Connecting Oxfordshire: Local Transport Plan 2015-2031

Cycle, Freight and Bus Strategies

DRAFT

Oxfordshire Cycling Strategy

1. Introduction

We aim to create the foundation for cycling to become a major mode of travel in Oxfordshire. It is a sustainable, inexpensive, reliable and pollution-free way of getting around. It comes with the fantastic bonus of improving our health, happiness and well-being. As we look for ways to solve the problem of congestion on our roads, cycling is an obvious and growing part of the solution. Cycling is a popular recreational activity too - most people enjoy cycling if they have the right equipment, confidence and access to quality cycling networks.

We want to make cycling a safe, simple and accessible option for people of all ages. We will be radical, and we will work with stakeholders to develop cutting-edge projects to meet our health and transport challenges. Our vision is for Oxfordshire to be a place where as many people as possible will consider cycling as a safe and feasible transport option – particularly for short trips. We want this to be a county where people will be able to cycle to work, to the shops, to rail stations or bus hubs on safe, attractive routes with secure cycle parking at the other end. Over time, our network of cycle routes will connect people to main employment and retail destinations. We will create a network of cycle routes that will enable as many people as possible to choose cycling rather than driving, with all the health benefits, quality of life benefits and financial savings that go with it.

Encouraging and enabling more people to choose cycling is not simply about providing cycle routes – although that is important. We are aware of the need to enable non-users to become confident about travelling by bike. In collaboration with the Oxfordshire Cycle Network, we will provide a comprehensive toolkit of cycling support – training for new users or people returning to cycling after a long lay-off. We will promote cycling using social media, workplace travel plans and personalised travel planning. While money will still be tight, more of it will go towards cycling with the consequent benefits for all.

Visionary cities such as Copenhagen and Amsterdam have led the way by showing that cycling is not a 19th century relic, but the solution to many of our 21st century travel problems. We aim to go further and demonstrate that cycling can transform travel problems throughout a county and not just in and around a city.

We are not starting from a low baseline. Four of our five districts – Oxford, South Oxfordshire, West Oxfordshire and Vale of White Horse are above the figure of 2.8% for cycling as a percentage of journeys to work in England and Wales in the 2011 Census. Oxford is, of course unique in the county with a 17% mode share of journeys to work. But this is not enough. Our ambition is to treble the share of journeys to work made by bike in our county by the end of this strategy.

Our strategy has been developed in collaboration with the Oxfordshire Cycling Network (OCN), which represents most of the cycling campaigning groups and clubs

in the county. We have benefitted greatly from this partnership and will continue to work with OCN to achieve the aims of the Strategy. We also want to involve people who are not members of cycling organisations and only cycle occasionally, if at all.

2. Key outcomes

The 2011 census data on travel to work in Oxfordshire found that 54% of people usually drive to work while just 7% of people cycle to work. The number of people who usually drive short journeys to work in Oxfordshire is increasing and our roads are becoming more and more congested. We will provide an alternative sustainable way to travel so we minimise the increasing levels of congestion by reducing the number of journeys made by motor vehicles, contribute to cutting pollution and improve our health.

2.1 Increasing Cycle Use

Our target is to treble the level of cycling to work in Oxfordshire by the end of this strategy. Cycling will be something that is a part of everyday life, which people are used to from an early age. We want and need to see demonstrable increases in levels of cycling for journeys to school, work and access to services like health and shopping. To achieve this, we will work with partner organisations, businesses, local councils, schools and communities to promote, enable and increase understanding of cycling throughout the county. We will investigate measures to encourage people to try cycling: for example we will look to build on our OXONBIKE pilot cycle hire scheme, identifying other locations that may be feasible.

2.2 A Quality Infrastructure

We will identify a series of strategic routes in collaboration with users where we will Cycle Premium Routes and Cycle Super Routes, which will become the focus of our future investment. The greatest investment potential lies in connecting the areas of employment growth to transport hubs and areas of housing growth. Many of these routes may already have good levels of cycling or have the potential for more cycling if made safer.

Over time, local route networks will also be upgraded to Connector Routes in order to enable safe, signed cycle journeys throughout the county, as well as providing links with Cycle Premium Routes and Cycle Super Routes. We have already

developed cycle strategies and networks for Oxford and Science Vale, and propos to adopt this approach for other main towns in Oxfordshire, working with the OCN and other partners to improve the choice of safe, attractive, high-quality cycling routes in the county. We will promote these to residents and visitors, for example through mapping, and provide cycle parking at key destinations.

2.3 Cycling as part of a Journey

Cycling alone cannot replace the car for long journeys, but a combination of cycling and public transport can create more door-to-door sustainable trips. Bike-rail or bike-bus can provide a seamless journey to almost anywhere – and one of the outcomes of our Strategy will be to make it easier for people to this. We will improve routes from residential areas to transport hubs, improve cycle parking and promote door-to-door travel using cycle and public transport. We will provide more and better links between our cycle network and popular public transport hubs and ensure that safe and secure cycle parking is available at the interchange point – not just at obvious places like rail stations but also at main stops on key bus routes. We will work with rail operators to provide more space for cycles on trains.

2.4 A Safe Form of Transport

We know that one of the main reasons people do not cycle regularly is for fear of an accident. A recent study found that, per hour spent cycling, cyclists in England are around four times more likely to be killed than they would be if they cycled in the Netherlands. This is not something that can be resolved in the short term, but we are committing to provide space and segregation for cycling and improving provision for cyclists at known danger points, such as junctions and roundabouts, as elements of the new Cycle Premium Routes.

2.5 More Funding for and Investment in Cycling

The All Party Parliamentary Group report ‘Get Britain Cycling’ recommended a £10 per head of population investment in cycling. In the draft Cycle Delivery Plan published by the Department for Transport in October 2014, the Government stated that it would work with local government and businesses to explore how a minimum funding package equivalent to £10 per person per year could be achieved by 2020-21 or sooner if possible. We cannot achieve this alone, but will work with government and other local authorities to make this a reality.

2.6 More user involvement in decisions affecting cyclists

Cycling needs to be considered and incorporated into the design of new roads at the earliest stage, and users or potential users consulted as part of this process. Oxfordshire County Council will commit to undertaking cyclability audits with users as standard practice and require developers to fund cyclability audits of new developments, so that local people can have a direct input into what cycling infrastructure would benefit users.

2.7 Cycling and health

Cycling is more than a mode of transport – it boosts our health too by providing the opportunity to build exercise into everyday life and improve health and well-being. There is a wide range of evidence to show that regular physical activity reduces the risk of major diseases and the growing problems of diabetes and dementia. However, as people get older, there is evidence that only a small minority cycle.

Transport - particularly single occupancy vehicle trips - is widely recognized to be a significant and increasing source of air pollution in the UK and elsewhere. This is a serious risk to health for all of us, as air pollution, leads to an estimated 35,000 premature deaths in the UK each year

3. Our strategy

3.1 Develop a High Quality Cycle Network

We have varying quality cycle routes in Oxfordshire, like the rest of the UK. To support our growth, transport and health objectives, we need to improve our cycle network and the supporting infrastructure, such as cycle parking.

For routes and areas where our analysis indicates the biggest potential growth in cycling, we will create safer and connected routes for cyclists, which will comprise safer, direct routes. Our aim is that the routes will be of a quality to convince more people to consider cycling. We will enhance the routes with branded signage, displaying details of destinations and the estimated time to reach these, while providing additional cycle parking where it is needed. We will identify funding from all available sources to ensure that the network continues to grow. We will also involve users in auditing the potential routes, using the cyclability audit tool.

Cycle route category	Common features
Cycle Super Route	Safe, direct, well-signposted routes in and around Oxford's areas of major current and potential cycling demand
Cycle Premium Route	Safe, direct, well-signposted routes in areas across the county where our analysis indicates substantial potential growth in cycling, particularly in the Knowledge Spine area
Connector/Local Routes	Safe, well-signposted routes attractive for both leisure and commuter journeys, providing links around the county

We will also work to increase the number of residents and visitors to Oxfordshire choosing to cycle for recreation and leisure through our improvements to cycle networks. As part of prioritising our maintenance programme, cycle tracks, roads and public rights of way that form part of our high priority cycling networks will be maintained to a high standard and promoted.

We will work with our partners in the county to ensure technology helps us maximise cycle uptake, for example by developing or linking to free smartphone apps, to enable cyclists to find a suitable cycle route, or to plan their own, and to locate cycle parking facilities at their destination.

3.2 Provide a Safe and Well Maintained Network

Sharing narrow carriageway space with fast-moving vehicles – particularly HGVs – is intimidating for even the most confident, experienced cyclists. All available evidence shows that this is why most people will not cycle on the carriageway. We will provide more segregated cycle lanes and other measures like advance stop lines at junctions. We will consider 20 mph speed limits and other traffic calming measures in locations where cyclists share space with other vehicles, where these can be justified. There will be more fully-segregated cycle lanes on existing routes.

A safe cycle network is also a well maintained cycle network. Given limited resources, we will identify a list of priorities for maintenance on key cycle routes. Where space is not available, we will seek to sign cyclists along safer route options, to minimise the need for cyclists to ride on roads that have no cycle facilities. We will also consider reallocating space to cyclists where feasible, considering the needs of pedestrians where space is shared.

3.3 Encouraging People to Cycle

We need to make people feel that cycling is something for them and give them confidence in using a bike. To make this happen, we will:

- Provide detailed information about travelling by cycle in the county as part of the Journey Planner currently in development.

- In collaboration with the OCN, develop a cycle buddy system, where an experienced cyclist will work with a new or returning cyclist on a one-to-one basis, to build confidence and advise on all aspects of cycling.

- Work with the OCN and partner organisations to communicate with businesses, schools and communities to promote, enable and increase understanding of cycling throughout the county. We will develop an information pack to promote and increase understanding of cycling throughout Oxfordshire.

- Increase the level of and improve cycle parking facilities in the city, in towns, at transport hubs (including bus stops) and in new residential developments

- Promote cycling to people who are concerned about their health or fitness, for example by working with our partners to make a cycle route planning app, to give estimates of the calories burned by cycling a route.

3.4 Cycling to Schools

Cycling should be something that is a part of everyday life, which children are used to from an early age. The school run is a major contributor of traffic congestion, especially in residential and suburban areas, but encouraging cycling to school can reduce traffic in the morning peak, while introducing children to cycling. We will raise awareness of cycling as a transport option for young people, working with schools to provide cycle training programmes and engage pupils in cycling. Cycling to school can also offer a healthy and cost effective alternative to school bus travel on some secondary school routes. We will look to invest in these routes where there is a clear case for promoting cycle trips for students.

3.5 Improve Our Journeys and Places

We will work with District and local Councils across Oxfordshire to develop cycling strategies for towns and journey to work areas, either as stand-alone documents or as part of wider area transport strategies. These will enable people to cycle into towns, park bikes securely, and access shops, offices, stations and priority bus routes. We will build-in user involvement, via cycleability audits, to develop coherent user-friendly plans and ensure all designers of schemes fully understand and take into account the needs of cyclists.

Science Vale

A stand-alone cycling strategy has been developed for Science Vale UK (see annex 1). This commits to cycle route upgrades and maintenance, initially through the 2015/16 Local Sustainable Transport Fund project. By 2020, we will provide new routes, branded signs, a trial cycle hire scheme and marketing measures to provide a high quality, safe and attractive network.

Oxford

Oxford already has an enviable cycling record with an estimated 75,000 cycle journeys made each day by Oxford's residents and monitoring of trips has shown a consistently high proportion of journeys made by bicycle into the city centre. But there is an ambition to go further: for Oxford to become a World-Class Cycle City where cycling is accessible to everyone regardless of age, background or cycling experience.

By 2020, the Oxford Cycle Strategy therefore commits to providing higher quality routes on the B4995, improving route continuity across other parts of the main road cycle network and an expanded network of quieter off-road routes. Furthermore, in the city centre there will be an increase in secure and conveniently located cycle parking, and city-wide there will be comprehensive destination signage throughout. This will be funded through existing money already secured such as developer contributions and the Local Growth Fund, as well as extra funding available from the Cycle City Ambition Programme recently announced by central government.

Longer term, the ambition is for a fully joined–up, coherent and safe network for all types of cyclist. This will mean a network of higher quality routes throughout the city that are continuous and direct, enabling cyclists to travel more quickly across the city. It will also mean overcoming major road and river barriers and providing cycle hubs at key public transport interchanges and major employment destinations. In the city centre it also means more innovative cycle parking solutions to deal with future demand and a range of cycle types.

3.6 New Developments

In September 2013, Oxfordshire councillors approved a motion that included requiring cycle-friendly measures to be incorporated into all new road schemes and new housing developments. It is essential that new developments are planned with cycling in mind and with facilities to make cycling both convenient and safe. Designing new developments so that cycling is the most convenient transport method for the majority of trips will naturally increase the proportion of journeys made in this way.

For large new housing development sites, we propose establishing the following principles:

- Developers must demonstrate through masterplanning how their site has been planned to make cycling convenient and safe, for cyclists travelling to, from within and through the site
- Site road network and junctions must be constructed with cycling in mind, including providing space for cycling on main/spine roads through the provision of, as a minimum, advisory cycle lanes

- We will ask developers to fund cyclability audits, so that the local user view is incorporated into new cycle facilities.

For large new commercial developments, developers should demonstrate how their development has been planned for users cycling to the site. This should be 'to the door' and as a result should show how cycle parking will be located in the most convenient position.

3.7 Provide for People without a Bicycle

We have developed a successful pilot OXONBIKE cycle hire scheme, funded by the Government via the Local Sustainable Transport Fund, in the Headington area of Oxford. During 2015/16, a similar project will provide cycle hire between Didcot Parkway station, Harwell, Oxford and Milton Park Oxfordshire. We have set up a stakeholder group to identify a strategic approach to cycle hire in Oxfordshire and how this could be funded in the longer-term, such as through sponsorship.

3.8 Encourage Cycling for Recreation

Cycling is the third most popular recreational activity in the UK - it is estimated over 3 million people cycle each month. Recreational and leisure cycling is often about taking the less direct route, using quiet roads, dedicated cycle tracks and public rights of way in addition to the roads network.

However, less-experienced or confident cyclists can be put off by traffic volumes driver behaviour, or road condition. The public rights of way network is also mainly unsurfaced and subject to seasonal variations as well as other problems such as vegetation growth so its quality and availability cannot be guaranteed. All these factors mean that choices can be limited, and can mean that people choose to drive to a place that can offer a safe cycling experience. As well as generating additional vehicle journeys this may reduce the number of new cyclists using the public network and mean they are less likely to choose to cycle for transport as well as recreation.

We will work to increase levels of cycling for recreation in Oxfordshire by improving the available Connector/Local cycle network where feasible. We will work with partners to improve the quality and resilience of the public rights of way network where possible and where there is potential for increasing usage. We will work with the OCN and other partners to improve the choice of safe, attractive, high-quality recreational cycling routes in the county. We will promote these to residents and visitors and provide cycle parking at destinations along the routes. Where the network has breaks in continuity that affect levels of use we will work with local communities and other stakeholders to find solutions. We will also look to reduce traffic speeds and influence driver behaviour where space is shared with vehicles.

3.9 Funding

Where there is a clear justification and outcome, we will commit to applying for grant and other funding opportunities announced for cycling and related schemes.
We will ensure that developer funding is used to fund infrastructure improvements that people will want to use. We will engage with developers to ensure that high quality cycle infrastructure is designed-in to their own development plans and secure Section 106 money to improve cycle facilities in and around the site, to encourage people to cycle as soon as they move in to the development. Where appropriate, Community Infrastructure Levy (CIL) funding will be used to provide cycle schemes or create sections of the overall county cycling network, with cyclability audits providing a user perspective.

We will improve links between our cycle network and popular public transport hubs and ensure that safe and secure cycle parking is available at the interchange point. We will work with rail operators to provide more space for cycles on trains.

3.10 Cycle Scheme Assessment and Prioritisation

As schemes and projects and funding opportunities come forward, we will need to ensure there is a robust means of assessing projects against the outcomes of this Plan and any bid criteria, to maximise our chances of success in securing funds and meeting Strategy cycling targets. For more significant and costly schemes,

especially those which require Local Growth Fund funding from the Oxfordshire Local Economic Partnership, schemes will be prioritised against their contribution to meeting the LEP objectives of Innovative Place, Innovative People, Innovative Enterprise, and Innovative Connectivity. Where schemes require Major Scheme funding (generally those costing over £5 million) then they will also need to be justified through a Business Case based upon the government's five-case model – economic, strategic, financial, management and commercial before funding becomes available.

4 Implementation Plan

This sets out what we will do during the first three years of the new strategy. We will inevitably need to make changes as we proceed – for example, if we receive more funding for our plans - and we have developed our strategy to make it easy to adapt.

2015/6

Identify a dedicated cycle resource to promote cycling internally and externally, develop a vision of an integrated cycle network, lead on high quality bids for funding opportunities and act as a point of contact for Stakeholders.
Development of assessment process in selecting Cycle Premium Routes and Cycle Super Routes (CPR), branding and marketing strategy for CPRs and development of plans for a comprehensive toolkit of support for cyclists
Identification and completion of first CPR route, including at least one audit of the route with users and subsequent detailed design work.
Research and analysis of options for three more CPRs to be delivered in 2016/17.
Completion of a document outlining the new strategy for utilising developer funding to support the developing cycling network within the county, including funding for cycleability audits
Communicate with businesses, parish councils, schools and communities to promote, enable and increase understanding of cycling throughout the county
Develop a cycling promotion and publicity plan (with Oxfordshire Cycling Network)
Discussions with rail and bus companies about the potential of improving bike/rail and bike/bus door to door journeys.
Identification (in collaboration with users via Oxfordshire Cycling Network) of maintenance priorities for cyclists in the county. This will be an on-going annual task**.**
Training for all planners and designers in facilitating cycleability audits including on-cycle audit of routes.

2016/17 to 2017/18

Completion of three further CPRs in 2016/17. Costed plan for implementation of three more CPRs to be delivered in 2017/18, including community street audits and detailed plans, prior to construction.
Publication of an annual report on progress to management councillors and Stakeholders outlining, achievements and lessons learned during the first year.
Taking every opportunity to promote Oxfordshire as a centre of cycling excellence, via press releases, articles in transport, health and other publications.
In 2018, produce a public report to show how the Strategy is working, covering 2015/16 and 2016/17. It will include comprehensive quantitative data on user numbers and views, particularly on CPR routes, evaluate the health benefits of the developing cycling network, measure progress to date and cover lessons learned.
Development of an implementation plan for 2018/19 onwards

5 How cycling addresses the objectives of our Local Transport Plan

Increasing the number of people cycling in Oxfordshire is a key element of our Local Transport Plan. Our strategy addresses the objectives of the Plan as follows:

Objective	**Cycling impact**
Make most effective use of all available transport capacity	A bicycle takes up just one-fifth of the road space of a car. Shifting car journeys to bicycle is one of the most efficient ways of increasing road space. However, we will look to provide segregated space for cyclists on roads with fast moving traffic.
Reduce the proportion of journeys made by private car	Cycling investment benefits everyone, whether or not they cycle. More people cycling means fewer people driving, which will reduce congestion.
Maintain and improve transport connections to support economic growth and vitality	Cycling improves transport links between homes and centres of employment, increasing access to work and options for jobs, especially for poorly connected people across the county. We will also promote and enable door-to-door journeys combining cycling and public transport as an alternative to driving to transport hubs.
Influence the location and layout of development	Cycling should be at the centre of the design of new developments, making it easy and attractive to walk or cycle the area. We will aim to influence the location of development to ensure that journeys are cyclable and not just accessible by vehicle.
Increase journey time reliability	Journey times are much more reliable for cyclists

	during peak times, but we recognise that many people will not consider switching to cycling if they perceive it as being too dangerous.
Develop a high quality, resilient integrated transport system that is attractive to customers	Enabling and improving door-to-door journeys combining cycling and train or bus is something that we will be prioritising as part of this Strategy.
Reduce per capita carbon emissions from transport in Oxfordshire	Cycling is a largely carbon-free form of transport. By increasing the proportion of journeys made by cycle rather than vehicles, we will make a contribution to reducing emissions.
Mitigate and wherever possible enhance the impacts of transport on the local built and natural environment	Cycling requires relatively small infrastructure changes to the environment, many of which will bring improvements for the wider community, for example street calming measures.
Improve public health and wellbeing	Cycling is an excellent form of exercise. A successful policy to increase the level of cycling will have substantial public health benefits and lead to long-term savings for the NHS. We have developed this strategy in collaboration with our colleagues in Public Health. This Strategy aims to support Priorities 1, 8 and 9 from 'Oxfordshire's Joint Health & Wellbeing Strategy 2012 – 2016'. Priority 1 aims to ensure that: 'all children have a healthy start in life and stay healthy into adulthood'. (DE)

Our vision for cycling in Science Vale

SCIENCE VALE

CYCLING STRATEGY

Version 1 – Autumn 2014

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PART ONE: Our vision

"Our vision is for a world-class cycle network enabling users to make safe, efficient, connected journeys by bike."

"Our ambition is to raise the status of cycling in the Science Vale area through the provision of innovative and high quality cycling facilities comparable with those found in the cycling countries of continental Europe, supporting the growth and investment being made in Science Vale"

Introduction

Science Vale is receiving unprecedented levels of economic investment and associated growth. This investment is creating new jobs, and these new jobs are being supported through new housing in the nearby towns. In the order of 20,000 new jobs and 16,000 new homes by 2031 are being planned for.

Science Vale is an economic growth area that includes three nationally and inter-nationally recognised science and research centres at Harwell Oxford Campus, Milton Park and Culham Science Centre. It also includes the settlements of Wantage & Grove and Didcot. Science Vale is home to Oxfordshire's Enterprise Zone and the focus for significant growth and infrastructure investment.

The transport network needs to be upgraded and strengthened to facilitate the investment by ensuring people can move efficiently around the area and easily reach jobs and services. Significant investment is needed to achieve this in the road network together with cycling and public transport. A multimodal approach is needed to provide choice and ensure resilience, sustainability and efficiency. The first schemes are already in progress. This document sets out our vision for cycling in Science Vale and details where investment in cycling will be directed.

With European companies investing and desire to provide good usable alternatives to car travel cycling is enjoying a renaissance: The profile of cycling is continually being raised at both national and local levels and more people are choosing to cycle. In Oxfordshire, we now have a new Cycling Strategy. The Oxfordshire Cycling Strategy, part of the new Local Transport Plan (LTP4), sets out our policies and targets for cycling in Oxfordshire. The Science Vale Cycling Strategy sets out how we will

implement these policies in the Science Vale area and help to deliver the transport strategy set out in the Science Vale Area Strategy.

The government has announced hundreds of millions of pounds of investment in science based industries in Science Vale, which is attracting multi-national companies to consider locating in the area. These companies are looking to locate where infrastructure is good, and this includes cycling infrastructure. It's essential we take the opportunity to ensure our cycling infrastructure meets the expectations of these companies so that they choose to locate in Science Vale, this will in turn support our aims to significantly increase levels of cycling in Oxfordshire.

There are significant challenges; the dispersed nature of the Science Vale area does not naturally encourage high levels of cycling, unlike cities such as Oxford where short distances between destinations make cycling an attractive option. The greater distances involved also means larger investment is required.

Cycling investment benefits everyone, whether or not they cycle. More people cycling means fewer people driving, which will reduce congestion. No one form of transport alone can provide the means to ensure the transport network remains functional. Cycling will be a central part of the transport system for Science Vale, supporting our aims set out in the Oxfordshire Cycling Strategy, the Science Transit Strategy and the new Local Transport Plan.

We have already started. Cycling schemes are in progress and we have secured a further £5million from the Oxfordshire Local Growth Fund to implement the highest priority schemes as the first phase of realising our vision. Future phases will follow once funding has been secured and this strategy will be an important tool in securing that funding.

There are already above average levels of cycling in Science Vale. For example, at the last census (2011), 4.1% of journeys to work were made by bike in Science Vale. This is higher than the average across England and Wales of 2.8%, or within Oxfordshire (excluding Oxford), where the average rate is 3.2%.

We aim to increase the overall proportion of journeys made by cycling in Science Vale by 50% by 2021.

Science Vale cycling network:

The Premium Routes approach

The Oxfordshire Cycling Strategy introduces our concept of Cycle Premium Routes. This will focus investment on those routes already popular, building upon their success to raise levels of cycling in the most efficient manner.

The premium routes concept has been successfully applied to bus routes in Oxfordshire over the past decade. The foundation of a successful route and proven demand can be nurtured through investment into an even more successful route. By focussing on these routes – the core links – investment is concentrated to where is can be used most efficiently, and this has allowed a step change in service delivery for bus passengers on these routes. These routes form the backbone of the commercial bus network in Oxfordshire and are used by the majority of bus passengers.

Cycle Premium Routes takes this concept and applies it to cycling. We have identified a series of strategic corridors across Science Vale where we will establish the Cycle Premium Routes which will become the focus of our future investment. The greatest investment potential lies in those corridors which connect together the areas of growth, and so our corridors are based around connecting the areas of employment growth to transport hubs and areas of housing growth. Many of these corridors already have good levels of cycling. We will build on this to create the Science Vale cycle network.

Our chosen corridors are defined and discussed in detail in part two. A system of prioritisation for investment is also included based on current demand and current route conditions.

A series of discrete schemes will be programmed for each Cycle Premium Route, once defined for each corridor, which when complete will form a continuous direct route providing a high quality cycling experience.

