**Connecting Oxfordshire:
Local Transport Plan 2015-2031**

Volume 1: Policy & Overall Strategy

CONTENTS

Other documents forming part of *Connecting Oxfordshire*

Document	Status
Area and Route Transport strategies • Oxford • Science Vale • Banbury • Bicester • Witney • Carterton • A420	Published alongside this document
Science Transit Strategy	Published alongside this document
Bus Strategy	Published alongside this document.
Rail Strategy	Published alongside this document
Cycling Strategy	Published alongside this document.
Freight Strategy	Published alongside this document.
A40 Strategy	In development – publication for consultation expected 2015
A420 Strategy	Published alongside this document
Highways Asset Management Plan	Adopted September 2014
Oxfordshire Rights of Way Management Plan	Adopted November 2014

1. Foreword

Oxfordshire is a prosperous and vibrant county, combining a successful, thriving economy with a high quality environment. It is the most rural county in southeast England, and yet is a world leader in innovation and enterprise in areas including scientific and energy research, international publishing, bio-technology, car manufacture and motor sport industries.

Current forecasts are for over 85,000 new jobs and 100,000 new homes in the county by 2031. Major development areas identified include Science Vale and Oxford, while Bicester has recently been awarded 'Garden Town' status. We are now working with partners in Buckinghamshire and Northamptonshire to develop a Tri-Counties alliance, England's Economic Heartland, to seek devolved powers from the Government that will help us growth further and faster. Together, this growth will have a significant impact on our transport network, with an ever increasing number of people and goods needing to use it. Given the existing pressures on the network and the scale of growth we are anticipating, we cannot rely on small, short-term solutions; more radical solutions are required to transform transport in Oxfordshire for its people and growing economy over the next twenty years and beyond.

Connecting Oxfordshire is our new Local Transport Plan (LTP4) setting out our proposed transport solutions for the county up to 2031, with ambitions beyond that in some cases. It has been informed by public feedback received in response to a series of public meetings and two public consultations in summer 2014 and spring 2015, as well as detailed discussions with a wide range of stakeholders.

You will notice that during this LTP4 period, we have a huge challenge to enable people to make the journeys they need to as the population grows, and avoid damage to the economy caused by severe congestion, as well as to protect the environment. So there needs to be a significant shift away from dependence on private cars, towards more people using forms of transport that use less road capacity and damage the environment less – where possible walking, cycling, or using public transport. Our aim is to make this happen by transforming travel by these means, supported by innovation. Our strategy seeks to make this more possible and more attractive, for more people, particularly on our busiest routes.

We need to make these other forms of transport equally if not more attractive than using the car, for the majority of people. This is not going to be easy: it requires us to consider some radical solutions as well as smaller-scale improvements, which I believe will make a huge positive impact on people's lives and provide a firm, future-proofed foundation for economic growth and prosperity for Oxfordshire's residents.

Councillor Ian Hudspeth,
Leader, Oxfordshire County Council

2. Executive Summary

Connecting Oxfordshire, our new Local Transport Plan (LTP4), sets out Oxfordshire County Council's policy and strategy for developing the transport system in Oxfordshire to 2031. We have developed it with input from Oxfordshire's district and city councils, its businesses, MPs, stakeholder groups and through public consultation. It fits our highest level strategic aims, as set out in *Oxfordshire 2030*, our Sustainable Community Strategy. It takes into account the plans and ambitions of the Oxfordshire Local Enterprise Partnership in its Strategic Economic Plan (SEP) for Oxfordshire and the aspirations of the England's Economic Heartland Tri-Counties alliance, and so identifies transport schemes that will support the Knowledge Spine growth area. *Connecting Oxfordshire* is nonetheless a plan for the whole county; it also sets out our policy priorities for parts of the county less affected by the Knowledge Spine, thereby providing a basis for securing transport improvements to support development countywide.

Connecting Oxfordshire has been developed with these over-arching transport goals:

- To support jobs and housing growth and economic vitality;
- To reduce transport emissions and meet our obligations to Government;[1]
- To protect, and where possible enhance Oxfordshire's environment and improve quality of life; and
- To improve public health, air quality, safety and individual wellbeing

To achieve these, we have developed ten objectives for transport, set out in Table 1. These are set within three themes, upon which we have based the structure of the policy section of this document. The objectives guide the area and route strategies and the bus, cycle and freight strategies that follow the policy section. This executive summary is not a substitute for, nor does it derogate from, the policies, strategies and text set out in the main document.

Context

Oxfordshire is experiencing economic growth. Its economy is recognised as one of the best performing in the UK and its contribution to the UK economy is well above average. For example, Workplace Gross Value Added per head averaged £28,767 in Oxfordshire in 2013, compared to the UK average of £23,755. It provides a high-performing home for start-up businesses and innovation, as recent studies have demonstrated. Meanwhile, its population is rising: it was home to around 666,000 people in 2013, a figure that had grown by over 10% in the past decade. Economic and population growth is due to continue: the SEP programmes a growth in Oxfordshire of 100,000 homes and over 85,000 jobs.

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[1] As outlined in *Creating Growth, Cutting Carbon: Making Sustainable Local Transport Happen,* DfT, 2011

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Although Oxfordshire's transport system continues to be upgraded, it will face a major challenge to cope with the number of new homes and jobs expected in the county over the coming years by the SEP. Public transport is currently crowded in many areas and roads are congested, especially in the peak hours. Many of our urban areas have poor air quality and climate change is an issue that we need to address. We need to undertake this in a climate of uncertain central Government funding and therefore a need to identify new, innovative ways of solving transport problems and of resourcing projects, working with businesses, researchers and the public in Oxfordshire through our Science Transit Strategy.

Supporting growth and economic vitality

Connecting Oxfordshire supports the SEP, the economic growth strategy for the county. Peak time travel to work is prioritised for attention, because it presents the greatest challenge to transport networks and is vital for the economy. We need innovative and traditional approaches to provide transport improvements to tackle congestion and provide new connections between homes and jobs. We will work to ensure that the transport network supports sustainable economic and housing growth in the county, whilst protecting our environmental and heritage assets, and supporting the health and wellbeing of residents.

Oxfordshire, Buckinghamshire and Northamptonshire have set out a proposal for a three-county strategic alliance to harness the economic potential of the area by taking a co-ordinated approach to planning for and delivery of strategic infrastructure. This establishes a strategic leadership in the counties and among the LEPs targeted at addressing barriers to economic growth. The Government's commitment to devolution provides the opportunity to seek a new regional Growth Deal through which we can implement a new delivery model: one which brings together a range of powers, responsibilities and resources in a way previously unseen. We are currently developing our Tri-Counties proposal so that it is of the greatest potential for residents and businesses across the region and gives us the potential to lead investment in infrastructure in the area.

We will use *Connecting Oxfordshire* to seek external funding to support the delivery of transport infrastructure priorities as set out in the Strategic Economic Plan and forthcoming Infrastructure Delivery Plan. We will work in partnership with the Local Enterprise Partnership, district councils, Highways England and developers to meet the objectives of this plan and we will seek to influence and support the development of Neighbourhood Plans with a view to consistency with this plan.

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Goal	Theme and section in *Connecting Oxfordshire*	Objective
To support jobs and housing growth and economic vitality	Supporting growth and economic vitality	Maintain and improve transport connections to support economic growth and vitality across the county
		Make most effective use of all available transport capacity through innovative management of the network
		Increase journey time reliability and minimise end-to-end public transport journey times on main routes
		Develop a high-quality, innovative and resilient integrated transport system that is attractive to customers and generates inward investment
To support the transition to a low carbon future	Reducing emissions	Minimise the need to travel
		Reduce the proportion of journeys made by private car by making the use of public transport, walking and cycling more attractive
		Influence the location and layout of development to maximise the use and value of existing and planned sustainable transport investment
		Reduce per capita carbon emissions from transport in Oxfordshire in line with UK Government targets
To support social inclusion and equality of opportunity To protect and where possible enhance Oxfordshire's environment and improve quality of health To improve public health, safety and individual wellbeing	Improving quality of life	Mitigate and wherever possible enhance the impacts of transport on the local built, historic and natural environment
		Improve public health and wellbeing by increasing levels of walking and cycling, reducing transport emissions, reducing casualties and enabling inclusive access to jobs, education, training and services

Table 1: Connecting Oxfordshire's *goals and objectives*

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We will work with partners to introduce enhancements to road capacity on strategic roads suffering from congestion and delays. We will work with Highways England to implement schemes to improve key junctions and traffic management on the A34, the key north-south road in our county, although we recognise that a longer-term solution is needed to congestion on the road to accommodate planned development and trip growth. The early years of this plan will see work on the Oxford to Cambridge expressway proposals, including on and off-line solutions for the A34.

We are developing a series of improvements to the A40 for implementation during this plan. This includes a new park & ride site at Eynsham and new eastbound bus lane from the site travelling towards Oxford. This will intercept car traffic west of Oxford Meadows and prevent congestion and pollution increasing on this stretch of the A40. We are also consulting on more comprehensive options for improving transport between Oxford and Witney.

The A420 is another important principal route running through our county, linking Oxford with Swindon, which operates over capacity at peak time, and we have developed a strategy to address this and future development proposed in Oxfordshire and neighbouring Swindon.

Congestion is not limited to the strategic road network; it is a problem throughout much of the county and in growth areas. The area strategies for Oxford, Science Vale, Bicester, Banbury, Witney and Carterton in *Connecting Oxfordshire* volume 2 outline local transport improvements that may be required to accommodate the development identified for those areas and support Local Plans.

If we continue to see the same proportion of sole-occupancy car journeys in the future, we will simply not be able to accommodate the trips that people want to make. Through our involvement in strategic planning, we will seek to ensure that the provision of infrastructure to support sustainable travel is a key criterion in identifying future areas of growth. We will seek to minimise the need for additional road infrastructure, but where required, the investment is planned and delivered in the most sustainable manner. With housing located close to jobs, shops and schools, we can reduce the need to travel, encourage people to walk or cycle to work and offer frequent, reliable, efficient, high quality public transport links. If this is offered, the car will not be perceived as the default means of transport. We will support measures that make more efficient use of transport network capacity and encouraging a greater proportion of journeys to be made on foot, by bicycle, or by public transport.

It is also vital that freight journeys are made using suitable routes and with minimal environmental impact and that we support initiatives to increase the proportion of freight carried by rail; we have developed a freight strategy which aims to improve the transport of freight within and through Oxfordshire, while reducing the impact of Heavy Goods Vehicles (HGVs) on communities.

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Our transport strategy relies on public transport being attractive enough to offer an alternative to the private car on journeys across Oxford outside of the city centre; for travel within other towns; and on inter-urban journeys. To achieve this it will need to be very high-quality, easy to use and offer seamless integration on journeys involving different types of transport. Our LTP4 includes:

- Our **Science Transit Strategy**, which defines both our high-level vision and outline roadmap for the development of better-integrated, high-quality mobility systems across Oxfordshire, while promoting projects promoting innovation in mobility and integrated transport delivery, including the Oxfordshire Journey Planner;
- Our **Bus Strategy**, which sets out how we will work to improve the county-wide bus network, developing rapid transit services along the busiest routes, upgrading Premium services in the county and developing the wider bus network;
- An updated **Rail Strategy** setting out our ambition and priorities for rail investment in partnership with Network Rail and train operators. This was informed by a rail demand forecasting exercise by the Council in 2013, which forecast an increase in passenger demand by 68% to 2026, most of the growth being generated by new rail investment. Better integration of rail and strategic bus networks and enhancing access to local rail stations by the provision of cycle parking are also improvements we will seek; and

Our LTP4 also supports access to, and development of, air travel services and facilities to support economic growth across the county, including promoting connections to Heathrow and supporting growth at London Oxford Airport.

In some cases, making public transport more attractive will not be enough alone to meet demand and the introduction of a workplace parking levy or other constraint may be necessary, as part of a wider programme of walking, cycling and public transport improvements. The Oxford Transport Strategy sets out proposals for this. We will manage the parking under our control and work with district and city councils to ensure that overall parking provision and controls support the objectives of local communities and this plan.

Keeping Oxfordshire's road and transport infrastructure in good condition is important for the county's economy. While potholes can cause damage to cars, they also can make bus journeys extremely uncomfortable and are a hazard to road users on two wheels. Poorly maintained footways can discourage people from walking, or even cause injuries. We will target new investment and maintain transport infrastructure to minimise long-term costs, publishing our policy on prioritisation of maintenance activity in the Highways Asset Management Plan.

Reducing emissions

We will seek to ensure that the location, layout and design of new developments minimise the need to travel. Approximately 12% of people in Oxfordshire work mainly from home and there is clearly potential for this to increase. We are working in partnership with the Government and BT to bring high-speed broadband to 90% of homes and businesses by the end of 2015 and we will continue to make this a priority for new developments.

Walking is a healthy, free, and zero emission form of transport. It can be built into every journey, whether from origin to destination or to travel to bus stops and rail stations, and provides significant health benefits. In area strategies we will review walking networks and improve routes with the greatest potential for increasing the numbers of people walking, particularly where enhancing the pedestrian environment would improve accessibility, support economic growth, reduce car use and make routes safer for all users, as well as enhancing the pedestrian environment.

Cycling is also zero emission, so where trips by bike replace vehicle trips, this helps to reduce emissions overall. Cycling also has huge health benefits, so increasing the proportion of people who cycle regularly will help to address the problems of obesity and ill health related to inactivity. Our cycling strategy and the individual area cycling strategies developed or under development set out our ambitions and proposals for this area.

We will ensure that new development adheres to the principles and philosophy set out in DfT's *Manual for Streets* and supplementary *Manual for Streets 2* as well as to subsequent guidance which the OCC intends to publish. In residential areas this will include restrictions on parking, lower speed limits where appropriate, flexible street design and more through routes for pedestrians and cyclists than for motor vehicles. We will ensure that travel plans for new developments include measures to increase walking and cycling, and that these travel plans are implemented and enforced. We will carry out targeted safety improvements on walking and cycling routes to school, to encourage active travel and reduce pressure on school bus transport.

We will promote the use of low and zero emission forms of transport, including electric vehicles and associated infrastructure, where appropriate. We will work through our Science Transit Strategy to develop and introduce low emission technology. We are supporting trials of electric buses in our county and will support further pilots where appropriate, working with business and research institutions. We will also work to reduce the carbon footprint of our transport assets and operation where economically viable, taking into account energy consumption and the use of recycled materials.

Improving quality of life

To ensure that the environmental and heritage impacts of this plan are considered fully, a Strategic Environmental Assessment has been carried out, the findings of which are contained in the *Connecting Oxfordshire's* Environmental Report. We will seek to avoid negative environmental and heritage impacts of transport, seeking opportunities with new infrastructure development and through the maintenance of highway assets to enhance the natural environment and improve biodiversity. Details of how we will manage our highway assets can be found in our Highways Asset Management Plan and our Tree Management Policy.

We will work with district councils to develop and implement transport interventions to support Air Quality Action Plans by reducing harmful emissions from vehicles where feasible, giving priority to measures which also contribute to other transport objectives.

We will improve urban public open spaces that are part of highway land where it is part of a wider highway improvement scheme, and we will de-clutter the street environment. We will work with partners to support Oxfordshire's 'green infrastructure', which includes our public rights of way network.

Oxfordshire is relatively healthy compared to the average for England, but this overall prosperity masks the health inequalities in the areas of deprivation, especially in some urban areas: life expectancy varies by 6.2 years for men and 2.8 years for women between the most and least deprived wards. For many people, the easiest way to build exercise into their daily routine is through walking or cycling for local journeys. Improving walking, cycling and public transport together offer the best solution for bringing accessibility to deprived areas, both rural and urban. Better transport links will provide connections with more job opportunities, shops and local centres, giving the opportunity both to improve health and to counter deprivation.

Making transport fit for an ageing population will be an important consideration in making transport improvements in coming years - the number of people aged 65 and over increasing by 18% from 2001 to 2011 and this will be a continuing trend. We will consult at an early stage on the development of schemes and initiatives so that the needs of individuals, communities and all groups sharing a protected characteristic under the Equalities Act 2010 are considered and, where appropriate, acted upon.

Road safety is an important objective, because of the harm done to individuals by road traffic accidents and the impact on the economy from congestion caused by accidents. We will give road users the opportunity to take advantage of new technologies, for example through the use of new, safer materials and infrastructure in highway schemes, and road safety adaptations that may become permissible under new legislation, e.g. in relation to in-vehicle technology that will alert drivers to risks and potentially manage, for example the headways between vehicles.

We will provide information to support the development of road safety technologies. Monitoring casualty history allows us to target our behaviour-change programmes, and also identify sites that would benefit from maintenance or improvement schemes. We will work with partners to support road safety campaigns and will keep speed limits under review, including giving consideration to the introduction of lower speed limits and zones. We will propose engineering solutions where they would be effective in helping reduce accidents on parts of the highway network where a significant number of accidents occur.

3. Introduction

Transport and economic growth

1. Oxfordshire is expecting, and planning for, strong economic growth. It is already recognised nationally for its universities and the strength of its science-based knowledge industries, with many high-technology firms that now form an Oxfordshire technology cluster with outstanding strengths in four overlapping industries.[2] The ambition of the Oxfordshire Local Enterprise Partnership (LEP) is for it to be a global leader in 'Big Science'.
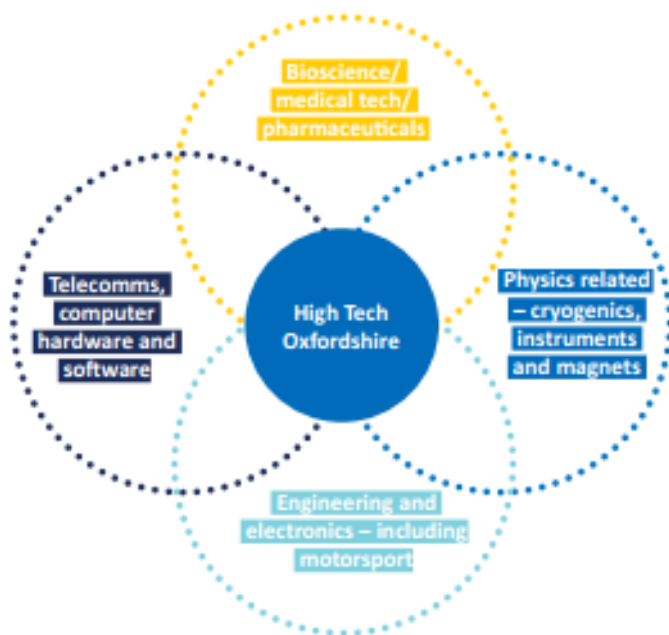
Figure 1: High Tech Oxfordshire (Source: Oxfordshire Strategic Economic Plan, 2013)

2. The growth of these sectors has been supported by a unique grouping of research facilities in Oxfordshire, including the UK Atomic Energy Authority Culham Centre for Fusion Energy; the Science and Technology Facilities Council; Rutherford Appleton Laboratory; Diamond Light Source, the national synchrotron facility; the Medical Research Council's facilities at Harwell; Begbroke Science Park; and the Satellite Applications Catapult Centre. Proximity to these facilities, combined with Oxford's global academic reputation and its strategic position at one apex of the UK's 'Golden Triangle' with Cambridge and London, provides huge potential for inward investment and for businesses to spin out and grow in high quality business locations across the region: Oxford's science parks, Bicester, Science Vale3, the Enterprise Zone, and beyond.

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[2] The Oxfordshire Innovation Engine, Realising the Growth Potential, SQW, October 2013
[3] 'Science Vale' is the term applied to an area encompassing the county's key high tech business parks: Milton Park, Culham and Harwell Campus, and their nearby towns of Wantage, Grove and Didcot.
[4] Seven quality of life factors taken from the Economist Intelligence Unit's Quality of Life Index for countries. The 2 not included are Political Freedom and Gender Equality. 'Security' is actually 'Political stability and security' in the Index.

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3. The high-tech sectors are expected to create the majority of the 85,000 plus new jobs anticipated in the county up to 2031. To do this they will need to retain and attract a large, skilled workforce. To achieve the agglomeration benefits of location in Oxfordshire, there will need to be excellent links between businesses and research establishments in the county, as well as to research establishments, suppliers and customers elsewhere in the UK and globally.

4. The Oxfordshire LEP's Strategic Economic Plan (SEP) sets out the investment that will be required to realise this growth. It focuses on providing homes, developing skills and improving connectivity and is now the basis upon which the majority of central Government funding for transport improvements is awarded locally, via the Local Growth Fund (LGF). The SEP'S focus on high tech economic activity means that Government funding for transport schemes will be largely focused on links within the area encompassing Bicester, Oxford and Science Vale, known as the Knowledge Spine, as well as improving access to it from important centres elsewhere in Oxfordshire, the UK and overseas.

5. In addition to funding which is available locally via the LGF, the Government is investing heavily in strategic transport infrastructure that will support Oxfordshire's economic development. These include important schemes such as railway electrification, East-West Rail, which will reconnect Oxford to Milton Keynes and Cambridge by rail, and direct rail access from the west into Heathrow. Additionally, Highways England is developing a route based strategy linking Southampton and the East Midlands, which will include improvements to the A34 and the development of an Oxford to Cambridge expressway. However, where a business case cannot be linked to the SEP and is neither a rail investment nor Highways England scheme, it will be more challenging to obtain central Government funding for transport schemes, and there will be more reliance on developer funding if the current situation continues.

6. Oxfordshire, Buckinghamshire and Northamptonshire have set out a proposal for a strategic alliance to harness the economic potential of the area by taking a co-ordinated approach to planning for, and delivery of, strategic infrastructure. The Government's commitment to devolution provides the opportunity to seek a new regional Growth Deal through which we can implement a new delivery model: one which brings together a range of powers, responsibilities and resources in a way previously unseen. Through this alliance, we would be able to look across investment programmes – both locally and nationally – and best take advantage of the opportunities to fund transport and other strategic investment across the growth areas of the region. We are currently developing our proposals so that they are of the greatest potential for residents and businesses across the region and give us the potential to lead investment in infrastructure in the area.

7. *Connecting Oxfordshire*, our LTP4, therefore sets out our policy and strategy for the whole county, supporting the SEP but also setting out our priorities for parts of the county less affected by growth in the Knowledge Spine. It thereby provides a basis for securing transport improvements to support development countywide, providing a basis to build our investment decisions on in the coming years.

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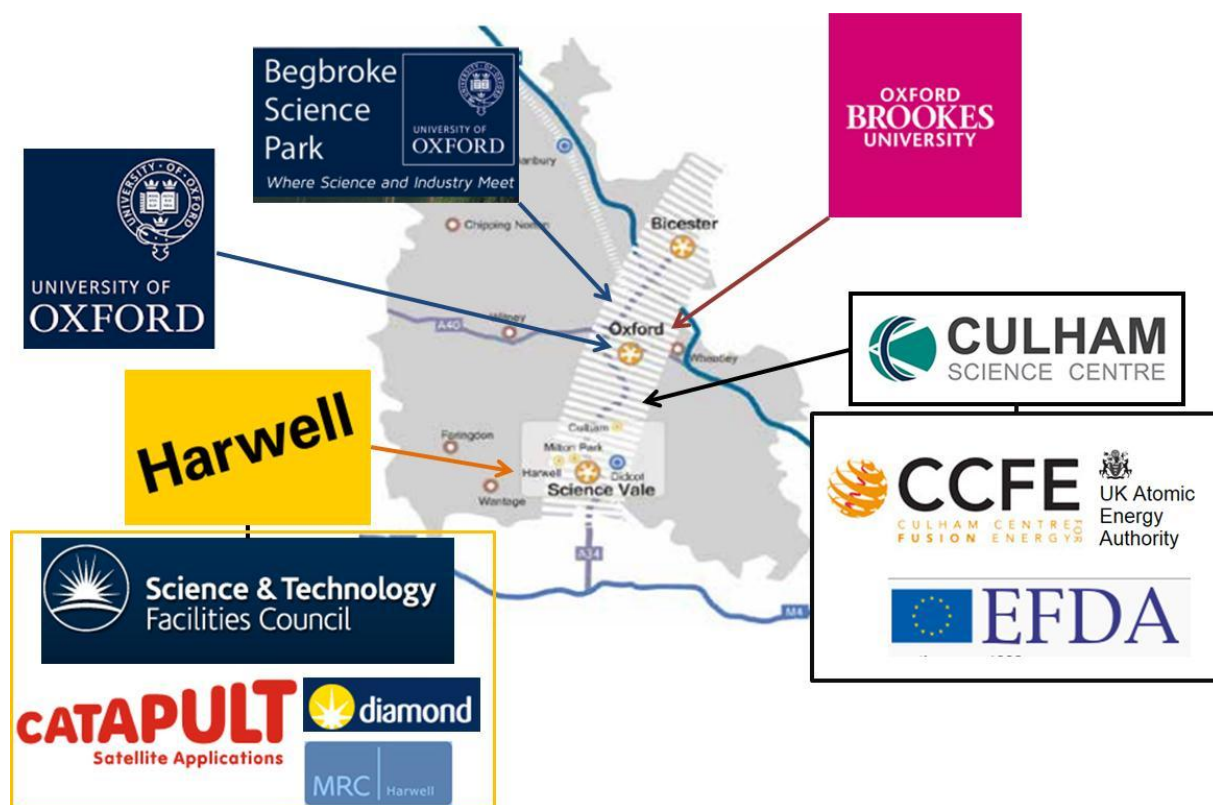
Figure 2: Oxfordshire's Knowledge Spine

Goals for transport

8. While *Connecting Oxfordshire* focuses on supporting growth in Oxfordshire, it also sets out how we will protect public health and the environment, which could be threatened by development unless action is taken. The growing economy and the transport improvements it brings have the potential to improve quality of life for all of Oxfordshire's residents; *Connecting Oxfordshire* aims to reduce inequality and promote equality of opportunity. This balanced approach fits with our highest level strategic aims, as set out in the Sustainable Community Strategy, *Oxfordshire 2030*, which sets out the long-term partnership vision and strategy for Oxfordshire. It guides the Council's policy making across all services, and is the long-term plan on which the Council's annually updated Corporate Plan is based. Its aims are to

   - Create a world class economy for Oxfordshire;
   - Have healthy and thriving communities;
   - Look after our environment and respond to the threat of climate change; and,
   - Reduce inequalities and break the cycle of deprivation.

