sets out the actions required at all levels of government to deliver this vision, grouped under four themes. The plan highlights that the UK needs to see a step-change in cycling and walking in the coming years. The LTCP will build upon the direction set by the government and will help to deliver this change.

#### Future of Mobility: Urban Strategy

The Future of mobility: urban strategy outlines the government's approach to maximising the benefits from transport innovation in cities and towns. It sets out the principles that will guide government's response to emerging transport technologies and business models. This understanding is helpful for framing the County Council's response to innovative technology in the LTCP.



## Sub-National

### England's Economic Heartland

Oxfordshire County Council is a part of England's Economic Heartland (EEH) sub-national transport body. EEH covers 11 Local authorities, including all of the Oxford to Cambridge arc.

EEH have recently published a transport strategy for the region. The strategy sets out that a step-change in approach is required to address the challenges our transport system already faces and to realise the region's economic potential and deliver sustainable growth.

The transport strategy sets out how the region will deliver this step change. The transport strategy will also be supported by a programme of connectivity studies and through an investment pipeline. The LTCP has been developed to reflect these priorities and will also help to deliver EEH's aspirations for the region.

## Local

### Oxfordshire Strategic Vision

The Oxfordshire Growth Board are developing a Strategic Vision for Oxfordshire. The Strategic Vision will establish a common and shared ambition to guide the focus of plans, strategies and programmes for Oxfordshire. The vision identifies an overarching vision statement as well as seven outcomes that if we are successful, will have been achieved in Oxfordshire by 2050.

The LTCP will play an important role in helping to deliver the Strategic Vision and its outcomes. We have ensured the content of this document aligns with the Strategic Vision and will continue to monitor progress on the Strategic Vision.

### Oxfordshire Plan 2050

In support of future growth, the district councils in Oxfordshire are working together to produce a Joint Statutory Spatial Plan known as 'the Oxfordshire Plan'. The Oxfordshire Plan will provide a strategic planning framework for Oxfordshire to 2050, setting out housing, employment and infrastructure needs. The LTCP is being developed in line with the Oxfordshire Plan to consider its outputs and the relevant transport schemes that may be required in response.

### Oxfordshire County Council Climate Action Framework

In October 2020 the County Council approved a Climate Action Framework. The document sets out the county council's plans to make itself a carbon neutral organisation by 2030, and to enable Oxfordshire as a whole to become zero-carbon by 2050. The LTCP will be essential to delivering these commitments and will outline in more detail how transport will contribute to these ambitions.

### Local Industrial Strategy

The Local Industrial Strategy sets out an ambitious plan to build on Oxfordshire's strong foundations and world-leading assets, to deliver transformative growth which is clean and sustainable. The LTCP will help to deliver these aspirations and will ensure there is the transport network required to support growth aspirations.

### Joint Health and Wellbeing Strategy

The Joint Health and Wellbeing Strategy sets out how the NHS, Local Government and Healthwatch will work together to improve resident's health and wellbeing. The LTCP can help to deliver some of these improvements and specifically takes forward priorities around Healthy Place Shaping.

#### **Summary**

- There are a range of strategies at the national, sub-national and local level that have informed and will be supported by the LTCP.

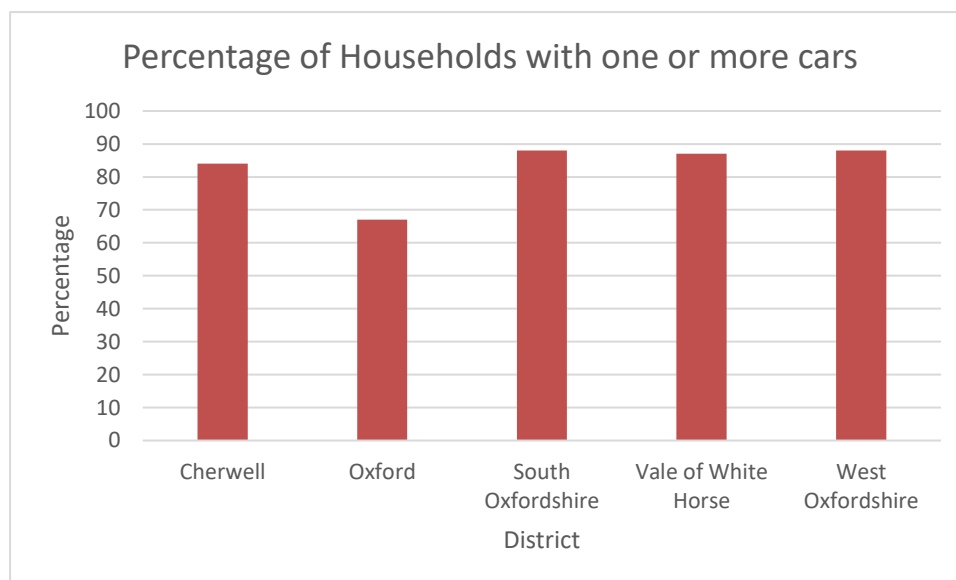
## Chapter 2 - Private car

### Ownership

Car ownership is high across Oxfordshire, particularly outside of Oxford. In total 83% of households in Oxfordshire have access to 1 or more cars or vans. This is significantly higher than the average for England which is 74%<sup>1</sup>.

Within Oxfordshire itself there is significant variation in the percentage of households that have access to 1 or more cars. In Oxford only 67% of households own 1 or more car, whereas the other 4 districts all have ownership levels over 80%. South Oxfordshire and West Oxfordshire have the highest levels of car ownership with 88% of households owning 1 or more car.

These patterns of ownership highlight the challenges that face Oxfordshire in terms of reducing private car usage and that much stronger measures will be required to facilitate modal shift. However, it is also important to consider those households that do not have access to a car in order to improve socioeconomic equality.

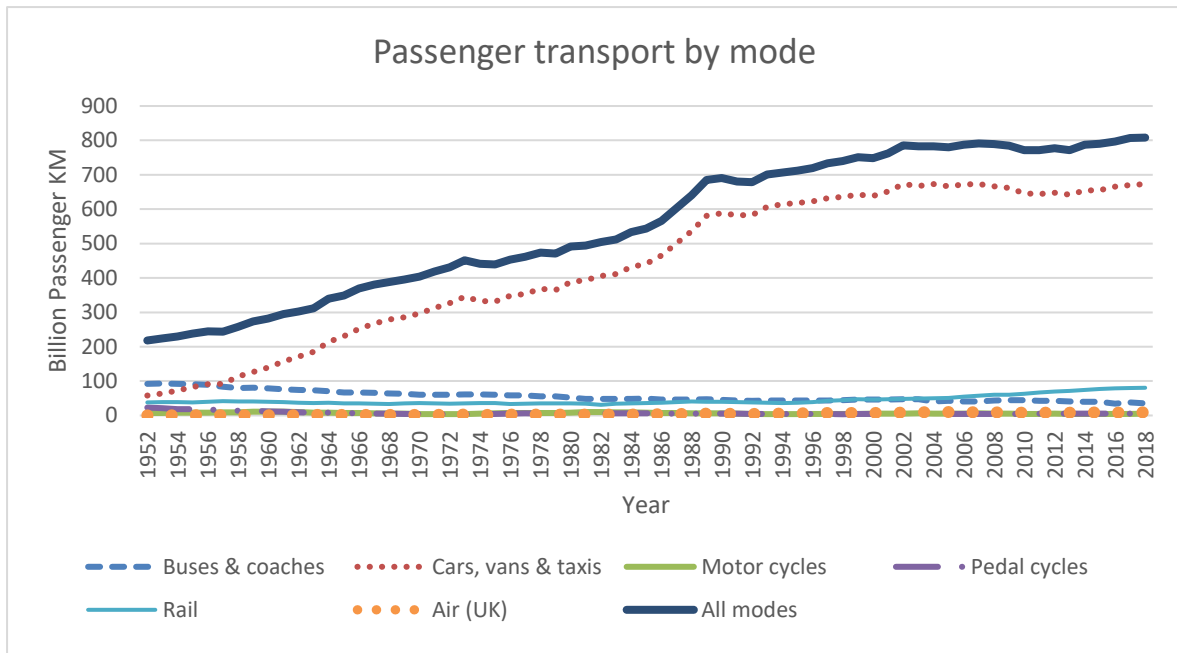


### Usage

Since 1952 we have seen a significant rise in mobility, driven by the private car in England. Individual car usage has tripled since 1952, from 2500 miles per person each year, to 7500 miles<sup>2</sup>. As seen on the chart below, there has been a gradual reduction of bus use down to 4% of our distance covered. However, since the mid-90s there has been a growth in railway usage, now up to 10% of our mileage.

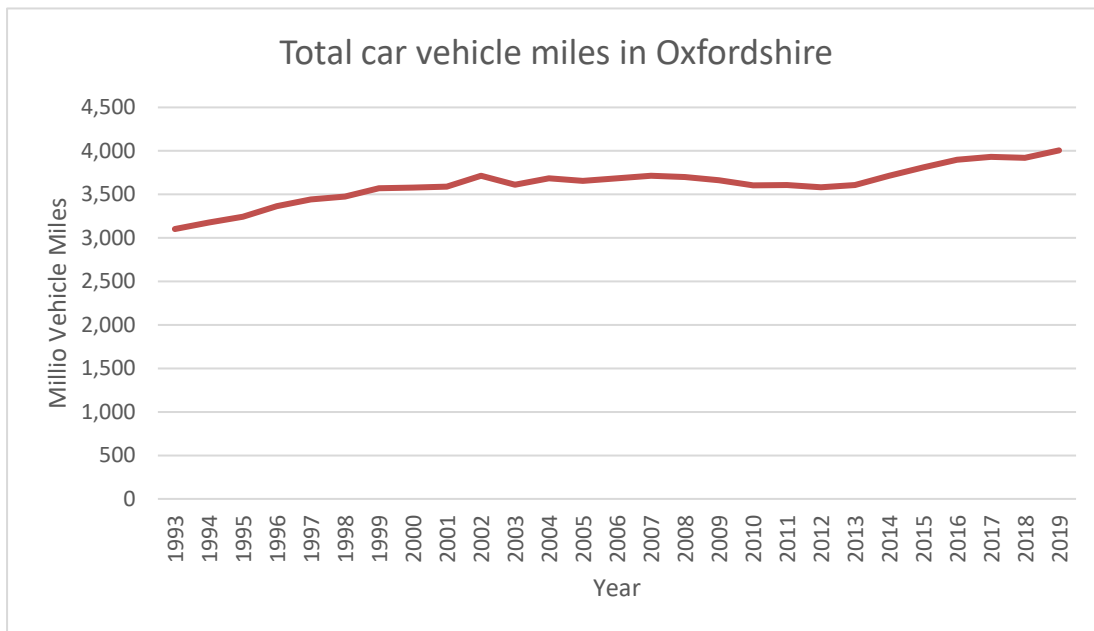
<sup>1</sup> 2011 Census: Car or van availability, local authorities in England and Wales

<sup>2</sup> Department for Transport: Passenger transport: by mode, annual from 1952



Whilst the trend of increasing car use has slowed since 1990, the total vehicle miles driven continues to increase. In England, total vehicle miles driven have increased by 32% between 1993 and 2019<sup>3</sup>. This trend has also been reflected in Oxfordshire where total vehicle miles driven have increased by 29% between 1993 and 2019. In 2019 total vehicle miles driven in Oxfordshire passed 4,000 million for the first time, the 18<sup>th</sup> most out of the 209 Local Authorities in the Department for Transport’s statistics.

This continued increase in private car usage is not sustainable and will further compound existing issues such as congestion, parking and air quality. It is therefore essential that a plan is set out to address this trend.



<sup>3</sup> Department for Transport: Car vehicle traffic (vehicle miles) by local authority in Great Britain, annual from 1993

## Congestion

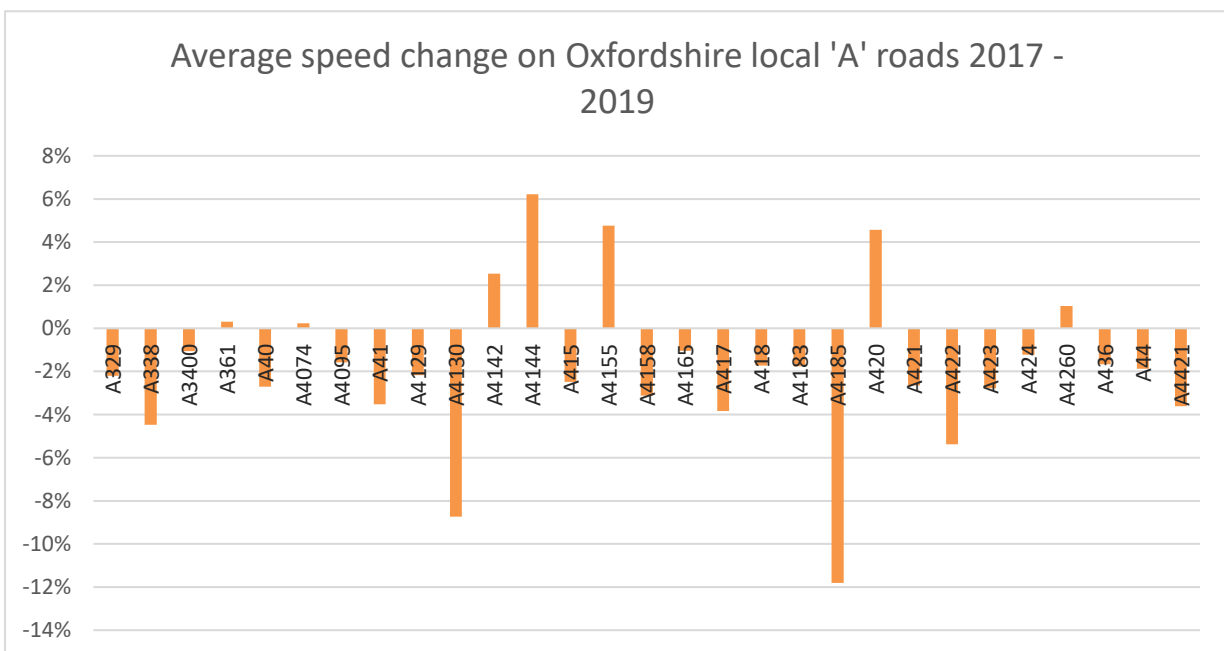
The increase in the vehicle miles travelled and a growing population have created issues with congestion across the UK. On average British drivers lose 115 hours per year to congestion, costing the UK economy an estimated £5.2 billion<sup>4</sup>. Tackling congestion is therefore important for a range of reasons, including to support the UK economy.