Feeder routes

Whilst investment will be focussed on the premium routes, a network of short feeder routes to the premium routes will also be developed and promoted. These routes will provide important links into the network to ensure the premium routes network is as easy to access as possible. Further details of these routes are discussed in part two.

National Cycle Network

The National Cycle Network is a network of routes largely established by cycling charity Sustrans, using millennium funding in the late 1990s and early 2000s. The routes consist of a mix of traffic-free paths and quiet roads linking together large towns. Continued investment since 2000 has established complimentary regional routes of a similar standard feeding into the national routes.

There are two National Cycle Network routes in the Science Vale area. National route 5 runs through the area from Oxford, via Abingdon, Didcot and onwards towards Reading via Long Wittenham. Regional route 544 feeds into this route at Didcot from Wantage via the Harwell Oxford campus.

These routes will continue to form an integral part of the cycling network and we will work closely with Sustrans to build on this.

Complementary measures

Investment in cycling is not just about infrastructure. In Science Vale we will actively promote and raise awareness of the cycling network. We have initially secured funding for this through the Department for Transport's Local Sustainable Transport Fund. We will make available a series of maps covering the area in both printed and electronic form. The maps will be supported by new, clear signage to destinations and map display boards at key locations and junctions.

Didcot Interchange

Didcot Parkway railway station is at the heart of the Science Vale transport network. It is the gateway into the area for many journeys and recently has had an £8million upgrade for this purpose. It is a significant destination for cycling journeys, and cycle facilities have been substantially improved as part of the upgrade work. We shall continue to look for opportunities for further development of the cycling facilities at the station to reflect its key role in the network. This could take the form of upgraded information points, secure cycle parking, improved local cycle routes, a bicycle repair service or even a fully featured cycle hub. We shall work with others to achieve this while recognising the station's space constraints and other future development.

Cycle Hire

Cycle hire schemes are currently enjoying significant popularity across the country, with new schemes coming online in different locations each month. In Oxfordshire we have the OxonBike cycle hire scheme in Headington and Brompton Dock points at Oxford and Didcot complementing traditional cycle hire companies operating in Oxford.

The OxonBike scheme has been introduced in Headington with funding from the DfT's Local Sustainable Transport Fund (LSTF). The type of hire scheme is similar to the popular Barclays Cycle Hire scheme in London, which is designed to maximise use of the hire bikes through short hires between hire points. Oxonbike has proved popular and its expansion to other areas is being investigated, including the Science Vale area.

Science Vale is substantially more rural and dispersed than most other areas operating Oxonbike type hire schemes; these tend to be urban areas. This will present challenges to operating a scheme in Science Vale. We have secured funding from the DfT's LSTF to set up a pilot scheme covering Didcot, Milton Park and Harwell Campus.

Our long term vision is for a commercially sustainable, innovative cycle hire scheme covering all of Science Vale, fully integrated into the Science Transit network. This could see the availability of e-bikes to assist with the longer journeys required in Science Vale.

Publicity

Getting the message out about good cycle routes is a key part of encouraging more people to cycle. This will become more important as the network is upgraded. We will communicate through a series of measures including:

- A set of cycling maps covering the Science Vale area in detail and highlighting quieter roads and off-road paths. These will be available both online and in printed form from local information points
- Map boards at key locations and junction points showing the local routes and points of interest. These will be similar to the boards that exist at some points on the National Cycle Network routes 5 and 544, which will be updated where needed
- An occasional cycling newsletter covering the latest route upgrades and events

- Promotion of cycling through the Oxfordshire Travel Choices brand including at events organised as part of the Access to Science Vale Enterprise Zone programme
- Close relationships with large employment sites and cycling user groups

Funding to start some of this work has been secured from the DfT's LSTF.

Signage

Good consistent route signage is important as it helps to ensure the cycling network is easy to use. The National Cycle Network routes within Science Vale are well signed, but other routes are often lacking good clear cycling specific signage. Good signage, particularly when including journey times, is also a good way of raising awareness of the network.

We have secured funding from the DfT's LSTF to create a set of signage guidelines which will be applied to routes in Science Vale to ensure quality and consistency.

Network identity

To complement our work on signage and publicity, we propose to give the Cycle Premium Routes in Science Vale a name or theme that will help to raise awareness of the network. We will then name each of the routes within the theme to help users understand the network better and to find out route destinations.

Our thinking is based on work elsewhere such as in Aylesbury, where cycle routes have been colour coded and named after gemstones.

New Developments

The significant amount of planned development in Science Vale offers the opportunity to make a real difference for cycling. It is essential that new developments are planned with cycling in mind and with facilities to make cycling both convenient and safe. Designing new developments so that cycling or walking is the most convenient transport method for the majority of trips will naturally increase the proportion of journeys made in this way.

For large new housing development sites, we propose establishing the following principles:

- Developers to demonstrate through masterplanning how their site has been planned to make cycling convenient and safe, for cyclists travelling to, from, within and through the site
- Sites to be connected to at least one of the Cycle Premium Routes defined in this strategy, including creating feeder routes where needed
- Site road network and junctions to be constructed with cycling in mind, including providing space for cycling on main/spine roads through the provision of, as a minimum, advisory cycle lanes

For large new commercial developments, developers should demonstrate how their development has been planned for users cycling to the site. This should be 'to the door' and as a result should show how cycle parking will be located in the most convenient position.

For new highway improvement schemes, we will outline where we propose to make improvements for cyclists and engage with cycling user groups, shortly after project inception, so that schemes are developed with improvements built in from the outset.

Where are we now?

The latest census, 2011, shows there are already above average levels of cycling in Science Vale for journeys to work. For 4.1% of journeys to work across Science Vale, the majority of the journey was made by bike. This is higher than the average across England and Wales of 2.8%, or within Oxfordshire (excluding Oxford), where the average rate is 3.2%.

It is difficult to reliably and consistently measure the proportion of journeys overall made by bike. The census only covers journeys to work, and this data is only records the main mode of travel used. A journey by train that involves cycling to the station is most likely to be recorded as a train journey, for example.

Where do people cycle to work?

Cyclists from…

Wantage

…work in	**% of cyclists**
Wantage	46
Harwell	22
Watchfield	14
Grove	13
Milton	6

Grove

…work in	**% of cyclists**
Wantage	46
Grove	31
Watchfield	14
Harwell	9

Didcot

…work in	**% of cyclists**
Didcot	63
Harwell	20
Milton	14
Abingdon	1
Wallingford	1

How do people get to work in Harwell?

Mode	%
Car - drive	77
Bus/Coach	5
Car - passenger	5
Bicycle	3
Foot	2
Train	1

How do people get to work in Milton Park?

Mode	%
Car - drive	76
Car - passenger	5
Bicycle	5
Bus/Coach	3
Foot	3

Monitoring our progress

We aim to increase the proportion of journeys for all purposes made by bike, where the journey is of a length suited to cycling. This is very difficult to accurately measure and monitor without conducting costly surveys. We therefore aim to monitor and analyse existing sources of data in addition to the census to identify trends. These additional sources will include:

- Travel to work surveys conducted by the main employment sites
- Automatic cycle counters (these already exist on a number of routes)
- General traffic surveys

We will set up a monitoring programme to assess our impact and report on this annually.

The central part of our monitoring will utilising information from travel to work surveys that will be regularly completed on the three main employment sites: Milton Park, Harwell Campus and Culham Science Park.

This will be complemented by analysis of automatic cycle counters positioned at strategic points on the network. These counters are permanent and count all bicycles that pass over them. We will review the current locations and supplement where necessary to ensure there is good coverage.

PART TWO: Routes and schemes

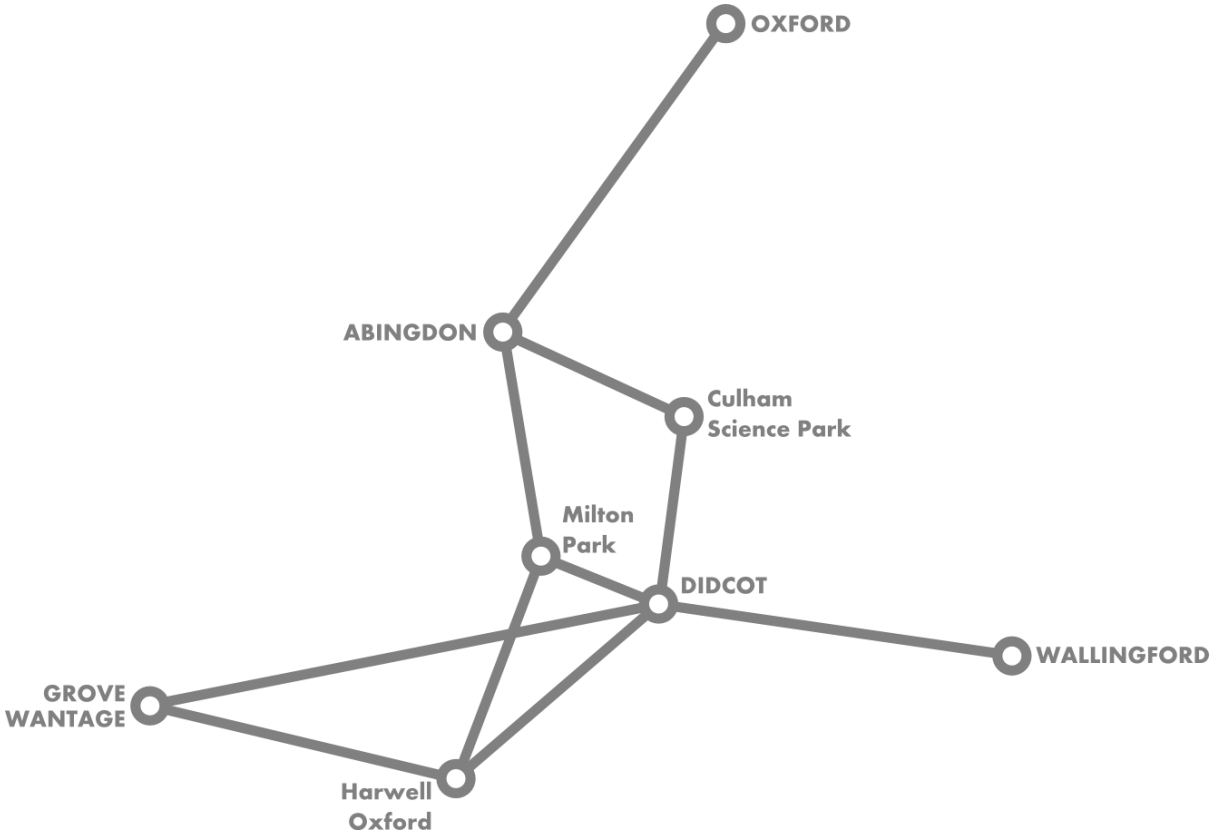
The network of Cycle Premium Routes in Science Vale will be based on connecting the large employment sites: Milton Park, Harwell Campus and Culham Science Park to the towns; Didcot, Abingdon, Wantage and Grove. This enables us to maximise our opportunities for funding and investment by focussing the network on the employment and housing growth areas. There are already good cycling levels in and between these points, which will help us to build on existing success and achieve our vision in the most efficient way.

We have identified a series of corridors for which a future study will determine where best to direct investment to create one Cycle Premium Route along each corridor. The study will review existing routes and previous studies, and recommend a series of schemes required to provide a continuous Cycle Premium Route along each corridor.

The resulting route along each corridor will be high quality, direct, well signed and is likely to be a mix of predominantly segregated and off-road paths. The study for each corridor will assess the possible individual scheme options and consider the benefits and feasibility for each. We will consult on the choice of schemes that are to make up each route.

Our aim for each of these routes is to achieve a quality of infrastructure comparable to that found in the European cycling countries. We may have to be pragmatic about how to achieve this and a staged approach may be required in places if full funding is not immediately available.

The map below shows the corridors that will make up the Cycle Premium Routes in Science Vale. Forthcoming studies will determine the exact routes and required schemes for each corridor. The routes of some corridors may overlap one another.



The corridors

Wantage to Harwell Campus

National Cycle Network route 544 currently connects Wantage to Harwell Campus via an indirect route. A shorter route will make cycling more attractive on this corridor. This promoted premium route will most likely make use of the existing route 544 at either end where the route is of a high standard already or is about to be upgraded. The strategy is to upgrade several sections of existing rights of way to create a more direct route. The longer-term aspiration is to also have a route alongside the A417.

Wantage to Milton Park

This strategy for this route is to create a connecting route between the Wantage to Harwell and Abingdon to Harwell corridors. Longer term, a separate route possibly running in the shadow of the railway line between Grove and Steventon could be created.

Abingdon to Milton Park

National Cycle Network route 5 already connects Abingdon to Milton Park via Sutton Courtenay. Our strategy is to supplement this route and create a shorter distance route from Abingdon to the central and western parts of Milton Park, and to also upgrade the Peep-o-Day Lane section of route 5.

The shorter distance route could be created by upgrading and converting footpaths running north from Milton Park, or use Milton Road and the rights of way east of Drayton to connect with the Drayton to Abingdon roadside shared use path.

Abingdon to Harwell Campus

Our strategy for this corridor will be to either utilise the Abingdon to Milton Park route or make improvements to the B4017 road route through Steventon. Continuing towards the Harwell Campus our strategy will be to either make upgrades for cyclists to the A4130 or to the Hungerford Road restricted byway.

Didcot to Harwell Campus

A substantial investment is being made to upgrade a footpath currently used by cyclists between the north end of the Harwell Oxford campus and Harwell village. This path, The Winnaway, is to be converted to a bridleway, widened and resurfaced by summer 2015. Our strategy is for this to form the southern section of the Didcot to Harwell Cycle Premium Route, which will then continue through Harwell village and utilise the B4493 into Didcot.

Longer term, our strategy will be to utilise Grove Road A34 bridge and then define a direct and convenient route through the proposed Valley Park development, leading into Great Western Park.

Didcot to Milton Park

Our strategy for this corridor will focus on upgrades to the existing routes. To the south of the power station site a shared use path runs along the south side of Milton Road. This path is very popular but suffers from seasonal vegetation incursion and conflict between cyclists and pedestrians, exacerbated by a lack of lighting which is a particular issue during the winter months. We will investigate enhancements to this route including lighting and, as the existing path is constrained between the carriageway and adjacent railway line, either constructing another path on the other side of the carriageway, or moving the carriageway to allow widening of the existing path.

To the north of the power station site is National Cycle Network route 5, which provides an alternative but less direct route to Milton Park. We will look at making this route more attractive by providing lighting, together with new sections of path at either end to create a more direct route.

Abingdon to Culham Science Park

Our strategy will be to create a new northerly route from Culham Science Centre, possibly crossing the Thames and connecting with route 5 into Abingdon and Oxford or staying south of the Thames and entering Abingdon at Bridge Street.

In addition, an existing shared use roadside path follows the A415 but stops at Culham Village turn where the pavement becomes raised into Abingdon; the path known as The Causeway. We will investigate the feasibility of continuing the cycle route along or behind The Causeway.

Feeder routes

Steventon to Milton Park

This scheme will provide a link between Steventon and Milton Park avoiding Milton Interchange. The scheme is likely to consist of a new cycle path running alongside the existing footpath which runs next to the railway line, passing under the A34 and connecting Steventon, probably at Pugsden Lane, to Milton Park at the Milton Village High Street junction.

Chilton to West Ilsley A34 junction

This scheme will provide a link between the West Ilsley A34 junction and the Chilton A34 junction. Currently cyclists heading north/south have to make use of a section of A34 dual carriageway. Alternative roads add several miles to a journey.

This scheme would create a path between these points suitable for all weather cycling and helping to make cycling a more attractive option between West Berkshire and Harwell Oxford campus and beyond.

Backhill Lane tunnel

This scheme will see a currently disused underpass under the railway at Milton Park reopened for cyclists and pedestrians. It will be of particular benefit for cyclists travelling from Didcot Great Western Park to the west of Milton Park. The £1.4million scheme is being delivered by Milton Park as part of a larger scheme including a new junction of the A4130, and is funded from the Oxfordshire LEP's Growing Places Fund.

Other schemes

Cow Lane underpass, Didcot

The Cow Lane underpass at Didcot represents a major barrier for cyclists. The underpass, which carries Cow Lane under the railway, lies on National Cycle Network route 5 and is a key link between the north and south of Didcot. It was built prior to the expansion of Didcot to the north, but has not been upgraded. It currently consists of a narrow southbound vehicle carriageway and a narrow pavement, separated from the carriageway with a barrier. Cyclists heading southbound can use the carriageway but heading north have no choice but to dismount and use the narrow pavement.

Several options have been looked at in the past to address the problem, including widening the existing underpass or constructing a new underpass, and funding has been sought unsuccessfully. The age of the underpass, its length and having an operational main line railway running over it contribute to any solution having a very substantial price tag of several million pounds, making it difficult to justify in terms of value for money.

A decision to spend several million pounds on one very small part of the network would need to be carefully considered in terms of value for money and compared to what that funding could achieve for the rest of the network if spent elsewhere.

A potentially less costly solution would be to remove the vehicle traffic lane and make the underpass for the exclusive use of pedestrians and cyclists. However, this solution would require widespread support locally and politically among all concerned before it could be considered.

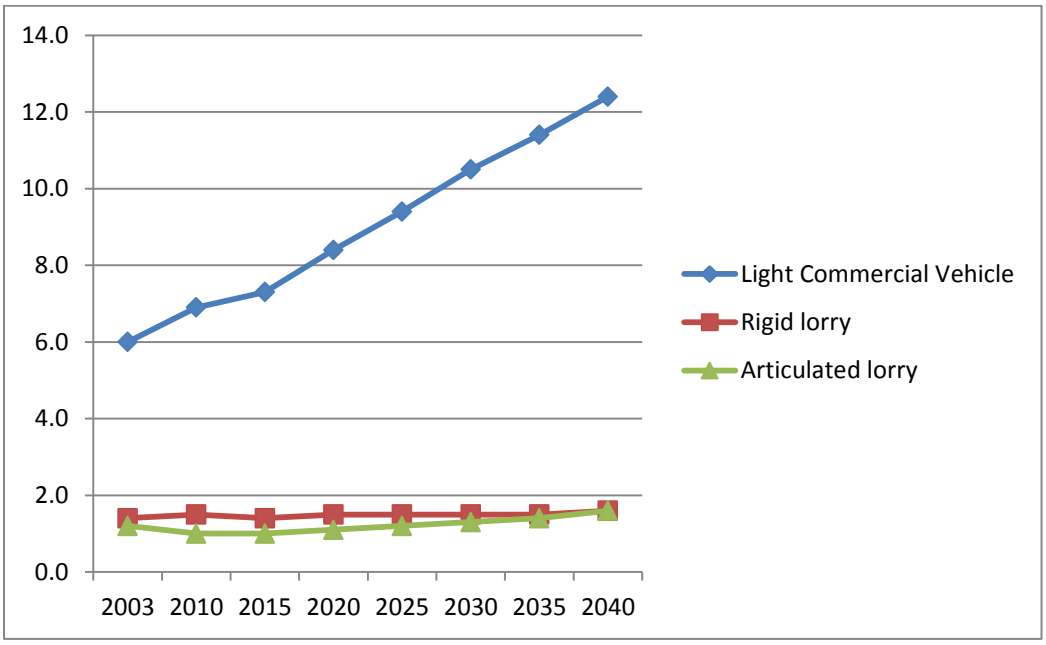
Longer term, a solution may be found through the possible creation of a northern entrance to Didcot station, utilising its associated subway or footbridge.

Oxfordshire Freight Strategy

Introduction

We rely on an efficient and reliable freight network for our daily lives. The freight network brings food to our supermarkets and parcels to our doors. It links our manufacturers with their suppliers and their customers and brings the aggregates to our roads. We need to enable reliable freight transport between businesses, their supply chains and their customers and so make Oxfordshire an attractive location for business and employment.

The nature and volume of freight traffic is likely to change substantially over the period of this strategy. The Department for Transport's central prediction for south-east England is that from 2015 to 2040, we shall see a substantial road traffic increase of 70% for light commercial vehicles; the level of articulated lorries on our roads will grow by 60% and the level of rigid lorries will grow by 14%. Freight traffic growth from our Strategic Economic Plan, with its aim to promote high tech industry, is likely to reflect and even exceed this pattern of growth in light commercial vehicles.



Freight Strategy Figure 1: 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 Forecasts 2013 – central forecast)

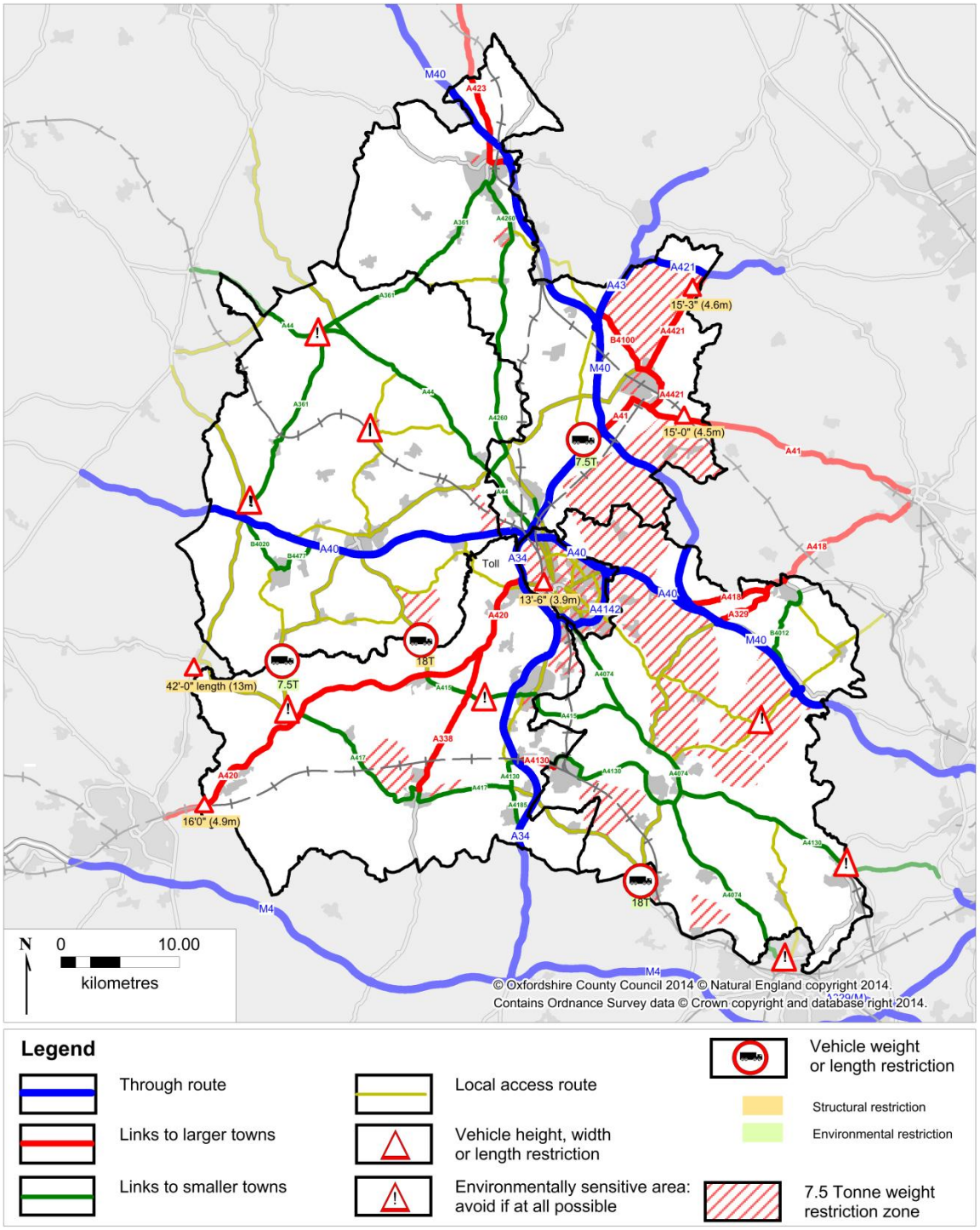
To provide for this we need to make more efficient use of transport networks and systems across all modes of transport, including use of the rail network. However, the majority of freight movements in our predominantly rural county will continue to

be by road. It is essential that we make use of our road network as efficient as possible, with larger goods vehicles using the strategic road network in preference to minor roads, encouraged by measures to reduce journey times and increase journey time reliability on these important major routes.

Freight vehicles can have negative effects on congestion, road safety, air quality and the wider environment. These depend very much on time and particularly place, with lorries negotiating narrow streets through villages and market towns generating numerous complaints from local residents. This can also impact on other modes of transport that LTP4 is seeking to encourage, for example delays to buses particularly from on-street loading and the risks to cyclists and pedestrians from large lorries which can deter use of these active modes of transport.
However, it is not a simple trade-off between economic benefits and environmental costs. A safe and attractive environment where people and goods can move around freely is a vital component of the county's economic offer as a place to live, work and visit. This is what our freight strategy aims to deliver for Oxfordshire.

The Department for Transport has published the estimated external cost per lorry mile of using different categories of road.[1] These vary from 82 pence for A roads to 235 pence for other (lower classification) roads. This reflects various environmental costs but the critical factor is infrastructure, where the costs are 7 pence for motorways, 24 pence for A roads and 171 pence for other roads. This illustrates the economic and environmental benefits of keeping lorries on the strategic road network as far as possible.