9. The balanced approach of *Connecting Oxfordshire* also aligns with the Government's vision for local transport, as expressed in the 2011 White Paper *Creating Growth, Cutting Carbon: Making Sustainable Local Transport Happen*. Our vision is for a transport system that is an engine for economic growth, but one that is also greener, safer and improves quality of life in our communities.

10. With this vision and these aims in mind, following consultation with the public and a wide range of stakeholders, we have developed a set of high level goals for transport for *Connecting Oxfordshire*:

Through transport improvement and innovation across Oxfordshire, our goals are:

- **To support jobs and housing growth and economic vitality;**
- **To support the transition to a low carbon future;**
- **To support social inclusion and equality of opportunity;**
- **To protect, and where possible enhance Oxfordshire's environment and improve quality of life; and**
- **To improve public health, safety and individual wellbeing.**

11. To achieve these goals we have developed ten objectives for transport. In this document they are grouped under three themes:

Theme 1: Supporting growth and economic vitality (Goal 1)

- **Maintain and improve transport connections to support economic growth and vitality across the county;**
- **Make most effective use of all available transport capacity through innovative management of the network;**
- **Increase journey time reliability and minimise end-to-end public transport journey times on main routes; and**
- **Develop a high quality, innovative and resilient integrated transport system that is attractive to customers and generates inward investment.**

Theme 2: Reducing Emissions (Goal 2)

- **Minimise the need to travel;**
- **Reduce the proportion of journeys made by private car by making the use of public transport, walking and cycling more attractive;**
- **Influence the location and layout of development to maximise the use and value of existing and planned sustainable transport investment; and**
- **Reduce per capita carbon emissions from transport in Oxfordshire in line with UK Government targets.**

Theme 3: Improving quality of life (Goals 3, 4 and 5)

- **Mitigate and wherever possible enhance the impacts of transport on the local built, historic and natural environment; and**
- **Improve public health and wellbeing by increasing levels of walking and cycling, reducing transport emissions, reducing casualties, and enabling inclusive access to jobs, education, training and services.**

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The scope of *Connecting Oxfordshire*

12. *Connecting Oxfordshire* builds on an existing programme of highway and transport schemes focused on unlocking economic growth up to 2021. It sets out a new transport strategy for the whole of Oxfordshire, covering the period 2015-2031. The end date of 2031 has been chosen to tie in with the period of most of the Local Plans published or being put in place by Oxfordshire's district councils. *Connecting Oxfordshire* considers the needs of residents, employers, as well as people travelling to and through Oxfordshire, including tourists.

13. It has been developed with Oxfordshire's district and city councils in conjunction with the development plan process, to take account of the future location of housing and employment within the county. It also takes account of the transport challenges created by future development outside but close to the county boundary, for example on the east side of Swindon approved as part of the Swindon Borough Local Plan.

14. However, the situation with regard to local plans is still evolving, largely as a result of the 2014 Oxfordshire Strategic Housing Market Assessment (SHMA), and other spatial and related plans under development, for example the Science Vale Area Action Plan. OCC in its capacity as infrastructure provider and enabler will continue to work with the district and city councils on spatial planning for the county to ensure efficient and effective allocations of future growth.

15. *Connecting Oxfordshire* therefore closely links national and local land-use and transport planning policies, and aligns with the National Planning Policy Framework (NPPF). It also takes into account national and local transport and enterprise policies. This is shown in Figure 3:

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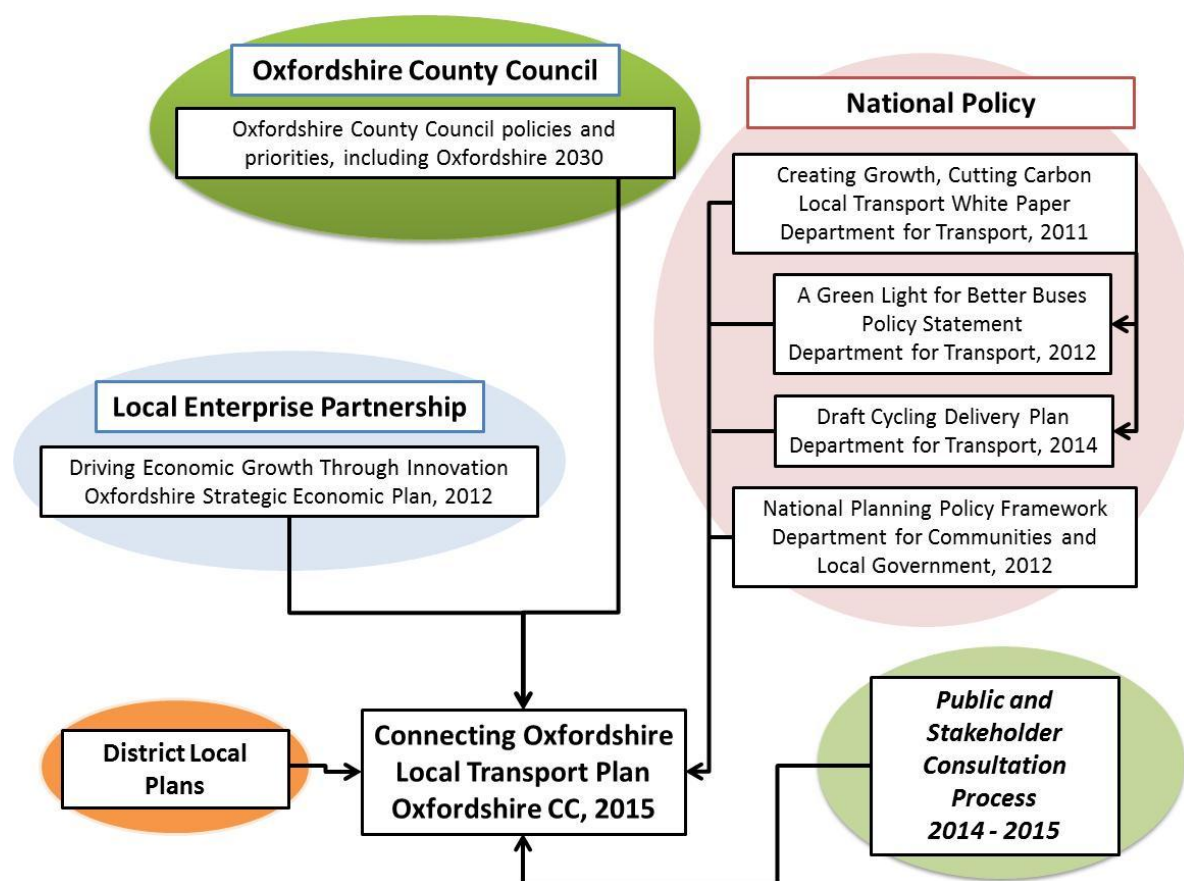
Figure 3: Connecting Oxfordshire*'s relationship with current national and local transport and planning policies and with the Oxfordshire Strategic Economic Plan*

Strategic approach

16. Our strategy for the period to 2031 acknowledges that predicting and providing fully for increased demand for road travel by car and freight vehicles, in the form of highway capacity improvements, is neither affordable, nor desirable from an environmental or economic perspective. It is vital that journeys made by sole-occupancy private vehicles make up a smaller proportion of transport mileage in future, and that more journeys are by means of transport that take up less road capacity or do not use roads at all. This is necessary simply to accommodate all the journeys that people and goods need to make. This plan does include road schemes to connect new developments, but we will be seeking to make best use of existing capacity taking advantage of smarter methods, mindful that any additional capacity has the potential to generate additional car traffic.

4. Oxfordshire now and in 2031

Oxfordshire now

Population and health

17. Oxfordshire is home to around 666,000 people, an increase of over 10% in the past decade. The county is divided into five district council areas: Oxford City, Cherwell, South Oxfordshire, Vale of White Horse and West Oxfordshire. Nearly a quarter of the county's residents live in Oxford City with the remainder split fairly evenly over the other four districts. The county is the most rural county in the south east of England, and over 30% of the population live in towns and villages of less than 10,000 people.

18. Overall in the last decade, the population has become older, with the number of people aged 65 and over increasing by 18% while the number of people aged 85 years and over increased by 30%. The age profile of Oxford's population is very different from the rest of the county, however, with a smaller proportion of older people and a much larger population in the 20-30 age group due to the high numbers of students.

19. Oxfordshire's population is relatively healthy, with a relatively high percentage of physically active adults compared to the average for England. However, rising obesity, low exercise levels and related health issues are still concerns, as they are nationally: 20% of people walk for more than 20 minutes less than once a year or never in England. Oxfordshire's overall prosperity masks some stark contrasts, particularly within urban areas. There are nine wards containing small areas among the 20% most deprived in England: two in Banbury, one in Abingdon, and the rest in Oxford. This is reflected in health inequalities across the county, with poor health strongly linked to deprivation: life expectancy varies by 6.2 years for men and 2.8 years for women between the most and least deprived wards.
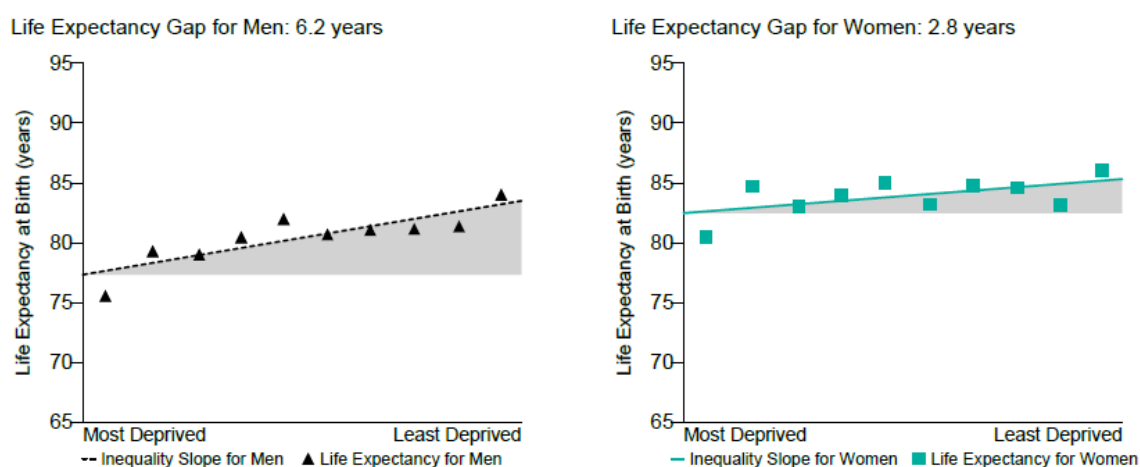

Figure 4: Life expectancy gap between most and least deprived wards in Oxfordshire (Source: Public Health England Health Profile 2014)
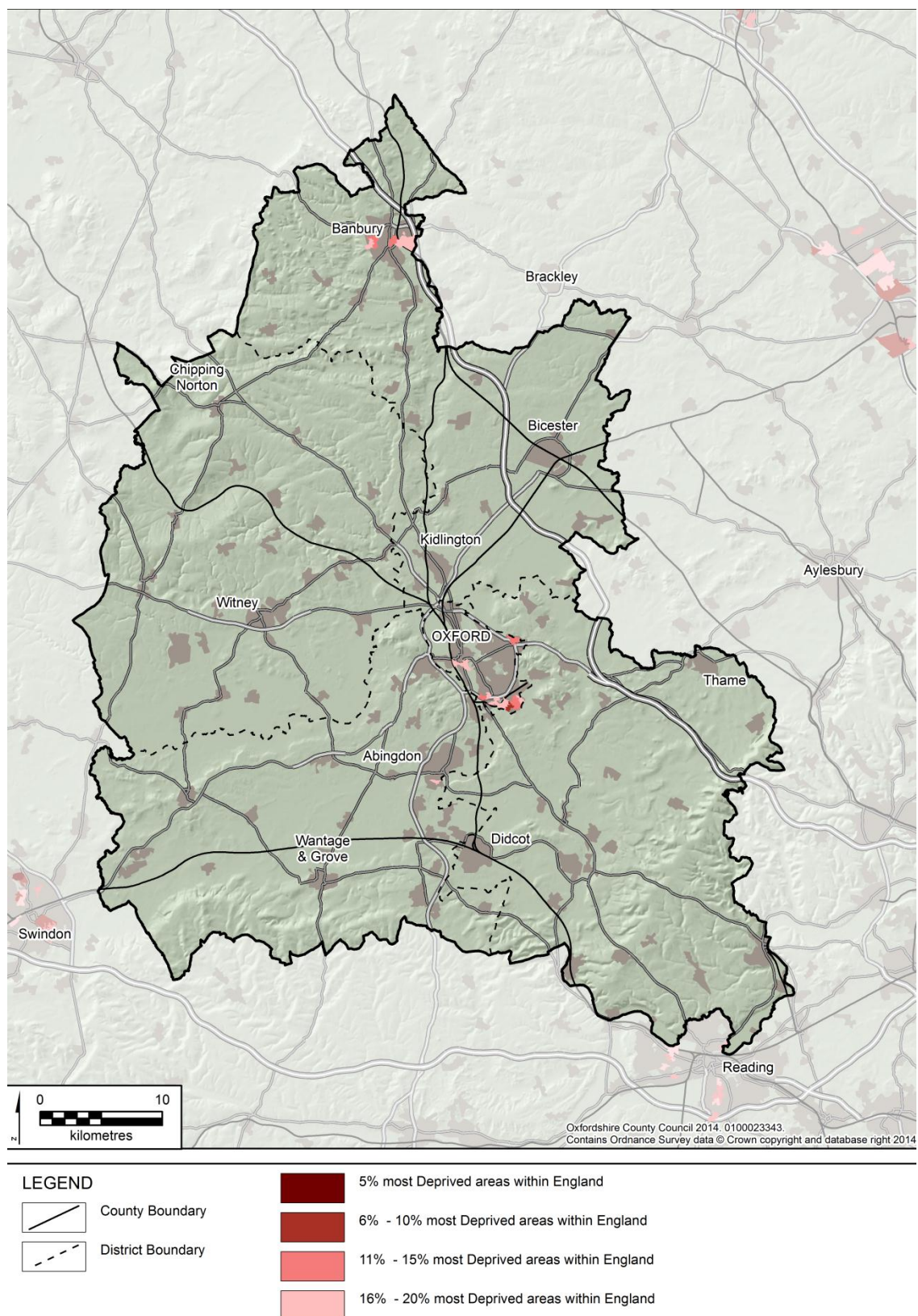
Figure 5: Deprivation in Oxfordshire: wards containing areas among the 20% most deprived in England (Source: DCLG Index of Multiple Deprivation)

Natural and historic environment

20. Oxfordshire has a rich and varied natural and historic environment, which makes it an attractive place to live, visit and work. To the north-west, the rolling hills and golden limestone villages of the Cotswolds are a magnet for tourists including walkers along the Ridgeway National Trail. To the south the landscape is dominated by the escarpments of the North Wessex Downs and the Chilterns. In between, the valleys and the flood plains of the Thames and its tributaries dominate the landscape, providing valuable farmland and lowland habitats, active gravel workings as well as a legacy of gravel extraction. 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 hundreds of homes.

21. The county contains part of three Areas of Outstanding Natural Beauty (AONB): the Cotswolds, North Wessex Downs, and the Chilterns, and a large area encircling Oxford is designed as Green Belt (see Figure 6).   There are seven internationally designated conservation sites (all Special Areas of Conservation) wholly or partly within Oxfordshire, 105 Sites of Special Scientific Interest (SSSI) and nine National Nature Reserves. However, despite the presence of these sites, a number wildlife species have been lost from or have been in decline in Oxfordshire. For example, three species of butterfly have been lost from the county in the last ten years. Semi-natural habitats such as grassland and heathland have been in decline across the county. Poorly-managed and poorly-designed developments have also taken place in recent decades in both rural and urban locations that were home to wild plants and animals. More information is in the Strategic Environmental Assessment which accompanies this document.

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

Figure 6: Oxford's Green Belt (source: CPRE)

Economy and travel characteristics

23. Oxfordshire is home to nearly 30,000 businesses, providing over 380,000 jobs, including a high proportion in research, science and technology, engineering, and high-tech manufacturing. The county's economy is recognised as one of the best performing in the UK and its contribution to the national economy is well above average. In 2013 Oxfordshire contributed £19.2 billion to the UK economy, giving it a 1.3% share. Workplace Gross Value Added per head in Oxfordshire averaged £28,767 in 2013, compared to the UK average of £23,755.

24. Oxford's unique character as a leading university city and a historic centre sets it apart from the rest of the county, and attracts much more travel than most towns or cities of comparable size. Tourism, business and academia are vital to the economy and 35% of the county's jobs are in the city. Due to the high number of jobs and the shortage and cost of housing in the city, more people commute to Oxford from outside the city than are working residents. The city also provides the majority of the county's hospital services, with three major teaching hospitals,

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as well as psychiatric and private hospitals. Oxford is therefore by far the most important 'centre of gravity' in the county, though as we have seen in the previous chapter, Bicester and the Science Vale are growing in economic importance.

25. Oxfordshire's rural areas are generally prosperous, however, so although many of its towns are largely commuter towns, they have managed to retain economic vitality as attractive and thriving local centres providing a good range of services. Banbury is more self-contained and experiencing jobs growth itself, with 60% of working residents having jobs in the town, besides the significant number commuting to Oxford.

26. 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 high-value growth areas around Milton Keynes and Cambridge. There are currently no direct rail connections to these centres, while travel by road involves cross-country single-carriageway routes or the use of the M25 around London. Improving the connectivity on this corridor – through East-West Rail and the Oxford to Cambridge Expressway projects - will place Oxfordshire at the centre of the south-east orbital corridor as a key hub for south-west to north-east transport. As a result, Oxfordshire will have improved agglomeration opportunities for jobs, growth and innovation, with its vastly-improved road and rail links to these high-value centres of the UK economy.

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	Total Travelling to	Total Travelling from	Net Migration
Oxford	18,102	4,787	13,315 In to Oxford
Banbury	2,329	2,748	-419 Out of Banbury
Bicester	2,409	4,819	-2,410 Out of Bicester
Witney	1,288	3,534	-2,246 Out of Witney
Abingdon	3,312	5,080	-1,768 Out of Abingdon
Didcot	1,261	3,090	-1,829 Out of Didcot
Grove & Wantage	532	2,047	-1,515 Out of Grove & Wantage
Thame	1,134	903	231 In to Thame
Chipping	341	636	-295 Out of Chipping
Kidlington	3,272	4,619	-1,347 Out of Kidlington
Reading	1,088	797	291 In to Reading
Swindon	658	1,359	-701 Out of Swindon
Aylesbury	686	1,281	-595 Out of Aylesbury
Milton Keynes	555	636	-81 Out of Milton Keynes
Brackley	626	1,257	-631 Out of Brackley

LEGEND

County Boundary

District Boundary

Urban centre assessed for travel to work flows

High number (over 2000) people travelling to work

Low number (less than 60) people travelling to work

0   10 kilometres

Oxfordshire County Council 2014. 0100023343
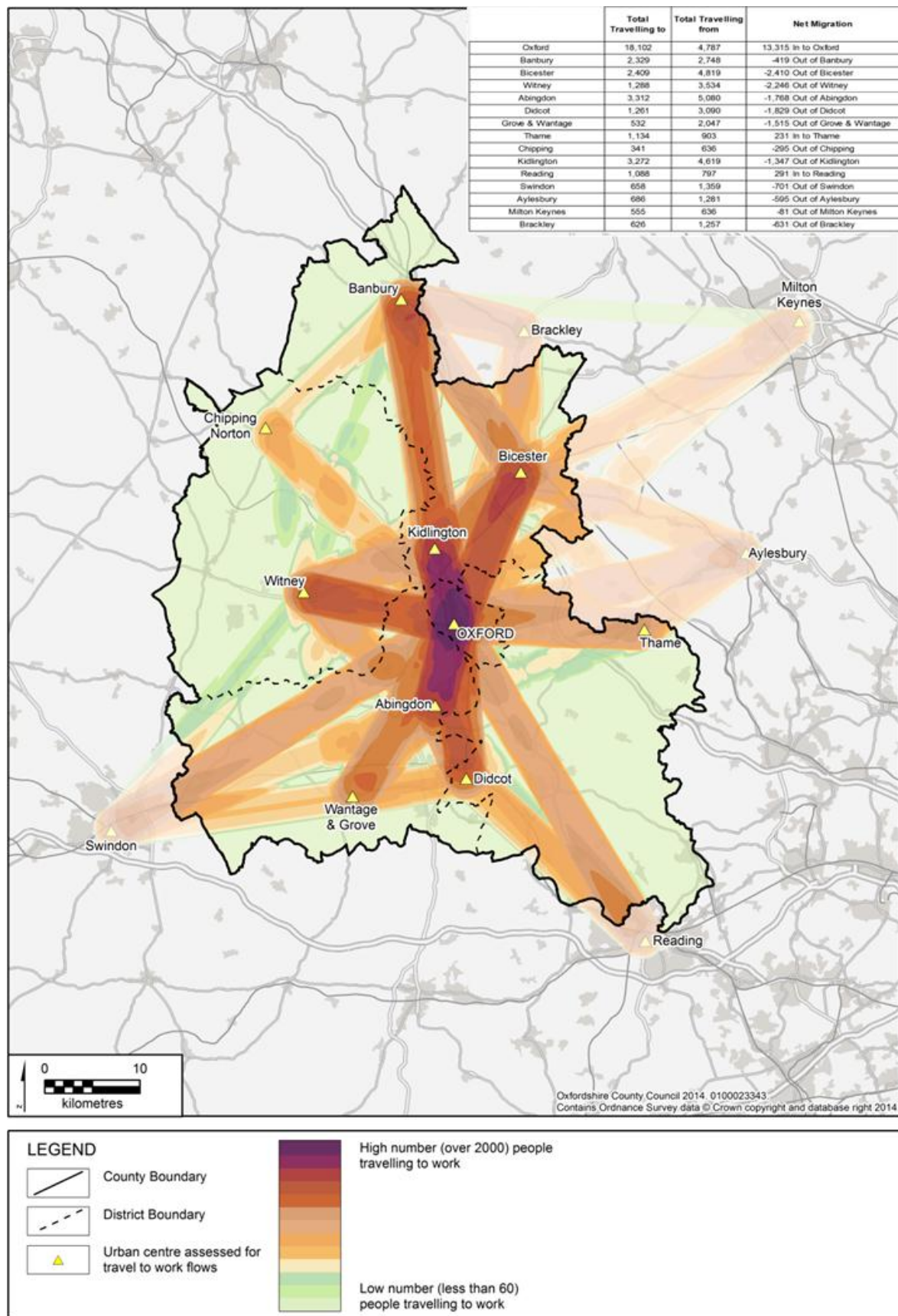Contains Ordnance Survey data © Crown copyright and database right 2014

Figure 7: Main travel to work flows in Oxfordshire [Source: Census 2011]

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27. The existing good 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 on the stretch between junctions 9 and 10, which links the A34 via the A43 to the M1 and carries over 100,000 vehicles per day. The A34 carries up to 70,000 vehicles per day, including a large proportion of lorries. Because the county relies heavily on the A34 for internal trips, and it forms part of the Oxford ring road, the severe congestion it suffers is damaging to the local, as well as the national economy. 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. The delivery of the Oxford-Cambridge Expressway will increase demand further for through travel on the A34, meaning that finding a long-term solution to congestion on the A34 will be important.