Average speeds on both the Strategic Road Network (SRN) and Local 'A' Roads have decreased since 2014 across the UK. Average speeds on the SRN have decreased by 1% since 2015 across the UK<sup>5</sup>, with the average delay increasing by 7% across the same time period<sup>6</sup>.

Within Oxfordshire only the M40 and A34 are part of the SRN. These roads have seen average speeds decrease by 0.3% since 2017. Notable areas that have seen above average speed decreases are the M40 Southbound between J10-J9 and the A34 Northbound between the A44, B4027 and B430. Similarly, Oxfordshire's SRN roads have seen average delays increase by 1.2% since 2017.

Average speeds on local 'A' roads have seen a larger decrease in average speeds since 2014. Across the UK speeds on urban local 'A' roads have decreased by 6% and speeds on rural 'A' roads have decreased by 3% since 2014<sup>7</sup>. Average speeds on Oxfordshire's local 'A' roads have reflected this trend with a 2% decrease in average speeds since 2015. Average speeds on the A4185, A4130 and A422 have decreased by the most over this period.

Congestion is having an impact on journey times across the UK, with these trends being reflected in Oxfordshire. It is essential that long term steps are taken to remedy this situation and fight congestion at its cause to ensure the county remains a thriving and attractive place to live.



<sup>4</sup> INRIX 2019 Global Traffic Scorecard

<sup>5</sup> Department for Transport: Average speed on the Strategic Road Network in England: monthly and year ending from April 2015

<sup>6</sup> Department for Transport: Average delay on the Strategic Road Network in England: monthly and year ending from April 2015

<sup>7</sup> Department for Transport: Monthly and 12 month rolling average speeds on local 'A' roads in England

## Electric Vehicles

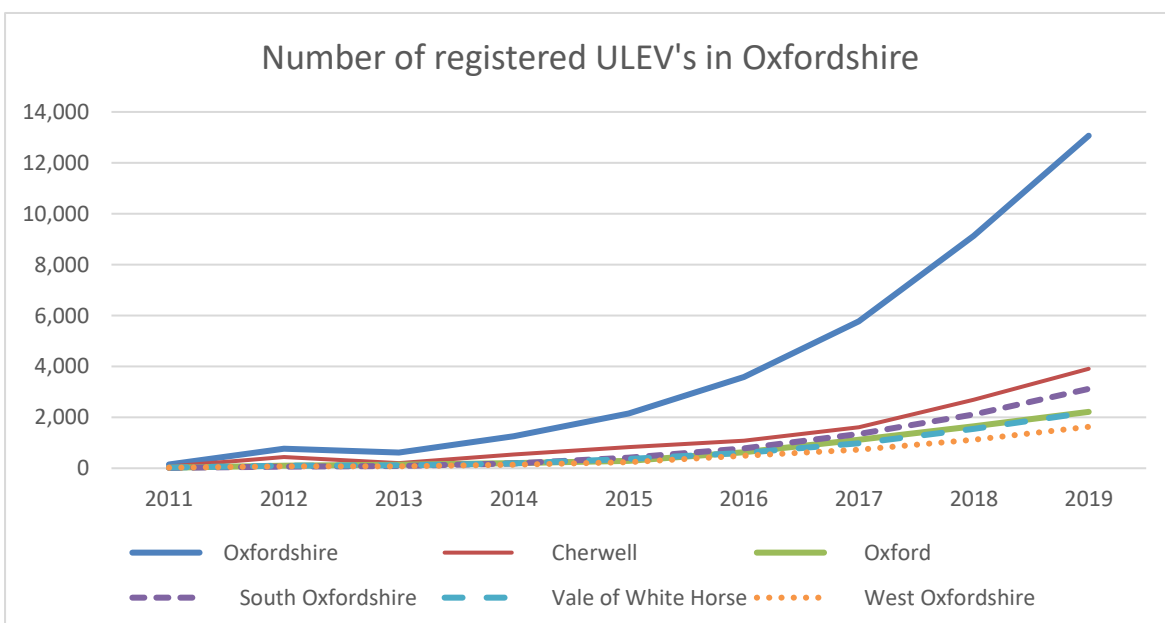
Electric vehicles (EVs) represent a significant change in vehicle technology. The number of registered EVs has grown rapidly in the last 10 years, particularly in the last 4 years since the publication of LTP4. EVs have the potential to reduce the environmental impact of car travel as they produce significantly fewer emissions. However, it should be noted that they do not address all issues. EVs still produce particulate matter from tyre and brake pad wear and will not address congestion issues.

It is necessary for the County Council to consider EV provision for a number of reasons. As highlighted EVs can have public health benefits. The County Council can also play a role in encouraging their uptake through the provision of charging infrastructure on council owned highway and in council owned car parks. Provision of charging infrastructure on the highway is particularly relevant for residents that do not have access to off-street parking.

There has been an increase in the number of registered Ultra Low Emission Vehicles (ULEV) of over 9000% in England since 2011. This trend has been replicated in Oxfordshire with a growth in the number of registered ULEV's of over 8700% since 2011. There are now 45,000 registered ULEV's in Oxfordshire, Cherwell being the district with the largest proportion of these with 14,000.

As highlighted the growth in the number of registered EV's has accelerated rapidly since 2016. In Oxfordshire there has been an increase in the number of registered ULEV's of 138% since 2016, notably higher than the national average of 93%. West Oxfordshire currently has the lowest number of registered ULEV's and the lowest growth rate, however the percentage increase of 116% since 2016 is still above the national average.

These statistics highlight that EV growth in Oxfordshire is very strong and so it will be necessary for the LTCP to consider provisions for both supporting these vehicles and encouraging the uptake of further EVs.



**Summary**

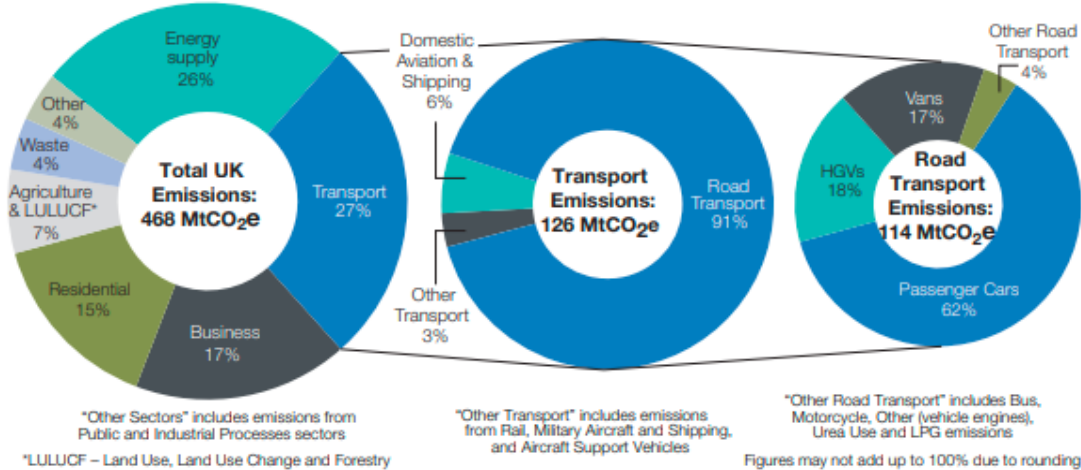
- There are high levels of car ownership across the county, except for Oxford.
- Since 1952 there has been a significant increase in car usage in the UK. This trend has been reflected in Oxfordshire, with vehicle miles continuing to increase.
- Congestion is affecting journey times across Oxfordshire. Steps are required to address this and ensure the county remains thriving and attractive.
- The number of Electric Vehicles in Oxfordshire is continuing to grow rapidly and so provisions for these vehicles will be required.

## Chapter 3 - Air Quality

### Transport Emissions

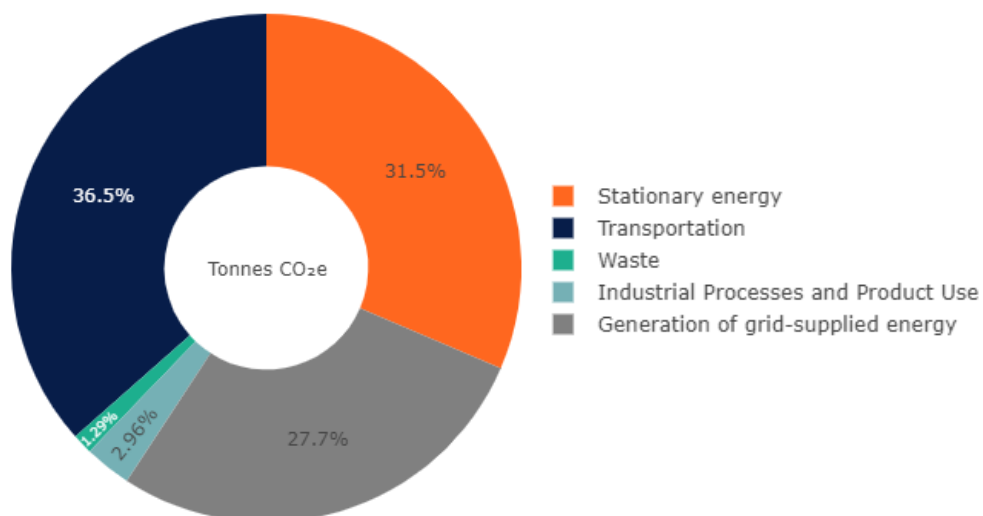
Transport is now responsible for the largest proportion of UK greenhouse gas emissions. In 2016 transport was responsible for 27% of total UK greenhouse gas emissions, with road transport responsible for 91% of transport emissions. Within this passenger cars produce 62% of road transport emissions<sup>8</sup>.

Total UK Greenhouse Gas emissions



These national trends are reflected in Oxfordshire where transport is the biggest source of emissions. In Oxfordshire transport is responsible for a larger proportion of greenhouse gas emissions than the national average, producing 36.5% of all emissions in the county<sup>9</sup>. Road transport is responsible for the majority of these emissions, 33.3%, making it the largest source of emissions in Oxfordshire. Addressing vehicle usage is therefore critical to reducing emissions and improving air quality across the county.

Emissions by sector in Oxfordshire



<sup>8</sup> UK Government: The Road to Zero

<sup>9</sup> Scatter Cities



## Air Pollution

Air pollution is the largest environmental health risk in the UK. It causes more harm than passive smoking. Conditions exacerbated by air pollution include asthma, chronic bronchitis, chronic heart disease (CHD), and strokes. In Oxfordshire, it was estimated that 3,578 years of healthy life were lost due to air pollution in 2017<sup>10</sup>.

Research by King's College London has highlighted some of the impacts of air pollution in Oxford<sup>11</sup>:

- Each year on average, higher air pollution days in Oxford are responsible for:
  - 6 more cardiac arrests outside hospital
  - 4 more hospital admissions for stroke
  - 5 more people to hospital for cardiovascular disease than lower air pollution days.
- Roadside air pollution in Oxford stunts lung growth in children by 14.1%.
- In Oxford, an extra 1 adult and 1 child are hospitalised with asthma on days where air pollution is high compared to days where air pollution is low on average each year.
- On high air pollution days, 4 more children with asthma in Oxford experience asthma symptoms than on lower pollution days.
- Cutting air pollution in Oxford by one fifth would result in:
  - 83 fewer cases of coronary heart disease each year
  - 28 fewer cases of lung cancer each year
  - 77 fewer children with low lung function each year
  - 38 fewer asthmatic children with bronchitic symptoms each year
  - 31 fewer children with a chest infection (acute bronchitis) each year
  - 1 less baby born underweight each year
  - An increase in children's lung capacity by around 2.8%

Oxfordshire also has 13 designated Air Quality Management Areas where air quality objectives are not being met. Over the past 5 years, the sites with the highest readings for Nitrogen Dioxide in Oxfordshire have generally seen a declining trend, but most are still above the target.

### Summary

- Air pollution is the largest environmental health risk in the UK and is negatively affecting Oxfordshire residents. Work to address the causes is essential.
- Road transport is responsible for the largest proportion of greenhouse gas emissions in the county. Addressing vehicle usage is therefore critical to reducing emissions and improving air quality.

<sup>10</sup> Oxfordshire Health and Wellbeing Joint Strategic Needs Assessment 2020

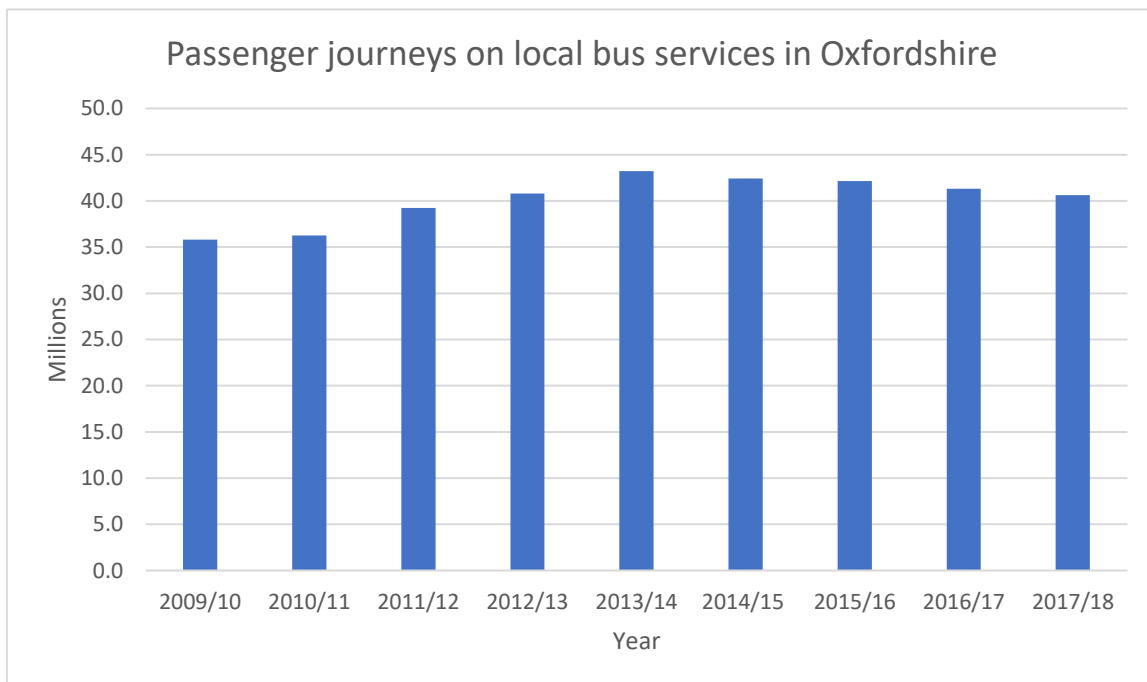
<sup>11</sup> Kings College London: Personalising the Health Impacts of Air Pollution – Summary for Decision Makers, 2019

## Chapter 4 - Buses

### Bus Usage

The number of passenger journeys on local buses has been falling over the last decade in England. The number of journeys in England (outside London) has fallen by 11.9% since 2008/09. Total local bus passenger journeys in England were 4.32 billion in England in 2018/19, a 0.7% decrease from the previous year. This decrease was smaller than previous years, but the total now represents the lowest recorded level<sup>12</sup>.

