CONNECTING OXFORDSHIRE

Volume 3: Rail Strategy

Local Transport Plan 2015-2031

OXFORDSHIRE COUNTY COUNCIL

Contents

Chapter 1
Introduction

This document sets out Oxfordshire County Council's strategy for the county's rail network up to 2034, and is a component part of *Connecting Oxfordshire* – our Local Transport Plan setting out our policy and strategy for developing the transport system in Oxfordshire up to 2031. Its end year of 2034 is significant as it covers the next four five-year control periods; the planning and investment cycles used by the government and Network Rail.

The rail strategy sets out how investment should play a key role in supporting Oxfordshire's economic development and the opportunity for the railway to establish itself as part of the backbone of Oxfordshire's transport network. It can link the key settlements in the Oxfordshire Knowledge Spine - Science Vale around Didcot, Oxford and Bicester – with each other and with the rest of the United Kingdom and the World. Rail is a genuine alternative to using congested roads for journeys to, from and within the 'Spine'.

The rail strategy provides a framework through which the county council can:

- develop local transport policy, including better integration between rail and other travel modes – cycle, walk, bus, motorcycle, and car;
- identify and seek service and infrastructure improvements;
- lobby to influence sub-regional rail policy and planning;
- support growth initiatives by integrating rail investment with decisions on land use, housing and economic development; and
- respond to consultations.

The rail strategy takes a high-level strategic approach, and identifies potential interventions that the county council and its partners will support the rail industry to develop and deliver, rather than developing detailed options.

The rail strategy considers:

- Passenger train services only;
- The "operational rail network" (i.e. the assets that are owned and managed by the various organisations that make up the rail industry);
- Access to the rail network, and trip generators such as housing / employment; and
- Travel planning.

Roles and responsibilities

The county council has no statutory responsibility for specifying or funding the railways, and we are not involved in setting timetables or fares so it may seem as if we have a limited role when investment decisions are made.

But as the local transport authority we have an important role to influence decisions taken by organisations within the rail industry by working in partnership with them and representing the people who live and work in Oxfordshire with a single voice. To meet our ambitious plans for growth we will lobby for an adequate share of the rail funding pot to deliver strategic improvements that bring benefits to local communities and businesses for generations to come.

It is important to understand the different organisations involved in running the rail network within the UK, which collectively we term "the rail industry". This rail strategy has been prepared to influence the decisions taken by the major players within the rail industry:

The Department for Transport (DfT) – decide on the level of service and the award of passenger service franchises; the allocation of rolling stock between train companies; and is ultimately responsible for implementing government decisions on investment;

Network Rail (NwR) – lead on long-term industry planning; manage track access and capacity utilisation by timetable approval; responsible for operating, maintaining and renewing the track, signalling, level crossings, bridges and tunnels, and for overall performance;

Train Operating Companies (TOCs) – operate the franchise train service specified by DfT, manage the operation of stations and day-to-day maintenance of trains. TOCs operating in Oxfordshire are: GWR, Chiltern Railways and CrossCountry Trains;

Freight Operators (FOs) – private companies who provide rail freight services to commercial customers who wish to move their goods by rail. The operators running trains through Oxfordshire include Colas Rail, DB Cargo UK, Freightliner and GB Railfreight; and

The Office of Rail and Road (ORR) – an independent organisation whose role is to ensure the Government receives value for money for its investment; validates the income needs of Network Rail every five years and is responsible for rail safety.

Train operating companies

Franchised

The majority of passenger rail services in Great Britain are contracted by the government and operated by one of the 15 rail franchises. The Department for Transport is responsible for specifying and letting franchises, and for managing franchisees' performance against a franchise agreement. A franchise contract is usually awarded for up to 8 years, although there is a move towards longer contracts. Under European law, a rail franchise may be awarded for 15 years, but may be extended for a further 7½ years in some circumstances.

A franchisee (known as a train operating company) earns revenue from passenger fares and any subsidy it receives. The stations are generally owned by Network Rail and leased to the franchisee to manage and operate, and they can earn rental income from sub-letting part of their stations to retailers. Franchisees' main costs are the track access charges they pay to Network Rail, the leasing costs of stations, property and rolling stock and employing staff.

Passenger services through Oxfordshire are provided by three franchises. In 2013/14, the Chiltern Railways and Great Western franchises made premium payments to the Treasury of £5 million and £73.8 million respectively. The CrossCountry franchise received financial support (subsidy) of £32.4 million.

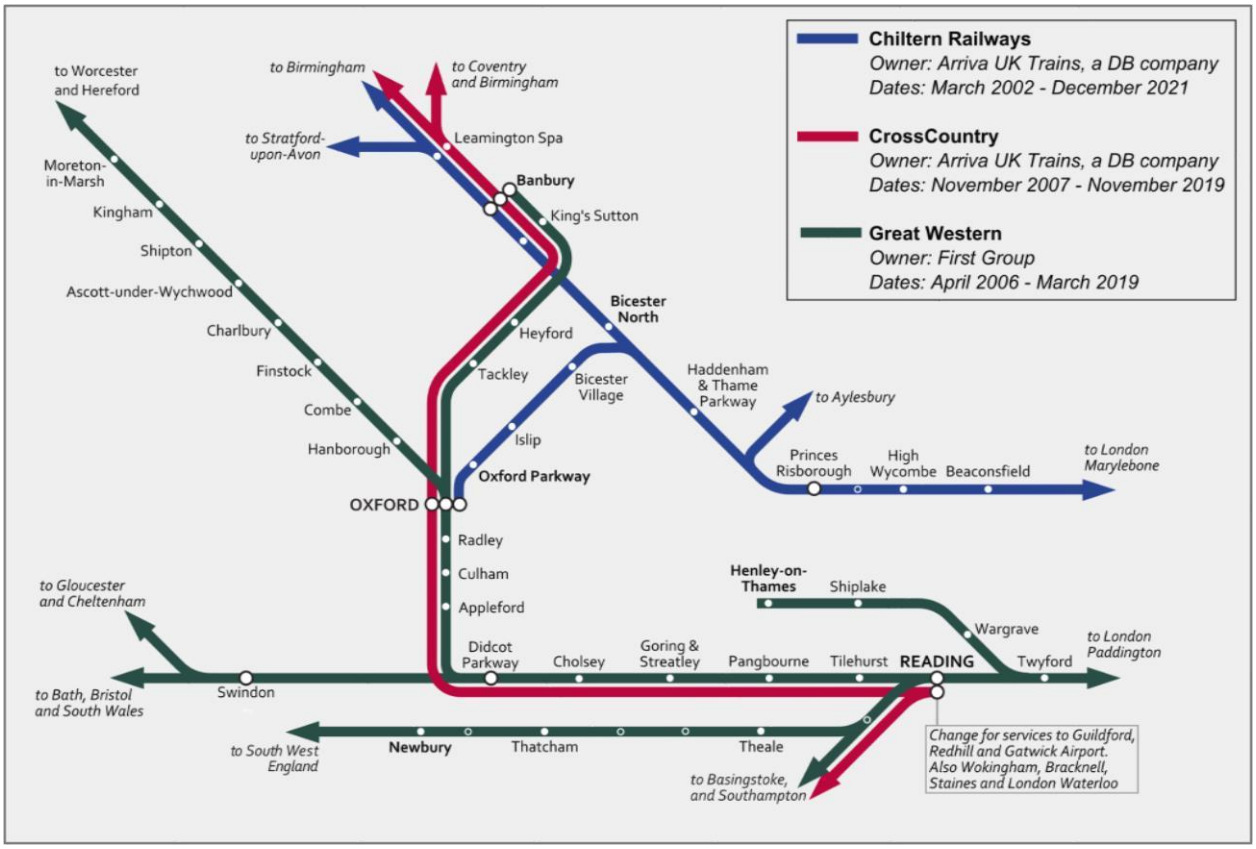

Figure 1: Passenger Rail Franchises in Oxfordshire

Open access

Other passenger services can be operated by open access operators who bid for 'slots' to operate their own passenger services where they have identified a commercial opportunity not met by one of the franchises. Their services are often to new destinations and can offer new direct travel opportunities, for example, between Humberside and London. There are few open access operators as the legal and financial requirements are quite onerous.

When considering applications Network Rail and the Office of Rail and Road will need to ensure that an open access operator does not:

- reduce the future attractiveness or value of a franchise, for example by abstracting passengers and lowering revenue;
- have an adverse impact on the operation of other freight and passenger services, particularly on already congested tracks;
- use rolling stock that is not compatible with optimal use of the infrastructure, for example, by having limited capacity or a lower maximum speed; or
- risk network efficiency, for example, by using scarce capacity or restricting opportunities for maintenance.

Rail planning and investment cycles

A key element in taking forward the rail strategy is to appreciate the rail industry timescales for securing funding for major rail schemes.

Every five years, the Office of Rail and Road (ORR) set regulatory targets and validates the income required by Network Rail to operate, maintain and renew the railway in the following five years. These 'periodic reviews' are important as they mean that rail planning horizons can be lengthy. Whilst this is good for the industry, in that it can plan with some certainty of funding for that period, it means that major infrastructure schemes often have to be planned with more than five year lead times. These five-year funding periods are known as Control Periods.

Control Period 5 started in 2014 which means any new investment will be allocated in a future Control Period. Planning for investment between 2019 and 2024 will begin later in 2016, and a summary of the timescale is shown in Error! Reference source not found..

Table 1: Control Period 6 - Development Key Dates

Date	Activity
May 2016	ORR commences periodic review consultation.
July 2016	ORR publishes guidance on how it will assess efficient expenditure and a review of open access operators on rail competition.
September 2016	The Initial Industry Advice (or IIA) is published. It sets out choices for the government to consider funding based on what the industry believes its necessary to deliver to the capacity and capability required during the control period, and at what cost.
October - November 2016	ORR seeks informal views on the IIA.
February 2017	ORR publishes advice to ministers and decisions on the framework for setting outputs and access charges.
July 2017	Secretary of State for Transport publishes the High Level Output Specification (HLOS) and Statement of Funds Available (SoFA).
January 2018	Network Rail publishes its Strategic Business Plan.
January - April 2018	ORR consults on Network Rail's Strategic Business Plan
June 2018	ORR publishes its Draft Determination on Network Rail's outputs and funding requirement.
June – September 2018	ORR consultation on their draft determination
October 2018	ORR publishes its Final Determination on Network Rail's outputs and funding requirement.
March 2019	Network Rail publishes its Delivery Plan
April 2019	Commencement of Control Period 6

The importance of prioritising and developing projects so they can feed into the five-year cycle of rail industry funding must always be considered in rail development.

Investment in major enhancement projects, such as a new or rebuilt station or opening new rail lines, can take several years of development before a project is sufficiently robust to be considered for funding. Ideally, projects should have a strong operating and economic case so they are supported by the rail industry by the time it puts together its Initial Industry Plan.

There are often opportunities to secure service enhancements and station improvements directly with a train operating company through commitments written into their franchising agreement with DfT. Recent schemes have included car park extensions and customer information systems.

Hendy Review 2015

Network Rail is delivering an ambitious £38 billion investment programme in Control Period 5 to operate, maintain, renew and improve the rail network across England and Wales. It is funded by the UK Government, and the biggest programme of railway modernisation since the Victorian era.

The cost and delivery for some significant enhancement projects, including electrification, had increased beyond expectation due to over optimism on costs, poor planning, lack of resources and changes in project scope. Network Rail was reclassified as a public body which now prevents it from accessing funds on the open market to cover increase costs.

Sir Peter Hendy was appointed Chair of Network Rail in July 2015 and the Secretary of State asked him to conduct a review of the enhancement programme to see what could be delivered in an affordable and timely way within the funding period to 2019 with the benefit of a better understanding of cost and delivery challenges. His report, *"Re-planning Network Rail's investment programme: A report from Sir Peter Hendy to the Transport Secretary"* was published in November 2015.

The re-planned programme is still more expensive than the financial settlement that Network Rail received in 2014, so Network Rail is planning to release £1.8 billion of funding through the sale of some non-core and lower value assets, including selling off some of the Network Rail managed stations and other property assets.

A draft Enhancement Delivery Plan was published in January 2016. Some projects have been rescheduled to the end of the plan period, including electrification of the line between Didcot-Oxford which is delayed by three years, although most projects will be delivered as originally planned by 2019. There is some uncertainty on when East-West Rail Phase 2 will be completed with the plan committing only to complete scoping of a single option by 2019 rather than delivery, with the new railway opening sometime after 2020.

Chapter 2
Rail Objectives

Introduction

Our objectives for rail development are aligned with the goals we have set for *Connecting Oxfordshire*, but also need to have cognisance with national railway planning and policy. In particular, we have considered Network Rail's Long Term Planning Process, and especially the new route studies, as well as the market assessments that have informed them.

We also have to consider the Local Plans that are being prepared by the district councils as we need to take a more strategic, planned approach to investment in the rail network and better align this with future land use so both can benefit each other.

A comprehensive approach is needed as the business case for future rail investment may depend on rethinking some land use plans to create the conditions where there is potential for rail to support existing and planned communities, through new or existing stations, and developments can provide the critical mass in demand to justify enhanced train services.

Local Transport Plan

This rail strategy forms part of *Connecting Oxfordshire*, our Local Transport Plan setting out our policy and strategy for developing the transport system in Oxfordshire up to 2031. The end date ties in with the period of most of the Local Plans being put in place by the district councils.

Oxfordshire faces a huge challenge to enable people to make the journeys they need to as the population grows, whilst avoiding chronic congestion that could damage our economy. We realise there needs to be a significant shift away from dependence on private cars, and to do that we intend to transform travel by walking, cycling or public transport to make these equally if not more attractive than using the car, for the majority of people.

Connecting Oxfordshire has been developed around a set of over-arching transport goals, and the specific policy relating to rail is shown in

Table 2: LTP Policy Relevant to Rail

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

Rail is an integral part of the county council's long term transport strategy, and there are a number of ways in which rail can contribute to meeting the five LTP goals. Accessibility in the context of both getting to the station, and using the network, is fundamental and better connectivity between centres of growth and regional centres and international gateways will support growth and sustainability. Error! Reference source not found. outlines how rail contributes to our LTP goals.

Table 3: Contribution of Rail to LTP Goals

LTP Goal	Contribution of Rail
Goal 1 - To support jobs and housing growth and economic vitality	• Enable travel between employment sites and urban centres for work, education, health and shopping; • Deliver capacity to meet future demand; • Reduce journey times; • Improve service reliability and resilience; • Integrated and seamless multi-modal ticketing; and • Improve global competitiveness by providing links tointernational gateways.
Goal 2 - To reduce emissions, enhance air quality and support the transition to a low carboneconomy	• Make rail an attractive alternative to using air travel or car for long distance journeys; • Reduce energy consumption and increase use ofrecycled materials on trains and at stations; • Reduce emissions from rolling stock; • Station facilities for electric vehicle charging andmulti-occupancy cars; and • Maximise the value of investment
Goal 3 - To protect and enhance the environment and improve quality of life (including publichealth, safety and individual wellbeing)	• Mitigate the impact of railways on the local built, historic and natural environment, including noiseand lighting; • Provide accessible trains and stations to remove barriers faced by older and disabled people; and • Encourage health and wellbeing; providing safe and secure facilities and policies that make walking andcycling more attractive.