[1] *Freight mode shift benefit values technical report: an update,* DfT, 2014



Freight Strategy Figure 2: Oxfordshire lorry route map

Key Principles

We will base our freight strategy on the following six principles:

Understand patterns of freight movements including time and origin/destination as well as any problems encountered by operators and their customers as well as problems experienced by local communities and other road users. Surveys will be required to improve our knowledge base in an area where data is currently limited.

Inform freight operators of the best routes to use and those other routes and locations which should be avoided where possible. As funding and priorities allow, we will take advantage of new technology and best practice to help manage freight movements, particularly where this would help meet other Plan objectives.

Encourage use of the strategic road network by traffic management measures. This could include better provision of high quality rest facilities, coupled with the removal of sub-standard laybys where these can adversely affect road safety and congestion on strategic routes. This also means using the opportunity presented by investment in strategic rail in Oxfordshire to shift freight from road to rail in support of our Route Based Strategies in the county.

Deter use of inappropriate minor roads and movements through towns and villages and other environmentally sensitive areas except where this is essential for local access. This also helps to minimise damage by lorries to road surfaces and bridges. Our strategy will set out a policy on the introduction of further environmental weight limits across Oxfordshire and on their enforcement.

Manage freight and logistics in partnership with public sector organisations and businesses to achieve maximum efficiency and reduce waste by eliminating unnecessary trips. This might involve consolidation of items from diverse origins, combining them for onward delivery to the same destination, possibly including the use of smaller or low emission vehicles in sensitive environments such as urban centres with poor air quality.

Plan the location of new employment sites and any related transport infrastructure so that these can function well, with efficient freight access to and from the strategic transport network without adverse impacts on local communities, road users and the environment.

These principles are developed further below.

i. Understand patterns of freight movements

We will improve our knowledge and understanding of freight transport, the needs of freight operators and their customers as well as the negative impacts on local

communities. This will involve traffic surveys but also knowledge gained from the use of the national freight journey planner and from the development of Construction Logistics Plans and Delivery and Servicing Plans.

ii. Inform freight operators of the best routes to use and those to avoid

There has been growing public and political concern in recent years about the number of lorries making journeys (other than for local access) through towns and villages in Oxfordshire. This is why we will take advantage of new technology and best practice to help manage freight movements. Our aim would be to influence how hauliers and logistics companies plan their activities so that route planning takes account of our weight limits and environmentally sensitive areas. Another objective would be to enable local residents to report suspected breaches of weight limits.

iii. Encourage use of the strategic road network and of rail freight

The rationale for our Route Based Strategies for the A34, A40 and A420 is to encourage lorries and through traffic to stay on the strategic route network as much as possible. There are various traffic management measures that can help to achieve this objective. For example, removing some laybys from main roads can help because large vehicles pulling out slowly onto a road with fast traffic can be a safety hazard as well as a significant cause of congestion. Another approach would involve prioritising lorry traffic – for example, one option for the A40 is a combined bus and lorry lane which if implemented could reinforce the attractiveness of this recommended lorry route which avoids important market towns.

It is important to note that, while major development is concentrated in areas well served by the strategic route network, this does lead to increased congestion forecast on the very routes we want lorries to use. This will be a major challenge for the Network Capacity and Management Strategy which is currently under development.

Rest areas for lorry drivers are an important element in an efficient freight network. Proper facilities with security, refreshments, washing and toilets also cater better for drivers in terms of health and safety. They also help to avoid inappropriate use of laybys and parking on-road, which can cause obstruction and serious environmental problems to local residents. Unfortunately, in recent years the smaller service stations have withdrawn from catering for HGVs, leaving only motorway service areas and a few lorry parks. Motorways and trunk roads are better served including Oxford services at M40 junction 8, Cherwell Valley services at M40/A43 junction 10 and Chieveley services (outside Oxfordshire) at M4/A34 junction 13.

However, the Road Haulage Association (RHA) and Freight Transport Association (FTA) have identified a need for additional capacity at a site or sites close to the Oxford ring road. One potential location could be adjacent to the A34 at Lodge Hill (north Abingdon) if this is expanded to a full all-movements junction, subject to

planning constraints in relation to the Oxford Green Belt. Such a facility could fit with plans for a park and ride at the same location.

Significant volumes of rail freight pass through Oxfordshire, particularly between the port of Southampton and the Midlands and North of England. A recent project to increase the loading gauge, enabling larger containers, has removed thousands of HGVs from the A34. Other rail freight includes aggregates, waste, MOD supplies and finished mini cars. 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.

iv. Deter use of inappropriate minor roads through towns and villages

We will conduct a review of the environmental weight restrictions across the County paying particular attention to those areas which are subject to high and significant levels of HGV traffic. This will focus on places which currently do not have any restrictions in force such as:

- Burford
- Chipping Norton
- Woodstock
- Henley-on-Thames

and also those areas, such as Watlington, which do have them in force but where consistent incursions by HGV traffic are exacerbating problems of air quality, economic function and environmental amenity.

Our policy on new environmental weight limits is that we will first need to establish that a particular location has a problem in terms of environmental and economic impacts as reflected in congestion, air quality, road danger and public concern. We will then need to identify the share of HGV traffic that does not constitute local access based on origin and destination surveys and other data, as well as analysis of alternative routes. Consideration of weight limits will also need to have reference to the road hierarchy set out earlier in this Local Transport Plan.

In Oxford we will review signing on the ring road to ensure that lorries are directed to their destinations within the city by the most appropriate routes. It is sensible to co-ordinate this with work to develop the cycle network to try to reduce the danger that lorries pose to cyclists.

Neighbourhood Weight Watch is an existing scheme using volunteers, often in partnership with parish and town councils, to report lorries contravening weight and other restrictions. It can supplement the limited resources available for enforcement (Thames Valley Police and OCC Trading Standards). Trading Standards have a separate policy for prioritising the enforcement of the various weight limits in Oxfordshire in the most appropriate and effective way.

v. Manage freight and logistics to achieve maximum efficiency

We will set up a freight quality partnership which is a good way in which to engage with freight and logistics operators and other stakeholders. However, we will do this in a considered way, reflecting our resource levels and prioritising action over discussion. This could involve ad hoc working with particular partners on particular issues, for example with the National Farmers Union on agricultural and rural freight issues and with district councils to rearrange refuse collection outside peak periods.

In recent years Oxfordshire County Council and Oxford City Council have discussed with a number of other local stakeholders the possibility of freight consolidation and trans-shipment to reduce the negative impacts of goods vehicles in the city. These negative impacts include congestion, poor air quality resulting from diesel emissions and accidents, particularly those involving cyclists and pedestrians.

Freight consolidation means combining loads from various sources to one or a number of closely located destinations. It is a technique already practised by large retailers with sophisticated logistics operations and it reduces the number of separate goods vehicle journeys and total goods vehicle mileage. Trans-shipment means switching to smaller, sometimes electric delivery vehicles for the “final mile”. In Oxford there are two areas that could benefit from freight consolidation - the city centre and the Headington area including the hospitals and Oxford Brookes University.

Other options include Construction Logistics Plans (for major developments while under construction) and Delivery & Servicing Plans (for existing and newly completed developments). These are like travel plans and help businesses to organise their deliveries and collections to reduce lorry trips but also to bring efficiency savings. They can be linked to the use of approved operators under a Freight Operator Recognition Scheme (FORS) with standards for safe and environmentally friendly operation.

vi. Plan the location of new employment sites and any related transport infrastructure

We will influence the location and design of new employment sites and any related transport infrastructure so that these can function well, with efficient freight access to and from the strategic transport network without adverse impacts on local communities, other road users and the environment. We will work closely with local

planning authorities within the constraints of the National Planning Policy Framework.

We will ask developers of major sites to prepare Construction Logistics Plans to minimise the impact of the large scale residential and business development planned for Oxfordshire, as well as Delivery and Servicing Plans to ensure that businesses make ongoing arrangements for sustainable freight and logistics.

We will take careful account of the need for an efficient and sustainable freight network as we look to refine Infrastructure Development Plans as part of emerging Local Plans. We will seek developer contributions to mitigate the impact of freight traffic on the local and strategic network.

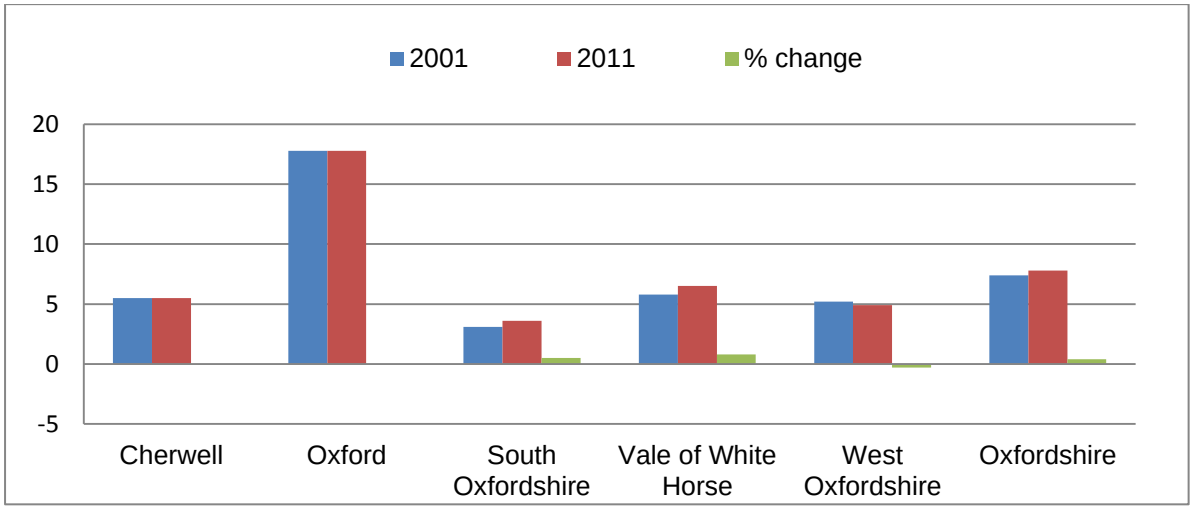
Oxfordshire Bus Strategy

Introduction

Oxfordshire County Council has a long and consistent track record of promoting bus travel working in close partnership with the bus industry. Our forward-looking pro-bus policies over the last four decades have been a key factor in the continual growth of bus patronage and development of a 'bus user culture', especially in and around the Oxford urban area. Oxford has developed one of the most highly-developed and successful commercial bus networks in the country.

Because of the relative strength of the local bus system – and health of the local economy – Oxfordshire has managed to avoid the widespread decline in bus passenger numbers across many parts of the country since 2008 and post one of the highest rates of growth of any local authority area in England and the South-East region. During this time we have also helped introduce major improvements on some inter-urban bus routes in central Oxford and its local area, including an integrated ticketing scheme.

As a result, in the past four years alone the total number of bus passenger journeys in Oxfordshire rose by almost 21% and the number of journeys per head of population rose by almost 17%. In 2013/14, there were over 43 million bus journeys in Oxfordshire, an increase of seven and a half million trips in just five years. In the predominantly rural districts the bus network is however currently much less developed and bus patronage substantially lower as a consequence, as figure 1 shows. In 2011 over 70% of all bus commuting trips in the County originated and/or ended took in, Oxford.



Bus Strategy Figure 1: Commuting to work by bus & coach in Oxfordshire - 2001 and 2011 - mode share by district [Source: Census]

Despite impressive and sustained bus growth Oxfordshire as a whole however continues to have very high levels of car congestion, especially at peak hours, which makes journeys unreliable, limits capacity for growth and damages health through pollution. Transforming the bus network is a key contributor to limiting congestion in the future, establishing sustainable travelling habits among those new to the county, by encouraging existing car users to switch to this more efficient means of transport and by making jobs, shops and local centres more accessible to those who cannot drive.

The development of this strategy has drawn on evidence, public consultation, and engagement with stakeholders, including transport operators, user groups and transport experts at county and local levels. A number of data sources have been used to identify the challenges facing the transport network in Oxfordshire including the national census, Local Plan work, and the Oxfordshire Transport Model. This evidence has informed the development of strategies and plans that are aligned with LTP4 objectives and integrated with other parts of the overall Transport Plan.

Key outcomes

We have developed a new bus strategy to complement the new Oxfordshire Local Transport Plan. The bus network is an essential contributor to sustainable transport and addresses the Plan's high-level goals in a number of ways. The table below identifies the key outcomes from this bus strategy in the light of *Connecting Oxfordshire*'s goals and objectives.

Bus Strategy Table 1: Key Outcomes

Connecting Oxfordshire high-level goals	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	To improve public health, safety and individual wellbeing
Bus strategy key outcomes	More people will be able to travel to more destinations by bus, improving access to work, shops and local centres	Sustainable, energy-efficient bus transport will reduce sole-occupancy car usage and help manage car emission levels	Accessible bus connections will enable disabled people, elderly people and those unable to drive will travel more	More public transport journeys mean fewer car journeys: fewer roads need to be built and harmful vehicle air pollution is lower	Regular walking and cycling to and from bus stops and interchanges can be an important contributor to keeping fit

In addressing these goals and objectives from our new Local Transport Plan through the key outcomes, this bus strategy realises the Council's vision for bus services in Oxfordshire:

… 'a modern bus and coach system which is fully integrated with rail and other modes of transport, provides an attractive, viable, and socially inclusive alternative to the private car for most local and medium-distance journeys, and has (a) supported growth and economic vitality across the whole of the County, (b) achieved a substantial shift to sustainable, low carbon modes of travel, (c) helped reduce traffic congestion, and (d) generally improved the quality of life and local environments in Oxfordshire.

The Bus Strategy

OVERVIEW

The bus will remain the sole or main alternative to the private car for most medium-distance inter-urban journeys, and an important mode within the larger towns and their surrounding hinterlands, and therefore one of the main means of tackling congestion and facilitating social inclusion.

The main elements of our strategy are:

- **Integrated transport planning** building on Oxford's successful policy of land use planning, traffic management, parking management and restraint, and bus promotion, and adaptation of this approach to the rest of the County.

- **A cohesive and integrated bus network and provision of accessible, high quality infrastructure** with clear policies and design standards to guide the development and improvement of route infrastructure.

- **Tackling congestion and delays** by implementing bus priority or other traffic management measures at specific points along the major bus routes to ensure that buses can operate reliably and at commercially attractive speeds.

- **Adapting the bus network** to cater for more complex and dispersed journey patterns and new major development. We will encourage and support the development of more

cross-town and cross-area bus routes where these are practically feasible and there is sufficient potential demand.

- The development of **mass rapid transit systems and routes** between Oxford and a proposed **new outer ring of Park & ride sites**.

- The **development or upgrading of new high quality Premium urban and inter-urban services** where new development makes it feasible including bus priority measures and enhanced passenger and interchange facilities in:
  - Oxford, especially within and linking to the growing Eastern Arc
  - The Science Vale area,
  - larger towns outside Oxford,
  - locations along some strategically important inter-urban routes.

- **Enabling good onwards access on foot to major destinations** facilitating the penetration of bus services as close as possible to the heart of destinations such as town centres, employment areas and hospitals, with conveniently located bus stops.

- **A strategy for public transport in rural areas** to deal with further funding cuts to the Supported Bus Services Programme.

- The further development and extension of **multi-operator and multi-modal smart payment** which will enable the network to offer a greater range of journey choices than at present.

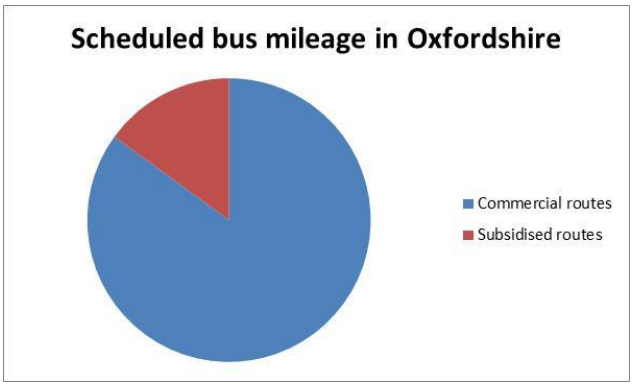
- **The further development of the Quality Bus Partnership approach** to focus on improving service punctuality/reliability, information and integration

- **Improvements to the securing and use of developer contributions for bus development,** by revising our approach to securing and utilising Section 106 developer contributions, and making preparations to achieve optimal use of the Community Infrastructure Levy.

- **Enhanced partnership working with local planning authorities** and use of the planning system to achieve better coordination between land use planning and future bus service provision.

OXFORDSHIRE'S BUS NETWORK

The private sector operates around 85% of scheduled bus mileage within Oxfordshire on a commercial basis. We subsidise the remaining services in order to fill gaps in the local bus network, especially in rural areas and smaller towns.



Oxford and its immediate surrounding area have a highly developed and generally high quality bus network, including a well-established park & ride system. Within Oxford there are already fairly extensive bus priority measures (although a few important gaps or 'pinch points' remain). Outside Oxford bus priority is currently almost non-existent on inter-urban routes and is generally under-developed in most of the larger urban areas. We need to identify the most important routes or corridors outside Oxfordshire where bus priority (or new services) may be needed to improve journey time reliability and reduce traffic congestion.

On a larger geographical scale the 'premium routes' bus network in Oxfordshire tends to follow a strongly radial, 'hub and spoke' pattern centred on Oxford, particularly the city centre. Outside these radial corridors – both within Oxford and Oxfordshire as a whole – there currently is fairly limited public transport connectivity.

The existing strategic inter-urban bus network is well connected to some major towns outside Oxfordshire but there are other strategically important links where services are less developed and a few where we may expect traffic demand to grow substantially as a result of major planned development in and outside Oxfordshire e.g. links to Northamptonshire and the Oxford-Cambridge arc.

Bus networks in and around Oxfordshire's larger towns have become increasingly limited and bus patronage generally has not grown significantly. Our current strategy is to use developer funding where available to 'pump prime' increased service frequency on routes serving the new developments. The defined bus network and hierarchy is used in negotiations with developers to determine the improved standard of service to be achieved and appropriate level of contribution required.

We have a duty to provide 'socially necessary' transport where commercial bus services have not proved viable. This is mostly in rural areas but also in some of the smaller towns. We have attempted to provide and maintain a basic network consisting of supported bus services and other statutory, voluntary or community transport services. Revenue funding to support these services has been declining for many years and the network has subsequently been shrinking. Further budget cuts mean that the supported bus services programme is due to be cut by over half over the course of the next four years. Without substitution in one form or other such extensive cuts to subsidised services may have adverse consequences for a small minority of the population and may serve to reinforce the culture of car dependency in large parts of the County, further undermining the growth of local bus services. There is a need to develop a new approach to rural public transport for this, as well as local economic reasons.

Changing demand for the bus network

Travel demand within Oxfordshire is becoming highly dispersed and complex and it is difficult and often impossible to serve with single-stage bus and rail services. With substantial employment and urban growth planned in Oxfordshire over the next 20 years, most of which will be concentrated within the 'Knowledge Spine' area, it is likely that travel demand patterns will become increasingly complex and decentralised. The County's strategic public transport network needs to be redesigned to cater for this more complex pattern of internal journeys, and public transport and multi-modal interchange will be an increasingly important issue in providing good access and achieving modal shift.

We have therefore reviewed and revised our bus strategy to ensure that the network is a key component of the overall public transport network in the County. By enhancing both routes and hubs and other interchanges simultaneously this facilitates better public transport connectivity and access leading to passenger growth and a reduction in car travel for unnecessary journeys. Supporting this with more efficient payment and ticketing systems helps create a more 'seamless' and easy to use, integrated public transport system.

Bus Network Strategy

The bus strategy is largely based on enhancing the role of the bus as a key component of the overall public transport network in the County, including the Science Transit Network. By enhancing both routes and hubs and other interchanges simultaneously this facilitates better public transport connectivity and access leading to passenger growth and a reduction in car

travel for unnecessary journeys. Supporting this with more efficient payment and ticketing systems helps create a more 'seamless' and easy to use, integrated public transport system.

Bus Strategy Table 2: Oxfordshire Bus & Coach Network Hierarchy

SERVICE LEVEL	DESCRIPTION	PRIMARY FUNCTION
THE STRATEGIC BUS AND COACH NETWORK		
BUS RAPID TRANSIT	• Bus Rapid Transit (or other form of Mass Rapid Transit) - direct and fast • Very high passenger volumes • Very high frequency (ideally a minimum of 6-8 buses per hour) • Extensive hours of operation • High level of bus priority/segregation • High quality vehicles and passenger and interchange facilities • Fully commercial services	• Connect places of strategic importance and busiest demand on main transport corridors in and approaching the largest settlements e.g. A40 corridor, • Cater for all journey purposes
PREMIUM TRANSIT	• High frequency (ideally a minimum of 4 buses per hour) • Early and late evening services • Direct, with some express services esp. at peak-time • High level of bus priority/segregation Moderate level of bus priority on inter-urban corridors but may utilise high level super-premium infrastructure to Oxford) • High quality vehicles and passenger and interchange facilities • Different standards for urban/extra-urban and inter-urban routes • Fully commercial services	• Connect places on main inter-urban corridors between Oxford, market towns and major urban centres in region • Links to main line railway stations at Oxford, Oxford Parkway, Didcot, Bicester (Town & North) and Banbury • Cater for all journey purposes

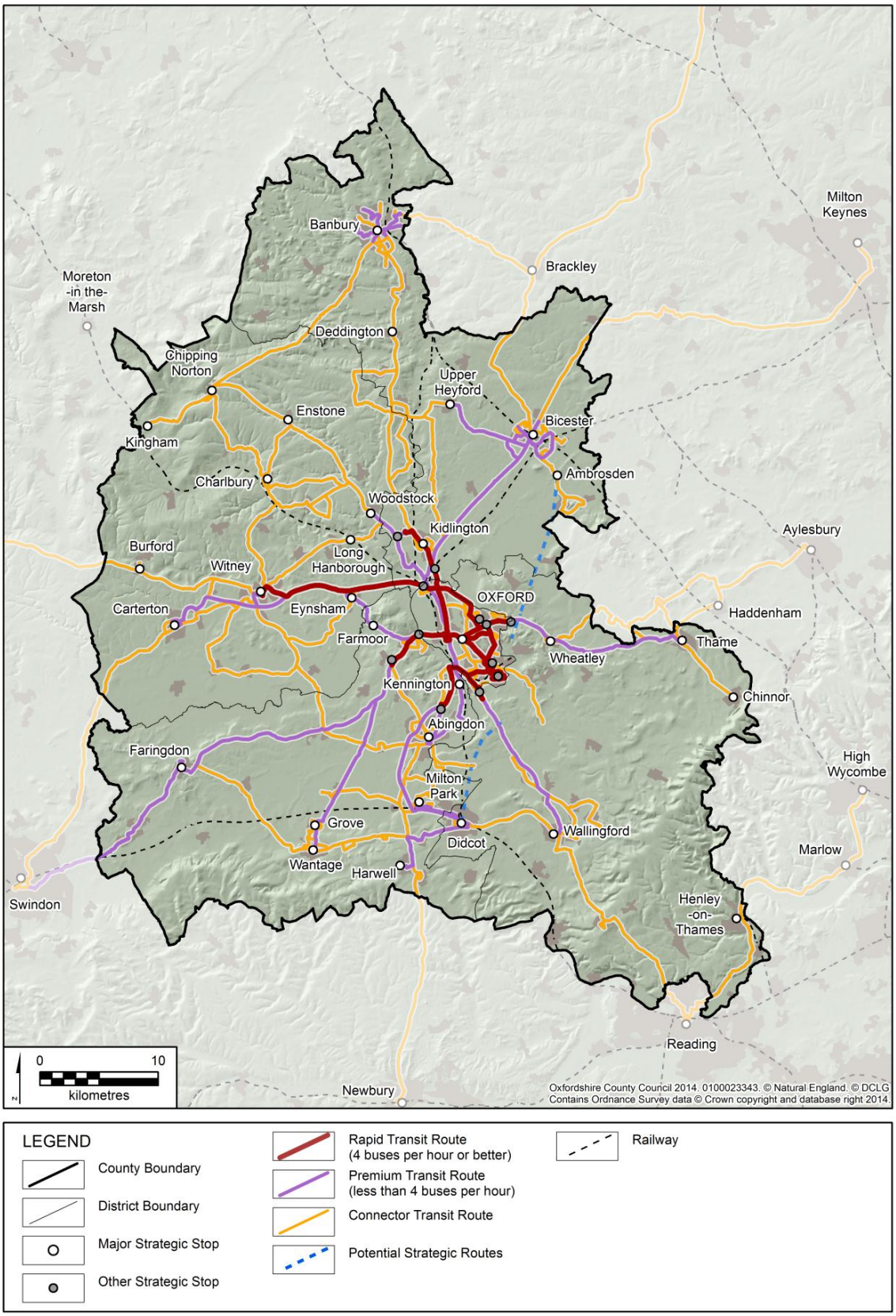
CONNECTOR TRANSIT	• Moderate frequency (ideally a minimum of two buses per hour) • Less extensive hours of operation and Saturday/Sunday services • Fixed route • Generally direct (but some services may be indirect) • High quality vehicles and passenger and interchange facilities • Fully commercial services or services with strong prospects to become so • May have a moderate level of bus priority /segregation on main urban and inter-urban roads (but may use high level super-premium infrastructure into Oxford)	• Local town services • Utility journeys to key trip generators (including railway stations) • Main corridors between market towns and larger villages • Secondary corridors into Oxford • Cater for all journey purposes
THE NON-STRATEGIC BUS NETWORK		
COMMUNITY OR LOCAL TRANSIT	• Fixed and flexible routes • Less direct/ indirect • Relatively low frequency (ideally one per hour - or demand responsive) • May use bus priority for higher-level services but no specific priority • Good standard of vehicles and some interchange facilities • Primarily subsidised (but may be close to commercial)	• Operates in areas of low and dispersed demand • 'Feeder services' to strategic transport interchanges and higher frequency services, town centres, main employment sites • Only cater to limited extent for commuting to work and post-school education • Link smaller rural villages to nearest market town • Off-peak services in smaller towns