Bus mileage has also seen a decreasing trend across England. Vehicle miles on local bus services in England have decreased by 11.2% since 2008/09 and are now at 1.18 billion vehicle miles. This was a 1.3% decrease when compared to the previous year. Despite these national trends, bus usage in Oxfordshire has increased over the last 10 years. Oxfordshire has seen a 13% increase in the number of passenger journeys since 2009/10<sup>13</sup>. Similarly, Oxfordshire has seen the number of passenger journeys on local bus services per head of the population increase from an average of 56 per year in 2009/10 to 60 in 2017/18, a 7% increase<sup>14</sup>.



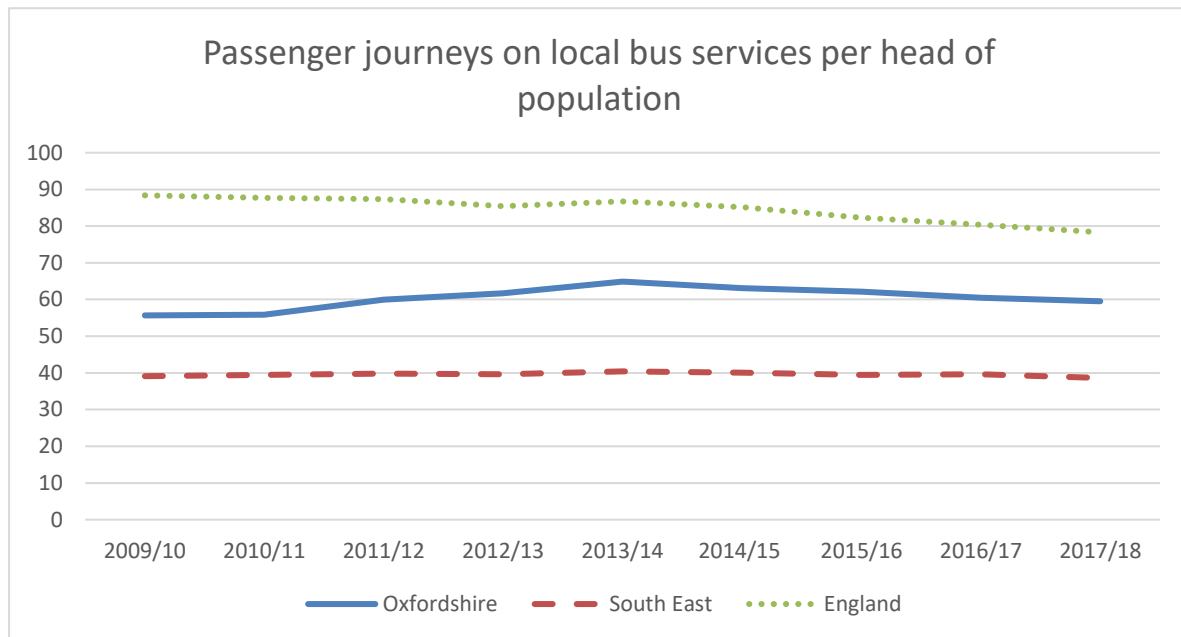
A lot of this success can be attributed to Oxford, where there is a mature and well-used network of commercial bus services, including regular services to the city centre from five park and ride sites on the edge of the city. However, within Oxfordshire's towns, commercial bus networks are relatively less well developed. Despite a network of bus and rail services from the county's main towns to Oxford, the proportion of car journeys between these towns and Oxford remains stubbornly high. In rural areas, reductions in central government funding has led to the removal of many subsidised local bus services.

<sup>12</sup> Department for Transport: Annual Bus Statistics: England 2018/19

<sup>13</sup> Department for Transport: Passenger journeys on local bus services by local authority: England, from 2009/10

<sup>14</sup> Department for Transport: Passenger journeys on local bus services per head by local authority: England, from 2009/10

Despite an overall increase in bus usage in Oxfordshire since 2009, there has been a declining trend in recent years. As seen on the graph, the total number of passengers has decreased by 6% since 2013/14, in line with the national trend. Similarly, the number of journeys per head of the population has declined by 8% since 2013/14. Whilst Oxfordshire's journeys per head of the population remains above the average for the South East, it is still considerably below the average for England. Work is therefore needed to rectify these trends, encourage bus usage and improve connectivity across the county.



### Bus Affordability

The cost of transport is also a key determining factor affecting its use. We do not have statistics relating to bus fares in Oxfordshire, however national data provides a helpful overview of changes.

In the year to March 2019, local bus fares in England have increased by 3.3%, faster than the annual all items Consumer Prices Index rate of inflation (1.9% increase), meaning bus fares have risen in real terms<sup>15</sup>.

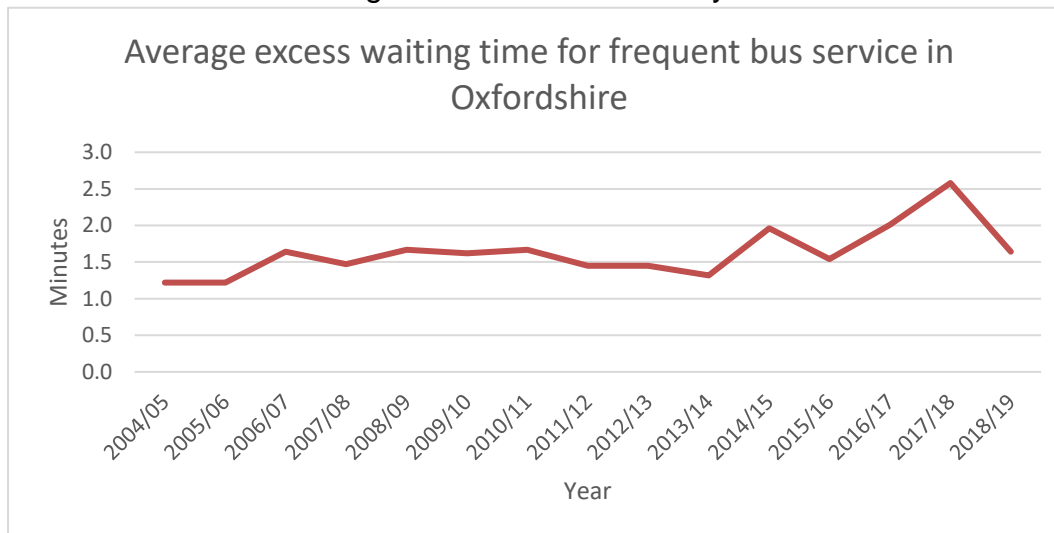
Local bus fares in England increased by 71% between March 2005 and March 2019. The all items Consumer Prices Index (CPI) has increased by 38% over the same period. Travel costs are therefore likely to now make up a larger proportion of residents spending. Unaffordable travel costs could act as a further deterrent to bus use and make it harder for residents to travel around the county by public transport.

### Bus Reliability

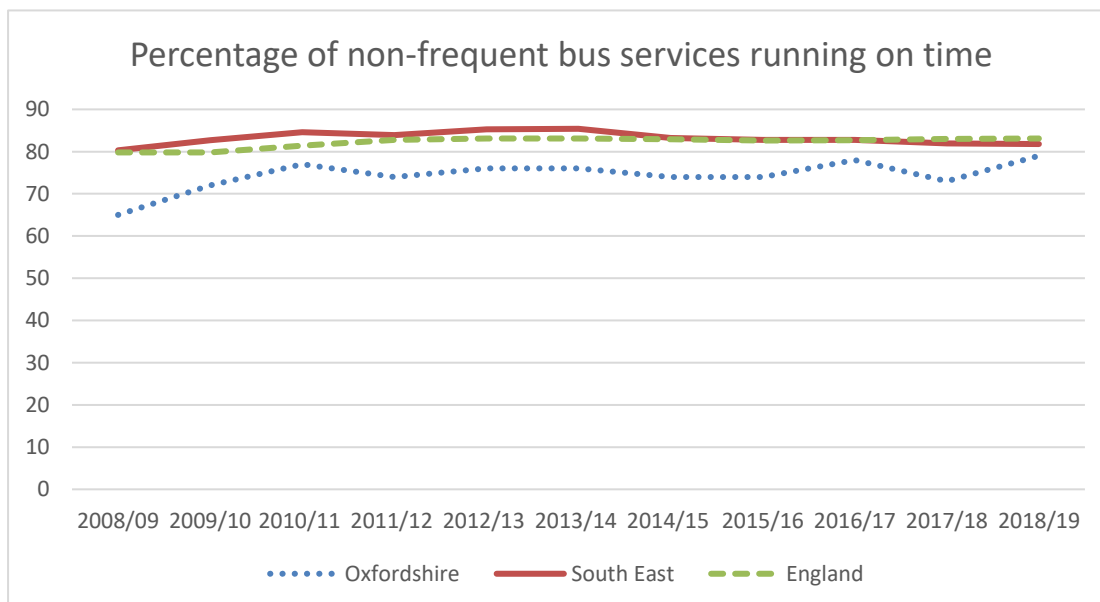
Reliability is another factor that plays an important role in bus patronage. Case studies have shown that improving bus service times and reliability will deliver increased patronage.

<sup>15</sup> Department for Transport: Annual Bus Statistics: England 2018/19

The reliability of frequent bus services in Oxfordshire has been decreasing in recent years. This is shown by the increase in average excess waiting time from 1.2 to 1.6 minutes on the graph below<sup>16</sup>. Averages for the South East and England are not available, however in the same time period the average excess waiting time for buses in London and Southampton have decreased. The primary cause for this change is increased levels of traffic congestion across the county.



The percentage of non-frequent bus services running on time has been increasing over the last 10 years. There has been an 11% increase in the number of these services running on time since 2005 to 79% of services in 2018/19<sup>17</sup>. However, despite this increase Oxfordshire remains below the average for the South East (82%) and England (83%). Residents want to know how long their journey will take and for their journeys not to be delayed or disrupted and so further work is needed to address congestion and improve bus priority.



<sup>16</sup> Department for Transport: Average excess waiting time for frequent services by local authority: England, annual from 2004/05

<sup>17</sup> Department for Transport: Non-frequent bus services running on time by local authority: England, annual from 2004/05

**Summary**

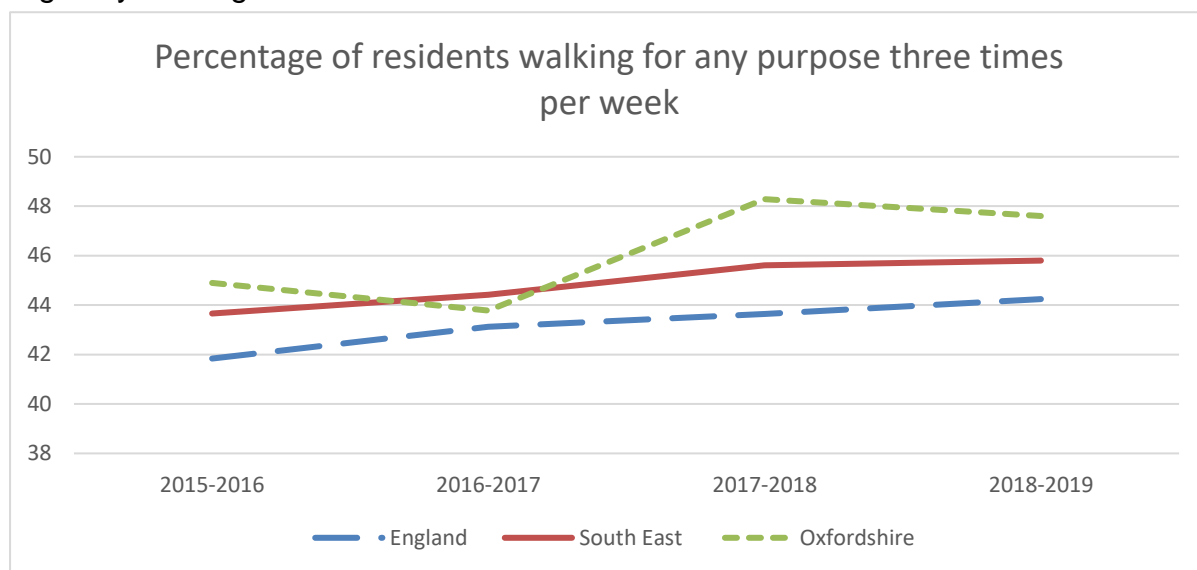
- Although bus usage in the county has increased overall since 2010, it has been declining since 2013/14. Bus journeys per head of the population also remains below the national average. Work is therefore needed to address existing issues and further encourage bus use.
- Bus costs have increased significantly in the last 15 years.
- Bus reliability remains an issue in the county. Measures are required to address this and make bus travel more attractive.