Strategic Economic Plan

Oxfordshire is already recognised nationally for its universities and the strength of its science-based knowledge industries. The ambition of the Oxfordshire Local Enterprise Partnership (OxLEP) is to further develop the county as the economic powerhouse of the UK and a global leader in 'Big Science' by creating the right conditions and infrastructure for businesses to invest and grow.

OxLEP is planning for, strong economic growth with up to 100,000 new homes and 85,000 new jobs by 2031, and the Strategic Economic Plan sets out the investment required in the provision of new homes, developing education and skills and improved connectivity. The main focus for this growth is the "Oxfordshire Knowledge Spine", linking Bicester, Oxford and an area known as Oxford Science Vale, with the high-tech sectors expected to create most of the new jobs. Figure 2: Oxfordshire Knowledge Spine shows the spine through the centre of Oxfordshire, and the main areas of economic activity in the county.

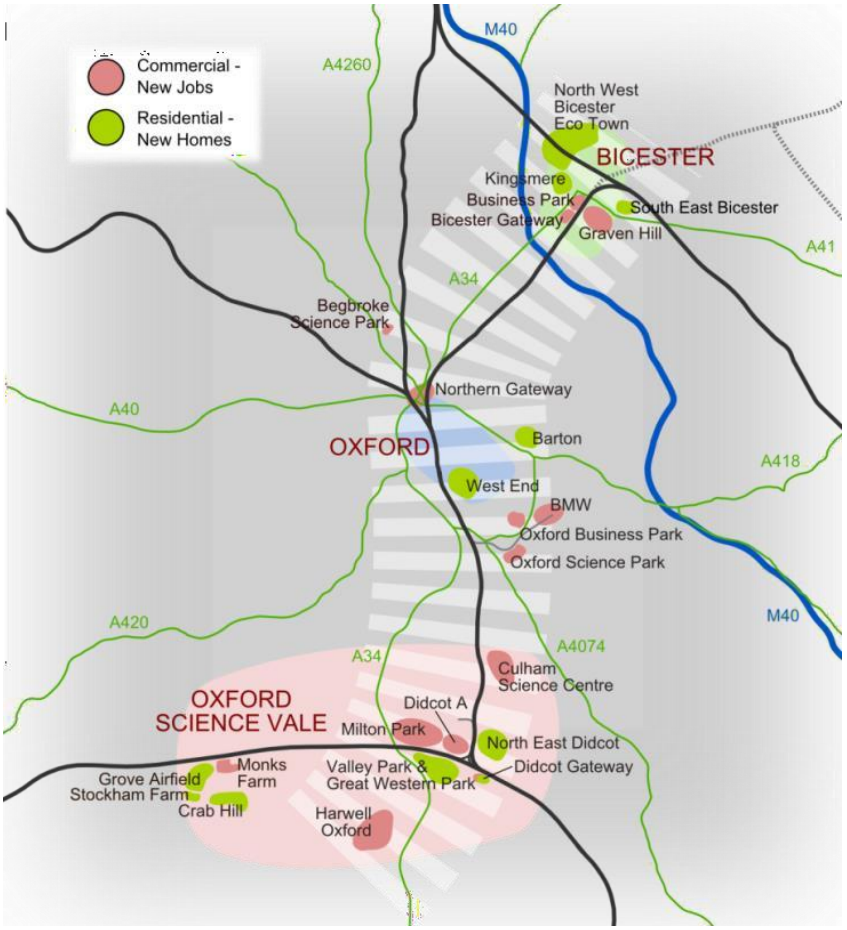

Figure 2: Oxfordshire Knowledge Spine

To help businesses retain and attract a large, skilled workforce, there will need to be excellent links between businesses and research establishments in the county, as well as to research establishments, suppliers and customers elsewhere in the UK and globally to achieve the agglomeration benefits of locating in Oxfordshire. Rail is therefore critical to realising this ambitious level of growth.

The Strategic Economic Plan provides:

- A mechanism to identify and prioritise infrastructure projects based on value for money and delivery of key economic growth objectives;
- The framework to encourage and facilitate co-ordination of investment decisions across the various agencies, such as Network Rail and Highways England; and
- The basis upon which the majority of central government funding is now sought and allocated for transport improvements via the Local Growth Fund, part of the City Deal.

In addition to funding from the Local Growth Fund, the government is investing in strategic infrastructure that will improve access to the Knowledge Spine from important centres in Oxfordshire, the United Kingdom and overseas. These include schemes such as East-West Rail, electrification and direct rail access into Heathrow.

As part of *Connecting Oxfordshire*, this rail strategy supports the Strategic Economic Plan. Crucially, improvements to rail infrastructure and services can assist economic activity by:

- enabling business to locate closer together and work in clusters;
- increasing labour market catchment areas and broaden the pool of available workers for existing and future jobs;
- improving access to national and international markets to help maintain global competiveness;
- reducing the pressure on the road network and reducing congestion;
- ensuring that new housing and employment growth is integrated with investment in strategic transport infrastructure; and
- Stimulating further inward investment to make Oxfordshire an easy place to access and move around - promoting greater travel choice.

In 2016, OxLEP will carry out a refresh of the Strategic Economic Plan to reflect Oxfordshire's latest economic environment. Their connectivity priorities to 2020 include ensuring transport investment programmes are:

(a) focused on overcoming current capacity bottlenecks;
(b) linked to the scale and location of planned housing and employment growth; and
(c) support the implementation of Oxfordshire's Science Transit Strategy.

Wider Rail Objectives

To ensure this rail strategy meets our LTP goals and wider rail objectives we have reviewed relevant planning and policy documents, at both a local and national level. Error! Reference source not found. shows the common themes, and in Error! Reference source not found. we have matched these with our LTP goals to ensure we have a cohesive rail strategy.

The documents reviewed include:

1) Local Transport Plan - *Connecting Oxfordshire* (May 2015)
2) *Driving Economic Growth through Innovation*: Strategic Economic Plan (Oxfordshire Local Enterprise Partnership, 2012)
3) Oxfordshire 2030 – our Sustainable Community Strategy
4) Rail Command Paper (Department for Transport, 2012)
5) White Paper: *Creating Growth, Cutting Carbon*: Making Sustainable Local Transport Happen (Department for Transport, 2011)
6) Electrification Route Utilisation Strategy (Network Rail, 2009)
7) Great Western Route Utilisation Strategy (Network Rail, 2010)
8) London and South East Route Utilisation Strategy (Network Rail,2011)
9) Western Route Study (Network Rail, 2014)
10) Draft West Midlands and Chilterns Route Study (Network Rail, 2015)

Table 4: Key themes

Source	Theme
Local Transport Plan	Economic vitality and sustainable growth Integrated transport networkA low carbon economy Enhance the environment and improve quality of life, including social inclusion and health & wellbeing.
Strategic Economic Plan	People – a better qualified workforce with flexible skills Place - accelerated housing delivery and improved quality of life Enterprise - accelerated economic growth and increased businessgrowth and productivity Connectivity - better integrated transport allowing people to move freely
Oxfordshire 2030	World class economy for Oxfordshire Healthy and thriving communitiesProtect the environment Reduce inequalities
White Paper: *Creating Growth, Cutting Carbon*	An engine for economic growth Greener transport
National Planning Policy Framework	Reduce greenhouse gas emissions Reduce congestion
Rail Industry	Value for money Support economic growth Carbon reduction and modal shift Effective and efficient use of network capacityProvide capacity to meet demand up to 2043

It is evident that the documents reviewed have some common themes, and these can be summarised as a set of wider rail development objectives, shown in Error! Reference source not found.. It is also clear that the goals we have set for *Connecting Oxfordshire* closely match these wider objectives as shown in Error! Reference sourcenot found..

Table 5: Wider rail development objectives

Economic growth and global competitiveness
A transport network to accommodate growth
Reduce environmental impact
A healthy and inclusive society

Table 6: Alignment of wider rail objectives with LTP goals

Development Objective for Rail	LTP Goal
Economic growth and global competitiveness	To support jobs and housing growth and economicvitality
A transport network to accommodate growth	
Reduce environmental impact	To reduce emissions, enhance air quality and support the transition to a low carbon economy

A healthy and inclusive society	To protect and enhance the environment and improvequality of life (including public health, safety and individual wellbeing)

The Environment

Rail has environmental advantages over many other modes of transport, which is a key reason why we want to promote its use in Oxfordshire. With congestion increasing on the road network, more people than ever are now choosing to travel by train and businesses recognise the time saving benefits of transporting their goods by rail.

The most significant environmental impacts associated with (diesel) rail are:

- Emissions of carbon dioxide (CO_2);
- Emissions of air pollutants, in particular nitrogen oxide (NOx), particulates and sulphur dioxide (SO_2); and
- Environmental Noise.

All motorised transport produces carbon dioxide – one of the 'greenhouse gases'. Rail produces relatively less CO_2 emissions than other modes, with emissions per passenger kilometre being on average half that of travel by car. Carrying freight by rail results in an 80% cut in CO_2 emissions per kilogram carried compared to road haulage. Trains are an energy efficient means of moving passengers and freight, particularly over long distances, as they use far less energy per passenger than road.

Trains emit relatively low levels of pollutants into the atmosphere, and this could be reduced further if diesel engines were switched off when stationary for more than a few minutes. By 2018, many services in Oxfordshire will be operated by electric trains which are pollutant free at point of use and do not contribute to local air quality problems.

Railway noise can take many forms and whilst technology has reduced some causes of noise, there is no evidence that overall noise impacts have improved. The main sources of noise are the sound of trains passing, accelerating or braking, diesel engines (but newer diesel trains are much quieter and electric trains virtually noise-free), the wheel-rail interface on tight curves (squeal), points (clatter) or surface irregularities, overnight maintenance and warnings at level crossings.

Summary

The elements of our rail strategy can be summarised as follows:

- Explain how an efficient and accessible rail network will help deliver wider economic policy priorities for the county; in particular the creation of new jobs and sustainable new housing;
- Present a coherent and realistic set of investments that the county council and its partners would like the rail industry to plan and develop in partnership with local stakeholders, and for the rail industry to deliver in future control periods;

- Identify rail as an integral part of local, regional and national transport networks by providing a choice of alternatives to road for strategic movements;
- Give a clear view on investment priorities so the rail industry know where it is likely to receive political support from the county council; and
- Enhanced partnership working with local planning authorities and use of the planning system to achieve better coordination between land use planning and investment in rail infrastructure and services.

Chapter 3
Baseline

Introduction

This chapter summarises the baseline situation. It sets out some key facts about the rail network in Oxfordshire, including:

- The railway and its context within Oxfordshire's wider transport network;
- How many people travel by train; and their origin and destination;
- The importance of local and national rail connectivity;
- The available capacity of the network in relation to travel demand;
- How the network is currently performing in terms of passenger satisfaction; and
- The capacity challenge and meeting future passenger demand.

Oxfordshire's rail network

Oxfordshire occupies a pivotal point in the UK rail network, with rail lines heading north, south, east and west passing through the county. The railway is a national network but a vital local asset without which we would see many more cars and lorries on our roads. In this respect, rail has an important role in reducing congestion and carbon emissions.

There are 23 stations, ranging in size from the smallest rural 'halt' with just a handful of weekday passengers to busy urban stations with several million passengers passing through every year. There are seven freight facilities handling automotive, aggregates (sand/gravel), household waste / recycled aggregate, defence and general goods, whilst many more trains pass through the county on their way to and from the Port of Southampton. Figure 3 shows the location of these passenger stations and freight facilities.

There are also many different demands from customers. Long distance passengers want services to be as fast as possible by minimising the number of stops. Local communities want to see more stops at their particular station – before having as fast a journey as possible thereafter. There is an increasing demand for freight traffic

as the advantages of rail over congested roads become more apparent to people who need to move goods, but they also need to have reliable 'just in time deliveries'. Balancing these demands is a challenge; and as the rail network becomes more crowded with a mix of services the potential for delays and cancellations, as a result of something going wrong, increase.

The railway provides connectivity locally and across the UK and is vital for Oxfordshire to be competitive in economic terms.

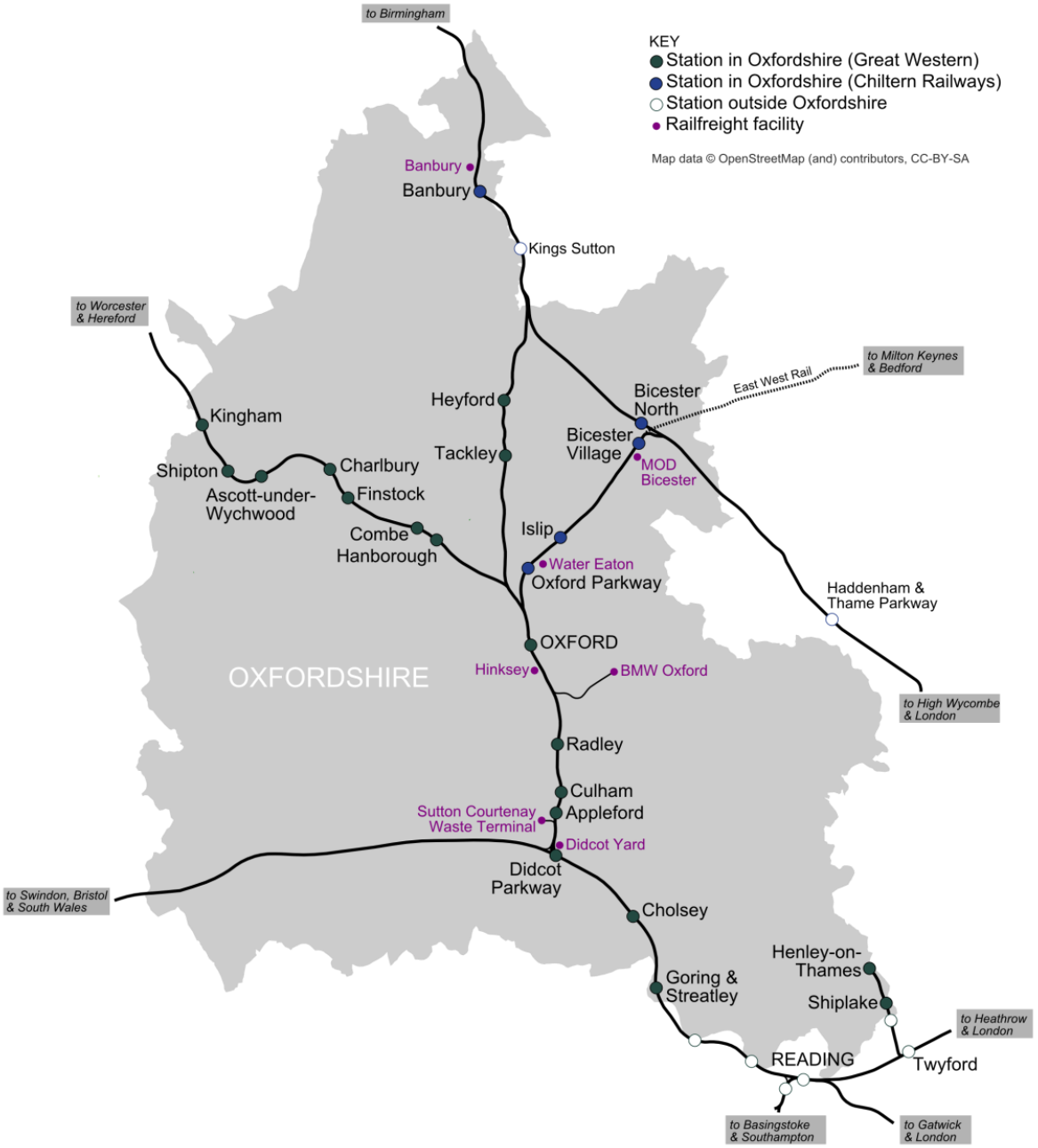

Figure 3: Oxfordshire Rail Network

Rail Connectivity

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

The railway is an efficient way of commuting to work, travelling to business meetings and enjoying leisure days out, and high-technology science and research businesses can thrive and prosper if they have good access to an agile workforce, supply chains, customers and specialist knowledge from across the UK and internationally.

