

Local Transport and Connectivity Plan – Baseline Report

July 2022



**OXFORDSHIRE
COUNTY COUNCIL**

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Executive Summary

This baseline report has been published in support of Oxfordshire County Council's Local Transport and Connectivity Plan (LTCP).

The LTCP sets out an overarching vision for transport in the county and the policies 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 takes a more holistic approach than previous Local Transport Plans and recognises 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 document builds upon the baseline report that was published in support of the LTCP vision document.

This evidence has been used to inform development of the LTCP vision and underpins the policies identified in the full LTCP document. 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 – 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 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 3 – Private car

- 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 increasing.
- Congestion is affecting journey times across Oxfordshire. Steps are required to address this and ensure the county remains thriving and attractive.
- COVID-19 significantly reduced vehicle miles and associated data. Further monitoring is required; however, we expect vehicle usage to return to pre-pandemic levels.
- 30mph roads generally have the lowest levels of speed compliance.
- For 20mph roads the average speed is above the speed limit for all vehicle types, but below the average speeds seen on the 30mph roads.



- The number of Ultra-low emission vehicles in Oxfordshire is continuing to grow rapidly and so provisions for these vehicles will be required.

Chapter 4 – Public transport

- Although bus usage in the county has increased overall since 2010, it has been declining since 2013/14. Work is therefore needed to address existing issues and further encourage bus use.
- COVID-19 has resulted in a decrease in bus journeys over the last year, it is unclear what the long term impact will be.
- 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.
- Rail usage has been increasing in the county and there are opportunities to further improve this.

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 work is needed to address cyclist safety.
- Access to food retailers by foot is poor outside of Oxford. Work is needed to create more walkable neighbourhoods and support car free lifestyles.

Chapter 6 – Road safety

- Road safety has improved but there have been some upward trends since 2018 and no level of casualties is acceptable. Further work to improve road safety is therefore required.

Chapter 7 – Air quality

- Air pollution is the largest environmental health risk in the UK and is negatively affecting Oxfordshire residents.
- 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 8 – Freight

- Solutions will need to be found that balance freight issues with the need for an efficient network.
- How freight is moved is changing and LGV growth is projected to significantly increase. The impacts of these changes will need to be considered.
- There are opportunities to increase the use of rail freight and provide environmental benefits.



Chapter 9 – 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 10 – Health

- Obesity is below the national average but remains over 50%. Encouraging more walking and cycling is one way the LTCP can help address this.
- Oxfordshire has above average levels of physical activity but there is still a need to further improve this through measures to encourage walking and cycling.

Chapter 11 – 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 12 – Rivers and canals

- Oxfordshire is home to a range of water resources which offer opportunities for the LTCP but are also negatively affected by the impacts of transport.

Chapter 13 – 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 significant inequalities across the county that transport can help to address.

Chapter 14 – Young people

- 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.

Chapter 15 – Deprivation

- Overall Oxfordshire has low levels of deprivation, however there are pockets of deprivation in the county.
- Many of the rural areas of Oxfordshire suffer disproportionately from Barriers to Housing and Services deprivation.

Chapter 16 – Urban vs rural

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

Chapter 17 – 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 the existing pressure and accommodate future growth while responding to concerns around climate change.

Chapter 18 – 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 19 – Future housing and jobs

- There is a significant amount of housing and employment growth proposed in the county which the LTCP will take account of and seek to influence.



Introduction

This baseline report has been published in support of Oxfordshire County Council's updated Local Transport Plan. 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 sets out an overarching vision for transport in the county and the policies 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.

We have developed and consulted upon the LTCP in 3 stages. This process began in March 2020 and has allowed for ongoing public engagement and feedback at each stage of the project.

The stages of development that we have conducted are:

- Stage 1 – Topic Paper Engagement
- Stage 2 – Development of Vision Document
- Stage 3 – Development of LTCP and supporting documents

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 development process helping us understand why the vision and key themes are necessary for Oxfordshire and informing the policies identified.

We published a first version of this baseline report in support of the vision document in March 2020. We have updated the report to reflect feedback received and incorporate further evidence, however some sections remain unchanged.

The COVID-19 pandemic has had a significant impact on transport patterns and data collected in the last year. We have included this data where available and provided some analysis of it throughout the document. However, owing to the exceptional circumstances surrounding it and uncertainty about long term trends, we have opted to omit it when discussing some long term trends.

A key overall conclusion from this analysis is the need for more sustainable ways of travelling, particularly people choosing to walk and cycle. 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.



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. This list has been expanded following the LTCP vision document consultation. Whilst this is not an exhaustive list, it does highlight the key policies at each level.

National

Local Transport Act 2008

Local Transport Plan's (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 published the Transport Decarbonisation Plan in July 2021. It sets out the government's commitments and the actions needed to decarbonise the entire transport system in the UK. This includes the pathway to net zero transport in the UK, the wider benefits net zero transport can deliver and the principles that underpin the government's approach to delivering net zero transport.

It also sets out a role for revitalised LTP's to set quantifiable targets in carbon reductions in transport for local areas. Guidance for designing sustainable transport solutions through LTP's will also be published and it is stated that this will be linked to funding for schemes.

The LTCP has been developed to consider the commitments in the decarbonisation plan and how it can contribute to delivery of them.

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.

Government's 25 year Environment Plan

Launched in January 2018, the government's 25 Year Environment Plan sets out how the government will improve the environment. The main goals of this strategy are creating richer habitats for wildlife, improving air and water quality and reducing plastic in the world's oceans. Transport will contribute towards achieving these aspirations.

National Bus Strategy

The National Bus Strategy was published in March 2021. The strategy sets out the vision and opportunity to deliver better bus services for passengers across England. As required by the strategy, the county council entered into an enhanced partnership with Oxfordshire's bus operators in June 2021. We have also published our bus service improvement plan alongside the LTCP.

UK Carbon Budget

The UK government have set a legally binding target to achieve net-zero carbon emissions by 2050. The government published the sixth carbon budget in April 2021 to ensure Britain remains on track to end its contribution to climate change while remaining consistent with the Paris Agreement temperature goal.

The carbon budget sets the legally binding target to reduce emissions by 78% by 2035 compared to 1990 levels. The LTCP will align with and help to deliver these legally binding targets.

Sub-National and regional

England's Economic Heartland Transport Strategy

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 published a transport strategy for the region in February 2021. 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



LTCP Baseline report

investment pipeline. The LTCP has been developed to reflect these priorities and will also help to deliver EEH's aspirations for the region.

OxCam Arc Spatial Framework

In August 2021, the government started a public consultation seeking views on the first stage of the Oxford-Cambridge Arc Spatial Framework. This will have national planning and transport policy status, meaning it will carry significant weight in the planning process.

Neighbouring local authorities

Oxfordshire borders the local authorities of West Berkshire, Swindon, Gloucestershire, Warwickshire, Northamptonshire and Buckinghamshire. Developments and policies in these counties can have an impact on Oxfordshire. We have therefore engaged with our partners in these local authorities when developing the LTCP and will continue to monitor cross boundary proposals.

Local

Oxfordshire Strategic Vision

The Oxfordshire Growth Board have developed 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 has been developed in accordance with it. Key 2050 outcomes from the Strategic vision that the LTCP will help to deliver are:

- We will already be carbon neutral and accelerating towards a carbon negative future.
- Our residents will be healthier and happier, and overall wellbeing will have improved.
- Our county's connectivity will be transformed in ways that enhance wellbeing.

Local Plans

All of the Oxfordshire district councils have produced local plans which outline future development proposals to the 2030's. These strategies guide future growth and outline future sites that are permitted for housing and employment development.

The LTCP has been developed to consider the impacts of these proposals and we will work with the district councils to inform future work on the local plan's such as through local plan reviews and supplementary planning documents.

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 has been developed in line with the Oxfordshire Plan to inform its content, consider its outputs and identify the relevant transport schemes that may be required in response.

Oxfordshire Infrastructure Strategy (OxIS)

The Oxfordshire plan will be supported by the Oxfordshire Infrastructure Strategy (OxIS). OxIS provides a long-term framework to identify strategic infrastructure investment priorities.

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 net-zero by 2050. The LTCP will be essential to delivering these commitments and outlines in more detail how transport will contribute to these ambitions.

Local Industrial Strategy

The Local Industrial Strategy (LIS) 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 Oxfordshire Investment Plan and Economic Recovery Plan are key strategies supporting the LIS. 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.

Oxfordshire Digital Infrastructure Strategy and Delivery Plan

The Digital Infrastructure Strategy and delivery plan set out our vision for Oxfordshire to be enabled with smart infrastructure and our strategy for achieving this. They are scheduled to be updated in 2022.

Summary

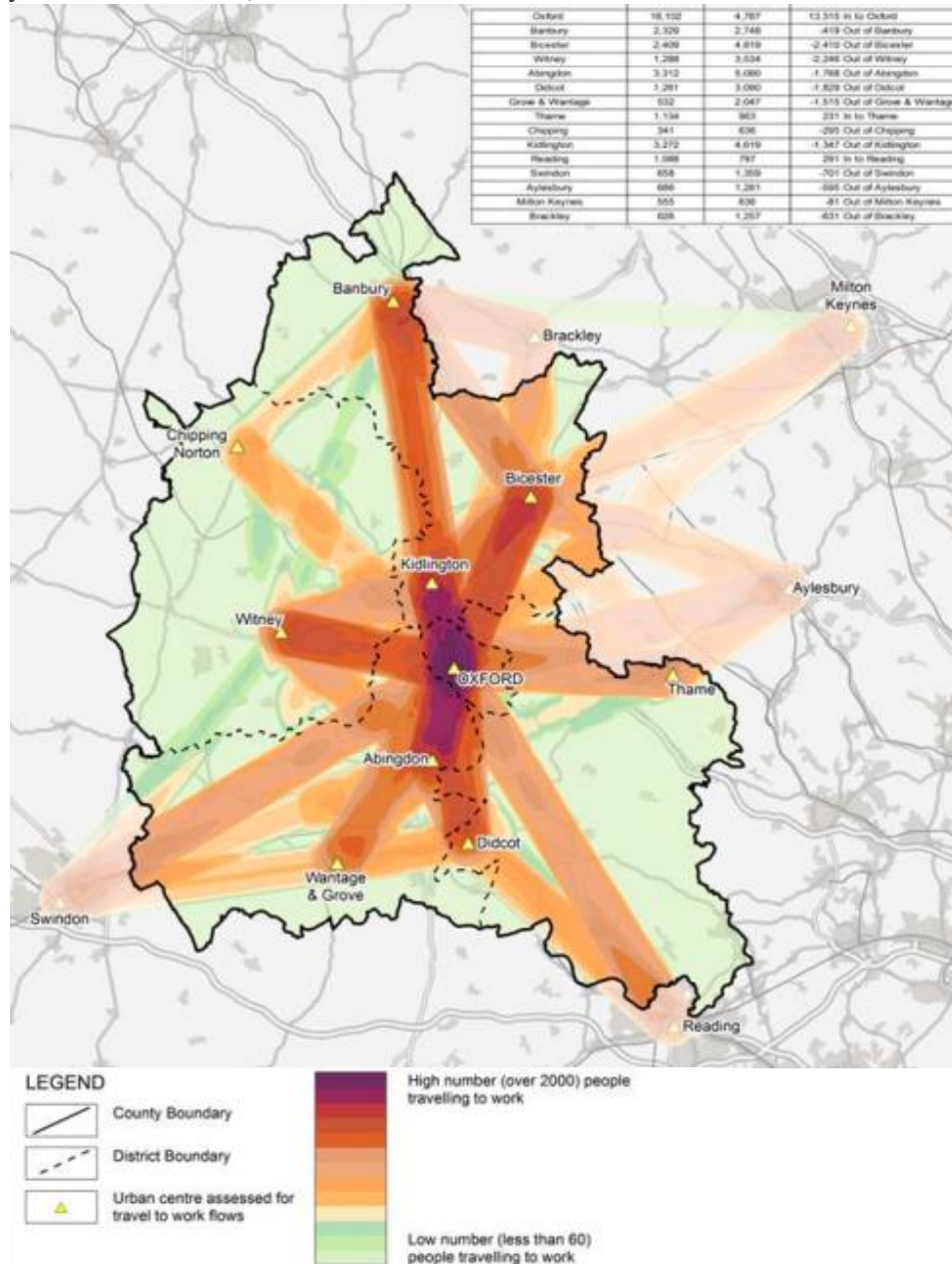
- There are a range of strategies at the national, sub-national and local level that have informed and will be supported by the LTCP.



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 Oxfordshire¹

¹ 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.

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 Oxfordshire²

² 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 services. Direct links with cities making up the northern powerhouse of England are less frequent, 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 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 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.



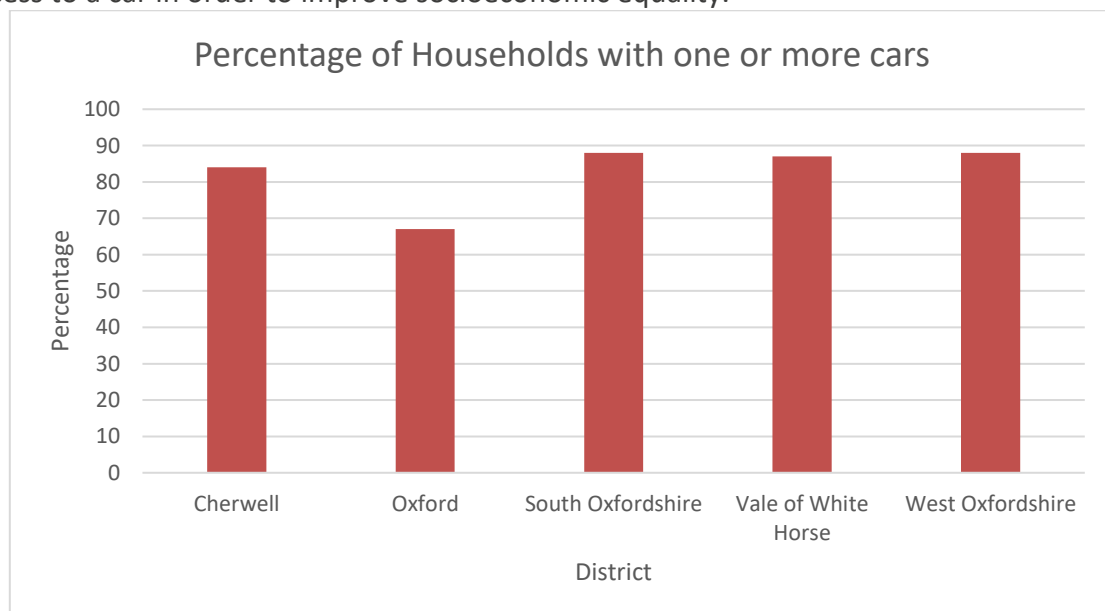
Private car

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%³.

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 this change. However, it is also important to consider those households that do not have access to a car in order to improve socioeconomic equality.



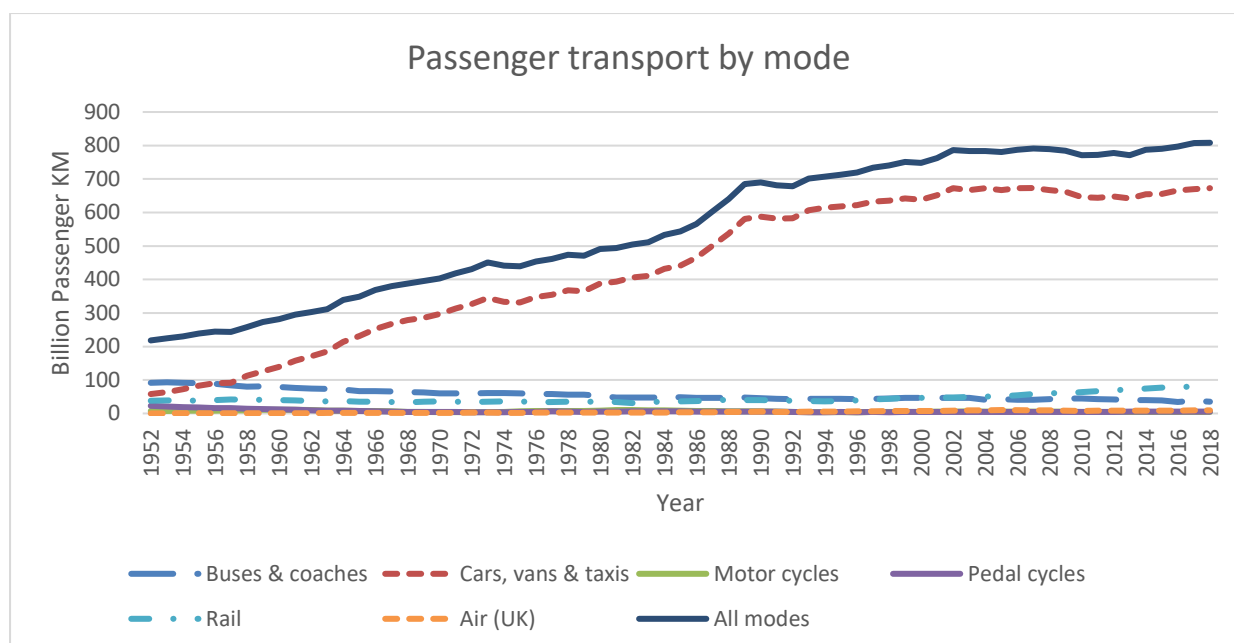
Usage

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 miles⁴. 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.

³ 2011 Census: Car or van availability, local authorities in England and Wales

⁴ 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 2019⁵. 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 billion for the first time, the 18th most out of the 209 Local Authorities in the Department for Transport’s statistics.