## Chapter 5 - Walking and Cycling

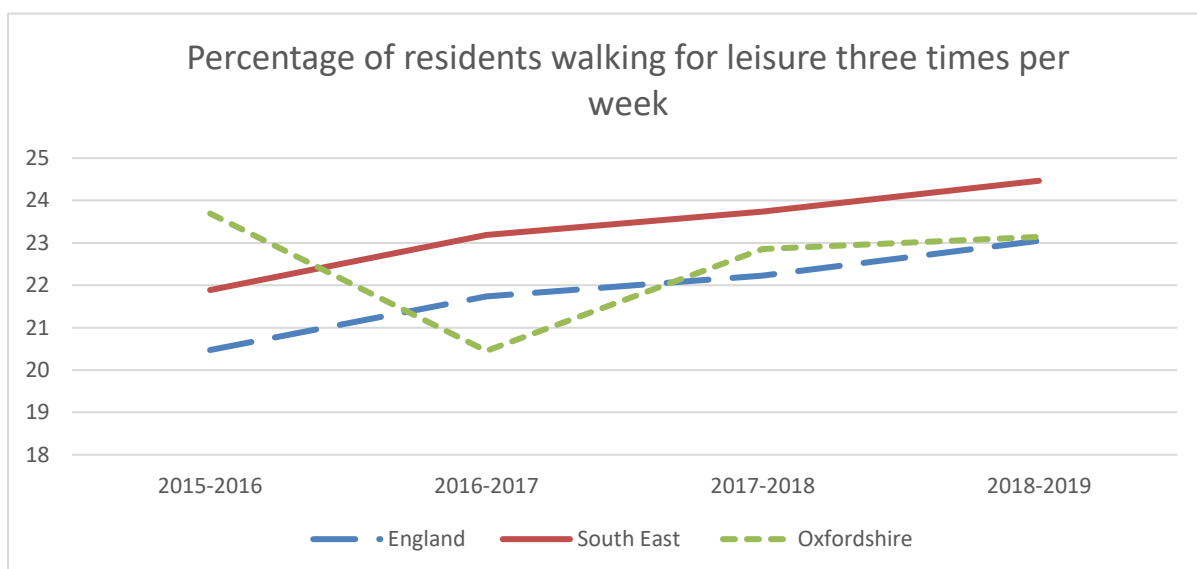
### Walking Levels

The percentage of residents that do any walking is above the national average in Oxfordshire and has increased over the last 5 years. The percentage of residents that walk once per month for any purpose has increased from 82% to 86% since 2015 and is above the national average of 80%<sup>18</sup>.

Similarly, the percentage of residents that do any walking three times per week has increased from 45% to 48% since 2015. This is also above the national average of 44%. However, there have been some negative trends in the proportion of residents regularly walking in Oxford since 2017.



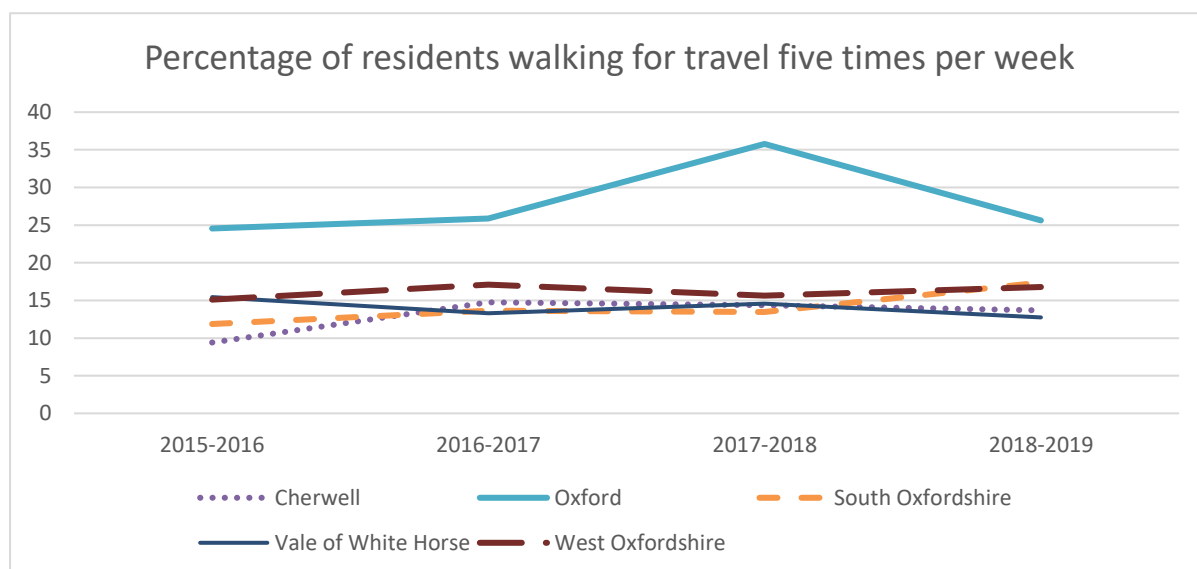
In terms of walking for leisure and walking for travel, Oxfordshire has seen an increase over the last 5 years and remains above the national average. The percentage of residents walking for leisure once per month has increased by 5% since 2015 to 73%, above the national average of 64%. The percentage of residents walking more



<sup>18</sup> Department for Transport: Proportion of adults that walk, by frequency, purpose and local authority, England, 2018-2019

regularly for leisure has largely remained the same over the last 5 years and is more aligned with the national average.

As highlighted the percentage of residents walking for travel in Oxfordshire is above the national average. In Oxfordshire 54% of residents walk for travel once per month and 25% walk for travel three times per week compared to the national averages of 49% and 23% respectively. However, we have seen the percentage of residents walking for travel in Oxford decline since 2017. Notably the percentage of residents walking for travel five times per week has decreased by 10% since 2017, although this is still higher than other (more rural) districts in Oxfordshire.



Whilst Oxfordshire is in a good starting place with regards to walking, there is still a need for further work. Recent declines in the percentage of people walking in Oxford could be part of a longer-term trend that would need to be addressed. The relatively high percentage of residents walking in Oxford also obscures the fact that walking levels in some districts are below the national average. Current levels are also nowhere near the levels required to reduce private car usage, improve air quality and address public health issues. Therefore, further and more extensive work is required to encourage walking across Oxfordshire.

## Cycling Levels

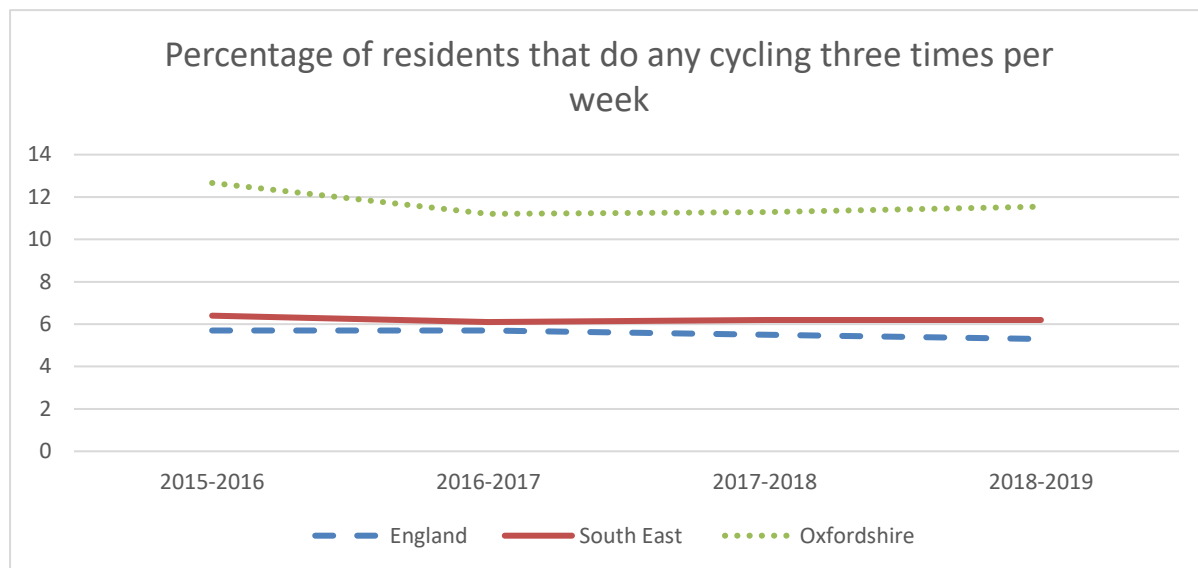
Cycling accounts for just 2% of all trips made nationally and 1% of all distance travelled<sup>19</sup>. The number of trips made has remained largely steady since 2002 but the distance travelled has increased by 41%. However, approximately 2 thirds of all trips in England are 5 miles or under, with other 40% being 2 miles or under<sup>20</sup>. There is therefore significant potential to increase the proportion of residents that cycle.

In line with national trends, the percentage of Oxfordshire residents that do any cycling has remained steady across the last 5 years. However, the percentage of residents cycling in Oxfordshire is notably higher than the national average. For example in Oxfordshire the percentage of residents cycling once per month (27%) and three times per week (12%) are significantly higher than the national averages of 16% and 5%

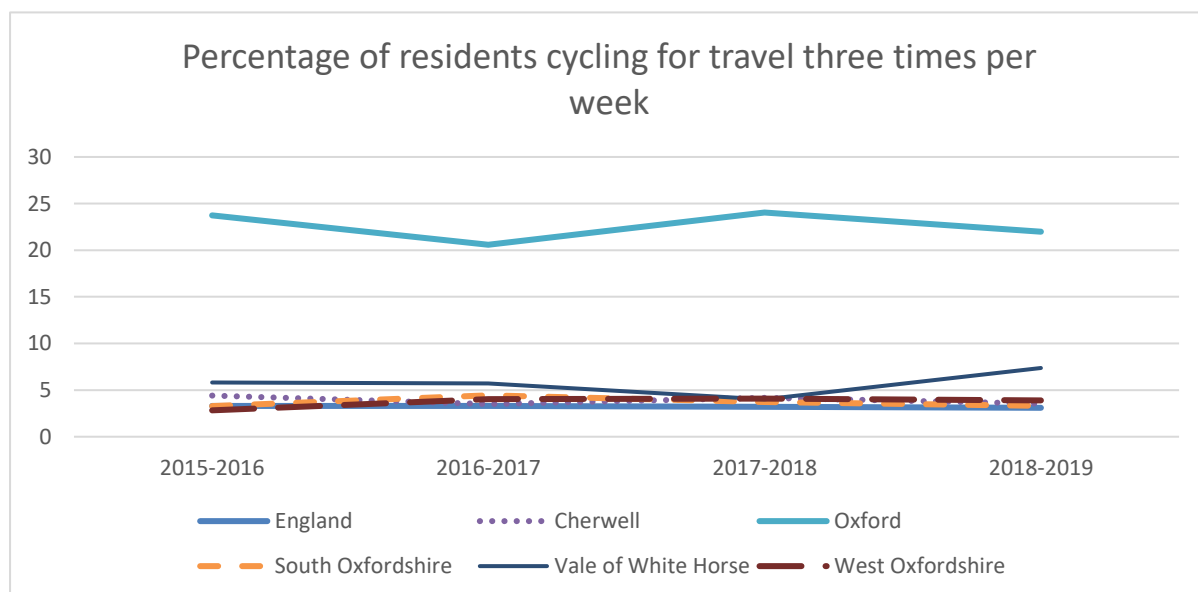
<sup>19</sup> Department for Transport: Walking and Cycling Statistics, England: 2019

<sup>20</sup> Department for Transport: National Travel Survey; Average number of trips by trip length: England, from 2002 - 2019

respectively. It should be noted that Oxford has one of the highest proportion of cyclists in the country which contributes significantly to the countywide figures.



These trends are much the same for the other cycling journey purposes of leisure and travel. Across both journey purposes the percentage of Oxfordshire residents cycling has remained largely consistent over the past 5 years and is significantly higher than the national average for all frequencies.



As with walking, Oxfordshire is in a good starting point with regards to cycling. However, there are similar issues and opportunities that need to be addressed. The percentage of residents cycling has not seen a significant increase across the county and there have been some decreases over the last 5 years, notably in Oxford for overall travel and Vale of White Horse for leisure. Similarly, the very high percentage of residents cycling in Oxford obscures average or below average rates elsewhere in the county. Therefore, further work is required to encourage cycling across Oxfordshire.



## Cycling Safety

Road safety is a significant barrier to cycling. This has been highlighted in the National Travel Survey where road safety was cited by 24% of respondents as to why they do not cycle more and too much traffic was also cited by 16% of respondents<sup>21</sup>.

Furthermore, when assessing the proportion of respondents agreeing that it is too dangerous to cycle on the road, we see that the percentage of respondents that agree has increased since 2011. Notably, the percentage of cyclists that agree has increased by 13% since 2011 to 57%.

Whilst the number of non-cyclists that agree has only increased by 1%, this figure remains high at 70%<sup>22</sup>, highlighting the perceived safety issues associated with cycling on road. In order to encourage further cycling, significant work is therefore needed to address cyclist safety.

## Walking and Cycling Demographics

Transport affects all residents and it affects them in different ways. It is important that we investigate and recognise these impacts to create a transport system that is inclusive and benefits all Oxfordshire residents.

Whilst there is not any local data regarding walking and cycling demographics, there is extensive national data which can help to inform our understanding of the different impacts and different needs of various groups.

In terms of walking, White British residents generally walk a lot more than other ethnicities. As shown on the table below, South Asian and Black residents walk significantly less than White British residents. There has also not been an increase in the percentage of South Asian and Black residents that walk over the last 5 years. Further consideration of the underlying factors for this and the needs of these residents is therefore required.

Ethnicity	2015-2016	2016-2017	2017-2018	2018-2019
White British	69%	71%	71%	73%
South Asian	61%	60%	61%	61%
Black	59%	59%	58%	59%
Chinese	66%	65%	69%	69%

*Percentage of residents that do any walking once per week*

The percentage of residents that cycle once per week, is also highest amongst White British residents. Whilst the differences between White British and other ethnicities are not as large as those for walking (4%), there is again a need to consider the factors contributing to these differences.

With regards to cycling, there is a stark gender difference. The percentage of men cycling once per week (16%) is over double that of women (7%). These figures have remained steady over the past 5 years. Consideration is therefore needed to address these differences and ensure cycling is accessible for all residents.

<sup>21</sup>Department for Transport: Walking and Cycling Statistics, England: 2019

<sup>22</sup> Department for Transport: Proportion of respondents agreeing that it is too dangerous to cycle on the road, England, 2011 to 2020

Finally, both walking and cycling follow a similar trend with regards to deprivation. Residents from the most deprived quartile have the lowest walking and cycling rates, with residents from the least deprived quartile having the highest walking and cycling rates. This trend is reflected across all journey purposes and frequencies, highlighting that there is a link between deprivation and active travel usage. Once again, these trends need to be considered as part of the LTCP to ensure Oxfordshire's transport system benefits all residents.

Level of Deprivation	Any Walking	Any Cycling
Least deprived quartile	75%	13%
Second least deprived quartile	73%	12%
Second most deprived quartile	72%	11%
Most deprived quartile	66%	10%

*Percentage of residents that do any walking or cycling once per week 2018-2019*

### Summary

- Whilst Oxfordshire is in a good starting place with regards to current walking and cycling levels, more still needs to be done to encourage usage.
- The needs of different demographics need to be considered to ensure that Oxfordshire's transport system benefits all residents.
- In order to encourage further cycling, significant work is needed to address cyclist safety.