We are fortunate that there are some good direct rail connections from Oxford, although direct rail services from the enterprise zones around Didcot to other parts of the UK are limited to services towards London and Bristol.

Figure 4 shows that connections with London, Birmingham and Bristol are relatively good with frequent, regular services. Direct links with cities making up the northern powerhouse of England are less frequent, and often no more than hourly. Connectivity with eastern England and with international gateways is at best convoluted and unattractive, or even non-existent.

Figure 4: UK rail connectivity

It is notable that there is a lack of direct train services to important cities including Leeds, Liverpool, Nottingham and Cambridge, and to Heathrow and Gatwick airports.

Oxfordshire's transport network

The railway is an important part of our wider transport network, offering an attractive alternative to using the car for shorter-distance trips within the A34 corridor (Didcot, Oxford and Bicester), and facilitating longer-distance journeys by train rather than car.

The Great Western Main Line from Didcot Parkway is an alternative to the M4 motorway for journeys into central London, and to Bristol and South Wales, whilst the Cotswolds & Malverns Line broadly follows the A44 towards Evesham and Worcester. Travelling to the West Midlands by train from Oxford or Banbury is comparable to the M40 motorway, but with less stress and greater reliability. Figure 5 shows the primary road and rail network in Oxfordshire.

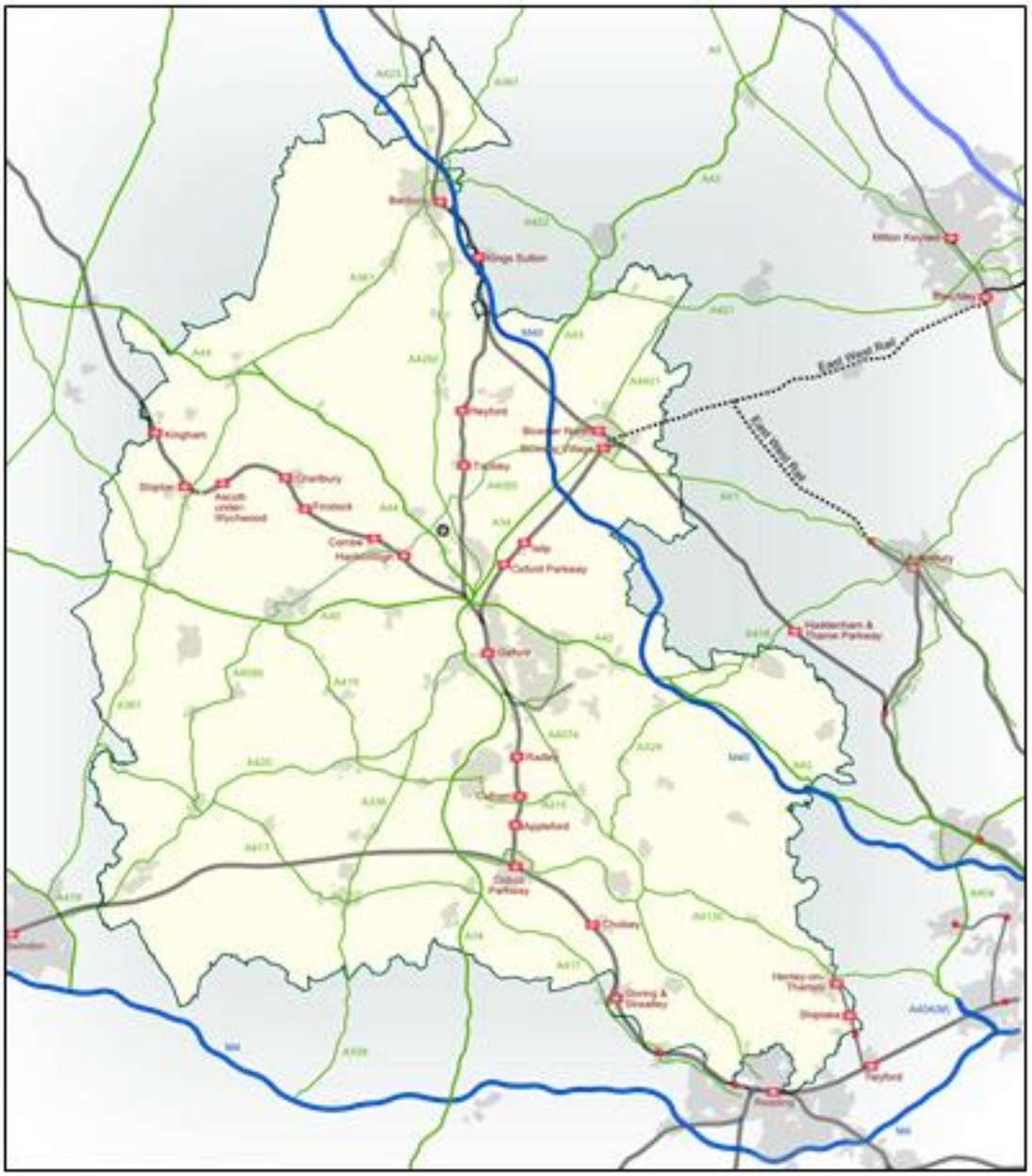

Figure 5: Oxfordshire's Strategic Transport Network

On some axis, and importantly the Oxford-Milton Keynes-Cambridge arc, the rail network does not provide direct links that are of comparable quality to travelling by road:

- Milton Keynes and the South East Midlands (Northampton and Corby);
- Central Buckinghamshire (Aylesbury and High Wycombe);
- East Anglia (Cambridge and Ipswich); and

- International hubs, such as Birmingham, Heathrow and Gatwick airports.

Although there are scheduled coach services to Heathrow and Gatwick airports, these are only available from Oxford or Lewknor at junction 6 on the M40. There is also a regular coach service from Oxford to Cambridge.

Oxfordshire's location means that its roads and its railways convey large volumes of traffic between the South East and the North, connecting the two national powerhouses. It has a vital role in the national economy. Of particular importance is the need to strike a balance between the need for local movements between places where people live and work, and accommodating strategic long-distance through travel by road or rail.

Rail Passenger Numbers

Rail as a means of travel is a success story. Passenger journeys nationally have soared by 70 per cent since 2002, and Britain's trains are filling up faster than anywhere in Europe. In Oxfordshire, we have seen above average growth of 92 per cent over the same period.

In part this is because more people are now considering rail as a more pleasant alternative to travelling on our increasingly congested road network. The level of growth we have seen in recent years shows no sign of slowing down and is now beginning to create problems of its own. In particular, peak-time overcrowding is commonplace into Reading and London Paddington, and the layout of track and signalling restricts the number of trains that can be operated, especially north of Didcot towards Oxford. Unless these constraints are removed they will become barriers that could stop the railways from fulfilling their potential to enable sustainable, economic growth.

The latest information on passenger numbers issued by the Office of Rail and Road covers the twelve months ending in March 2015 and can be summarised as follows:

- Number of passenger journeys at Oxfordshire stations: 17.59 million.
- Rail usage at Oxfordshire stations has increased by 92% since 2002.
- Five stations account for 89% of passenger journeys: Oxford, Didcot Parkway, Banbury, Bicester North and Henley-on-Thames.

Error! Reference source not found.shows that rail in Oxfordshire is a significant success story, and shows the entries and exits at each of the 22 stations in 2014/15 compared with 2002/03. Several railway stations are not located in Oxfordshire, but are used regularly by residents of the county. Error! Reference source not found. summarises the total passenger numbers at these stations – although it should be remembered that only a proportion of these users would live in Oxfordshire.

Table 7: Railway Station Usage – Oxfordshire Stations[1]

Station	2002/03	2014/15	% Change
Oxford	3,651,099	6,850,857	+88
Didcot Parkway	2,049,057	3,574,826	+74

[1] Source: Office of Rail and Road

Banbury	924,617	2,698,924	+192
Bicester North	634,639	1,696,402	+167
Henley-on-Thames	675,868	771,406	+34
Goring and Streatley	358,047	401,356	+12
Charlbury	235,592	305,284	+30
Cholsey	216,785	272,430	+26
Bicester Town#	54,278	207,896	+283
Hanborough	71,934	243,568	+239
Kingham	124,661	180,536	+45
Radley	56,728	138,896	+145
Shiplake	103,402	92,580	-10
Culham	35,259	63,210	+79
Heyford	28,187	38,068	+35
Islip#	19,689	27,018	+37
Tackley	19,383	22,612	+17
Appleford	7,284	7,738	+6
Shipton	5,098	4,884	-4
Ascott-under-Wychwood	1,613	4,026	+150
Finstock	1,796	1,804	0
Combe	1,559	1,248	-20
Total	9,176,575	17,585,409	+92

Table 8: Railway Station Usage - Non-Oxfordshire Stations[2]

Station	2002/03	2014/15	% Change
Haddenham and Thame Parkway	379,970	762,680	+101
Tilehurst	387,422	546,658	+41
Pangbourne	344,056	431,404	+25
Kings Sutton	39,745	63,340	+59
Total	1,151,193	1,804,082	+57

Origins and Destinations

Ticket sales data provided by GWR gives an insight into the journeys that Oxfordshire rail passengers are making. Figure 6 shows the destinations of passengers travelling from eight selected Oxfordshire stations. Not surprisingly the most popular destinations are the places that have a direct train service to and from the station, for example Bicester North and Henley-on-Thames to central London, or between centres of employment within or just outside the county boundary, such as Charlbury to Oxford or from Didcot to Reading.

Due to route modernisation, Bicester Town and Islip stations were not open during 2014/15, and passenger numbers shown are for 2013/14.

[2] Source: Office of Rail and Road

Figure 6: Destinations of passengers boarding at selected Oxfordshire stations (2014/15)[3]

The predominance of London revealed in the ticket sales data was supported by Census travel-to-work data that records the work destinations of Oxfordshire residents. According to the 2011 census, the capital is the most popular work destination outside the county from all five district areas. After that, the pattern of travel reflects historical geography with travel from the southern area of the county dominated by Reading (to the east) and Swindon (to the west), whilst there is already a strong relationship between Cherwell and Milton Keynes – a link that will be strengthened further with East West Rail.

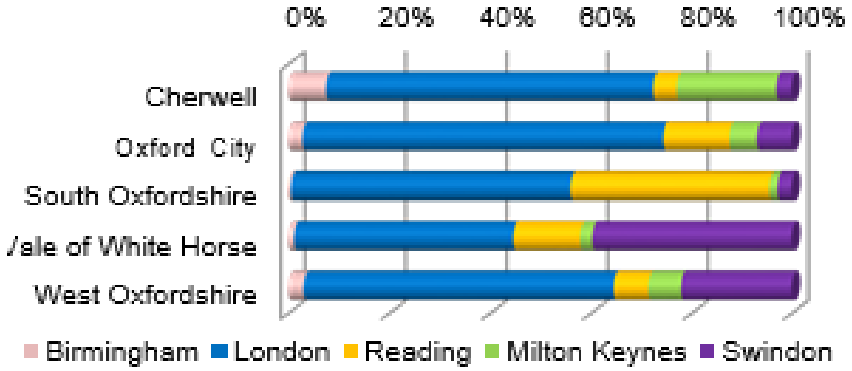

Figure 7: Top five work destinations outside Oxfordshire[4]

Passenger satisfaction

Tables 9 and 10 show how the three train operating companies compared against some key indicators. The results are for the whole franchise and not just Oxfordshire, but show how passengers view existing services.

[3] Source: Great Western Rail/LENNON
[4] Source: 2011 Census
[5] National Rail Passenger Survey – Autumn 2015 (Transport Focus)

Table 9: Summary of Passenger Satisfaction with Stations[5]

Performance Measure - Stations	Chiltern Railways	Great Western Railway	Cross Country
Overall satisfaction with the station	88%	81%	88%
Ticket buying facilities	80%	80%	85%
Provision of information	85%	85%	90%
Connections with other public transport	79%	73%	80%
Facilities for car parking	72%	59%	55%
The availability of station staff	64%	70%	77%

Table 10: Summary of Passenger Satisfaction with Trains

Performance Measure - Trains	Chiltern Railways	Great Western Railway	Cross Country
Overall satisfaction with the train	92%	81%	84%
Punctuality / reliability	90%	79%	86%
Journey time	88%	85%	86%
Value for money	52%	53%	58%
Sufficient room for passengers to sit/stand	71%	67%	66%
How well train company dealt with delays	54%	45%	54%

Car parking scores less than connections with other forms of public transport, mainly due to the added cost of parking and limited availability. There is general satisfaction with ticket buying facilities but station staffing is seen as an issue. The relatively low satisfaction levels with value for money for the price of the ticket probably reflects dissatisfaction with the Government fares policy where passengers using the railway are now expected to pay more of a contribution towards the cost of running the railways than the taxpayer.

Figure 8 shows the overall passenger satisfaction for the three train operators compared against the national average. Our three train operating companies are currently above the national average.