The Strategic Bus Network

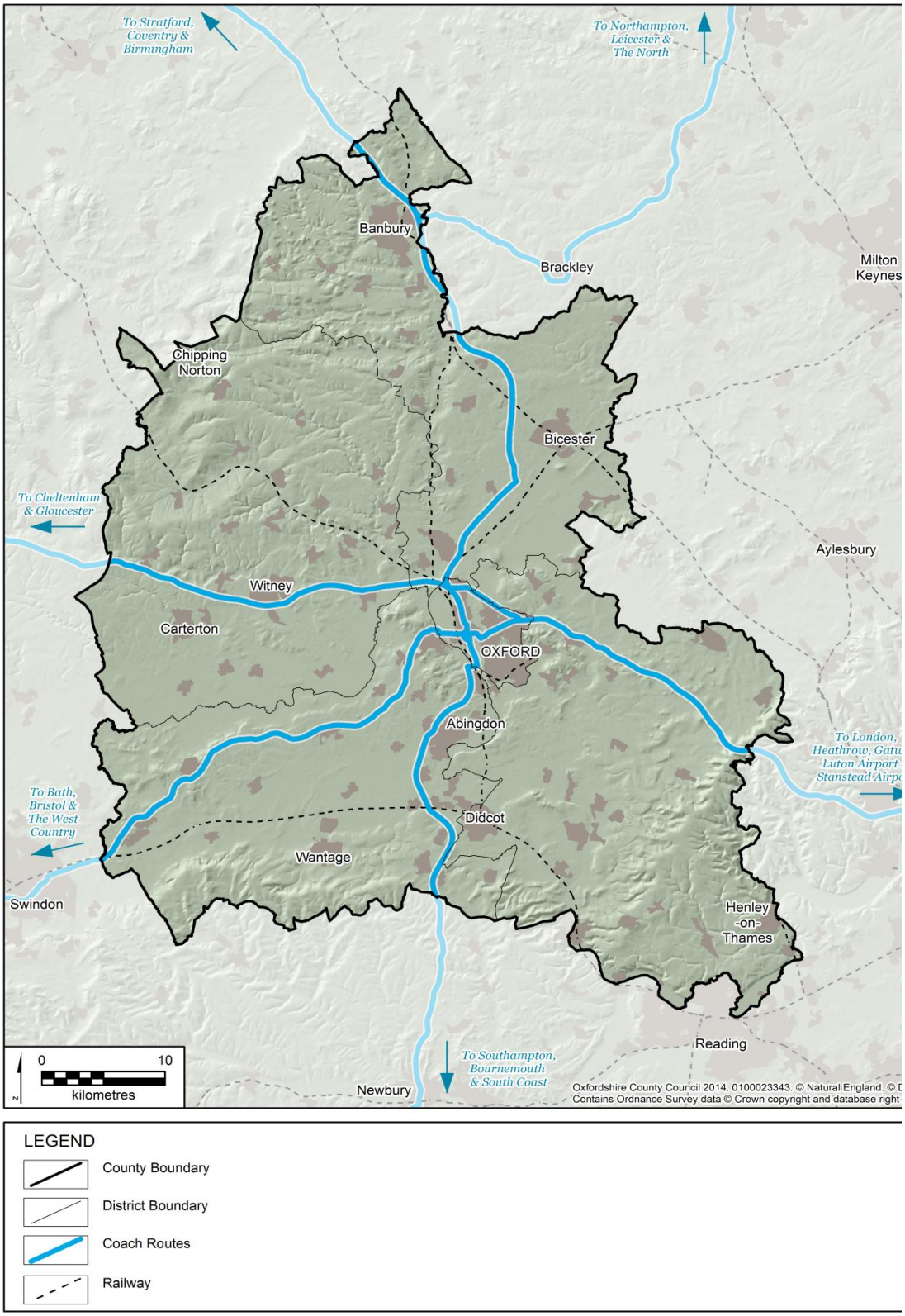
Introduction

Bus Strategy Figure 2 shows a map of the strategic inter-urban bus and coach network identifying the Bus Rapid Transit (BRT), Premium and Connector Transit routes to optimise the use of existing strategic transport infrastructure and minimise the growth in vehicle traffic.

Bus Strategy Figure 2: Oxfordshire's strategic bus network



Bus Strategy Figure 3: Oxfordshire's Strategic Coach Network



Our policy is to support bus development such that as much of the bus network as possible becomes wholly commercially viable, especially services on the strategic network. Commercial viability is based on the achieving the right combination of:

- **Potential demand -** matching desired travel patterns between residential origins and a range of potential destinations, across the day and not just in peak hours.

- **Critical mass** – ensuring that services provide the optimum level of capacity for the size of development.

- **Frequency and reliability –** providing a service that is attractive in terms of frequency and journey time reliability for work trips and other types of journey.

- **Fares –** ensuring that fares are affordable but optimising potential revenue which will sustain further growth and improvement.

- **Seat capacity** – buses that are well matched in terms of size to the level of passenger demand so as to maximise vehicle efficiency and keep the number of bus movements in urban centres to an acceptable level.

More specifically, where funding allows, our policy on the strategic network is to make services as attractive as possible for bus passengers and potential users through:

(i) 'Pump priming' increased service frequency and operating hours and where there is a reasonable prospect of the higher level of service being self-sustaining in the longer-term once funding support is removed.

(ii) Improving on-road conditions for strategic bus services to achieve better journey time reliability and faster journey times.

(iii) Improving passenger facilities and access to bus stops and other interchange points particularly on foot and by bicycle.

(iv) Supporting commercial bus operators through the Bus Quality Partnership framework in delivering well-targeted and designed marketing and promotion.

(v) In addition, where service improvements are associated with new residential or business developments and developer contributions there is a significant role for travel planning

and other smarter choice initiatives to contribute to the achievement of bus mode split targets.

Bus Rapid Transit Routes/Services

We aim to develop three Bus Rapid Transit routes centred on Oxford that will achieve an exceptionally high level and quality of service. These routes will require substantial investment in bus priority measures, or possibly purpose-built infrastructure, as well as on passenger facilities and high quality pedestrian and cycling links to access the services. We expect to attract high occupancy developments around the routes in order to take maximum advantage of the investment and the potential or encouraging sustainable travel behaviour. Our strategy for developing these routes is set out in the section on the Oxford area bus strategy in Annex 1 and in the Oxford Transport Strategy.

Premium Transit Routes/Services

Premium Routes generally serve the most heavily trafficked road corridors and larger settlements and employment areas in the County. Improving bus journey times and service punctuality is therefore a high priority for all Premium Routes.

A major challenge is therefore to provide protection against worsening traffic congestion in order to ensure that buses remain attractive alternatives to the private car for work, education and shopping. Premium bus routes will therefore generally require infrastructure investment on bus priority measures where there is congestion and circumstances permit in order to improve journey time reliability and speed.

OCC therefore wishes to see future land use development proposals located on or near Premium Route corridors, where appropriate sites can be identified. Such an approach would be more financially sustainable than designation of entirely new routes; and is also likely to reduce levels of traffic generated by new developments.

The Premium Route brand has traditionally focused on service frequency; but operators have demonstrated already that there are many other aspects of the service that help to deliver a quality product. For example both Stagecoach and Oxford Bus Company have introduced high quality and low environmental impact vehicles on their bus and coach services in and around Oxford.

BUS RAPID TRANSIT

What is it?

High quality passenger facilities and environments are part of the typical BRT package to achieve a step change in service quality and image.

Bus rapid transit (BRT) systems are found in cities throughout the world. Although they vary in form, their key characteristic is that, compared to conventional bus services - even good ones - they are faster and higher quality operating on routes ranging from an above average level of on-road bus priority up to complete 'grade segregation'.

They are more than this however. BRT is an integrated system of facilities, services, and amenities that collectively improves the speed, reliability, and identity of bus transport. Their other typical features include: use of 'rubber-tyred' vehicles and roads (rather than rail track), faster methods of passenger boarding, faster fare collection, and a unique and identifiable identity and public image. The best systems tend to include a combination of Intelligent Transportation System (ITS) elements in a fully integrated system.

BRT's flexibility and ability to be built quickly, incrementally, and economically accounts for their growing popularity in these times. In many respects BRT is similar to a light-rail rapid transit system, but with greater operating flexibility and potentially significantly lower capital and operating costs.

BRT Vehicles

As an example of leading edge BRT vehicle design, Cologne recently commissioned a fleet of new electric articulated buses based on the existing 'Citea' version. The articulated Citea (see above) with its completely flat floor is ideal for the transport of large numbers of passengers. The low floor construction makes it extremely easy to enter the bus and offers optimal access for travellers with wheelchairs or baby pushchairs. The internal design makes the flow of passengers from entry to exit doors easy, and seat design gives plenty of passenger space and a high standard of comfort.

These buses will run entirely on electricity without any aids such as diesel hybrid engines and overhead pantographs for power supply. Electric buses are an important development in public transport as they contribute to a cleaner environment, lower energy consumption, and a quieter and healthier environment.

Why do we need BRT in Oxford and the surrounding area?

Huge population growth is proposed in Oxford and its surrounding catchment area over the next 20 years. There are acute and increasing levels of traffic congestion in and around the City, and we are faced with virtually insurmountable physical constraints on further significant improvements and expansion of conventional public transport solutions. Together these create the need for new mass transportation solutions. BRT represents an innovative, relatively low cost public transport solution to many of Oxford's mobility and accessibility problems.

BRT is a way to improve mobility in Oxford and the sub-region at relatively low cost through incremental investment in a combination of bus infrastructure, vehicles, operational improvements, and technology.

An example of a BRT system in the UK: Cambridgeshire

The Cambridgeshire Guided Busway connects Cambridge, Huntingdon and St Ives and the route consists of two long sections of guided operatio n (together covering 16 miles), a bus-only road, and other places with on-street operation using conventional bus lanes. New park and ride sites have been built at Longstanton and at St Ives, with a cycle track/bridleway alongside some sections of the route. The scheme includes bus priority and real-time passenger information system displays at special busway bus stops, and better links are being created to bus stops for pedestrians and cyclists.

The busway between Oakington and Longstanton. The cycle path is visible on the left of the image.

Most buses are fully accessible, have leather seats and air conditioning for greater comfort, free wifi connection for convenience, and use the latest technology for greater environmental sustainability. Two bus operators have been given exclusive use of the route for five years in exchange for providing a minimum service frequency. Specially adapted buses are used on the guided sections.

A total of 2,500,000 trips were made in the first year of operation - 40% higher than predicted. Bus ridership along the corridor was estimated to have increased by 33% over the same period.

The scheme was predicted to cause some reduction in traffic on the busy parallel A14 road and complement other planned measures, but its main intended effect on congestion was to have an overall benefit across the local road network.

Connector Transit Routes/Services

Connector bus services often play an important role in providing "feeder" links to the Premium Route services, as well as rail services, as well as origin to destination journeys. Most services are commercially provided and except where new development significantly increases or alters the level or pattern of potential demand are generally unlikely to increase to a higher level of frequency that would make them more attractive to new users in the foreseeable future. Some Connector routes are however commercially marginal, and in some cases we currently supplement the fully commercial services by subsidising specific services at certain times of the day or week. These journeys are particularly vulnerable to budget cuts.

Our main is to assist with protecting and improving commercial viability through incremental infrastructure and service enhancements such as:

- Targeted measures to address problems such as on-street parking or inefficient traffic signal operation;
- Improved bus stops and hubs;
- Integration with more frequent bus and rail services (potentially facilitated by through ticketing).
- In return, through the mechanism of the Quality Bus Partnerships, bus operators will be encouraged to provide high quality, low emission vehicles and well trained drivers and higher quality and consistently available information.

Developing and upgrading bus services and routes

We and bus operators wish to take advantage of travel demand from proposed future development – in particular housing, employment and urban retail. The aim is to increase the frequency of existing bus routes where these exist, potentially to Premium or higher standard if sufficient potential demand exists, and introduce new routes where different travel patterns are created. "Pump priming" funding from section 106 developer contributions may therefore be used to provide incremental enhancements to higher standards, particularly in terms of service frequency, for an initial period of time. After the end of the pump priming, the service frequency would need to be provided on a commercial basis with additional demand primarily coming from the most recent land use development. The priority for service enhancements will therefore be on work and other utility journeys (education, shopping and access to essential services) which can be financially sustainable.

Bus routes that run within new developments must be planned and designed in a way which minimises vehicle journey time, whilst aiming for a maximum walking distance from a bus stop of around 400 metres. Longer maximum walking distances are tolerable if this results in a much faster bus service being delivered (which results in a faster overall journey time). Time consuming and circuitous bus routes must be avoided, as they will not be attractive to people with a higher value of time.

Bus priority measures play a major role in attracting additional patronage by ensuring that bus routes under development provide fast and reliable links between where people live and where they need to get to. Up untill now there has been little investment in bus priority measures in the larger urban areas other than Oxford, or on the main inter-urban routes. However, with increasing congestion on many of these routes, with increasing urban growth, and the higher priority assigned to achieving bus growth outside Oxford, our policy is to increase the amount and proportion of developer funding that is used for bus priority infrastructure (see section 2.7). We must co-ordinate the timing of bus infrastructure and introducing new services – which tend to come from different funding streams - to optimise the potential for attracting and retaining new passengers. Where we have a reasonable expectation of sufficient demand and where it is practically feasible we will encourage and practically support bus operators to develop new routes, for example cross-town and inter-urban services/routes in and to Oxford to the Eastern Arc, to avoid unnecessary interchange.

The non-strategic bus network

Community or Local Bus Routes/Services

Community or local bus and community transport services operate in places of low transport demand such as rural areas and small towns. They primarily provide ‘socially necessary’ transport for people who do not have access to a private car and therefore rely on the bus for access to essential services such as shops and health care and currently tend to require a high level of financial subsidy.

As with other routes in the hierarchy, bus priority, service information and stop improvements will be particularly important for enhancing knowledge and usage of local routes. The provision of conventional buses and bus stops, that are accessible to people with mobility impairments, is also an important priority so as to prioritise specially adapted vehicles for people with the most chronic disabilities.

The budget for supported bus services is proposed to be cut by over 50% over the next 4 years, which will clearly have a major impact on the Local/Community bus network. We will need to carefully consider how this change is managed to ensure that essential services are protected and best value for money achieved, while developing a new approach to supporting local transport services.

Other types of bus service

In addition to the hierarchy of scheduled bus and community transport services there are a number of specialised services designed to meet the needs of specific groups. The most numerous of these are school bus services, which we provide for those living over three miles from their nearest state-maintained secondary school (two miles for primary schools). These are run largely as an independent network not available to the general public. Some independent schools also provide services. Higher and further education establishments provide a range of services; some of these – notably the *Brookes Bus* network provided by Oxford Brookes University and the bus service funded by Abingdon & Witney College to link its two sites – also run as scheduled local bus services which contribute to the local network.

Some major employment sites fund bus services to serve their sites, notably Harwell Science & Innovation Campus and Oxford Science Park. These are generally combined with local bus services. Some retail sites also fund shoppers' services to their sites; these generally run free to users, are not registered as local bus services and completely separate from the local bus network. We expect the operators of such sites to ensure that they are accessible by public transport without funding from the council but, where they might be conveniently combined with a local bus service which is also useful for other journeys, will consider joint funding arrangements.

Public transport interchange strategy

High-quality infrastructure and integration with other services and types of transport is crucial to the successful operation of bus and coach services in Oxfordshire. Reliable and attractive public transport services can only operate where vehicles arrive at high-quality stops that users can easily access and where they can wait in safety and comfort, knowing their service will arrive on time. Interchanges provide the link which binds different public transport services into a network. If transfers between bus and other public transport services can be made easier, quicker, and more convenient, travel opportunities for existing and new passengers will emerge that are better, more frequent and wider ranging.

The main challenges we face in improving interchange facilities and interchange in Oxfordshire include:

- Overcrowded and inadequate interchange facilities and limited available space in Oxford city centre
- Park & Ride sites close to capacity at certain times
- Inadequate interchange facilities in many of Oxfordshire's other main urban centres and along main inter-urban bus routes.
- A need to protect and enhance the built environment, heritage, and ambience in all town or city centres, with Oxford presenting a particular challenge.
- An increasing demand for travel
- Increasing passenger expectations of safety, security and comfort
- Differing needs of passengers and other users
- Working with many partners who often have differing objectives and priorities.
- Limited financial resources

Bus Strategy Table 2 below outlines our Bus Interchange hierarchy and the level of passenger facilities required at each. The different types and standard of facilities is a function of a number of factors including:

- the level of bus route,
- the number and types of public transport service utilising the facility,
- location, and
- current and projected passenger demand.

We propose to increase connectivity and access and improve the passenger experience by

- working with operators and other partners to develop and improve the public transport hubs and other interchanges facilities so that they appropriate to the size of urban area and demand along the corridor;

- improving access to these facilities by feeder modes (both access routes and co-ordination of services); and

- making payment and ticketing systems easier and speedier to use.

Criteria which will be considered in planning and designing appropriate interchange facilities include facilities for disabled passengers, opportunities to connect by walking and cycling,

Bus Strategy Table 2 – Bus Interchange Hierarchy

LEVEL	MAIN TYPES OF HUB	MINIMUM HUB FACILITIES	MINIMUM BUS STOP FACILITIES
RAPID TRANSIT INTERCHANGE	• Main Park & Ride sites • Intermediate hubs on main routes (e.g. where orbital and radial services meet) • Main rail, bus or coach station	• Bus layover facilities • Pre-payment ticket machines • High quality passenger facilities (restrooms, waiting rooms, retail outlets, etc) • High disability access standards throughout • Real time service information • High quality cycle and walking links • Secure covered cycle parking	• Very high quality bus shelters • Pre-payment ticket machines • Real time service information • High quality cycle/walking links • Secure cycle parking • Good lighting at shelters and on main access routes • High disability access standards
PREMIUM INTERCHANGE	• Park & Ride Sites • Other rail/bus/coach stations	• Bus layover facilities • High quality passenger facilities (restrooms, waiting rooms, retail outlets, etc) • Real time service information • Secure cycle parking	• High quality bus shelters or larger structures with real time and printed service information • Good cycle and walking access • Good lighting at stops and on main access routes • Secure cycle parking • High disability access standards
CONNECTOR INTERCHANGE	• Small, local Park & Ride sites • Large or medium sized town bus / rail stations or interchange	• Central bus / coach station with adequate layover or multiple bus stops clustered on the same section of road in the centre • Bus / rail interchange in one location or less than a 5 minute walk between bus and rail stations	• High quality bus shelters with real time and printed service information in main centres and other places where feasible • Secure cycle parking • Good lighting at shelters and on main access routes • Bus stops meeting disability access standards

COMMUNITY OR LOCAL INTERCHANGE	• Local parking sites close to bus stops • Smaller town bus or rail interchange • Bus stops on higher frequency services	• Bus stop adjacent to railway stations or less than a 5 minute walk between bus and rail stations	• High quality bus shelters with printed service information • Safe access on foot • Bus stops meeting disability access standards

improving personal safety and security, and enhancing the public realm. We will further develop public transport hubs in conjunction with work on implementing the Rail Strategy.

There are a number of major hub locations where the potential for new or improved interchange will be assessed and possibly developed (these are discussed in greater detail in section 2.3 and/or in the respective area transport strategies):

- **Oxford** – station re-development as part of wider master plan with enhanced bus / rail interchange; a revised Park & Ride system involving the creation of a ring of new sites further out of Oxford on key radial corridors.
- **Banbury** – reviewing bus interchange facilities in and near the town centre and making improvements accordingly.
- **Bicester** - a new Park & Ride site at South West Bicester.
- **Didcot railway station** – further development of the multi-modal interchange creating a high quality gateway leading to the town centre.
- **Proposed new opportunities** e.g. potential new railway station at Grove or on the Cowley branch line.

There will also be enhancements of facilities at smaller interchange locations, for example in Abingdon, Didcot, Wantage and Witney. With the recent development of high frequency Premium inter-urban bus routes in the County there is a growing demand for better access to these services by residents in towns and villages along the routes and surrounding villages so better interchange facilities in smaller urban centres on the Premium inter-urban bus network will need to be considered at locations like Thame, Faringdon and Shrivenham.

A growing issue is access by car to the inter-urban bus network and whether there is benefit in developing small rural Park & Ride facilities close to stops and other interchange facilities at some locations. For example in Shrivenham there is already an issue with inter-urban bus passengers parking their cars close to the bus stop for large parts of the day leading to complaints from local stakeholders about this using up scarce on-road parking spaces that could be used by shoppers with greater benefit to sustaining local centre vitality.
In general we will encourage and facilitate access to higher level bus services by walking, cycling and local bus services. Improving foot and cycle access to bus stops and other interchange facilities will also be given a high priority when new bus routes are developed and existing routes are being upgraded or altered. Access by these modes will be considered when investigating the siting of new bus stops and cycle parking facilities will be provided where appropriate. Many local bus stops do not have suitable waiting facilities,

especially for those passengers who are disabled, frail and elderly. Opportunities will be taken to introduce low-cost improvements, if possible on a whole-route basis.

We recognise however that there may be situations where small formal car parking arrangements may be desirable and necessary in order to facilitate access, encourage patronage growth, and avoid undermining access by car to local centres. In partnership with the appropriate local authorities we will therefore consider parking provision and management at locations along strategic inter-urban bus routes as part of a comprehensive access strategy. Where development funding might permit small scale car parking, a needs and impact assessment which takes account of all the above mentioned considerations will be carried out prior to reaching a decision.

Co-ordinating bus and rail services to reduce waiting times and facilitate easy connection is a particular challenge given the large number of private operators and their sometimes conflicting priorities. Operators however recognise the importance of making public transport services more attractive, particularly to those that have the option of private car use. We will continue to work with bus and rail operators through partnership arrangements to improve service co-ordination and integration.

Developing more efficient payment and ticketing systems is a particularly important in improving public transport interchange. This is a highly complex and challenging issue organisationally but substantial progress has already been made in Oxfordshire with the introduction in 2011 of the *Smartzone* integrated, multi-operator ticketing system centred on Oxford. Using smartcard technology this has enabled bus passengers to make trips on any operators' service within the zone and was the main reason for the large growth in passenger numbers following its introduction. The next stage is to extend the system to include parking charges at County Council owned Park & Ride sites in the near future.

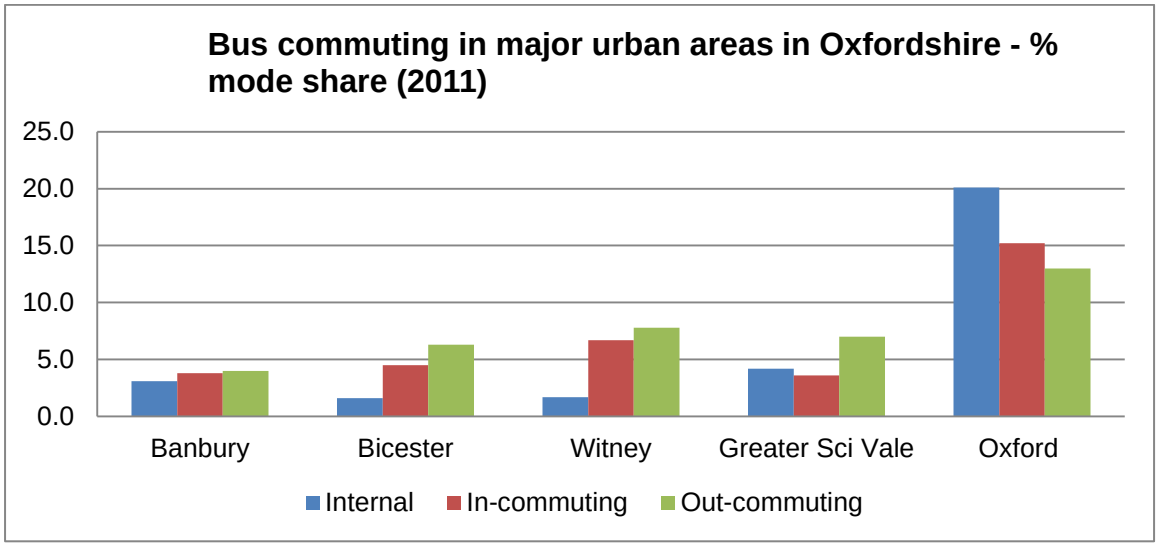
Outside the Oxford *Smartzone* there is less advantage in having integrated ticketing as there is seldom more than one operator on any particular route and most journeys do not involve more than one operator. In such areas the ability to use smartcard payments systems - particularly when these are associated with more economical regular user tickets for certain periods – tends to be more beneficial for both passengers and operators. For the former they can make payment easier (and cheaper) and for the latter they help speed up boarding and journey times.