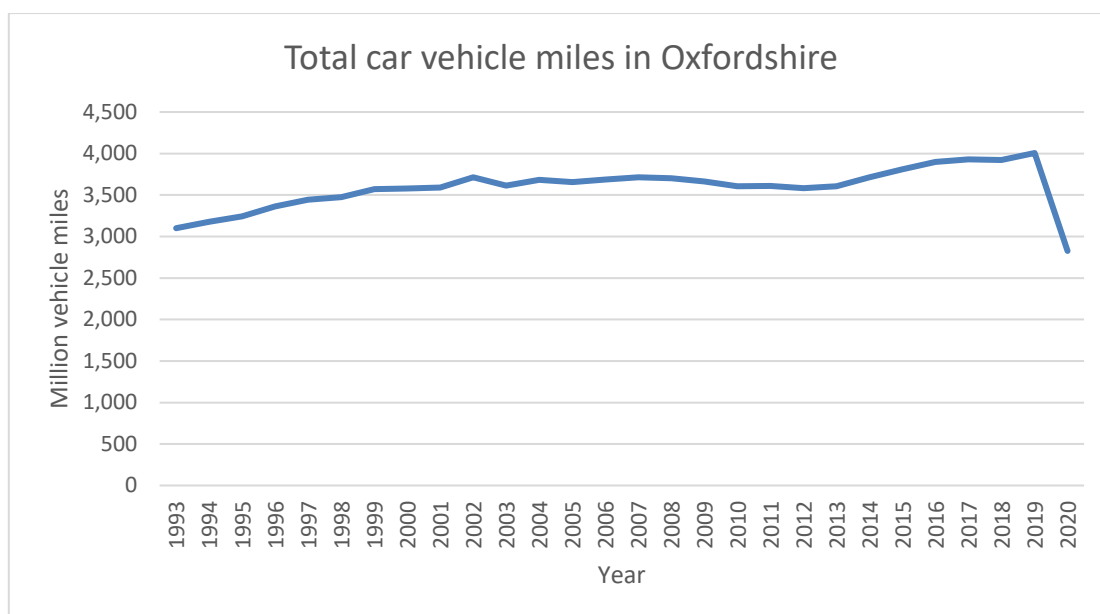
This continued increase in private car usage is not sustainable and will further compound existing issues such as congestion, parking and air quality. It is therefore essential that a plan is set out to address this trend.

COVID-19 had a significant impact on car travel. There was a drastic 29% decrease in car vehicle miles in Oxfordshire from 2019 to 2020. This decrease was higher than both the national average (25%) and the average for the south east (26%).

It remains to be what the long term impact of the COVID-19 pandemic on travel will be. However, initial studies have found that the total amount of miles driven in the UK between lockdowns (August 2020 – October 2020) exceeded 100% of normal levels, peaking at 110% of normal levels in September 2020⁶. We therefore expect that car vehicle miles will quickly return to and potentially exceed 2019 levels.

⁵ Department for Transport: Car vehicle traffic (vehicle miles) by local authority in Great Britain, annual from 1993
⁶ INRIX Global Traffic Scorecard 2020





Congestion 2014 - 2019

As highlighted previously, we have opted to omit the 2020 data from the long term analysis of congestion data. The 2020 data is impacted by the COVID-19 pandemic and so is discussed separately. As discussed, we believe many of the 2020 trends to do with vehicle mileage will not continue.

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 billion⁷.

Average speeds on both the Strategic Road Network (SRN) and Local ‘A’ Roads decreased between 2014 and 2019 across the UK. Average speeds on the SRN decreased by 1%⁸, with the average delay increasing by 7%⁹.

Within Oxfordshire only the M40 and A34 are part of the SRN. These roads saw average speeds decrease by 0.3% between 2017 and 2019. Notable areas that saw above average speed decreases were the M40 Southbound between J10-J9 and the A34 Northbound between the A44, B4027 and B430. Similarly, Oxfordshire’s SRN roads saw average delays increase by 1.2% between 2017 and 2019.

Average speeds on local ‘A’ roads saw a larger decrease in average speeds between 2014 and 2019. Across the UK speeds on urban local ‘A’ roads decreased by 6% and speeds on rural ‘A’ roads decreased by 3% since¹⁰. Average speeds on Oxfordshire’s local ‘A’ roads reflected this trend with a 2% decrease in average speeds between 2015 and 2019. Average speeds on the A4185, A4130 and A422 decreased by the most over this period.

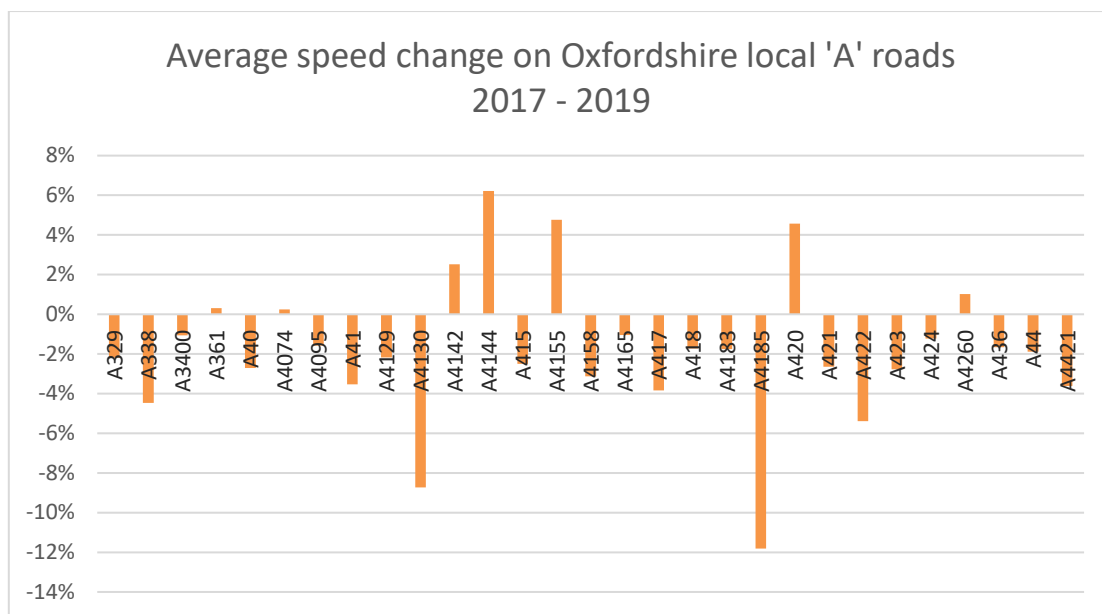
⁷ INRIX 2019 Global Traffic Scorecard

⁸ Department for Transport: Average speed on the Strategic Road Network in England: monthly and year ending from April 2015

⁹ Department for Transport: Average delay on the Strategic Road Network in England: monthly and year ending from April 2015

¹⁰ Department for Transport: Monthly and 12 month rolling average speeds on local ‘A’ roads in England





Congestion is having an impact on journey times across the UK, with these trends being reflected in Oxfordshire. We expect that these issues will continue following the COVID-19 pandemic and so 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.

Congestion 2019 - 2020

The reduction in congestion due to the COVID-19 pandemic resulted in UK drivers saving £2.6 billion. Congestion cost the average UK driver £291 in 2020 compared to £904 in 2019¹¹. Tackling congestion can therefore play a significant role in supporting the UK economy.

As expected, a result of the COVID-19 pandemic was an increase in average speeds and decrease in delays on the SRN when comparing 2020 to 2019. Average speeds increased by 3%, with the average delay decreasing by 34%¹². Oxfordshire’s SRN roads reflected this trend with average speeds increasing by 6% and delays decreasing by 11% between 2019 and 2020¹³.

Similarly, average speeds on local ‘A’ roads increased between 2019 and 2020. Nationally, average speeds on urban ‘A’ roads increased by 10% and speeds on rural ‘A’ roads increased by 4%. Oxfordshire’s local ‘A’ roads reflected this trend with an 8% increase in average speeds¹⁴.

The impacts of COVID-19 demonstrate the benefits that can be delivered by reducing the number of vehicles on the road.

¹¹ INRIX Global Traffic Scorecard 2020

¹² Department for Transport: Average speed on the Strategic Road Network in England: monthly and year ending from April 2015

¹³ Department for Transport: Average delay on the Strategic Road Network in England: monthly and year ending from April 2015

¹⁴ Department for Transport: Monthly and 12 month rolling average speeds on local 'A' roads in England



Vehicle speed compliance

The Department for Transport publish estimates of car compliance with speed limits in free-flowing conditions on roads in Great Britain. These are based on speed data from a sample of Department for Transport’s Automatic Traffic Counters. Whilst not specific to Oxfordshire, these statistics provide us with an insight into speeds at which drivers choose to travel when free to do so. This helps to inform our policies on road safety, notably our proposals on 20mph zones.

The analysis found that in 2020, under free-flowing traffic conditions, 56% of cars exceeded the speed limit on 30mph roads compared to 53% on motorways and 12% on national speed limit single carriageway roads¹⁵.

This trend was reflected for all vehicle types, with speed compliance tending to be highest on National Speed Limit (NSL) single carriageways and lowest on 30mph roads as shown on the table below.

Road	Cars	Vans	Articulated HGV	Rigid HGV	Short buses	Long buses	Motorcycles
Motorways	53	55	2	-	-	-	58
NSL single carriageways	12	-	35	41	45	48	29
30mph roads	56	58	46	49	29	24	67

Percentage of vehicles exceeding the speed limits by road class, 2020

The proportion of cars exceeding the speed limit by over 10mph on 30mph roads was 6%. On NSL single carriageway roads and motorways the proportion was 2% and 13% respectively.

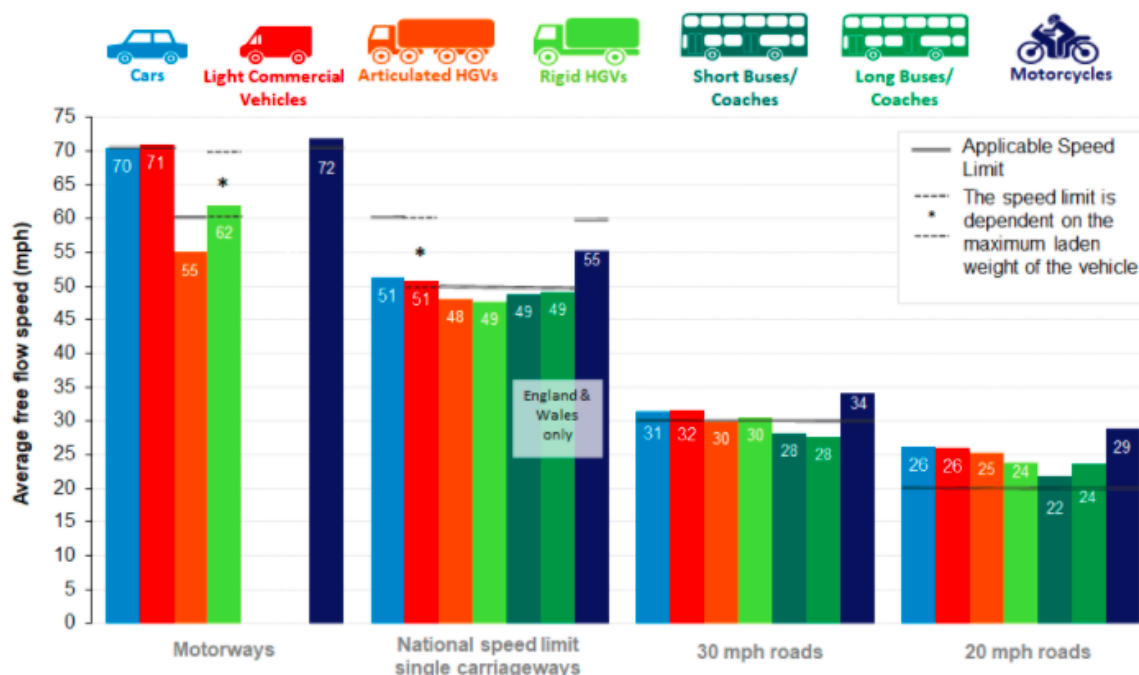
The average free-flow speeds at which drivers choose to travel as observed at sampled locations is also included. This analysis found that for motorways and national speed limit single carriageway sites, the average free-flow speed is at or below the designated speed limit for each vehicle type.

For 30mph sites the average free-flow speed is slightly above the speed limit for 3 vehicle types (cars, motorcycles and vans), with averages for all vehicle types ranging from 28mph to 34mph overall.

For the 20mph sites sampled (the DfT state that these are not thought to be representative of all 20mph roads), the average speed is above the speed limit for all vehicle types, ranging from 22mph to 29mph but below the average speeds seen on the 30mph roads.

¹⁵ <https://www.gov.uk/government/statistics/vehicle-speed-compliance-statistics-for-great-britain-2020/vehicle-speed-compliance-statistics-for-great-britain-2020>





Average free-flow speeds by vehicle type and road type in Great Britain, 2020¹⁶

Ultra-low emission vehicles

An Ultra-low emission vehicle (ULEV) is defined as one which emits less than 75g of carbon dioxide from the tailpipe per kilometre travelled. It typically refers to Battery Electric Vehicles (BEVs) and hybrid vehicles.

BEVs include cars, motorcycles, scooters, buses and trucks. Large BEVs such as buses and medium/large trucks are less common, but development is ongoing, and vehicles of this type are likely to become more common on Oxfordshire’s roads over the coming years.

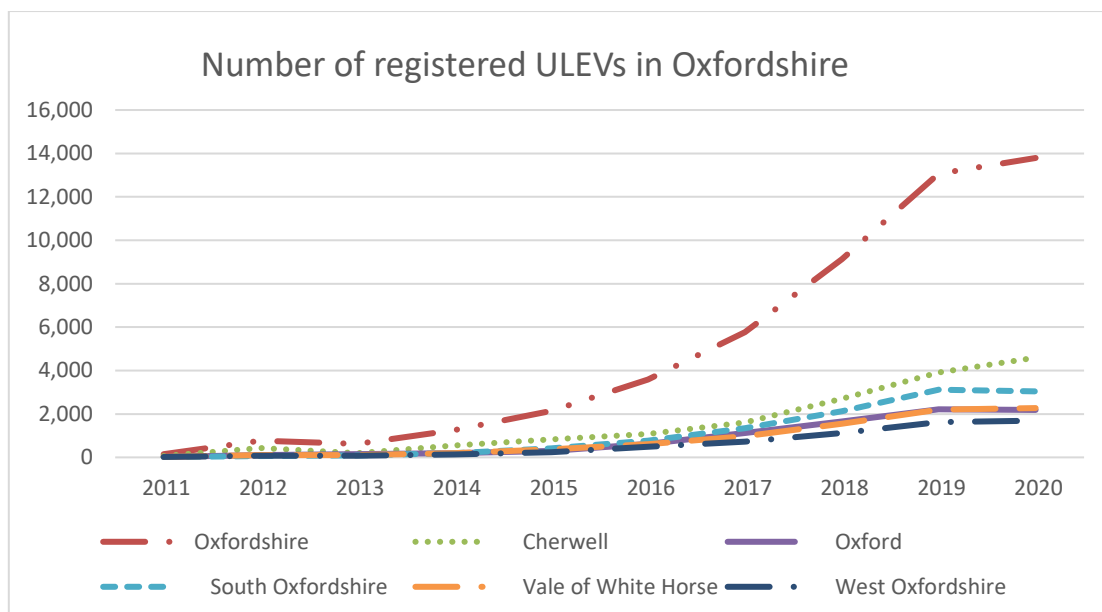
The number of registered ULEV’s has grown rapidly in the last 10 years, particularly in the last 5 years since the publication of LTP4. ULEV’s have the potential to reduce the environmental impact of car travel as they produce significantly fewer emissions. However, it should be noted that they do not address all issues. ULEV’s still produce particulate matter from tyre and brake pad wear and will not address congestion issues.

There has been an increase in the number of registered ULEV’s of over 9700% in England since 2011. This trend has been replicated in Oxfordshire with a growth in the number of registered ULEV’s of over 9000% since 2011¹⁷.

¹⁶<https://www.gov.uk/government/statistics/vehicle-speed-compliance-statistics-for-great-britain-2020/vehicle-speed-compliance-statistics-for-great-britain-2020>

¹⁷ Department for Transport: Ultra low emission vehicles (ULEVs) licensed at the end of the quarter by upper and lower tier local authority, United Kingdom from 2011





In Oxfordshire there has been an increase in the number of registered ULEV's of 285% since 2016, notably higher than the national average of 210%. West Oxfordshire currently has the lowest number of registered ULEV's and the lowest growth rate, however the percentage increase of 242% since 2016 is still above the national average.

These statistics highlight that ULEV 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 further uptake.

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 increasing.
- Congestion is affecting journey times across Oxfordshire. Steps are required to address this and ensure the county remains thriving and attractive.
- COVID-19 significantly reduced vehicle miles and associated data. Further monitoring is required; however, we expect vehicle usage to return to pre-pandemic levels.
- 30mph roads generally have the lowest levels of speed compliance.
- For 20mph roads the average speed is above the speed limit for all vehicle types, but below the average speeds seen on the 30mph roads.
- The number of Ultra-low emission vehicles in Oxfordshire is continuing to grow rapidly and so provisions for these vehicles will be required.

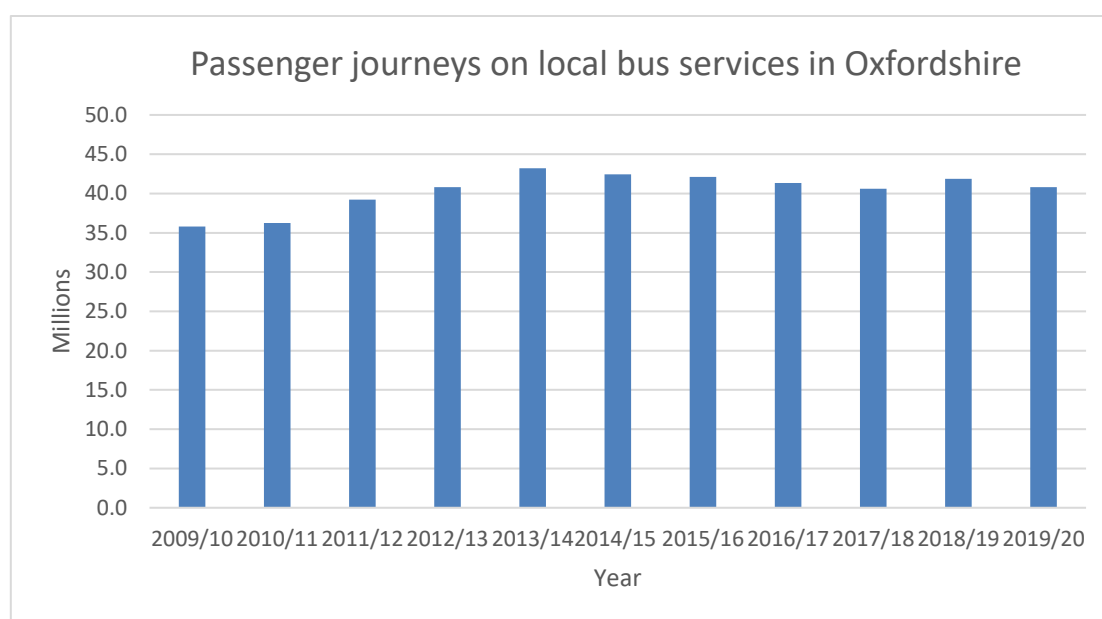


Public transport

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 11.8% since 2009/10. Total local bus passenger journeys in England were 4.07 billion in England in 2019/20, a 5.5% decrease from the previous year. This decrease can largely be attributed to the COVID-19 pandemic¹⁸.