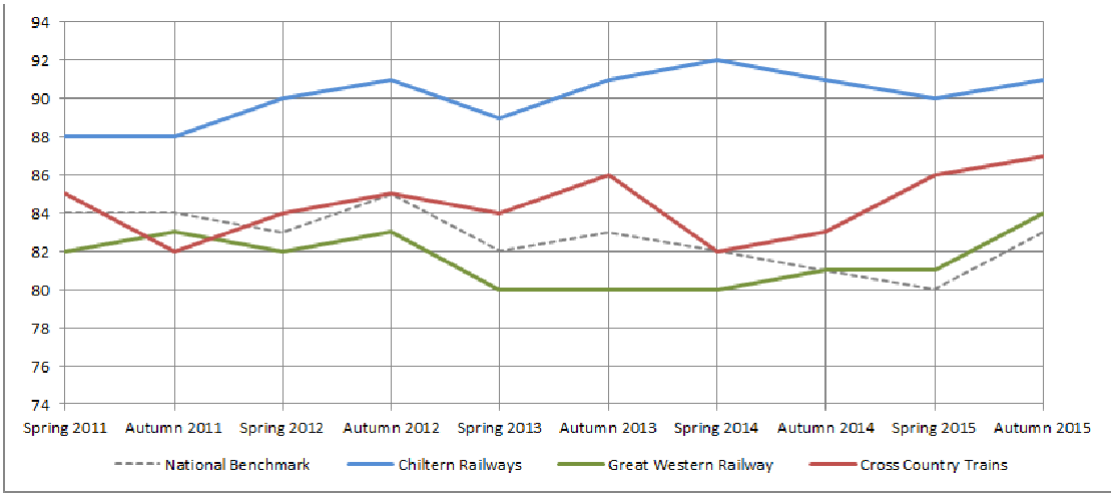

Figure 8: Overall Passenger Satisfaction Trend

Road capacity

Oxfordshire already suffers from a high volume of through traffic which can result in delays to local road journeys. As new housing and jobs are created it is increasingly important to have the essential connectivity needed to support Oxfordshire's economic prosperity. More commuting and business travel will add pressure to an already congested road network; it will make journeys slower and unreliable, and create more traffic

congestion.

As the focus of housing and employment growth will be through the Oxfordshire Knowledge Spine between Didcot, Oxford and Bicester, the railway can potentially provide an efficient and sustainable alternative as part of an integrated transport network. It can link all three growth areas without adding traffic to the nationally-important A34 which is used by up to 70,000 vehicles per day, including many lorries from to/from the Port of Southampton.

Railway capacity

Congestion is not a problem unique to road travel, however. Many trains into urban centres such as Reading and London are becoming overcrowded at the busiest times of day and it is increasingly difficult to get a seat during peak periods on weekdays.

As well as on-train crowding, there is limited infrastructure capacity on the rail network. Between Didcot and Banbury, and through Oxford station itself, the physical extent of the network with only two main tracks and two through-platforms means that it is now very difficult to increase the number of trains without major investment. This constraint will become a major constraint to potential growth in the enterprise zones and the Knowledge Spine that underpins our growth strategies.

What is passenger capacity?

Capacity does not refer to on-train seating capacity alone, but seating plus an allowance for standing room (one passenger per 0.45 m^2). Transport for London define the level of crowding as the typical number of passengers standing per square metre, and considers crowding to be 'high' when there are three or more passengers per square metre.

Demand vs. Capacity

Forecast rail passenger demand for Relief Line services between London Paddington and Reading shows that with the introduction of Crossrail services, there is sufficient capacity to accommodate the forecast demand until 2023. Beyond 2023, additional capacity will be required, and this will need to increase again from 2026 to meet demand following the opening of the proposed HS2 station at Old Oak Common.

Beyond 2024, the forecasts suggest an increase in rail passenger demand into London Paddington of 298% on Relief Line services and 99% on Main Line services to 2043.

Table 11: Market Study rail passenger demand forecasts (0700-0959)[6]

Service Group	2012-2023	2012-2043
Demand growth into London Paddington on Relief Line 'Inner Suburban' services	198%	298%

[6] Source: London & South East Market Study (Network Rail, 2013)

Demand growth into London Paddington on Main Line services	29%	99%

Table 12 shows the anticipated capacity provided in 2019 with predicted demand for 2023 and 2043. It also shows that extra capacity will be required to accommodate forecast rail passenger demand and minimise on-train crowding in 2023 and 2043.

Table 12: Three-hour peak Main Line arrivals into London Paddington (0700-0959)[7]

Service Group		Total capacity assumed 2019	2023 estimated demand	2043 estimated demand
15x Oxford	6 suburban stopping services	2,880	2,000	3,000
	6 fast from Oxford	2,160	1,300	2,000
	3 from Worcester	1,890	1,600	2,400
3x Cheltenham via Swindon		1,890	1,700	2,600
6x Bristol Temple Meads via Bath Spa		3,762	4,000	5,300
5x Bristol Temple Meads via Bristol Parkway		3,150	2,500	5,000
6x from Swansea		3,762	3,900	5,700

Analysis has shown that at London Paddington the three-hour morning peak period (0700-0959) and the three-hour evening peak period (1600-1859) have similar levels of demand.

Table 13 shows that additional capacity will be required by 2023 to accommodate demand and minimise on-train crowding on Main Line services into Reading from the Didcot corridor into Reading, and on-train crowding is forecast on Cross Country services from the North of England passing through Oxford. By 2043, the majority of services into Reading will require additional capacity.

Table 13: Three-hour peak arrivals into Reading (0700-0959)[8]

Service group	Capacity assumed	Estimated demand	
	2019	2023	2043
6x Relief Line - calling at all stations between Didcot and Reading	2,844	2,100	3,100
12x Main Line - either from Oxford (3x) or Swindon (9x)	7,542	8,400	12,800
4x Cross Country	773	1,000	1,400

[7] Source: London & South East Market Study (Network Rail, 2013)
[8] Source: Regional Urban Market Study (Network Rail, 2013)

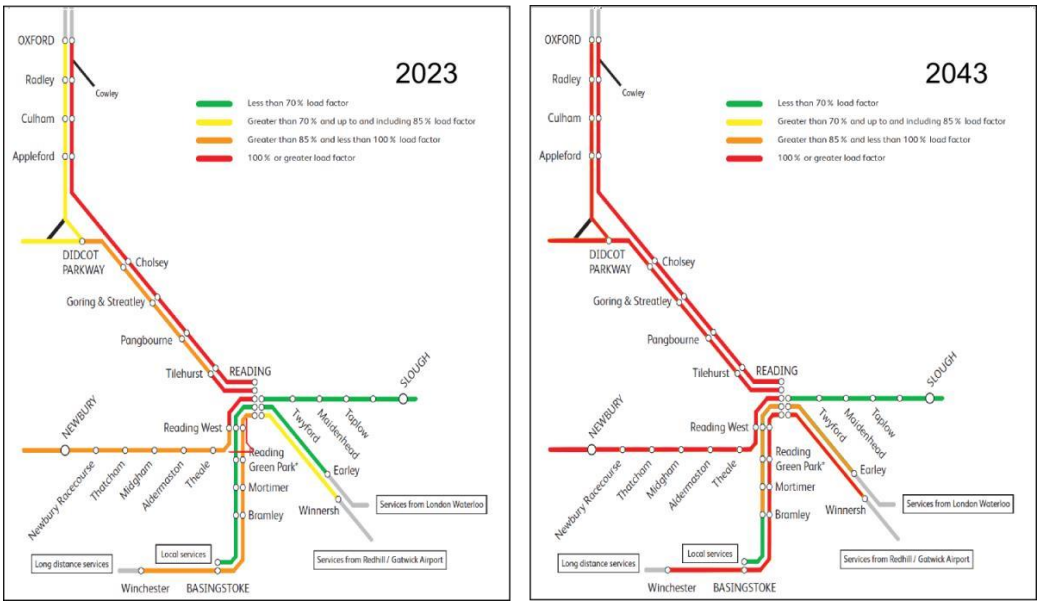

Figure 9: Average peak-hour loadings into Reading (0800-0859) *(Network Rail)*

Optimising the use of the available track capacity of the lines into Reading and London Paddington through train service and infrastructure enhancements will be necessary to meet future demand and mitigate on-train crowding. It will shape the pattern of services in the Outer Thames Valley in the years ahead.

Oxfordshire Demand Forecasting Study

In 2013, the county council commissioned work to assess the likely increase in patronage arising from the committed investments planned up to 2019. These include electrification, East-West Rail and Crossrail. The objective of the study was to understand the increase in passenger demand resulting from population and employment growth and fuel prices, as well as scheme specific growth.

The results indicated that passenger demand at Oxford could increase by 68%, or 3.3 million journeys, by 2026, with most of this growth being generated by new rail investment, such as East-West Rail and the introduction of Super Express Trains. The greatest overall increase is expected between Oxford and London, where a choice of routes and increase in services resulting from the opening of East West Rail (Phase 1) and a new Oxford Parkway station, will generate 47% more demand, or over 1 million annual trips.

East West Rail (Phase 2) will generate half a million new rail trips linking Didcot, Oxford, Bicester and continuing to Milton Keynes and Bedford. Western Rail Access to Heathrow is expected to generate around 200,000 new rail journeys.

Rail Industry Long-Term Planning Process (LTPP)

The Long Term Planning Process builds on previous rail industry planning work that culminated in publication of Network and Route Utilisation Strategies (RUSs) in 2010/11. The purpose of the long-term planning process is to set out a strategic vision for the rail network for the next 30 years by planning the long-term capability of the network and providing choices to funders, primarily the government, that deliver capability and meet capacity.

Its four strategic goals are to:

- Enable economic growth
- Reduce environmental impact
- Improve quality of life for communities and individuals
- Improve affordability

The LTPP considers planned economic and population growth, government and industry aspirations, and the need to meet passenger and freight demand in Control Period 6 (2019-2024) and beyond. The LTPP is a key part of the evidence base for future investment in the rail network.

Market Studies

In 2013, Network Rail published four Market Studies which include demand forecasts for likely passenger and freight traffic at 10 years (2023) and 30 years (2043). The capacity and capability requirements for the railway to meet the forecast demand are presented as conditional outputs, which set out the aspired levels of service in terms of frequency and/or journey time and/or passenger capacity. The key requirements for the Thames Valley can be summarised as:

1. Provide sufficient capacity for passengers travelling to Reading to 2043
    - 25% increase by 2024
    - 90% increase by 2043
2. Provide sufficient capacity for passengers travelling to London Paddington to 2043
    - 30% increase by 2024
    - 100% increase by 2043
3. Provide capacity for growth of all freight commodities to 2043
4. Provide better access to Heathrow Airport and HS2 interchange
    - Aspiration for sub-hour journeys to airport
5. Better access to tourist infrastructure and educational establishments
6. Improve connectivity with regions other than London

Capacity relates to the ability of the infrastructure and rolling stock to meet the demands placed upon them, including layout of track and junctions, length of platforms, stations or signalling , the number and length of trains and the availability of seating. Capability is defined as the ability of the rail network to satisfy the needs of passengers, including journey times, service frequency, fares and ticketing, accessibility, station facilities, staffing and security.

Western Route Study

The Western Route Study is a key part of Network Rail's Long Term Planning Process and translates the outputs from the market studies into a train service specification that meets the capacity and connectivity requirement in 2023, 2033 and 2043 for a geographical route, but subject to further feasibility into affordability and deliverability.

The baseline for the Western Route Study includes those schemes that had funding committed in Control Period 5 (CP5, 2014-2019), and are therefore assumed to have been delivered by 2019, including Crossrail and East West Rail (Phase 2). It also includes major projects that will require significant changes on the existing railway network over the next ten years, such as the Western Rail Link to Heathrow and High Speed 2.

The 2019 baseline used for the Western Route Study has already altered following the Hendy Review of Network Rail's Control Period 5 enhancement programme, but with the study having a longer-term view, the implications are limited to when the committed schemes are delivered rather than the need for them. The exceptional growth seen since the mid-1990's is forecast to stabilise but will continue and it the railway it is important that further capacity is provided up to 2043.

The Route Study gives priority to schemes necessary to accommodate passenger and/or freight demand before 2024, and/or where there is an opportunity to bring forward a scheme to achieve more cost effective delivery, and/or where funding priorities require earlier implementation. By doing so, it informs the development of the Initial Industry Advice for Control Period 6 (CP6, 2019-2024), and sets out a longer-term investment strategy.

Delivering Capacity in the Outer Thames Valley

Initially the focus will be on how to make the best use of the existing network before identifying options for new infrastructure. There are several different ways to optimise the capacity available on the existing network and the following options are likely to be considered:

- harmonising train speeds and rolling stock capabilities so faster trains are not hindered by slower trains using the same track;
- optimising calling patterns to support the delivery of overall requirements;
- the ability to handle high passenger volumes at key stations, such at London Paddington and Reading;
- minimising conflicts caused by trains crossing or merging from one line to another by ensuring that all trains using the Main Line tracks have the same calling pattern and are capable of 125mph; and
- increasing train length and train occupancy with services at intermediate stations served by 4-car or 8-car trains, using the Relief Line to Reading, and with Oxford and Didcot Parkway served by 12-car trains using the Main Line. Platform lengthening will be required at every station between Radley and Tilehurst (inclusive) to accommodate these longer trains.

These options alone will not deliver the change required to meet future demand and new infrastructure will have to be considered. Physical constraints already exist on the approach to London Paddington, due to track layout and capability of the junction at Ladbroke Grove. The Main Line capacity east of Airport Junction (where the line to Heathrow Airport joins the main line) means there is minimal capacity to operate additional train services and that may require a revised junction layout to create capacity for higher-capacity long-distance services from the Outer Thames Valley.

Other new infrastructure may include extra platforms, additional tracks, grade separation to remove conflicting movements, revised junction layouts, line speed improvements and train depots or overnight stabling facilities.

Chapter 4
Rail Priorities

Introduction

Rail has the potential to play a much bigger part in meeting the Oxfordshire growth agenda, particularly as an alternative to the A34 for connecting our three main growth areas; Didcot, Oxford and Bicester. The county council has worked with Network Rail as part of their long term planning process and acknowledges there are various constraints on the rail network which restrict the ability to achieve more frequent or faster train services.

This chapter identifies our priorities for dealing with these constraints so the full potential of the railway can be realised in Oxfordshire. Our strategic rail priorities include:

- Supporting the development and delivery of East West Rail Phase 2 and progressing future phases working with Network Rail and the East West Rail Consortium;
- Increased passenger and freight capacity between Didcot and Oxford, including opportunities for an expansion of Culham station;
- Promotion of a major upgrade to Oxford station, including additional platforms, through lines and a new station building and transport interchange;
- Development of the next stage of upgrades to Didcot Parkway, including new multi-storey car park, northern entrance and new station building;
- Reopening the Cowley Line to passenger services, with new stations to serve the Oxford Science Park and Oxford Business Park;
- Promotion and support for direct rail services from Oxford and Didcot Parkway to Heathrow Airport;
- Supporting further capacity and service enhancements on the North Cotswold Line;
- Better integration of rail and strategic bus networks as part of Science Transit;
- Enhancing access to local rail stations by supporting appropriate expansion in car parking and the provision of secure and accessible cycle parking;
- Development of a business case for a proposed new station in the Grove/Wantage area.