## Chapter 6 - Natural and historic environment

Oxfordshire has a rich and varied natural and historic environment, which makes it an attractive place to live, visit and work. The county contains the golden limestone villages of the Cotswolds, the escarpments of the North Wessex Downs and the Chilterns and valleys and flood plains of the River Thames.

The rivers themselves, particularly the Thames, offer a wealth of opportunities for leisure activities, including the Thames Path National Trail, but flood most winters with increasing severity and regularity, affecting the transport network and homes.

The county contains part of three Areas of Outstanding Natural Beauty (AONB): the Cotswolds, North Wessex Downs, and the Chilterns, and a large area encircling Oxford is designated as Green Belt.

There are seven internationally designated conservation sites (all Special Areas of Conservation) wholly or partly within Oxfordshire, 105 Sites of Special Scientific Interest (SSSI) and nine National Nature Reserves. However, despite the presence of these sites, a number of wildlife species have been lost from or have been in decline in Oxfordshire.

Semi-natural habitats such as grassland and heathland have been in decline across the county. Poorly managed and designed developments have also taken place in recent decades in locations that were home to wild plants and animals.

Oxfordshire also has a rich heritage and archaeological resource, with Blenheim Palace UNESCO World Heritage Site, 55 Registered Parks and Gardens, nearly 13,000 listed buildings, 242 Conservation Areas, 2 historic battlefields and approximately 350 Scheduled Monuments. These help make the county a major tourist destination.

### Summary

- Oxfordshire has a rich and varied natural and historic environment, but certain habitats have been in decline in recent years. Increases in Oxfordshire's population and economic activity mean that this will need to be carefully managed for the future.

## Chapter 7 - Population

### Population Growth

Oxfordshire has a population of 691,667 according to the latest Office for National Statistics mid-year estimates<sup>23</sup>. The population is distributed relatively evenly across the 5 districts, as seen on the table below, with Oxford having the largest population at 152,457 and West Oxfordshire having the smallest population at 110,643.

Area	2019 Population
Oxfordshire	691,667
Cherwell	150,503
Oxford	152,457
South Oxfordshire	142,057
Vale of White Horse	136,007
West Oxfordshire	110,643

The population has been increasing in Oxfordshire since 2001. This population growth has been reflected in all of Oxfordshire's districts. Since 2001, Oxfordshire's population has increased by 14%, with all districts experiencing population growth of over 10% since 2001. The Vale of White Horse has seen the largest population growth since 2001 with an increase of 17%.

With plans for a further 100,000 new homes in the county by 2031, there is going to be increased pressure on the existing transport network. Given the scale of growth, more effective solutions are therefore needed to transform transport in Oxfordshire.

### Demographics

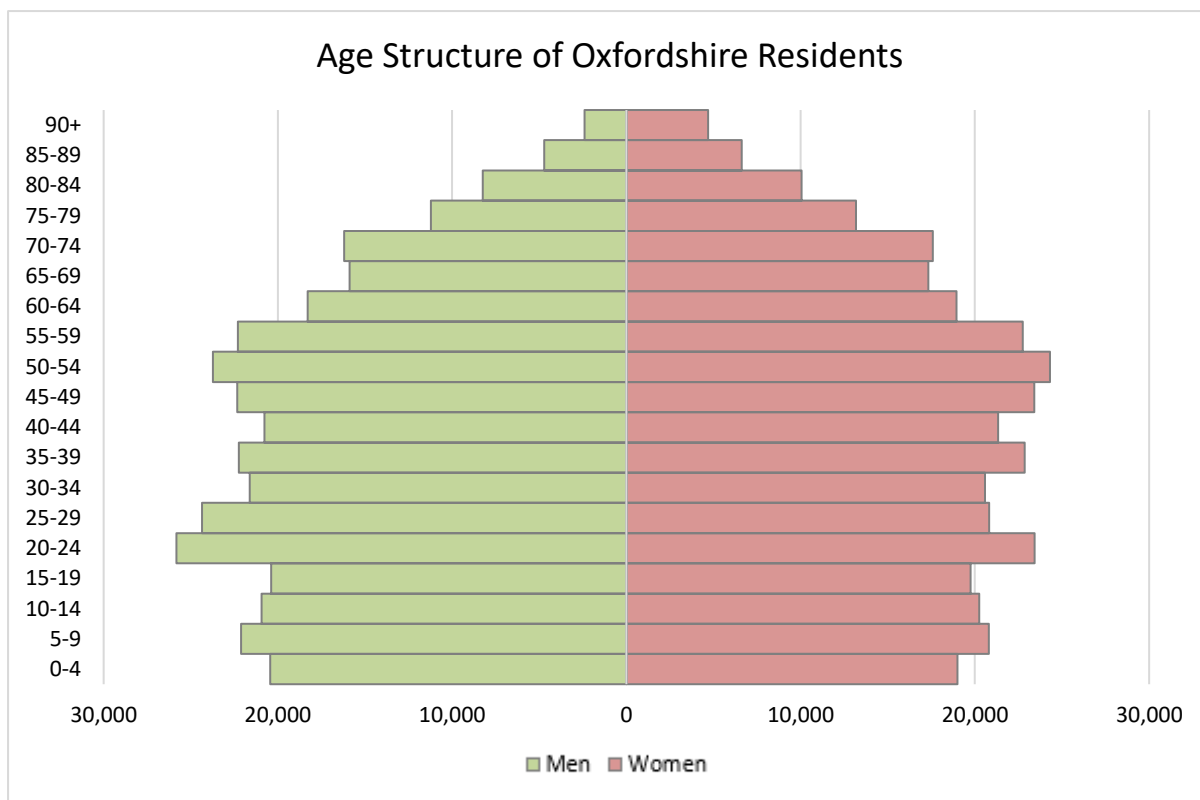
Oxfordshire's population has a relatively equal gender distribution with 344,030 males<sup>24</sup> and 347,637 females<sup>25</sup>. There is also a relatively equal age distribution in the county as seen on the age structure diagram overleaf.

Those aged 20-24 make up the largest age group in the county with 49,251 residents (14.2% of the population). However, despite this group being the largest single age group, Oxfordshire has an ageing population. The 50-54 age group makes up the second largest age group with 48,042 residents and those aged between 46 and 55 make up the largest proportion of residents (27.4%). Similarly, the narrower bottom to age structure diagram highlights that there is an older population with long life expectancy, low death rates and low birth rates.

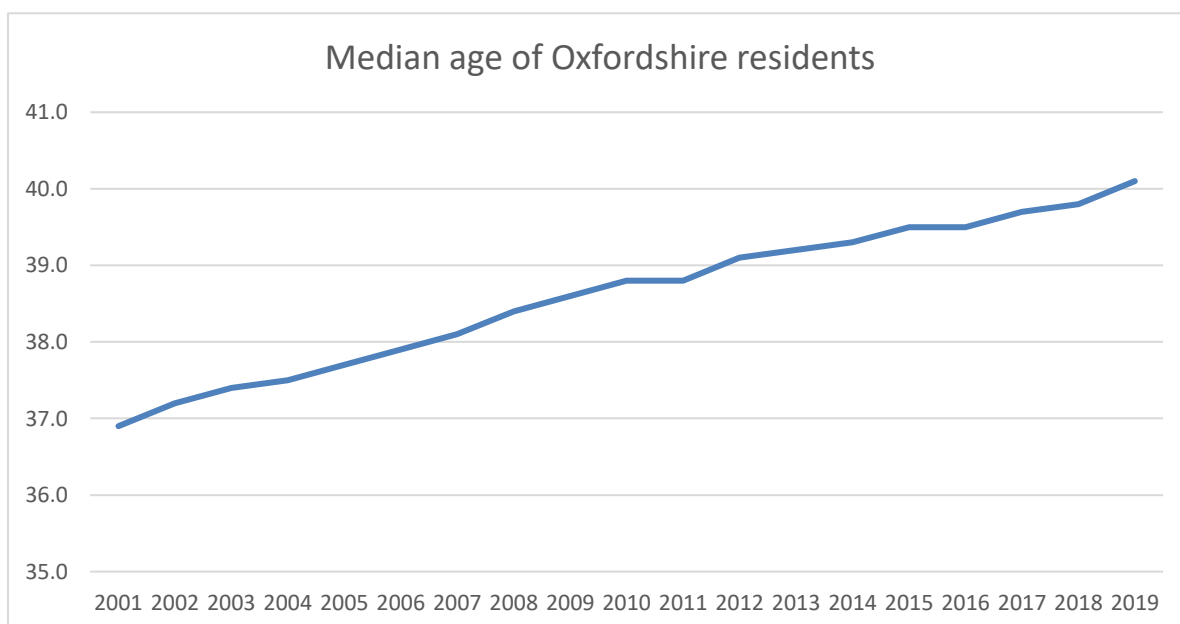
<sup>23</sup> Office for National Statistics: Mid-year Population Estimates

<sup>24</sup> Office for National Statistics: Population estimates: Males by single year of age and sex for local authorities in the UK, mid-2019

<sup>25</sup> Office for National Statistics: Population estimates: Females by single year of age and sex for local authorities in the UK, mid-2019



Furthermore, the median age of Oxfordshire residents has increased by 3.2 years since 2001<sup>26</sup>. The median age of Oxfordshire residents is now 40.1, compared to 36.9 in 2001. There have been notable increases in South Oxfordshire and West Oxfordshire, where the median age for both is over 44, an increase of over 5 years since 2001. We will need to consider the impacts of this ageing population on future transport provision, particularly in terms of accessibility requirements.



<sup>26</sup> Office for National Statistics: Median age of population for local authorities in the UK, mid-2001 to mid-2019

As highlighted in the Walking and Cycling Demographics section, transport affects all residents and it affects them in different ways. The below table shows the different demographics in Oxfordshire. Oxford is a particularly diverse and multi-cultural city, however there is a range of ethnicities in all districts. We therefore need to ensure all groups needs are considered at every stage of the LTCP development.

Area	White British	Other White	Mixed / Multiple Ethnic Groups	Asian / Asian British	Black / African / Caribbean / Black British	Other Ethnic Group
Oxfordshire	82	8	2	4	2	2
Cherwell	85	7	1	3	3	N/A
Oxford	65	13	3	12	3	5
South Oxfordshire	90	6	1	1	N/A	1
Vale of White Horse	83	7	2	2	3	2
West Oxfordshire	93	6	1	1	N/A	1

*Population in Oxfordshire by Ethnic Group (percentage)<sup>27</sup>*

### Life expectancy

Life expectancy in Oxfordshire is higher than the national average for both men and women. The average life expectancy at birth for men is 81.6 compared to the national average of 79.6 and has increased by 3.7 years since 2001<sup>28</sup>. For women the life expectancy at birth is 84.7 which is again higher than the national average of 83.2 and has increased by 2.7 years since 2001<sup>29</sup>.

However, there are clear inequalities in life expectancy across Oxfordshire with people in more deprived areas having significantly lower life expectancy compared with the less deprived. Data for 2015-2017 shows that for males there was a gap of almost 7 years between the most and least deprived areas and a gap of 5 years for females.

Therefore, despite a relatively high life expectancy in the county there is still significant work to do in terms of health inequalities. Transport can play a significant role in helping to tackle these inequalities.

#### Summary

- Oxfordshire's population is growing and with further growth proposed more effective solutions will be needed to transform transport in Oxfordshire.
- Oxfordshire has a high life expectancy but there are significant inequalities across the county that transport can help to address.

<sup>27</sup> Office for National Statistics: Population in England and Wales by ethnic group: 2016

<sup>28</sup> Office for National Statistics: Life Expectancy at birth for males, United Kingdom, 2001-2003 to 2016-2018

<sup>29</sup> Office for National Statistics: Life Expectancy at birth for females, United Kingdom, 2001-2003 to 2016-2018

## Chapter 8 - Health

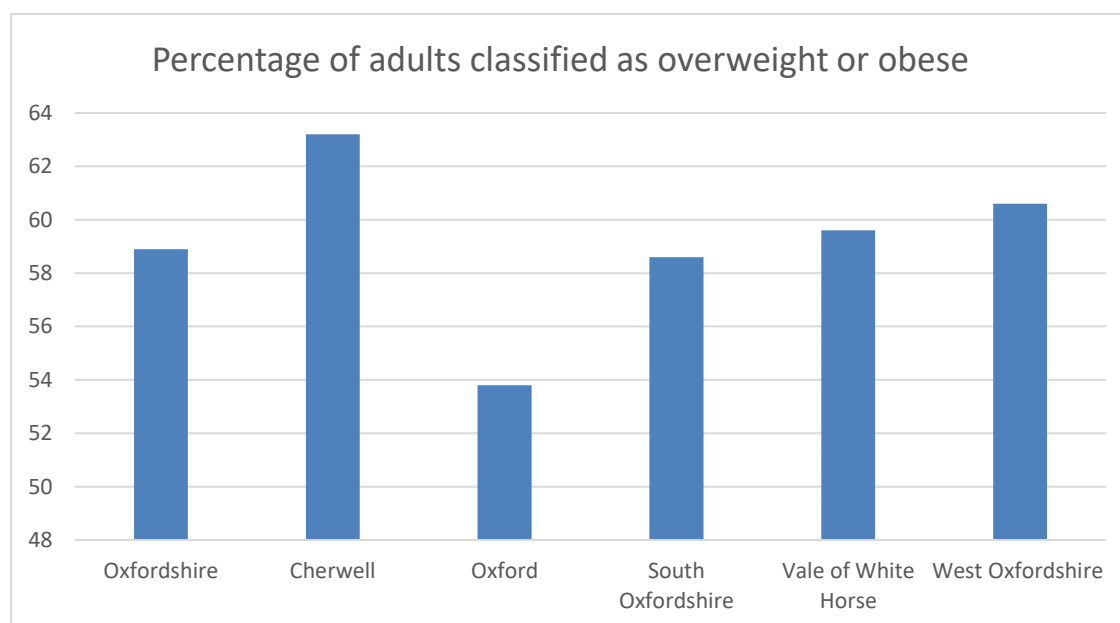
### Obesity

Obesity is a serious issue in England costing wider society £27 billion and the NHS an estimated £6.2 billion on related ill health in 2014/15<sup>30</sup>. It is a complex problem with multiple causes and significant implications for health and beyond. It is recognised as a major determinant of premature mortality and avoidable ill health.

In Oxfordshire an estimated 58.9% of people aged 18 or over in Oxfordshire are classified as overweight or obese (2017/18), lower than the average for England (62%)<sup>31</sup>. However, the percentage of adults classified as overweight or obese has increased in Oxfordshire by over 4% since 2015. There are also significant variations across the county, for example Cherwell district is above the national average with an estimated 63.2% of adults classified as overweight or obese.