However, with increased bus network development and greater bus and rail network connectivity, demand for an extension of the Smartzone integrated ticketing system to other parts of the County is likely to grow. We will look for opportunities to extend the integrated ticketing system as well as support the further development of smartcard and other off-board payment and ticketing systems.

Outside Oxfordshire some neighbouring authorities plan to develop public transport hubs that will have an impact on the Oxfordshire bus network and travel opportunities for Oxfordshire residents. The most significant of these new hubs is a new major park & ride site on the A420 on the approach to Swindon.

2.2 DEVELOPING & ENHANCING BUS NETWORKS IN THE MAIN URBAN AREAS

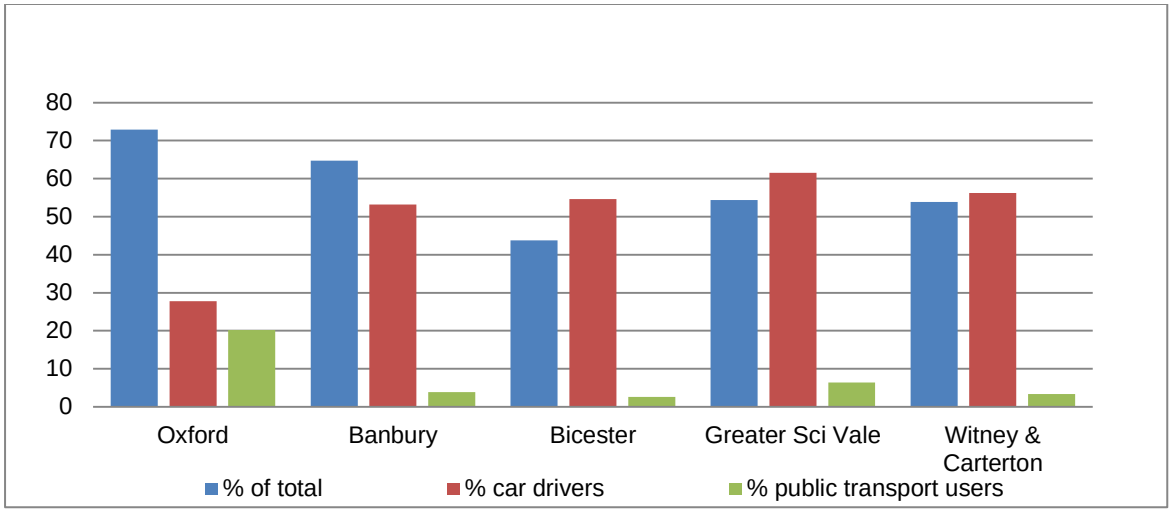
For the purposes of this bus strategy the main urban areas of Oxfordshire have been defined as Oxford, Banbury, Bicester, Witney and Carterton, and the Greater Science Vale area which includes Abingdon and Wallingford. Figure 5 shows the proportion of people that were commuting to work by bus in 2011 within, to and from these settlements or areas (i.e. for the longest part of their journeys) and clearly shows the currently very low levels of bus commuting in outside Oxford.



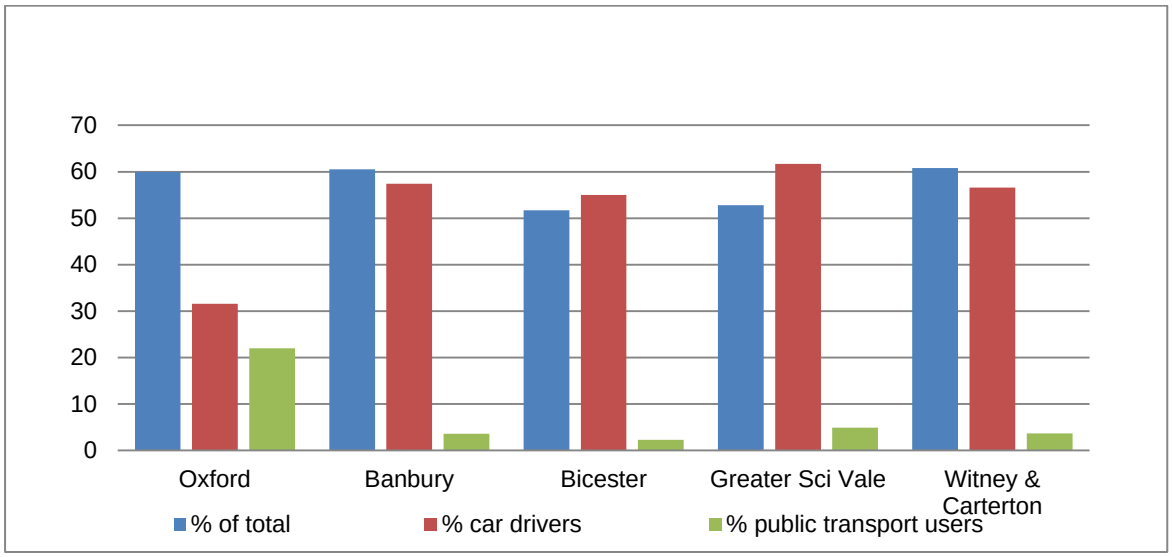
Bus Strategy Figure 4: Bus commuting in major urban areas in Oxfordshire

These settlements and localities display a very wide variation in the proportion of local employees who live within the surrounding area (defined here as being up to 10km of their workplace) and the proportion of residents whose workplace is within this range. This, and the comparative level of access by bus and other modes, has a profound influence on mode

choice and mode split within these settlements and surrounding catchment areas (see figures 4, 5 and 6).



Bus Strategy Figure 5: Main urban areas: Means of transport and percentage of residents working within 10km of home (source: 2011 Census)



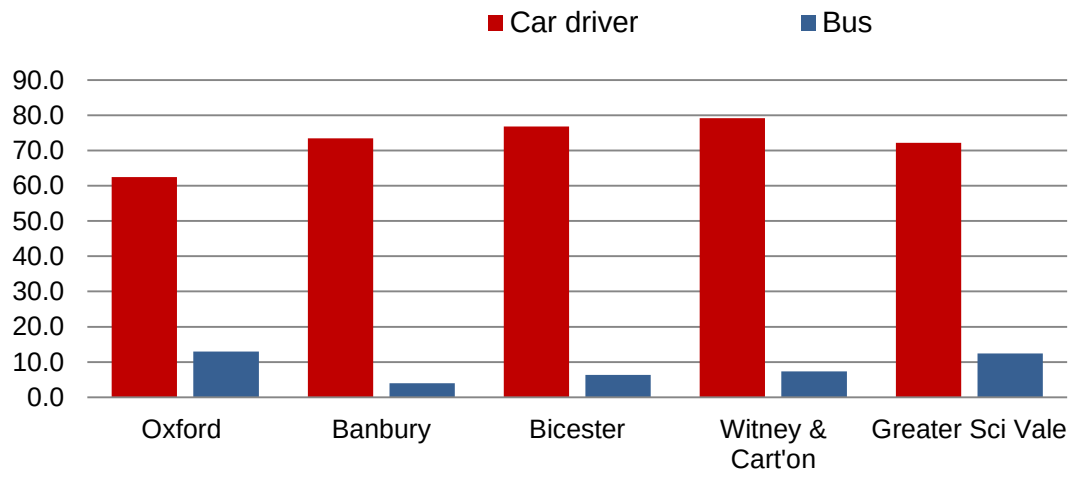
Bus Strategy Figure 6: Means of transport and percentage of employees residing within 10km of workplace (source: 2011 Census)

We have developed plans for bus network improvements to 2031 for each of these areas and these are included in the Annex to this document.

2.3 DEVELOPING AND ENHANCING THE INTER-URBAN BUS NETWORK

A large proportion of journeys in Oxfordshire, particularly commuting to work, involves travel outside residents' home settlements and the vast majority of these journeys are still carried out by car and very few by bus (see figure 7 below). These longer-distance, mostly car-borne journeys produce the majority of road based carbon emissions, vehicle miles, and traffic congestion on busy inter-urban routes and within urban areas.

Bus Strategy Figure 7: Out-commuting by bus & car: main Oxfordshire urban areas (2011) [Source: Census data]



For most people's journeys, bus is the only viable alternative to car travel - at least to destinations on the strategic transport network. A relatively good, high frequency, but limited, inter-urban bus (and coach) network has developed in Oxfordshire in recent years linking some of the larger towns in the County, and also Oxfordshire to the wider region and beyond. Figure 2 shows the map of the Oxfordshire strategic inter-urban bus and coach network. In partnership with the main bus operators the County Council has supported the development of the inter-urban bus network which has helped facilitate a significant and rapid growth in passenger numbers on several of these routes. For example, bus patronage on the route between Swindon and Oxford has more than doubled in the last five years and, as a result, the fully commercial service frequency is increased to three buses per hour.

The current Oxfordshire strategic bus network has a strongly radial pattern centred on Oxford and there are few good bus (or rail) connections between neighbouring towns. To some extent this reflects the centralisation of employment and services in Oxford and subsequent weaker patterns of demand between other urban centres. Analysis shows that the inter-urban routes with the highest proportion of bus/coach commuters generally start or finish in Oxford. Generally the proportion of commuters travelling by bus to other centres

outside their home towns is *significantly* lower than to/from Oxford. As travel patterns are likely to become even *more* complex (and decentralised) in the future. The strategic inter-urban bus network will need to adapt to cater much better for complex, non-radial patterns of travel demand.

Given that bus patronage growth in Oxford seems, for now, to have more or less levelled off in terms of market share, the majority of passenger growth in the County is occurring on these routes and for operators it seems likely that this where many of the best commercial opportunities lie.

This section of the bus strategy outlines our approach to increasing growth even more on the strategic inter-urban routes in the County. To this end the strategy is divided into three main elements:

(1) The key role that a revised Oxford Park & Ride strategy will play in contributing to a step change in interurban bus development and passenger growth.
(2) Our strategy for increasing inter-urban bus connectivity within (and to) the Knowledge Spine.
(3) Our strategy for improving inter-urban bus connectivity within Oxfordshire more generally, and in connecting Oxfordshire to the wider region.

PARK & RIDE AND THE BUS STRATEGY

Introduction

The Oxford Park & Ride strategy has evolved, in conjunction with parking management and on-road bus prioritisation and service improvements primarily as a means of tackling traffic congestion on the main radial routes within the City and on the Oxford ring road by facilitating access to Oxford city centre – and later other destinations within Oxford. Its main function and purpose has been to enable transfer to bus for the last leg of the journey into Oxford.

Park & Ride has become hugely successful commercial operation. Most of the existing P&R sites are now however often close to capacity - and for most of them - especially those within the ring road – the congestion has spread to engulf the approaches to the sites. This not only increases car journey times to reach the sites but suggests that the current park and ride strategy has limited potential in dealing with any further expansion in travel demand along these routes.

Oxford's Park & Ride system is one of the key elements affecting the City and County's bus system and has a wide geographical influence on travel behaviour. Changes to the County's Park & Ride strategy and system will therefore have a considerable impact on the planning, operation, and attractiveness of the Oxfordshire public transport network.

Strategy

A new approach to Oxford's Park and Ride system has been proposed as part of an updated Oxford Transport Strategy. The following section outlines these proposals, which will require further development to assess their probable impacts on the bus network and bus offer before a final approach is agreed.

(a) Short/medium term Park & Ride strategy

The main element of the new approach to Park & Ride is the development of a network of larger sites located further out of Oxford adjacent to the main inter-urban radial routes. These sites would intercept trips closer to their point of origin and before they cross the ring road. The first of these new sites, to be opened in 2015 adjoins the new residential development at south-west Bicester (A41).

Other proposed locations are: Eynsham (A40), Langford Lane (A44), Lodge Hill (A34 south of Oxford), Kidlington (A34 north of Oxford), Cumnor (A420 west of Oxford), and Sandford (A4074), and Garsington Road (B480).

The development of this 'outer ring' of sites may mean that some or all of the existing sites within the Ring Road i.e. at Peartree, Redbridge and Seacourt could be closed if no longer required and could be redeveloped for other purposes, which may include public transport-related functions.

The current proposals for an outer ring of sites have been developed with the aim of meeting the following objectives:

- maximising the potential for intercepting trips,
- reducing congestion on the inter-urban network,
- increasing bus modal share to Oxford (and onward connections), and
- site availability and financial feasibility.

Opportunities will also be created from new Park & Ride developments planned outside Oxfordshire. In particular, we recognise that the proposed P&R site on the A420 approaching Swindon (in the Borough of Swindon) will potentially have an impact on traffic along the A420 corridor in both directions, and on inter-urban and local bus services in the area. In partnership with Swindon Borough Council and bus operators we will seek to maximise the public transport benefits for Oxfordshire.

(b) Impacts on the County's inter-urban and local bus networks

Although it is too soon to predict the full impacts of proposed changes to the Oxford Park & Ride system on the bus network and travel behaviour, the following changes are planned or expected:

- The proposed outer Park & Ride sites at Cumnor, Eynsham, Langford Lane and Sandford – and the existing site at Thornhill – would constitute the termini of three Bus Rapid Transit routes centred on Oxford.

- Outer Park & Ride sites are expected to develop into significant bus hubs connect Bus Rapid Transit or Premium Transit services into/from Oxford with services to/from neighbouring urban and rural areas and longer-distance bus and coach services, thus greatly enhancing public transport connectivity and access across Oxfordshire.

- Bus journey times and reliability for all services using the Bus Rapid Transit routes will be greatly enhanced. In combination with other measures this should help facilitate substantial growth in bus ridership on inter-urban routes in and out of Oxford.

- Proving feeder bus services to sites may give a significant boost to local bus services and networks, and help facilitate a reduction in car dependency outside Oxford.

- The interchanges planned on the BRT routes within Oxford (where they intersect with radial or orbital bus or rail routes and at new city centre bus termini), and the Park & Ride sites close to built-up areas, would not only greatly enhance public transport connectivity within and out of the City, but also facilitates increased pedestrian and cycling access to the strategic public transport network and final destinations. There will therefore be a strong emphasis on providing good links to/from interchange facilities and neighbouring employment sites, residential areas, and other trip attractors and cycle parking at interchanges and destinations.

c) Longer term Park & Ride strategy

Longer term, there may be the need and opportunity to develop additional Park & Ride sites to serve Oxford and other towns in Oxfordshire. In order to optimise the transport and non-transport impacts of different locations and sites consideration will be given to developing and utilising an appraisal methodology that would include the following objectives:

- reducing the total amount of car travel (and therefore carbon emissions),
- maximising *non-car* access to/from the site and integration with connecting bus services,
- encouraging *outward- as well as inward-bound* commuting,
- supporting local bus services as well as inter-urban ones,
- their potential for supporting local economies and town centres.

CONNECTING THE OXFORDSHIRE 'KNOWLEDGE SPINE'

Introduction

The primary focus of employment and housing growth in Oxfordshire up to 2031 is likely to take place along the 'Knowledge Spine' which runs through the centre of the County (see figure xx). Growth in the Knowledge Spine is to be targeted in three broad areas i.e. in and around Bicester, Oxford City, and Science Vale as discussed in Oxfordshire County Council's Science Transit project.

The Knowledge Spine lies along the north-south strategic transport corridor consisting of the A34 road and the Didcot-Oxford-Bicester railway line. The A34 is already severely congested in many places in Oxfordshire and prone to severe unplanned disruptions, particularly at peak times. There are very few suitable alternative north-south roads capable of providing adequate connectivity within the Knowledge Spine.

Table xx shows the level of commuting flows between the major urban centres and some of the major employment areas within the Spine in 2011. It shows Oxford City and the employment clusters at Milton Park and Harwell as being the two largest inter-urban commuting destinations for residents within the Spine, and also shows the significant scale of out-commuting from Abingdon. With large amounts of growth planned in all three parts of the Spine initial modelling suggest that this pattern to continue, although Bicester and Didcot in particular are likely to grow in importance both as the destination and origin of inter-urban commuting trips.

Table XX: Commuters flows between key towns and selected employment areas within the Knowledge Spine in 2011 [Source: Census data]

		DESTINATION						
		Bicester	Kidlington[1]	Oxford	Abingdon	Didcot	Business Parks[2]	**TOTAL**
ORIGIN	Bicester	-	640	2,530	130	50	80	3,430
	Kidlington	280	-	3,575	130	30	50	4,065
	Oxford	400	980	-	960	250	900	3,490
	Abingdon	70	240	3,700	-	370	1,100	5,480
	Didcot	<50	140	1,430	780	-	1,560	3,960
	TOTAL	800	2,000	11,235	2,000	700	3,690	20,425

1. *Kidlington including mid-layer super output area containing Kidlington airport*

2. *The mid-layer super output area containing Milton Park and Harwell*

The difficulty of accommodating more movements on the existing north-south road network, particularly the A34, highlights the need to significantly enhance the strategic public transport network between strategic locations and growth areas along the Knowledge Spine (and beyond), and also strengthen east-west public transport connections to places along the Spine. This section focuses on the former aspect, and the latter will be dealt with in the next.

The main rail line through the centre of the Spine linking Didcot, Oxford, and Bicester is an extremely valuable strategic asset and component of the public transport strategy for Oxfordshire and the Knowledge Spine. Rail has the potential to move very high volumes of people (and freight) between a limited number of fixed points quickly and efficiently, especially for medium and longer-distance journeys. With new infrastructure and services being developed and planned, for example East West Rail, the new Oxford Parkway station and proposed development of the Cowley branch line, rail is likely to provide a much greater proportion of journeys within and to the area in the future, especially for commuter trips.

The majority of travel demands within the Knowledge Spine - including to main business / employment clusters – however tend to be dispersed and complex and this is likely to continue. For many of these journeys, bus services will be more flexible and accessible than rail. Services can potentially operate at very high frequencies and move high volumes of passengers on main strategic corridors, with certain services deviating from the main route to serve more dispersed demand in residential or employment areas nearby. Multi-stage bus journeys can be made easier by providing more and better bus integration and service co-ordination. Investment in bus priority measures on specific routes can also demonstrate

very good value for money, especially when coupled with investment by operators in new vehicles and additional services.

The relative importance of the bus for commuting to work between parts of the Knowledge Spine is demonstrated in table xx which shows the shares for bus and rail commuting for the trips mentioned in the previous table. The data also shows the much lower levels of bus commuting to the locations mentioned outside Oxford, and the very high level of bus use between Kidlington and Oxford is notable. It is also notable that bus commuting between places on the opposite side of Oxford is currently very limited given the lack of direct services or easy ability to interchange.

More detailed analysis shows that the majority of inter-urban bus commuters along the Spine tend to work - or live - in the central part of Oxford City, given the relatively poor access by bus to the eastern side of Oxford.

Table XX: Commuting between key towns and employment areas within the Knowledge Spine in 2011: rail and bus mode shares[3] [Source: Census data]

Rail commuters		**DESTINATION**						
		Bicester	Kidlington[1]	Oxford	Abingdon	Didcot	Business Parks[2]	**TOTAL**
ORIGIN	Bicester	-	0.3	3.3	0.0	4.0	1.3	2.6
	Kidlington	0.0	-	0.0	0.0	0.0	0.0	0.1
	Oxford	3.2	0.0	-	0.4	6.7	6.8	2.7
	Abingdon	0.0	0.0	0.7	-	0.3	0.0	0.5
	Didcot	8.9	3.0	19.9	0.6	-	0.0	7.6
	TOTAL	2.1	0.3	3.5	0.5	2.9	1.7	2.5
Bus commuters		**DESTINATION**						
		Bicester	Kidlington[1]	Oxford	Abingdon	Didcot	Business Parks[2]	**TOTAL**
ORIGIN	Bicester	-	2.8	17.3	2.3	0.0	0.0	13.4
	Kidlington	12.5	-	36.6	5.3	3.3	2.0	33.3
	Oxford	18.8	20.7	-	14.5	5.9	7.6	14.4
	Abingdon	10.4	4.1	25.4	-	7.0	8.5	19.7
	Didcot	0.0	3.0	2.5	6.2	-	13.9	7.7
	TOTAL	14.8	11.8	24.2	9.9	6.0	10.4	18.1

1. The mode used for the longest stage of the journey.

Strategy

Given the pattern of transport demand in the area, the flexibility of bus transport and its much lower infrastructural costs, the bus and Bus Rapid Transit (BRT) in places where there is a particularly high volume of demand) will continue to provide the main public transport alternative to the car for most inter-urban journeys within the Knowledge Spine. Buses will also play a vital role as feeder services between railway stations and main business sites, town centres and residential areas.

Our strategy for improving bus connectivity within the Knowledge spine includes the following key elements:

New Park & Ride strategy:

- The proposed new 'outer' Park & Ride sites adjacent to the strategic highway network at Bicester South-West (A41), Lodge Hill (A34 just north of Abingdon), Kidlington (A34 south of Islip), Sandford (A4074), and Garsington Road (B480) - linked to the development of three Bus Rapid Transit Routes centred on Oxford, will improve bus connectivity between Oxford and other parts of the Knowledge Spine.

Increased and improved public transport interchange capacity:

- The improvement in capacity for interchange and greater connectivity within Oxford, with the planned interchanges between BRT and other bus and rail services, is likely to significantly improve access by bus to/from the Eastern Arc in Oxford, and also increase bus connectivity through the City for people travelling to destinations on the opposite side of Oxford.

- We expect the Park & Ride sites to develop as significant bus and coach hubs facilitating the growth in more dispersed patterns of local bus services improving access and connectivity.

A major new north-south highway corridor linking Didcot and the eastern side of Science Vale with east Oxford:

- A potential new road link and Thames River crossing with bus priority where required running between north Didcot, past Culham Science Centre (connecting to the B4015 and the east side of Oxford).

Innovative strategic bus routes:

- Where possible, and in pursuit of our strategic objectives, we will encourage and support bus operators proposals to develop innovative bus services and alternative routes, especially more direct and express services. An example of this that will be considereda is a strategic bus link from south-east of Bicester to the Oxford Eastern Arc. The main advantages of this proposal is that a large part of growth in Bicester is focused on the south-east of the town and access to the Eastern Arc from Bicester is currently poor.

- South of Oxford we will explore the feasibility of developing a Busway 'spine' running north-south through central Science Vale – possibly terminating at the proposed Park & ride site at Lodge Hill in the north and at Harwell Business Park in the south. Such a busway would be a high frequency BRT route allowing services to branch off and serve strategic employment and residential developments.

- With the Highways Agency we will continue to explore the possibility of bus (or 'no car') priority measures at junctions and on specific links on the A34.

CONNECTING OXFORDSHIRE AND THE WIDER REGION

Introduction

While most of Oxfordshire's housing and employment growth up to 2031 is likely to be within the Knowledge Spine we acknowledge – as does the Oxfordshire strategic Economic Plan - the importance of strengthening the bus network in the rest of Oxfordshire, including the rural parts of the County, and increasing bus connectivity to the wider region. This is an important priority for the following main reasons:

- reducing traffic growth and congestion in the Knowledge Spine area,
- reducing transport carbon emissions,
- supporting local economies in Oxfordshire, including the rural economy, outside the Knowledge Spine,
- providing opportunities for people without access to private motor vehicles living or working in these areas to access employment and services.

The focus of this section is on the inter-urban bus and coach network outside the Knowledge Spine, and the following section addresses the rural bus network.

Strategy

Figures 2 and 3 (above) show the Oxfordshire strategic bus and coach network map, which is based on an analysis of current and predicted peak hour and commuting general and bus passenger flows, patterns of major growth in Oxfordshire and adjoining areas, and the strategic urban hierarchy. Given the above factors we have changed the designated strategic inter-urban bus network from LTP3. The major changes and reasons for them are listed in table 3 below:

Bus Strategy Table 6: Changes in the Strategic Bus & Coach Network

ROUTE/LINK	CHANGE	RATIONALE
Didcot - Harwell link	Upgraded to Premium	Strategic importance, housing and economic growth, high volume of demand
Witney – Eynsham P&R – Northern Gateway – Headington – Cowley – Lodge Hill P&R / Sandford P&R	New Bus Rapid Transit	Strategic importance, high volume of demand. Intercept trips on A40, B4449, A4074, and A34 corridors at P&R sites and provide high speed, high frequency service to/from Oxford
Langford Lane P&R (Begbroke) – City Centre - Blackbird Leys	New Bus Rapid Transit route	Intercept trips on A44 and A4260 corridors at P&R and provide high speed, high frequency service to/from Oxford
Cumnor P&R – City Centre – Thornhill P&R	New Bus Rapid Transit route	Intercept trips on A420 and A40 corridor east of Oxford at P&R sites and provide high speed, high frequency service to/from Oxford
A44 – A4260	Designated a potential strategic link	Potential connection for Banbury – Oxford and/or Witney – Woodstock – Kidlington airport bus routes

Kidlington – Upper Heyford	New strategic route – connector level	New development at Upper Heyford
Banbury - Upper Heyford - Bicester	New route – connector level	Major growth at Banbury, Upper Heyford and Bicester
Bicester - Milton Keynes	Designated a strategic route – connector level	Major growth at Bicester and along Cambridge Arc
Bicester & Banbury - Brackley – Northampton (A43 corridor)	Designated a strategic route – connector level	Major growth at Bicester, Banbury and Northants
Grove – Faringdon	Designated a strategic route – connector level	Strategic importance of access to employment in Science Vale from west part of Vale of White Horse (and Swindon); moderate volume of demand
Harwell - Newbury	Designated a strategic route – connector level	Strategic importance of access to employment in Science Vale from Newbury area
Thame - Aylesbury	Upgraded to Premium route	Strategic importance, mod/high level of demand
Oxford – Swindon	Upgraded to Premium route	Strategic importance, mod/high level of demand

Where inter-urban bus routes are designated as Premium we will, where applicable, review the conditions for bus operations and passenger access, as part of developing major route strategies. The route strategies being developed for the A420, A34, and the A40 will give a high level of consideration to facilitating quicker bus journeys, and better access and bus interchange facilities along the routes. Review of bus conditions and facilities on other strategic inter-urban routes will take place according to need and development funding-related opportunity, especially related to major development on or near the route.