Priority Projects

East West Rail

East West Rail is vital to Britain's economic success, and will establish a strategic railway connecting the Thames Valley with the South East Midlands and East Anglia. It is a vital missing piece in our country's strategic rail network, and will improve connectivity in the region by establishing a rail route from Oxford to Ipswich via Milton Keynes, Bedford and Cambridge.

East West Rail will lead to the restoration of a strategic transport corridor of regional and national significance - essential to drive growth in the economy of England.

Figure 10: East West Rail Connectivity

The project will:

- Provide a strategic east-west route linking key centres of economic activity;
- Support ambitions for economic growth based on the creation of new jobs and the development of major areas of new housing; and
- Provide a connection between six radial rail routes out of London facilitating journeys without the need to travel through central London.

The project has been promoted by the East West Rail Consortium since 1995, and it is now working in partnership with Network Rail. It has support from Local Enterprise Partnerships in the South East Midlands, Oxfordshire and Berkshire Thames Valley; and strong political support in Westminster from an All-Party Parliamentary Group.

East West Rail is an important priority for government. In his 2016 Budget, the Chancellor announced that the National Infrastructure Commission will carry out a study to assess the strategic infrastructure priorities needed to unlock further growth, jobs and housing along the Cambridge, Milton Keynes and Oxford corridor.

The corridor contains four of the UK's fastest growing places, with global centres of science research expertise in Oxford and Cambridge and advanced manufacturing and logistics in Milton Keynes. The government wants to maximise the potential of the corridor as a single, knowledge intensive cluster that competes on a global stage, whilst protecting the natural environment and securing the homes and jobs. The study will review the economic case for investment in the Oxford to Cambridge corridor.

Western Section - Phase 1

Phase one started as a franchise commitment from Chiltern Railways, and they developed plans to upgrade the railway between Oxford and Bicester as part of a proposal to introduce a new train service between Oxford and London Marylebone.

A Transport & Works Act Order was submitted in 2010, followed by two public inquiries in 2011 and 2012. The Secretary of State for Transport granted permission to start work on the upgrade in October 2012 and was finally confirmed in the High Court in May 2013 after a judicial challenge by opponents to the upgrade was dismissed.

The upgrade was brought into the main project when the Department for Transport sought additional capability for the route, and a collaboration was created with Chiltern Railways, Network Rail and the East West Rail Consortium taking a joint project approach to ensure cohesive planning and more efficient delivery.

Construction work has included a new 1km section of railway to join the Chiltern Mainline with the East-West Rail line where they cross in Bicester and doubling over 18km of track along with the closure of 37 level crossings to improve safety, the construction of new road bridges and footbridges, and increasing the speed that trains can travel to 100mph. A new station has been built at Water Eaton called Oxford Parkway and a larger station has been built in Bicester and in Islip.

The train service commenced from Oxford Parkway to London Marylebone in October 2015 serving the rebuilt Bicester Town station (now renamed Bicester Village) with some trains also serving Islip. It is expected to deliver significant economic benefits for people living and working along the route and re-establishes a rail link between High Wycombe and Oxford. It is expected that services will be extended into Oxford from December 2016.

Western Section - Phase 2

The second phase will further improve connectivity by upgrading the mothballed section of railway between Bicester and Bletchley (including reinstating a section where the track was removed) and upgrading the freight-only track between Aylesbury and Claydon.

Phase 2 gained government support from the Chancellor of the Exchequer in the Autumn Statement 2011. It was subsequently included as a committed scheme in the Department for Transport's High Level Output Specification and funding was allocated in Network Rail's enhancement expenditure for 2014 to 2019.

The new train service on East West Rail is vital to support planned housing developments and the creation of thousands of new jobs. We envisage two trains each way every hour between Reading and Bletchley, with one train going to Milton Keynes and the other train going to Bedford. An hourly service between London Marylebone and Milton Keynes via Aylesbury is also proposed. The journey time from Oxford to Milton Keynes will be about 40 minutes. East West Rail will link Didcot, Oxford and Bicester.

An alliance comprising of Atkins, Laing O'Rourke, VolkerRail and Network Rail will design and construct Phase 2. Development work will continue to finalise the scope and develop more detailed designs with the aim of submitting a Transport & Works Act Order application to the Secretary of State for Transport in spring 2017 to gain the necessary permissions to carry out the upgrade. A joint delivery approach means that the combined expertise of Network Rail and the local authorities within the East West Rail Consortium is being used to accelerate delivery of the project.

The county council will support the development and delivery of East West Rail Phase 2 and will take an active role in the Joint Delivery Board working with Network Rail and East West Rail Consortium.

Didcot – Oxford Capacity Improvement

"The single biggest barrier to economic prosperity in Oxfordshire is the lack of capacity on the rail network forming the backbone of the Oxford Knowledge Spine, between Didcot and Oxford."

Didcot East is the point where the four tracks from Reading become two sets of tracks that diverge north towards Oxford and west towards Swindon. The railway between Didcot Parkway and Oxford is struggling to handle the number and mix of train services using the two-track railway, creating a 10-mile bottleneck on a major arterial route used by long distance freight and passenger trains linking the South with the Midlands and the North.

The line has a theoretical capacity of 11 trains per hour in each direction, assuming all trains have the same speed characteristics. This is not the reality as a train calling at the intermediate stations or a freight train will use considerably more capacity than a non-stop passenger train, as shown in Figure 11.

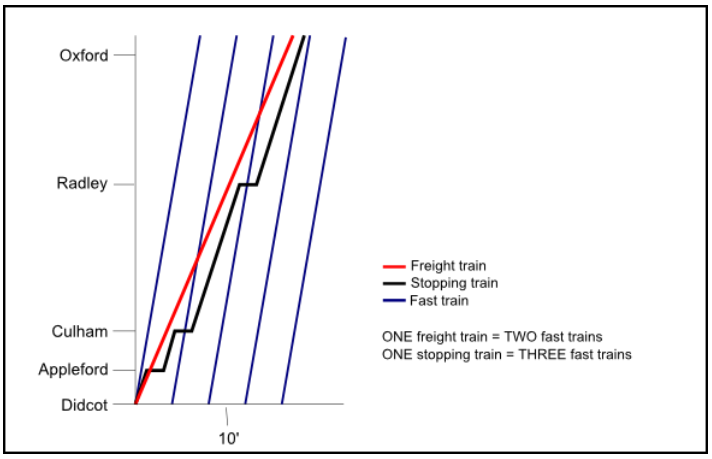

Figure 11: Track capacity utilisation by train type

The rail industry's long term planning work to 2043 has identified the capacity constraints as:

- The configuration and number of platforms and track layout at Oxford station creates conflict as trains generally arrive into the only through platform on the west side of the station, regardless of the route they take after departing the station. This creates conflict where the lines diverge north of the station;
- The variable speed and calling pattern of services between Oxford and Didcot, and between Didcot and Reading on the relief lines uses capacity and means these tracks are operating at near capacity ;
- The frequency and speed of services that need to cross from the main lines to the relief lines at Didcot East for services towards Oxford, which conflict with services heading towards London – much like a car turning right into a side road; and

- The future capacity at Oxford North Junction expected because of the new services planned to operate once the East West Rail route opens.

CrossCountry trains already use the slower relief lines between Reading and Didcot to avoid having to cross from the main line to the relief line tracks at Didcot East, and this adds time to the journey through this section.

Recognising the bottleneck is a significant issue, an Oxford Corridor Capacity Improvement scheme was to be delivered in the Network Rail enhancement programme for 2019-2024. Following the Hendy Review the scope was reduced to focus on delivering only the work needed to allow the Chiltern Railways service from Marylebone to be extended from Oxford Parkway into Oxford station, and for resignalling prior to future electrification.

If the existing infrastructure means it will not be possible to alter the stopping pattern of existing services to stop at more stations, or to run new services beyond those currently planned for 2019, it will have a major impact on the ability of Oxfordshire to grow its economy over the next decade.

Without extra infrastructure, Oxfordshire residents and businesses will not reap the benefits from East West Rail or the new western rail link into Heathrow Airport for many years, even though both projects will be complete.

- It will not be possible to introduce new inter-regional services to the East Midlands and South West without the provision of four tracks south of Oxford station, together with changes to the platforming of services at Oxford station. This creates the need to build a fourth through platform to enhance overall capacity.

- Neither will it be possible to add new services between Oxford and Heathrow Airport as part of connectivity improvements to provide a direct rail service from Oxfordshire without a grade-separated junction east of Didcot. The potential extension of services from Heathrow Airport may also drive the need for train stabling facilities near Didcot, bringing with it new skilled engineering jobs.

The kind of major infrastructure required can take many years to develop, which is why we are urging Network Rail to start planning now so they are ready to start delivering the infrastructure for these extra services in the early years of Control Period 6 (CP6, 2019-2024). The planned levels of growth, particularly in our enterprise zones, rely heavily on better connectivity and the ability to access new job markets and attract highly-skilled people. Our aspiration is to have four trains per hour between Oxford and Didcot (Science Vale) to support housing, retail and employment growth in these locations. Oxford cannot wait another 10 or 15 years for the rail infrastructure it needs to allow more services to reach the city.

One scenario may be to stage the enhancements but if so, all stages should be planned together and delivered without a lengthy delay between each stage, as follows:

- Stage 1- A firm commitment to deliver a major upgrade of Oxford station before 2024, including two additional tracks between the station and a point north of Radley, which can be built within the existing railway boundary. This will unlock the potential to develop the Cowley line for new passenger services.
- Stage 2 – a flyover or dive-under east of Didcot to reduce conflicting movement along with extra tracks to separate traffic flows (rather than sharing a section of track with other services);
- Stage 3 – two additional tracks between Didcot East and Radley, paired by speed to optimise capacity, with new infrastructure south of Oxford to separate and manage the flow of traffic that diverges north of

Oxford. The existing tracks would become the relief lines used by higher frequency services to Culham and Didcot, including East West Rail services, with the new main lines used by CrossCountry and fast services from Oxford to Reading, cutting five minutes from their journey time over this section.

It is critical for the economy of Oxfordshire and the United Kingdom that the rail industry rises to the challenge and removes these constraints by delivering the infrastructure to allow free movement of goods and people on this strategic section of the national network. Growth in intermodal freight and passenger services must not be supressed until 2025 or even 2029 if we want to maintain and grow our competiveness at home and abroad.

Other complementary measures may involve improved operational flexibility by increasing the maximum speed on the relief lines between Didcot and Reading so it is similar to the main lines to minimise the time difference between using either set of tracks. Also, in the short term, it will become increasingly important to make better use of the available capacity, with freight and passenger services considered on an equal basis. If station usage shows a trend of low use with limited potential to increase, freight will be a better use of the capacity – shifting freight onto rail results in fewer lorry movements, less congestion and better road safety overall. Where there is strong passenger use, or planned development, the level of service at those stations should be sufficient to encourage greater demand.

The county council expects Network Rail to deliver the infrastructure that is needed to support economic growth in the Oxford Knowledge Spine, and specifically to enable introduction of new train services to Heathrow Airport, and destinations on East West Rail, at the earliest opportunity in Control Period 6.

We will work with local partners including the Local Enterprise Partnership to support the rail industry in bringingforward firm proposals that add capacity and capability to the rail network.

Oxford Station

Oxford station has been recognised as being a major constraint within the Didcot-Oxford corridor, and its limitations affect the reliability of trains on the strategic national rail network. It is a major obstacle to dealing with the suppressed demand for rail travel and without expansion it will hinder economic growth in Oxfordshire.

The existing single-storey station building has limited passenger circulating and waiting space, basic facilities and a poor retail offering. It gives a negative first-impression for visitors to a world-class city. At the busiest times of the day it is difficult to move freely around the station, with crowding around the footbridge and ticket barriers. This may worsen with the introduction of new services to London Marylebone in 2016 and to Milton Keynes a few years later.

The operational bottlenecks are the track layout on the approaches to the station, which restricts flexibility of operation by requiring trains to cross the path of other trains north and south of the station to optimise use of the existing platforms, and the lack of through platforms. It is common for trains to be delayed waiting for a platform to become available due to the headway of trains in the timetable and terminating trains that can take several minutes to vacate a platform once passengers have alighted.

The County Council, Oxford City Council and Network Rail have worked together on a long-term vision for major improvement to the station and the public space around the station. The Masterplan was launched in July 2014, and its main features include:

- A new multi-level station building built over the railway on the north side of Botley Road;
- Two additional through platforms by creating two island platforms connected to the station building by lifts and escalators;
- A transport interchange for buses, taxis and cyclists;
- A multi-storey car park;
- Improvements to Botley Road bridge to allow widening of the carriageway and provision of new footpaths and cycle ways. It will also carry the extra tracks needed to serve the new platforms;
- Commercial development, with opportunities for food and beverage establishments, fitness and office accommodation; and
- higher quality public space, in and around the station.

The ambition of the masterplan is to create an exemplary gateway to the city and its delivery is vital to the city's plans for economic growth and regeneration. Along with other planned rail investments, the masterplan will transform Oxford Station into a major rail interchange, with improved facilities to meet passenger expectations. Once seen as the end of the journey for services from London, there will in future be more through services and the station needs to expand to accommodate an increase in train services and passenger growth.

Whilst the masterplan stands well as a concept, the redevelopment and expansion of the station will be driven by a clear need for additional rail capacity through Oxford that will allow the railway to evolve in support of the national and regional growth agenda. Resolving the network blockage through Oxford will act as the enabler to unlock a number of key projects in addition to the expansion of the station itself. Enhanced East West Rail and CrossCountry services, through services to Cowley and a further upgrade of the Cotswold Line become possible once the constraint is removed.

There remains a fundamental gap between what Network Rail is currently looking to provide by 2019 and what the station needs. In part this is caused by the way Network Rail is funded to deliver enhancements in five-year control periods. Their focus is therefore on delivering schemes that have funding secured. In the case of Oxford station, it is preventing progress on developing and planning the long-term solution.

Oxford station needs one comprehensive project that brings together the operational needs of the railway to improve capacity and performance and the spatial ambition set out in the masterplan, supported by a robust and affordable business case that all stakeholders can get behind.

There is a once-in-a-lifetime opportunity to remove a bottleneck that prevents growth in freight and passenger services and will increasingly threaten the local and national economy. A station development group could be formed to develop a single scheme, raising its profile and making sure its importance is clearly understood by planners, decision makers and funders. It should be recognised as being a nationally significant project and necessary to underpin delivery of UK government economic and transport policy.

The county council supports the establishment of a local development group with the aim of bringing together rail-industry projects and the spatial masterplan into a single plan, and to oversee development and delivery ofthe plan with the aim of securing full investment in Control Period 6.

We will support Network Rail in deferring (and ring-fencing) investment from Control Period 5 to Control Period 6to enable partnership work to continue on a developing a plan to deliver a single overall solution.

Didcot Station

Didcot, with a current population of over 26,000 is the main growth area for Science Vale in Southern Oxfordshire, and contains the highest concentration of multi-million-pound science research facilities in Europe. It has two enterprise zones – Science Vale (Harwell and Milton Park) and Didcot Growth Accelerator, which are the catalyst for employment growth and help to attract significant government spending. It also means the district councils can retain business rates, all of which will lead to £120 million of funding towards infrastructure around Didcot.