Bus mileage has also seen a decreasing trend across England. Vehicle miles on local bus services in England have decreased by 13.9% since 2009/10 and are now at 1.13 billion vehicle miles. This was a 3.1% 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 2010/11¹⁹. 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 2010/11 to 59 in 2019/20, a 6% increase²⁰.

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.

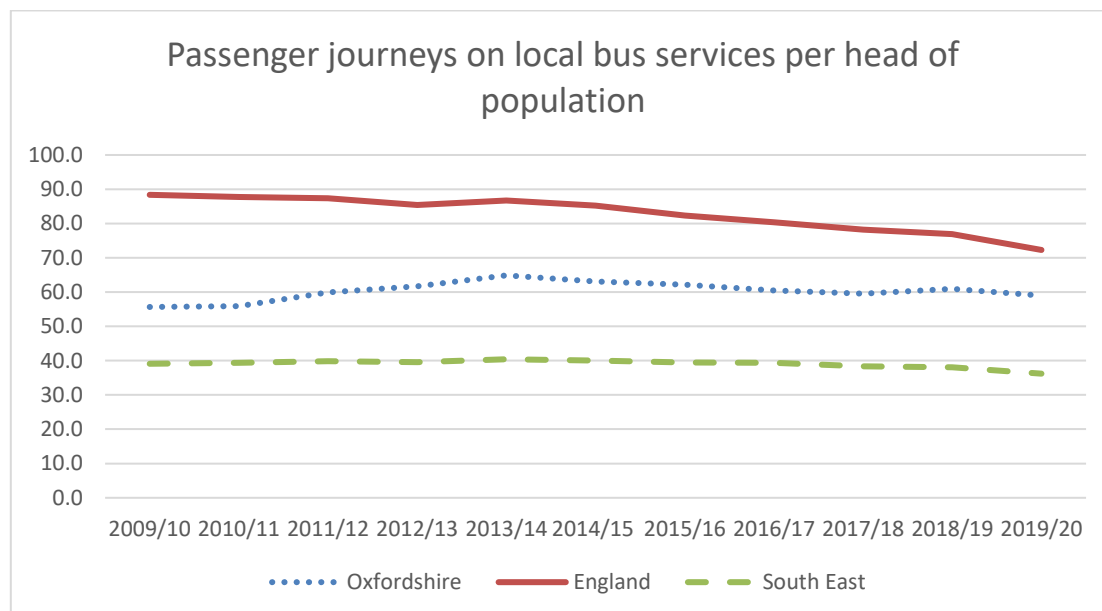
¹⁸ Department for Transport: Annual Bus Statistics: England 2019/20

¹⁹ Department for Transport: Passenger journeys on local bus services by local authority: England, from 2009/10

²⁰ 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 9% 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 2020, local bus fares in England have increased by 2.5%, faster than the annual all items Consumer Prices Index rate of inflation (1.5% increase), meaning bus fares have risen in real terms²¹.

Local bus fares in England increased by 77% between March 2005 and March 2020. The all items Consumer Prices Index (CPI) has increased by 40% 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.

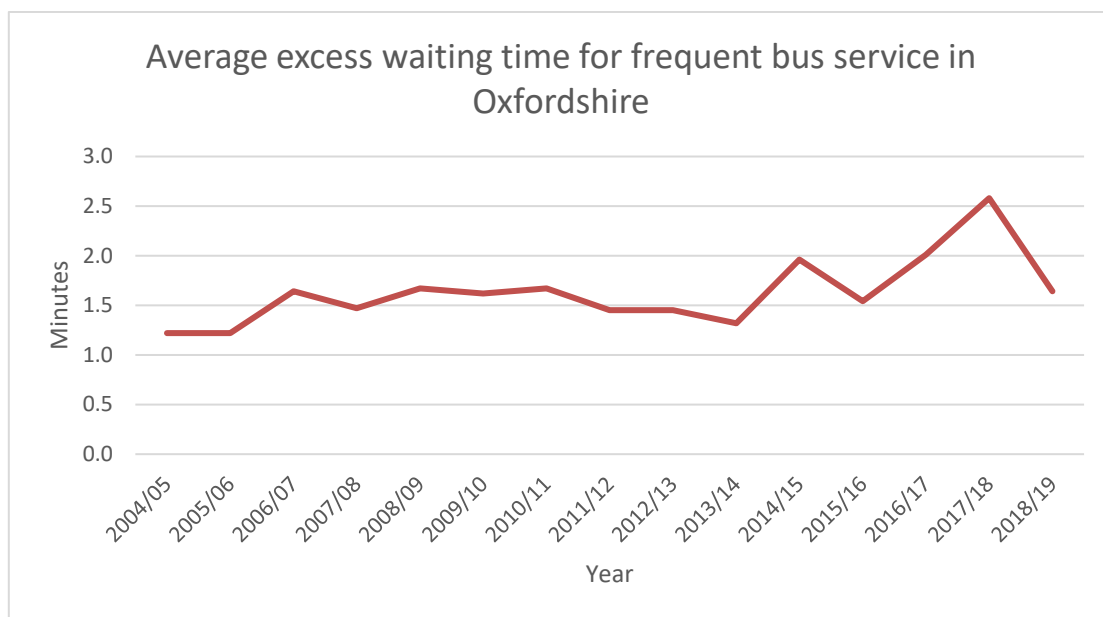
²¹ Department for Transport: Annual Bus Statistics: England 2019/20



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.

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 below²². 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.

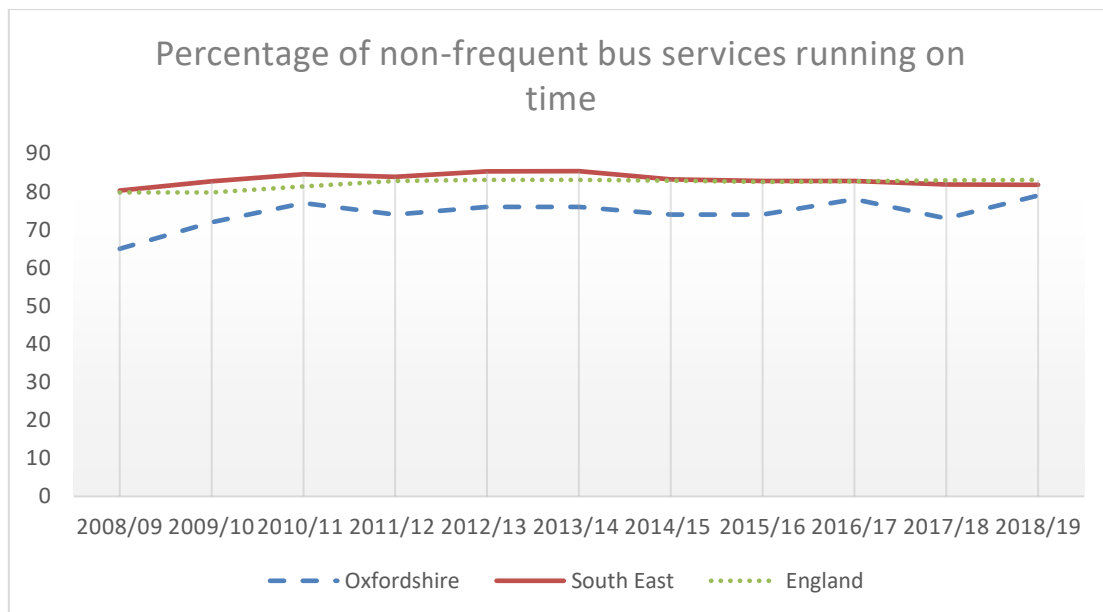


The percentage of non-frequent bus services running on time has been increasing over the last 10 years. There has been an 11% increase in the number of these services running on time since 2005 to 79% of services in 2018/19²³. However, despite this increase Oxfordshire remains below the average for the 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.

²² Department for Transport: Average excess waiting time for frequent services by local authority: England, annual from 2004/05

²³ Department for Transport: Non-frequent bus services running on time by local authority: England, annual from 2004/05

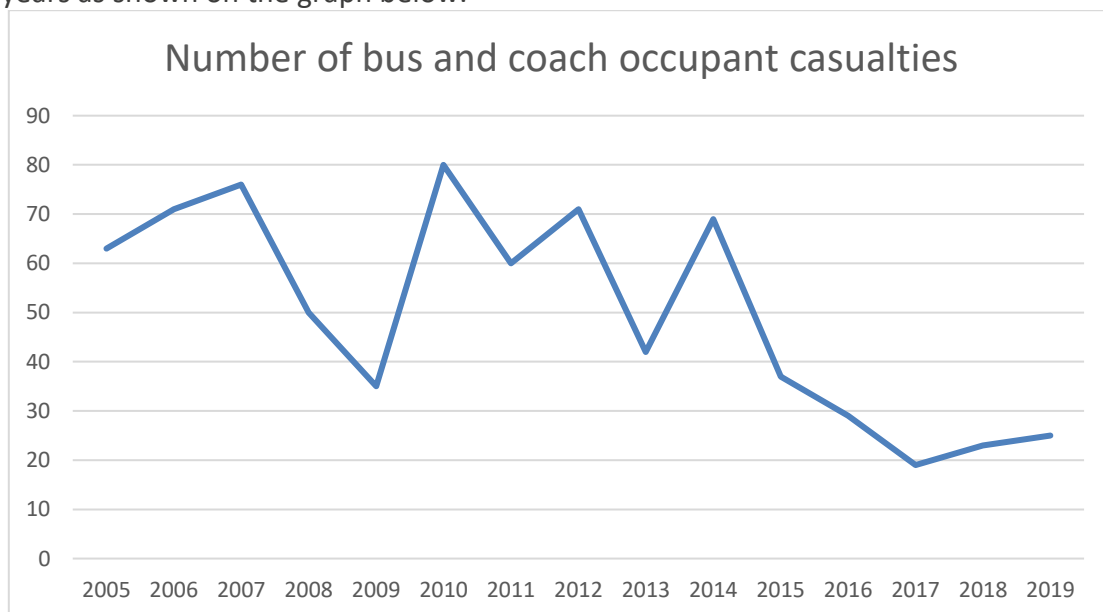




Bus safety

Buses remain a safe mode of transport for occupants. There were 25 bus and coach occupant casualties in 2019, approximately 2% of all road traffic casualties in the county²⁴.

The number of bus and coach occupant casualties has increased slightly in the last 4 years from a low of 19 in 2017. However, the total number has significantly declined over the last 10 years as shown on the graph below.



Rail station usage

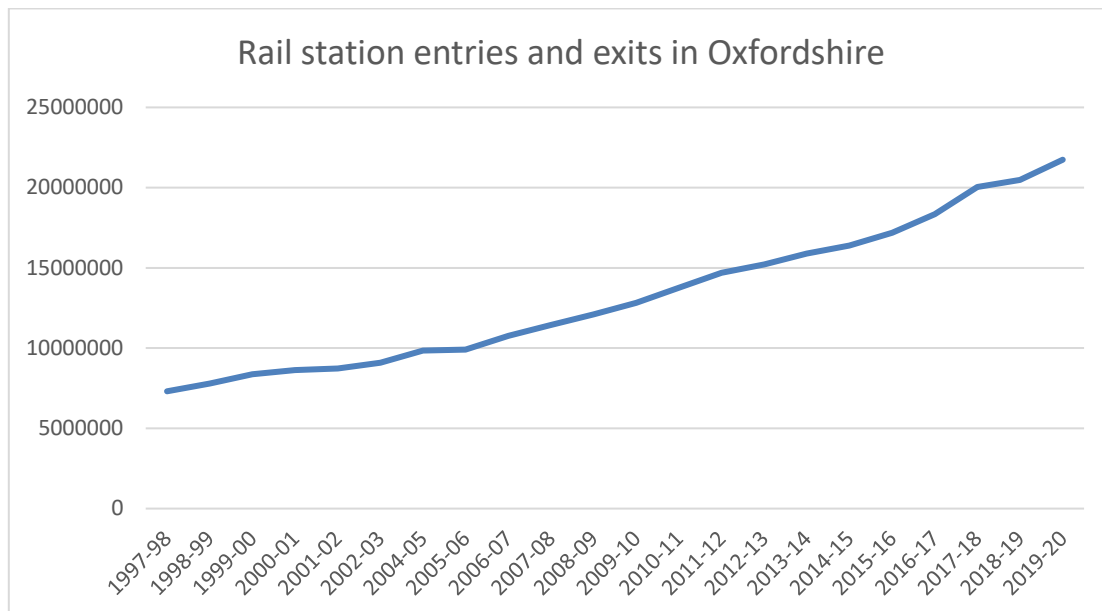
Demand for rail travel in Oxfordshire has grown rapidly and well above the UK average. Journeys to and from stations in Oxfordshire have increased by 75% in the 10 years to 2018 against a UK average increase of 44%²⁵.

²⁴ Oxfordshire County Council Road Traffic Accident Casualty Data Summary 2019

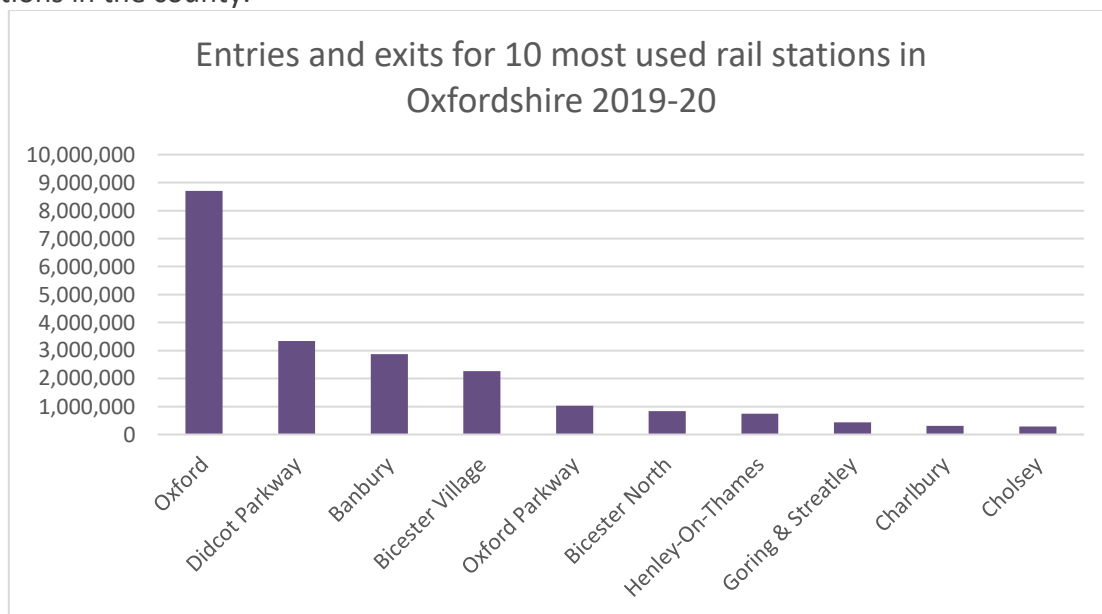
²⁵ Network Rail: Oxfordshire Rail Corridor Study



Growth in the last 5 years has been particularly significant, averaging 5.2% annually against a national average of 2.7%. In total numbers, there were 21.7 million entries and exits to Oxfordshire rail stations in 2019-20²⁶. These figures highlight the attractiveness of rail in the county and the potential for it to further contribute to Oxfordshire’s transport network.



Oxford is the most used rail station in the county with 8.7 million entries and exits in 2019-20. This is more than double the second most used station in the county, Didcot, which had 3.3 million entries and exits. The other most used stations in the county are Banbury, Bicester Village and Oxford Parkway. The graph below shows entries and exits for the 10 most used stations in the county.



There are some stations that have experienced significant growth in the last 5 years. Notable stations in this category include Bicester village (448% increase), Oxford Parkway (273% increase) and Islip (226% increase). The growth in usage of these stations can

²⁶ Office of rail and road: Time series of passenger entries and exits by station



LTCP Baseline report

attributed to delivery of East-West Rail phase 1 which connected Oxford and Bicester. Other stations with above average increases include Combe, Culham and Oxford.

There have also been some stations that have experienced decreases in usage over the last 5 years. Most notably, Bicester North has experienced a 41% decrease in usage. However, this can largely be attributed to the improved connectivity from Bicester Village. Other stations experiencing declines include Didcot Parkway (-3%), Henley on Thames (-4%), Charlbury (-4%) and Radley (-7%).

Future rail improvements

The Oxfordshire Rail Corridor Study (ORCS), was commissioned by the Oxfordshire Growth Board and other partners. The study identified the need for a 70% increase in services as well improved calling patterns and service coverage by 2028.

Future growth will be concentrated on seven hubs in the Oxfordshire rail System: Banbury, Bicester Village, Culham, Didcot Parkway, Hanborough, Oxford and Oxford Parkway. Analysis of potential new stations also suggests that two stations on the Cowley Branch Line have a role to play in supporting growth.

A key proposal is that the majority of passenger services are extended through, rather than terminating at, Oxford station. Another key feature is provision of new direct services to Bristol and Swindon and strengthening of connections with Birmingham, Worcester, and the South Coast to support Oxfordshire's economic growth.

Network Rail have identified the Oxford Phase 2 works as the critical next step in boosting rail capacity, frequency and connectivity in the county. Delivery of Oxford Phase 2 is critical to support the 2024 train service specification and all subsequent specifications.

A portfolio of interventions is required to deliver the 2028 specification. Some can be associated with individual service enhancements, but the majority represent a comprehensive system upgrade between Oxford North Junction and Didcot.

Rail operator customer satisfaction

Whilst Oxfordshire County Council do not have direct influence over the railways, we work with rail stakeholders and it is helpful to understand customer satisfaction to inform this partnership working.

The primary rail operators in Oxfordshire are Chiltern Railways, Great Western Railway and Cross Country. Overall customer satisfaction with these operators in Spring 2020 is shown on the table below²⁷.