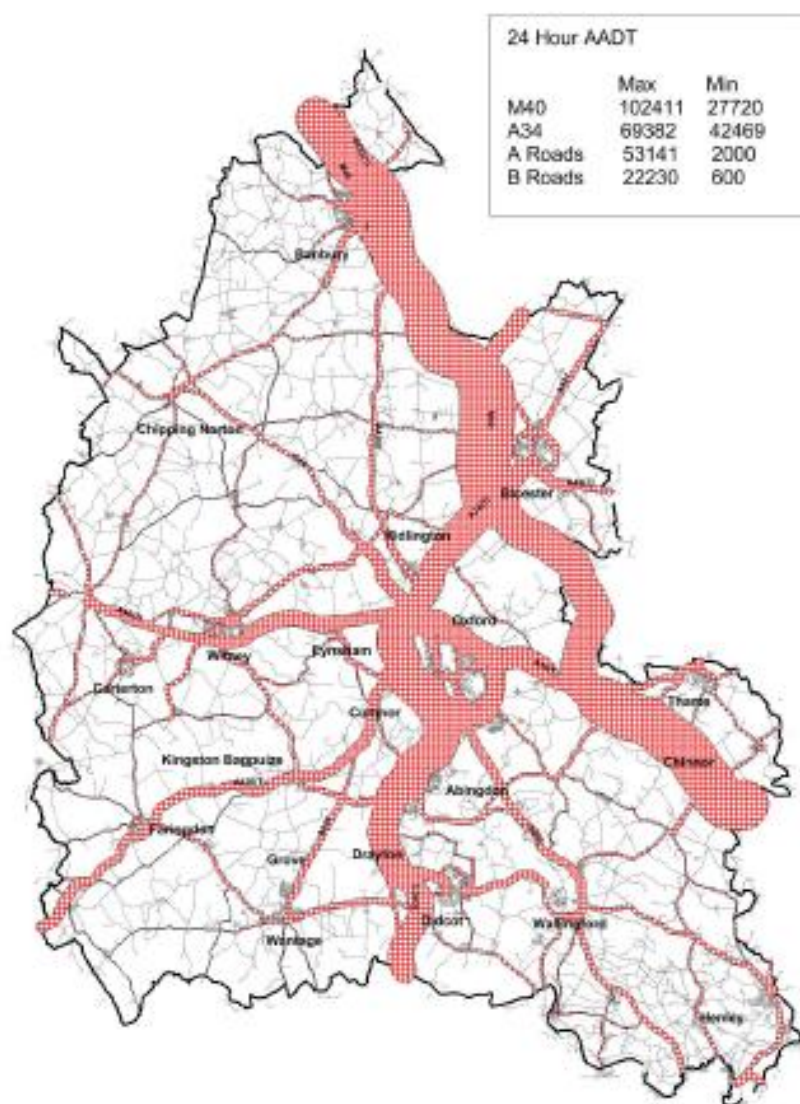| 24 Hour AADT		
	Max	Min
M40	102411	27720
A34	69382	42469
A Roads	53141	2000
B Roads	22230	600

Figure 8: Annual average daily traffic flow bandwidth map – based on automated traffic counts throughout Oxfordshire. (Source: Oxfordshire County Council Transport Monitoring)

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28. Car ownership and car usage is high outside Oxford, with 87% of households owning a car – compared with only 67% in Oxford. This is reflected in the high proportion of journeys made by car outside Oxford, including a large number of short trips within the county's towns. Although 50% of journeys to central Oxford are by bus, most of the city's jobs are in the more outlying areas to the east of the city, which are less accessible by public transport.
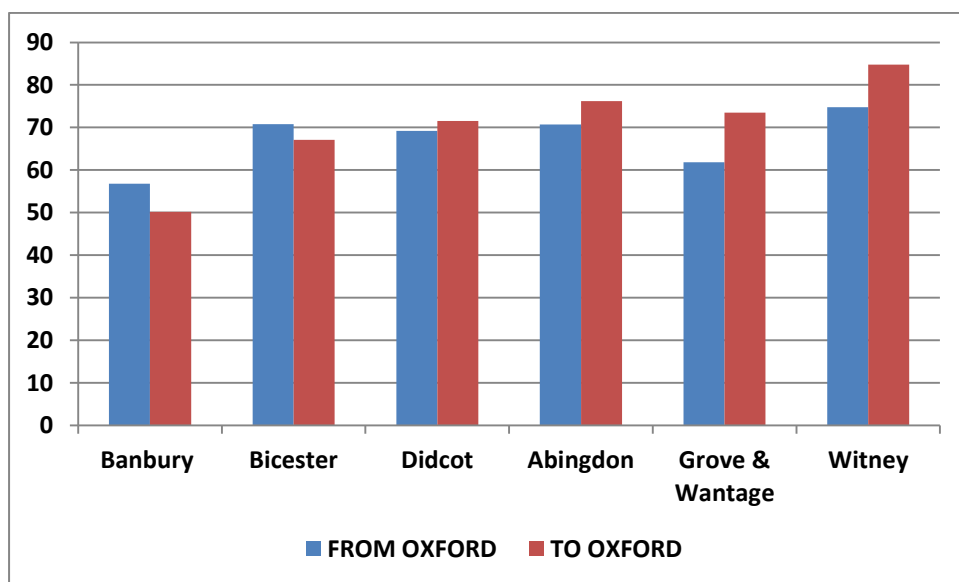
Figure 9: Car commuting between Oxford and large Oxfordshire towns as a percentage of overall commuter journeys [Source: Census 2011]

29. There is a good network of frequent bus or rail services linking the county's main towns with Oxford, yet the proportion of car journeys between these towns and Oxford remains stubbornly high. In part this is due to the success of Park & Ride on the edge of Oxford, which has been developed since the 1970s in conjunction with restrictions on access to the city centre. However, it means that the road corridors leading to Oxford used by buses all suffer from congestion. The A40, which is a major through route linking Gloucester and London, intersects with three key radial routes to the north of Oxford, where it forms part of Oxford's ring road, causing serious delays between Witney and Oxford. Much of the traffic using this route is accessing the large employment sites in the eastern arc of Oxford.

Figure 10: Highway Network in the morning peak – volume of traffic in relation to road capacity (85% to 95% = at capacity, 95% plus = over capacity)

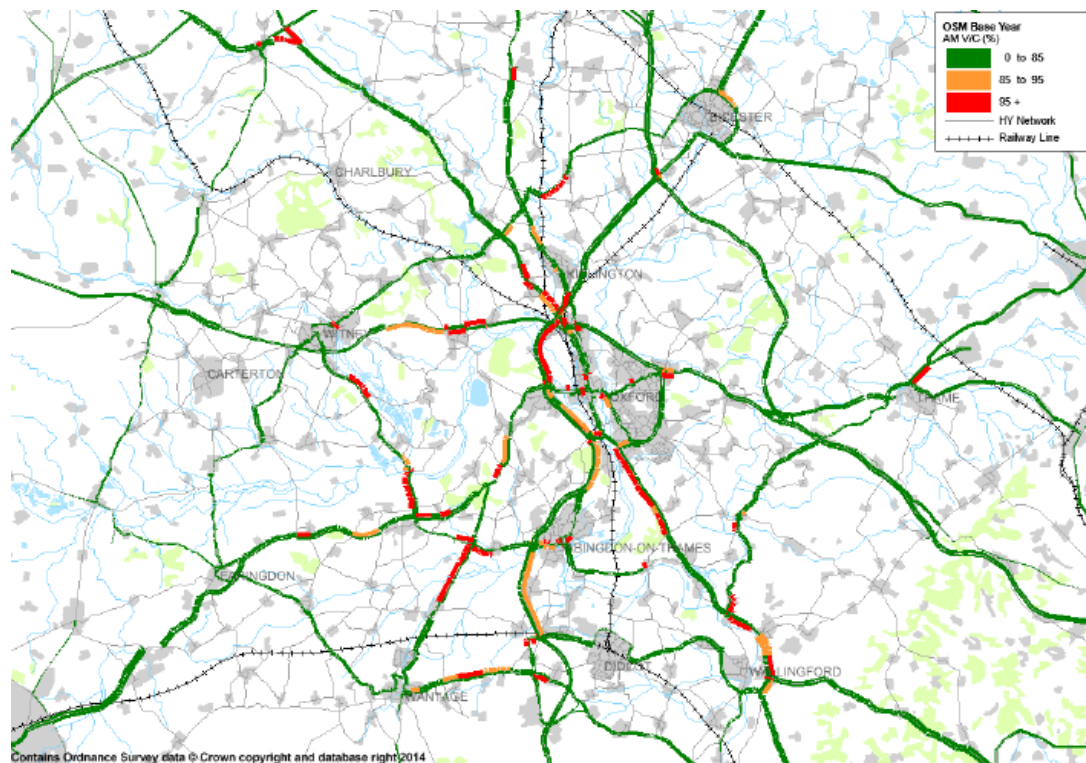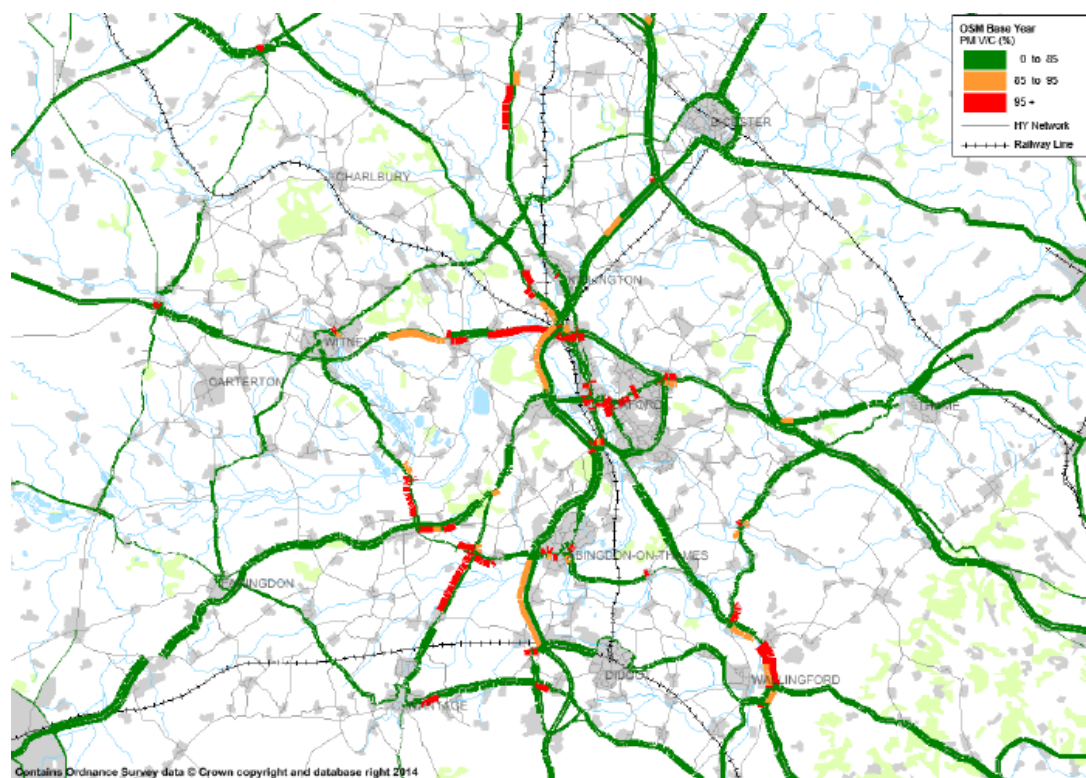*Figure 11: Highway Network in the evening peak – volume of traffic in relation to road capacity (85% to 95% = at capacity, 95% plus = over capacity)*

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30. Within Oxford, there is a mature and well-used network of largely commercial bus services, including regular services to the city centre from five park and ride sites on the edge of the city. Most radial routes have stretches of bus lane, but these are not continuous due to lack of available space. A Quality Bus Partnership between the city's two main bus operators and the County Council has led to a joint smartcard ticketing arrangement and consolidation of services on larger vehicles. Vehicles are modern and around 50% of the fleet are electric hybrids.

31. Within Oxfordshire's towns, bus networks are relatively under-developed, offering slow, infrequent routes that are more suited to shoppers than commuters. The quality of cycling and walking networks is variable, with some towns having had very little investment in pedestrian and cycling infrastructure. Although there is a charge for most town centre parking in district council car parks other than in West Oxfordshire, many of the trips within the towns are to workplaces with ample staff parking, edge of town retail, or schools. This means that even for internal trips, a very high proportion are still made by car.

32. In rural areas, away from the main transport corridors leading to Oxford, the county has a network of subsidised local services providing a basic service linking to local town centres. There are a few small voluntary community minibus schemes, as well as some fairly large volunteer car schemes, mainly offering transport to hospital appointments for older and disabled people. Reductions in overall funding for subsidised networks across the country puts our rural areas at risk of declining services unless commercial opportunities can be developed.

33. Many people without cars, especially disabled people, the elderly and those living in areas that do not have a regular bus service, rely heavily on taxis, which are regulated by the district councils. Over 8,000 people are registered on the Oxfordshire Liftshare database, of which 46% of people have contacted others with a view to arranging a liftshare, and registrations are steadily increasing. In Oxford city, socio-economic conditions and high housing density provide suitable conditions for commercial car clubs to succeed, and there are community car schemes in East Oxford, Cowley, Headington and Iffley. Many villages in the county run volunteer hospital transport schemes for those without cars, while school transport and transport to daycare services and offered by our integrated transport unit.

34. Over 25% of Oxford residents who work in Oxford cycle to work, with a further 25% walking and 20% using the bus. Many people commute to Oxford by bike from nearby settlements, particularly Kidlington, Yarnton, Botley and Abingdon. However, the quality of the cycle links is variable, and given the short distance from Oxford, there is scope to increase levels of cycling through targeted improvements to cycling infrastructure. Elsewhere, cycle routes along inter-urban routes are largely non-existent, the notable exception being the cycle track alongside the A40 linking Witney and Wheatley to Oxford. The speed of traffic using inter-urban routes without cycle facilities is a major deterrent to cycling. Cycling levels in other towns are generally much lower than in Oxford.

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Maintenance

35. The County Council is responsible for the maintenance of over 4500 km of roads in Oxfordshire. Like in other parts of the UK, the condition of the road network has deteriorated over recent years. This is as a result of a severe shortage of funding for maintenance, of increasing numbers of heavy vehicles using roads which were not originally designed to carry them, and successive harsh winters and flooding. For cyclists and pedestrians in particular, poor maintenance is a safety hazard and can deter people from walking and cycling. Funding levels over the last 25 years have been such that roads are able to be rebuilt approximately every 255 years on average, as opposed to the optimal 40 years.

36. Although Oxfordshire is in a better position than the national average, with only 11% of roads in a poor condition compared with 18% nationally, it is estimated that to bring all roads within Oxfordshire alone up to a good state of repair would cost £165 million and then an on-going year on year investment of approximately £20m per year to maintain that condition level.

Emissions from transport

37. Heavy traffic and congestion contributes to high levels of emissions from transport in Oxfordshire. Greenhouse gas emissions from domestic transport in the UK grew by 8% between 1990 and 2007, with continual improvements in the fuel economy of new cars slightly offset by continuing growth in road traffic volumes. This was followed by a fall of 8% between 2007 and 2009, mainly due to reductions in road traffic volumes during the recession and, to a lesser extent, improvements in car fuel economy and the increased use of biofuels. Car travel contributed 58% of the total and heavy and light goods vehicles about 30% in 2009. Under the Climate Change Act 2008 the Government is required reduce emissions in the UK by at least 34% by 2020 and 80% by 2050, from 1990 levels.

38. More immediate and localised effects are felt from emissions of oxides of nitrogen (NOx), which cause respiratory illness and shorten lives. Nitrogen deposition also has a negative impact on wildlife, by fertilising the soil, encouraging fast-growing species which then out-compete other, rarer species. The biggest contributors of NOx are heavy diesel engines, and at some locations in the county, NOx levels affecting people near roads exceed maximum levels. Several Air Quality Management Areas have been declared, with a number of areas under investigation. In Oxford city centre, buses are subject to a Low Emission Zone, which means modern, cleaner buses are used in Oxford and on inter-urban services arriving in central Oxford. The Oxford Low Emission zone does not apply to other types of vehicle, and freight contributes a high proportion of NOx at most AQMAs.

Road safety

39. While every casualty is one too many, since 2005 there has been a general downward trend in people killed and seriously injured (KSI) on our roads and footways. There were 25% fewer casualties overall in 2013 compared with the average of 2005-2009 figures. This is in line with the reduction nationally.
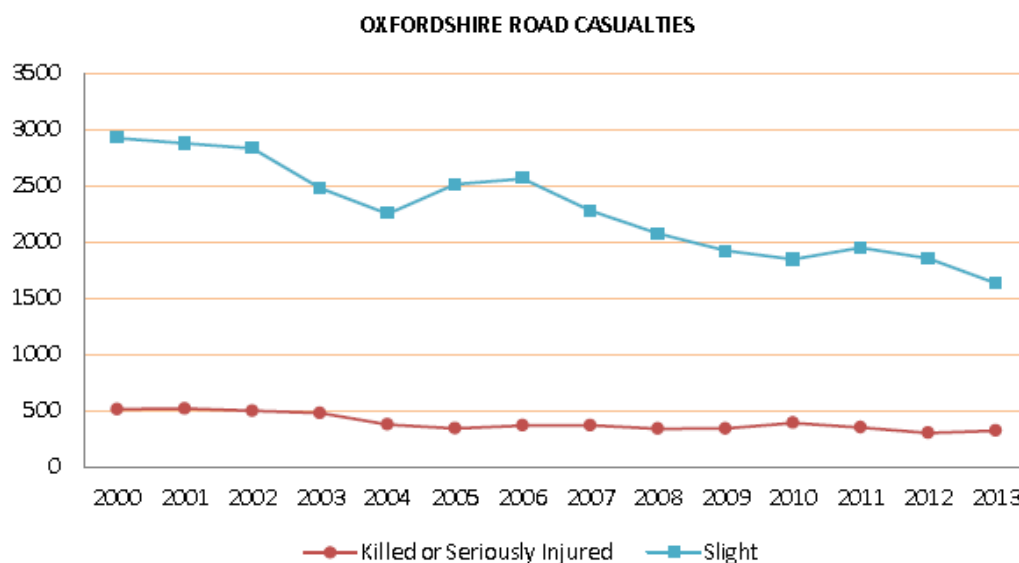
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OXFORDSHIRE ROAD CASUALTIES

Figure 13: Oxfordshire road casualties 2000-2013

40. The notable exception to the downward trend is in pedal cycle casualties, which are 8.2% higher, though this is much less than the increase nationally, of 18%. This needs to be seen in the context of increasing numbers of people cycling, but nevertheless pedal cyclists nationally suffer around 15 times more casualties per billion miles than do car occupants.

41. Motorcyclists continue to suffer a disproportionately high casualty rate (around 22% of those killed or serious injured (KSI) on Oxfordshire's roads are motorcyclists, but they account for only about 1% of traffic, and collectively they suffer around 56 times more KSI casualties per billion miles than car occupants.)

42. We record and analyse data from casualty reports received from Thames Valley Police. This includes information about weather and road conditions and other factors, as well as the circumstances surrounding the incident. Traffic collisions are most likely to occur when roads are slippery due to rain or ice and when visibility is reduced by poor light or fog. Other major contributing factors to accidents include excessive speed, tiredness, alcohol and drugs, and driver distractions caused by mobile phones or other devices. The severity of casualties is increased when seatbelts are not worn, and when motorcyclists do not wear protective clothing.

43. *Connecting Oxfordshire* seeks to address existing problems arising from the issues described above. It includes a number of schemes already 'in the pipeline', particularly aimed at reducing congestion where it is damaging the economy or hindering economic growth. Looking ahead to the future, *Connecting Oxfordshire* needs to ensure high level of housing and economic growth expected in the county do not make the existing situation worse, but it also needs to take account of likely societal, behavioural and technological changes over the plan period, as well as changes to national strategic transport infrastructure.

LEGEND

⬦ County Boundary

⬦ District Boundary

🟧 Oxfordshire Air Quality
Management Areas (AQMAs)
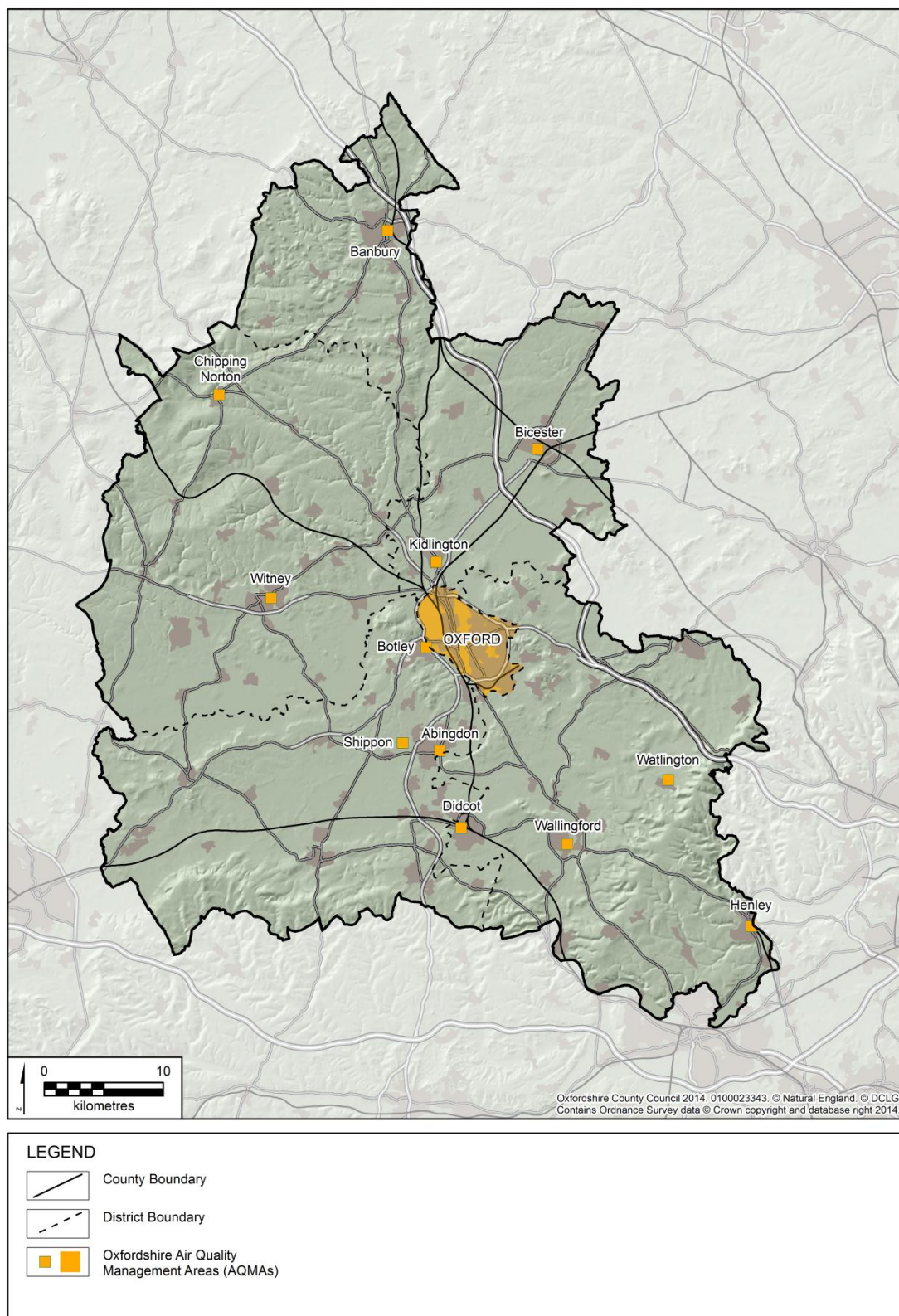
Figure 12: Air Quality Management Areas in Oxfordshire

Oxfordshire in 2031

44. A number of strategic challenges, which also present significant opportunity for purposefully-directed growth and local improvement, emerge over the time of this Local Transport Plan.

45. Oxfordshire's population will grow as a result of normal patterns of fertility, mortality and migration, but also as a result of the planned economic growth set out in the SEP, which will attract workers to live in the county. The Oxfordshire Strategic Housing Market Assessment (SHMA) carried out in 2014 to assess the county's level of housing need. Its assumptions were based on an economic forecast reflecting the policy-led economic growth ambitions in the SEP.