The majority of children in Oxfordshire are a healthy weight and the prevalence of childhood obesity has remained stable in Oxfordshire since 2007. In 2018/19 19% of reception children and 29% of Year 6 children were classified as overweight or obese. This suggests that overweight and obesity prevalence increases over the course of Primary School.

Active and healthy travel is one factor that can help to tackle obesity. It is therefore important that the LTCP encourages these modes in order to help tackle rising obesity in the county and address the related health issues.



### Physical inactivity

In general, the more time spent being physically active the greater the health benefits. In 2017, Low Physical Activity caused 124 (2.2% of total) deaths and 352 years lived

<sup>30</sup> Public Health England

<sup>31</sup> Public Health England Profiles

with disability (YLDs) in Oxfordshire, due to cardiovascular diseases, diabetes and kidney disease, and neoplasms<sup>32</sup>.

The percentage of adults in Oxfordshire meeting physical activity recommendations (72.5%) is higher than the national average (66.3%)<sup>33</sup>. Despite this 3 out of 10 adults are still not meeting the recommendations. There are also significant variations across the county, with a 10% difference between Cherwell and South Oxfordshire.

The number of children and young people meeting physical activity recommendations is also higher than the national average. In Oxfordshire 52.4% of children meet the 60 minute per day recommendation compared to 46.8% nationally<sup>34</sup>. However, this figure is still just over 50% and means approximately 42,100 children are not getting enough physical activity.

As highlighted in the obesity section, the LTCP can help to encourage physical activity through measures to support active travel.

### Summary

- Obesity is below the national average, but levels have been rising. Encouraging active and healthy travel is one way the LTCP can help address this trend.
- Oxfordshire has above average levels of physical activity but there is still a need to further improve this through measures to encourage active travel.

<sup>32</sup> Institute for Health Metrics and Evaluation (IHME), GBD Compare

<sup>33</sup> Public Health England Profiles

<sup>34</sup> Sport England, Active Lives Children and Young people Survey 2018/19

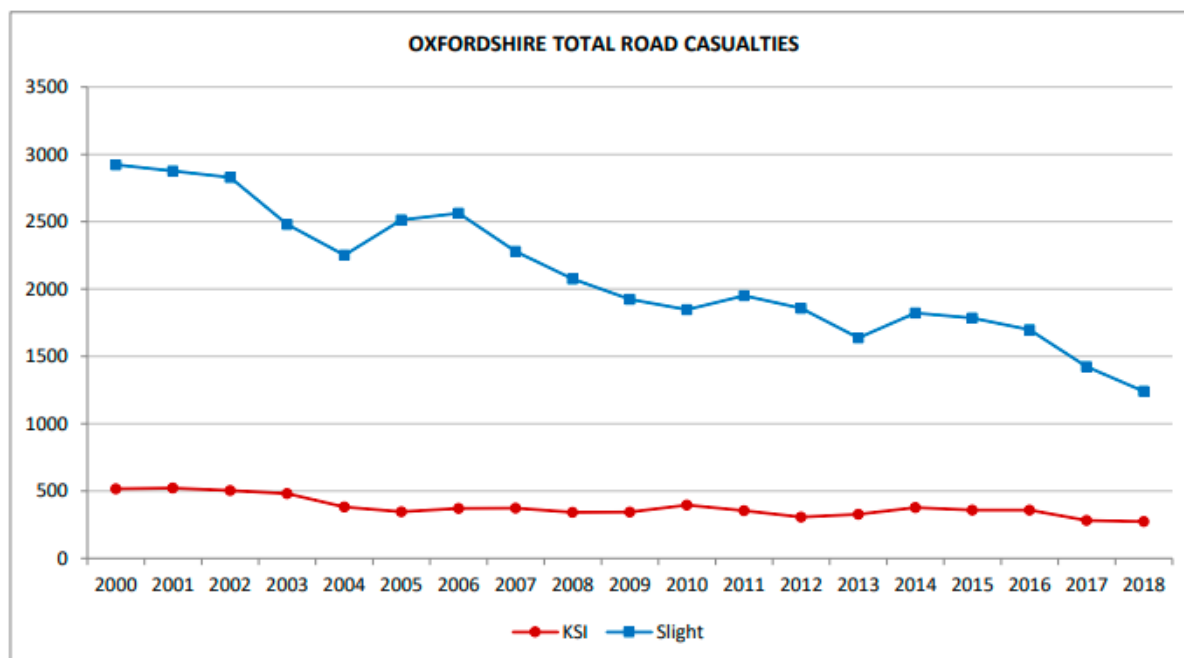


## Chapter 9 - Road safety

Road safety is a serious issue that can affect many residents directly. The County Council publish an annual Road Traffic Accident Casualty Data summary report<sup>35</sup> which provides more detail about the number and nature of casualties sustained as a result of road traffic collisions reported on Oxfordshire's roads. Headline statistics from that report are included below to highlight the current situation in Oxfordshire:

- In 2018 there were 1513 total casualties, an 11% decrease from 2017 and a 52% decrease since 2005.
- In 2018 there were 273 Killed or Seriously Injured (KSI).
- There has been a gradual decrease in the number of KSI since 2014.
- There were 115 child casualties in 2018, an increase of 11.7% from 2017 but the number of KSI decreased from 14 to 13.
- Car drivers were the road user group with the highest number of casualties in 2018, making up 39.9% of all casualties. Pedal cyclists (16.7%) and car passengers (16.1%) had the next highest number of casualties.
- There were more male casualties (58.6%) than female casualties (41.4%).
- The 16-24 and 25-34 age groups had the highest number of casualties (304).

Whilst general reductions are being seen among most of the main road user groups pedestrian casualty numbers, for both children and adults has seen a more recent upward trend over the last couple of years. When compared to its statistical neighbours Oxfordshire's performance continues to be ranked somewhere in the middle, like the overall national picture. Therefore, there is a need for ongoing work to address road safety in Oxfordshire, which the LTCP will recognise.



<sup>35</sup> Oxfordshire County Council Road Traffic Accident Casualty Data Summary 2018

## Motorcycles

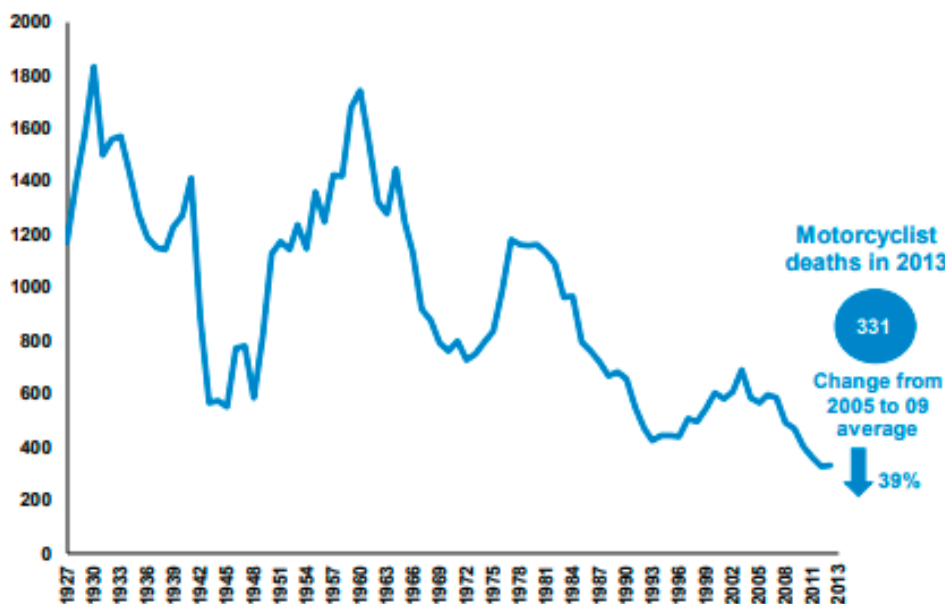
There were 1.11 million licensed motorcycles in England at the end of 2016. The number of licensed motorcycles increased steadily to a peak of 1.12 million in 2008 and has been stable since then. The number of motorcycles in 2016 was a 74% increase on the 1994 figure<sup>36</sup>.

There have been fewer motorcyclists recorded in the National Travel Survey in recent years, but data suggests that motorcyclists are continuing to do broadly the same amount of travel. Motorcyclists used motorcycles for around 40% of the total distance they travelled.

Between 2002 and 2016 nearly 90% of motorcycle trips were done by men. Similarly, men travelled a higher average mileage per motorcyclist over the same period. Men averaged around 4,380 miles, compared to 2,740 miles for women. 91% of total motorcycle distance was travelled by men.

A higher proportion of motorcycling trips tend to be made during May and June. Between 2002 and 2016 11% of motorcycling trips were made in June and 10% in May, compared to 6% in December.

A significantly higher proportion of motorcycle trips are made for commuting or business purposes than other modes. Over 50% of motorcycle trips are made for commuting or business purposes compared to 19% of trips for all modes combined. A lower proportion of motorcycle trips are for shopping, personal business or education.



*Reported motorcyclist fatalities 1927 – 2013*

Motorcyclists are particularly vulnerable to injuries. Motorcyclists are one of the vulnerable user groups and have the highest collision and injury rates per mile travelled of all road user groups. On average there were 6 deaths and 94 serious injuries to motorcyclists in 2013, with a total of 5197 killed or seriously injured<sup>37</sup>.

<sup>36</sup> Department for Transport: National Travel Survey Motorcycle use in England

<sup>37</sup> Department for Transport: Facts on Motorcyclist Casualties 2015

Since recording began in the 1920's the number of motorcyclist fatalities and serious injuries has fallen significantly. The number of fatalities fell by 39% between 2005 and 2009 and the number of serious injuries fell by 16% over the same time period. The number of fatalities or serious injuries has been relatively stable since 2010.

Motorcyclists account for less than 1 per cent of traffic each year, but 19 per cent of fatalities in 2013. They are therefore considerably overrepresented in collisions, more so than any other road user group. The risk of death for a motorcyclist is at least 57 times than that for a car occupant. Despite rural roads accounting for 40% of motorcycle traffic, they account for 68% of motorcyclist fatalities.

Whilst motorcyclists only make up a small proportion of transport, they face significant road safety issues that will require consideration as part of the LTCP. It is also important to consider their broader needs to ensure all road users are considered.

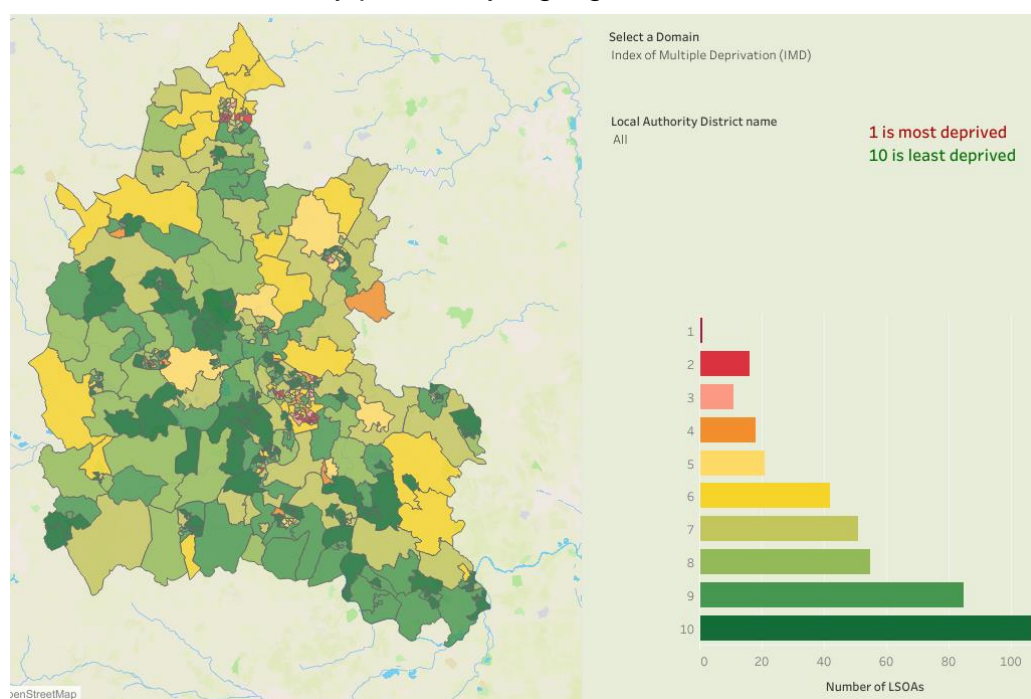
#### **Summary**

- Road safety has improved but remains average nationally and there have been some upward trends. Further work to improve road safety is therefore required.
- Consideration of motorcyclists needs and safety will be required as part of the LTCP due to their vulnerability and overrepresentation in collisions.

## Chapter 10 - Deprivation

According to the Indices of Multiple Deprivation (IMD) Oxfordshire is the 10<sup>th</sup> least deprived of the 151 upper tier local authorities in England. The ranking of Oxfordshire's districts shows that, since the last release in 2015, Cherwell has become relatively more deprived and Oxford has become relatively less deprived. South Oxfordshire, Vale of White Horse and West Oxfordshire districts have remained similarly ranked<sup>38</sup>.

However, Oxfordshire's overall prosperity masks some stark contrasts, particularly within urban areas. Oxfordshire has one area in Oxford within the 10% most deprived areas nationally, down from two areas in this decile in 2015. A further 16 areas are among the 20% most deprived nationally (compared with 13 in 2015). These areas are in Banbury, Abingdon and Oxford. This deprivation is reflected in the health inequalities across the county previously highlighted.



### Summary

- Overall Oxfordshire has low levels of deprivation, however there are pockets of deprivation in the county.