Operator	Satisfied or good (%)	Change vs Spring 2019
Chiltern Railways	88%	-2%
Great Western Railway	86%	-1%
Cross Country	85%	-1%

²⁷ Transport Focus National Rail Passenger Survey 2020



Generally, passengers are satisfied with the primary rail operators in Oxfordshire. We will continue to work with rail operating companies, to ensure residents are provided with a consistently good quality service that adapts to customer expectations.

Summary

- Although bus usage in the county has increased overall since 2010, it has been declining since 2013/14. Work is therefore needed to address existing issues and further encourage bus use.
- COVID-19 has resulted in a decrease in bus journeys over the last year, it is unclear what the long term impact will be.
- 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.
- Rail usage has been increasing in the county and there are opportunities to further improve this.



Walking and cycling

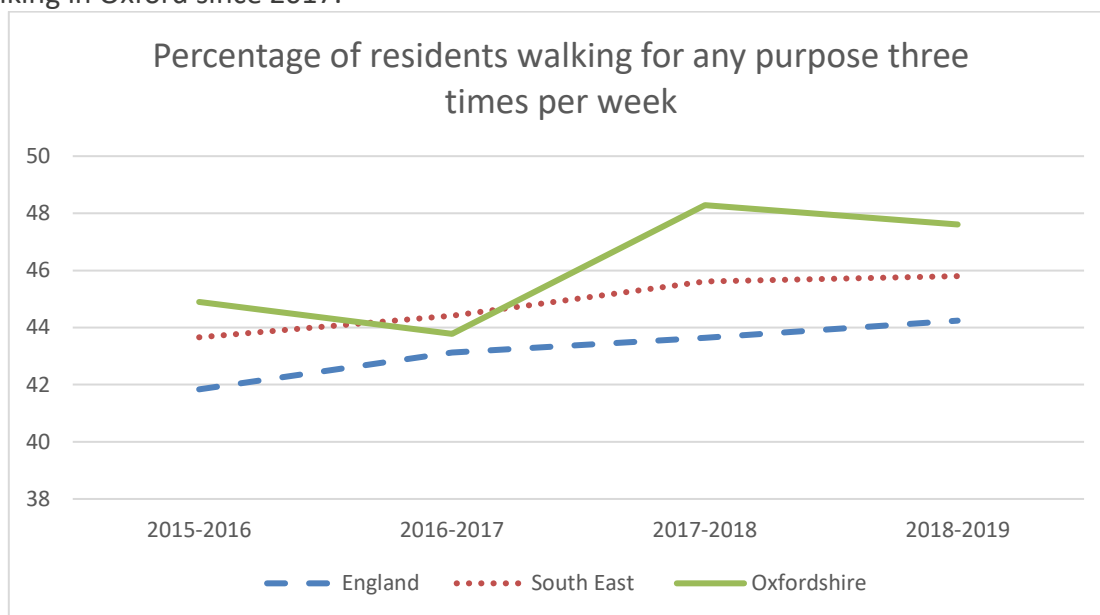
Oxford data

For data analysis in this section we have sometimes provided countywide figures with Oxford removed. Oxford is of a very different nature to many other areas of the county and its inclusion in countywide data sometimes obscures trends in walking and cycling that we are seeing elsewhere. More detailed analysis regarding walking and cycling in Oxford can be found in the Oxford LCWIP document.

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%²⁸. This trend is fairly consistent across the county with a high of 88% in the Vale of White Horse and a low of 84% in Cherwell.

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.



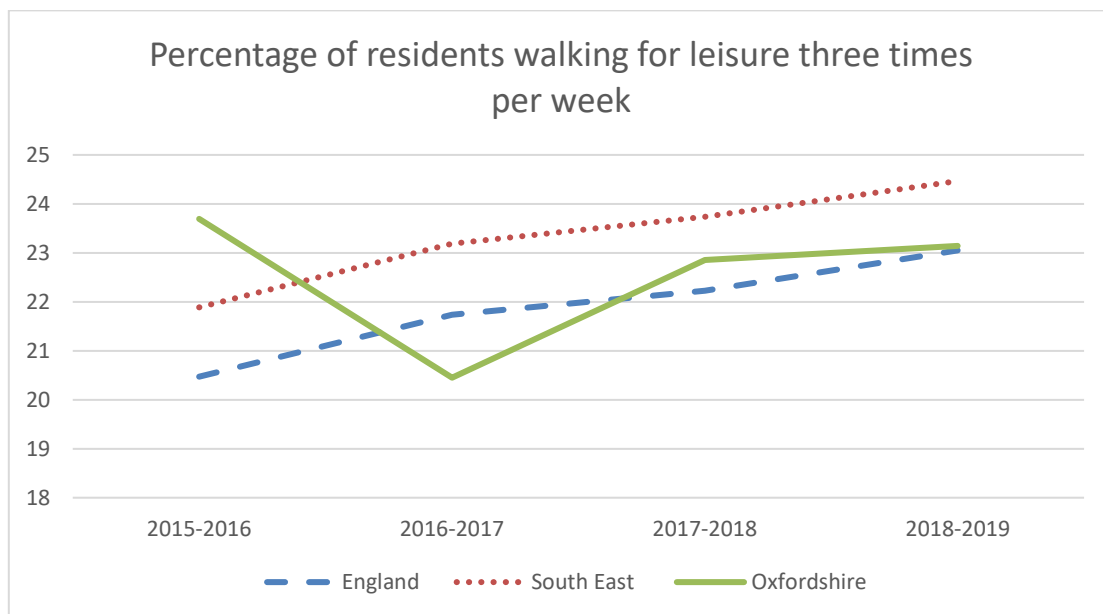
In terms of walking for leisure and walking for travel, Oxfordshire has seen an increase over the last 5 years and remains above the national average. The percentage of residents walking for leisure once per month has increased by 5% since 2015 to 73%, above the national average of 64%. The percentage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

Oxford has the lowest proportion of resident’s that walk for leisure. 65% of Oxford residents walk for leisure once per month compared to the countywide average of 73%. Similarly, 14%

²⁸ Department for Transport: Proportion of adults that walk, by frequency, purpose and local authority, England, 2018-2019



of Oxford residents walk for leisure three times per week compared to the countywide average of 23%. The proportion of residents walking for leisure three times per week in the other districts varies between 23% (Cherwell) and 30% (West Oxfordshire).

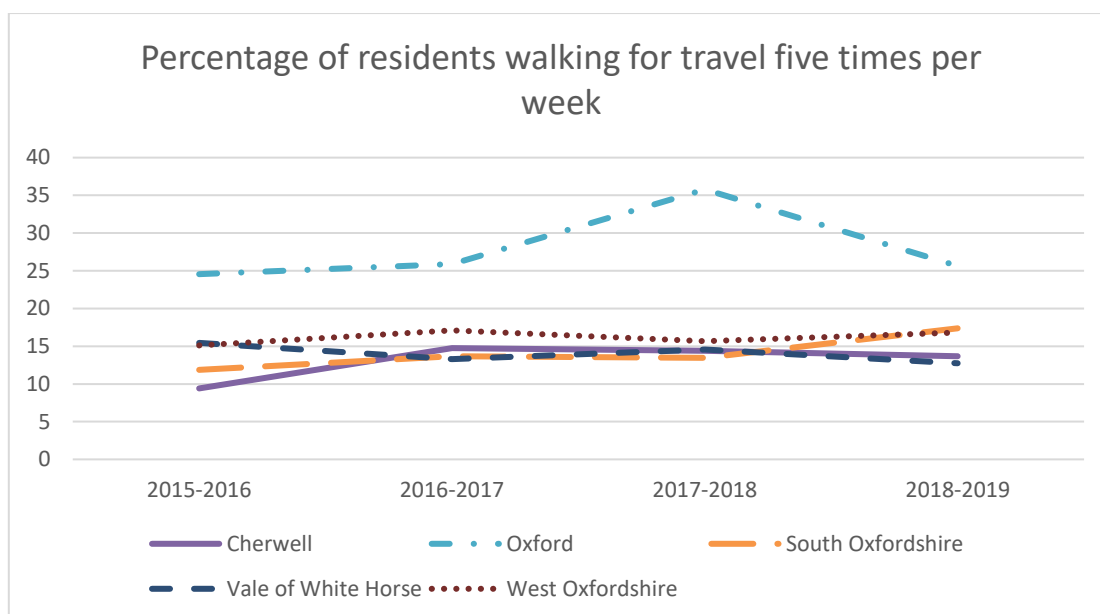


As highlighted the percentage of residents walking for travel in Oxfordshire is above the national average. In Oxfordshire 54% of residents walk for travel once per month and 25% walk for travel three times per week compared to the national averages of 49% and 23% respectively.

However, these averages are heavily influenced by Oxford. 71% of Oxford residents walk for travel once per month compared to next high of 52% in the Vale of White Horse. With Oxford removed, 49% of residents walk once per month for travel and 22% walk for travel three times per week. These figures are more in line with or slightly below the national average.

Within Oxford, we have seen the percentage of residents walking for travel 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 the 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. As noted, the relatively high percentage of residents walking in Oxford also obscures the fact that walking levels in some districts are at or below the national average.

Current walking 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

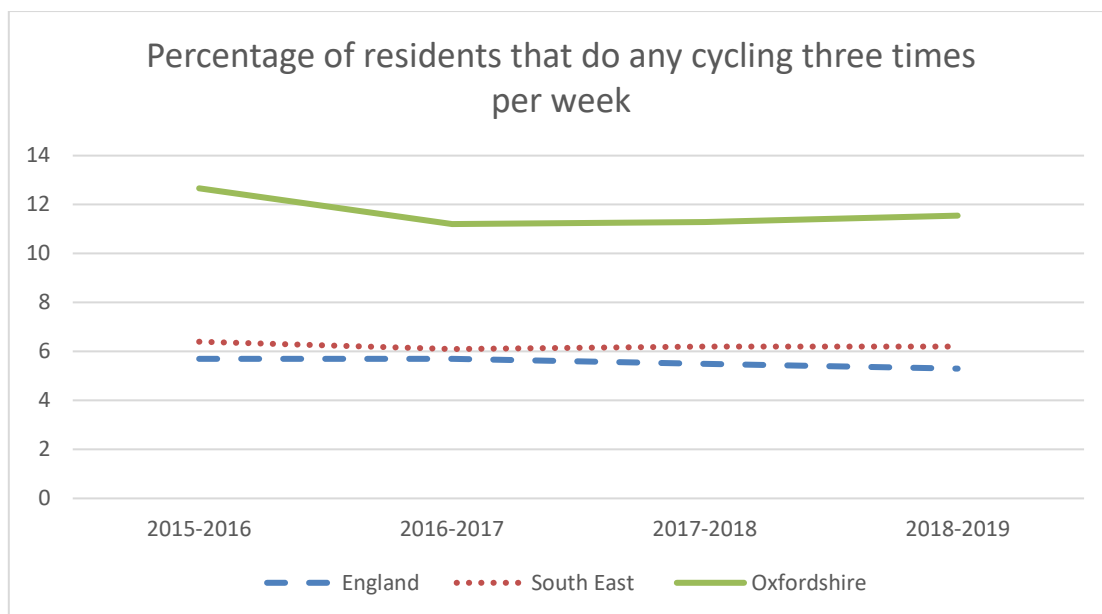
Cycling accounts for just 2% of all trips made nationally and 1% of all distance travelled²⁹. The number of trips made has remained largely steady since 2002 but the distance travelled has increased by 41%. However, approximately 2 thirds of all trips in England are 5 miles or under, with other 40% being 2 miles or under³⁰. 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% respectively.

²⁹ Department for Transport: Walking and Cycling Statistics, England: 2019

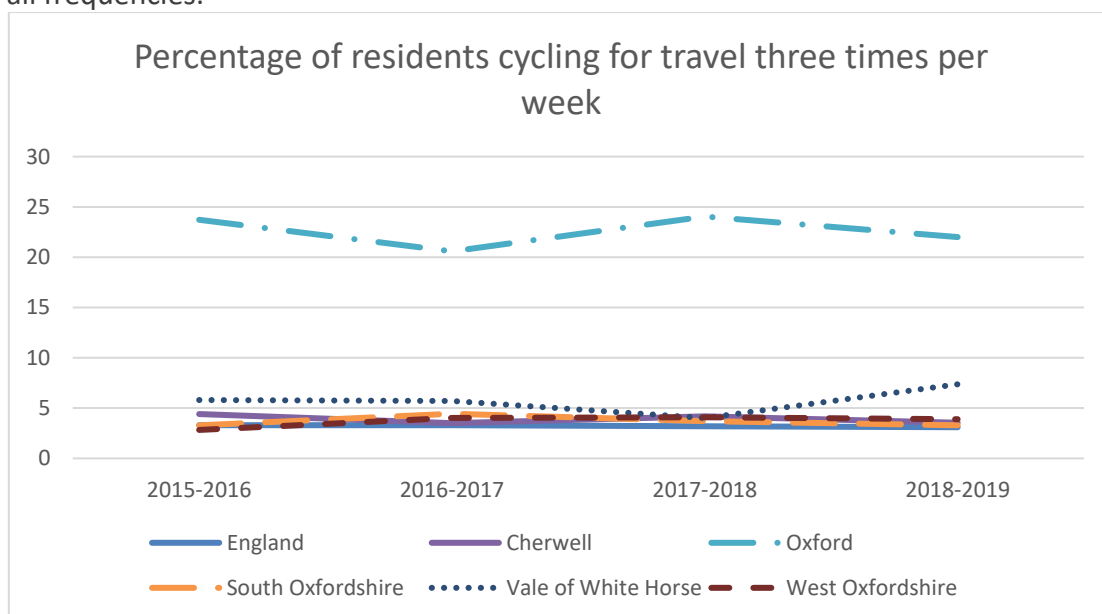
³⁰ Department for Transport: National Travel Survey; Average number of trips by trip length: England, from 2002 - 2019





It should be noted that Oxford has one of the highest proportion of residents cycling in the country which contributes significantly to the countywide figures. When Oxford is removed, the proportion of residents cycling once per month and three times per week fall to 22% and 8% respectively. Whilst these figures are reduced, they remain higher than the national averages.

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.



The proportion of residents cycling for leisure is fairly consistent across the county. However, the proportion of residents cycling for travel is heavily influenced by Oxford. The countywide averages for residents cycling for travel once per month or three times per week are 17% and 9% respectively. This is over double the national averages of 8% and 3%. When Oxford is removed, the proportion of residents cycling once per month and three



times per week for travel fall to 11% and 5%. These figures remain higher than the national averages but are significantly reduced.

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, as highlighted 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 respondents³¹.

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%³², 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.

Within Oxfordshire there were 270 pedal cyclist casualties in 2019. This made up 19% of all casualties, the second highest proportion of all road users³³. Of these 270 casualties, 250 were adult cyclists and 20 were children. There were 45 casualties that were killed or seriously injured (KSI), 1 of these being a child and the rest being adults.

The number of child pedal cycle casualties has remained steady over the past 6 years following a period of declining casualty numbers. The number of adult pedal cycle casualties has remained fairly constant since 2000. There has however been a declining trend in recent years from a peak of 332 in 2014. This is despite an increase in the number of pedal cyclists over the same time.

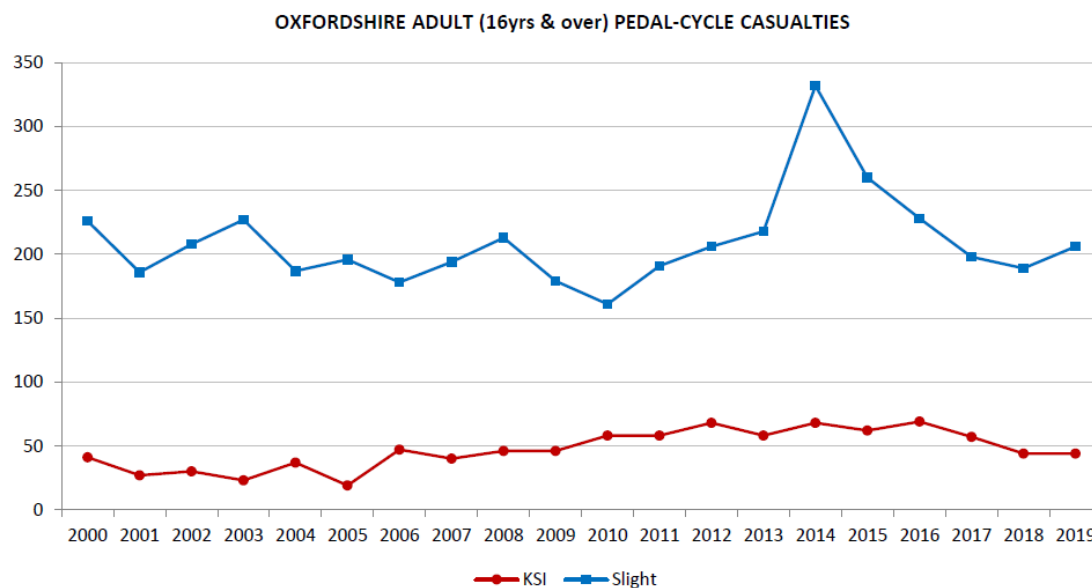
Whilst there have been some improvements in cyclist safety in recent years it is clear that further work is needed to improve cyclist safety. This is particularly important to support our aspirations for increased cycling in the county.

³¹Department for Transport: Walking and Cycling Statistics, England: 2019

³² Department for Transport: Proportion of respondents agreeing that it is too dangerous to cycle on the road, England, 2011 to 2020

³³Oxfordshire County Council Road Traffic Accident Casualty Data Summary 2019





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.