The town was awarded Garden Town status in 2015 and there are plans for the accelerated delivery of up to 15,000 new homes and 18,000 new jobs by 2031.

The station is the gateway to Science Vale and 3½ million journeys were made at the station during 2014/15, representing average growth of 5.8% per annum over the past ten years. Assuming growth of 4% per annum, reflecting the 20-year national average, the number of journeys could easily reach 7 million a year by 2031.

An £8 million redevelopment of the station forecourt to create a multi-modal transport interchange, with better facilities for bus, cyclists and pedestrians was completed in 2014. A new 800-space multi-storey car park, funded jointly by the Local Growth Fund and the direct award franchise is due to open in summer 2017. A new accessible footbridge will link the car park with the station building.

The development of Didcot station is of strategic importance to Oxfordshire and the wider area and our long term vision is to transform the station into a strategic transport hub. To do so it will need further expansion to accommodate expected rail growth and to reflect its role as “a key gateway” as outlined in the Strategic Economic Plan.

We have identified improvements that seek to integrate the station with developments in the town and ensure a sense of arrival at the heart of Science Vale with clear links to the town centre, Milton Park and Harwell Oxford. They are:

- A new station building with a larger footprint comprising three floors and a modern glass façade. We envisage the ground floor having retail space for a convenience store, café and cycle hub, toilets and staff accommodation. The subway to Didcot Railway Centre would be retained. The second floor could have a large waiting area with café/shop, ticket office and toilet facilities along with staff accommodation; it will provide level access onto platform 1. The third floor will lead to a new footbridge that will connect the building to all the platforms and the proposed new northern station entrance. There could be staffed ticket barriers and circulating space, staff and management accommodation. Lifts and stairs would connect all floors and make the station fully-accessible.

- A northern station entrance to improve pedestrian and cycle access from the residential areas of Ladygrove and North East Didcot. We envisage this having an entrance hall with ticket rchasing machines and staffed ticket barriers with lift and stairs to either an extension of the existing subway or a new pedestrian bridge to the station building. The limited headroom and narrow width of the subway may be a constraint to future growth. There would be new footways and cycle paths as well as facilities for drop-off accessed from Cow Lane.
- An integrated rail and bus network based on the station interchange offering seamless connections available between bus and rail services as part of the Science Transit initiative, including smart ticketing and a commercially viable bus network.

There remains a need for improved connectivity with other areas of the country and to international markets to support population growth, global economic activity and business growth. In particular:

- Increase mainline services with additional peak time services to/from London, and a standard off-peak service of four trains per hour; Bristol via Bath Spa, Bristol via Bristol Parkway, Cardiff and Gloucester/Cheltenham;
- Introduction of East West Rail services, with half-hourly services linking three growth areas in the Oxfordshire Knowledge Spine, and with Milton Keynes and Bedford. From 2024 it may be possible for these services to be extended to Heathrow Airport by using the new Western Rail Link, giving international visitors to the high-tech science facilities a fast, direct journey; and
- Reintroduction of Cross Country services will provide direct links with the West Midlands and Birmingham Airport and to the core cities making up the Northern Powerhouse - Manchester, Liverpool, Leeds, Sheffield and Newcastle.

The county council will work with South Oxfordshire District Council, Network Rail and Great Western Railway to develop a masterplan for the station with the intention of making a strong case for investment during ControlPeriods 5 and 6, (CP5, 2019-2024 and CP6, 2024-2029).

We will continue to work closely with Network Rail on their long-term planning of the rail network to ensure that future enhancements are safeguarded and not frustrated. We will respond to rail industry consultations on future franchise requirements and will stress the importance of better connectivity with other areas of the UK.

Cowley Line

The county council commissioned an initial study to assess the capacity and capability for introducing a half-hourly passenger service to support job creation, business development and new housing. Two new stations are envisaged in the locality of the Oxford Science Park and Oxford Business Park. Using the standard rail industry method for calculating demand, we considered a number of different train service options, with those to Banbury and London shown to have the greatest potential to generate new rail trips. A through service to London had the best business case as the higher fares generated the most revenue. However, both service options failed to cover the cost of operating the service.

The study concluded that it would be challenging to create an operationally robust timetable due to the number of trains using the main line south of Oxford station and the layout at Kennington where northbound trains would have to cross all tracks.

Chiltern Railways, who had been consulted during our initial study, undertook their own assessment in 2015 looking at the possibility of extending one of their London Marylebone to Oxford services to provide an hourly weekday service with extra trains at peak times. However, an hourly service is not likely to attract many potential passengers when there are other, more frequent, travel options.

It was estimated up to 2,500 journeys each weekday could be generated, but off-peak and weekend demand was minimal. This reflects the primary focus on commuting with the stations being mainly employment destinations rather than places of origin. They concluded there is no business case for operating weekend services, even on an hourly basis unless their operating costs were offset against the more lucrative weekday service.

Both studies identified the intensity of use and lack of capacity on the tracks south of Oxford as being a major constraint to developing the branch line. This could be resolved by provision of extra track on the east side of the railway so trains to Cowley can operate independently without affecting the main line. This new infrastructure should form part of the Oxford Corridor Capacity Improvement scheme.

The County Council will support the rail industry as it develops proposals to add more capacity in the Oxford corridor, and will work with the Local Enterprise Partnership to consider funding opportunities.

North Cotswold Line Upgrade

Significant improvements have been made on the North Cotswolds Line in recent years and the completion of 20 miles of track redoubling in 2011 enabled the introduction of additional services. Passenger growth has been significant and journeys from the seven stations in Oxfordshire have increased by 67% since 2002 to 741,350. Exceptional growth has been seen at Hanborough (up 239%) and at the busiest station on the line at Charlbury (up 30%).

There is significant demand and further passenger growth is being supressed, by train capacity and by relatively poor access to rural stations. There is potential for further growth with the introduction of an hourly service in December 2018. New trains will bring increased capacity with additional seating and will also achieve faster journey times, with some services from Hanborough reaching London Paddington in 63 minutes.

We have a strategic aspiration to develop Hanborough station as a transport hub, and it can help to reduce congestion on the A40 as part of a package of public transport measures contained in our A40 Strategy. To fulfil its potential, the station will require a larger car park, footbridge and new platform so any trains extended from Oxford can terminate and turnaround. In supporting any proposal, we will carefully consider the routeing of station traffic to mitigate its impact on the local road network and surrounding villages.

Appropriate levels of car parking should be provided at other stations to meet the demand created by service improvements and encourage people to use their nearest station. We would also welcome improved cycling facilities, and bus links where there is demand for them to be provided on a commercial basis.

To fully realise the potential of the railway, further redoubling will be required at the eastern and western ends of the line, between Wolvercot Junction and Hanborough, and from west of Evesham towards Pershore. This would

allow up to three trains per hour to Hanborough and/or Chalrbury and two trains per hour between London and Worcester, with a journey time under two hours.

There are many level crossings on the route used and these will need to be assessed to ensure a safe, efficient and reliable railway, especially with any increase in train frequency and potentially also an increase in speed to achieve a faster journey time. A review of the smallest stations will need to consider how they may be served in future given the competing demands to improve end-to-end journey times and meet suppressed demand at the busiest stations.

In the longer term, once there is additional capacity on the line, it may be possible to reopen the old railway between Honeybourne and Stratford-upon-Avon. This would boost tourism in the Oxfordshire Cotswolds and give a direct rail link between the popular tourist destinations of Oxford, the Cotswolds and Stratford-upon-Avon. An initial feasibility study identified some engineering challenges and further development work will be required to find affordable solutions.

The county council supports in principle the development of Hanborough station, subject to an assessment of highway capacity and traffic impact, and will work with Great Western Railway and West Oxfordshire District Council to develop an acceptable proposal for expanding the station;

As highway authority, we will participate in a level crossing review, with the intent of reducing the number of level crossings to improve safety and reduce journey times.

We will support a review of the stations with an annual footfall of less than 100,000 journeys to look at their current and future role and the options for serving them in the future.

Access to Heathrow Airport

Heathrow is the UK's busiest airport and handles the most international passengers of any airport in the world. The airport has excellent connections to central London but there are limited options for rail passengers travelling to Heathrow Airport from other areas.

It will involve building a new 5.5km railway that will leave the Great Western Main Line between Langley and Iver before entering a tunnel to pass under the M4 and M25 motorways to join the existing rail lines at Terminal 5. Heathrow Airport Holdings (then BAA) had the foresight to build the rail station underneath Terminal 5 with spare platforms and the ability for train services to continue through them, making western access easier to achieve.

Figure 12: Western Rail Access to Heathrow (*Network Rail*)

A new rail link with the Great Western Main Line will provide a direct rail service for airport staff and for travellers travelling to and from Reading, Oxford, South Wales and Bristol (and until High Speed 2 is completed, also from the Midlands and beyond).

Oxfordshire is strategically located at the heart of the UK road and rail network, within an hour of Heathrow Airport - the UK's and Europe's premier global hub airport. Its proximity to Heathrow makes it a great place to locate and grow business.

The Civil Aviation Authority[9] has identified that annually 2.3 million passengers travel to or from Oxfordshire using London's five major airports, including 1.33 million passengers at Heathrow Airport.

The Strategic Economic Plan strives to create the conditions that make Oxfordshire the location of choice for the world's leading science and technology businesses. Crucial to achieving that will be investor confidence in efficient international connectivity.

A direct connection to Heathrow Airport is a business priority and a significant opportunity to grow the economy of Oxfordshire. Fast, reliable rail access is a determinant of investment decisions for businesses which operate in the global market and is critical to Oxfordshire's economic success – both now and in the future.

The benefits of a western access to Heathrow are:

- Improve business access to Heathrow Airport from Reading and Oxford - it is forecast that the rail market share from Oxford will increase from 4% to nearly 20% as a result of the faster journey - equating to 250,000 new trips by rail each year;
- Improve workforce mobility within the Thames Valley;

[9] Passenger Survey Report 2013, Civil Aviation Authority

- Reduce traffic congestion on the M4, M40 and M25 motorways and the A4; and
- Up to 6,000 jobs created and £30 million GVA

London Heathrow - average AM peak journey time		
Travel mode	Oxford	Didcot
Driving (via A34/M4)	80 minutes	60 minutes
Coach (Airline LHR)	90 minutes	No service
Fast train to Paddington then Heathrow Express	105 minutes	92 minutes
Fast train to Reading then RailAir coach	94 minutes	76 minutes
Western Rail Access to Heathrow (WRAtH)	55 minutes	45 minutes
Time saving - public transport	*-35 minutes*	*-31 minutes*

Figure 13: Comparison of journey time to Heathrow Airport (by mode)

The greatest benefit for the economy of Oxfordshire would be gained by new direct airport services from Oxford and Didcot. This can be achieved if some of the four trains per hour expected to be operated between London Paddington and Reading via Heathrow are extended to provide through services from Oxfordshire. There would also appear to be significant benefits in East West Rail services from Bedford and Milton Keynes also serving the airport when they are extended from Reading to London Paddington.

The Network Rail Draft CP5 Enhancements Delivery Plan anticipates an application for a Development Consent Order being made by the end of 2017, with construction of the rail link due to start in 2019, subject to consent being approved. The new rail link is expected to open in 2024.

The county council will work with the Local Enterprise Partnership to lobby for the extension of two trains per hour beyond Reading to serve Didcot and Oxford, as they can support our international reputation in science and technology.

We will ensure that in discussions with the rail industry about capacity improvements, the solutions do not frustrate future aspirations to extend East West Rail services to Heathrow Airport.

Chapter 5
Committed Projects

Introduction

There are a number of committed projects that are either being developed or already under construction that will have either a direct or indirect impact on Oxfordshire once completed. This chapter explains what they are.

Crossrail

Crossrail is Europe's biggest engineering project and will transform services east of Reading and across central London when the Elizabeth Line, as it will be known, opens in 2018. The line will serve 40 stations from Reading and Heathrow Airport in the west through the West End, the City of London and Canary Wharf to Abbey Wood and Shenfield in the east.

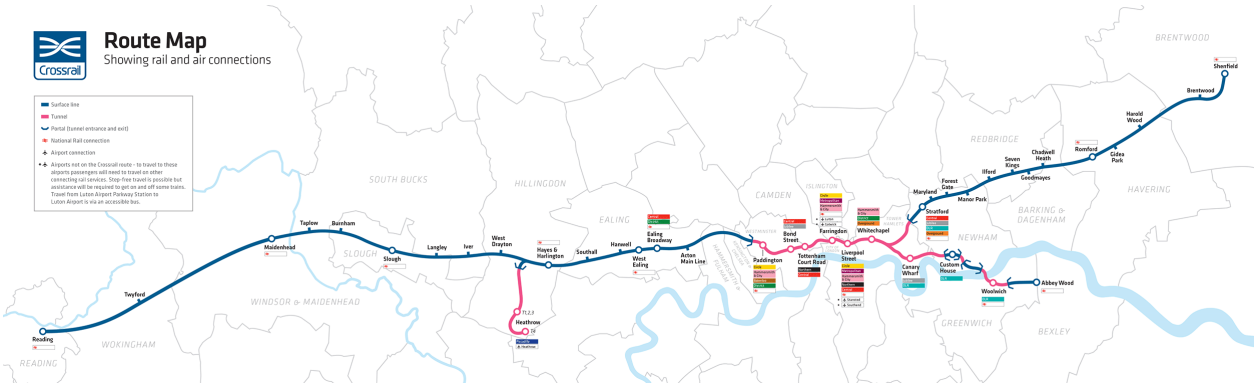

Figure 14: The Elizabeth Line

Crossrail is costing almost £15 billion but will increase central London rail capacity by 10%, and will bring an extra 1.5 million people to within 45 minutes of central London. Estimates suggest it will add £42 billion to the UK economy.

Up to 200 million passengers are expected to use the Elizabeth Line each year. Each train will be around the length of two full-sized football pitches and have nine carriages with accommodation for 1,500 passengers.

The peak-time timetable from the Thames Valley will consist of:

- 2 trains per hour in each direction from Reading
- 2 trains per hour in each direction from Maidenhead
- 2 trains per hour in each direction from West Drayton
- 4 trains per hour in each direction from Heathrow Airport

14 trains per hour will start or finish at Paddington. All trains will serve the West End, the City and Docklands, with half the trains continuing to Abbey Wood and half continuing to Shenfield.
To provide the capacity needed to cope with passenger demand between Reading and London Paddington, the existing peak-time direct services to and from Henley-on-Thames will be withdrawn by 2017 and replaced by a shuttle service to Tywford every 30 minutes throughout the day.

A comparison of journey times after the opening of the Elizabeth Line shows journeys from Twyford to London Paddington taking slightly longer than they do now (44 minutes compared to 34 minutes), but journeys to the City and Docklands will be on average 10 minutes quicker in future, and with no change of train required.