Where we have designated strategic bus routes that extend into neighbouring local authority areas we will work with the relevant authorities to ensure that the priority they attach to these routes is similar to ours, and that our respective plans for bus-related infrastructure and service development match and are fully co-ordinated.

2.5 PUBLIC TRANSPORT FOR RURAL AREAS

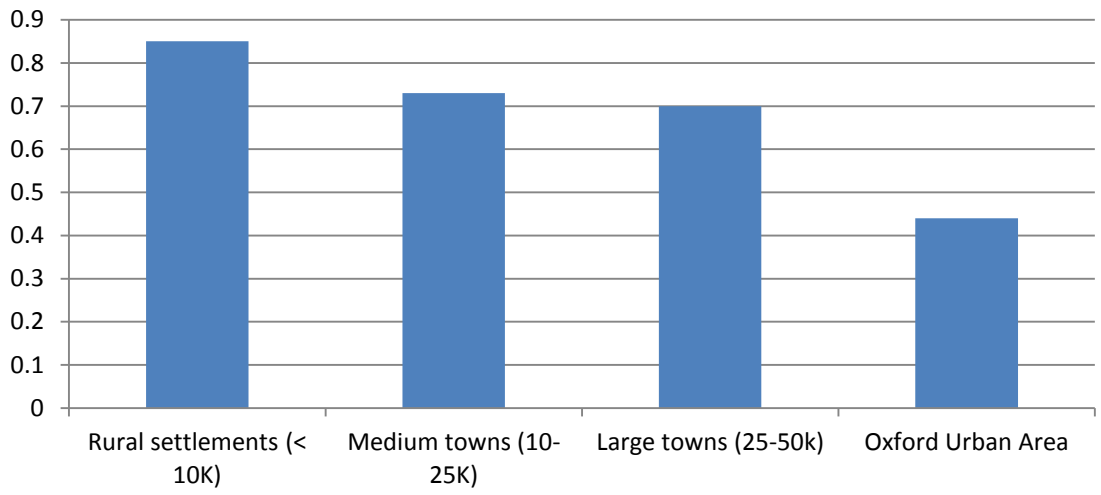
Rural bus and community transport services provide a lifeline for many people. For those living in rural areas without easy access to a car, having accessible and affordable public or community transport is vital to leading an active and independent life. Good rural public transport can also have important wider economic, environmental and social benefits and will therefore be a vital element in a successful comprehensive public transport system in Oxfordshire.

Introduction

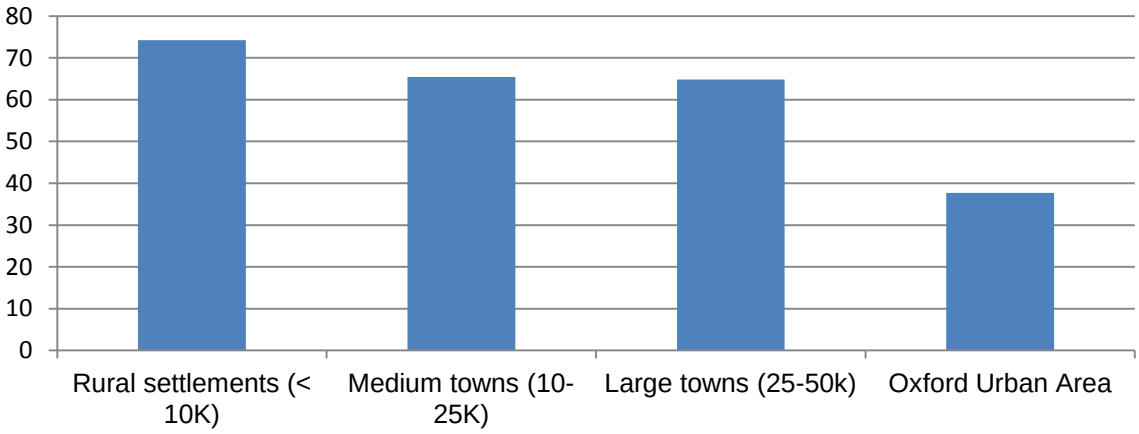
Oxfordshire is one of the most rural counties in the South East region. In 2011 37% of the population was living in settlements of less than 10,000 residents (the most common definition of rural areas), while 27% was living in settlements with less than 3,000 inhabitants. The state of public transport in the more rural parts of Oxfordshire is therefore a major concern not only for rural communities, but also local policy-makers and various other interest groups.

Most rural settlements in Oxfordshire do not lie on main inter-urban bus routes providing satisfactory levels of access to basic services and essential activities, particularly work and education. The dispersed and low level of transport demand in many rural areas makes the provision of affordable commercial public transport services unfeasible and publicly supported or subsidised services costly. Also, increased prosperity has encouraged the growth of car ownership and the development of highly car dependent lifestyles further weakening demand (see figures xx and xx). Consequently by 2011 only 2.1% of employed residents (about 3,600 people) living in rural settlements (i.e. less than10,000 residents) travelled to work by bus – a rate over 60% lower than in urban areas.

Bus Strategy Figure 8: Oxfordshire: cars per adult by settlement size (Source: 2011 Census)



Bus Strategy Figure 9: Oxfordshire: mode share for travel to work by settlement size (2011); [Source: Census]



Poor public transport undoubtedly causes significant hardship for many people without easy access to a motor vehicle who are predominantly concentrated amongst the elderly, the young, those with disabilities, and those on low incomes. There is also evidence to suggest that many low-income households living or working in rural areas are forced into buying and running a car when they cannot really afford to do so. Although to some extent community transport services have helped meet some of the need arising from a reduced level of bus services there are significant constraints on the further expansion of this sector. However it is far more than an individual or personal problem for a minority of people living in these areas. Important adverse economic, social and environmental impacts include:

- Consequences for the demand for other public services e.g. health, education and social care that can lead to significant direct and hidden long-term costs for these services.

- Undermining the economies of small and medium-sized towns leading to greater economic and social inequality.

- Undermining the rural economy worsens economic and social inequality. With increased urbanisation in the County and expansion in home-working the demand for access to the countryside for work, leisure, recreation, and tourism is expected to increase even more in scale and importance. Without adequate public transport, access to the countryside would to some extent be suppressed and be more inequitable and rural economic growth stifled.

- Increased levels of car use in - and to - rural areas leading to higher transport carbon emissions and further reductions in the quality of life in villages.

Despite efforts to reduce costs and maintain a public transport 'safety net' that fulfils basic social needs, rural bus services in Oxfordshire (as in England generally) have been gradually contracting for many years against a backdrop of declining central government funding and this situation is likely to continue.

County Council duties and responsibilities

National legislation lays down what we may and may not do in relation to subsidy for bus services. Bus operators are free to decide what commercial (unsubsidised) services to provide; we have no direct control over these services. Timetables for all bus services must be registered with the Traffic Commissioner – a Government appointee – who can ensure that services run to their registered timetable but cannot influence the timetable in the first place. Operators must give the Traffic Commissioner and the local transport authority at least eight weeks' notice of service introductions, withdrawals and timetable changes.

The Council has a duty to arrange "such services as they consider it appropriate to secure" to meet public transport needs which are not met by commercially run services. We can subsidise these extra public transport services, but for at least three quarters of all subsidised bus services must invite competitive tenders and decide which tender to accept solely on the basis of securing "best value" for public funds. A bus service can be arranged without tendering to meet an unexpected and urgent requirement (such as withdrawal of a

commercial service which can be with only eight weeks' notice), but tenders must subsequently be invited.

The amount of support for non-commercial services is limited by the funding that is available to us. In the short term we will be looking to see how the funding available can be used most effectively to provide for people's minimum access requirements within very tight financial limits. This raises some difficult and fundamental questions about how public transport services are to be delivered in the future.

Community Transport

We will continue to work with our district partners and local communities to support community transport to improve accessibility of services for rural communities. Oxfordshire has a large number of community transport schemes in operation. These range from car schemes whereby volunteers provide transport using their own cars, through to schemes providing shared minibuses to local groups, to schemes providing regular timetabled transport services similar to a conventional bus. Most community transport schemes in Oxfordshire are self-financing, but rising costs and legislative requirements are becoming a burden for some. The rising age profile of the volunteers themselves is also of concern when contemplating some schemes" sustainability. Where funding is available Oxfordshire County Council is currently able to offer support for community transport schemes in the form of grants.

Future strategy

This draft plan does not currently include any specific policies or proposals for how the rural transport network or transport for particular groups will be supported. This will be added to the Bus Strategy and the Local Transport Plan once further needs assessment has been completed.

2.6 INTEGRATED TICKETING, INFORMATION AND MARKETING

Bus service information and marketing

Bus service information tells users or potential users about services available and provides assurance that buses will provide a certain level of service to enable them to get to where they need to go. Marketing goes a stage further and aims to provide compelling reasons and sometimes inscentives for people to choose bus travel.

This strategy clarifies responsibility for the provision of information and who should meet the costs. Oxfordshire County Council generally provides bus stop infrastructure, including the pole, bus stop flag and timetable case. Operators are expected to meet the cost of providing and maintaining information relating to their own services.

Oxfordshire's Real Time Information service is amongst the best-performing systems in the UK primarily because the partners have focused on achieving quality in terms of the proportion of buses accurately predicted at stops and bus operators have invested in the on-board technology and so have a vested interest in the performance of the system. The issues faced by the system include whether the geographic coverage should be extended and whether the functionality of the system should be further developed.

There is a wide range of printed and web-based bus service information available for services across the county. However limited funding means that information provision needs to be both targeted at evidence of real need / usage, and delivered efficiently by OCC and operators. There are other challenges to be addressed in this strategy including:

- Differing responsibilities for providing information
- Consistency of presentation
- The future of real time information
- The move to increasing provision of electronic information

To address these challenges and achieve a step change in bus patronage will require a major improvement in the quality and availability of bus service information and increased and better marketing. OCC aims to plan and implement these measures with the co-operation of bus operators through the mechanism of the existing and future Quality Bus Partnerships (QBPs) which will need to consider:

- Evidence of the benefits and what people want from printed and web-based information.
- The benefits and costs of more consistent formats and house styles for information.
- The potential to make best use of OCC and operator information / marketing budgets (to avoid any possible duplication).
- The means of ensuring that information is regularly and consistently updated and then effectively implemented.
- An assessment of who does what; and whether there are more efficient and effective ways of working.

- A focus on key target groups who either don't get the information they need or who are most likely to change their travel behaviour as a result of marketing initiatives. These groups include people with sensory disabilities or impairments.

This work will be done in partnership with operators and representatives of bus users and other target groups, ensuring a greater focus on the "end customer".

Integrated Ticketing and Payment

We support the development of off-bus and integrated 'smart' payment, as a means of facilitating multi-stage and multi-operator public transport journeys, and reducing bus journey times by speeding up boarding. In 2011 a limited integrated smart ticketing system was introduced in bus services based in Oxford. In combination with some other measures – including routeing changes – this immediately had the effect of significantly increasing bus patronage on urban and some inter-urban services by making multi-operator journeys easier and more affordable.

We will continue to work in partnership with operators to develop improved ticketing schemes including further development and roll out of smartcards to potentially include other services like parking at park and ride sites and rail services. This work is one of the key elements of the Science Transit strategy and programme.

2.7 PARTNERSHIP WORKING

Quality Bus Partnership

The County Council and bus operators have worked in partnership since the 1970s. In 2011 OCC and the two major bus operators - Oxford Bus Company and Stagecoach Oxfordshire - launched a network of co-ordinated timetables and smarter ticketing on Oxford's main bus routes so that passengers are able to use one ticket for services from either bus company. The agreement resulted in far fewer buses on Oxford's central streets helping to reduce congestion and improve the ambience in the city centre. At the same time, the number of seats was maintained for passengers through the use of larger vehicles, which are among the greenest buses in the country, benefiting the environment. The challenge is now to expand the scope of the QBP in Oxford and across Oxfordshire.

With Oxford and Central Oxfordshire being given the opportunity to assume devolved powers under the City Deals initiative, there is an opportunity to work in partnership with bus operators to develop strategies for serving new development and making existing urban

areas function more effectively in transport terms. Understanding the future demand for bus services and the critical success factors for passengers will be important in order to develop a financially sustainable strategic public transport network.

This strategy proposes to develop a further quality bus partnership working covering the commercial network across the whole County. The primary focus would be on the major urban areas and inter-urban corridors (especially where new land use development is planned) and location specific objectives would include:

- Greater time-based and geographic coverage of bus services based on evidence of when and where people want to travel.
- Reduction in delays to bus services as a result of traffic congestion.
- Reduction in service cancellations.
- Increases in passenger satisfaction with the "end to end" journey experience.
- Increase in numbers of bus passengers.

Future Oxfordshire QBPs will concentrate on three major strands of activity:

(a) **Punctuality and reliability improvement**: to identify the source of delays to bus services and to jointly develop evidence-based solutions.

One of the several ways that OCC may achieve improvements in bus punctuality is using the New Roads and Street Works Act 1991. This legislation gives OCC responsibility for the planning, approval and (in some cases) undertaking of highway works, which can adversely affect bus punctuality and ability to run services to the timetable. OCC can designate any street with over eight buses per hour as "traffic sensitive", which can potentially restrict disruptive highway works especially at peak times. The Traffic Management Act 2004 also requires the implementation of bus punctuality improvement plans as part of the duty to secure the "expeditious movement of traffic".

Depending on evidence of the cause of punctuality and reliability problems the partners will need to jointly draw up and implement remedial action plans. There is also a need for all partners to consider solutions to the medium and longer term risks to bus punctuality and reliability – for example additional traffic congestion from planned land use development and general economic growth.

(b) **Information and Marketing**: to provide information in such a way that it break down perceived barriers and make people aware of the transport services and options

available, and furthermore provides compelling reasons for using the bus (or rail). Our strategy for this area of work is described in section 3.XX.

(c) Improving door-to-door integration and the overall passenger experience:

If buses are to attract and retain existing and future users and provide satisfaction there needs to be a greater focus on increasing integration between different stages of passengers door-to-door journey and improving the whole passenger experience. The QBP would identify the underlying causes of poor integration and low user satisfaction and develop financially sustainable solutions. The most important issues that will need to be addressed include:

- Wider availability of inter-operator (and multi-modal) smart payment systems.
- Service frequencies and daily coverage.
- Access to bus routes by foot and cycle at both ends of the journey. See the Cycling Strategy for more details of how we will aim to achieve sustainable Door to Door journeys (DE)
- Access to vehicles at stops for people with mobility impairments.
- Quality and environmental performance of vehicles (especially on lower level bus routes).
- Standards of driving / customer care.
- Integration with rail services.

QBPs have worked very successfully in Oxfordshire, however should voluntary agreements not prove effective in future in dealing with the scale and nature of the challenges faced OCC may look at the option of utilising powers contained within the Transport Act to assist policy delivery, through the development of Statutory Quality Partnerships or Quality Contracts.

Equality-related partnership working

Oxfordshire County Council will follow two important principles on all schemes. The first of these is that consultation with disabled people and their representatives should take place from the earliest stage in the development of schemes and initiatives before any details have been determined. The second principle is that the Council should secure high level disability awareness training for all appropriate staff in order that scheme designers can have greater awareness of the needs of disabled people.

When planning new schemes and improvements to existing facilities, we will consult local access groups, with Transport for All (the independent but council-funded body representing disabled and mobility-impaired people throughout Oxfordshire in relation to transport issues) and with the Oxfordshire disability organisation Unlimited. We will also, when necessary, seek expert advice to ensure that the final outcome is a satisfactory and useable facility for everyone.

2.8 PROMOTING BUS USE THROUGH THE PLANNING PROCESS

Strategy

Our strategy to enhance the bus network and achieve a substantial increase in bus patronage through the planning process consists of the following main elements. Success in achieving this goal and the other bus strategy objectives hinges on effective integration and co-ordination between each of these elements.

Integrated land use-transport planning

To support bus development and optimise the use of strategic transport investment we will:

- Encourage appropriate types of new development to be located, planned and designed with good access to the strategic bus network, especially designated Bus Rapid Transit and Premium bus routes.
- Encourage master planning to gives bus and rail a central place in the transport hierarchy.
- Support increased urban densification, especially near major strategic public transport infrastructure
- Encourage growth to be concentrated in existing larger urban areas or, with the development, to reach a threshold of greater potential self-containment and transport sustainability.
- Seek developer funding to support the development of existing or new bus services to achieve a higher and more attractive standard of service as required and where there is a reasonable expectation of longer-term commercial sustainability.
- Where significant new developments are planned, we will seek developer funding to pay for the necessary bus stop infrastructure to upgrade it to the desired standard.

- Ensure that new developments are planned to ensure optimal movement of buses along future routes in accordance with national and Oxfordshire County Council design guidance best practice. Bus routes must provide very high levels of penetration of - and pedestrian access – to and within sites.

- With the relevant District Council partners explore the possibility of introducing tighter parking standards at new major employment sites and residential developments, and restraint measures at existing major employment sites.

- Explore opportunities with the relevant District and Town Councils and local businesses to gradually introduce parking controls/regimes in town centres that could encourage the greater use of buses and other non-car modes of transport while taking account of town centre vitality.

- Support residential and workplace sustainable travel planning.

Transport development control and travel planning

To support bus development and optimise the use of strategic transport investment we will ensure the development of:

- Planning agreements that support bus development in terms of both hard infrastructure and 'soft' travel planning measures.

- Ambitious sustainable travel plans and targets which are monitored, managed and enforced.

Increased consideration will have to be given in future to of the most appropriate developer funding source for infrastructure schemes and bus service development and the most appropriate and best use of developer funds in particular cases. The options include Section 106 contributions, the Community Infrastructure Levy (CIL) and devolved major scheme funding.

Section 106 agreements

The identification, negotiation and securing of section 106 financial developer contributions to bus services and infrastructure is currently undertaken on a site by site basis. OCC (and partners such as the bus operators and District Councils) consider a number of factors when proposing bus service and infrastructure improvements – as shown in Table 7 below.

There isn't a strict formulaic approach which calculates a financial contribution to transport measures. The size and phasing of any specific developer contribution is currently a matter of negotiation and agreement between the relevant local authorities and the developers.

Bus Strategy Table 7 – Factors in Identification of Service and Infrastructure Improvements

Improvement	Key Factors
New bus service or improvement in existing frequency / daily coverage	• Size of development (e.g. number of houses, number of new jobs, floor area of retail development etc.)
	• Time taken to construct and occupy development (phasing)
	• Location of development (i.e. distance from existing frequent public transport corridor)
	• Frequency / commercial viability of existing bus services
	• Proximity to existing urban centres and travel generating destinations
	• Potential links to other proposed developments
Bus priority measures	• Evidence of current problems and / or future congestion resulting from development-related travel demand
	• Requirement to minimise journey times to adjacent settlements / developments
Bus stops and support accessibility improvements (walking routes and road crossings)	• Size and geographic extent of development
	• Minimising the required walking time from the development
	• Proximity of existing or proposed bus routes
Travel Plans	• Size of development and travel demand generation potential
	• Projected travel patterns (origins and destinations)
	• Socio demographic profile of development

The current approach allows flexibility based on the specific circumstances of development(s) based on experience of what has worked (or not worked) elsewhere. Local knowledge of the bus operating conditions and potential passenger demand means that the service and infrastructure measures can be tailored to circumstances, based on available local evidence and professional judgement.

Our policy to date has been to concentrate on promoting the development of local bus services by using developer contributions to increase service frequencies, particularly for employment and utility trips, attract more passengers and therefore improve commercial viability. The developer funding to support these services is time-limited therefore it is critical that these improved services become commercially sustainable in the longer term. There is a significant role for travel planning and other initiatives to support these developing bus services.

A drawback of the current approach is the potential for a lack of transparency and consistency in the way developer contributions are secured and apportioned, especially where more than one development is required to make a contribution to bus service and infrastructure improvements in an area or corridor. Individual developers may challenge the financial contribution expected if they believe that they are paying more than their "fair share". This all makes for a time-consuming and inefficient system. There is also a need to plan a future integrated network that links different developments rather than simply introducing a series of isolated routes.

We therefore believe there is a case for defining a more consistent and transparent policy and process for developer contributions towards transport improvements, including bus services and infrastructure. With the much higher level of population and employment growth anticipated outside Oxford in the future and our ambition to achieve a major step change in the bus system and patronage it has become a priority to review our strategy and policy in this area. This will imply adopting a formulaic approach for calculating contributions from developments to public transport, based on the anticipated transport impact (including the key factors outlined above).

The key principles of this formulaic approach could include:

- Provision of a multi-modal trip rate for the different classifications of development (e.g. residential, B1 office, retail etc.).

- Calculation of a financial value per trip based on the estimated cost of transport services (including buses) and infrastructure that would be necessary to make the development work in transport terms.
- Provision of local weighting factors to reflect specific circumstances (potentially including local economic conditions, sustainability of the development site, proximity of existing Premium Routes etc.).
- Agreement of binding targets for bus use from specific developments – with additional investment being triggered if targets are not met.

There are challenges in developing such an approach. There will need to be a clear local vision for a future bus network which would link each development to an appropriate range of trip attractors and generators. Individual section 106 agreements will need to build up the wider public transport system rather than simply providing isolated routes, which would then disappear once funding ended. There would also need to be a means of ensuring that operators who provide services as part of sections 106 contributions (by winning a contract from the OCC or developer) subscribe to the principles set out in QBPs (see section xx above).

Community Infrastructure Levy (CIL)

OCC is aware of the need to improve conditions for buses and facilities for passengers in towns and villages outside Oxford and on inter-urban routes. Bus priority is currently under-developed outside Oxford. In some areas bus operators have indicated that they would find investment in infrastructure, particularly bus priority and other traffic management measures that would improve bus reliability more beneficial and attractive for them in the longer run than subsidisation of higher service frequencies. It is suggested that this might make them more willing to take the commercial risk of introducing new or additional services. As CIL is only applicable to capital infrastructure schemes, enhancements to bus services would still need to be secured through section 106 contributions.

The basis of CIL is a charging rate per residential dwelling or square metre of development, which generates an overall sum for funding strategic infrastructure required to facilitate both individual and multiple developments. There is no size limit to CIL and the money can be pooled to address transport problems that are wider than any specific development. The potential advantages of CIL include:

- Improving predictability and certainty for developers as to what they will be asked to contribute;
- Increasing fairness by broadening the range of developments asked to contribute;
- Allowing the cumulative impact of small developments to be better addressed; and
- Enabling important sub-regional infrastructure to be funded.

This strategy makes the case that bus services and infrastructure are a vital part of the solution for additional travel demand and congestion that could be generated by planned development in the county. Therefore CIL policies and schedules being developed by the District Councils should include provision for bus priority and transport hub strategic priorities.

Bus Service Operators Grant (BSOG)

Bus Service Operators Grant (BSOG) enables bus operators to reduce their costs and can charge a lower fare and / or operate a larger network than they otherwise would do. BSOG is currently paid directly to operators by the Department for Transport (DfT) based on the amount of fuel they use on both commercial and council-supported services. The DfT is proposing to devolve BSOG paid for non-commercial routes to local transport authorities (i.e. OCC) with the aim of enabling the money to be spent according to local circumstances. OCC and the operators have concerns that devolved BSOG payments would not reflect the relatively high proportion of commercial service mileage in the county. OCC will work with bus operators to decide how the devolved BSOG could best be invested based on the policy for Local Routes outlined below.

3 ACTION PLAN AND PERFORMANCE MONITORING

A detailed forward programme for the whole LTP, including the Bus Strategy, will be developed prior to the final version of the plan. In the interim the table below (see table xx) gives a broad indication of the phasing of the implementation of the bus strategy during the plan period.

The most important transport outcome the bus strategy aims to achieve is to increase bus patronage and modal shift from cars across the County and especially in - and to/from - major urban and employment areas at peak times in order to mitigate traffic congestion. Our key performance indicators (see below) have been designed to reflect these aims.

Although transport outcomes such as the above are influenced by a huge range of variables, including many over which local authorities have little or no control or influence, performance monitoring and ongoing policy assessment is all a vital part of effective strategic management and planning, and will therefore be accorded a very high priority. In particular we will use it to inform partnership working with District Councils, bus operators through the Quality Bus Partnership, and other stakeholders and regular reviews of our bus strategy and overall transport strategy.