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 walking and cycling levels. 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%

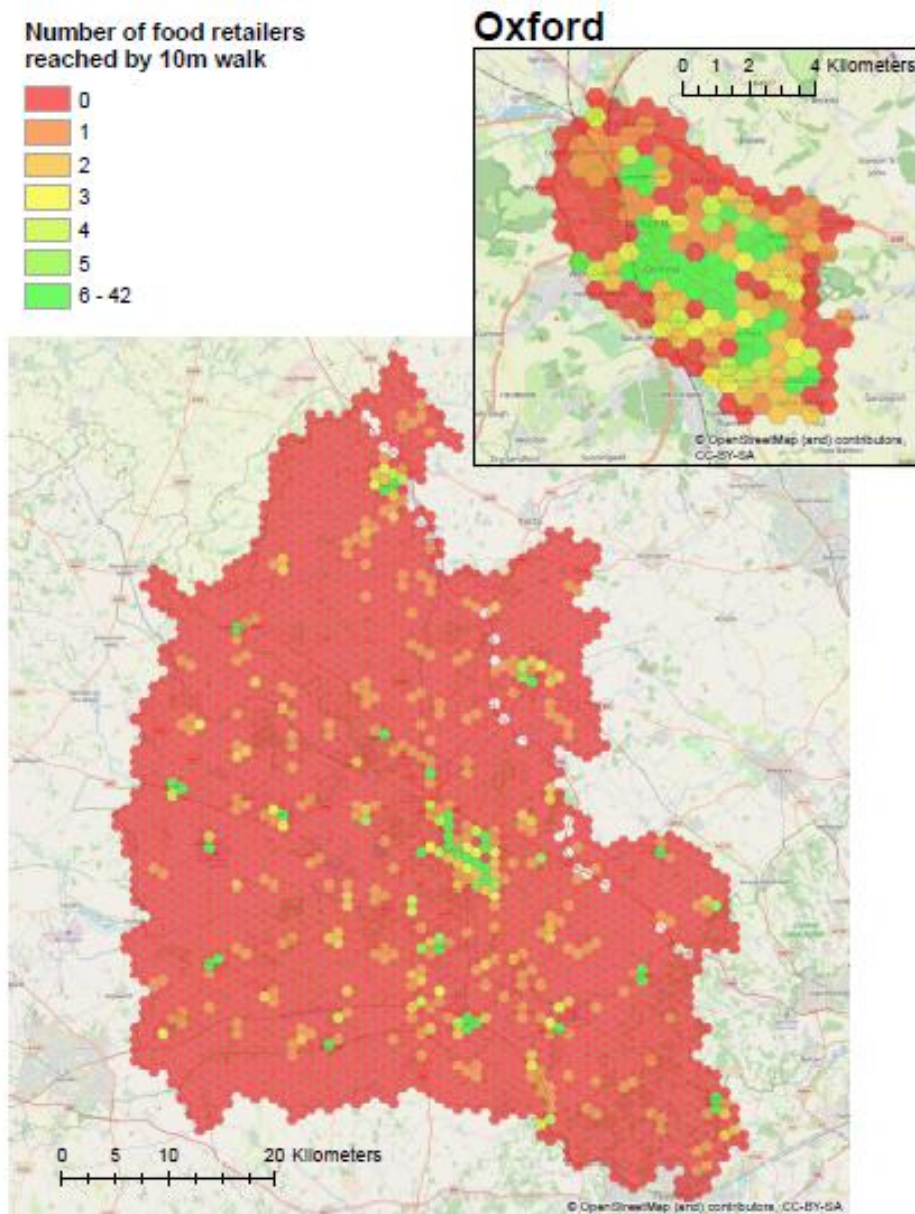
Percentage of residents that do any walking or cycling once per week 2018-2019

Access to services

Spatial planning can also help to encourage walking and cycling. By locating shops, services and leisure facilities near residential developments walking and cycling is a feasible option for residents. The LTCP has identified a 20 minute neighbourhood policy to help encourage this practice.

We have conducted an initial analysis of the number of food retailers reached within a 10 minute walk of an area in support of the 20 minute neighbourhood policy. This analysis is shown below and highlights the scale of the challenge. Outside of Oxford there are currently few towns that offer good access to food retailers by foot. There will be an opportunity to further analyse this work through the area transport strategies.





Number of food retailer reached by a 10 minute walk in Oxfordshire

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 work is needed to address cyclist safety.
- Access to food retailers by foot is poor outside of Oxford. Work is needed to create more walkable neighbourhoods and support car free lifestyles.

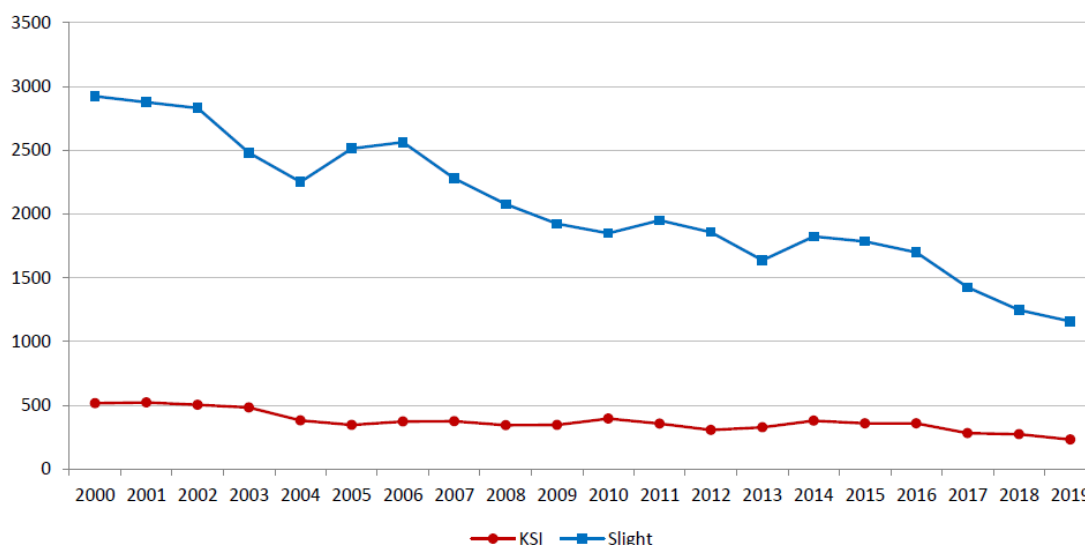


Road safety

Road safety is a serious issue that can affect many residents directly. The County Council publish an annual Road Traffic Accident Casualty Data summary report³⁴ 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 2019 there were 1389 total casualties, an 18.5% decrease from 2018 and a 56% decrease since 2005.
- In 2019 there were 231 Killed or Seriously Injured (KSI).
- There has been a gradual decrease in the number of KSI since 2014.
- There were 98 child casualties in 2019, a decrease of 4.9% from 2018 but the number of KSI increased from 13 to 19.
- Car drivers were the road user group with the highest number of casualties in 2019, making up 39.7% of all casualties. Pedal cyclists (19.4%) and car passengers (15%) had the next highest number of casualties.
- There were more male casualties (58.4%) than female casualties (41.6%).
- The 16-24 and 25-34 age groups had the highest number of casualties (565).

OXFORDSHIRE TOTAL ROAD CASUALTIES



Generally, reductions have been seen in the number of road casualties for all user groups since 2010. This trend has continued in 2019 with most user groups showing a declining number of casualties compared to 2018 numbers.

However, pedal cyclist casualty numbers have seen an upward trend over the last year. There has also been an increase in the number of child KSI casualties after a period of declining figures.

When compared to its statistical neighbours Oxfordshire's performance is ranked somewhere in the middle with regards to total casualties per 1,000 of the population. This figure is similar to that of the overall national picture. Oxfordshire has reduced the number

³⁴ Oxfordshire County Council Road Traffic Accident Casualty Data Summary 2019



of KSI casualties per 1,000 of the population and is now performing better than many of its statistical neighbours.

All casualties	Fatal	Serious	KSI	Slight	Total	% of total
Pedestrian	3	28	31	88	119	8.6
Pedal cycle	1	44	45	225	270	19.4
Two-wheel motor veh	3	42	45	86	131	9.4
Car driver	9	52	61	490	551	39.7
Car passenger	2	30	32	176	208	15.0
Bus occupant	0	3	3	22	25	1.8
Goods veh occupant	4	6	10	59	69	5.0
Other	1	3	4	12	16	1.2
Total	23	208	231	1158	1389	100

Total casualties by road user group

Whilst these trends are positive, there are still areas that require improvement, particularly improving safety for when people are walking and cycling and rectifying the increase in child KSI's. Therefore, there is a need for ongoing work to address road safety in Oxfordshire, which the LTCP will recognise.

Summary

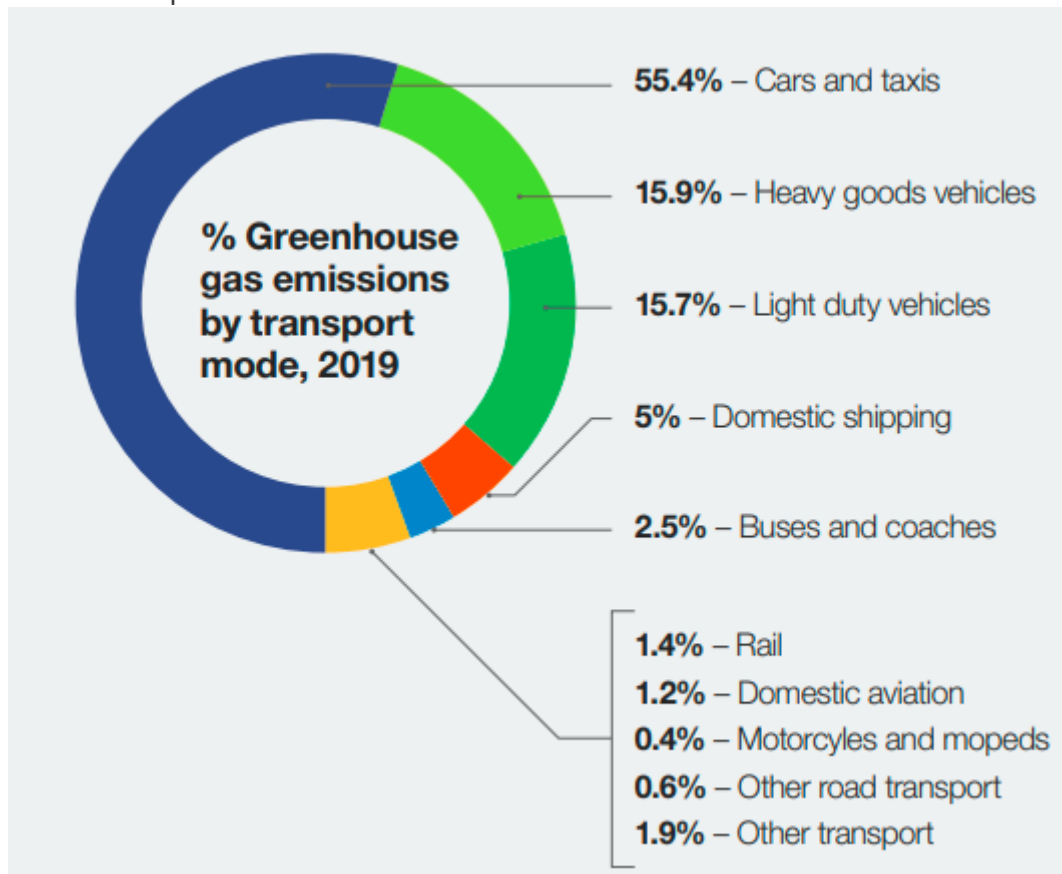
- Road safety has improved but there have been some upward trends since 2018 and no level of casualties is acceptable. Further work to improve road safety is therefore required.



Air quality

Transport emissions

Transport is now responsible for the largest proportion of UK greenhouse gas emissions. In 2019 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 55% of road transport emissions³⁵.



UK Greenhouse Gas emissions by transport mode³⁶

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 approximately 36% of all emissions in the county³⁷.

Total CO₂ emissions in the county have declined by 27% since 2008, despite a 7.6% population increase over the same period. However, transport emissions have only declined 1.9% across the same time period.

The figures below show recent trends in carbon emissions, broken down by district in Oxfordshire. Total emissions in all parts of the county have fallen since 2008, but transport

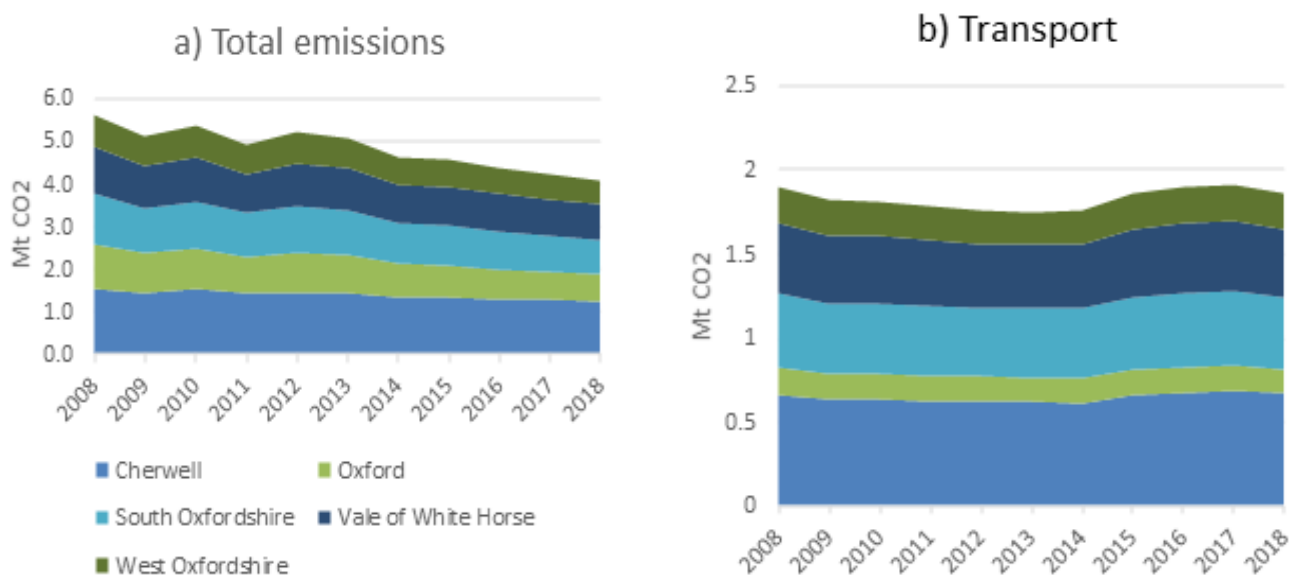
³⁵ UK Government: Transport Decarbonisation Plan

³⁶ UK Government: Transport Decarbonisation Plan

³⁷ University of Oxford Transport Studies Unit: Pathways to a zero-carbon Oxfordshire



emissions remain high. The transport figure includes emissions from motorways, which contributes to the relatively high figures from Cherwell and South Oxfordshire.



Graphs showing total emissions and transport emissions in Oxfordshire

Air pollution

Air pollution is a mix of particles and gases of both natural and human origin. The main components of urban air pollution are particulate matter (PM) and nitrogen dioxide (NO₂). Road transport is the largest source of NO₂ and fourth largest source of PM³⁸. Currently, there is no clear evidence of a safe level of exposure.

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 2017³⁹.

Oxfordshire's air pollution comes from a variety of sources, and the mix of sources varies by location. Across Oxford road transport accounts for approximately 40% of NO_x emissions and 10% of particulate matter emissions. At roadside locations in the county with heavy traffic, road transport accounts for as much as 75% of NO_x and 20% of particulate matter emissions.

Research by King's College London has highlighted some of the impacts of air pollution in Oxford⁴⁰:

- 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

³⁸ <https://www.gov.uk/government/publications/health-matters-air-pollution/health-matters-air-pollution>

³⁹ Oxfordshire Health and Wellbeing Joint Strategic Needs Assessment 2020

⁴⁰ Kings College London: Personalising the Health Impacts of Air Pollution – Summary for Decision Makers, 2019



- 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.
- 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.



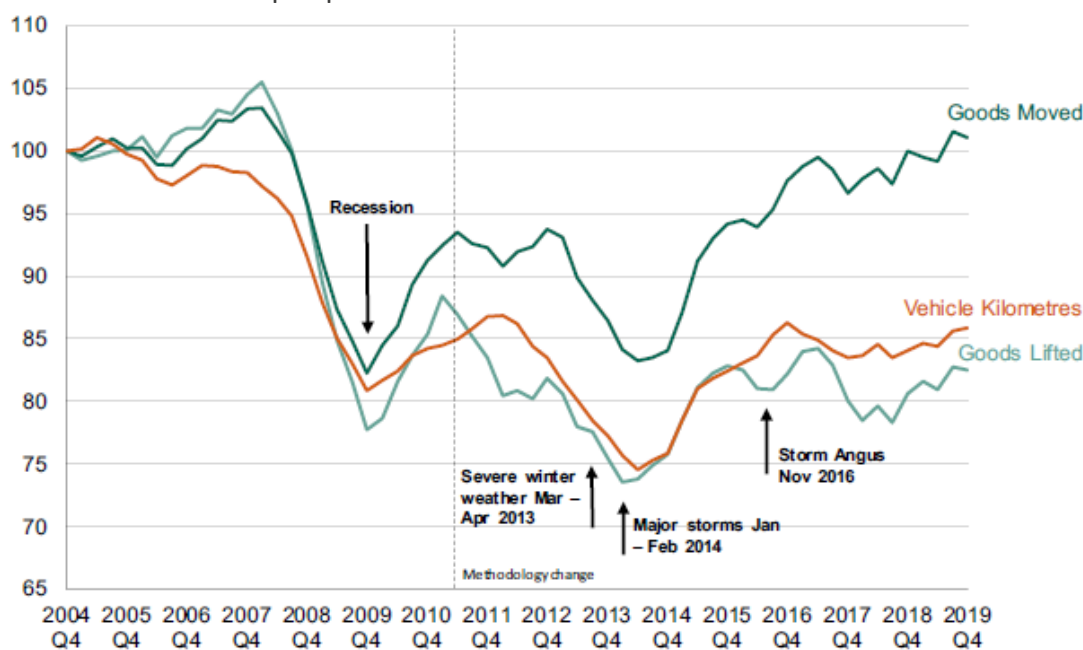
Freight

As with many sectors, freight movements were disrupted by the COVID-19 pandemic in 2020. We have therefore noted trends from 2020 but have focused on data from 2019 which was consistent with long term trends. We will continue to monitor future data to assess whether any trends from 2020 are part of a longer term shift.

Freight movement in the UK

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 2009⁴¹.

In 2020 the amount of goods moved decreased by 12% when compared to 2019 levels⁴². As noted, this is largely due to the impacts of the COVID-19 pandemic. Further analysis shows that the amount of goods moved increased by 31% between quarters 2 and 3 of 2020. The industry is therefore recovering, and we will continue to monitor whether the amount of goods moved returns to pre-pandemic levels.