46. The SHMA predicts around 100,000 new houses will be needed in Oxfordshire, between now and 2031, to support economic growth and meet affordable housing need. Oxfordshire's districts are now taking this into consideration through the development plan process. Figure 14 (below) indicates the development envisaged in very broad terms and the additional commuter trips anticipated. *Connecting Oxfordshire* will be revised to take decisions on where growth and jobs will be specifically located.
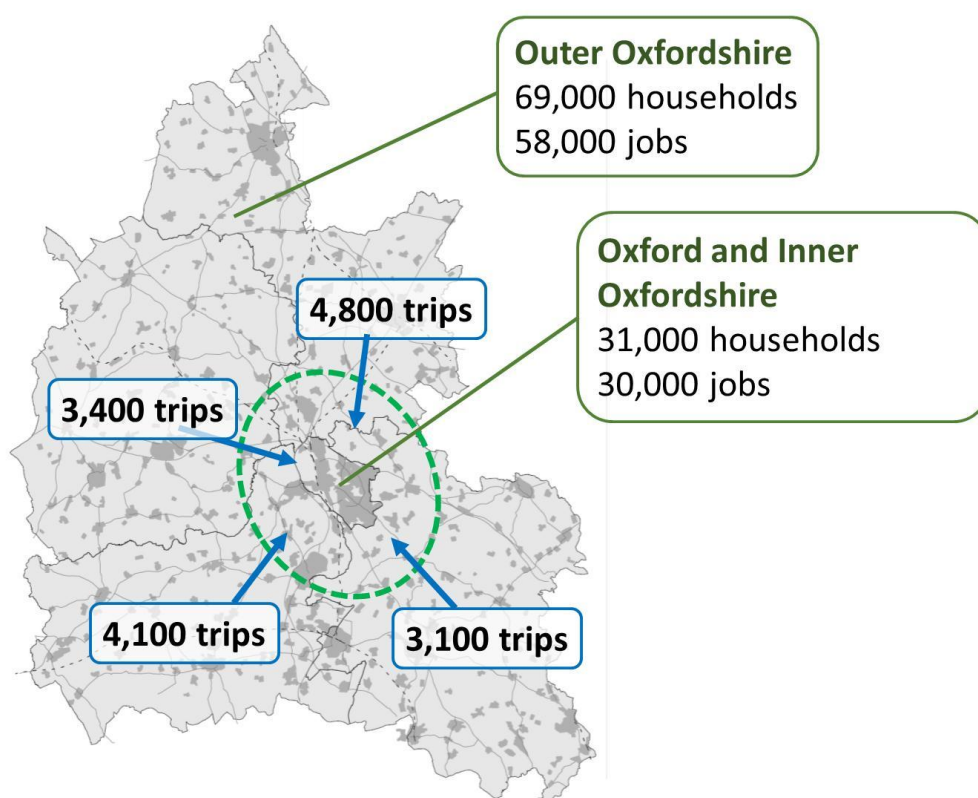
Figure 14: Strategic housing and employment allocations in Oxfordshire in 2031 (SHMA housing growth & Cambridge Econometrics jobs forecast), with our estimate of additional commuter trips into the area in and around Oxford

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47. The potential impact of housing and jobs growth on the county's transport networks, taking into account committed transport infrastructure, has been forecast using a strategic transport model. The model shows many junctions over capacity in 2031, and severe delays on many routes, especially the A34, A40, A338 and A4074. These forecasts do not take into account the full level of housing need in the SHMA; when that is added to the model the situation will be worse. However, because the future growth has only been quantified at a countywide level and we have no detailed knowledge of where the development will be located, we have had to develop this model using various policy-level assumptions.
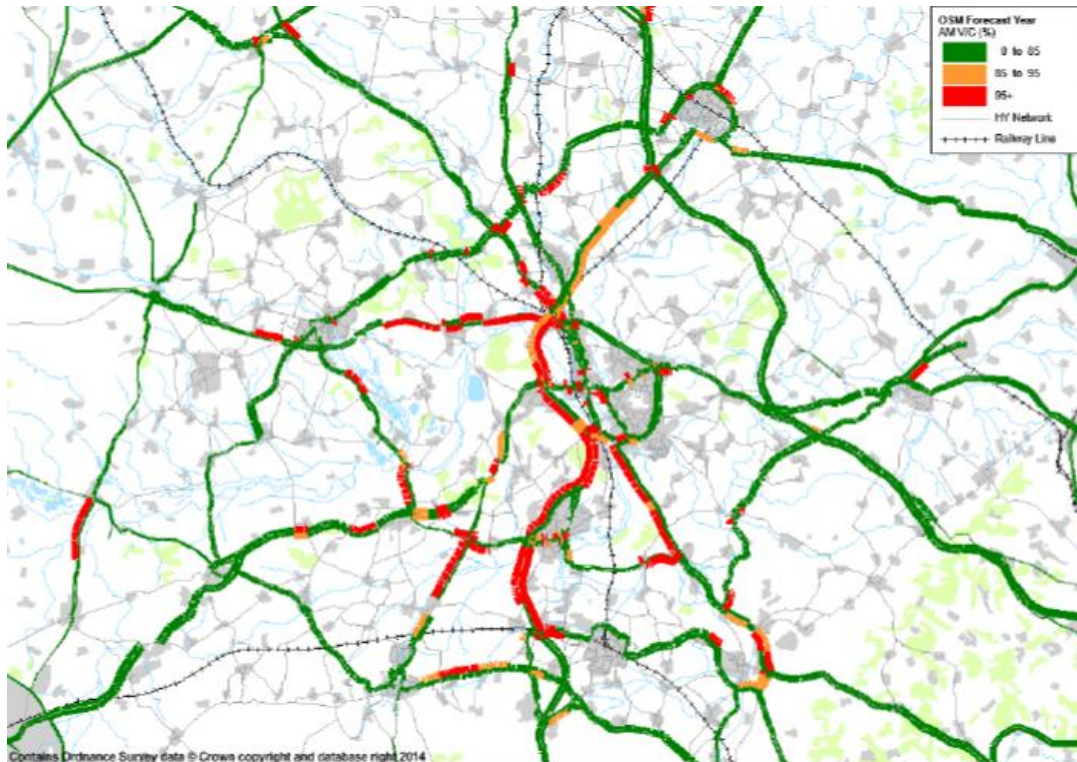
Figure 15: Highway Network in the morning peak in 2031 with no intervention – volume of traffic in relation to road capacity (85% to 95% = at capacity, 95% plus = over capacity)

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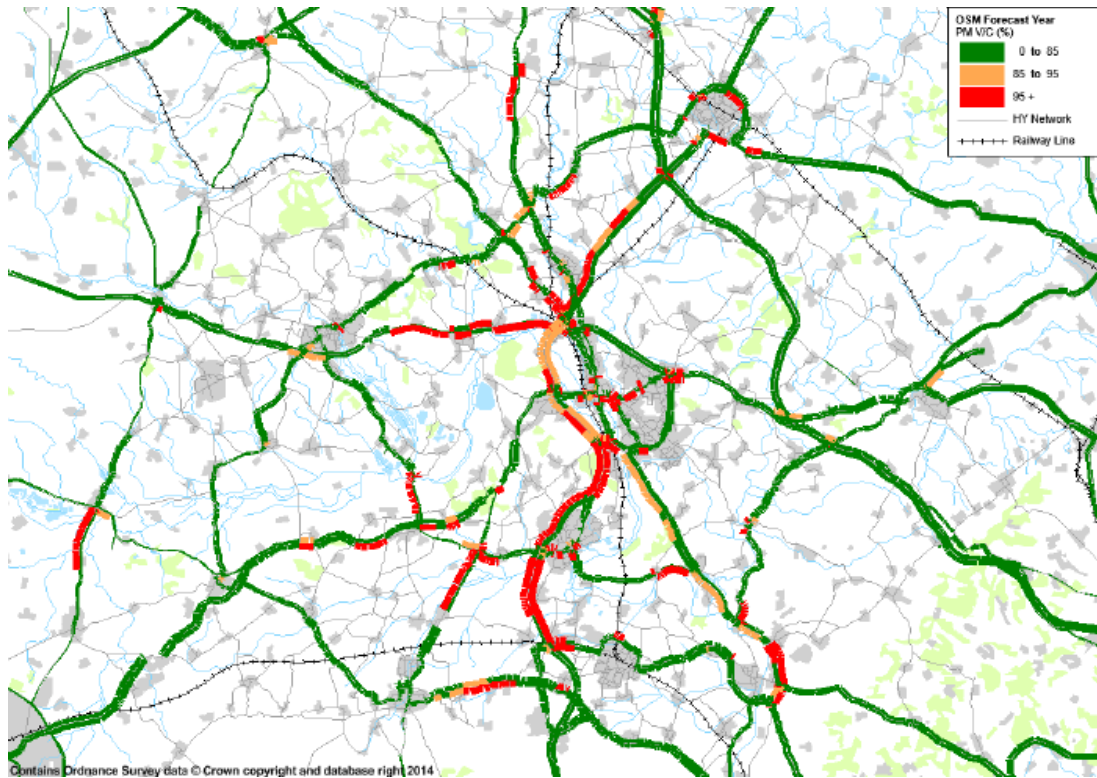
Figure 16: Highway Network in the evening peak in 2031 with no intervention – volume of traffic in relation to road capacity (85% to 95% = at capacity, 95% plus = over capacity)

48. Unless drastic changes are made by 2031, congestion will have a severe impact on the economy and people's daily lives, with many journeys being effectively impossible. Forecasts show that additional transport capacity is required, though this does not necessarily mean more roads. New strategic road and rail infrastructure will also change travel patterns and have wider impacts in Oxfordshire. Notable schemes include Highways England's capacity improvements on the A34, the recently-announced Oxford to Cambridge Expressway, and East-West Rail, which will provide access to Milton Keynes and beyond, as well as rail access to Heathrow from the west.

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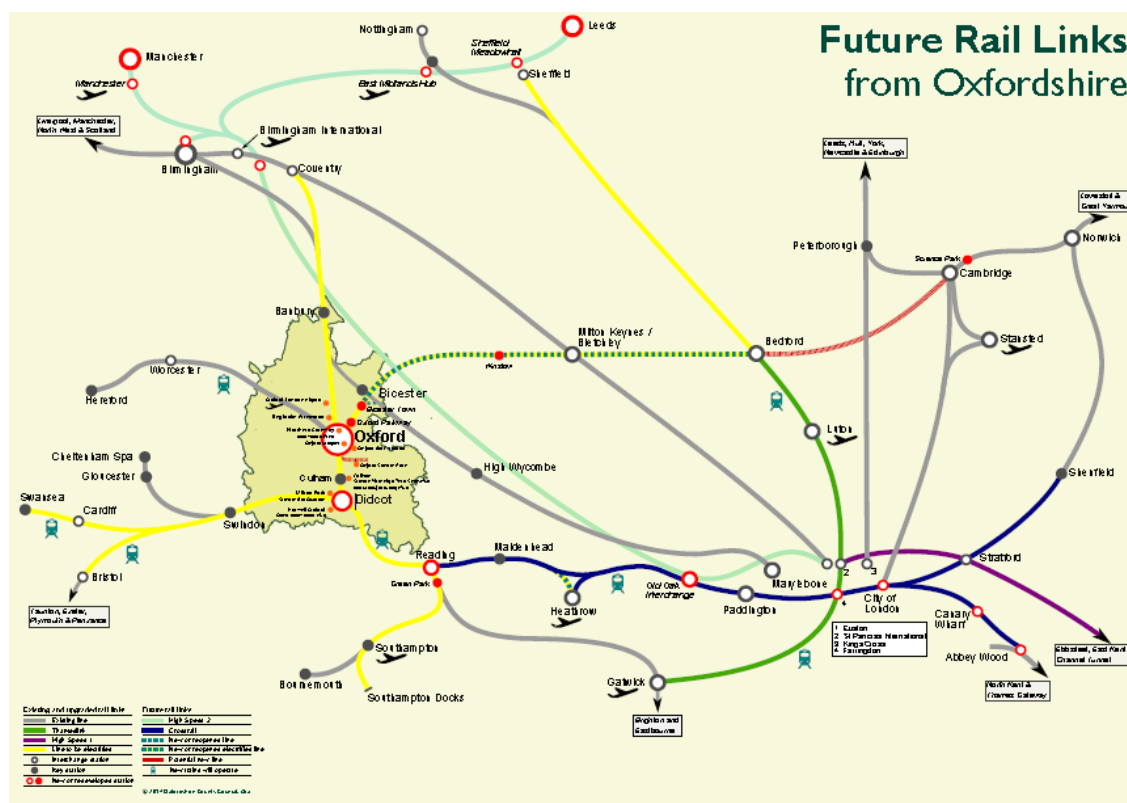
Figure 17: Future rail links from Oxfordshire

49. As the population and economy grow, more and more goods will be transported. The plan period is set to see significant rail freight growth, which may limit the growth in long-distance HGV traffic. However, rail freight alone will not provide for the diverse and growing demands for goods travel to, from and around Oxfordshire; furthermore, rail freight will still need to travel by road between its origin, the railhead and its destination. There will also be a substantial growth in vans and other light commercial vehicles around the county, as both service industries and internet shopping increase largely in line with economic and population growth.

50. Emissions from transport will increase, but not proportionately to the growth in motor traffic, due to technological advances. Supported by Government policy, uptake of low emission vehicles is set to increase. However, this depends on the success of the policies to support uptake, and market conditions. NOx emissions from HGVs are likely to increase, due to increasing mileage, and a slow replacement rate for vehicles. It is likely that air quality will become a problem in more locations in the county.

51. Even if UK greenhouse gas emissions targets are reached, climate change will continue to generate extreme weather conditions; the county's transport networks will be under attack from more frequent flooding and harsh winters will continue to damage roads.

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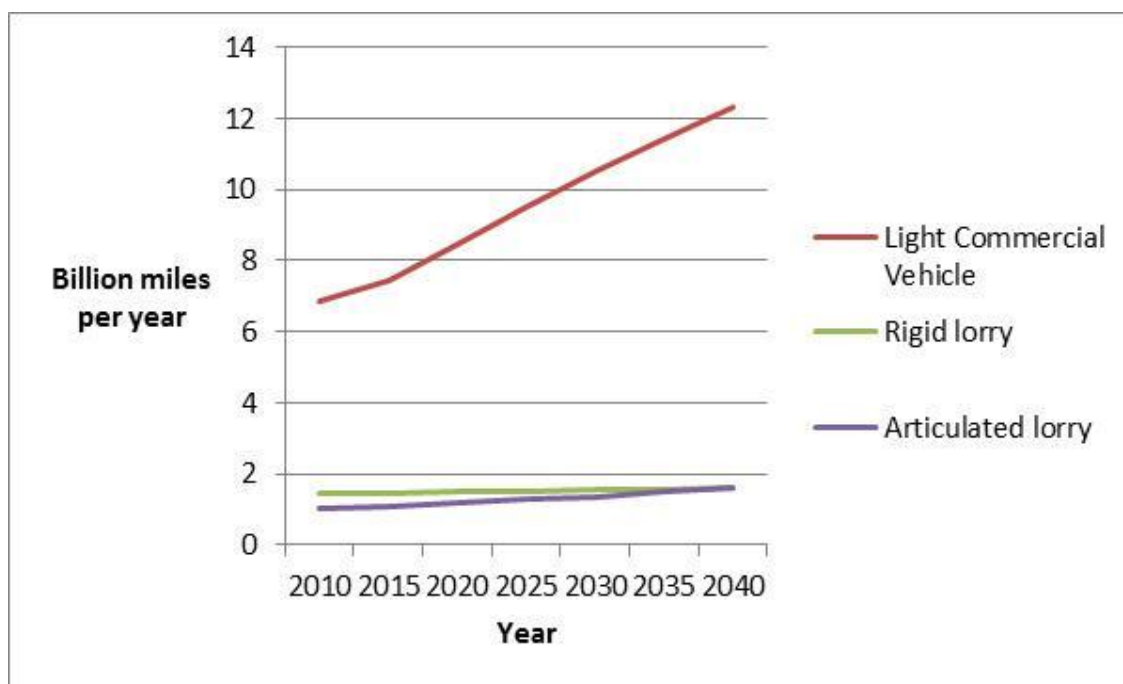
Figure 18: Forecast growth in freight on all types of roads in south-east England excluding London, billion miles per year (source: Department for Transport Road Traffic Forecast 2015 – extrapolated trend)

52. Growing road traffic levels risk a deterioration in quality of life for many residents, for example due to noise, a less safe walking and cycling environment, and associated impact on community life. It also threatens wildlife due to increasingly polluted run-off from roads and animals killed by traffic. Without very careful design and mitigation, new development and transport infrastructure could increase flood risk, destroy wildlife habitats, and blight the landscape.

53. The population will continue to age overall: by 2026 there are expected to be 46% more people aged 65 and over, and 69% more people aged 85 and over, than in 2013. Younger people will be attracted to areas with high jobs growth, provided the housing is affordable and the services and cultural and leisure offer of new neighbourhoods is sufficiently attractive. However, planning policy will result in older peoples' housing alongside homes for workers in the new urban areas. In rural areas, people without access to a car will find it harder to get about if fewer non-commercial bus services can be supported. This will particularly affect the older population at first, but in the future, increasing numbers of older and disabled people should be able to drive: fewer will never have driven and more will be capable of driving due to advances in vehicle technology, while automatic personal rapid transport may be available for point-to-point public transport journeys.

54. Lifestyle factors are hard to predict and could have a big impact on travel patterns.   For example, we do not know to what extent social marketing and policy changes will succeed in encouraging people to be more active. We do not know how the trend for more homeworking, which increased by 35% between 2001 and 2011, will continue. It is difficult to predict how much people will need

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or want to travel in future for retail or services. There is growing evidence that the model of car ownership is changing, with more people using leased or shared vehicles and many no longer see the car as a status symbol.

55. It is also difficult to predict future working patterns: despite flexible working the standard working day has persisted for the majority of people. Will more people work part time, on late or early shifts, or have more than one job? How long will people continue to work into older age? Will working patterns respond as resources such as office buildings and factories become more intensively used and business becomes even more globalised?

Science Transit

56. The UK Government seeks the development of new solutions to these problems of transport congestion and pollution using science, industry and the engagement of the public sphere, through its Future Cities Catapult initiative. Our county is in an ideal position to take advantage of this and to develop new, smarter methods of transport, with our strengths in science, in the motor industry and with our educated populace able to debate and determine what smarter improvements can benefit it. Our Science Transit programme supports this.

57. Given the rapid pace of technology, developments could dramatically affect mobility in ways we cannot currently predict in the longer-term. The uncertainties and challenges anticipated during the period of this plan offer the opportunity to develop new technologies and ways of working and enjoying our lives. Greater involvement of intelligent transport systems in traffic management and the deployment of autonomous or semi-autonomous vehicle technology are two obvious fields for this currently. In terms of the limited infrastructure we have, we shall seek to maximise its use with the use of big data collected via sensors, mobile devices and the 'internet of things' to predict network conditions.

58. Meanwhile, other technology will increasingly allow day-to-day working from home in many industries, reducing the need to commute at all. The markets for new smart technology to address these issues in Oxfordshire and worldwide is great and entering it is a major element of *Connecting Oxfordshire* and Science Transit. We want Oxfordshire to become a smart county that makes transport a positive experience that helps attract an agglomeration of knowledge industries. Our county should also be a great place to live. Smart technology should make our lives more enjoyable.

59. Above all, progress of the economy out of recession may not be smooth and this uncertainty favours transport solutions that are incremental, efficient, reliable and scaleable to respond to demand.

Policy 01: Oxfordshire County Council will work to ensure that the transport network supports sustainable economic and housing growth in the county, whilst protecting and where possible enhancing its environmental and heritage assets, and supporting the health and wellbeing of its residents.

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5. Supporting growth and economic vitality

Objectives:

- **Maintain and improve transport connections to support economic growth and vitality across the county through traditional and innovative solutions;**
- **Make most effective use of all available transport capacity through innovative management of the network;**
- **Increase journey time reliability and minimise end-to-end public transport journey times on main routes; and,**
- **Develop a high quality, resilient integrated transport system that is attractive to customers and generates inward investment.**

60. *Connecting Oxfordshire* supports the Strategic Economic Plan (SEP) - the economic growth strategy for the county - and the proposed strategic alliance between Oxfordshire, Buckinghamshire and Northamptonshire. The SEP focuses on growing the high tech industries for which Oxfordshire is already renowned. The main focus of this growth is in the Knowledge Spine, linking Bicester, Oxford and Science Vale. Peak time travel to work is a priority, because it presents the greatest challenge to transport networks and is vital for the economy. Businesses need to attract high quality staff, and a trouble-free journey to work is an important factor for people in deciding where to live and work.

61. However, other types of journey are important for Oxfordshire's economy. In particular, the county is an attractive location because of its journey time from international gateways like Heathrow Airport. This gives business travellers and tourists easy access, and enables airfreighted goods to reach their destination quickly. Avoiding delays to components and finished goods is also important.

62. Oxfordshire's economy is not just about high tech industry in the Knowledge Spine. There are thriving business parks elsewhere in the county and Banbury in particular has a strong manufacturing base, including motorsport. The north of the county has close connections with the South East Midlands LEP (SEMLEP) area economy. The economic vitality of the county also depends on the success of large and small town centre retail and leisure facilities, and many businesses catering for tourists, which are dispersed across rural areas. Oxfordshire's cultural, visitor and heritage economy is estimated to be worth £3.1 billion per year. Whilst the highest demand for transport along the Knowledge Spine needs to be catered for, Oxfordshire needs good links to all its settlements.

63. We also need to accommodate through-travel: this does little to benefit the local economy, but most of the through traffic on Primary Routes has no suitable alternative to passing through Oxfordshire. Easing journeys through the county helps to avoid delays to local traffic.

Enhancements to road capacity

64. In some cases new roads, or widening roads and junctions may be necessary, to ensure a reliable and effective transport network. Some examples of this include where access is needed to new developments; where the existing road is unsafe; where the existing road brings congestion and pollution to built-up areas; or where the existing road threatens areas of environmental or archaeological interest. However, these schemes often generate new demand and quickly reach capacity again. We will always require careful modelling for major schemes to ensure that effects on the wider network are fully understood, and will consider whether the demand can be met more sustainably.

65. We are working with our partners to develop route strategies for the improvement of strategic roads in the county. The strategies currently under development are described below. We shall be producing route strategies for other roads over the coming years, while maintaining our awareness of the issues and priorities of local road networks.

> Policy 02: Oxfordshire County Council will manage and, where appropriate, develop the county's road network to reduce congestion and minimise disruption and delays, prioritising strategic routes.

A34 and the Oxford – Cambridge Expressway

66. The A34 is the critical north-south route for Oxfordshire and is the main highway linking current and future growth areas in the 'Knowledge Spine'. It is also the main north-south route for HGVs and other traffic travelling from the south coast to the Midlands and north of England. The combined demand from local traffic and long-distance traffic creates substantial congestion along the route for much of the day. Figure 19 illustrates key opportunities and challenges along the A34 in Oxfordshire.

67. Oxfordshire County Council has been working with Highways England, which manages the route, to develop a number of schemes which are deliverable in the short-term for the A34. These include new slip roads at Chilton Interchange to turn this into an all movements junction and a "hamburger" style improvement to the Milton Interchange Roundabout to improve access onto the A34 from Didcot, both scheduled for completion in 2016. We also propose a bus priority lane on the northbound approaches to the A34 exit slip road at Hinksey Hill Interchange.

68. Highways England published its Solent to Midlands Route Strategy in April 2015. This includes the construction of funded schemes for improvements at Peartree and Botley interchanges around Oxford by the end of 2019/20. Highways England will also introduce new driver information systems between the M4 and M40 at key locations.
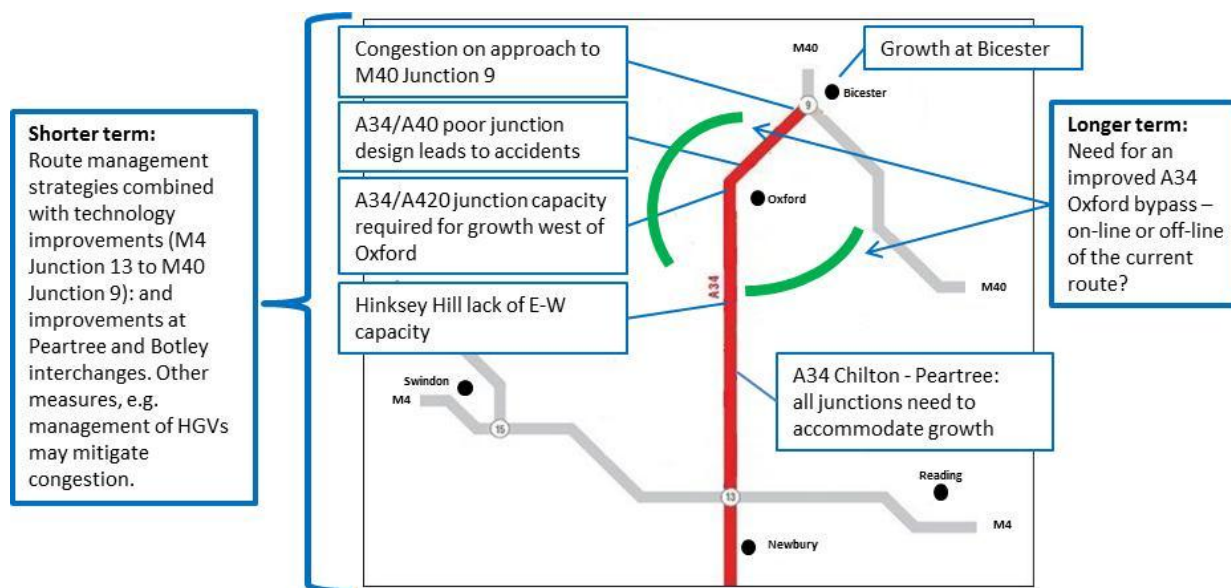
Figure 19: The A34 in Oxfordshire

69. Long-term options for providing more reliable operation of the route, especially around Oxford, will be investigated by Highways England and Oxfordshire County Council. Highways England's policy is that infrastructure improvements on the Strategic Route Network (SRN) should only be considered as a last resort in planning for development. We will, through our Science Transit approach, develop measures for north-south travel along the Knowledge Spine that reduce or eliminate the 'without intervention' growth in traffic on the A34 shown on Figure 15 and Figure 16. If, given the forecast background growth in traffic on the SRN, infrastructure improvements are needed on the A34, these could include the development of a new road away from the existing route past Oxford, as an alternative to further enhancements to the existing A34 western ring-road.