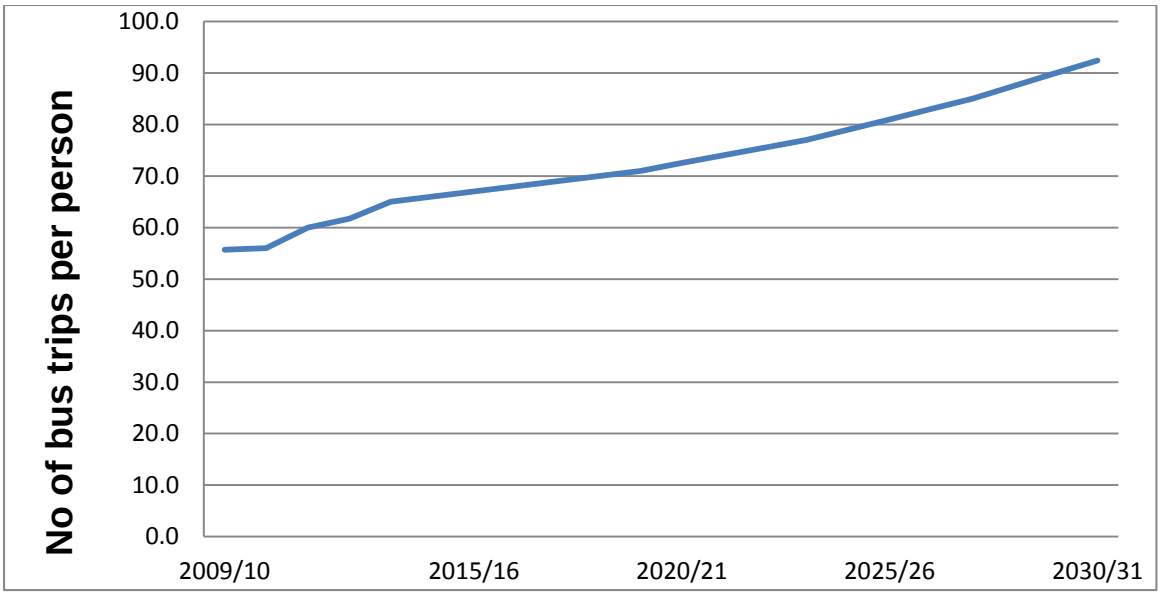
Bus Strategy Table 8: Indicative broad outline of the phasing of the Oxfordshire bus strategy 2015-

ACTION	SHORT-TERM (2015-2020)	MEDIUM-TERM (2021-2025)	LONGER-TERM (2026-2031)

2031

LTP4 Bus strategy 2015 – 2031: Suggested Key performance indicators and targets

INDICATOR	**NO. OF ANNUAL BUS JOURNEYS PER HEAD OF POPULATION**		
Data source	DfT statistics (Table: Bus 0110a)		
Area	Oxfordshire		
BASELINE	**SHORT-TERM TARGET**	**MID-TERM TARGET**	**LONGER-TERM TARGET**
2013/14: 65.0	2020/21: 72.5	2025/6: 81.0	2030/31: 92.4



INDICATOR	**WORKPLACE MODE SHARE: % OF EMPLOYEES COMMUTING TO WORK BY BUS [or alternatively - % of employed residents commuting to work by bus]**		
Data source	National Census		
Area	Major urban areas in Oxfordshire		
AREA	**BASELINE**	**SHORT-TERM TARGET**	**LONGER-TERM TARGET**
	2011	2021	2031
Oxford City			
Banbury			
Bicester			
Science Vale & environ			
Witney & Carterton			

Annex: Bus strategies for selected urban areas

OXFORD & SURROUNDING AREA

Introduction

Oxford is the largest urban area in the County and in functional and transport terms exerts a strong centralising influence over a large part of central Oxfordshire. In 2011 it had a resident population of almost 152,000 and was home to approximately 96,000 jobs and about 32,000 full-time students. It is also a major regional centre for retail activity and other services - particularly health care.

Oxford enjoys a very high level of employment self-containment which is conducive to sustainable travel behaviour. Currently only a very small proportion of employed Oxford residents work outside the City - a mere 13% - and 52% of jobs based in Oxford were filled by local residents in 2011. In addition, there are a very large number of student commuting movements, which are predominantly internal, relatively short-distance, and mostly performed using sustainable modes of transport.

Oxford benefits from the fact that the bus (along with walking and cycling) has become a key part of the local transport system and is testament to a long history of successful integrated sustainable transport strategies. In 2011 over 10,500 employed residents of Oxford (about 18% of the total) regularly commuted to work by bus or coach, and of these 8,500 travelled to workplaces inside Oxford (representing over 20% of internal commuters).

Levels of bus commuting from outside Oxford are also relatively high: in 2011 almost 7,000 commuters (over 15% of *in-commuters*) travelled to work by bus/coach. It is noteworthy however that the levels of *out-commuting* by bus/coach (with the exception of journeys to London) are significantly lower than the levels of internal and in-commuting by bus: slightly over 2,000 residents commuted out of Oxford by bus in 2011 of which almost 600 travelled to London (see section 2.3).

The following factors present challenges to the further growth of bus use in - and to - Oxford:

Traffic congestion: There is acute traffic congestion on several of the main radial roads in and approaching Oxford City, the A34 and A40, the Oxford Ring Road, and at a number of locations in the 'Eastern Arc' during the morning and afternoon/ evening peaks. Despite extensive on-road bus priority measures conditions for buses have tended to become worse

in many places leading to deterioration in bus journey time reliability. A few major 'pinch points' still exist on some of the main radial and the few orbital routes.

Constraints on the continued effectiveness of the current Park & Ride system: Most of the existing P&R sites on or near the edge of the City are now often operating close to capacity and congestion now affects the approaches to most sites at peak times.

Restricted bus movement around/through the city centre: The constrained central area road network creates difficulty in traversing or going around the city centre impeding the development of cross-town services.

Limited capacity for further bus growth in the city centre: 'Transform Oxford' improved the city centre ambience and conditions for pedestrians and cyclists partly by restricting the number of buses entering the area while slightly increasing the capacity by moving to double-decker buses. With the limited road space available there is now limited scope for further increasing bus capacity without once again worsening the ambience and conditions for pedestrians and cyclists.

Limited public transport interchange and inadequate passenger facilities: There is generally a poor level of interchange between different bus routes and between bus and rail in the city centre and very little outside the centre. This makes passenger interchange costly in terms of the time and distance penalty involved and discourages bus use for some journeys within Oxford and also some outbound journeys. In addition, there are insufficient conveniently located, high quality facilities for bus passengers and space for buses and coaches to wait and offload.

Limited bus connectivity to and within the 'Eastern Arc': The main commuting flows to Oxford are from north, west and south-west directions but a large proportion of employment is located in the east and south-east parts of the city (the so-called 'Eastern Arc'), accessible by only a few river crossings. Consequently within the city, and Eastern Arc in particular, there is currently insufficient orbital connectivity, leading to poor access by all transport modes and worsening congestion on the Ring Road and within the built up area. At the moment, most travel to the Eastern Arc from West Oxfordshire and Cherwell necessitates a difficult interchange in the city centre, although there are a few direct services which lack good bus priority. Both direct and multi-stage bus travel from these areas are therefore considered unattractive options.

Acute sensitivity of bus services to disruptions on the road network: Unplanned and planned events both inside and on the edge of the City often lead to virtual gridlock for extended periods affecting bus services as well as general traffic.

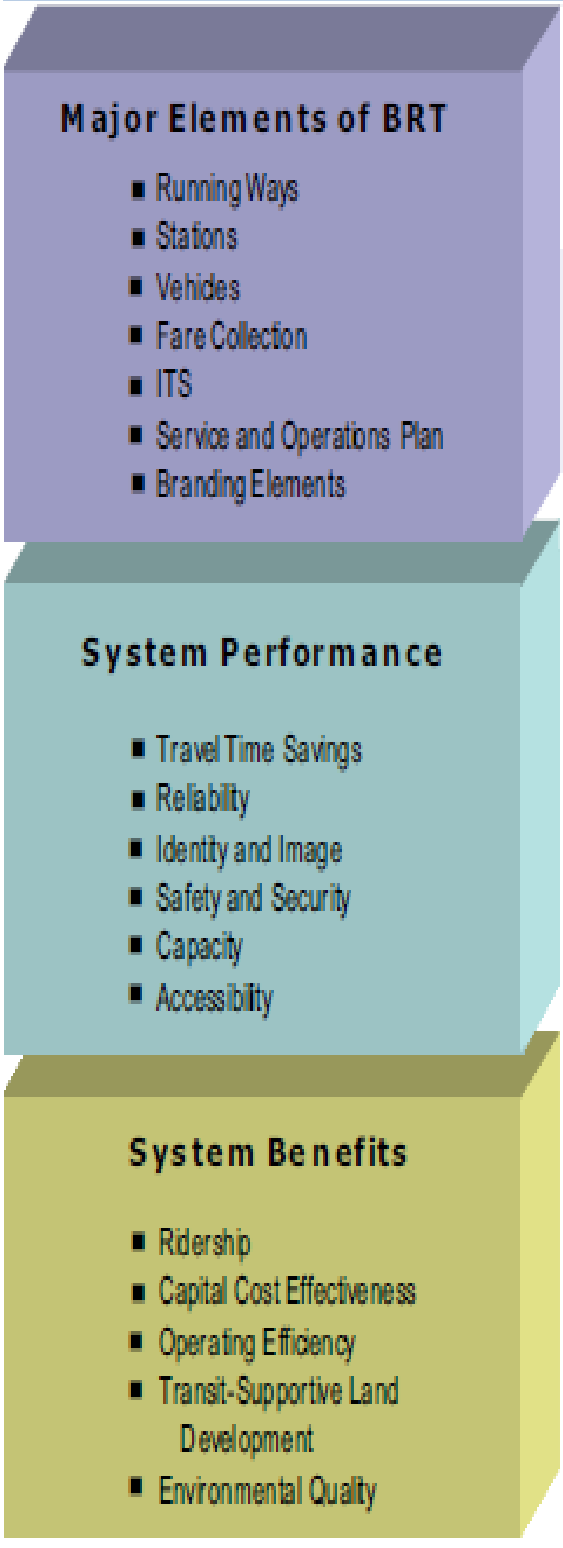
Although it has not yet been possible to carry out detailed transport modeling, with the scale of housing and employment growth expected in the City and surrounding area the City's existing public transport system faces major challenges in the future. Without decisive action to further transform public transport infrastructure and improve sustainable travel options, traffic conditions, particularly at peak hour, would be likely to deteriorate significantly. The bus strategy which follows is an important component of our overall, integrated approach to develop a sustainable transport system and travel choices.

Strategy

Oxfordshire County Council's vision of the strategic bus network in Oxford and the surrounding area in the short to medium term is shown in figure xx. The strategic network and the categorisation of routes/services will be kept under constant review as circumstances change and new opportunities arise.

The Oxford Transport Strategy will continue to support the development of local and longer-distance bus services through a combination of *integrated transport strategies and policies*. Proposals are likely to evolve over time in response to changing circumstances and opportunities however by 2031 they are likely to include the following elements (described in greater detail in the Oxford Transport Strategy – Connecting Oxfordshire Volume 2):

Enhanced bus network connectivity, integration, and access:



- New outer-ring of Park & Ride sites further away from Oxford on main radial routes to intercept trips closer to their point of origin, prior to reaching the Ring Road / A34
- Redevelopment of existing Park & Ride sites inside the ring road / A34
- Development of bus hubs/interchanges within the City linking services and catering more for non-car journeys (walking and cycling). Link with cycling strategy by referring to it here (DE)
- Better transport interchanges at railway stations including Oxford and Oxford Parkway stations and proposed new station sites on the Cowley Branch Line.
- New city centre bus terminals.
- Expanded and improved integrated smart payment systems.

Development of Bus Rapid Transit routes and services:

- Three routes have been designated as future 'Bus Rapid Transit' (BRT) routes traversing the City and terminating at the new 'outer' Park & Ride sites.
- BRT services in Oxford are likely to have the following general features: higher levels of frequency; enhanced on-route bus

priority or (where circumstances require) grade segregation; off-board ticketing; separate passenger entrance and exit doors for speeded up loading/off-loading; overall faster journey times; higher capacity and high quality vehicles; zero emission technology (i.e. at point of use); comprehensive use of intelligent transport systems; good cycling and walking links to interchange points, high quality passenger facilities at stops, termini and other interchanges, and a strong, unique public image.

Traffic management:

- Various priority measures e.g. reallocating road space, improving junction, and access restrictions to improve flow conditions and access for conventional buses, especially on designated premium bus routes.
- Enhanced contingency planning to deal with traffic disruptions, in time utilising the potential of intelligent transport systems.

Other measures to enhance and promote bus travel:

- Extension of the smart payment system
- Enhanced real-time bus information, including innovative advanced journey planning systems.
- Work with local bus operators through a Quality Bus Partnership (see section 2.7)
- Strong marketing/branding campaigns carried out with local bus operators.
- Improved passenger facilities in accordance with standards set out in the bus network hierarchy.
- Further Improvements in the quality and comfort of bus vehicles and vehicle emission standards.

BANBURY & SURROUNDING AREA

Introduction

Banbury is the second largest town in Oxfordshire, with a residential population of nearly 47,000 and over 28,700 jobs, accounting for 42% of the total jobs in Cherwell District.[2] In addition to Oxford, Banbury is currently the only settlement in Oxfordshire to have more jobs than employed residents. Located in north Oxfordshire, close to the M40 motorway and several 'A' roads and with good long-distance rail connections, Banbury acts as a Primary Regional Centre in its own right with an extensive catchment area.

[2] Source: *Cherwell Economic Analysis Study*, 2014 (presented as evidence at the Cherwell Local Plan hearing)

The *Cherwell Local Plan* anticipates that Banbury will continue to grow significantly. It proposes that by 2031 there will be an additional 7,000 houses and 7,000 jobs based in the town. Key residential sites are proposed in the south, west and north-west of Banbury. Proposed employment sites are located on the east side of Banbury, close to M40 Junction 11.

Given its prime location in relation to the wider region, its excellent strategic transport links, and the size and diversity of its economy, Banbury employment sites generate a sizeable minority of very long distance car commuting journeys: in 2011 its employees had the longest average commuting trip of all the main Oxfordshire settlements (see Bus Strategy Figure X below).

Bus Strategy Figure 10: Employees' average travel to work distances (straight-line distance between postcodes) in major Oxfordshire settlements (km) (source: 2011 Census)

Banbury	Bicester	Witney	Abingdon	Didcot	Oxford
16.1	**14.9**	**11.5**	**14.6**	**10.6**	**14.9**

Banbury *residents* enjoy a high level of employment self-containment, with associated shorter commuting distances: 60% of journey-to-work trips are currently undertaken within the town, with a home origin and work destination in Banbury. However, despite the local pattern of work trips, whilst 32% of these trips are undertaken on foot, 57% of these local trips are undertaken by car and only 3% by bus. The levels of in-commuting and out-commuting by bus are only slightly better than this at about 4%.

Collectively these statistics suggest that there is considerable potential for encouraging sustainable travel both within the town and the immediately surrounding area. Banbury's Bus Strategy forms a key strand of the town's Sustainable Transport Strategy.

The Bus Strategy will focus on addressing the following key issues and challenges that have been identified in Banbury:

- **Improving journey time reliability: Traffic congestion,** particularly at key town centre junctions during the peak hour, and a **lack of bus priority measures**, impact significantly on bus service viability and the ability for operators to run frequent and reliable commercial services.

- **Improving the town centre bus, and bus-rail interchange experience for passengers:** The existing bus station is unwelcoming and under-used. In addition, although Banbury railway station, the central bus station, and the Bridge Street bus 'hub', are all located relatively close to the town centre there is significant severance between them.
- **Providing *direct and frequent* services between key residential and employment sites** to ensure that the bus is a genuinely viable alternative to the car.
- **Reversing the existing culture of car dependency and the correspondingly weak culture of bus use,** as indicated by the relatively low numbers of bus passengers in the town

With the scale of planned growth in jobs and housing in the town, an ***effective*** Bus Strategy will be a key element to the sustainable growth of Banbury.

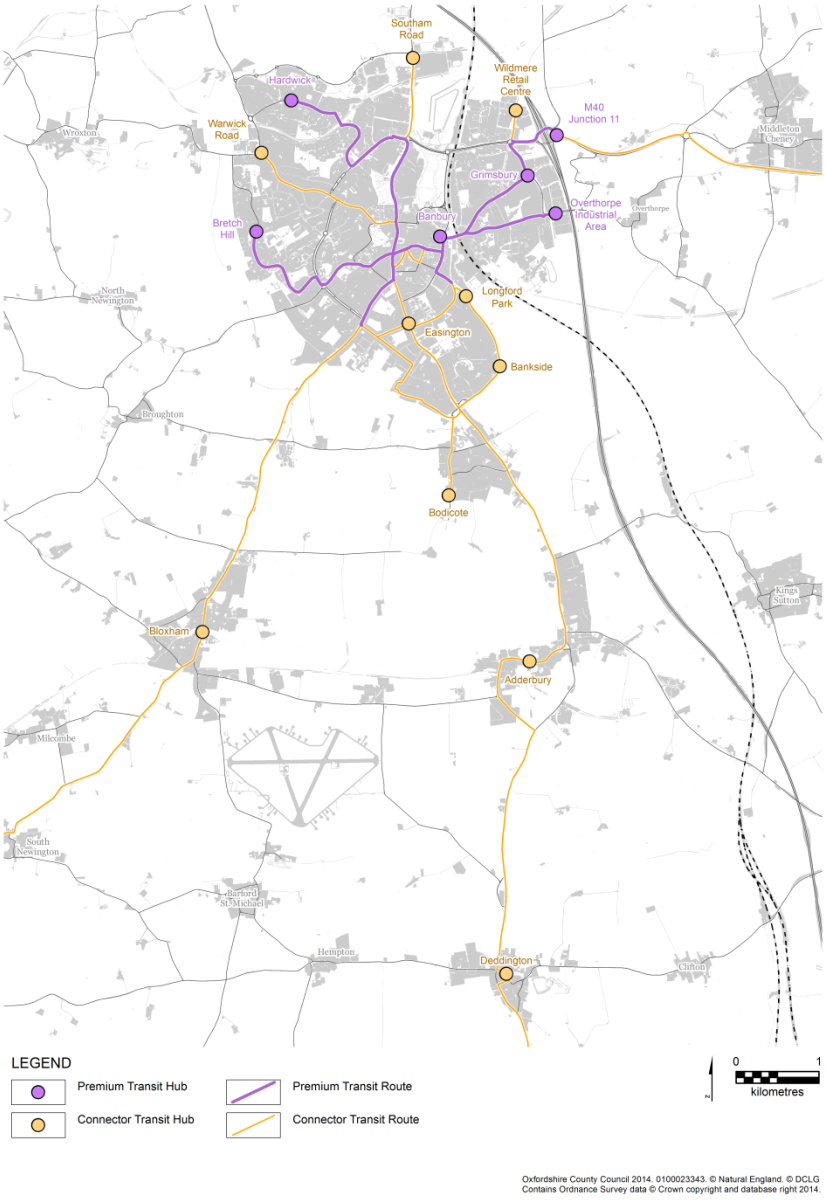
Strategy

Our vision of the strategic bus network in Banbury and the surrounding area in the longer term (2031), based on existing and future patterns of growth is shown in Figure xx. The strategic network and categorisation of routes/services will be kept under review as circumstances change and new opportunities arise.

Strategy

Our vision of the strategic local bus network in Banbury and the surrounding area in the short to medium term based on existing and future patterns of growth is shown in Figure xx. The strategic network and categorisation of routes/services will be kept under constant review as circumstances change and new opportunities arise.

The primary aim of the bus strategy is to increase bus patronage in the area, particularly for peak hour journeys. The Banbury Sustainable Transport Strategy will support the development of local and longer-distance bus services through a combination of the following integrated transport strategies and policies:



Bus Strategy Figure 11: Banbury area's strategic bus network

Enhancement of the town's bus network:

- A comprehensive review of town bus operations will identify short, medium and long term infrastructure and service requirements.
- There will be a focus on improving direct links between residential areas and key employment, leisure and retail destinations, and the rail station. There will be a particular emphasis on improving bus links between west Banbury and employment sites on the east side of town.
- Improvements will be prioritised at key congestion pinch points within Banbury, especially on designated 'Premium' bus routes. Junction improvements and bus priority

on Bloxham Road, and minor highway and signalling changes in the town centre, are high short-term priorities for existing bus operations to support quicker and more reliable bus journeys.

- The Cherwell Street 'Eastern Corridor' will be the preferred north-south route for traffic through the town and improvements will be made to the Bridge Street / Cherwell Street junction, and additional capacity provided at the Bloxham Road (A361) / South Bar Street junction which will facilitate improved bus movements.
- Bus routes and services will be reviewed and enhanced where necessary with the aim of increasing patronage and commercial viability. Where possible, enhancements will be funded through developer contributions.

Review and enhancement of bus interchange facilities in the town centre

- A comprehensive review of bus interchange facilities in and close to the town centre will be carried out taking into account bus-layover requirements, passenger access to the town centre, facilitating bus and rail interchange, and the relationship of these factors to town centre regeneration proposals.
- A new bus station facility on the George Street car park, with strong, high quality pedestrian links to the town centre, has been identified as one option to be explored.

Other measures to enhance and promote bus travel:

- Working with public transport operators in the town to ensure access to high quality passenger information, including enhanced real-time bus information on strategic routes and innovative advanced journey planning systems.
- Extension of integrated multi-modal, multi-operator smart payment to area.
- Work with local bus operators through a Quality Bus Partnership (see section 2.7)
- Improving passenger facilities in accordance with standards set out in the bus network and interchange hierarchy.
- Improving connections to bus stops, e.g. walking/cycle links
- Improvements in the quality and comfort of buses and vehicle emission standards.

Other changes that would benefit bus travel:

- Explore opportunities with the relevant District and Town Councils and local businesses to gradually introduce parking controls/regimes in town centres that could encourage the greater use of buses and other non-car modes of transport, while taking account of town centre vitality.
- Review of parking provision, management and information

- Potential new link roads to enable new routes/services (e.g. A361 to A4260)

Integrated land-use planning measures (see section 2.8)

BICESTER & SURROUNDING AREA

Introduction

Bicester had a population of almost 33,000 people and over 13,000 jobs in 2011 and is the fastest growing town in Oxfordshire. It has an increasingly diverse and strong economy that includes Bicester Village shopping outlet which has become a major UK tourist attraction, drawing in nearly six million visitors a year.

The town possesses excellent road links via the A34 and the M40, and rail links to Oxford, London Marylebone, High Wycombe and Birmingham (and in the near future, also Milton Keynes), and has a highly advantageous location in relation to major areas of economic growth in Oxford and Science Vale, the Oxford-Cambridge Arc, and the Northamptonshire Arc. Bicester has been identified as the northern end of the Oxfordshire Knowledge Spine.

Bicester has major ambitions for growth. The Cherwell Local Plan seeks to exploit Bicester's potential to deliver jobs-led growth, supported by housing, with approximately 10,000 new homes and up to 9,000 additional jobs planned up to 2031. The Plan also seeks to strengthen the town centre economy. In December 2014 the Government confirmed plans for the town to become a new 'Garden City' with up to 13,000 new homes.

Given the compactness and current size of the town a relatively high proportion of residents that work in the town currently walk and cycle to work. The level of bus commuting is however extremely low – less than 2% in 2011. Residents that work locally however represent only a minority of the town's commuters: because of a shortfall in the number of local jobs and the town's location, the level of out-commuting is relatively high, and of these 77% were car drivers. Similarly 80% of in-commuters were car drivers. The levels of in- and out-commuting by bus were 4.5% and 6.3% respectively.

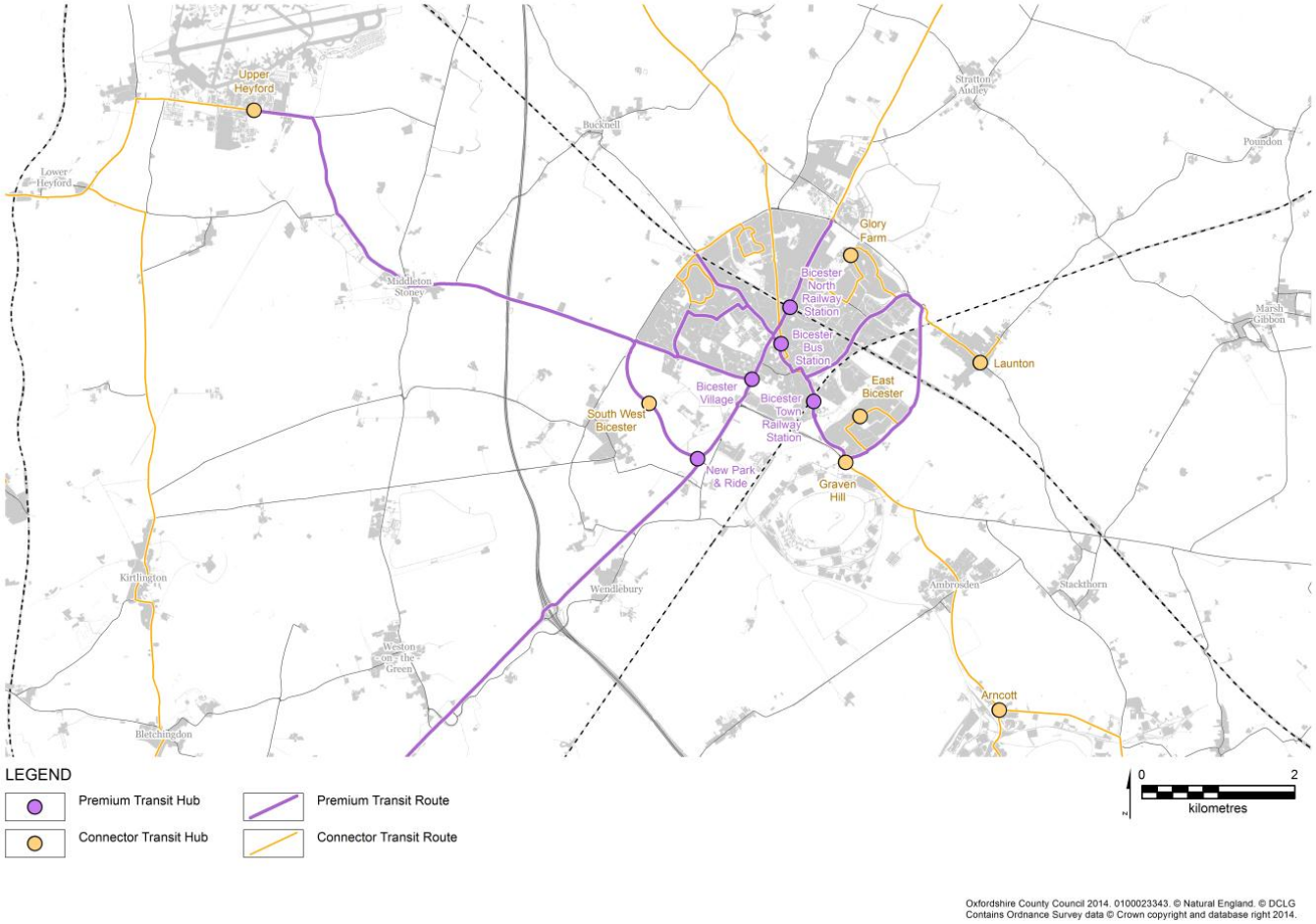
The following factors present challenges to the further growth of bus use in - and to - the Bicester area:

An inadequate existing local bus network: There is currently a low level of bus frequency and poor coverage of many residential and employment areas in the town and to settlements in its immediately surrounding travel to work and shopping/service catchment area.