Trend in goods moved, goods lifted and vehicle kilometres by GB-registered HGVs, rolling 4 quarter totals, 2004 Q4 to 2019 Q4⁴³

Freight vehicles in the UK

The growth of Light Goods Vehicle (LGV) traffic has been a significant change to freight movement in recent years. The number of LGVs increased by 29% between 2004 and 2014, compared to a 5% decrease in the number of Heavy Goods Vehicle's (HGV) over the same

⁴¹ Department for Transport: Domestic Road Freight Statistics, United Kingdom 2019

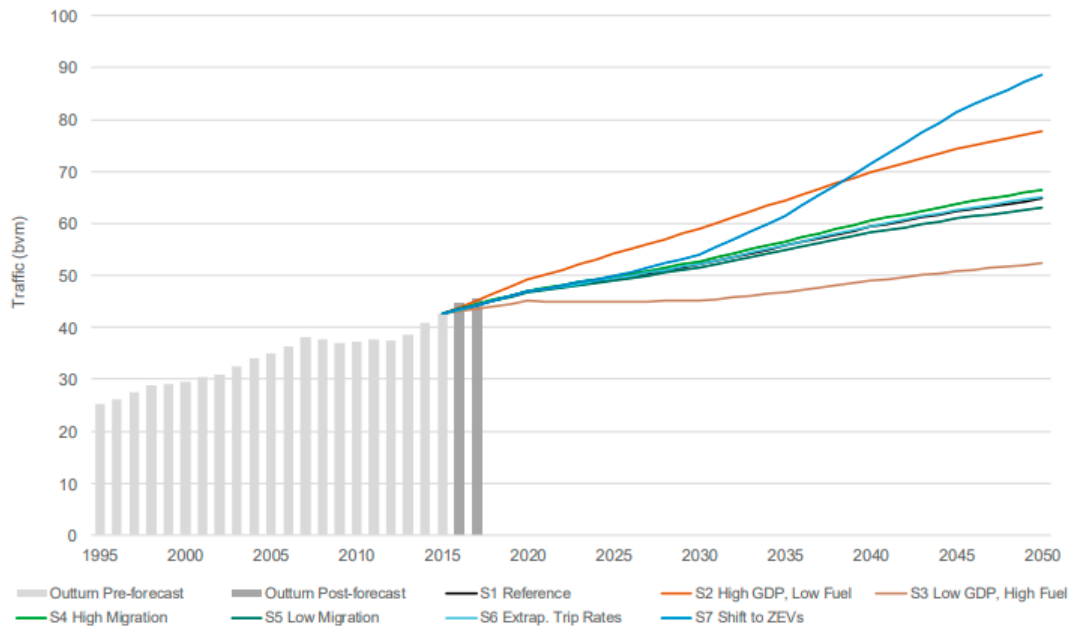
⁴² Department for Transport: Road freight activity for the United Kingdom and internationally from October 2019 to September 2020

⁴³ Department for Transport: Domestic Road Freight Statistics, United Kingdom 2019

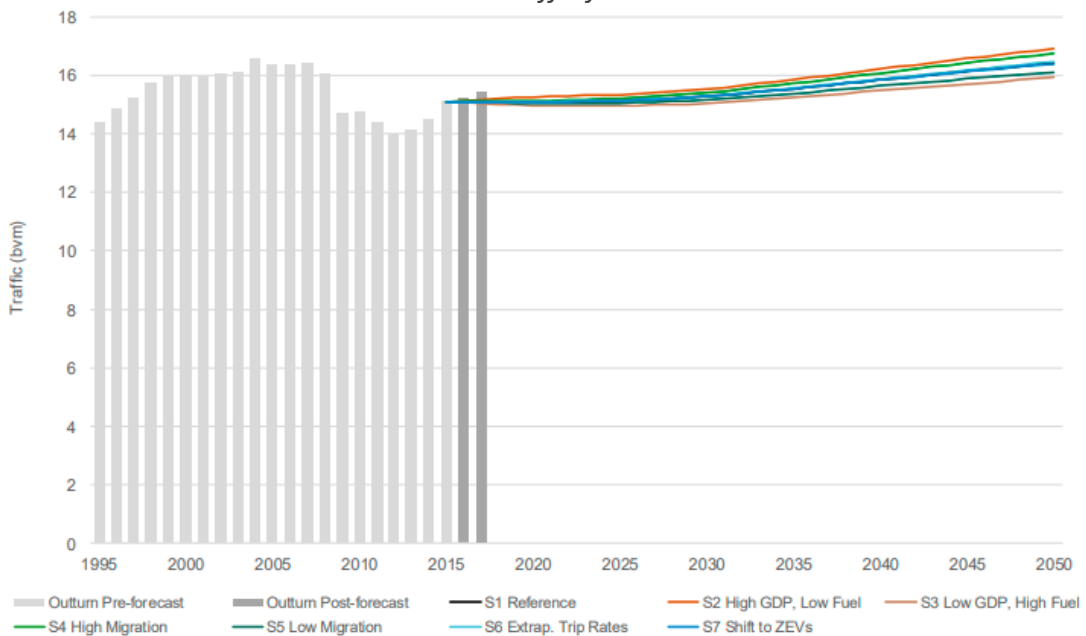


period⁴⁴. LGV traffic has increased by 67% over the last 20 years and currently makes up 15% of all traffic, with HGVs making up 5%.

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 2050⁴⁵. The graphs below demonstrate the current levels of LGV and HGV traffic and the forecasts for growth under different scenarios.



LGV road traffic forecasts



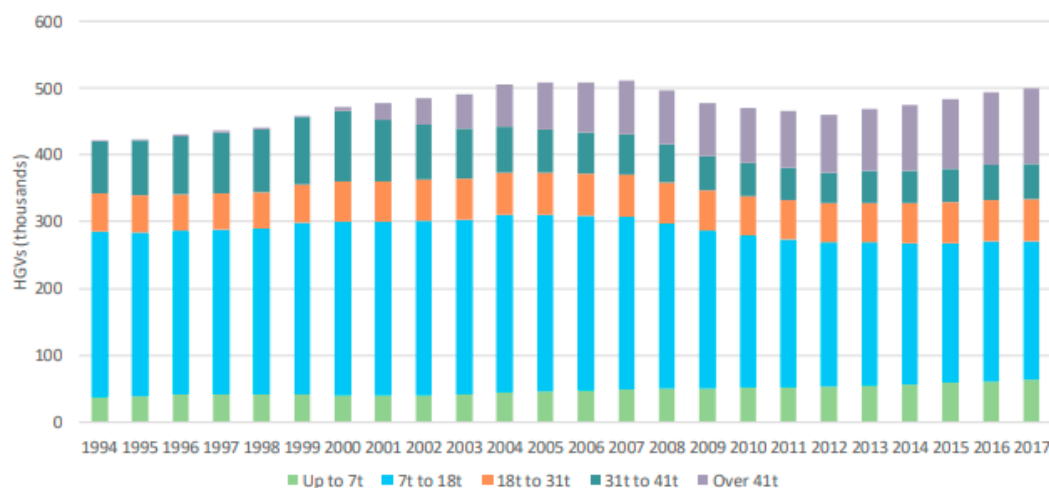
HGV road traffic forecasts

⁴⁴ RAC Foundation: Van Travel Trends in Great Britain

⁴⁵ Department for Transport: Road Traffic Forecasts 2018



Some of these changes may be attributable to the fact that freight is increasingly carried in larger HGVs. The share of freight carried in smaller rigid HGVs (under 17 tonne) decreased from 11% in 2000 to only 2% in 2017. The share of freight carried in larger rigid HGVs increased from 13% to 18% over the same period⁴⁶. Whilst these changes may help to reduce the number of HGVs on the road, they present challenges at the local level, particularly in many of the rural villages in Oxfordshire.



Proportion of UK freight carried by HGV weight class⁴⁷

Other factors that may be changing the way freight is moved are the rise of online shopping and changing customer expectations. In 2018 online sales comprised 18% of total UK retail sales, up from 16% in 2017⁴⁸. This growth has likely contributed the rise in LGVs and will continue to drive the number of LGVs in Oxfordshire.

Similarly, customer expectations have also changed, with there now being more demand for deliveries to be made in tight timescales. This presents a challenge for delivery services and can require more vehicles to be able to meet demand⁴⁹.

Pollution

As previously highlighted, transport is responsible for 27% of total UK greenhouse gas emissions. Road transport is responsible for 91% of transport emissions, with HGVs and vans producing 35% of road transport emissions⁵⁰.

With forecasts predicting an increase in freight miles, there is a need to address the impacts of freight on air quality in Oxfordshire. If unaddressed, this could lead to CO₂ emissions from freight transport increasing by around 20% by 2050⁵¹.

⁴⁶ The Value of Freight, Vivid Economics, 2019

⁴⁷ The Value of Freight, Vivid Economics, 2019

⁴⁸ Office of National Statistics (2018) Retail sales, Great Britain: October 2018

⁴⁹ McKinsey & Company (2014) Same-day delivery: The next evolutionary step in parcel logistics

⁵⁰ UK Government: The Road to Zero

⁵¹ The Value of Freight, Vivid Economics, 2019



Congestion

Freight is both impacted by and contributes to congestion. It is estimated that congestion delays HGV journeys by around 23% today, potentially rising to 35% by 2050⁵². Overall, it is estimated that the total cost of congestion to the UK freight system today is more than £6 billion.

Freight also contributes to congestion and this contribution could increase due to the projected rise in LGV and HGV miles. Options for reducing congestion are more limited for freight than for passenger vehicles. However, a range of options exist that we have explored as part of the Freight and Logistics Strategy.

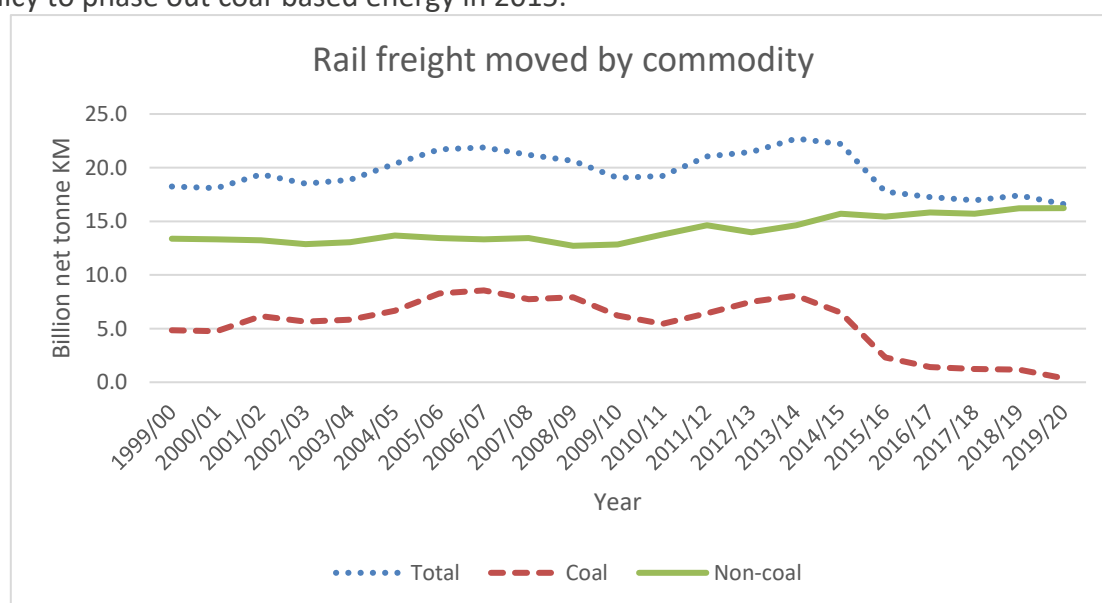
Freight movement in Oxfordshire

Evidence on freight movements and activity in Oxfordshire shows concentration of 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.

There are existing issues with freight vehicles that need to be addressed and new issues stemming from the growth of LGVs 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.

Rail freight

Rail currently accounts for approximately 9% of UK Freight movements⁵³. There has been a 25% decline in the amount of freight moved by rail since a peak in 2014/15. However, this can largely be attributed the Department for Business, Energy and Industrial Strategy's policy to phase out coal-based energy in 2015.



⁵² The Value of Freight, Vivid Economics, 2019

⁵³ UK Rail Factsheet 2019



The amount of non-coal commodities moved by rail freight has been steadily increasing since 2013/14. There has been an 11% increase in non-coal commodities carried by rail freight in this time period⁵⁴. This demonstrates the potential for increased rail freight movement for all commodities.

In 2018/19, 7 million road haulage journeys were avoided as a result of rail freight movements⁵⁵. This is equivalent to 1.6 billion road vehicle kilometres. Rail freight therefore helps to provide environmental benefits and reduce road congestion.

Summary

- Solutions will need to be found that balance freight issues with the need for an efficient network.
- How freight is moved is changing and LGV growth is projected to significantly increase. The impacts of these changes will need to be considered.
- There are opportunities to increase the use of rail freight and provide environmental benefits.

⁵⁴ Department for Transport: National Railways freight moved by commodity, annual from 1996/97

⁵⁵ Department for transport: Number of freight train movements, impacts on road haulage and Freight Performance Measure: annual from 2005/06

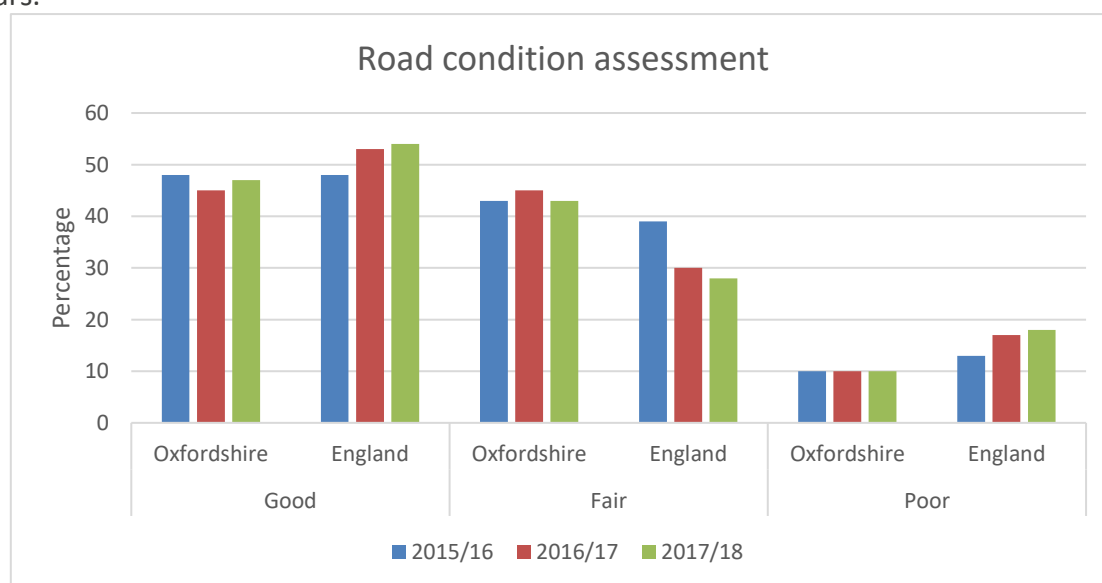


Highway maintenance

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%)⁵⁶. 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 National Highways.

The funding directed to highway maintenance capital works is £18 million per annum⁵⁷. It is estimated that it would cost around £240m to bring the network to an acceptable standard and would then require an annual 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.

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.

⁵⁶ Oxfordshire County Council: Highway Maintenance Factsheet Summer 2018

⁵⁷ Oxfordshire County Council Highways Asset Management Plan 2020 - 2021



Health

Obesity

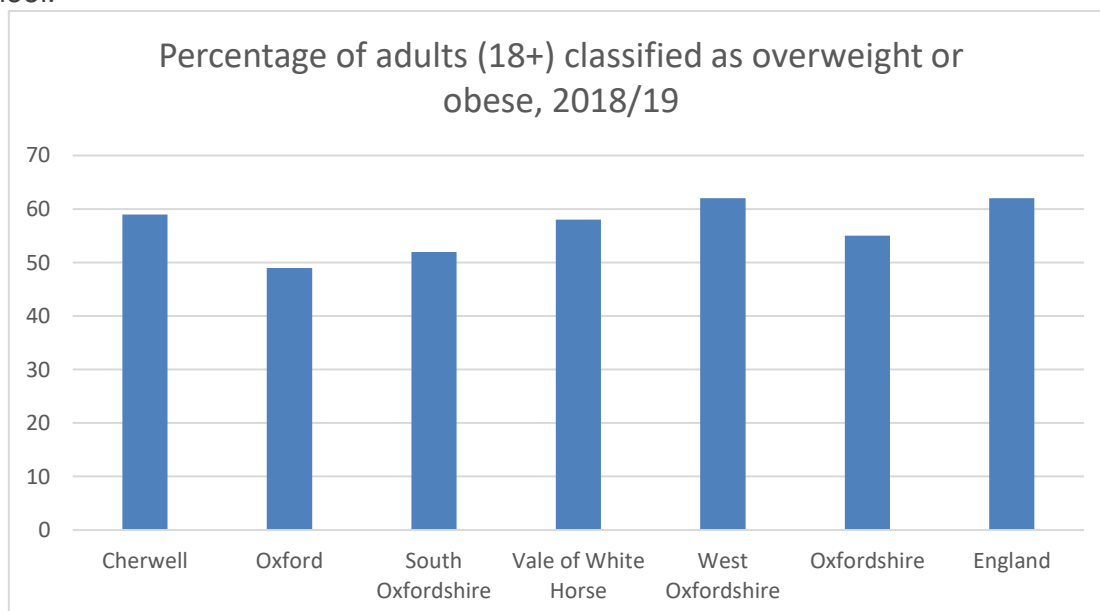
It is recognised that obesity is caused by a complex range of factors and is not directly related to transport. However, walking and cycling is one factor that can help to tackle obesity. It is therefore important that the LTCP recognises the challenges surrounding obesity in the county and encourages these modes.

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 2014/15⁵⁸. 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 55% of people aged 18 or over are classified as overweight or obese (2018/19), lower than the average for England (62%)⁵⁹. The percentage of adults classified as overweight or obese has remained similar in Oxfordshire since 2015.

However, the figures indicate that over half of adults are overweight or obese. There are also significant variations across the county, for example West Oxfordshire district is above the national average with an estimated 63% 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 2019/20 19% of reception children and 29% of Year 6 children were classified as overweight or obese⁶⁰. This suggests that overweight and obesity prevalence increases over the course of Primary School.



⁵⁸ Public Health England

⁵⁹ Public Health England Profiles

⁶⁰ Public Health England Profiles



Physical inactivity

In general, the more time spent being physically active the greater the health benefits. In 2019, Low Physical Activity caused 121 (2.2% of total) deaths and 676 years lived with disability (YLDs) in Oxfordshire, due to cardiovascular diseases, diabetes and kidney disease, and neoplasms⁶¹.