70. Some of the fastest-growing towns in England are located in a belt to the north of London. England's Economic Heartland – the strategic alliance formed by the County Councils and LEPs of Oxfordshire, Buckinghamshire and Northamptonshire – is a £46.6bn economy and net contributor to the UK Exchequer. Transport connections between much of Oxfordshire and cities elsewhere in the alliance area – for example Milton Keynes - as well as to key regional partners such as Cambridge are notably poor. The lack of transport for people and freight between these areas creates an artificial barrier between hubs of knowledge-based growth.

71. Highways England is undertaking a study into how the strategic gap in road transport between the M1 at Milton Keynes and the M40 near Oxford can be filled. Growth around Science Vale, Oxford, Bicester and Milton Keynes creates strong arguments for upgraded transport infrastructure in the area. We – along with our partners in our strategic alliance as well as from further afield – will work with Highways England on their study into creating an Expressway to connect the towns and cities along this corridor together. This route, which must incorporate

real improvements to the whole A34 corridor in Oxfordshire, will help to deliver a strong outer London orbital network which fits a key strategic ambition for Oxfordshire and the South East. This work will take into account work already planned to improve the rail network in the area.

A40

72. The A40 is an important through route linking Gloucestershire and South Wales with London via M40. It is also critical in linking West Oxfordshire - particularly Witney and Carterton - to the Knowledge Spine through connections to the A44 and A34.

73. Witney and Carterton are the two largest towns in West Oxfordshire. They have both seen considerable growth over the last 30 years and this is expected to continue in the future. The A40 forms the main route between both of these towns and Oxford; this is used by most of the bus routes as well as general traffic. Neither Witney nor Carterton have a direct rail connection; their nearest stations are at Hanborough or Oxford.

74. The A40 is a single carriageway Primary Route. It carries a daily flow of between 23,000 and 30,000 vehicles per day - well above the road's link capacity. This is exacerbated by junction capacity issues at Eynsham/Cassington and Wolvercote. This results in congestion on the route for much of the day, including at weekends. During school term times the average journey speed on the A40 between Cassington and Wolvercote in the morning peak is 17 mph, while on the worst days it can be as low as 10 mph.

75. The current bus services have achieved a notable success in attracting people who are travelling from Witney and Carterton to Oxford city centre, but there is still considerable scope for increasing bus use in journeys to the rest of the city.

76. A number of schemes are proposed which may bring some relief to the A40. The County Council has secured City Deal funding for proposals to improve Wolvercote roundabout and Cutteslowe roundabout while the Oxford Transport Strategy is developing proposals which could include improvements to Peartree Interchange, a new access route and a Strategic Link Road between A40 and A44. However these improvements are unlikely to wholly resolve the current capacity issues on A40 let alone deal with the impact of future developments in West Oxfordshire.

77. To this end a long term strategy for improving the A40 is currently being developed. The objectives for this strategy are:

   o To improve travel times and/or journey reliability along the A40 corridor, in particular between Witney/Carterton and Oxford, taking account of future travel needs;
   o To stimulate economic in line with the Oxfordshire Strategic Economic Plan; and,

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o To reduce the environmental impacts and safety issues along the A40 corridor.

78. In the short term we have been provisionally awarded £35 million from the Government's Local Growth Fund for public transport improvements in the A40 corridor for delivery between 2019 and 2021. The proposed scheme includes:

- An eastbound bus lane between Eynsham Roundabout and the Duke's Cut, Wolvercote;
- Westbound bus priority on the approaches to Cassington traffic signals and Eynsham Roundabout;
- A Park and Ride car park adjacent to the A40 in Eynsham; and,
- Junction improvements along the A40 corridor between Witney Bypass and Eynsham Roundabout, including bus priority on the approach to Swinford Tollbridge.

79. The current Witney to Oxford cycle route will be retained and will be developed into part of the Oxfordshire Cycle Premium Route network. Together these measures will prevent or reduce congestion and pollution increasing on the A40 travelling alongside Oxford Meadows.

80. In addition to these schemes for the A40 corridor, we will seek the completion of the Cotswold Line redoubling and the development of Hanborough station into a local interchange and Park & Rail facility, with additional platform and parking.

81. We will be seeking views on a range of different long term strategy options in a public consultation following which the preferred strategy for the A40 corridor will be chosen. This will allow the strategy to be implemented as funding becomes available.
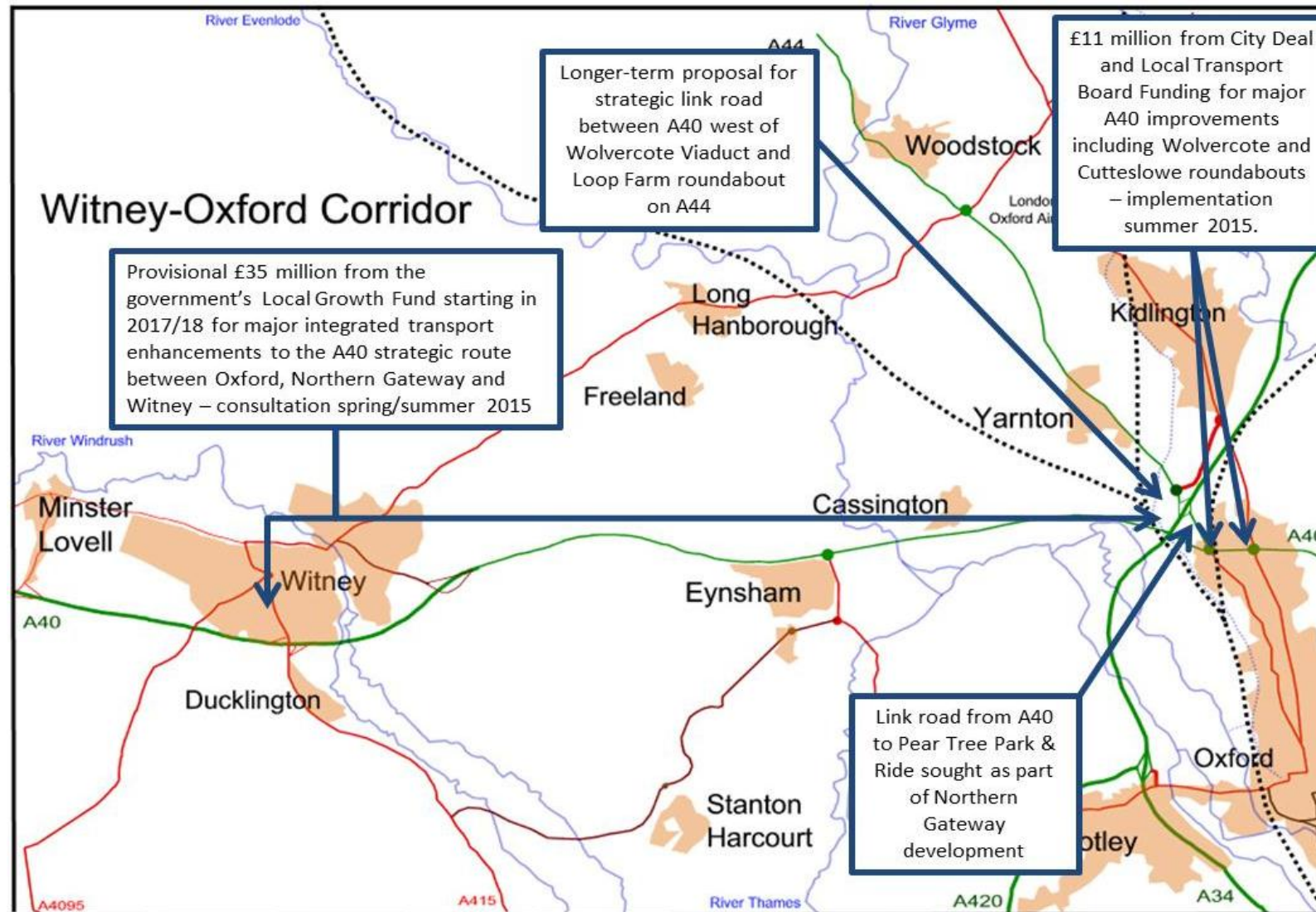
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Figure 20: The Witney – Oxford corridor

A420 Corridor

82. The A420 is an important principal route between Swindon and Oxford serving many settlements along the corridor including: Shrivenham, Watchfield, Faringdon, Kingston Bagpuize and Cumnor. At peak times it operates over capacity resulting in congestion, particularly at the northern end near Botley. Although advised to use the M4 and A34, there is some HGV usage of the route. Consultation revealed a number of concerns about junctions on the route, with roundabouts and other improvements suggested at several locations. Our proposals for the route are detailed in the A420 strategy, in Volume 2 section ii of this Plan. Funding to deliver Strategy schemes will need to be secured from development via Community Infrastructure Levy (CIL),Section 106 and/or Section 278 agreements, working closely with local councils and other stakeholders.

Local routes in Science Vale

83. A number of new road links and capacity improvements are necessary to accommodate the large scale of employment and residential development in Wantage, Grove, Harwell and Didcot. These are detailed in the Science Vale Area Strategy.

Local routes in Bicester

84. The Bicester Area Strategy outlines options for a new road linking the eastern perimeter route with the A41. The preferred option will be identified and the Area Strategy reviewed in time for the Part Two of the Cherwell Local Plan. Large residential development in north-west Bicester offers the opportunity to relocate the north western perimeter route around Bicester, creating a boulevard through the new development. We are also progressing work to deliver a new highway bridge to allow the Eastern Perimeter Road to cross the new East West Rail line, replacing the current Charbridge Lane level crossing.

Local routes in Banbury

85. The Banbury Area Strategy includes a new link road between the town and a large employment site to be developed east of M40 junction 11. A spine road to be built as part of development at Salt Way south of the town will link the A4260 Oxford Road and A361 Chipping Norton Road.

Local routes in Witney and Carterton

86. The Witney Area Strategy outlines a new junction with the A40 already secured from the development at West Witney, and west-facing slip roads at Shores Green junction on the A40, which would enable the A40 to be used by people travelling from one side of Witney to the other.

87. There are other parts of the county's inter-urban road network where congestion is forecast to be severe in 2031. We will develop a programme of further route strategy work to address these, recognising the importance of enabling development across the county, and key cross boundary links.

Cross-boundary links

88. We will continue to work with Berkshire councils on the potential for additional river crossing capacity at Reading, taking into account the potential for impacts

on the local road network from the increased traffic flow across the river and how or if that can be mitigated. We also need to understand expectations for population growth in Berkshire and the impact this would have on future demand across any potential bridge.

Reducing pressure on the road network

89. If the same proportion of journeys made by sole-occupancy private car continues from future developments, we will not be able to accommodate the trips that people want to make. Through our involvement in strategic planning in the county, we will therefore seek to ensure that the need for additional road infrastructure is minimised. By locating housing close to jobs where people can more easily walk or cycle to work, in places where people will be able to use high quality public transport to get to work and where the car is not perceived as the default means of transport, the number of miles travelled by car per individual can be reduced over time, thereby slowing the growth in pressure on the road network. We will also use our influence in the planning process to ensure that new developments are well laid out so that they encourage walking, cycling and the use of public transport rather than car use.

90. Bus and cycle travel uses less road space per person than car use. Walking and in some cases cycling can be accommodated away from roads. All three of these modes can help reduce congestion and help make the county a more attractive place to live and work. Wherever there is the potential to accommodate more individual person trips through more walking, cycling or use of public transport, we will consider scheme options that give priority to these modes, through traffic signals, allocation of road space, and improving conditions for cyclists and pedestrians. We will improve access to the rail network and work in partnership to improve rail capacity, for passengers and freight.

91. Before developing schemes for additional road space, we will look at ways to make existing road space accommodate more vehicle trips. There is great potential across the county to make junctions work more efficiently through investment in updating the management of traffic signals, and coordinating them so that they work together to smooth traffic flows.

92. We will also use travel information to encourage and influence people to choose public transport, walking and cycling, through further developments of the Oxfordshire Journey Planner, an on-line journey planning tool that can be used on mobile devices. We will embrace new technologies and use data and information to predict and influence travel on our transport networks, alongside more traditional network management techniques such as the use of Traffic Regulation Orders. This is outlined in the Science Transit Strategy.

> Policy 03 Oxfordshire County Council will support measures and innovation that make more efficient use of transport network capacity by reducing the proportion of single occupancy car journeys and encouraging a greater proportion of journeys to be made on foot, by bicycle, and/or by public transport.

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Prioritising different types of journey

93. The road network has different user priorities in different environments. In order to keep through traffic on the core network moving, it is often necessary to prioritise vehicle journeys over others, restricting interruptions to traffic flow on the more important routes. These can mean a lower priority to vehicles joining or crossing the main route, pedestrians crossing the route, or due to obstructions like parking or loading. Where roads pass through urban centres as a high street, they are part of a place as well as being a link. In the latter situation pedestrians would be given a much higher priority, with plenty of opportunity to cross the road even if this means interrupting traffic flow. In the former situation, pedestrian crossings, if provided, would probably give the minimum green time to pedestrians. Each situation must be treated on its own merits, but we have classified the road network, indicating the function of each link. This classification, as set out in Table 2, will be used as a guide in decisions over which type of road user to prioritise.

94. Along main roads in Oxford and our growth towns, we will also prioritise the use of public transport and/or cycling, depending on the potential for more journeys to be accommodated via these methods. This may be through allocating road space to bus or cycle lanes, and through the use of bus priority traffic signals, or signals that give priority to cyclists if and when these are approved for use.

Policy 04 Oxfordshire County Council will prioritise the needs of different types of users in developing transport schemes or considering development proposals, taking into account road classification and function/purpose, the characteristics and function of the place and the need to make efficient use of transport network capacity.

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Status	Definition	Characteristics/treatment	Routes in Oxfordshire
Class 1: Motorway	A road suitable for high speed long distance national traffic *Responsibility of Highways England (HE)*	Dual carriageway with limited access and type-restricted use No weight restrictions	M40
Class 2a: Strategic Primary Routes	A strategic road suitable for longer-distance and inter-regional traffic. Main connections between defined primary destinations. Part of the national lorry route network *Responsibility of either HE or the County Council*	Able to cater for high volumes of traffic. Predominantly dual carriageway No restrictions on access or permanent weight restrictions Presumption against at-grade pedestrian crossings Presumption against speeds below 50 mph	A34, A43 (HA) A40 (M40 J8 to Witney) A41 (A34 to Bicester) A44 (A40 to A4095)* A423, A4142 (Oxford S / E bypass)
Class 2b: Other Primary Routes	A road suitable for longer distance and inter-regional traffic. Main connections between defined primary destinations. May be part of the national lorry network *Responsibility of the County Council*	Able to cater for high volumes of traffic Either dual carriageway or single carriageway No restrictions on access or permanent weight restrictions, may be some height restrictions	A40 (west of Witney) A41 (Bicester to Aylesbury) A44 (north of A4095) A420 (west of A34)# A422 (east of A423) A423 (north of A422)
Class 3a: County Principal (A) Classified Roads (major)	A road suitable for important cross- and inter-county traffic where there are relatively large volumes of traffic but not longer-distance travel. Should be able to cater for all types of vehicles *Responsibility of the County Council*	Usually good standard single carriageway Weight restrictions may be considered where there is a suitable alternative route of the same or better standard available	A338 (Wantage to A415); A415; A417; A418**; A421; A4074+; A4130; A4260 (north of A40)

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Class 3b: County Principal (A) Classified Roads (minor)	A road suitable for important cross- and inter-county traffic where there are relatively lower volumes of mostly local traffic. Minor A-roads would serve to link larger settlements with major A-roads and provide missing links *Responsibility of the County Council*	Predominantly single carriageway; some sections might be of a lower standard Weight restrictions can be considered where there is a suitable alternative route available	A40 (east of A418); A329; A338; A361; A420 (through Oxford); A422 (west of Banbury); A424*; A436; A3400; A4095; A4129; A4144; A4155; A4158; A4165; A4183; A4185; A4260 (south of A40); A4421
Class 4: Non-principal roads (B/C Classified)	A road suitable for other shorter cross and inter-county movements where volumes are relatively low and no principal road is available *Responsibility of the County Council*	Weight restrictions can be considered providing diversions are not excessive and do not prevent access to properties	All B and C roads

these roads are on the Primary Route Network signed as "unsuitable for HGVs" because of height restrictions at railway crossings
* routes which could be reclassified in whole or part, in accordance with Council strategy on HGV routing
** A418 is signed as alternative Primary Route between Oxford and Aylesbury to A41 for HGVs
+ A4074 is signed as alternative Primary Route between Oxford and Reading to A34/M4 but signed as "unsuitable for HGVs"

Table 2: Road priority hierarchy

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Freight journeys

95. Residents across the county complain about vibration, emissions and other environmental damage and dangerous experiences for cyclists and pedestrians caused by heavy lorries (HGVs) travelling through villages and small towns. It is a difficult area to control and our ability to succeed is dependent on both the resources we have available, but also the willingness of the operators to comply.

96. Where HGVs would cause environmental damage, we will retain environmental weight limits, enforceable by the County Council through Traffic Regulation Orders. These prohibit HGV through traffic, but allow local access. We will consider imposing further environmental weight limits where there is compelling evidence of risk of environmental damage due to through HGV traffic, which outweighs the risks arising from the use of alternative routes.

97. We will also seek to minimise environmental damage from HGVs through the use of Routing Agreements and Construction Logistics Plans associated with new developments. Structural weight limits will be applied to protect the county's bridges where necessary.

98. We will seek to work with district colleagues and Highways England to improve both freight distribution networks and support services, for example freight services on the motorway and trunk road network in the county.

99. We will work with Network Rail, rail freight operating companies and businesses in Oxfordshire to increase the proportion of heavy goods being carried to, from and through the county by rail. Significant volumes of rail freight pass to, from and through Oxfordshire, particularly between the port of Southampton and the Midlands and North of England. A recent project to increase the railway loading gauge, enabling larger containers, has removed thousands of HGVs from the A34. It is heavy and bulky items like these for which rail is most competitive, and we will support the provision of appropriately sited rail freight facilities, subject to funding being available and having regard to the impacts on local communities and on the road and passenger rail networks.

Policy 05 Oxfordshire County Council will classify and number the roads in its control to direct traffic, particularly lorry traffic, onto the most suitable roads as far as is practicable.

Policy 06 Oxfordshire County Council will support measures to reduce the number of Heavy Goods Vehicles travelling through the county, by promoting freight by rail and working to improve strategic roads.
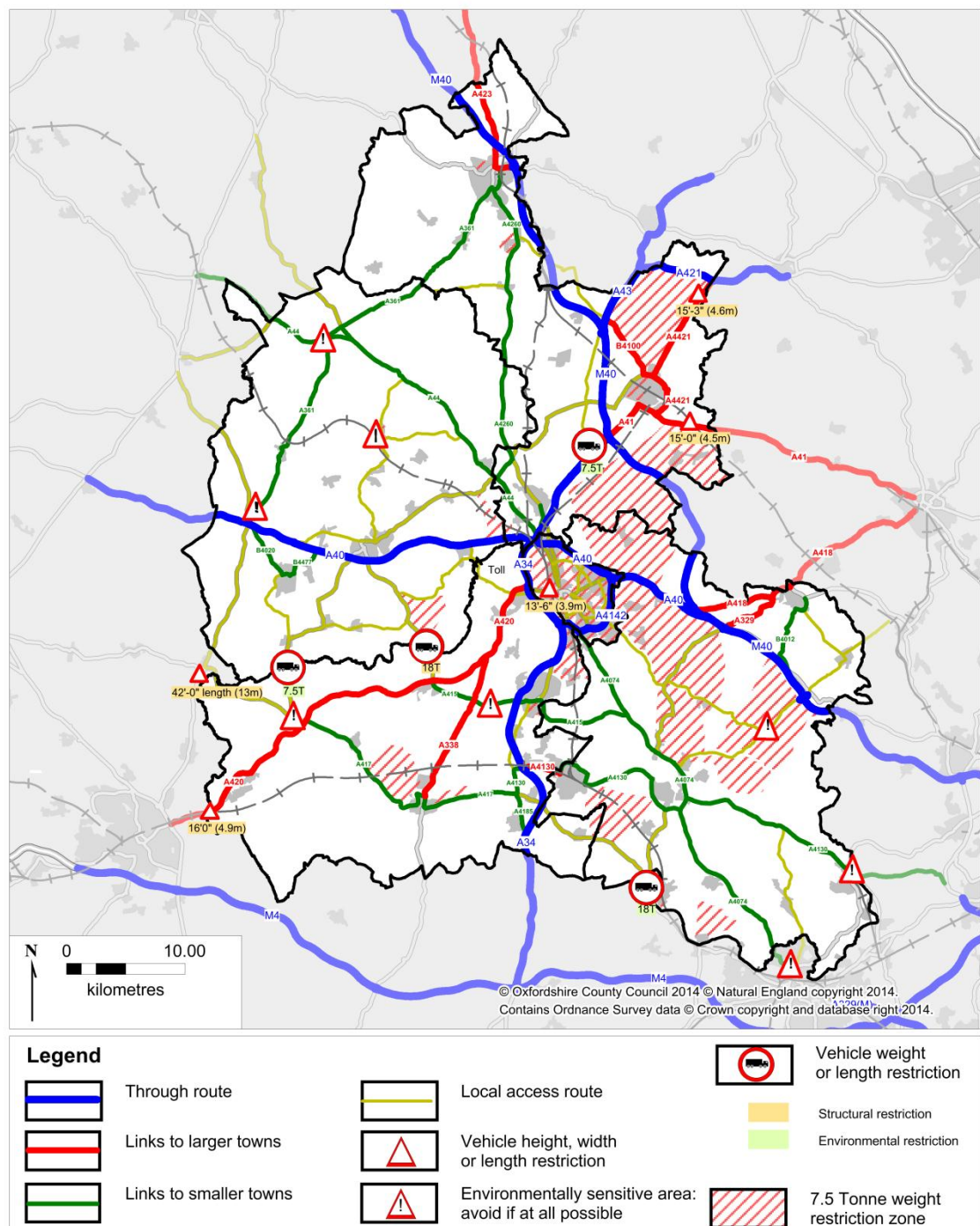
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Figure 21: Lorry routes in Oxfordshire

Better-integrated, high-quality public transport

100.   A large proportion of journeys to Oxford city centre are by bus and rail. However, increasing public transport use on journeys to other parts of the city, within other towns, and along inter-urban routes will be a challenge. Public transport, walking and cycling will need to be more attractive than driving a car. To achieve this they will need to be very high quality, easy to use, and offer seamless integration on journeys involving different types of transport. There will need to be a significant improvement in public transport provision, rather than small improvements to frequency and journey time.

101.   The Science Transit Strategy defines both our high-level vision, and outline roadmap, for the development of better-integrated, high quality mobility systems that both serve the Oxfordshire Knowledge Spine and connect it with the rest of the county. It will be made up of four main elements:

- Projects which promote innovation in mobility and integrated transport delivery;
- Projects which encourage intelligent mobility and opening Oxfordshire's data to promote research and enterprise;
- Key infrastructure improvements which will improve connections between key areas along the knowledge spine, for example, upgrading key junctions and constructing new mass rapid transit systems, for example rapid transit bus lanes. These infrastructure projects will sometimes be led by opportunities in funding streams; and,
- Key route enhancements which will improve connections between key locations along the knowledge spine, including new public transport routes and improved frequency of services on existing routes.

Policy 07 Oxfordshire County Council will work with operators and other partners to enhance the network of high quality, integrated public transport services, interchanges, and supporting infrastructure, and will support the development of quality Bus Partnerships and Rail Partnerships, where appropriate.