The county council welcomes and supports the Elizabeth Line, but expects timely connections to be provided at Twyford between the GWR Henley-on-Thames branch line services and TfL's Elizabeth Line so the end-to-endjourney time to the City of London is no longer than it is in 2016.

Great Western Electrification

The Great Western Main Line is the longest non-electrified intercity route in Britain, and the strategic case for electrification is based on three main benefits – reliability, capacity and performance.

The existing fleet of High Speed Trains were introduced in 1976 and, whilst they have been updated many times over the past 40 years, they are now coming to the end of their working lives. From a passenger perspective, electric trains will provide a better experience with facilities such as accessible toilets and at-seat catering, and an improved level of comfort through reductions in noise and vibration.

The lines into London Paddington are some of the busiest in the UK, and the past decade has seen sustained growth in rail travel. With this demand set to continue increasing for the foreseeable future, especially into London, Reading and Bristol, electric trains can provide more seats compared to a diesel train of similar-length.

Electric trains have greater reliability and require less maintenance. They can accelerate and decelerate faster which will reduce journey times by up to six minutes from Oxford to London.

Electrification presents huge opportunities -

- It is better for the environment as electric trains are more reliable and emit 20% less carbon per passenger mile than a diesel train, even allowing for generation of the electricity used. They are quieter and virtually silent when waiting at stations;
- The new fleet of trains will have more seats and journey time savings can be made as they will accelerate faster;
- Electric trains are generally cheaper to buy than diesel trains, and lease costs are typically around 20% lower. This advantage is set to increase as diesel engines are likely to become heavier, larger and more expensive to meet stricter EU emissions standards; and
- Cutting costs as electric trains are around 35% cheaper to operate, are lighter causing less wear and tear, and they require less maintenance.

The electrification of the Great Western Main Line from Maidenhead to Swansea, including the lines to Oxford and Newbury, was first announced in 2009, and was given the go-ahead by the coalition government after the 2010 general election.

Figure 15: Electrification infrastructure near Didcot Parkway

A new fleet of Super Express Trains will replace the aging HSTs as part of the InterCity Express Programme (See Chapter 6). The Thames Turbo diesel trains will be cascaded to services around Bristol, and will be replaced with a mix of 37 four-carriage Class 387 trains and 21 four-carriage Class 365 trains from spring 2016. These new trains can run with up to 12 coaches to provide the extra capacity needed to cater for future growth.

The Hendy Review into Network Rail's 2014-2019 capital investment programme identified that costs had tripled from the original estimate of £874 million to £2.8 billion, but confirmed the main programme will still go ahead, albeit with some route sections re-prioritisation . The revised dates for the completion of electrification work were published in early 2016, with electrification to Cardiff via Bristol Parkway and the route from Reading to Newbury planned by December 2018; the line from Didcot to Oxford by June 2019 (three years later than originally planned); and the line to Bristol Temple Meads from Wootton Bassett by April 2020. The Cardiff to Swansea section will be delayed to sometime between 2019 and 2024.

The Henley-on-Thames branch line will also be electrified by December 2018, enabling the introduction of 4-car trains to replace the existing 2 or 3-car trains on an enhanced half-hourly shuttle service calling at all stations to Twyford.

The county council will work with Network Rail to facilitate the efficient delivery of highway works associated with electrification.

We will reiterate the importance of Network Rail completing the work to the revised programme and that wider 'opportunity' benefits, such as road widening or improved footpaths/cycle routes, are included where it is cost-effective to do so.

The Electric Spine

In 2012, the government announced[10] plans for a high-capacity freight and passenger route using existing tracks from the south coast to Oxford, where one route will run via Banbury to Leamington Spa, Coventry and the West Midlands and another will use East West Rail to Bletchley, Bedford and the East Midlands.

The electric spine would facilitate journey time and environmental benefits through use of electric passenger trains and bring efficiency savings to attract more freight from road hauliers and encourage investment by the private sector t in new electric freight locomotives. These would haul longer and heavier intermodal trains from Southampton Docks to the freight terminals in the north of England. To date, no orders have been placed for new electric locomotives and the freight industry remains sceptical about the benefits of the project.

The routes identified to form part of the electric spine include Southampton to Reading via Basingstoke, Oxford to Nuneaton via Banbury, Leamington Spa and Coventry, and Oxford to Bletchley and Bedford. The tracks between Basingstoke and Reading, Oxford and Bedford, the Midland Mainline and Leamington Spa to Coventry were prioritised and were due to be completed by 2019, with the other routes being completed in subsequent railway Control Periods.

The government paused development work on the planned electrification of the Midland Main Line between Bedford, Nottingham/Derby and Sheffield for three months. Following the Hendy review into Network Rail's investment programme, only the Bedford to Kettering/Corby section is expected to be delivered before 2019, with development and delivery of the electric spine being deferred into Control Period 6 (CP6, 2019-2024).

The county council will expect Network Rail to consider the development and future delivery of the 'electric spine' when delivering its committed projects in Oxfordshire.

We will encourage Network Rail to bring forward the delivery of electrification between Oxford and Bletchley.

Intercity Express Programme

The Intercity Express Programme is intended to replace the 40-year old InterCity 125 fleet on the Great Western Main Line. In 2009, the government announced that their preferred bidder to deliver this new fleet of electric trains was Agility Trains, led by Hitachi. An order was confirmed in July 2012.

The new fleet of 57 Super Express Trains will be introduced onto services between London Paddington, Oxford, Bristol and South Wales. Valued at £2.4 billion, the fleet will comprise 369 carriages consisting of 21 nine-car all electric (Class 801) and 36 five-car electric/diesel 'bi-mode' trains (Class 800).

The trains will be 15% more fuel efficient and weigh 86 tonnes less than existing HSTs which will allow faster journey times. They will be the first long-distance bi-mode trains operating anywhere in the world, and their 26 metre carriages will be a first in Britain.

[10] High Level Output Specification, Department for Transport, July 2012

The bi-mode variant will be used on services that travel over non-electrified routes, such as the Cotswolds & Malverns Line. At the busiest times, they can be joined together to form 10-carriage trains and they will be able to switch between overhead electric power and their on-board diesel engines whilst stationary or when on the move.

The first pre-production trains arrived from Japan in 2015 and are undergoing initial testing before the first production trains are delivered. The trains are expected to enter passenger service from May 2017, with all trains in service ready for timetable improvements that are expected in December 2018.

The county council supports the introduction of Super Express Trains which will transform rail services through Oxfordshire and provide extra capacity to cope with future demand, whilst also reducing journey times and improving air quality by reducing carbon emissions.

High Speed 2

Building a new high speed rail network in Britain is a government commitment, and a preferred route for the first stage of a new railway between London and the West Midlands was announced in March 2010. This has been subject to a number of minor modifications following public consultation.

The track passes through 3.4 miles of Oxfordshire, entering the county north of Godington on a low viaduct for a short distance and then re-entering east of Newton Purcell in a cutting that follows the old Great Central Railway alignment. The A4421 will be diverted over the new high-speed tracks and they will enter a deep cutting to pass below the A421. The tracks will deviate from the old railway alignment, passing to the north east of Mixbury in a series of cuttings and viaducts before they cross the River Great Ouse to exit the county.

In January 2012, the Government announced that HS2 will be built in two phases, with the line from London to the West Midlands expected to open in 2026, with an extension to Manchester and Leeds by 2033.

The government deposited a hybrid Bill, known as the '*High Speed Rail (London - West Midlands) Bill*, with Parliament in November 2013 to secure the powers needed to construct and maintain the new railway between London and Birmingham. The Bill will grant the powers to acquire land, divert or close rights of way, roads and waterways, modify any infrastructure belonging to utility companies and carry out demolition or protective work on buildings in order to build the railway.

A series of amendments to the original Bill, known as 'Additional Provision' were submitted to Parliament and examined by a Select Committee. The hybrid Bill completed its third reading stage in the House of Commons in March 2016 and has been introduced into the House of Lords. It is expected to achieve Royal Assent by the end of 2016.

The county council will identify highway improvements that it will expect HS2 Limited to consider funding where the new railway interfaces with our highway network. Working with HS2 Limited we will seek to mitigate the impact of building the new railway on residents and businesses, particularly by planning and monitoring the routeing of construction traffic and activities.

We will expect HS2 Limited to bring added value to East West Rail if there is an opportunity to do so where the two lines will run alongside and where they intersect at Claydon.

Chapter 6
Potential future projects

Introduction

There are a number of strategic projects which are unlikely to be achieved during the period of this strategy but remain longer term ambitions. Further development work will be required at an appropriate time to define the output required and determine if a business case exists that would justify future investment.

East West Rail - Central Section

The former railway between Bedford, Sandy and Cambridge was closed in the 1960s and some of the land has been sold and developed for other uses. Within the overall East West Rail project this is therefore the most difficult and costly part of the route to reinstate.

The East West Rail Consortium commissioned a study to determine the business case of a new rail line from Bedford to Cambridge to identify where economic activity and potential growth could be supported by a new railway. This concluded that improved rail connections and services could deliver sufficient economic benefit to justify investment. This will enable train services to operate between Oxford and Cambridge, and potentially onto Norfolk and Suffolk.

Network Rail has evaluated a long list of potential corridors, considering population and employment, operating costs, passenger and journey demand, the infrastructure and train service opportunities. In April 2016, they announced the single preferred geographical corridor from Bedford to Cambridge was via Sandy, with the evidence indicating it offers the best return on investment.

Further analysis and consultation will take place to determine the precise route of the new line on a map within that corridor. This will demonstrate a solid evidence-base that can be put forward for consideration for investment, most likely in Control Period 7 (CP7, 2024-2029).

The county council supports the ongoing development work and will continue to work with Network Rail and the East West Rail Consortium to bring forward a proposal for delivering this vital section of missing railway, thatultimately will lead to direct rail services between Oxford and Cambridge.

Culham Station

Once the capacity constraints have been removed from the Oxford to Didcot corridor, there is a significant opportunity to redevelop Culham station as a transport hub, recognising its importance and potential as a gateway to support growth and development at the adjacent Science Centre.

Culham Science Centre is an internationally renowned centre for fusion energy research, development and technology and forms part of the globally significant science, technology and innovation cluster known as Science Vale Oxford. It hosts over 40 organisations from small start-up companies at the Culham Innovation Centre to global leaders in bio-science. It is the northern hub of Science Vale Oxford.

There is potential to radically improve the transport offer with better rail, bus and road links that could unlock land surrounding the station for commercial and residential development. This would need to be considered through the Local Plan process but a location with good sustainable credentials may offer a solution to accommodating some of the unmet housing need from Oxford City.

Our rail ambition includes the following elements:

- Dynamic passing loops with platforms to allow 'fast' services to overtake trains stationary at the station without reducing capacity of the network – this could be delivered as part of the Oxford Corridor Capacity Improvement Phase 2 scheme from 2019;
- An enlarged station, with accessible footbridge, passenger facilities and car parking;
- An improved bus interchange, and direct connections with the highway network, including proposed new link road;
- Direct pedestrian/cycle access with Culham Science Centre and Site One;
- A minimum of two trains per hour in each direction throughout the day.

The county council will work with South Oxfordshire District Council and the rail industry to identify future opportunities for a new station, and to assess its financial and operating viability and potential to supporteconomic growth, job creation and new housing.

Oxford – Didcot - Swindon

The 24 miles of railway between Didcot and Swindon consists mainly of two-tracks with a passing loop at Steventon and another between Challow and Wantage. With a mix of 125mph passenger trains and 75mph freight trains the limited opportunities for slower trains to pass faster passenger trains is a major constraint. The 11 miles between Challow and the outskirts of Swindon is a constraint as passenger trains only take 6½ minutes to travel this section whilst a freight train can take three times as long. Other constraints include the road bridge and the two level crossings at Steventon. Although timetable solutions are possible they will lead to longer journey times and a reduction in the number of trains so are undesirable, and extra infrastructure will be necessary to accommodate train services beyond 2023.

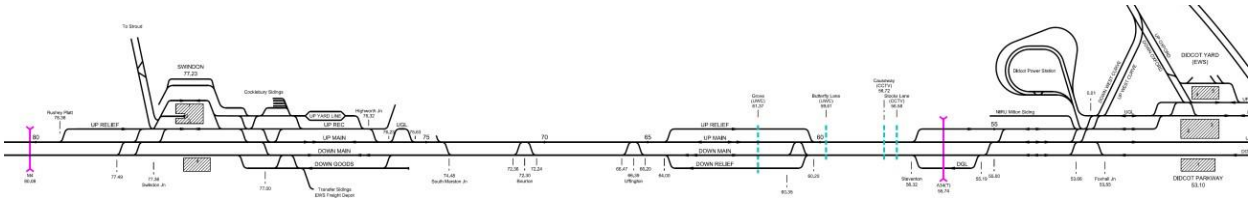

Figure 16: Electrification infrastructure near Didcot Parkway

There are currently five passenger trains per hour in each direction throughout the day and one freight train per hour in the off-peak, generally between 10:00 and 16:00. Table 14 shows how services will gradually increase over the coming years.

Table 14: Train service growth: Didcot to Swindon

Service Group	Trains per hour (peak /off-peak)			
	2019	2023	2033	2043
London Paddington – Bristol via Bath Spa	2tph	2tph	3tph	2tph
London Paddington – Bristol via Bristol Parkway	2tph	2tph	2tph	2tph
London Paddington - Cardiff	2tph	2tph	2tph	4tph
London Paddington – Cheltenham Spa London Paddington – Worcester via Cheltenham Spa	1tph -	1tph -	1tph -	- 1tph
London Paddington – Didcot - Swindon	2tph/-	2tph/-	2tph/-	
(East West Rail) Oxford – Bristol via Bath Spa			1tph	1tph
London Paddington - Gloucester				1tph
Freight	-/1tph	-/2tph	-/3tph	-/3tph
Maximum Infrastructure Capability	8tph	9tph	12tph	14tph

There are several options for adding capacity including extending the existing four mile passing loop towards Bourton in the west to create a new 12-mile loop that would be adequate to handle the level of service at 2033 but would require further extension towards Swindon and Steventon to create a predominately four-track railway by 2043. This final configuration would have the capability to handle up to 11 passenger trains and six freight trains every hour in each direction. Network Rail is currently evaluating the options and will present its initial advice to the Department for Transport in September 2016.

A more immediate enhancement is required to remove the conflict that exists between freight trains from Oxford that are heading towards Swindon and main line services, as the former currently have to cross all the main line tracks at Didcot West. This will help improve train reliability and allow two additional services to be introduced from 2023. In the future it would make operational sense to pair the tracks to Swindon by speed, as they are to the east of Didcot, which would put the slower speed tracks used by freight and stopping services on the north side of the existing railway.