The percentage of adults in Oxfordshire meeting physical activity recommendations (73.6%) is higher than the national average (67.2%)⁶². Despite this 1 out of 4 adults are still not meeting the recommendations. There are also variations across the county, with West Oxfordshire having the lowest percentage (69.9%).

The number of children and young people meeting physical activity recommendations is also higher than the national average. In Oxfordshire 58.4% of children meet the 60 minute per day recommendation compared to 44.9% nationally⁶³. However, this figure means that approximately 37,600 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 walking and cycling.

Summary

- Obesity is below the national average but remains over 50%. Encouraging walking and cycling is one way the LTCP can help address this.
- Oxfordshire has above average levels of physical activity but there is still a need to further improve this through measures to encourage walking and cycling.

⁶¹ Institute for Health Metrics and Evaluation (IHME), GBD Compare

⁶² Public Health England Profiles

⁶³ Sport England, Active Lives Children and Young people Survey 2019/20



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.

Areas of Outstanding Natural Beauty

There are three Areas of Outstanding Natural Beauty (AONB) located wholly or partly within Oxfordshire (covering approximately 25% of the LTCP area):

- North Wessex Downs AONB (southern section of Oxfordshire, within the Vale of White Horse District and South Oxfordshire District)
- The Chilterns AONB (within the south eastern section of Oxfordshire, within South Oxfordshire District)
- The Cotswolds AONB (north western section of Oxfordshire, within West Oxfordshire District and Cherwell District).

Green Belt

The Revised NPPF (February 2019) states that the Green Belt is to prevent urban sprawl by keeping land permanently open. A large area encircling Oxford is designated as Green Belt.

There is approximately 1,287ha of Green Belt within Oxford City which equates to 28% of the administrative area of Oxford.

International and European designated sites

The Convention on Wetlands of International Importance (the Ramsar Convention) is the intergovernmental treaty that provides the framework for the conservation and wise use of wetlands and their resources.

Special Areas of Conservation (SACs) are designated under the European Habitats Directive (92/43/EEC) for containing habitats and species listed in Annex I and II of the Directive.

There are seven internationally designated conservation sites (all SACs) wholly or partly within Oxfordshire. These are:

- Aston Rowant SAC: One of the best remaining examples in the UK of lowland juniper scrub on chalk.
- Chilterns Beechwoods SAC: Beech forests on neutral to rich soils, stag beetle (*Lucanus cervus*), dry grassland and scrublands on chalk.
- Cothill Fen SAC: Largest surviving example of alkaline fen in central England, alder woodland on floodplains.
- Hackpen Hill SAC: Significant population of early gentian (*Gentianella anglica*), dry grasslands and scrubland on chalk.
- Hartslock Wood SAC: Yew woodland and chalk grassland supporting one of only three UK populations of monkey orchid (*Orchis simia*).



- Little Wittenham SAC: One of the best studied great crested newts (*Triturus cristatus*) sites in the UK.
- Oxford Meadows SAC: Lowland hay meadows including the larger of only two known sites in the UK for creeping marshwort (*Apium repens*).

Nationally designated sites

Sites of Special Scientific Interest (SSSI) are protected by law to conserve their wildlife or geology. Natural England is a statutory consultee on development proposals that might impact on SSSIs. There are 111 SSSIs wholly or mainly within Oxfordshire.

SSSIs are divided into one or more monitoring 'units'. Oxfordshire has 162 such units which contain habitats that support unusual or endangered flora, fauna or geological features. Of these sites 45% are listed as in 'Favourable' condition, 53% 'Recovering' and 2% 'Unfavourable'.

National Nature Reserves (NNRs) were established to protect some of England's most important habitats, species and geology, and to provide 'outdoor laboratories' for research. There are four NNRs located wholly or partly within Oxfordshire, specifically: Aston Rowant; Chimney Meadows; Cothill; and Wychwood.

Locally important sites

Local Nature Reserves (LNRs) may be established by Local Authorities in consultation with Natural England under Section 21 of the National Parks and Access to the Countryside Act 1949 and are habitats of local importance. There are 15 LNRs located wholly or partly within Oxfordshire:

- Abbey Fishponds (Vale of White Horse)
- Magdalen Quarry (Oxford)
- Adderbury Lakes (Cherwell)
- Mowbray Fields (South Oxfordshire)
- Bure Park (Cherwell)
- Rock Edge (Oxford)
- Crecy Hill (West Oxfordshire)
- Saltway (West Oxfordshire)
- Cuttle Brook (South Oxfordshire)
- The Slade (Cherwell)
- Ewelme Watercress Beds (South Oxfordshire)
- Tuckmill Meadows (Vale of White Horse); and
- Kirtlington Quarry (Cherwell)
- Watlington Chalk Pit (South Oxfordshire)
- Lye Valley (Headington)

There are many other important sites identified for their ecological and geological interest including 362 Local Wildlife Sites and 46 Local Geological Sites, 38 Conservation Target Areas, and 35 Road Verge Nature Reserves.



There are a variety of Biodiversity Action Plan (BAP) Priority Habitats located within or within proximity to Oxfordshire, primarily areas of deciduous woodland and ancient woodland, coastal and floodplain grazing marsh, and good quality semi-improved grassland.

The Thames Valley Environmental Records Centre contains records of protected or notable species within Oxfordshire⁶⁴. A total of 146 UK legally protected species have been recorded in the county with more than 260 species recognised as being a priority for conservation.

International heritage sites

Oxfordshire also has a rich heritage and archaeological resource. A World Heritage Site is a landmark or area which is selected by the United Nations Educational, Scientific and Cultural Organization (UNESCO) as having cultural historical, scientific or other form of significance. Oxfordshire contains one World Heritage Site, Blenheim Palace, which is located south of Woodstock in West Oxfordshire.

Listed buildings

Listing marks and celebrates a building's special architectural and historic interest, and also brings it under the consideration of the planning system, so that it can be protected for future generations.

A significant number of nationally listed buildings are present in the Oxfordshire. The number of Grade I, Grade II and Grade III listed buildings in each Local Planning Authority area is as follows:

Local planning authority area	Grade I	Grade II	Grade III
Cherwell	39	102	2195
Oxford	199	80	906
South Oxfordshire	61	180	3054
Vale of White Horse	44	128	2014
West Oxfordshire	42	214	2948

Scheduled monuments

A scheduled monument is an archaeological site of national importance which is included in the Schedule of Monuments kept by the Secretary of State for Digital, Culture, Media and Sport. There are 311 scheduled monuments in Oxfordshire.

Other designated sites

There are a range of other nationally and locally designated sites in the county. This includes 55 Registered Parks and Gardens, 242 Conservation Areas and 2 historic battlefields.

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.

⁶⁴ TVERC (2021): 'Thames Valley Environmental Records Centre', [online] available to access via: <http://www.tverc.org/cms/>



Rivers and canals

Water resources

The water resources located within and within proximity to Oxfordshire include the River Thames and its tributaries (Leach, Windrush, Evenlode, Glyme, Cherwell, Ray (Oxon), and Ock), small streams and brooks, along with several drainage ditches and small pools located within and adjacent to field margins.

Oxfordshire also has two canals: Oxford Canal (which is navigable and fully open) and Wiltshire & Berkshire Canal (which is in the early stages of restoration from a derelict state).

The Oxford Canal runs from Banbury to Oxford where it connects at two points with the River Thames. At intervals along its course it uses the River Cherwell as the navigational route.

The Wiltshire & Berkshire Canal runs from Abingdon to the county border near Shrivenham and will eventually link with the navigable Kennet and Avon Canal at Semington, near Trowbridge. Both canals form linear habitats linking natural or managed wildlife areas.

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.

Water quality

Oxfordshire is within the Thames River Basin District, including the following Management Catchments: Cherwell and Rey (northern Oxfordshire); Cotswolds (north western Oxfordshire); Gloucestershire and the Vale (central and western Oxfordshire); Kennet and Trib (southern Oxfordshire); and Thames and Chilterns South (eastern Oxfordshire). A summary of the water quality within the River Basin District is provided below:

Number of water bodies	Ecological status or potential					Chemical status	
	Bad	Poor	Moderate	Good	High	Fail	Good
498	19	116	333	30	0	498	0

Summary

- Oxfordshire is home to a range of water resources which offer opportunities for the LTCP and are also negatively affected by the impacts of transport.



Population

Population growth

Oxfordshire has a population of 691,667 according to the latest Office for National Statistics mid-year estimates⁶⁵. 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 males⁶⁶ and 347,637 females⁶⁷. There is also a relatively equal age distribution in the county as seen on the age structure diagram overleaf.

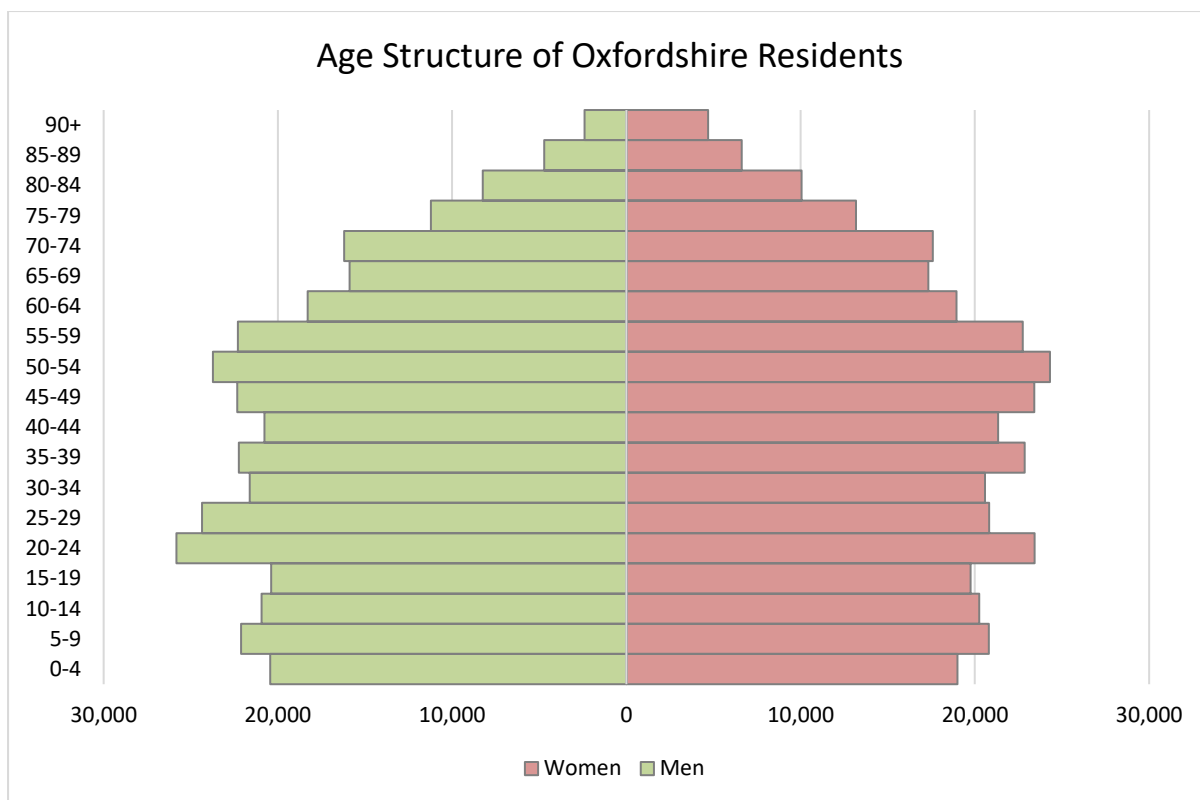
Those aged 20-24 make up the largest age group in the county with 49,251 residents (14.2% of the population). However, despite this group being the largest single age group, Oxfordshire has an ageing population. The 50-54 age group makes up the second largest age group with 48,042 residents and those 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.

⁶⁵ Office for National Statistics: Mid-year Population Estimates

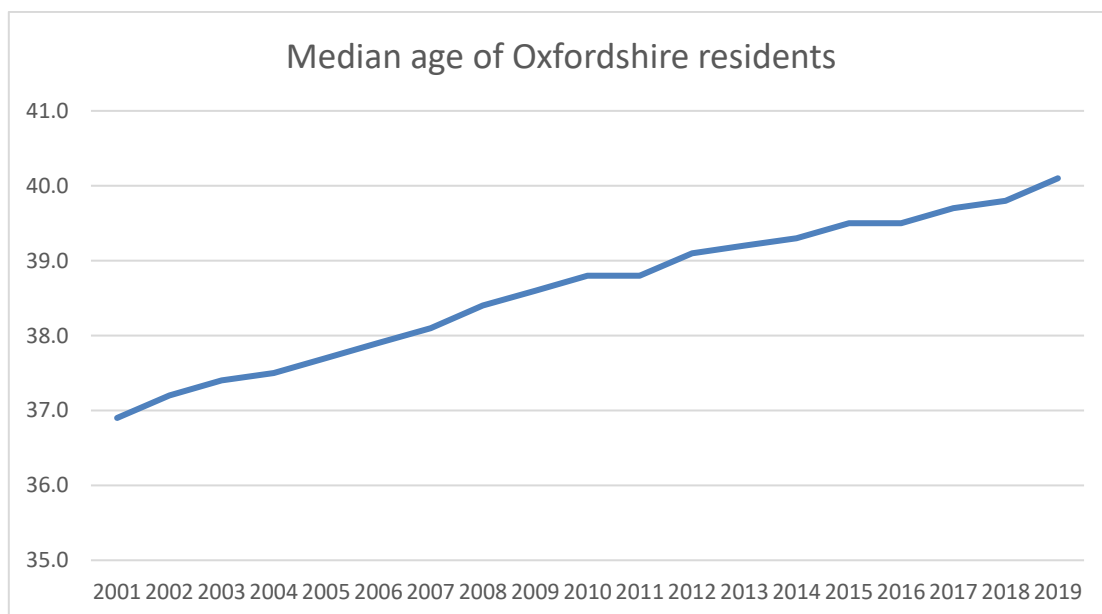
⁶⁶ Office for National Statistics: Population estimates: Males by single year of age and sex for local authorities in the UK, mid-2019

⁶⁷ 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 2001⁶⁸. 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.



⁶⁸ 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)⁶⁹

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 81.7 compared to the national average of 79.8 and has increased by 1.6 years since 2009⁷⁰. For women the life expectancy at birth is 85 which is again higher than the national average of 83.4 and has increased by 1.1 years since 2009.

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 the combined years 2017 to 2019 shows that for males there was a gap of almost 7 years between the most and least deprived areas. For females the gap was just under 5 years⁷¹.

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.

⁶⁹ Office for National Statistics: Population in England and Wales by ethnic group: 2016

⁷⁰ Office for National Statistics: Health state life expectancy, all ages, UK

⁷¹ Public Health England: [Health inequalities dashboard](#)



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 2014⁷².

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
- 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.

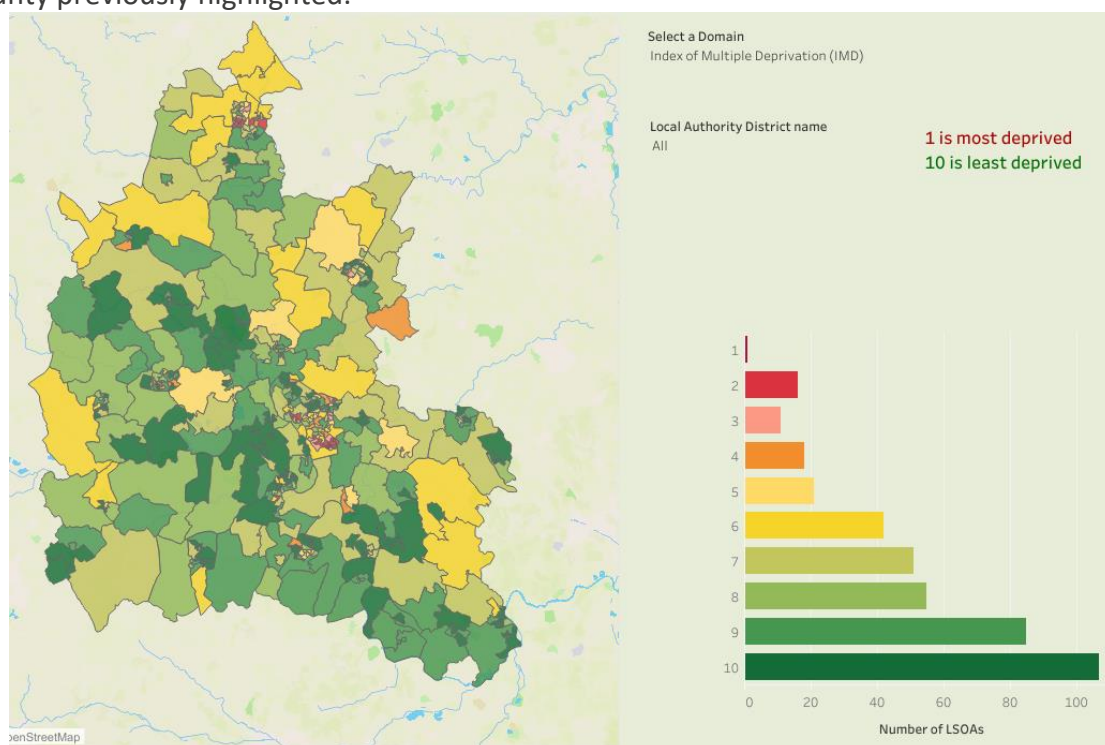
⁷² Chatterjee, K., Goodwin, P., Schwanen, T., Clark, B., Jain, J., Melia, S., Middleton, J., Plyushteva, A., Ricci, M., Santos, G. and Stokes, G. (2018). Young People's Travel – What's Changed and Why? Review and Analysis. Report to Department for Transport. UWE Bristol, UK.



Deprivation

According to the Indices of Multiple Deprivation (IMD) Oxfordshire is the 10th 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 ranked⁷³.

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.