Policy 08 Oxfordshire County Council will work with partners towards the introduction and use of smart, integrated payment solutions for a range of transport modes.

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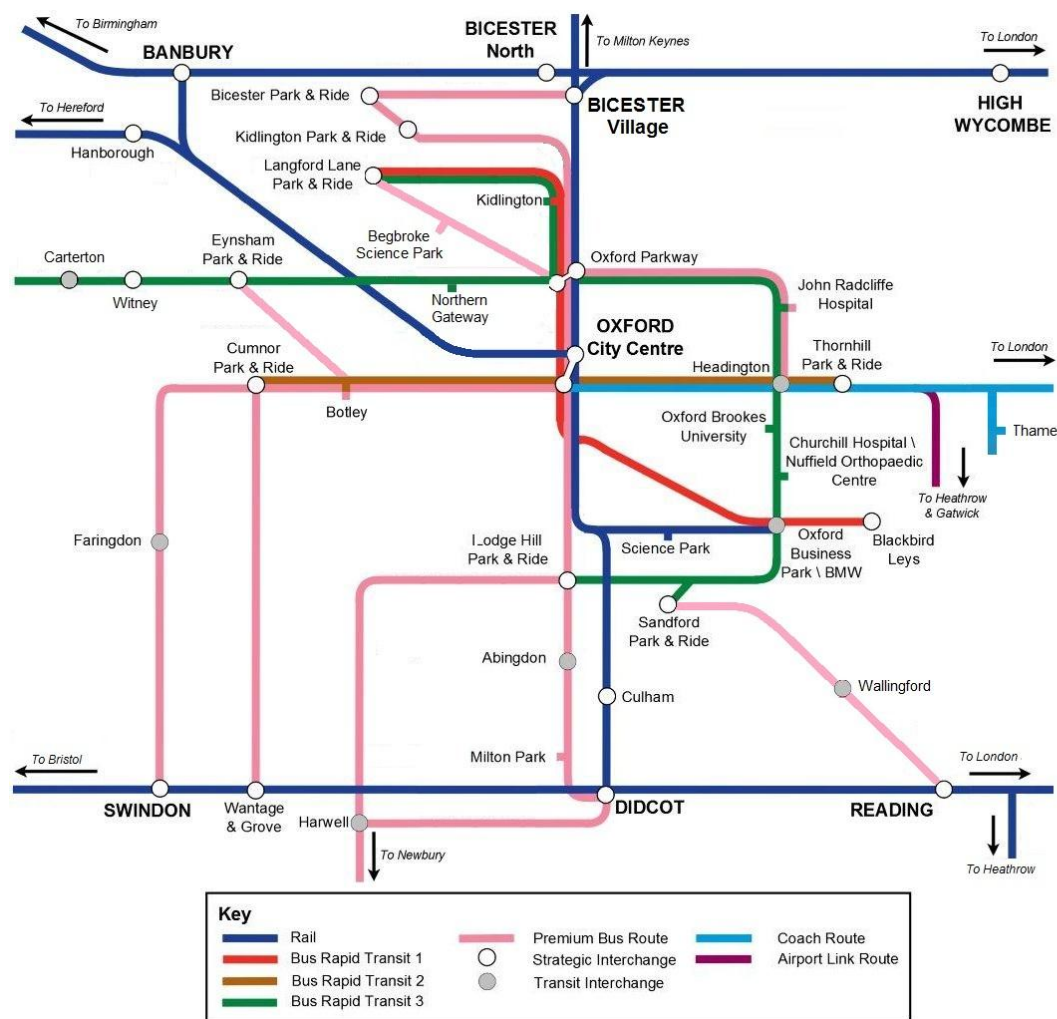
Figure 22: Potential Science Transit network

Buses and coaches

102.   We have been successful in working with bus operators to increase the number of journeys made by bus in the county in recent years, a trend running contrary to many regions in the UK, especially those outside of large cities. We do not have control over commercial rail and bus operators and cannot exercise the same degree of influence over public transport provision as in London. However, we have strong partnership arrangements with the main bus operators and through these we have introduced initiatives such as smart ticketing and payment in Oxford. Further, county-wide improvements to bus services, promoting bus travel and delivering our Science Transit ambition depend on this relationship.

103.   Our bus and rapid transit strategy sets out how we will continue to work with operators to refine and expand the network. We plan new rapid transit services along the busiest routes in Oxford, upgrading Premium bus services in the county, and developing the wider bus network. Bus services also provide important links

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across our county boundary, with a growing market on several cross-boundary Premium routes. We will work to promote and grow bus services on these routes. Partnership with rail operators will need to be strengthened, and there is a need to bring bus and rail operators together.

104.   Oxford is an important destination for scheduled coach services, as shown in Figure 23. Oxford has a 24 hour a day scheduled coach connection with London, with nine coaches an hour each way on the route at the peak. It has half-hourly coach links to Heathrow Airport and an hourly service to Gatwick Airport. These services all start and end at Oxford's Gloucester Green Coach Station, which also serves as a through-stop for a number of national scheduled coach services, including National Express, which brings 200,000 passengers through the coach station annually.

105.   Oxford, Blenheim, the Cotswolds and Bicester Village are also major destinations for charter coach trips, which benefit the visitor economy but require coach parking and driver break facilities to be available near stopping points. We will need to work with coach operators to ensure that our coach infrastructure has the space and facilities to accommodate growth from both scheduled and charter coach services.

Rail strategy

106.   Our rail strategy sets out our ambition and priorities for rail investment in Oxfordshire, and is being taken forward in partnership with Network Rail and train operators. It covers both the planning and delivery of short term schemes to be delivered within the current control period for rail investment (2014 to 2019) and sets out the priorities and evidence base to support investment in the industry's subsequent five year planning periods.

107.   Our strategy has been informed by a rail demand forecasting exercise completed by the Council in 2013, which showed that passenger demand is predicted to increase by 68% to 2026, most of this growth being generated by new rail investment. The greatest increases are predicted on the Oxford-London corridor, where from 2015 there will be a choice of routes and increase in services, resulting from the opening of East West Rail (EWR) Phase 1 and Oxford Parkway station, and on the rail network through Oxfordshire linking Didcot, Oxford, Bicester on to Milton Keynes and beyond when Phase 2 opens in 2019. Our strategy for rail investment also includes other route and service upgrades, for example to support growth and investment in Science Vale and further upgrades to the Cotswold Line.
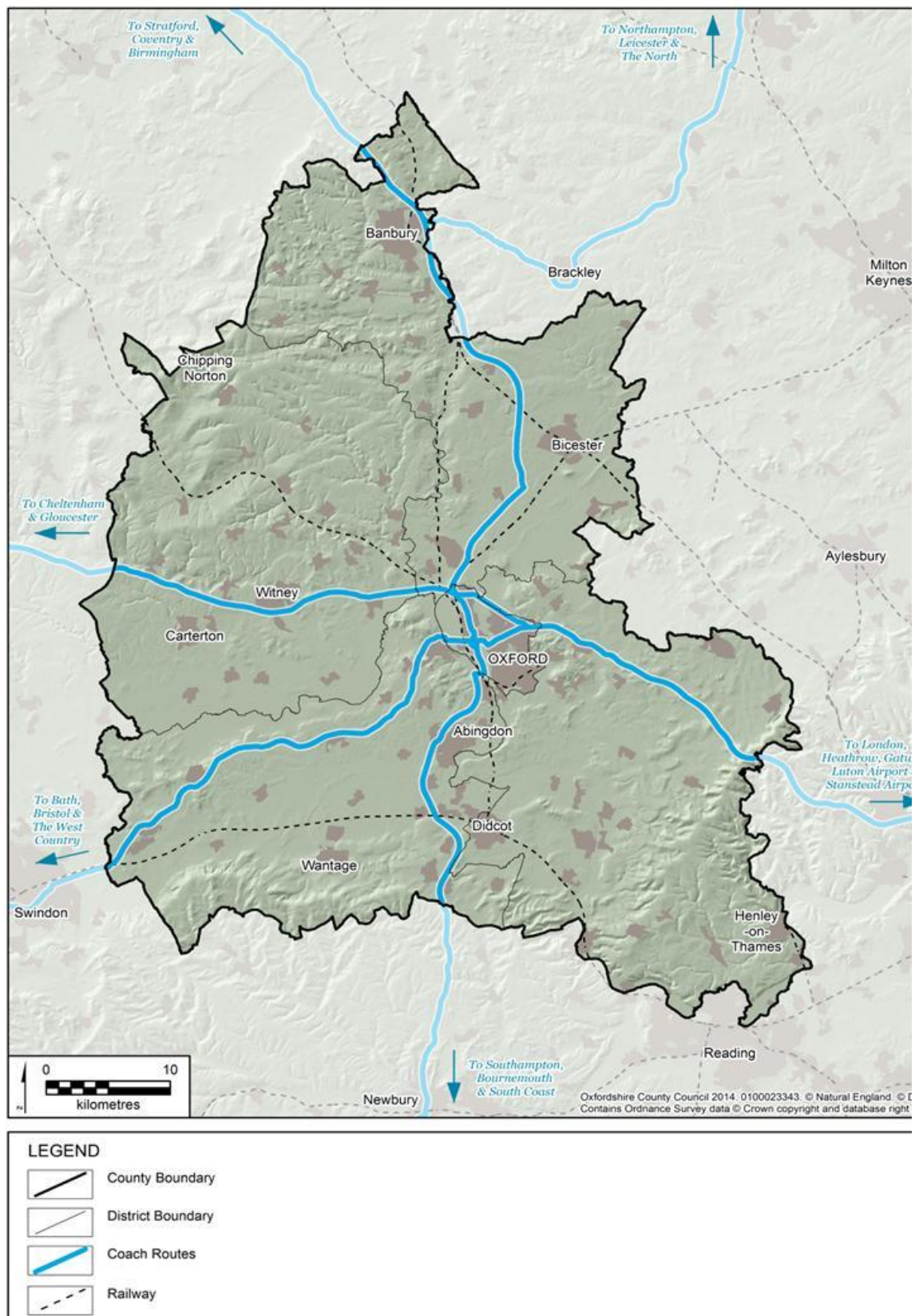
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Figure 23: Oxfordshire's strategic scheduled coach network

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108.   We are also working with Network Rail on their long term planning process to 2043, recognising that there are significant constraints on the rail network – between Didcot and Oxford in particular – which restrict our ability to develop new rail services and the potential of rail to play a much bigger part in meeting the Oxfordshire growth agenda, particularly as an alternative to the A34. This includes a greater role for rail freight in Oxfordshire, taking HGVs off the road.

109.   Our strategic rail priorities include:

- Supporting the EWR consortium and Network Rail in the design and delivery of EWR Phases 1 and 2;
- Supporting provision of enhanced and direct rail services from Oxfordshire to Heathrow Airport and Crossrail;
- Promotion of a major upgrade to Oxford station, including additional platforms, through lines and a new station building and transport interchange;
- Development of the next stage of upgrades to Didcot Parkway, including new multi-storey car park, northern entrance and new station building;
- Opening of the Cowley rail line to passenger services, with new stations serving the Oxford Science and Business parks;
- Developing a business case for increased freight and passenger capacity between Didcot and Oxford, including opportunities for Culham Station;
- Four-tracking the railway line between Oxford and Didcot to provide extra capacity for local, freight and high speed trains to use the route together;
- Development of a business case for a new rail service linking Bristol and Swindon to Oxford and beyond, including a proposed new station in the Grove/Wantage area;
- Supporting the completion of the Cotswold Line redoubling project, including the development and expansion of Hanborough station;
- Better integration of rail and strategic bus networks including ticketing, as part of Science Transit;
- Enhancing access to local rail stations by supporting appropriate expansion in car parking and the provision of secure and accessible cycle parking.

110.   Further investment in the Oxfordshire rail network will also be needed, picking up the outcomes from the rail industry's long term planning work, which has identified future constraints on the rail network in the Didcot and north of Oxford areas in particular.

Policy 9 Oxfordshire County Council will work with the rail industry to enhance the rail network in Oxfordshire and connections to it, where this supports the county's objectives for economic growth.

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Air travel

111.   Oxfordshire benefits greatly from its international business links and despite improvements in video-conferencing and technologies such as Skype, the demand for face-to-face meetings continues to rise in most global business sectors. The ease and speed with which international clients and investors can access our county has a major influence on their decisions about whether to invest and do business in Oxfordshire. Our Strategic Economic Plan's aim to increase the level of high-value jobs in Oxfordshire, together with our forecast rise in dwellings, will mean that maintaining and improving easy international connectivity for Oxfordshire becomes increasingly important.

112.   Improving connections between our county and Heathrow - the UK's hub airport and main centre for intercontinental flights and air freight - is therefore essential in maintaining Oxfordshire's international competitiveness, as well as supporting it as a popular destination for tourists. We are therefore currently working with Network Rail and pressing for the quick implementation of the Western Rail Access to Heathrow project, which will make links between Oxfordshire and Heathrow significantly faster and easier than at present.

113.   Reliable and easy links between the county and Gatwick Airport, Birmingham Airport and Luton Airport are also very important for the county's economy and residents. These airports are bases for low-cost European flights, flights to hub airports in Europe and the Middle East, and charter flights to holiday destinations. Links to both Birmingham Airport and Gatwick Airport will be improved with the electrification of the railway between Oxford and Reading (for connections with trains to Gatwick) and then from Oxford to Birmingham.

114.   London Oxford Airport, located to the north of Kidlington, has the capacity for many more short-haul flights to cities and hub airports in north-western Europe, without the need for extending the runway. We will support this growth by working with the LEP to identify and respond to new central Government funding announcements. We will seek to avoid increasing pressure on the road network in the vicinity of the site, by working in partnership with the airport to improve public transport access, including links to Oxford Parkway station and key linkage to our emerging Rapid Transit Routes 1 and 3.

> Policy 10 Oxfordshire County Council will support the development of air travel services and facilities that it considers necessary to support economic growth objectives for Oxfordshire.

Managing demand

115.   While this Plan seeks significant improvements to the public transport offer, it recognises that the private car will still be a dominant mode of travel throughout the county. In some cases, making public transport more attractive will not be enough to convince or enable users to choose not to use the car. To allow car use, but to make public transport more attractive in comparison, the cost of premium space in the city centre and other areas throughout Oxford, will be such that the introduction of a workplace parking levy or other constraints will be required. To an extent this

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is already happening, with the University and other employers charging for the cost of parking. The Oxford Transport Strategy sets out proposals for a staged approach to introducing a Workplace Parking Levy, as part of a package including public transport, walking and cycling improvements, as well as restrictions on more through routes in the city. This would need to be combined with a pricing strategy for park and ride charges that incentivise their use over parking within the city, as well as further expansion of controlled parking zones to prevent commuters from parking in residential streets. This will provide choice for the traveller and help secure sustainable funding to boost the public transport offer.

116.   Elsewhere, we will work with district councils to ensure that parking provision and charging regimes support area transport strategies. The Council appreciates the value that a decriminalised parking scheme across the county would provide to ensure that the impact of parking on town centres and large events can be mitigated and will continue to work closely with the district councils to identify opportunities to introduce such a scheme in a way that does not add additional burden to the public purse.

Policy 11 Oxfordshire County Council will manage the parking under its control and work with district councils to ensure that overall parking provision and controls, including the potential for further decriminalised parking in Oxfordshire, are financially viable and support the objectives of local communities and this Plan.

Ensuring that everyone can participate in economic growth

117.   There will still be places that cannot viably be connected by bus. With the pressure on Council budgets, more places may fall into this category. As part of the Council's on-going efforts to find savings, it needs to deliver specific savings of £6.25m from these supported transport services by 2017/18. The Supported Transport programme will manage the delivery of these savings. Following an extensive review of current supported transport provision, the intention is to realise these savings through the implementation of a Transport Hub, and through changes to non-statutory subsidised bus services.

118.   The Hub will be a single team which deals with all requests for supported transport services in a coordinated and fair way. It will ensure people are allocated transport according to their needs; supporting those who are judged as capable to use existing public transport or a suitable voluntary sector provider, while protecting the most vulnerable with specialist, bespoke services. Not only does this improve how we allocate our available resources, it also ensures that the whole process for accessing supported transport is now more simple and straightforward.

119.   It is vital that all of Oxfordshire's residents have an opportunity to contribute to, and benefit from, the economic success that is forecast for the county over the period of this Plan, whether or not they have access to a private car. Above all this requires access to education and jobs, but also to retail, leisure, culture, and health

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services. For short trips, access can be significantly improved through better walking and cycling links. When developing walking and cycling networks for towns we will ensure that they include connections to areas that are less well served by public transport, and in particular areas with higher levels of deprivation.

120.   For longer trips and where walking or cycling is not an option, other solutions may be necessary. We recognise the importance of taxis, particularly for providing links to rail stations, and will work with partners to ensure that they are given full consideration in the design of transport interchanges. They also provide a much needed service to people with disabilities, as well as people carrying large items, so we will work with the district councils who regulate taxis, to ensure there are adequate waiting and drop off facilities in town centres.

121.   However, use of taxis on a regular basis is unaffordable for many people. We will work with local research and development partners to scope, design, test, and implement a family of vehicle hire and ride sharing technologies focused on bike hire, car share, car clubs and other on-demand vehicle services. We will also partner with local universities and automotive companies to create and test intelligent, driverless, demand-responsive mobility services.

122.   We will also support local communities to help themselves, offering a range of support to community transport organisations that provide minibus and car schemes using volunteer drivers. A package of support could include the use of Council vehicles when they are not required for Council services, insurance or training. We will provide assistance to vulnerable people seeking transport, putting them in touch with community run schemes where appropriate.

Policy 12 Oxfordshire County Council will work with partners to identify how access to employment, education, training and services can be provided, particularly for those with disabilities or special needs, or who otherwise have difficulties in walking, cycling and/or using public transport, or for people without access to a car.

Policy 13 Oxfordshire County Council will support the development and use of locally-organised community transport to meet local accessibility needs.

Policy 14 Oxfordshire County Council will support the research, development and use of new technologies and initiatives that improve access to jobs and services, taking into account their environmental impact and fit with the other objectives of LTP4.

Resilience and maintenance

123.   Oxfordshire is responsible for maintaining over 4500km of roads and keeping the network in good condition is important for the county's economy. Roads in poor condition can deter inward investment and tourism, which are key to Oxfordshire's success. Lack of maintenance can also cause damage to cars, make bus journeys extremely uncomfortable and are a hazard to road users on two wheels

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124.   Poorly maintained footways can also discourage people from walking, or even cause injuries and can be problematic for wheelchair, mobility scooter and pushchair users. Keeping roads and footways in good condition is therefore a key part of our strategy to get more people using public transport, walking and cycling.

125.   Maintenance has been a challenge for many years because of insufficient Government funding, a succession of cold winters and flooding, and the rise in the number of vehicles, including heavy vehicles, using roads that were not originally designed to cope with them. As new transport infrastructure is built, the problem will become greater. The County Council has developed an Asset Management approach to deliver a more efficient and effective approach to the infrastructure assets through longer term planning. Our policy on Asset Management will meet the following aims and objectives:

- *Keep Oxfordshire moving by providing a well-managed, well maintained and more resilient highway network*

126.   We will make every effort to understand current and future requirements for the highway infrastructure and its contribution to creating a world class economy. In order to deliver this, we will continue to understand our stakeholders' needs, promote levels of service and maintenance priorities for our highways. Our adoption of an Asset Management approach will take a long term view in making informed maintenance and investment decisions).

- *Improve the safety and condition of local roads, footways and cycleways, including resilience to climate change.*

127.   We will improve and maintain the condition of roads and highway related assets with systematic prioritisation where there are safety related issues, Premium bus routes and high pedestrian and cycle usage whilst still maintaining the network as a whole. We will maintain the drainage and associated structures to prevent flooding on and from the highway network.

- *Provide a sustainable approach*

128.   We will invest in energy reducing technology for street lighting and associated electrical apparatus.

129.   Our aim is to move towards a preventative approach to the maintenance of highway assets by prioritising roads for early treatment that have not yet fallen into the failure threshold. Whilst this may appear to be undertaking maintenance on roads that don't look to be in need of repair, and may seem unnecessary when there are roads in visually worse condition, this will often be the right choice and ultimately deliver the best value for the county in the long-term.

130.   The system for prioritising maintenance schemes will take into account the assessed condition, the level of use by different types of road user, the type of road

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and its position in a hierarchy ranging from Primary Route to minor lane or track, and the strategic importance of the road or footway as a walking or cycling route. Details are set out in the Highways Asset Management Plan and its annexes.

Policy 15 Oxfordshire County Council will target new investment and maintain transport infrastructure to minimise long-term costs.

Policy 16 Oxfordshire County Council will publish and keep updated its policy on prioritisation of maintenance activity in the Highways Asset Management Plan.

6. Reducing emissions

Objectives

- **Minimise the need to travel;**
- **Reduce the proportion of journeys made by private car by making the use of public transport, walking and cycling more attractive;**
- **Influence the location and layout of development to maximise the use and value of existing and planned sustainable transport investment; and,**
- **Reduce per capita emissions from transport in Oxfordshire in line with UK Government targets.**

131.   Reducing emissions from transport sits alongside creating growth as the highest local transport policy priorities for Government. The 2011 White Paper states that there is a need for a 'coherent plan to reduce the carbon emitted by transport, not least in order to meet our binding national commitments'.

132.   In addition to continuing to pledge to make car travel greener through technological advances and more stringent emissions standards for manufacturers, the White Paper placed greater emphasis on non-car, behavioural change transport solutions to reduce carbon emissions, particularly for short journeys.

133.   Our strategy to support the achievement of national carbon reduction targets fits neatly with our other objectives. Minimising the need to travel, and getting more people to walk, cycle or use public transport instead of driving not only reduces emissions, but also supports growth by helping to meet the overall demand for travel, and reducing congestion, as explained in the previous chapter. In this chapter we say more about how this will be achieved - including how we will support the uptake of zero and low emission vehicles – for both private and public transport.

Minimising the need to travel

134.   To reduce the pressure on transport networks as the population grows, and minimise emissions and other environmental damage from transport, it makes sense to cut the amount of vehicular travel per head by making some of people's travel unnecessary. If people work close to where they live, their commuting journeys will be shorter, perhaps short enough to make by bike or on foot.

135.   Through our role in supporting strategic planning across the county, we will influence the location of development to minimise the need for car travel in particular, and ensure that where new infrastructure is required, it can be justified and is affordable. We want to move towards place-based guidance for transport and the urban realm for both existing settlements as well as new and expanding developments, which will minimise the need to travel and give the promotion of walking and cycling the highest priority.

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136.   We will work closely with our district and city councils and neighbouring local authorities to coordinate land-use and transport planning, with the aim of ensuring housing is located close to employment and good public transport where possible, new developments have good transport links, and are laid out in a way that enables people to get around easily on foot or by bike, or by public transport. This is in line with the National Planning Policy Framework (NPPF):

- Encouragement should be given to solutions which support reductions in greenhouse gas emissions and reduce congestion. In preparing Local Plans, local planning authorities should therefore support a pattern of development which, where reasonable to do so, facilitates the use of sustainable modes of transport (Paragraph 30);

- Plans and decisions should ensure developments that generate significant movement are located where the need to travel will be minimised and the use of sustainable transport modes can be maximised (Paragraph 34).

The NPPF also states that developments should:

- …give priority to pedestrian and cycle movements, and have access to high quality public transport facilities... (Paragraph 35).

137.   We are required by law to be consulted on the transport implications of all new planning applications. We will look carefully at plans for new developments to ensure that they support the use of sustainable travel, through the way they are laid out, the transport infrastructure and facilities they include, and the way in which the development will be managed when occupied.

138.   In line with NPPF we will require all planning applications for developments over a certain size to be accompanied by a Transport Assessment, setting out the likely impact of the development on transport networks, and any proposed mitigation by the developer. Also in line with NPPF, depending on the size of the development, we will require developers to submit a Travel Plan, setting out how targets for the number of trips associated with the development will be achieved. Details of our requirements are set out in our *Transport Assessment and Travel Plan Policy Document*. We will strongly encourage travel planning from the start of the process to ensure it is embedded in the design and content of the proposed development, rather than as so often happens as an afterthought.

139.   We will also support development in locations that make use of existing or planned sustainable transport infrastructure, for example development that would help create the demand necessary to make a new rail station feasible. We will ensure that housing and employment developments and investment in the transport network are progressed together. Land may not always be available in the right places, and people may not always be able to find a job or may not choose to work close to where they live or somewhere they can access by public transport, but if more people have these options, it will help to reduce demands on transport networks.

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> Policy 17 Oxfordshire County Council will seek to ensure through cooperation with the districts and city councils, that the location of development makes the best use of existing and planned infrastructure, provides new or improved infrastructure and reduces the need to travel and supports walking, cycling and public transport.