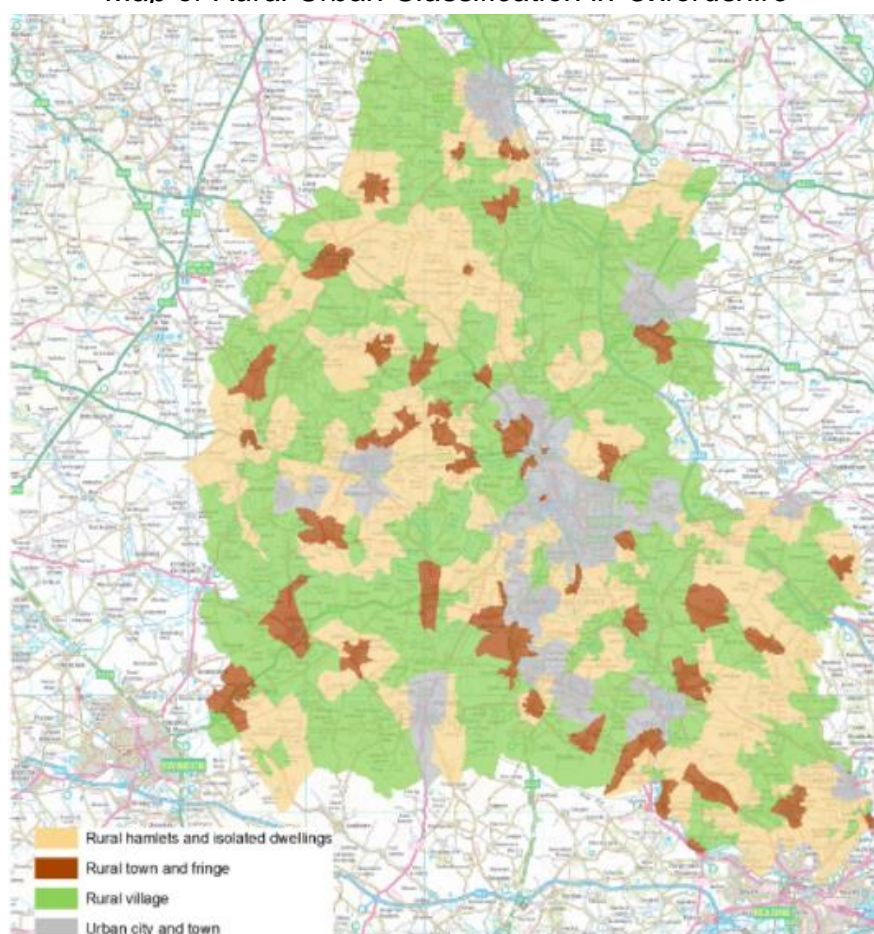
<sup>38</sup> Ministry of Housing, Communities & Local Government: English indices of deprivation 2019

## Chapter 11 - Urban vs Rural

Oxfordshire has a relatively notable rural urban divide. Approximately 60% of the county's population live in Oxford and the county's main towns, with the remaining 40% living in smaller towns and villages. Oxfordshire is the most rural county in the South East with 2.6 people per hectare compared with the regions average of 4.8 people per hectare.

The map below illustrates the rural urban classification from the 2011 census<sup>39</sup>. The map shows that the majority of Oxfordshire is classified as being rural, with very few urban city/town areas. In total 39% of wards are classed as being urban, with South Oxfordshire being the most rural district with only 37% of the population living in urban areas.

*Map of Rural Urban Classification in Oxfordshire*



The urban and rural areas of the county have very different needs and challenges which the LTCP will need to recognise and address in order to create an effective transport network for all residents.

### Summary

- Oxfordshire has both urban and rural areas which will require different approaches.

<sup>39</sup> Local Enterprise Partnership detailed rural urban maps: Census 2011

## Chapter 12 - Economy

Oxfordshire has one of the strongest economies in the UK, contributing £23bn Gross Value Added (GVA) to the UK exchequer in 2017. The economy of Oxfordshire is also rapidly growing at an average of 3.9% growth year on year since 2006<sup>40</sup>. The county's economic output is 22% higher than the national average.

The county has significant assets in Research and Development (R&D) which includes the top performing university in the world, the University of Oxford. Many of the county's innovation assets are at the forefront of global innovation in transformative technologies and sectors.

Oxfordshire is home to nearly 30,000 businesses and generates the highest number of university spin-out companies in the UK. The county also has a track record of growing these businesses with a market value of over US \$1bn. Tourism is also important to the economy of Oxfordshire. The city of Oxford and the county's rich natural and historic environment attract over 27 million visitor's worth over £2 billion<sup>41</sup>.

Oxford is particularly important to the county's economy and is home to 35% of the county's jobs. However, the average house price in the city is £390,000 and was ranked as the least affordable UK city for housing by The Centre for Cities. This leads to more people commuting into the city than are working residents.

Whilst Oxford is the largest centre of gravity in the county, there are other critical economic assets and areas of growing economic importance. A summary of critical economic assets is provided below<sup>42</sup>.

Location	Key Sectors
Begbroke Science Park	<ul style="list-style-type: none"> <li>• Advanced engineering</li> <li>• Medical tech</li> </ul>
Harwell Campus	<ul style="list-style-type: none"> <li>• Health sciences</li> <li>• Space applications</li> <li>• Energy</li> </ul>
Motorsport Valley	<ul style="list-style-type: none"> <li>• Advanced engineering</li> <li>• Battery technology</li> <li>• High performance motorsport</li> </ul>
Upper Heyford Creative City	<ul style="list-style-type: none"> <li>• Creative industries</li> </ul>
Williams Innovation and Technology Campus	<ul style="list-style-type: none"> <li>• Advanced engineering</li> </ul>
Milton Park/Didcot Garden Town	<ul style="list-style-type: none"> <li>• Life sciences</li> <li>• Creative industries</li> </ul>
Oxford City Science Area	<ul style="list-style-type: none"> <li>• Life sciences</li> <li>• AI technologies</li> <li>• Digital health</li> <li>• Quantum computing</li> </ul>

<sup>40</sup> OxLEP: Oxfordshire Local Industrial Strategy 2019

<sup>41</sup> Oxfordshire County Council Corporate Plan

<sup>42</sup> OxLEP: Oxfordshire Local Industrial Strategy: The Investment Plan

	<ul style="list-style-type: none"> <li>• Global CBD</li> </ul>
Culham Science Park	<ul style="list-style-type: none"> <li>• Fusion energy</li> <li>• Robotics and autonomous systems</li> </ul>

However, Oxfordshire has low productivity relative to other South East regions. Whilst the region's productivity per hour worked is above average for England, in recent years it has fallen below the south east average.

Furthermore, as Oxfordshire's economy grows there is an increased strain on the county's infrastructure. Housing and economic growth means that the existing transport network is not sufficient to meet demand. Work is therefore needed to ensure the transport network is effective and supports Oxfordshire's economy.

## Jobs

The Oxfordshire economy supports 417,000 jobs, 7% of which are in the four science and technology sectors. Employment is very high across the county with a participation rate of 82% compared to the national average of 75%<sup>43</sup> and unemployment among the working age population is 1.3%.

Oxfordshire has also created 50,000 new jobs since 2011/12. Spin out companies from the county's universities supported 2,421 of these jobs between 2014 and 2015 alone. Oxfordshire is also effective at generating good jobs, with wages for the bottom 10% among the best in the country, second to inner London in 2017. 82% of residents have jobs within the county boundaries, highlighting the strengths of the local economy.

However, as highlighted in Chapter 9, there are pockets of deprivation and inequality in the county. Transport is one factor that can help tackle these issues by improving access to employment opportunities for all residents.

## Growth

The projection for the Oxfordshire economy is for it to double in size and create an additional 108,000 jobs by 2040<sup>44</sup>. This means that more people and goods will need to use Oxfordshire's transport network, increasing pressure on it. As highlighted in the Local Industrial Strategy, work is therefore needed to relieve the existing pressure and accommodate future growth, while responding to concerns around climate change.

### Summary

- Oxfordshire has one of the UK's strongest economies, however housing and economic growth are placing strain on the existing transport network.
- Employment is high across Oxfordshire and the economy supports 417,000 jobs but pockets of deprivation exist that transport can help to address.
- Work is needed on Oxfordshire's transport network to relieve the existing pressure and accommodate future growth while responding to concerns around climate change.

<sup>43</sup> OxLEP: Oxfordshire Local Industrial Strategy 2019

<sup>44</sup> OxLEP: Oxfordshire Local Industrial Strategy 2019

## Chapter 13 - Digital connectivity

Digital connectivity in Oxfordshire has significantly improved in recent years. The Better Broadband for Oxfordshire programme has increased superfast broadband availability from 69% to over 96% of premises across the county<sup>45</sup>. Currently 7% of premises have full fibre connectivity which is double the national average but significantly lower than many of the region's global competitors. The digital infrastructure program aims to achieve 99% superfast coverage and 16% Full-fibre coverage by 2021.

Full-fibre broadband offers speeds of 1Gb/s today and will be capable of much higher speeds in the future. In particular, the potential for gigabit levels of internet service is something that is seen as important to enable through future investment. This same fibre is also the backbone for backhauling 5G mobile. It will therefore be essential for future connectivity, particularly with the move to cloud storage, the Internet of Things, Artificial Intelligence and global internet traffic doubling every two years.

Delivering high quality digital coverage to rural and urban areas will help to improve Oxfordshire's quality of life for residents and its attractiveness as a location. It will also reduce the need to travel through enhanced digital connectivity, helping to tackle existing transport challenges.

### Summary

- Digital connectivity is good in Oxfordshire and can play a role in reducing travel demand. However, there is a need to expand full-fibre and gigabit broadband coverage.

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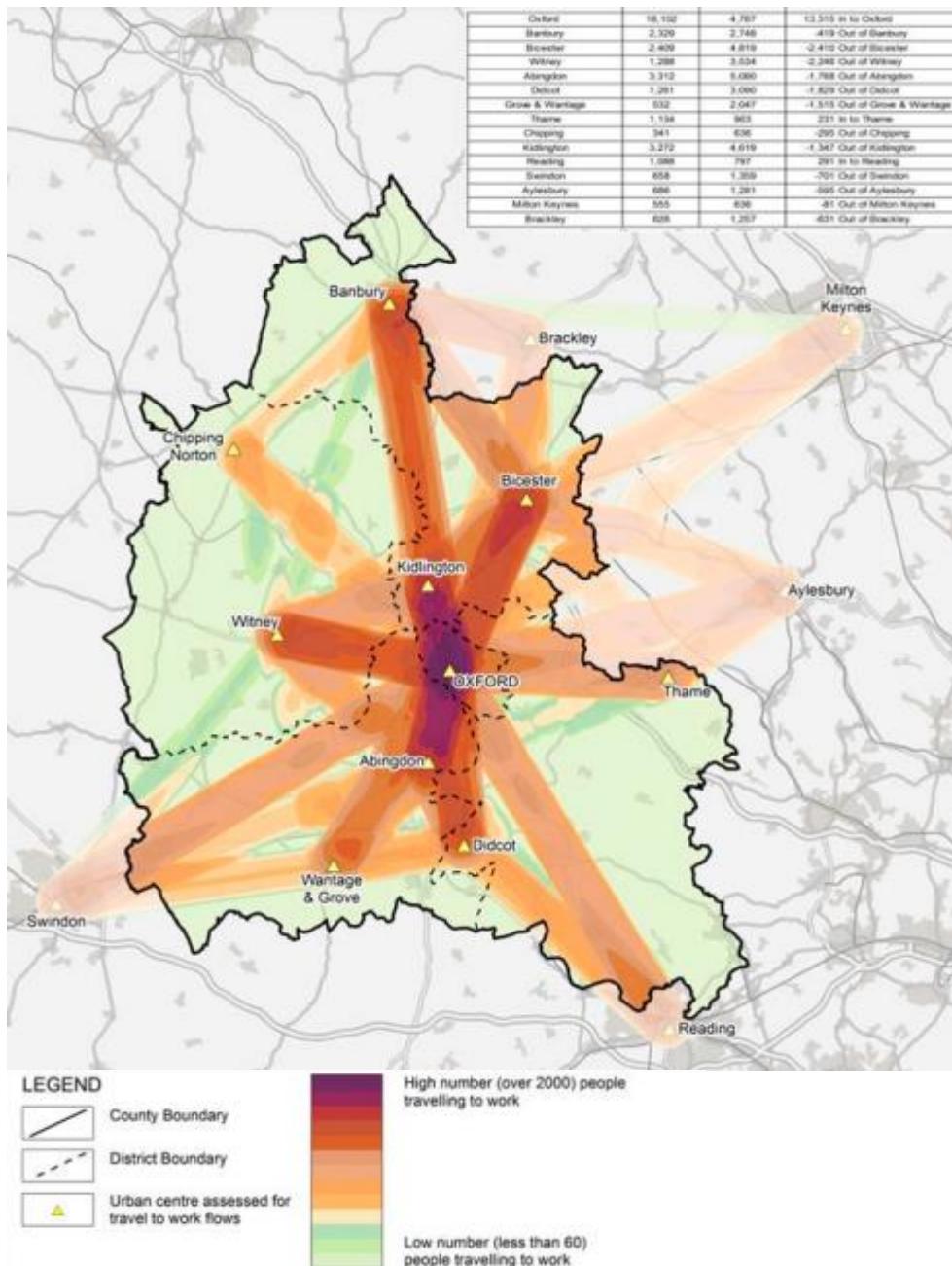
<sup>45</sup> Oxfordshire Digital Infrastructure Strategy



## Chapter 14 - Road and Rail Links

Oxfordshire sits on the busy road and rail transport corridor between the south coast ports, the Midlands and the north and enjoys easy links to London and the West Midlands via the M40. However, it suffers a lack of connectivity to and from the east, in particular to the areas around Milton Keynes and Cambridge.

The existing road links between Oxfordshire and London, Birmingham, Heathrow Airport and Southampton are currently used by a high volume of through traffic which can result in long delays to journeys by road. The M40 carries the most traffic, particularly between junctions 9 and 10, which links the A34 via the A43 to the M1.



Main travel to work flows in Oxfordshire<sup>46</sup>.

<sup>46</sup> Census 2011

The county relies heavily on the A34 for internal trips and carries up to 70,000 vehicles per day, including a large proportion of lorries as it is a key route to the southern ports. It is particularly vulnerable to disruption due to incidents, because of the lack of alternative north-south routes for journeys both within and through the county. Congestion suffered on the A34 is damaging to both the national and local economy due to its importance. Data regarding private car usage in the county can be found in Chapter 1.

Oxfordshire occupies a pivotal point in the UK rail network, with rail lines heading north, south, east and west passing through the county. Connectivity from Oxfordshire is shown on the map below. The railway is a national network but a vital local asset helping to transport both people and goods.

The rail network is a vital component in supporting Oxfordshire's economic development by linking key locations in the Oxfordshire Knowledge Spine both with each other and with the rest of the United Kingdom and the World. Rail is a genuine alternative to roads and has the potential to become part of the backbone of Oxfordshire's transport network.