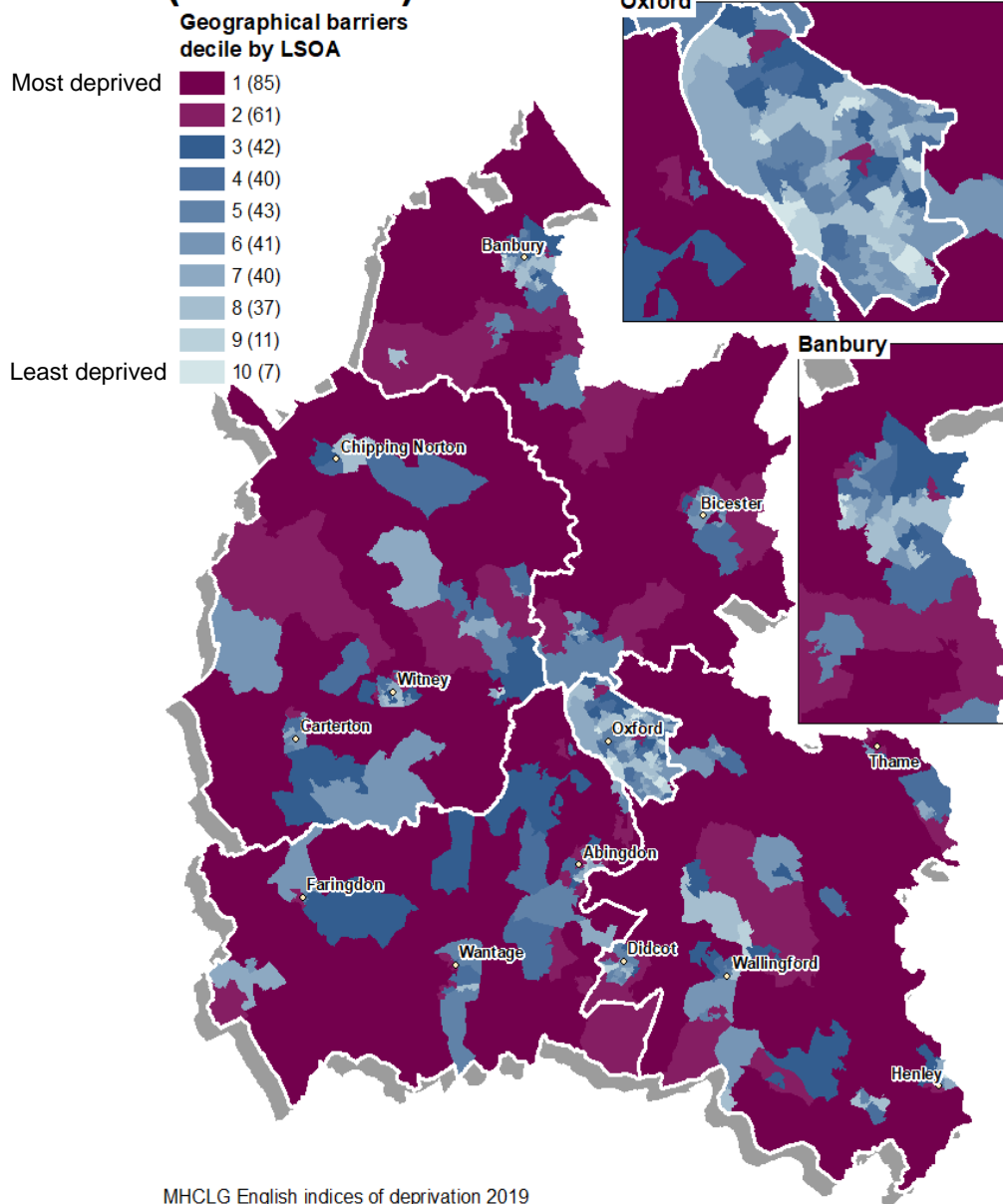
Deprivation across Oxfordshire (green is least deprived, red most deprived)

Of close relevance to the LTCP is the Geographical Barriers to Services deprivation domain, which considers the accessibility of residents to local services. As highlighted by the deprivation map below, many of the rural areas of Oxfordshire suffer disproportionately from this type of deprivation. Oxfordshire currently performs poorly in this respect. Overall, 21% of the total population live within areas that are ranked within the worst 10% of areas nationally.

⁷³ Ministry of Housing, Communities & Local Government: English indices of deprivation 2019



Geographical Barriers to Services (IMD 2019)



Deprivation across Oxfordshire: Geographical Access to Services domain⁷⁴

Summary

- Overall Oxfordshire has low levels of deprivation, however there are pockets of deprivation in the county.
- Many of the rural areas of Oxfordshire suffer disproportionately from Barriers to Housing and Services deprivation.

⁷⁴ English indices of deprivation 2019 - GOV.UK (www.gov.uk)

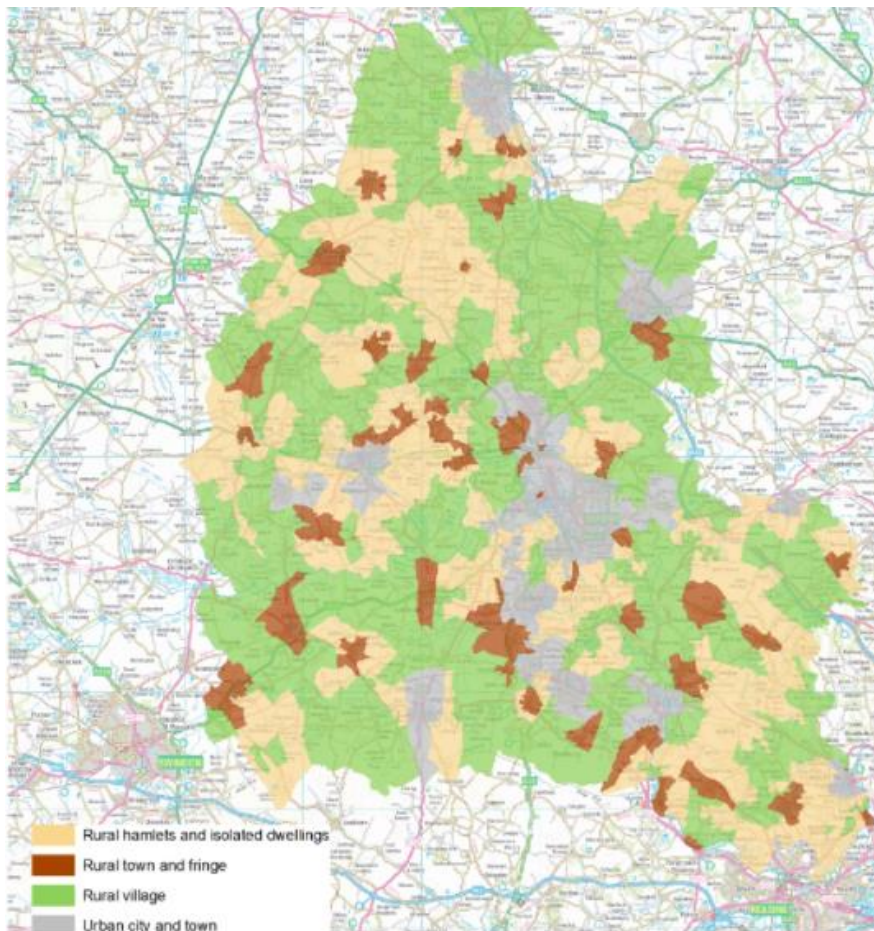


Urban vs rural

Oxfordshire has a relatively notable rural urban divide. Approximately 55% of the county's population live in rural areas and hub towns with the remaining 45% living in the county's urban areas⁷⁵. 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 census⁷⁶. 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.

Map of Rural Urban Classification in Oxfordshire



There are significant variations in the rural population between districts in Oxfordshire. The below table shows the amount of each districts population which was classified as rural related in the 2011 census.

⁷⁵ Office for National Statistics: Rural Urban Classification (2011) of counties in England

⁷⁶ [Local Enterprise Partnership detailed rural urban maps: Census 2011](#)



District	Total rural population	Total hub town population	Total rural related population	Percentage of total population
Oxford	1,872	0	1,872	1.2%
Cherwell	43,542	15,829	59,371	41.8%
Vale of White Horse	46,866	21,548	68,414	56.5%
South Oxfordshire	67,005	59,469	126,474	94.2%
West Oxfordshire	59,312	45,467	104,779	100%

As highlighted in the previous section, rural areas of Oxfordshire suffer disproportionately from Barriers to Housing and Services deprivation. They therefore suffer from poorer access to services.

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.



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 2006⁷⁷. 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 billion⁷⁸.

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 below⁷⁹.

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

⁷⁷ OxLEP: Oxfordshire Local Industrial Strategy 2019

⁷⁸ Oxfordshire County Council Corporate Plan

⁷⁹ OxLEP: Oxfordshire Local Industrial Strategy: The Investment Plan



	<ul style="list-style-type: none"> • Digital health • Quantum computing • Global CBD
Culham Science Park	<ul style="list-style-type: none"> • Fusion energy • Robotics and autonomous systems

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%⁸⁰ 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. However, as highlighted previously, 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 2040⁸¹. 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.

⁸⁰ OxLEP: Oxfordshire Local Industrial Strategy 2019

⁸¹ OxLEP: Oxfordshire Local Industrial Strategy 2019



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 county⁸².

Currently 10% 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.

⁸² Oxfordshire Digital Infrastructure Strategy



Future housing and jobs

Local Plans

In 2014 the evidence showed we needed an additional 100,000 homes by 2031. In support of this, each Oxfordshire district committed through the Oxfordshire Housing & Growth Deal to submitting a Local Plan for examination.

Local plans guide future growth and outline future sites that are permitted for housing and employment development. The districts are at different stages of this process; however, each authority is well on the way to producing a Local Plan covering the period up to between 2031 and 2036.

Current development proposals as identified in the district councils' local plans are summarised in this section.

Oxfordshire Plan

In support of this future growth, the district councils in Oxfordshire are also 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 Oxfordshire Plan builds on the foundations set by the current and emerging Local Plans and looks beyond them, at the strategic planning issues for the period up to 2050. It will give districts a framework for future planning policies and help determine planning applications where appropriate.

The Plan will not allocate sites for housing or employment. Instead, it will identify key areas for sustainable growth with associated housing / employment numbers, while considering how to help tackle climate change, improve water efficiency and mitigate flood risk. Districts will then use this to produce future Local Plans which will provide a detailed view of how housing and infrastructure will be delivered, and how they will address the climate emergency.

Cherwell District Council Local Plan⁸³

Strategic employment sites

Site	Employment area (gross) (ha)
Bicester	
North-west Bicester eco-town	10
Gravern Hill	26
Bicester Business Park	29.5
Bicester Gateway	18
Employment land at North East Bicester	15

⁸³ <https://www.cherwell.gov.uk/info/83/local-plans/376/adopted-cherwell-local-plan-2011-2031-part-1>



LTCP Baseline report

South East Bicester	40
Banbury	
Employment land west of M40	35
Employment land north-east of junction 11	13
Rural areas	
Former RAF Upper Heyford	Approx. 120,000 sq. metres

Proposed strategic housing allocations

Site	Total number of homes 2014-2031
Bicester	
North West Bicester (Eco-Town)	3,293 (further 2,707 after 2031)
Graven Hill	2,100
South West Bicester Phase 2	726
South East Bicester	1,500
Gavray Drive	300
Banbury	
Canalside Banbury	700
Southam Road	600
West of Bretch Hill	400
Bankside Phase 2	600
North of Hanwell Fields	544
Bolton Road	200
South of Salt Way - West	150
South of Salt Way - East	1,345
Drayton Lodge Farm	250
Higham Way	150
Other notable sites	
South West Bicester Phase 1	1,742
Bankside Phase 1	1,090
Former RAF Upper Heyford	2,361

Overall Distribution of Housing in the Local Plan

	2011-2031	2014-2031
Bicester	10,129	9,764
Banbury	7,319	7,106
Rest of Cherwell	5,392	4,864
Total	22,840	21,734

West Oxfordshire District Council Local Plan⁸⁴

Strategic employment sites

Site	Employment area (gross) (ha)
Witney	
West Witney urban extension	10
Downs road	8

⁸⁴ <https://www.westoxon.gov.uk/localplan2031>



Carterton	
Land at Ventura Park	4.5
Land east of Monahan Way	15
Chipping Norton	
Land East of Chipping Norton Strategic Development Area	5
Oxfordshire Cotswolds Garden Village	
Campus-style 'science park'	40
Rural areas	
Existing commitments	5

Proposed strategic housing allocations

Site	Total number of homes 2011-2031
Witney	
Land to the east of Witney	450
Land to the north of Witney	1,400
Chipping Norton	
Land to the east of Chipping Norton at Tank Farm	1,200
Eynsham	
Land west of Eynsham	1,000

Overall Distribution of Housing in the Local Plan

	2011-2031
Witney	4,702
Carterton	2,680
Chipping Norton	2,047
Eynsham-Woodstock	5,596
Burford-Charlbury	774
Total	15,950

South Oxfordshire District Council Local Plan⁸⁵

Strategic employment sites

Site	Employment area (gross) (ha)
Didcot	
Southmead Industrial Estate	2.92
Milton Park	6.5
Henley-on-Thames	
Sites to be identified in the NDP	1
Thame	
Sites to be identified in the NDP	3.5
Wallingford	
Sites to be identified in the NDP	3.1
Hithercroft Industrial Estate	1.09

⁸⁵ <https://www.southoxon.gov.uk/south-oxfordshire-district-council/planning-and-development/local-plan-and-planning-policies/local-plan-2035/adopted-local-plan-2035/>



Crowmarsh Gifford	
Sites to be identified in the NDP	0.28
Culham	
Culham Science Centre	7.3
Chalgrove	
To be allocated in accordance with STRAT7	5
To be allocated in accordance with EMP9	2.25
Berinsfield	
To be allocated in accordance with the regeneration strategy	5
Grenoble Road	
Extension to Oxford Science Park	10

Proposed strategic housing allocations

Site	Total number of homes 2011-2035
Chalgrove	
Chalgrove airfield	2,105
Culham	
Land adjacent to Culham science centre	2,100
Berinsfield	
Land at Berinsfield Garden Village	1,700
Grenoble Road	
Land south of Grenoble Road	2,480
Northfield	
Land at Northfield	1,800
Bayswater Brook	
Land north of Bayswater Brook	1,100
Wheatley	
Land at Wheatley Campus	500

Overall Distribution of Housing in the Local Plan

	2011-2035
Didcot	6,339
Oxford (unmet needs)	5,380
Chalgrove	2,105
Culham	2,100
Berinsfield	1,700
Thame	1,518
Henley-on-Thames	1,285
Wallingford	1,070
Wheatley	500
Nettlebed, Sonning Common, Woodcote	257
Total	23,550



Vale of White Horse District Council Local Plan⁸⁶

Strategic employment sites

Site	Employment area (gross) (ha)
Milton	
Milton Park	28
Harwell	
Harwell Campus (enterprise zone)	93
Harwell Campus (outwith enterprise zone)	35
Grove	
Monks Farm	6
Didcot	
Didcot A	29
Faringdon	
South of park road	3

Proposed strategic housing allocations

Site	Total number of homes 2011-2031
Abingdon-on-Thames	
North of Abingdon-on-Thames	800
North-West of Abingdon-on Thames	200
Kingston Bagpuize with Southmoor	
East of Kingston Bagpuize with Southmoor	280
Radley	
North-West of Radley	240
South of Kennington	270
Wantage	
Crab Hill	1,500
Grove	
Grove airfield	2,500
Monks Farm	885
Harwell and Milton Parishes	
Valley Park	2,550
North-west of Valley Park	800
West of Harwell	200
Milton Heights	400
Sutton Courtenay	
East of Sutton Courtenay	220
Faringdon	
Land South of Park Road, Faringdon	350
South-West of Faringdon	200
Great Coxwell Parish	
East of Coxwell Road Faringdon	200
South of Faringdon	200
Shrivenham	

⁸⁶ <https://www.whitehorsedc.gov.uk/vale-of-white-horse-district-council/planning-and-development/local-plan-and-planning-policies/local-plan-2031/>



LTCP Baseline report

North of Shrivenham	500
Stanford-in-the Vale	
West of Stanford in-the-Vale	200

Overall Distribution of Housing in the Local Plan

	2011-2031
South-East Vale (including Wantage, Grove, Harwell, Milton)	12,450
Abingdon-on-Thames and Oxford Fringe	5,438
Western Vale (including Faringdon, Shrivenham, Stanford-in the-Vale)	3,173
Total	20,560

Oxford City Council Local Plan⁸⁷

Employment sites for development

Site	Site area (gross) (ha)
Unipart	30.63
MINI Plant Oxford	82.13
The Oxford Science Park	27.1
Oxford Business Park	35.4
Churchill Hospital Site	22.73
Littlemore Park	5.44
John Radcliffe Hospital site	27.75

Proposed site allocations

Site	Total number of homes 2016-2036
West End and Osney Mead area of change	
Sites in the West End	734
Osney Mead	247
Cowley Centre District Centre area of change	
Cowley Centre	226
Blackbird Leys area of change	
Blackbird Leys Central Area	200
Summertown District Centre area of change	
Summer Fields School Athletics Track	120
Diamond Place and Ewert House	160
Cowley Branch Line area of change	
Sandy Lane Recreation Ground and Land to the Rear of the Retail Park	120
Northfield Hostel	30
Edge of Playing Fields, Oxford Academy	20
Kassam Stadium Sites	150
Knights Road	80
Marston Road area of change	
Government Buildings and Harcourt House	70
Headington Hill Hall and Clive Booth Student Village	200

⁸⁷ https://www.oxford.gov.uk/info/20067/planning_policy/1311/oxford_local_plan_2016-2036



Sites released from Green Belt	
Marston Paddock	39
St Frideswide Farm	125
Hill View Farm	110
Land west of Mill Lane	75
Park Farm	60
Pear Tree Farm	122
Land East of Redbridge Park & Ride	162
St Catherine's College Land	31
Other sites	
Banbury Road University Sites	60
Bertie Place Recreation Ground and Land Behind Wytham Street	30
Cowley Marsh Depot	80
Faculty of Music, St Aldates	40
Former Barns Road East Allotments	25
Former Iffley Mead Playing Fields	84
Grandpont Car Park	22
Jesus College Sports Ground	28
Land at Meadow Lane	29
Lincoln College Sports Ground	90
Littlemore Park	270
Thornhill Park	534
Oriel College Land at King Edward Street and High Street	7
Oxford Brookes University Marston Road Campus	59
Oxford University Press Sports Ground	130
Pullens Lane	11
Radcliffe Observatory Quarter	48
Summertown House, Apsley Road	20
Union Street Car Park	20
University of Oxford Science Area and Keble Road Triangle	20
Valentia Road Site	12
West Wellington Square	18
Bayards Hill Primary School Part Playing Fields	30
William Morris Close Sports Ground	82

Summary

- There is a significant amount of housing growth proposed in the county which the LTCP will take account of and seek to influence.