140.   Approximately 12% of people in Oxfordshire work mainly from home, and there is clearly potential for this proportion to increase as technology develops and the nature of work changes over time. Increasing the number of homes with a fast internet connection will enable more people to work or run businesses from home. The County Council is working in partnership with central Government and BT to bring high speed broadband to 90% of homes and businesses by the end of 2015 and we will continue to make this a priority for new developments.

> Policy 18 Oxfordshire County Council will help reduce the need to travel by improving internet and mobile connectivity and other initiatives that enable people to work at or close to home.

Active travel

Increasing walking

141.   Walking emits less carbon than any other form of transport. From a strategic perspective, its advantage is that it uses less space than other forms of transport, and does not require any parking or waiting facilities. The more people there are walking about, the safer people feel. Communities benefit from greater interaction, and local shops and businesses benefit from increased footfall.

142.   Walking has huge health benefits, and can be built into every type of journey. It is a necessary part of all public transport journeys, so a key part of encouraging people to use public transport is making the walking element of their journey attractive. While ideally properties should be within a short walk of bus stops, it may be necessary for people to walk further to access high quality, frequent, express-type services. Pressure on bus services in the future, particularly in Oxford, means that we want to encourage more walking where it is an obvious alternative to other forms of travel.

143.   For people to want to walk, they need to feel safe, secure and comfortable. They need to be able to make good progress along their line of route and feel as though they are as important as or more important than car drivers. Being able to make journeys safely on foot provides important independence for the oldest and youngest residents, and being able to get about using walking aids, wheelchairs and mobility scooters allows people with physical disabilities and mobility impairments to play an active part in the local economy. Given the ageing population, we need to make walking routes accessible and safe for all.

144.   In developing area strategies we will review walking networks and focus capital improvements on routes with the greatest potential for increasing the numbers of people walking, particularly where improving the pedestrian environment would support economic growth and reduce car use. We will also prioritise strategically important walking routes for maintenance. Where funding allows, we will carry out targeted safety improvements on routes to school, to encourage active travel and reduce pressure on school bus transport.

145.   In planning improvements to walking routes, we will carry out audits with users, and consult people with disabilities. We will focus on improvements that make routes safe for all users, such as pedestrian crossings and improved surfaces, but will also improve the pedestrian environment by removing street clutter, improving drainage, and providing seating where appropriate, as well as making other design improvements to enhance people's enjoyment of public space. To ensure that walking routes are accessible by people with disabilities, we will follow the principles set out in the Department for Transport Guidance, Inclusive Mobility or Government guidance that may replace it in future.

146.   When improving walking routes in urban areas with high footfall we will sign the routes, and will provide accurate information on walking via the Oxfordshire Journey Planner.

Increasing cycling

147.   Cycling is a reliable, cheap means of transport that emits zero carbon in use. Where trips by bike replace private car or public transport trips, this helps to reduce carbon emissions overall. Cycling also has huge health benefits, so increasing the proportion of people who cycle regularly will help to address public health problems of obesity and ill health related to inactivity. We will increase cycling in Oxfordshire by:

- Treating cycling as a major mode of transport, considering it at an early stage in all policy decisions, new projects, maintenance schemes and developments;
- Allocating more investment to cycling where available;
- Where there is a clear justification and outcome, applying for grant and other funding opportunities announced for cycling and related schemes;
- Engaging with developers to ensure that high quality cycle infrastructure is designed-in to their own development plans and secure Section 106 or CIL funding to improve cycle facilities in and around the site, to encourage people to cycle as soon as they move in to the development;
- Where possible, allocating dedicated road space for cycling, and reducing vehicle speeds where it isn't, focusing on routes where there are already a large number of cyclists, and ones where there is potential for more;
- Creating a network of branded cycle routes, working towards a complete network for the county but prioritising routes where there is most potential for cycling to replace car trips;

- Integrating cycling with public transport, with branded cycle routes linking centres of population with rail stations and Premium bus route stops, safe and secure cycle parking at interchanges with bus and rail services, with additional facilities at major transport hubs;
- Planning comprehensive, connected cycling networks for the larger towns, linking existing sections of cycle route together and creating new ones, and collecting developer funding to implement them;
- Providing accurate information about cycling routes via the Oxfordshire Journey Planner, and promoting cycling in partnership with the Oxfordshire Cycling Network;
- Encouraging cycling for recreation, making full use of the potential of Oxfordshire's Public Rights of Way network;
- Provide charging infrastructure for electric bikes in the public realm and require it in planning applications where appropriate and viable; and
- Encourage awareness of the Wheels for All initiative and support the use of cycles for mobility-impaired people.

148.   The Oxfordshire Cycling Strategy sets out the detail about how we will go about increasing cycling and provides the framework for developing cycling within Oxfordshire's towns and in new developments.

Design

149.   We will ensure that new development adheres to the principles and philosophy set out in the DfT's *Manual for Streets* and supplementary *Manual for Streets 2*, which apply a user hierarchy to the design process, with pedestrians at the top. In residential areas this will include restrictions on parking, lower speed limits where appropriate, and more through routes for pedestrians and cyclists than motor vehicles. These principles may also be applied to improvements in existing residential areas and town centres where there is potential to increase walking and cycling. OCC will be developing its own supplementary Design Guide and standing advice to help provide consistency and transparency for street design in the county.

150.   We will ensure that travel plans for new developments include measures to increase walking and cycling, and that these travel plans are implemented.

Policy 19 Oxfordshire County Council will encourage the use of modes of travel associated with healthy and active lifestyles.

Policy 20 Oxfordshire County Council will carry out targeted safety improvements on walking and cycling routes to school, to encourage active travel and reduce pressure on school bus transport.

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Influencing travel choice

151.   Providing people with excellent public transport and walking and cycling infrastructure, as well as information about their travel options, will not be enough to bring about the shift that we need from car use to other methods of transport. In line with the Government's approach we will adopt the principle of the 'ladder of interventions', enabling choice following provision of better information and education.
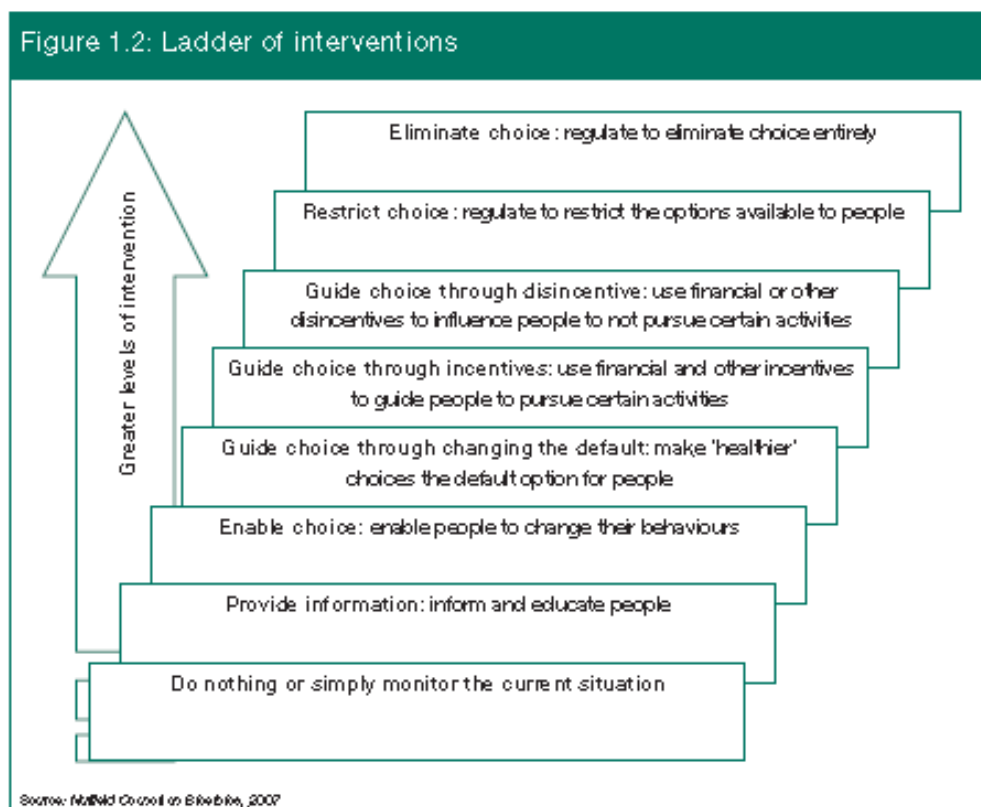

Figure 1.2: Ladder of interventions

- Eliminate choice: regulate to eliminate choice entirely
- Restrict choice: regulate to restrict the options available to people
- Guide choice through disincentive: use financial or other disincentives to influence people to not pursue certain activities
- Guide choice through incentives: use financial and other incentives to guide people to pursue certain activities
- Guide choice through changing the default: make 'healthier' choices the default option for people
- Enable choice: enable people to change their behaviours
- Provide information: inform and educate people
- Do nothing or simply monitor the current situation

Greater levels of intervention

Source: Nuffield Council on Bioethics, 2007

Figure 24: The Ladder of Interventions (Source: Creating Growth, Cutting Carbon: Making Sustainable Local Transport Happen, DfT, 2011)

152.   With the widespread use of mobile internet devices, the Oxfordshire Journey Planner will be the primary source of information on all aspects of travel, providing people with the ability to plan their journeys in real time and make the best choices to enable them to reach their destination on time.

153.   The journey planner aims to help people make informed decisions about their journeys, allowing more seamless travel and therefore increasing the desirability of Oxfordshire for businesses, reducing congestion and environmental impacts from travel in the county. In addition, the application will pull together journey planning information into one location, thus improving our service offer to the general public and tourists. To maximise reach and take-up, local tourist websites and businesses will be encouraged to integrate the application onto their home pages.

154.   It will make use of a wide range of data to predict demand on Oxfordshire's transport networks and give people an accurate forecast of journey time via all

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modes of transport and combinations of modes. The journey planner will highlight the carbon savings and health benefits from switching to different modes. We also anticipate app developers and innovation companies to use this information and data to develop new technology and applications for further improvements to the journey planner and journeys generally.

155.   This tool will be developed so that it 'nudges' people towards taking the option that is both quickest for them and best for optimising the capacity of transport networks. For example, on the approach to Oxford by car it will inform people of the time it will take them to drive to their destination, compared with the time they could save by parking and taking the bus or train. It will be used to offer incentives for travelling in a way that relieves pressure on transport networks. Further details are set out in the *Science Transit Strategy*.

156.   We recognise that access to the internet is not universal, so we will continue to ensure that basic information on public transport services is available by other channels. Our aim is to make the Journey Planner as accessible as possible to users of all ages and ability, and to make it so easy to use that people will choose it over any other method of planning their journey.

Policy 21 Oxfordshire County Council will support the use of a wide range of data and information technology to assist in managing the network and influencing travel behaviour, and work with partners to ensure that travel information is timely, accurate and easily accessible in appropriate formats for different user groups.

157.   The Council will seek opportunities to promote sustainable travel where they can be resourced from external funding streams. In recent years we have successfully obtained grant funding from the Government's Local Sustainable Transport Fund to carry out targeted behavioural change initiatives in the Headington area of Oxford, and we will seek similar opportunities in the future.

158.   Generally people are most willing to consider changing their behaviour when their circumstances change, particularly when changing jobs or moving house. New housing and employment developments need to be designed and provide information to encourage people to travel sustainably. Employers can have direct influence over their staff and can put in place policies and incentives to encourage people to travel to work by public transport, by bike or on foot. We will therefore place an emphasis on ensuring that good travel plans are in place for new developments, and seek opportunities to develop travel plans with existing organisations, including schools, who wish to promote sustainable travel, where funding allows.

Low emission vehicles

159.   We will support the introduction of low emission and renewable energy vehicles to replace existing ones, and will expect any new public transport vehicles to conform to high environmental standards.

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Public transport

160.   Central Oxford has a Low Emission Zone (LEZ), applying to buses only. This was introduced primarily to reduce levels of pollution from oxides of nitrogen (NOx). It requires local buses operating in affected streets to comply with the Euro V emission standard for NOx. The main bus operators responded to this and to customer preference, by introducing a number of hybrid electric buses into the fleet. Hybrid electric buses use a combination of an electric battery pack and a diesel engine to provide power, and produce around 40% less carbon dioxide (CO2) emissions than traditional diesel-engine buses.

161.   We are supporting trials of wireless induction charged electric buses, which run fully on electricity. As technology develops we expect electric buses and other types of low emission public transport vehicles and propulsion technologies to become more widespread. We will support pilots where appropriate, working with businesses and research institutions. If successful, we will support the provision of the required infrastructure, taking into consideration safety and environmental factors. We will ensure that new infrastructure considers the flexibility to enable the take-up of future low emission vehicle technologies, for example through incorporating sensor or wireless technology in new roads or bus lanes.

162.   Network Rail is carrying out a programme of electrification which means that the proportion of diesel trains through Oxfordshire will reduce over the period of this plan. By 2031 we expect that the vast majority of passenger carrying rail lines through Oxfordshire will be electrified. This will reduce carbon emissions as well as NOx pollution.

Private cars

163.   Electric hybrid cars are becoming more popular as they become more affordable, and battery technology develops allowing a longer range. The 'whole life' carbon benefits of electric over conventional vehicles has been debatable, but as electric power generation moves towards greater use of renewable energy sources, the benefits will become more convincing, particularly as mileage increases. In urban areas, there are clear air quality as well as lower emission benefits. However, electric cars take up just as much road space as conventional cars, so from a transport strategy perspective, it would not be desirable if people used them for journeys they could make by public transport, walking or cycling.

164.   To encourage the uptake of electric cars, we will focus on support for charging infrastructure and other incentives which do not run the risk of increasing congestion. We will not support policies which undermine bus or public transport priority, such as the use of bus lanes by private electric cars. We will consider the provision of free or reduced price parking for low or zero emission vehicles at Park and Ride sites.

165.   We will seek funding opportunities and work with partners to provide a network of rapid charging infrastructure, which benefits users wishing to make longer distance journeys. We will also seek funding opportunities to provide charging points on street and on Council property, to assist those residents without off street parking where they can charge a vehicle overnight. To allow the use of charging

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points to be optimised we will implement parking time limits, and we will ensure that any charging infrastructure can be used by all forms of electric vehicles, subject to site-specific vehicle height restrictions. We will also look for opportunities to support the development of a network of hydrogen fuelling infrastructure as this technology develops.

Policy 22 Oxfordshire County Council will promote the use of low or zero emission transport, including electric vehicles and associated infrastructure where appropriate.

Reducing the footprint of our own operations

166.   We and our partners operate a large fleet of vehicles. We will look for opportunities to introduce low emission vehicles into the fleet where this is cost effective.

167.   We will seek to reduce energy consumption in our operation of the transport network, by introducing more energy efficient electrical equipment such as street lighting and traffic signals.

168.   We will ensure that highway construction is carried out in an energy efficient manner, maximising the use of recycled materials where appropriate, taking into account the emissions of transporting them. Our policy is set out in more detail in the Highways Asset Management Plan.

Policy 23 Oxfordshire County Council will work to reduce the emissions footprint of transport assets and operation where economically viable, taking into account energy consumption and the use of recycled materials.

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7. Improving quality of life

Objectives:

- Mitigate and wherever possible enhance the impacts of transport on the local built, historic and natural environment; and,
- Improve public health and wellbeing by increasing levels of walking and cycling, reducing transport emissions, reducing casualties, and enabling inclusive access to jobs, education, training and services.

169.   Alongside supporting growth, transport has the potential to improve quality of life for everyone, but can also have side effects which reduce it. Figure 25 represents the ways transport can impact on seven quality of life factors[4] . Our aim is to increase the net positive impact on quality of life; however, there is a risk of environmental impacts, such as climate change and biodiversity, being understated when compared with some of the positive benefits, because they are not felt so immediately.
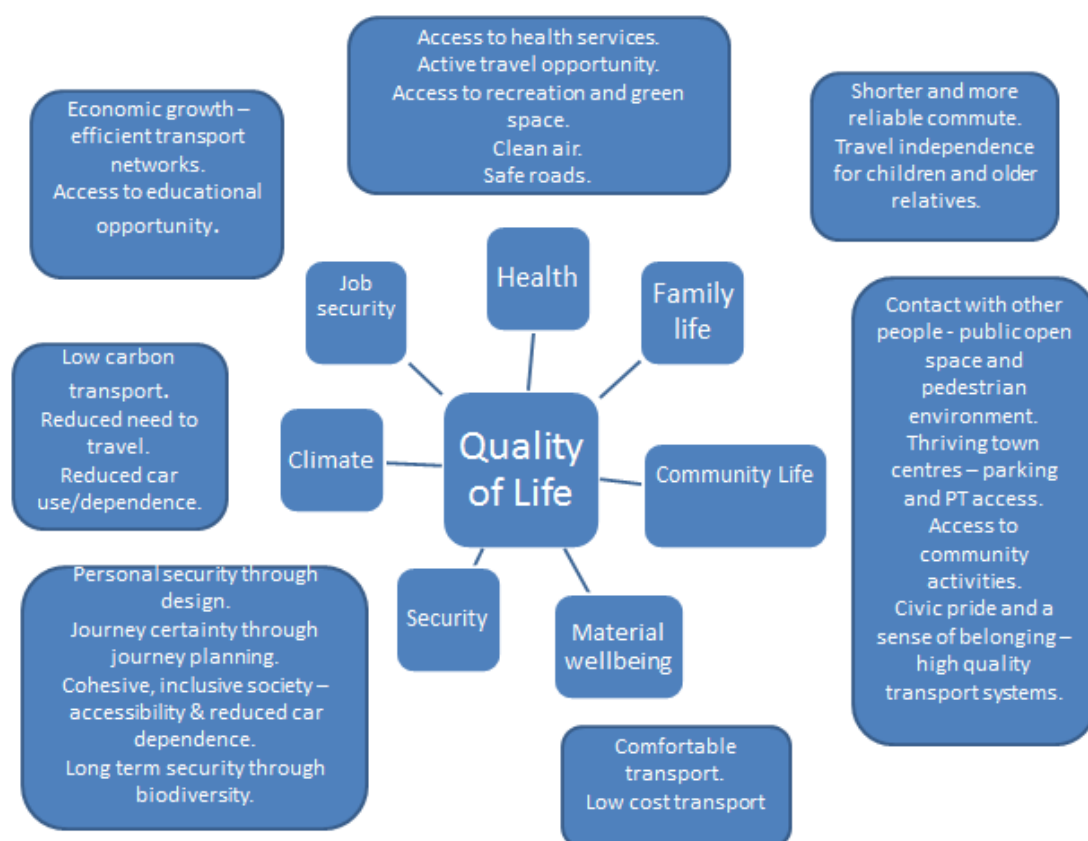

Figure 25: Transport impacts on quality of life

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[4] Seven quality of life factors taken from the Economist Intelligence Unit's Quality of Life Index for countries. The 2 not included are Political Freedom and Gender Equality. 'Security' is actually 'Political stability and security' in the Index.

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Protecting and enhancing the environment

170. To ensure that the environmental impacts of this Plan are considered fully, a Strategic Environmental Assessment has been carried, the findings of which are contained in the Environmental Report which forms part of *Connecting Oxfordshire*. It assesses this plan on its impact with respect to:

- Air quality;
- Climatic factors – greenhouse gas emissions, and adaptation to effects of climate change;
- Noise;
- Biodiversity – flora and fauna;
- Population and community;
- Human health, including safety;
- Soil;
- Water, including quality, quantity and flood risk;
- Material assets, including resource efficiency and waste;
- Cultural heritage and the historic environment, including architectural and archaeological heritage; and,
- Landscape and townscape.

A Habitats Regulations Assessment and a Health Impact Assessment have also been carried out.

171. Damage to the environment, including heritage assets, can occur as a result of development of physical infrastructure, or as a result of increasing use of environmentally damaging forms of transport. The policies of this Plan generally support a reduction in car mileage per head, which will have a positive impact. However, the plan also proposes the development of transport infrastructure to support growth. This needs to be carried out in a way which avoids damage to the environment where possible and seeks opportunities to enhance it.

172. Environmental factors, including relevant legislation and guidance regarding the impact on the natural environment and heritage, will be considered at the outset of every transport infrastructure scheme, while a number of scheme options are still being considered. This will allow proper consideration of less environmentally damaging options and for the design to be guided by environmental considerations so that the best mitigation and enhancement measures can be incorporated into the scheme. Early consideration of environmental factors will deliver better outcomes than considering the environment later in the process, when making changes becomes more costly.

173. We will ensure that the impact on biodiversity informs transport decisions. We will seek to provide biodiversity enhancements from infrastructure schemes where possible, including seeking to reduce the impact on biodiversity from vehicle emissions. Where negative impacts on biodiversity are unavoidable, we will ensure

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that mitigation and compensation are provided. In managing our transport assets, we will consider how we can make positive biodiversity gains, including protecting and enhancing habitats for bees and other pollinators in line with the Council's resolution in July 2014. This includes the way in which we manage highway verges and trees, what materials and the type of equipment we use, and drainage. Details of our plans can be found in the *Highways Asset Management Plan* and the *Tree Management Policy*. Our approach to biodiversity is set out in the *Oxfordshire Biodiversity Action Plan*.

174.   We will work with partners to develop Oxfordshire's 'green infrastructure', which includes our public rights of way network. Details of our plans will be set out in the Rights of Way Management Plan.

175.   We will help to conserve designated Areas of Outstanding Natural Beauty (AONB), though working with the AONB management teams to implement relevant policies or actions from their management plans.

176.   We will manage flood risk through our statutory role to coordinate flood risk management for surface water, groundwater and smaller watercourses in the county. The Environment Agency remains responsible for main-river flooding. Details of our plans can be found in the *Oxfordshire Local Flood Risk Management Strategy*.

> Policy 24 Oxfordshire County Council will seek to avoid negative environmental impacts of transport and where possible provide environmental improvements, particularly in Areas of Outstanding Natural Beauty, Conservation Areas and other areas of high environmental importance.

177.   We will ensure that transport decisions are informed by an understanding of landscape and townscape character and sensitivity to development, recognising that materials, signing and lining can have a negative impact on character and tranquillity. We will use tools such as the Oxfordshire Wildlife and Landscape Study (OWLS) and Historic England's Streets for All streetscape manual, as well as local landscape and townscape character assessments.

178.   When responding to development proposals, we will seek appropriate mitigation for environmental impacts, and highlight opportunities for environmental enhancement. Where it is part of a wider highway improvement scheme, we will seek to improve urban public open spaces that are part of highway land, to make them more visually attractive and inviting, taking the needs of all road users into account, and prioritising pedestrians where it is appropriate. This includes removing unnecessary street clutter such as signs that are not legally required and are of little use.

> Policy 25 Oxfordshire County Council will work with partners to improve public spaces and de-clutter the street environment.

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Improving health and wellbeing

179.   Transport can play an important part in contributing to improvements in public health, particularly in four key areas:

- Encouraging physical activity;
- Promoting independence for older and disabled people;
- Improving air quality; and
- Improving road safety.

Physical activity

180.   Low levels of physical activity and increasing obesity are a huge concern nationally. Oxfordshire has a relatively high percentage of people who take part in regular activity per week (26%) but there is room for improvement. Preventing chronic disease through tackling obesity is a key priority of Oxfordshire's *Joint Health and Wellbeing Strategy.*

181.   For many people, the easiest way to build-in regular physical activity to their daily routine is through walking or cycling for local journeys. Using public transport is also good, because it usually involves walking or cycling to or from a station or bus stop. Our policies to increase the amount of walking, cycling and public transport use support the priority of tackling obesity. Physical activity has also been shown to improve mental health.

182.   The Council is also responsible for management and maintenance of an extensive network of public rights of way (PRoW), which provide opportunities for people to take outdoor exercise as a leisure activity, as well as providing valuable pedestrian, equestrian and cycle links for getting around. Opportunities for leisure cycling can build confidence and encourage people to take up cycling as part of their daily routine. The Rights of Way Management Plan sets out our plans for developing the network.

183.   We will seek enhancements to the PRoW network from new developments, with additional sections of path where necessary to link the developments to the existing network.

Policy 26 Oxfordshire County Council will aim to record, protect, maintain and improve the public rights of way network so that users are able to understand and enjoy their rights in a safe and responsible way.

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184.   Towpaths along the River Thames and the Oxford Canal provide opportunities for long distance walking and, where it is permitted, for cycling. Particularly in urban areas these form part of important local networks of walking and cycling routes. We will work with the Canal and River Trust to promote the use of these paths and seek funding towards their improvement, mindful of the fact that removing the natural features of river banks can damage valuable habitats, for example that of the water vole.

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> Policy 27 Oxfordshire County Council will support appropriate opportunities for improving towpaths along the waterways network, where it would not harm the ecological value of the area or waterway network.