*Map of rail connectivity from Oxfordshire<sup>47</sup>*

<sup>47</sup> Oxfordshire County Council: Connecting Oxfordshire Volume 3: Rail Strategy

The main rail corridor is focused on the central spine of Oxfordshire, running between Didcot, Oxford and Banbury. Rail connections with London, Birmingham and Bristol are relatively good with frequent, regular services. Direct links with cities making up the northern powerhouse of England are less frequent, and often no more than hourly.

Connectivity with eastern England and with international gateways is currently convoluted or non-existent. However, Oxfordshire is due to benefit from on-ward rail connectivity towards Milton Keynes and Bedford once the next stage of East West Rail is built. The emerging Oxfordshire Rail Corridor Study has shown Oxfordshire could also benefit from further rail investment linked to new development, such as operating services on the Cowley Branch Line.

### **Summary**

- Oxfordshire lies on a well-connected and busy transport corridor, but it lacks links to and from the East and is reliant on the A34 for internal vehicle journeys.
- Planned rail investment such as East-West rail will help improve longer-distance connectivity, but further investment in public transport is also likely to be needed if such transport movements are to be more sustainably enabled in the future.

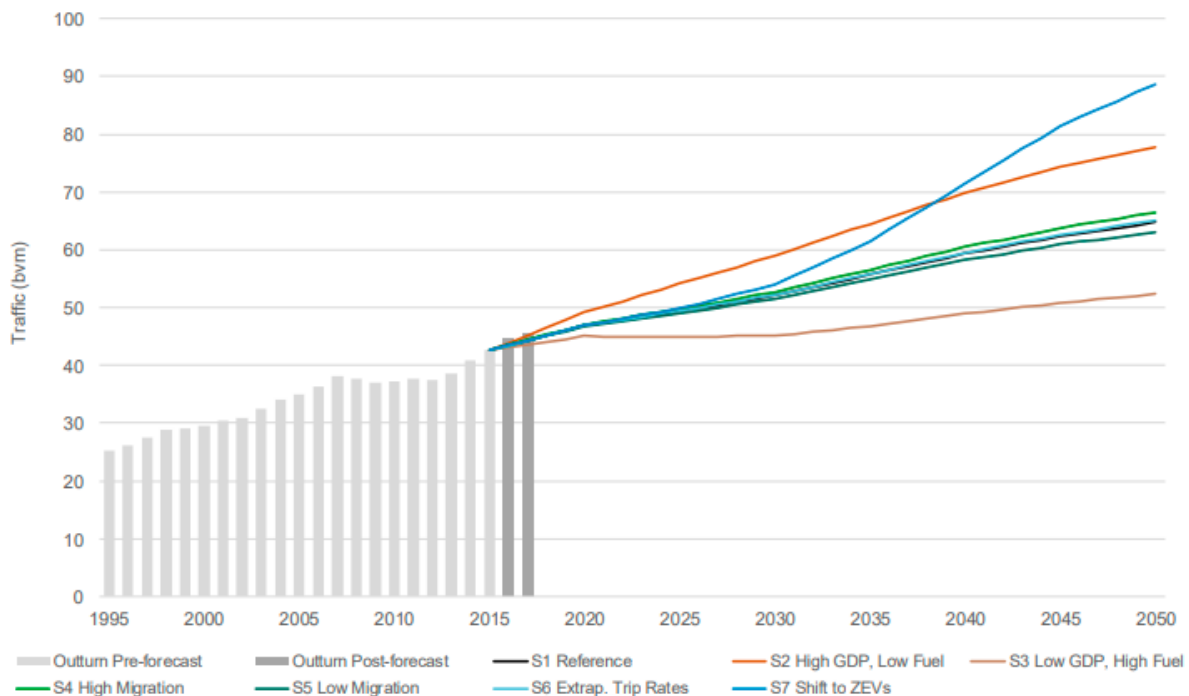
## Chapter 15 - Freight

Evidence on freight movements and activity in Oxfordshire shows concentration of Heavy Goods Vehicles (HGVs) on several main corridors, particularly the A34, A420, A40 and A41. There is also a higher proportion of HGV traffic on other routes including main roads around Banbury, Bicester and Didcot.

In 2019 domestic road freight activity increased in the UK. There were 154 billion tonnes of goods moved, a 1% increase from 2018 and 19.1 billion vehicle kilometres travelled, a 2% increase from 2018. The amount of goods moved has increased by 23% since 2009<sup>48</sup>.

The growth of Light Goods Vehicle (LGV) traffic has been a significant change to freight movement in recent years. This growth has largely been driven by the rise in internet shopping and home delivery. The number of LGV's increased by 29% between 2004 and 2014, compared to a 5% decrease in the number of HGV's over the same period<sup>49</sup>. LGV's traffic has increased by 67% over the last 20 years and currently makes up 15% of all traffic, with HGV's making up 5%.

LGV traffic is forecast to continue to grow significantly between now and 2050. The Department for Transport has forecast LGV traffic to increase by between 23% and 108% by 2050, depending on the scenario. Whereas HGV traffic growth is forecast to be lower than other vehicle types with growth ranging from 5% to 12% by 2050<sup>50</sup>. The graphs below demonstrate the current levels of LGV and HGV traffic and the forecasts for growth under different scenarios.

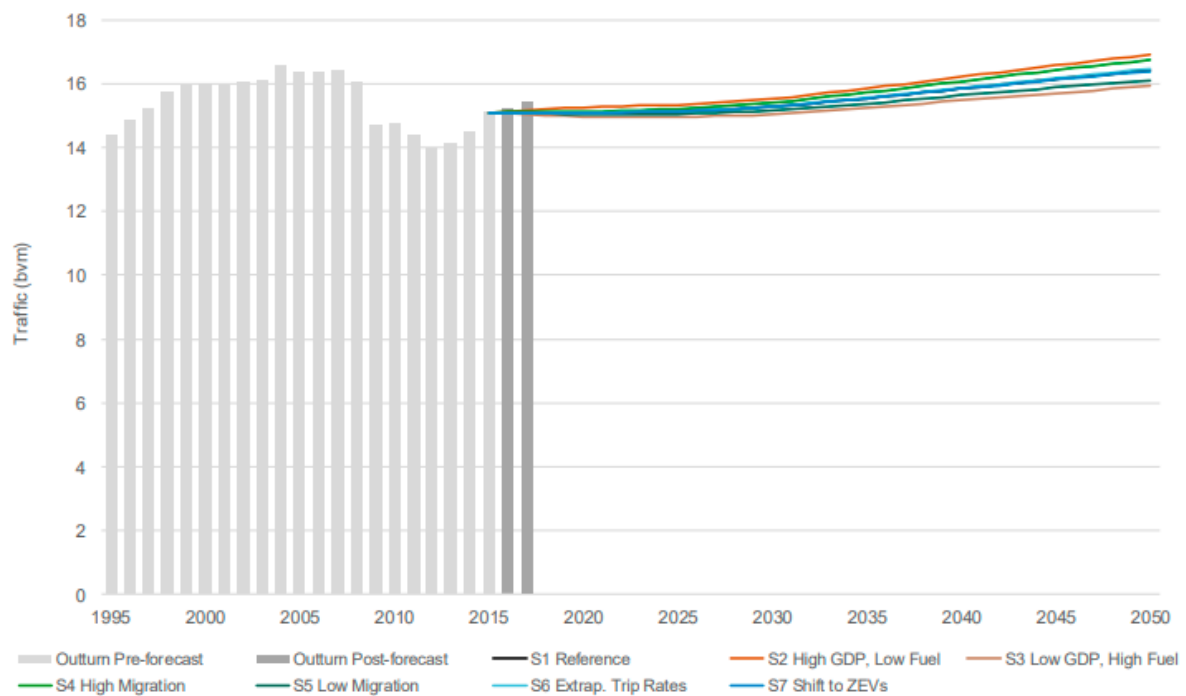


*LGV road traffic forecasts*

<sup>48</sup> Department for Transport: Domestic Road Freight Statistics, United Kingdom 2019

<sup>49</sup> RAC Foundation: Van Travel Trends in Great Britain

<sup>50</sup> Department for Transport: Road Traffic Forecasts 2018



*HGV road traffic forecasts*

There are existing issues with freight vehicles that need to be addressed and new issues stemming from the growth of LGV's that need to be mitigated. These issues include congestion, road safety, air quality and impacts on the wider environment. However, efficient movement of freight is important to residents' everyday lives, the local economy and the national economy. Solutions will therefore be required that balance these considerations and create an efficient transport network for all.

### Summary

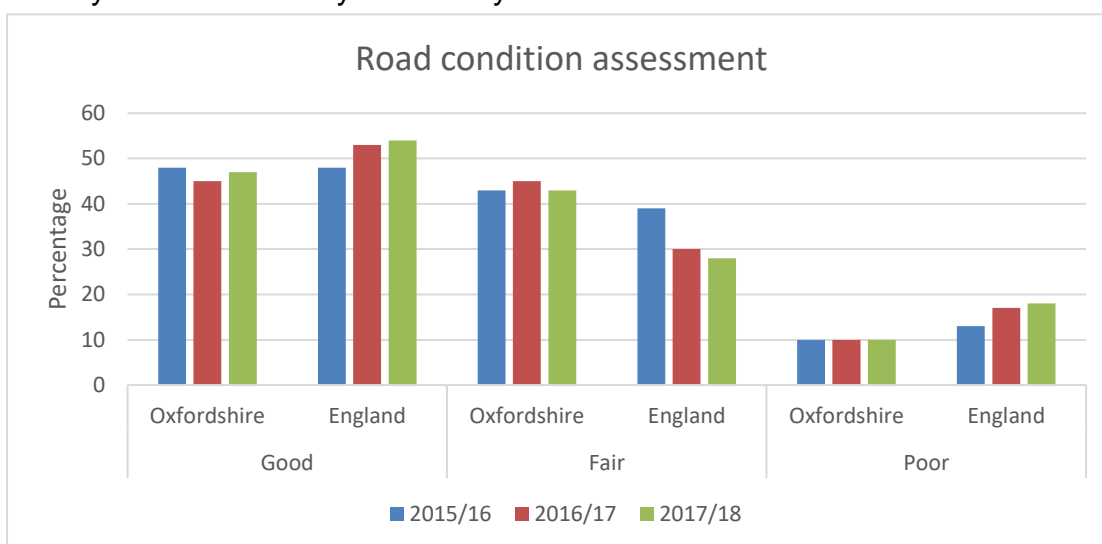
- Solutions will need to be found that balance freight issues with the need for an efficient network. LGV growth is projected to significantly increase and the impacts of this will need to be considered.

## Chapter 16 - Highway Maintenance

Oxfordshire County Council manage 2,994 miles of road network in the county. The network is made up of A roads (15%), B roads (10%) and C or unclassified roads (75%)<sup>51</sup>. The high proportion of C and unclassified roads, which are often not built to modern standards and in rural areas, makes highway maintenance a challenge. The A34, M40 and A43 are managed and maintained by Highways England.

The County Council's total budget for carriageway repairs was £11m in 2018/19. It is estimated that it would cost around £250m to bring the network to an acceptable standard and would then require an annual capital investment of £21m to keep them at that standard. In addition, £5m a year is required for regular maintenance.

47% of roads in Oxfordshire are assessed as being in 'Good' condition, this is lower than the national average of 54%. However, Oxfordshire has fewer roads in 'Poor' condition than the national average (10% compared to 18%) and significantly more roads in 'Fair' condition than the national average (43% compared to 28%). The graph below shows this comparison and highlights that road conditions in Oxfordshire have generally remained steady in recent years.



Increased heavy vehicle usage and exceptionally wet weather have led to rapid deterioration of road surfaces in recent years. The impacts of climate change could lead to increased frequency and severity of extreme weather, making maintenance of the highway network even more challenging.

It is important that an effective plan for highways maintenance is developed to generate cost savings, improve road safety, provide a better service to all road users and mitigate the potential impacts of growth and climate change on the county's roads.

### Summary

- The county has a lower proportion of roads in 'good' condition than the national average, but less in 'poor' condition. The high proportion of C and unclassified roads and limited funding makes highway maintenance a challenge.

<sup>51</sup> Oxfordshire County Council: Highway Maintenance Factsheet Summer 2018

## Chapter 17 – Young People

Evidence collected by the Department for Transport (DfT) shows that young adults in Great Britain and other countries are driving less now than in the early 1990s. A review of the evidence around this subject was conducted by the Centre for Transport and Society (UWE, Bristol) and the Transport Studies Unit (University of Oxford) in 2018.

The percentage of young people (aged 17-29) with driving licenses peaked in 1992-94, with 48% of 17-20 year olds and 75% of 21-29 year olds holding a driving licence. The number of young people holding a driving licence had decreased to 29% of 17-20 year olds and 63% of 21-29 year olds in 2014<sup>52</sup>.

Similarly, there was a 36% decrease in the number of car driver trips per person by people aged 17-29 between 1995-99 and 2010-14. The number of trips per person fell by 44% for men and 26% for women. In terms of the total number of trips per person, young people generally travel less now. The total number of trips per person made by young men fell by 28% between 1995-99 and 2010-14 and by 24% for young women.

Analysis of the factors behind these changes suggests that the causes lie largely outside transport. It is not possible to quantify the extent to which each factor has influenced travel behaviour, but they can be viewed as interconnected. Key factors that have been identified as contributing to these changes are:

- Changes in young people's socio-economic situations e.g. increased higher education participation and the rise of lower paid, less secure jobs
- Changes in young people's living situations e.g. less home ownership and re-urbanisation
- Social changes such as increased digital interaction
- High driving costs, especially car insurance

It is not known how these trends will affect future travel demand. It is possible that future generations travel less but there is also the possibility that car usage increases throughout young people's lives. Changes to broader socio-economic factors will also have an impact on future trends.

Whilst it is uncertain how these trends will progress; it highlights the need for the LTCP to be resilient and consider a range of future travel demand scenarios when identifying the policies and schemes. It also shows the potential opportunity to 'lock-in' more sustainable travel choices from an early age if high quality choices are made available as this part of the population ages.

### Summary

- Young people currently travel less than previous generations, particularly by car. It is uncertain how these trends will progress highlighting the need for the LTCP to be resilient and consider a range of future travel demand scenarios, including any opportunities to 'lock-in' more sustainable travel for this group of the population.

<sup>52</sup> Chatterjee, K., Goodwin, P., Schwanen, T., Clark, B., Jain, J., Melia, S., Middleton, J., Plyushteva, A., Ricci, M., Santos, G. and Stokes, G. (2018). Young People's Travel – What's Changed and Why? Review and Analysis. Report to Department for Transport. UWE Bristol, UK.