Traffic congestion: There is acute traffic congestion on key main routes through and in the town, and at specific locations at certain times e.g. the junctions in the vicinity of Bicester Village. There are currently virtually no significant bus priority measures within the town.

Car dependent local attitudes: According to the *Bicester Movement Study* there is currently a lack of popular support for demand management measures e.g. road space reallocation and parking restraint that would constrain car use and support increased bus use.

With the scale of planned growth in jobs and housing in the town, it is clear that decisive action to further transform public transport infrastructure and travel options, as well as increase existing overall transport capacity, will be necessary to avoid a further deterioration in traffic and environmental conditions in Banbury. The bus strategy which follows is an important component of our overall, integrated approach to develop a sustainable transport system and travel choices.



Bus Strategy Figure 12: Bicester area's strategic bus network

Strategy

Oxfordshire County Council's vision of the strategic bus network in Bicester and the surrounding area in the short to medium term is shown in figure xx. The strategic network and the categorisation of routes/services will be kept under constant review as circumstances change and new opportunities arise.

The Bicester Transport Strategy will support the development of local and inter-urban bus services through a combination of *integrated transport strategies and policies*. Proposals are likely to evolve over time in response to changing circumstances and opportunities however they are likely to consist of the following elements: **Enhancement of the town's bus network:**

- Improving bus services along key routes to connect residential areas with existing and future employment centres, particularly Graven Hill, North West Bicester, the Launton Road Industrial estate, Bicester Business Park, South-East Bicester and North-East Bicester Business Parks, as well as the town railway stations, the town centre, Bicester Village and the Park & Ride site. This will be achieved by using funding from development to enhance the quality and frequency of existing services, with the aim of services reaching full commercial viability.

- Proposed network improvements are shown in Figure xx (see attached).

- Growth at Upper Heyford will need to be considered in terms of improved public transport frequency and connectivity with Bicester.

- Prioritise highway improvements and bus priority measures at key congestion pinch points on designated 'Premium' bus routes and other places where there are identified needs arising from strategic development sites. For example, a bus priority scheme on Bucknell Road-St Johns Street-Manorsfield Road is vital to deliver an improved bus service to service the major North West Bicester development.

- A comprehensive review of town bus operations will identify other short, medium and long term infrastructure and service improvements required.

Enhancement of bus interchange facilities:

- use the opportunities offered by the redevelopment of Bicester Town Railway Station to create a 'state-of-the-art' multi-modal interchange offering high quality facilities for pedestrians, bus users and cyclists.

- Fully utilise the potential of the new Park & Ride site at South West Bicester to promote bus use to as wide a possible range of destinations inside and outside the town, especially to promote both in and out-commuting by bus. Within Bicester the P&R should be directly linked to Bicester town centre, key employment centres, and Bicester Village.

Other measures to enhance and promote bus travel:

- Extension of integrated multi-modal, multi-operator smart payment to the area
- Enhance real-time bus information, including innovative advanced journey planning systems, working with Bicester Town Council.

- Work with local bus operators through a Quality Bus Partnership (see section 2.7). In particular co-operate with local bus operators and key local stakeholders to carry out a strong marketing/branding campaign promoting the Bicester P&R and bus connections to EW Rail and the Garden City vision

- Improved passenger facilities in accordance with standards set out in the bus network hierarchy.

- Improvements in the quality and comfort of buses and vehicle emission standards.

Other changes that would benefit bus travel:

- The announcement that Bicester is to be developed as a 'Garden Town' is likely to give a significant boost to the development of sustainable transport and travel.

- Expand capacity on new and existing peripheral routes to encourage their greater use for employment purposes and longer distance traffic. This would help reduce congestion in the town centre and central corridor, and thus help facilitate improved conditions for bus movement on these routes and in these areas.

- New link roads to enable new routes/services (e.g. through the SE Bicester development area?) Peripheral developments should enable attractive inter-urban bus travel along new links.

- Review of parking provision, management and information

- Better connections to bus stops, e.g. walking/cycle links

Integrated land use-transport planning measures (see section 2.8)

SCIENCE VALE AND SURROUNDING AREA

Introduction

LTP4 contains an area transport strategy for Science Vale, however for the purposes of strategic bus planning we have defined a slightly larger area south of Oxford consisting of not only the Science Vale area (including Grove, Wantage, Didcot and the high-tech business parks at Harwell Oxford, Milton Park and Culham Science Centre) but also Abingdon and Wallingford.

In 2011 this area had a population of approximately 117,000 residents and over 54,000 jobs. The Oxfordshire Strategic Economic Plan has however recommended that approximately 20,000 new homes and 20,000 additional jobs be concentrated in the Science Vale area between 2011 and 2031 – the majority are likely to be located around Didcot and Grove/ Wantage. This translate into an increase of approximately 55,000 residents – almost a 50% growth in population.

The major business parks in Science Vale possess a very high concentration of employment in high-tech industries and therefore attract employees from a very wide catchment area as well as generating a large number of national and international business trips. In 2011 the jobs located in the area generated about 47,000 commuter journeys of which 57% were internal, and about 52% of employed residents of the area worked locally.

Although a relatively high proportion of residents work in the area, the level of bus commuting to workplaces within the area is currently extremely low: only about 4% of employees in the area commuted to work by bus in 2011, whereas over 62% of internal commuters and 82% of commuters from outside the area were car drivers. The level of bus commuting to *workplaces outside the area* was slightly better: about 7% travelled by work by bus (and 73% were car drivers).

The following factors present challenges to the further growth of bus use in - and to – Science Vale and the surrounding area:

Limited bus connectivity between major settlements in the area and employment areas: many services between important destinations are currently relatively infrequent and slow, and in some cases do not exist at all. Connections to the centre of Oxford are more frequent, however those to other areas, especially major employment areas in the Oxford Eastern Arc are relatively poor.

Traffic congestion and lack of bus priority measures on busy, main connecting routes e.g.

Weak car demand management policies and measures: little or no strategic use of parking policies to manage demand and encourage sustainable modes of transport.

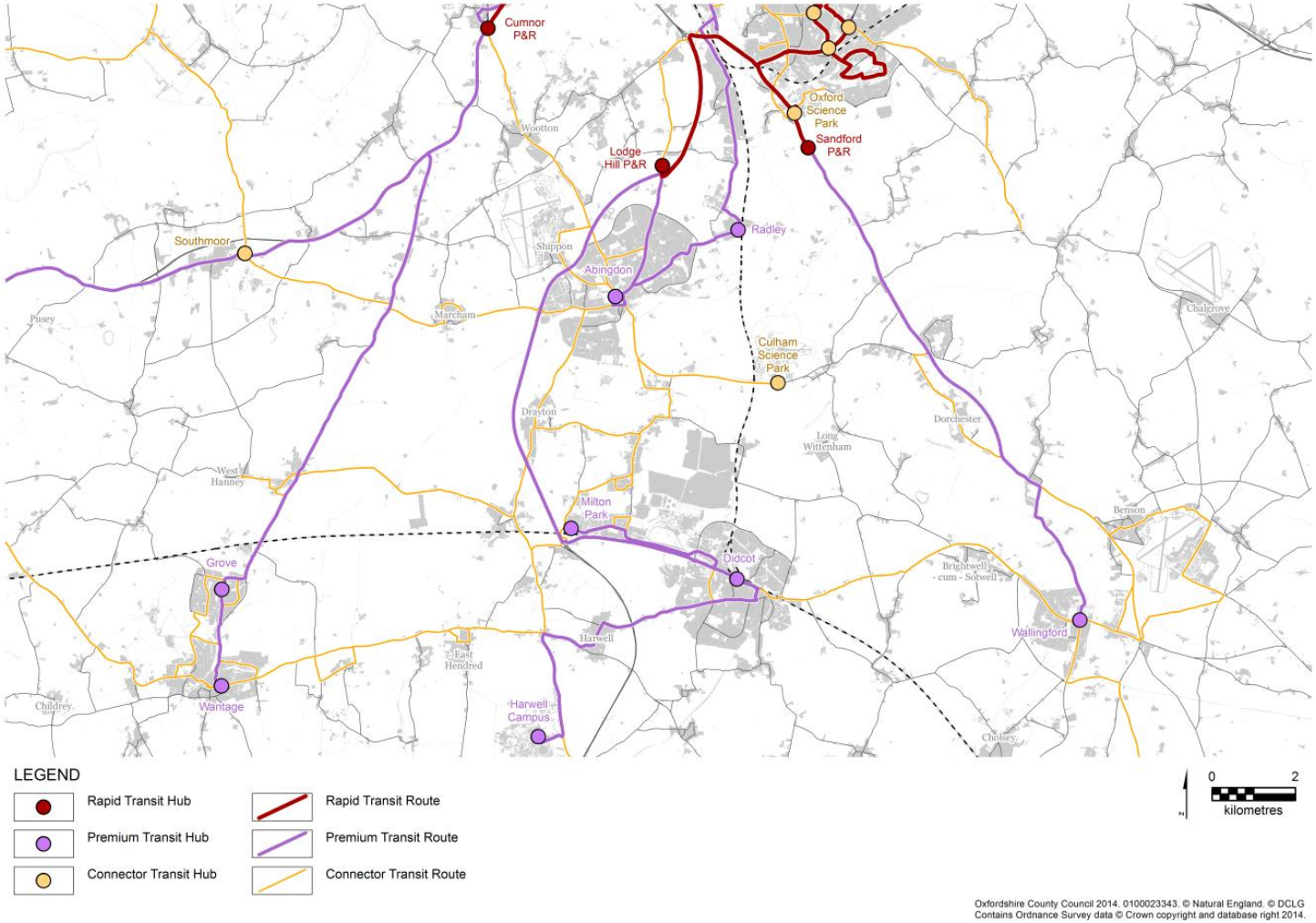
Limited public transport interchange and inadequate passenger facilities: With the exception of Didcot railway station there are currently few high quality interchange facilities enabling transfer between different bus services, between bus and rail, and park & ride.

Lack of integrated ticketing: There is currently no system of multi-operator and multi-modal ticketing for public transport services within the area.

Although it has not yet been possible to carry out detailed transport modeling, with the scale of housing and employment growth planned in the area it is clear that without decisive action to further transform public transport infrastructure and improve sustainable travel options, traffic conditions, particularly at peak hour, would be likely to deteriorate significantly. The bus strategy which follows is an important component of our overall, integrated approach to develop a sustainable transport system and travel choices.

Strategy

Oxfordshire County Council's vision of the strategic bus network in Science Vale and the surrounding area in the short to medium term is shown in figure xx. The strategic network and the categorisation of routes/services will be kept under constant review as circumstances change and new opportunities arise.



Bus Strategy Figure 13: Science Vale Bus Strategy

To support planned growth and cope with the predicted growth in travel demand it is vital to develop a much improved bus network within the area and, together with the railway network, connect it (through the 'Science Transit network') to other parts of Oxfordshire, especially the 'Knowledge Spine' and wider region. Other complementary measures to encourage and facilitate sustainable travel will also be important.

Improved rail services and travel opportunities, although an important part of the strategy, will only be able to cater for a small proportion of all transport needs generated within the area given the complex and dispersed nature of internal and external travel patterns. The bus network will therefore need to provide the backbone of the public transport system in the area and needs to be accorded a much higher priority in integrated land use-transport planning.

The Science Vale Transport Strategy will support the development of local and longer-distance bus services through a combination of *integrated transport strategies and policies*. Proposals are likely to evolve over time in response to changing circumstances and opportunities however by 2031 may consist of the following key elements:

A major new north-south transport corridor linking Didcot and the eastern side of Science Vale with east Oxford:

- A potential new road link and Thames River crossing with bus priority where required running between north Didcot t, past Culham Science Centre (connecting to the B4015 and the east side of Oxford).

Traffic management:

- Various measures to improve traffic flow and give greater priority to buses on strategically important local routes and at junctions (esp. on 'Premium bus routes' – see map and below)
- Bus priority measures where required on the Harwell - Didcot - Milton Park - Abingdon – Lodge Hill P&R – Oxford route linking the two main towns and most of the major employment sites in the area; this routes is seen as the 'spine' of the bus network in the area.

Development of new and enhanced commercial bus services, focusing on high quality, high frequency 'Premium' bus services on the following core north-south routes (see map):

- Harwell - Didcot - Milton Park - Abingdon – Lodge Hill P&R - Oxford
- Harwell - Lodge Hill P&R - Oxford
- Wantage - Grove - Oxford

Development of high quality commercial services on the following 'Connector' Bus Routes (with the following routes our initial priority - see map):

- Wantage - Grove - Abingdon
- Wantage - Grove - Milton Park
- Grove - Wantage - Harwell
- Wallingford – Didcot

New and better quality bus interchange facilities:

- Improved and expanded bus-rail interchange as part of a redeveloped Culham railway station.
- Potential development of a Park & Ride site and bus 'hub' at the Lodge Hill junction on the A34.
- Provision of a bus-rail interchange at the potential new railway station at Grove.
- Enhancement of bus and passenger waiting facilities in Didcot, Abingdon, Wantage, and Wallingford town centres to meet projected demand by 2031 (in accordance with bus interchange policy standards in section XX).
- Better facilities for integration between bus and cycling and walking including safe, accessible routes, street lighting, and cycle parking at key bus stops.

Other measures to enhance and promote bus travel:

- Extension of integrated multi-modal, multi-operator smart payment to area
- Enhanced real-time bus information, including innovative high-tech journey planning systems.
- Work with local bus operators through a Quality Bus Partnership (see section 2.7)
- Strong marketing/branding campaigns carried with our partners at major employment sites and local bus operators.
- Improvements in quality and comfort of buses and vehicle emission standards.

Integrated land use-transport planning measures (see section 2.8)

The present bus strategy emphasises and gives priority to north-south 'Premium' routes and services as this is where the greatest demand and modal potential currently lies. While we would also like to see Premium level bus services on key east-west routes within the area there is currently insufficient actual and potential demand for increased/improved services. Realistically our goal given present circumstances is to develop and maintain services at a 'Connector' standard (i.e. at least 2 buses per hour) on the priority routes mentioned. The key factor that might enable the achievement of Premium standard east-west bus routes would be additional residential and/or employment development on a sufficiently large scale in the Grove/Wantage area (perhaps linked with the development of a new railway station at Grove).

WITNEY & CARTERTON

Introduction

This Local Transport Plan contains separate area transport strategies for Witney and Carterton. In terms of strategic bus planning however it makes sense to look at the two largest towns in West Oxfordshire District together given their close proximity and the strong travel and bus connections between them.

Witney is the largest town in West Oxfordshire with a population in 2011 of about 27,500. It is the main commercial and service centre for the predominantly rural district of West Oxfordshire and possesses a relatively strong and diverse economy. In 2011 Witney was home to about 12,300 jobs.

Carterton, the second largest settlement with a population of just under 15,800 residents is a relatively modern town which has grown, in the main, to serve RAF Brize Norton. It has a small but varied economy, largely focused around the provision of local services, and has been identified as a growth area by West Oxfordshire District Council and Carterton Town Council with opportunities for both residential and employment growth. The two towns enjoy a frequent, high quality 'Premium' bus service to Oxford, however the range of other destinations in West Oxfordshire and in adjacent local authority areas that are served by bus is very limited and the services generally infrequent.

For Witney, current development proposals contained in the WODC Housing Consultation paper (July 2014) include 3,550 new homes by 2029, and provision for further economic

development. The draft Local Plan (2012) contains policies to maintain and enhance Witney's town centre shopping, leisure and cultural attractions. Current development proposals for Carterton include 2,450 new homes by 2029, strengthening the employment offer in the town and local area, and developing a more attractive and vibrant town centre. In combination these initiatives will present greater opportunities to work and live in the Carterton area, thus potentially reducing out-commuting and the need to travel. The Witney and Carterton Area Transport Strategies will be revised following the adoption, by West Oxfordshire District Council, of the Local Plan and Carterton Master Plan.

Both Witney and Carterton currently experience fairly high levels of out-commuting: in 2011 some 58% of Witney's and 62% of Carterton's employed residents worked outside their respective home towns. In- and out-commuting in Witney is strongly car based: about 81% of in-commuters and 78% of out-commuters travelled to work by car; the proportions commuting by bus were respectively 6.7% and 7.8%. Internally though, given the compactness and size of Witney a relatively high proportion of residents that work in the town currently walk and cycle to work. The level of bus commuting is however extremely low – less than 2% in 2011. The picture of commuting in Carterton is very similar to Witney's.

Despite the high rate of out-commuting, Witney has the greatest proportion of employees (i.e. 72%) living within 10km of their workplace of all the main Oxfordshire settlements. Many of these employees live in Carterton and a smaller proportion in surrounding villages. This suggests that there is strong latent potential for increased bus commuting between the two towns and to Witney in general, which is likely to increase significantly with the housing and employment growth planned.

The following factors present challenges to the further growth of bus use in - and to – Witney and Carterton and the surrounding area:

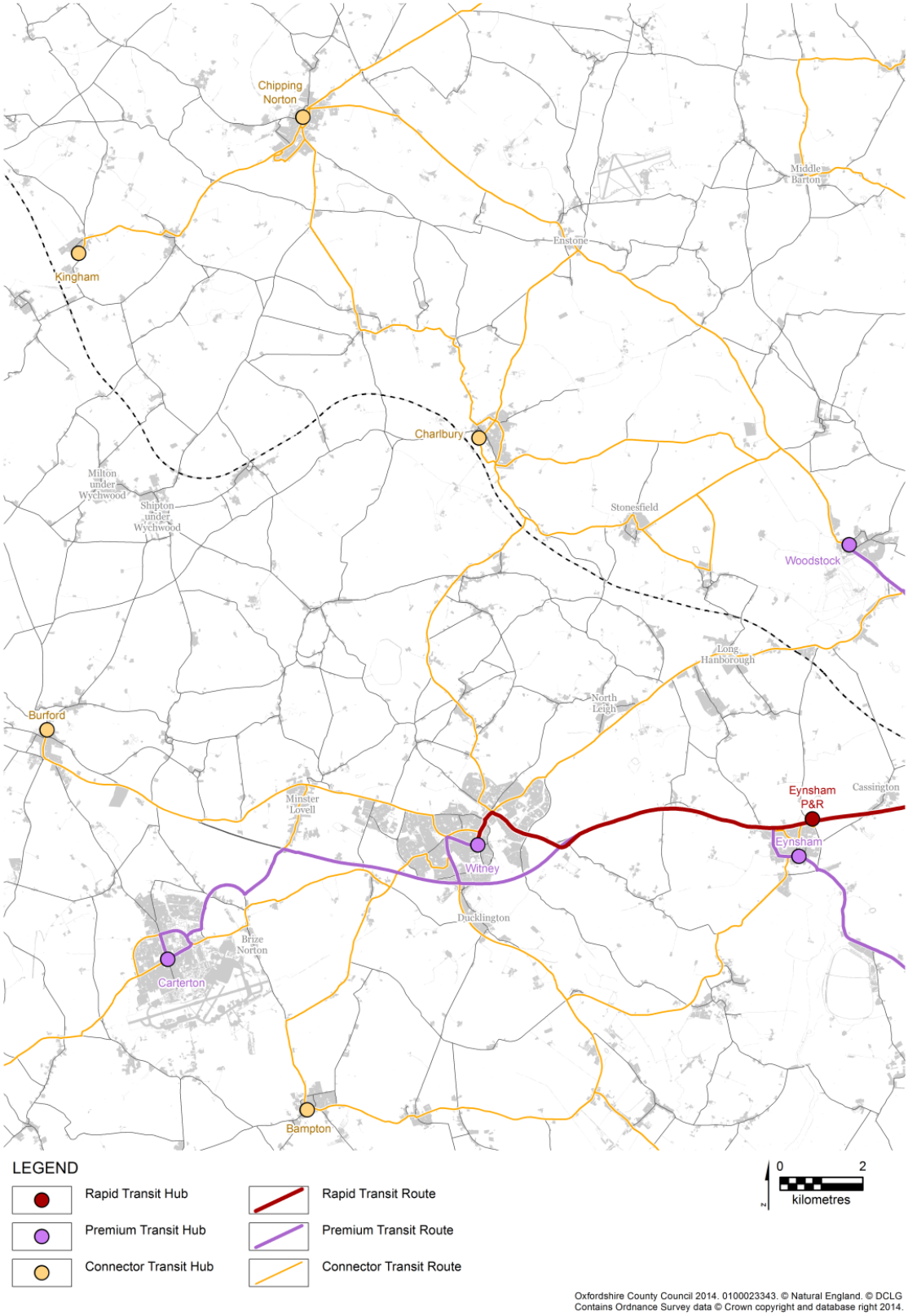
- The attractiveness of using the bus is restricted by bus frequency, journey time and journey time reliability.
- Acute traffic congestion and bus delays at Bridge Street in Witney, the only main route through the town, a major bottleneck for local journeys and through traffic from the northeast.
- A lack of bus priority measures at appropriate places within and on the edges of the towns.
- Chronic congestion on the A40 east of Witney.
- An inadequate existing local bus network linking residential areas to employment areas

- Away from the main bus routes, there are low levels of frequency and poor coverage of some residential and employment areas in the towns and settlements in the surrounding rural hinterland (to be addressed in the rural bus strategy – see section 2.5).

The following bus strategy is an important component of our overall, integrated approach to develop a sustainable transport system and travel choices for those people living and working in this area.

Strategy

Oxfordshire County Council's vision of the strategic bus network in Witney and Carterton and the surrounding area in the short to medium term is shown in figure xx. The strategic network and the categorisation of routes/services will be kept under constant review as circumstances change and new opportunities arise.



Bus Strategy Figure 14: Witney and Carterton area strategic bus network

The Witney and Carterton Area Transport Strategies will support the development of local and inter-urban bus services in these towns through a combination of integrated transport strategies and policies. Proposals are likely to evolve over time in response to changing circumstances and opportunities is likely to consist of the following elements:

Use developer funding to improve the frequency of bus services on the following routes including where necessary pump-prime funding to produce commercially viable bus services:

- Between Carterton, Witney and Oxford; including City Centre, Oxford rail station, hospitals and Oxford Brookes University;
- Between Woodstock and Burford via Hanborough rail station and Witney;
- Between Witney's main residential and employment areas;
- Between Carterton and Swindon.

Use developer funding to ensure that new and, where possible, existing residential areas are connected by adequate levels of bus service to the main employment areas/sites in the Witney and Carterton area.

Implement measures to reduce delays to bus services, including considering bus priority on the Premium Routes:

- through Witney particularly along Corn Street, Market Place, Bridge Street and Newland;
- joining the A40 eastbound at B4044 Shores Green;
- along the A40 corridor, east of Witney to Oxford;
- at any other identified congestion pinch points on designated 'Premium' bus routes;
- where there are identified needs arising from strategic development.

In the short term, make public transport from Carterton, and Witney to Oxford more attractive by using Oxfordshire's Local Growth fund allocation to develop and implement a scheme to provide a step change in public transport provision on the A40 Witney-Eynsham-Oxford corridor, by providing significant bus priority measures on the A40 between Eynsham and Wolvercote. This scheme would be complemented by enhanced bus services.

Other measures to enhance and promote bus travel:

- Enhance town centre bus interchange facilities
- Provide new bus stops to better serve employment sites such as RAF Brize Norton.
- Extension of integrated multi-modal, multi-operator smart payment to the area
- Enhance real-time bus information, including innovative advanced journey planning systems, working with Witney and Carterton Town Councils.
- Work with local bus operators through a Quality Bus Partnership (see section 2.7)
- Improved passenger facilities at bus stops, and access to these on foot and by bicycle, in accordance with standards set out in the bus interchange hierarchy.
- Improvements in the quality and comfort of buses and vehicle emission standards.

Integrated land use-transport planning measures (see section 2.8)