Promoting independence

185.   Nationally, the ageing population means that there will be huge pressure on social and health services. Transport has a role in helping more people to stay independent and healthy, which will reduce this pressure. People need to be able to do basic things such as shopping, banking and going to the doctor, as well as activities that keep them healthy and reduce isolation, such as visiting friends and generally being part of the community. Older people also make a vital contribution to the economy: they are more inclined to support local shopping centres, and many of them provide important services as volunteers.

186.   In Chapter 4 we discussed the importance of ensuring that older and disabled people can get around and how this can be supported. We will work to remove the barriers to access that these groups of people encounter. We will consider the impacts on disabled people at an early stage in developing new transport schemes, so that improvements can be built into the design. This will involve consulting disabled people or their representatives. It is our policy to carry out a Vulnerable Road User Audit on the design of all new schemes to fully understand the impacts.

187.   We will also work closely with public transport operators to ensure that vehicles and infrastructure are fully inclusive and that people with disabilities receive excellent service and feel safe and secure at all times when travelling.

188.   We have statutory duties to promote equality, celebrate diversity, improve social inclusion and ensure fairness for everyone in Oxfordshire. Our ambitions for equality in the delivery of County Council services are set out in our *Equality Policy 2012-17*. The County Council also has a *Social Inclusion Strategy*, which highlights the importance of improving transport links.

189.   Under the Equality Act 2010, the Council has a Public Sector Duty, which includes a duty 'to advance equality of opportunity between people who share a protected characteristic and those who do not.' The protected characteristics are: age, disability, gender reassignment, marriage and civil partnership (but only in respect of eliminating unlawful discrimination), pregnancy and maternity, race – this includes ethnic or national origins, colour or nationality, religion or belief – this includes lack of belief, sex and sexual orientation.

190.   A formal assessment (SCIA) has been made of this Plan as a whole and is available along with the other consultation documents. Similar assessments are required under the Council's Equalities Policy for all new schemes, policies and plans.

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191.   We are committed to ensuring that our transport systems themselves are as inclusive as they possibly can be, and that they advance inclusivity by helping everyone to take an active part in society and the local economy.

Policy 28 Oxfordshire County Council will consult from an early stage in the development of schemes and initiatives so that the needs of individuals, communities and all groups sharing a protected characteristic under the Equalities Act 2010 are considered and, where appropriate, acted upon.

192.   When assessing the health impacts of transport schemes and initiatives, we will be mindful of the need to address health inequalities, which are often linked with the differences in levels of deprivation between different areas. In consultation with public health colleagues, we will factor this consideration into our recommendations.

Improving air quality

193.   In Chapter 3 we described the problem of air pollution from oxides of nitrogen affecting Oxfordshire. This is a serious public health issue, affecting respiratory health for people using the highway in affected areas. District and city councils are responsible for air quality monitoring in Oxfordshire.

194.   When an area is declared an Air Quality Management Area (AQMA) because of exceeding levels of particular pollutants, the district or city council is required to develop an Air Quality Action Plan (AQAP). As transport contributes most of the problem pollution (in Oxfordshire this is currently NOx in all cases), many of the potential actions are only possible with the support of the County Council. We recognise our responsibility and will work with the district and city councils to develop appropriate actions, taking into account our overall transport strategy.

195.   The following Air Quality Action Plans are in force in Oxfordshire:

- **Oxford**: The Oxford AQAP covers the entire city within the ring road. Measures to support it are contained in the Oxford Transport Strategy;
- **Chipping Norton**: The Chipping Norton AQAP proposed the introduction of a weight limit for HGVs and re-routing of HGV traffic between south-east England and the Vale of Evesham via the A40. This included 'de-priming' the A44 and associated modification to signage. We have commissioned a feasibility study for the implementation of the lorry management measures;
- **South Oxfordshire:** There are three AQMAs in the district, in Henley, Wallingford and Watlington. South Oxfordshire District Council has drafted an action plan that contains some suggestions on how the air quality issues in these three areas, and South Oxfordshire as a whole, can be tackled;
- **Vale of White Horse**: Vale of White Horse District Council has drafted an action plan covering the two AQMAs in the district: Abingdon town centre, and Botley, adjacent to the A34. Abingdon has had an AQAP since 2009, and the

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Abingdon Integrated Transport Strategy, which smoothed traffic flows in the town centre, has helped to reduce levels of NOx. Botley AQMA has not previously had an AQAP: specific actions to reduce NOx in Botley are very difficult because the pollution is created by the busy A34 managed by Highways England. A 50 mile per hour speed limit on the A34 has been introduced to reduce air pollution; however levels remain above the air quality standard. Work with Highways England to develop a strategy for the A34 will take into account the need to reduce NOx pollution in Botley and support the AQAP.

196.   We will work with the district and city councils to develop transport measures as part of AQAPs for the county's other existing AQMAs, in Witney, Kidlington, Bicester and Banbury, and other AQMAs that may be declared during the period of this Plan.

Policy 29 Oxfordshire County Council will work with district and city councils to develop and implement transport interventions to support Air Quality Action Plans, giving priority to measures which also contribute to other transport objectives.

Improving road safety

197.   When evaluating the costs and benefits of new road schemes, the Department for Transport uses an estimate of just under £50,000 for the average value of preventing each road casualty, however serious.   This reflects not only medical costs, but also the suffering of those involved as well as any lost economic output. This figure excludes the wider costs such as the severe congestion that is often caused even by comparatively minor collisions on the strategic roads in the county.

198.   Our strategy for improving road safety by preventing casualties is set out in the *Oxfordshire Community Risk Management Plan*. Our approach consists of:

- Gaining an understanding of the problem through analysing casualty reports and monitoring the casualty history of all roads in the county, and targeting our work accordingly;
- Changing road users' attitudes and behaviour so they take more responsibility for their own and other people's safety;
- Maintaining transport infrastructure in a safe condition;
- Highway engineering improvements where appropriate, and designing in safety to all new highway schemes including those being constructed as part of new development; and,
- Changing speed limits where appropriate and reinforcing these with specific measures like variable message signing, where this can be justified.

199.   During the period of this Plan, technologies to improve safety will very likely be further developed or become more widely available. The Council will respond positively, so that road users in Oxfordshire have the opportunity to take advantage of new technologies, for example through:

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- The use of new, safer materials and infrastructure in highway schemes;
- Considering road safety adaptations that may become permissible under new legislation – many of these are likely to relate to in-vehicle technology that will alert drivers to risks and potentially manage, for example, the headways between vehicles; and
- Providing information to support the development of road safety technologies.

200.   We process and analyse all reports of injuries on the road received from Thames Valley Police. This allows us to identify collision problem sites and routes, and trends in numbers overall and for specific road user groups, as well as to explore behavioural and other factors. Prompt processing of data allows us to respond quickly to maintenance issues such as gully clearing to reduce localised flooding or worn road markings.

201.   Monitoring casualty history allows us to target our behaviour-change programmes, and identify sites that would benefit from maintenance or improvement schemes. Because casualties are dispersed, and therefore the number of casualties at any site is low, we monitor them over a five year period to detect patterns. However, we acknowledge that many casualties, particularly minor ones that don't involve motor vehicles, are not reported to the police. For this reason, we also receive summary information from the NHS on road accident casualties to complement the police data.

202.   We deliver Road Safety Education programmes, sometimes in collaboration with other agencies such as the police or local community safety officer. We use casualty data to identify road user groups most at risk and target our programmes to achieve casualty reduction within those specific groups, either county-wide or to address specific local problems.

203.   Each year a proportion of our maintenance budget is spent on planned road safety maintenance schemes, such as rectifying substandard skid resistance. Schemes are identified from analysis of casualty records and surveys. This is in addition to routine maintenance such as cutting vegetation to maintain visibility, and reactive maintenance to repair serious safety defects such as large potholes and damaged safety barriers.

204.   We investigate road engineering solutions for parts of the road transport network where collisions occur most frequently. It is important to understand the causes of collisions and that engineering solutions may not always be possible or cost-effective and in many cases may have little impact. An assessment of the priority of a safety scheme will take account of its cost and anticipated accident savings.

205.   We have a legal duty to regulate traffic in the interests of safety, through our powers as a highway authority. It has the power to set speed limits, following strict Government guidance and subject to consultation. Lower speed limits have been found to be effective in reducing casualty rates, in particular on rural single

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carriageway routes. A general review of the county's A and B roads was completed in 2011, and this may be repeated within this Plan period. However, we will investigate additional changes in response to new development, and our ongoing casualty monitoring.

206.   In Oxford, most residential roads were reduced to 20mph in 2009, which has been successful in reducing accidents and encouraging more walking and cycling. Government guidance urges traffic authorities to consider introducing more 20 mph limits, over time, in primarily residential urban areas and built-up village streets, to increase safety for pedestrians and cyclists. We are aware that a number of communities across Oxfordshire have expressed an interest in 20mph limits, and, subject to funding, we will work in partnership with local councils and Thames Valley Police to investigate and promote lower speed limits where they can be justified and funded. This includes areas where lower speed limits could help meet wider objectives, such as encouraging more cycling and walking.

207.   While we use casualty records to target sites for potential engineering or speed reduction improvements, we are also mindful of the importance of perceived safety on people's behaviour: that is where people view a situation as unsafe even though this may not be borne out by casualty records. This is particularly relevant to our objective to develop and increase cycling and walking. In some locations safety improvements may not appear to be justified by casualty records, but they could remove barriers to walking and cycling, and in particular support parents in allowing children to walk or cycle to school.

208.   People with reduced mobility feel particularly vulnerable, and the fear of a collision or of falling can discourage them from going out. Targeted safety improvements, such as improved crossings, can support the key priority of the Oxfordshire Health and Wellbeing Strategy to support older people to live independently with dignity whilst reducing the need for care and support.

Policy 30 Oxfordshire County Council will identify those parts of the highway network where significant numbers of accidents occur, and propose solutions to prevent accidents.

Policy 31 Oxfordshire County Council will work with partners to support road safety campaigns and educational programmes aimed at encouraging responsible road use and reducing road accident casualties, and will keep speed limits under review, including giving consideration to the introduction of lower speed limits and zones.

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8. Funding and implementation

209.   The strategic approach and policies outlined in the preceding chapters will be applied across the whole county in the following ways:

- Through our key role in collaborative strategic land use and transport planning for the county;
- Through our involvement in the development of Local Plans and Neighbourhood Plans;
- In our response to strategic infrastructure and development proposals;
- In our response to planning applications;
- Through the development of area strategies for areas planned for growth;
- Through the development of supporting strategies;
- Through our work with partners to develop transport solutions; and,
- In our decision making process for all aspects of transport for which we have control.

Development of area, route and supporting strategies

210.   For those parts of the county due to experience significant housing and/or employment growth, we have developed draft Area Strategies reflecting emerging Local Plans. These include:

- Oxford;
- Science Vale (the area encompassing Wantage and Grove, Abingdon, Didcot, Culham, and Harwell Campus);
- Bicester;
- Banbury;
- Witney; and,
- Carterton.

211.   These set out a clear strategy for transport in those areas to guide decision making and support future funding arrangements to mitigate the impact of the growth proposed. We are also developing route strategies for the A40, A34 and A420 and we are considering the need for further route strategies. These will consider the transport impact on smaller settlements and key junctions along the routes.

212.   Area and supporting strategies, developed or amended over time, will be formally adopted as part of the Local Transport Plan.

Influencing and supporting Neighbourhood Plans

213.   For smaller towns, villages and rural areas where there is less growth to impact on transport demand and less of an impact on strategic transport networks, in the spirit of localism we are not planning to develop detailed transport strategies for local communities. Many of these communities are developing Neighbourhood Plans, and we will expect these to set out priorities for transport in keeping with both the policies in the preceding chapters and our freight, cycling, rail and bus strategies published alongside this document.
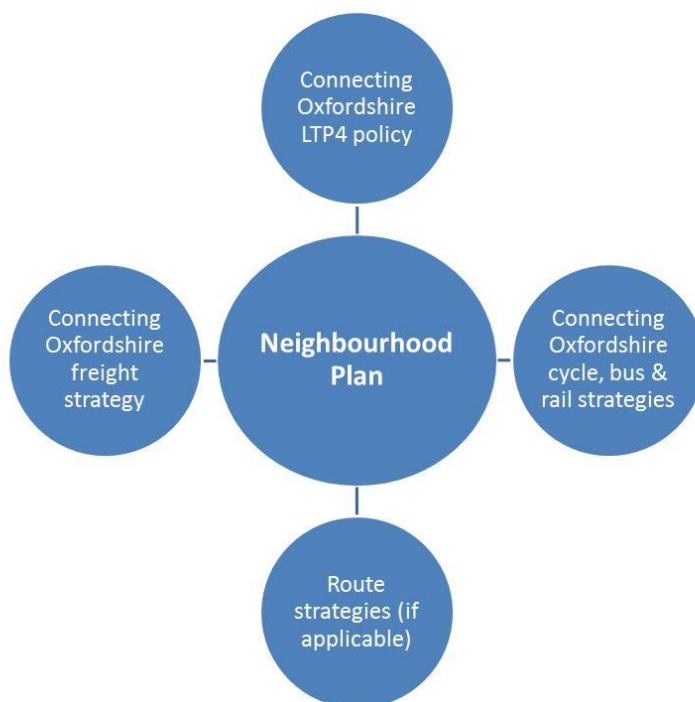

Figure 26: Connecting Oxfordshire's input into Neighbourhood Plans where there is no area transport strategy

Policy 32 Oxfordshire County Council will support the development of Neighbourhood Plans. Where a Neighbourhood Plan has been adopted and providing it is consistent with LTP4, the Council will seek funding to secure the Plan's transport improvements from local developments and the Community Infrastructure Levy as appropriate.

Funding transport improvements

214.   Councils no longer receive funding directly to spend on transport improvements. Capital funding for local projects from the Departments for Transport, Business Innovation & Skills, and Communities & Local Government has been pooled into a single Local Growth Fund (LGF). The Government have given sole responsibility for deciding on priorities for investment and putting in bids for the LGF to the Local Enterprise Partnerships (LEP).

215.   This means that for each transport scheme for which the Council wants to seek Government funding, it has to prepare a bid and is then dependent on the LEP selecting it for submission. It then is considered in competition with non-transport schemes and schemes from other LEPs across the country. This more challenging route to funding requires us to prepare strong business cases that show how schemes contribute towards economic growth.

216.   From time to time, specific grant funding opportunities arise, but these are moving towards becoming funding streams within the LGF, for example the Local Sustainable Transport Fund (LSTF). With tightening local authority budgets, Government revenue grants are particularly valuable, allowing us, for example in the case of LSTF, to carry out promotional activities no longer affordable from Council budgets. We will seek to bid for every available opportunity, which means we need to have schemes and projects ready to put forward.

217.   The other main route to funding is from development, via planning obligations. Developers either contribute towards improvements to mitigate their transport impacts, or carry out works themselves under S278 Agreements with the Council.

218.   While developments can 'pump-prime' public transport service improvements, in the long term these must be provided commercially because there will be insufficient funds to subsidise further public transport services. Private sector funding is therefore a key part of the funding mix for our transport strategy.

219.   We will work in partnership with district and city councils and the LEP through the Growth Board to develop a prioritised programme of capital transport schemes, taking into account the various funding sources. We will also seek to work strategically with other counties or authorities where applicable to secure and develop further funding opportunities. This will be updated annually.

Policy 33: OCC will work in partnership through the Growth Board and developers to meet the objectives of LTP4 and seek external funding to support the delivery of transport infrastructure priorities as set out in the Strategic Economic Plan and forthcoming Oxfordshire Infrastructure Strategy.

Influencing development

220.   Much of what we want to achieve depends on how we can guide development, and raise funding for transport improvements through planning obligations. Our approach is both proactive (strategic planning) and reactive (responding to development proposals).

221.   The County Council works closely with district councils, which are each responsible for preparing a Local Plan. Local Plans - together with any Neighbourhood Plans - form the development plan for an area. They set out the opportunities for development and contain policies on what will be permitted, and where. The County Council provides transport input and advice into Local Plan development and works with district councils to set priorities for strategic transport infrastructure.

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222.   In most cases district and city councils decide whether a development can go ahead (the County Council only determines planning applications for minerals and waste developments such as quarries and landfill sites, and developments on County Council-owned land). Planning applications should be determined in accordance with the development plan for the area unless material considerations indicate otherwise.

223.   The County Council provides pre-application advice to developers to help ensure the development proposals meet transport objectives and do not create unacceptable safety or congestion problems.

224.   In determining planning applications district councils are legally required to consult and take account of the advice of the County Council in its capacity as highways authority and in relation to its other statutory responsibilities. The County Council provides co-ordinated advice on development proposals through its consultation response on planning applications. This may specify requirements for measures to mitigate the transport and other impacts of the development, which can be secured through legal agreements.

225.   Ultimately, the County Council can recommend refusal, but district councils are not obliged to follow our recommendation and need to balance it with other factors.

226.   We will work in partnership with the district councils to ensure that new development:
- Is located in accordance with the relevant spatial planning policies and proposals;
- Contributes to the timely delivery of improvements to the transport network and services, either for better management of existing infrastructure and services or for the provision of new facilities to support growth;
- Has a minimal adverse impact on the existing highway network by providing appropriate highway mitigation works;
- Is designed to encourage and support the increased use of sustainable means of transport;
- Does not impose undue stress on ongoing highway maintenance costs; and,
- In terms of the transport and highway elements complies with current national and local policy guidance, is designed to modern contemporary design standards, and built to the Council's specifications.

227.   In responding to consultations on planning applications the County Council will prioritise the assessment of strategic and large major applications which contribute to economic and housing growth and which raise significant issues for the provision of supporting transport and highways infrastructure.

228.   Applications need to be accompanied by the right supporting information, including testing through approved transport models, to enable a proper assessment of the proposals and identification of any necessary mitigation

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measures. The County Council encourages developers to enter pre-application discussions so that key issues can be identified early and it can advise on the information that is required.

229.   We will normally expect a Transport Assessment to accompany a planning application, or, in the case of smaller developments, a shorter Transport Statement. This sets out the transport issues relating to a proposed development and identifies what measures will be taken to deal with the anticipated transport impacts and contribute towards our transport objectives. It will be used to determine whether the impact of the development is acceptable. The County will continue to develop and maintain a robust transport model which should be used by developers to test their schemes for impact and solutions as part of developing their proposals.

230.   In particularly sensitive locations, such as Air Quality Management Areas, the environmental impacts of the traffic generated by the development will need to be addressed in a separate Environmental Statement or included in the Transport Assessment. A detailed assessment of air quality and noise impact may be required.

231.   Where the development will generate a significant increase in lorry movements during construction or in operation, the applicant should provide information of routeing arrangements to avoid sensitive locations such as villages and residential areas. This may lead to a formal routeing agreement being signed.

232.   For the largest developments, we will ensure that there is a comprehensive travel plan in place. This sets out how a development will be managed, post occupation, to meet targets for car journeys to and from the site and promote sustainable travel.

233.   The County Council will develop and publish guidance documents to assist developers in meeting our requirements.

Mitigation and developer contributions

234.   If proposed new developments are considered to undermine the efficient, effective or safe operation of the transport network, the County Council will expect the developer to remedy any identified impact. This can be either through carrying out remedial works themselves, to our satisfaction, or by making an appropriate contribution to allow this work to be done by us. Where CIL is in place, it will need to be demonstrated that funding will be available from the money collected to deliver the mitigation required.

235.   Developers can be required to mitigate transport impacts which occur away from the development site. For example, a pedestrian crossing might be needed to help people get from a new development to the centre of a village across a busy road. Developers are required to protect rights of way or enhance those running

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over or near their developments; applications for diverting or stopping-up rights of way are dealt with under a separate process.

236.   Where the cumulative impact of a number of developments in an area over the plan period will require improvements to transport infrastructure and services, all developments will be expected to make a contribution towards the wider improvements. The contribution from each development will be linked to its transport impact and the transport need it generates. This contribution will be additional to any works or contributions aimed at resolving any particular problems caused by the development alone.

237.   The system for obtaining contributions is likely to change, as districts now have the power to impose a 'Community Infrastructure Levy' (CIL). The County Council will input into the CIL process by agreeing priorities for local transport which will then be used to set the level of the CIL in each district.

238.   Our aim is that most new development in Oxfordshire will be located where it can be served by existing high quality public transport services, especially the designated Bus Rapid Transit and Premium bus routes, and close to our main transport hubs and interchanges. Where the existing public transport is inadequate we expect developers either to secure services in agreement with us, or to provide funding for them. This will normally be required until services reach a point where they are commercially viable and can operate without subsidy. Our approach to the use of developer contributions for developing the public transport network and increasing patronage is shown in policy 35 below, and is set out in more detail in our bus strategy. It includes reference to providing more detailed standing advice, which when approved will set out guidance on Section 106 contributions towards public transport from development.

Policy 34 Oxfordshire County Council will require the layout and design of new developments to proactively encourage walking and cycling, especially for local trips, and allow developments to be served by frequent, reliable and efficient public transport. To do this, we will:

- secure transport improvements to mitigate the cumulative adverse transport impacts from new developments in the locality and/or wider area, through effective travel plans, financial contributions from developers or direct works carried out by developers;

- identify the requirement for passenger transport services to serve the development, seek developer funding for these to be provided until they become commercially viable and provide standing advice for developers on the level of Section 106 contributions towards public transport expected for different locations and scales of development;

- ensure that developers promote cycling and walking for journeys associated with the new development, including through the provision of effective travel plans;

- require that all infrastructure associated with the developments is provided to appropriate design standards and to appropriate timescales;
- set local routeing agreements where appropriate to protect environmentally sensitive locations from traffic generated by new developments;
- seek support towards the long term operation and maintenance of facilities, services and selected highway infrastructure from appropriate developments, normally through the payment of commuted sums;
- secure works to achieve suitable access to and mitigate against the impact of new developments in the immediate area, generally through direct works carried out by the developer.

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9. Policy Action Plan

Policy	2015 - 2019	2020 - 2024	2025 - 2030	2031 and later
1. Transport network	Ongoing	Ongoing	Ongoing	
2. Roads	Prioritising strategic routes, developing strategies, implementation	Review and implementation	Review and implementation	Review and implementation
3. Reduce pressure on roads	Ongoing	Ongoing	Ongoing	Ongoing
4. Different street types	Ongoing	Ongoing	Ongoing	Ongoing
5. Reclassify roads	Ongoing	Ongoing	Ongoing	Ongoing
6. Freight movements	Lorry route map produced	Implementation of measures	Review route map	Ongoing
7. Public transport	Bus partnerships and rail partnerships created. Multi-modal payment introduced	Incorporate new technology and BRT	BRT completed	Review infrastructure in central Oxford
8. Smart payment	Integrated ticketing completed	Review new opportunities	Ongoing	Ongoing
9. Rail policy	Policy developed and input to CP6	Input to CP7	Input to CP8	Input to CP9
10. Air travel	WRaH decisions. Airports Commission report. Development of London Oxford Airport	Electrified links to Gatwick and Birmingham airports	Further development of London Oxford Airport	New south-east England runway opens

11. Parking	Ongoing	Ongoing	Ongoing	Ongoing
12. Special needs access	Ongoing	Ongoing	Ongoing	Ongoing
13. Community transport	Ongoing	Ongoing	Ongoing	Ongoing
14. R&D	Ongoing	Ongoing	Ongoing	Ongoing
15. Maintenance	Ongoing	Ongoing	Ongoing	Ongoing
16. HAMP	Ongoing	Ongoing	Ongoing	Ongoing
17. Development locations	Produce best practice guide Use best practice guide	Ongoing	Ongoing	Ongoing
18. Internet	Ongoing	Ongoing	Ongoing	Ongoing
19. Active travel	Ongoing implementation	Ongoing	Ongoing	Ongoing
20. School travel	School Travel Strategy Ongoing implementation	Ongoing	Ongoing	Ongoing
21. Data and IT	Mobility Oxford (MOBOX) project	New data projects	Ongoing	Ongoing
22. Low emission transport	OLEV and other projects	Ongoing	Ongoing	Ongoing
23. Our operations	Ongoing	Ongoing	Ongoing	Ongoing

24. Environmental policy	Ongoing	Ongoing	Ongoing	Ongoing
25. Public spaces	Ongoing	Ongoing	Ongoing	Ongoing
26. Public rights of way	Ongoing	Ongoing	Ongoing	Ongoing
27. Towpaths	Ongoing	Ongoing	Ongoing	Ongoing
28.Equalities	Ongoing	Ongoing	Ongoing	Ongoing
29. AQAPs	Ongoing	Ongoing	Ongoing	Ongoing
30. Prevent accidents	Ongoing	Ongoing	Ongoing	Ongoing
31. Road safety campaigns	Ongoing	Ongoing	Ongoing	Ongoing
32. Neighbourhood Plans	Ongoing	Ongoing	Ongoing	Ongoing
33. SEP and IDP	Development of IDP	Tri-Counties further implementation	Ongoing	Ongoing
34. Development planning	Ongoing	Ongoing	Ongoing	Ongoing