The rail industry has already identified a need for a new passenger service to connect the south west of England with England's Economic Heartland, and potentially the East Midlands or East Anglia, without the need to travel across central London. It is intrinsically linked to our ambition for a new station to support growth in Grove and Wantage. This will be possible following the completion of East West Rail Phase 2 in 2019, but is subject to further business case development and a future franchise specification. To understand its full potential it will be necessary to work with neighbouring local authorities who might also gain benefit from a new train service, especially where they have plans for other new stations, such as Royal Wootton Basset and Corsham.

The county council will work with Network Rail to ensure that investment in new infrastructure deliver s the best outcome for local residents and businesses, with minimal environmental impact ,and will also work with the rail industry and neighbouring authorities to evaluate potential for a new train service between Oxford and Bristol.

Grove Station

The county council has a long-held ambition to reopen a station to serve Grove and Wantage. It had developed an outline proposal for a station on land adjacent to the A338 on the northern outskirts of Grove, but withdrawal of the Oxford-Bristol train service in 2003 was a major setback and the proposal was not developed beyond the outline planning consent, which lapsed in 2011.

Reconstruction of the A338 bridge, involving a realignment of the road and the building of an electricity feeder station for the Great Western Mainline electrification now means the land we had previously identified for a new station is no longer available.

We now need to look at alternative sites for a station, and consider the demand for a rail station, in the context of both recent and planned housing and employment development. We will also review the type of station and whether it should be a 'local' station or attract people from further afield; which would strengthen the economic case for investment. In doing so we will consider how it should be accessed. We will endeavour seek to get the site safeguarded so that it can be progressed in the future.

It will be necessary to understand the financial and operating viability of the proposal at an early stage, and to produce a robust business case that can be used to justify any investment. A significant factor that could affect the prospects for a station might be further development in the Grove area beyond that currently proposed. This is a matter for the district council but it is looking unlikely, at least in the current Local Plan period to 2031. It means a new station, even if proven to be financially viable, is unlikely to be considered until Control Period 8 (CP8, 2029-2034) at the earliest.

Our expectation is that a new station could be served by the hourly passenger service to be introduced between the south west of England, Oxford and the East Midlands by 2033, and peak-hour services to and from Didcot, Reading and London Paddington.

The county council will seek to identify a site for a new station and evaluate the potential demand based on various growth and train service scenarios. Working with Vale of White Horse District Council we will seek to safeguard land within the Local Plan to protect the long-term ambition of a railway station.

Oxford – Witney Rail Link

The county council commissioned URS in 2014 to carry out a feasibility study looking at a range of options, either singly or in combination, which could provide a long-term solution for improving transport along the A40 between Witney and Oxford. Their work included a review of the previous rail study carried out in 2001 and considered technical feasibility rather than specific infrastructure and operational issues.

Their study concluded that reusing some of the old railway alignment was feasible but there were significant issues, including deviation from the old alignment at Eynsham, South Leigh and south of Witney requiring land acquisition, difficulty in constructing new road bridges in some locations, a need for extensive work to drainage and earthworks, and being unable to cross the A40. Witney could only be served by a parkway-type station at Ducklington, and this would affect the amenity at Duckington Lake and require changes to the A40 slip roads

and possible demolition of the Four Pillars Hotel. The location of the station will generate extra local traffic but may not attract car users from residential areas in the town. A railway is unlikely to alleviate traffic congestion on the A40 on its own, and the estimated cost for a basic single-track railway at £289 million would in any case only facilitate an hourly train service. That level of service raises questions about its attractiveness to users, and particularly for short distance journeys to Oxford, and does not meet our strategic aim to reduce congestion and improve air quality.

An alternative new railway alignment north of the A40 was also considered, along with options such as 'tram' or tram-train. The study confirmed that trams could only be justified if there were also an extensive tram network with on-street running in the centre of Oxford and the surrounding area. The benefits of tram-train was thought to be limited as there is only a short section of shared infrastructure, between Oxford and Yarnton.

There was considerable public support for reinstating a rail link during the public consultation held in autumn 2015 to inform our long-term A40 Strategy, and it was the most favoured public transport option. A single track railway places a constraint on the level of service that could be provided, as does the capacity issues on the rail line through Oxford station. The low frequency of trains raises concerns about the commercial viability of a train service. A much greater population would be needed to compensate for the low frequency service but that is not part of the current Local Plan being taken forward by West Oxfordshire District Council. Rail industry resources and finances are focused on resolving the capacity constraints on the existing rail network, and it is unlikely we can progress this scheme in the foreseeable future.

Our A40 Strategy was agreed in May 2016 and proposes a combination of dual-carriageway and bus lanes. In the short-term, £35 million has been secured from the Local Growth Fund for the first stage of an A40 corridor upgrade, including a Park & Ride near Eynsham and associated measures such as eastbound bus priority and junction improvements. The may be an opportunity to link the Park & Ride with Hanborough station with a bus service, but only if this can be operated commercially without subsidy.

The strategy recommends a length of dual-carriageway between Witney and the Park & Ride, with further bus priority along the A40 between the Park & Ride and west of Wolvercote roundabout. Whilst the aspiration of reinstating a rail line remains, the Council is not taking it forward at this time.

The county council will retain the option of a rail line to Witney as a longer term aspiration in its A40 Strategy, and will pursue opportunities to realise the aspiration with Network Rail and train operators in the future.

Banbury Station Redevelopment

Banbury station functions satisfactory for rail passengers, but the area surrounding the station does not provide an attractive or welcoming gateway to the town, or recognise its proximity to the main shopping area and local bus services. The existing forecourt layout does not provide a practical transport interchange.

There are known problems with traffic congestion at the Station Approach/Bridge Street junction which hampers access to the station at peak times. Pedestrian access between the station and town centre and buses is hampered by the road layout and crossing facilities. A recent improvement has been a new multi-storey car park to the east of the station, located off Merton Street, with a connecting footbridge to the station.

A proposal has existed for several years to provide a bus-only link between Bridge Street and Tramway Road but has not secured funding. To meet an increasing demand for travel, broader proposals are now being developed to provide an integrated rail and bus interchange on the forecourt, with an improved public realm giving a sense of arrival and more space for pedestrians, better cycle facilities and a taxi rank, as well as providing for through bus services.

The county council will continue to work with Cherwell District Council and Chiltern Railways to develop proposals for redeveloping the station forecourt that improve access by sustainable modes to the national rail network in support of growth around the town.

Proposed Heyford Park station

Heyford Park is located 6 miles northwest of Bicester. It has established itself as one of Oxfordshire's leading business parks, with over 100 businesses employing over 1,200 people.

When the airbase was sold by the Ministry of Defence it was promoted as having the potential for up to 10,000 new homes. The first of 1,000 homes have already been completed, and the developer has recently sought permission to increase this to 5,000 new homes. There is strong demand for housing in Oxfordshire and Cherwell District Council is considering the site as a potential 'new town' to meet their housing supply targets in the Strategic Housing Market Assessment and provide a five-year land supply.

It is possible the developers will want to further develop the 1,200-acre site by providing up to 10,000 new homes and increasing the range of commercial property available to attract new businesses; this will realise the full potential of the expansive site.

The Chiltern Mainline runs in a shallow cutting less than 300 metres to the east of the site and a station existed at Ardley until 1963. Unlike the line through Lower Heyford, it s not constrained by capacity. A new station will make this a highly-sustainable and attractive development location.

A new station at either Upper Heyford or North-West Bicester could be served by the regular Chiltern Railways service between London Marylebone and Banbury/Birmingham, providing local connectivity and direct or onward connections with London and the West Midlands. Further work will be necessary to look at the demand for a station and potential site(s) to see whether it 'stacks up' in terms of benefits and costs.

The county council will work with Cherwell District Council, developers and the rail industry to identify future opportunities to progress one new station between Bicester and Aynho, and to assess its viability and potential to support economic growth, job creation and new housing.

Proposed Bicester Eco station

North West Bicester (Bicester Eco) is a proposed 6,000-home development to create a zero carbon development on the edge of Bicester. It was one of four eco-towns given the green light by government in 2009 to be a showcase for environmentally sustainable communities through measures such as renewable energy,

high energy efficiency and sustainable travel options. The development will also include complementary commercial development.

The site is located on both sides of the Chiltern Mainline, which passes through the centre of the development on an embankment. The first phase of the development to provide 393 new homes, a new primary school, local shops and offices, and an eco-business centre has already started. A masterplan will guide development for the remainder of the site as it takes place over the next 20 years.

The masterplan currently assumes there will be two high-frequency bus services between the development - one to the east and one to the west of the railway line - the town centre and Bicester Village station. These may be extended to serve other areas of the town or connect with longer distance bus services.

We recognise the masterplan seeks to limit the need to travel by provision of employment and a range of local facilities in close proximity to homes, but it has limited influence over people's choice about where they live, shop or work. There is an ambitious target for at least 35% of trips to be within the development and 60% to be within Bicester as a whole.

Where travel is necessary the masterplan aims to encourage high quality public transport to reduce the overall environmental impact, especially for longer journeys. Providing a station close to the development would help significantly increase the attractiveness of rail as an alternative to using the A34/M40 for north-south journeys.

A new station at either Upper Heyford or North-West Bicester could be served by the regular Chiltern Railways service between London Marylebone and Banbury/Birmingham, providing links to both local urban centres and direct or onward connections with London and the West Midlands, subject to further work to identify a positive business and operating case.

The county council will work with Cherwell District Council, developers and the rail industry to identify future opportunities to progress one new station between Bicester and Aynho, and to assess its viability and potentialto support economic growth, job creation and new housing.

Chapter 7
Supporting Rail Growth

Introduction

This chapter sets out how growth on the rail network relies on many factors, such as the adequacy of the road network, car parking at or near a station, ease of access, competitive pricing and availability of fares and the ability to expand stations to meet future demand.

First journey impressions are critical in determining whether someone will chose to travel by train again, and it should be a commercial imperative for the Train Operating Company. We need to consider how people receive the information that helps them plan their journey, such as train times and fares, and why it should be easy for them to get to and from the station seamlessly and without any hassle.

There needs to be a new emphasis on the 'whole journey experience' as travelling by train is often only part of a longer journey. Passengers also need to get to and from the station so their overall experience begins a long time before they step foot in the station.

Evidence from Transport Focus emphasises the importance of the "end to end" journey experience of using the railway, including:

- Getting to and from the station;
- Buying a ticket, either in advance or at the station;
- Using the station (waiting facilities, accessibility, toilets etc.); and
- The train service (frequency, reliability, seat availability and journey time).

Getting to and from the Station

When considering the 'whole journey experience', the quality and ease of access to and from the station has a major influence on the choice of rail as the main journey mode.

Active and healthy travel can enable people build exercise into journeys that may already form part of their daily routine, rather than try to find time in busy lives to add exercise as an extra task. Walking or cycling can often be used to replace car trips to the rail station for instance. Our Active & Healthy Travel Strategy sets out a vision for healthy sustainable travel, including walking, cycling and door-to-door multi modal travel.

Walking

Nationally, walking is the most frequent mode used for very short distance trips: 76% of all trips under one mile are walks which makes it hugely significant option for people to get to and from their station in most towns and villages. Walking is the healthiest option because it is good for our physical and mental health and often leads to social cohesion when people meet one another whilst walking on a regular basis.

The county council in collaboration with the Active Travel Steering Group will seek funding to improve walking routes to rail stations where there is evidence of existing or potential demand. Improvements may consist of step-free dropped kerbs, facilities for crossing roads, clear signage with timings and/or distance, and conflict free segregated routes so pedestrians do not mix with other traffic.

In town centres, there should be clear wayfinding to and from the railway station, using simple yet distinctive signage that is consistent and easy to follow. The use of colour is a good visual prompt whilst public art can create a sense of place and act as reassuring milestones.

The County Council will work in collaboration with the Active Travel Steering Group to seek funding to improve walking routes to stations where there is evidence of existing or potential demand, and will expect the station operator to continue pedestrian improvements within the station.

Cycling

We want to make cycling a safe, simple and accessible option for people of all ages, and their first choice for short distance local journeys, such as those to and from their nearest rail station. When funding permits, the county council in collaboration with the Active Travel Steering Group will identify routes connecting areas of employment growth with rail stations and areas of housing growth that can be improved to create direct and safe cycle routes. We will ensure that rail stations are sign-posted from national and local cycle networks.

Since 2005, we have provided secure cycle parking at all stations in Oxfordshire and cycle usage has increased at many stations as a result. Examples include Didcot Parkway and Oxford Parkway, where high quality two-tier facilities have been introduced, and Henley-on-Thames, where new secure covered cycle parking had the effect of unlocking suppressed demand. The use of cycle parking should be reviewed annually and spaces increased if there is demand. We welcome the introduction of initiatives such as folding bike hire at stations, as Brompton folding bikes can be taken on buses and trains without time restrictions, making them ideal for commuters.

Bike-rail can provide a seamless journey to almost anywhere, but encouraging and enabling more people to cycle is not simply about providing cycle routes, although that is important. People need to feel confident about travelling by bike. We have identified four measures that train operators should consider introducing to help build that confidence:

1) The compulsory reservation required for cycles on GWR inter-city services should be developed into a real-time smartphone app so potential users can check availability and reserve a space immediately before travel;
2) Sections of a journey where the carriage of cycles is restricted at peak times should be clearly shown by shading in the timetable;
3) Improved security, with all station cycle parking monitored by CCTV and located in a busy thoroughfare where activity may discourage vandalism or theft; and
4) The location of the bike storage area on trains should be clearly indicated on the outside of the train and on the platform to reduce delays in boarding and storing the cycle.

The county council will work in collaboration with the Active Travel Steering Group to improve cycle routes to and from rail stations, including clear directional signage, when funding becomes available.

We will support initiatives by the train operating companies to improve bike-rail integration with clear policies and commitments, platform and train signage and development of cycle hubs offering repair and maintenancefacilities at the busiest stations.

Buses

Railways can move high volumes of people quickly and efficiently. However, completing the journey will often involve using a bus to get between the railway station and employment sites, town centre, hospital or housing development. It is important that bus services operate at the times when they are needed to get commuters to and from a station. This may mean they have to start earlier and finish later than they would normally, and may be something the rail industry might want to consider funding in future to improve access to the rail network.

It is important that bus stops are conveniently located outside the station to enable facilitate easy and seamless transfer between modes. They should be well-signposted and have accurate and up-to-date travel information.

Bus operators recognise the importance of making their services more attractive, and whilst co-ordinating bus and rail timetables to reduce waiting times is very desirable, it can be difficult to achieve. Simply retiming a bus journey to connect with a train can have an impact elsewhere on the route, make the bus service less attractive, or increase costs if an additional bus or driver is required. We will continue to work with bus operators through our Quality Bus Partnership to improve co-ordination and integration.

We have financially supported the award-winning Cotswold Line Railbus since 1994, but funding pressures mean we can no longer afford to subsidise rail-feeder bus services. We will seek to have this type of service funded by the rail industry in future rail franchise requirements.

The county council will work with bus operators to improve co-ordination and integration between travel modes, including bus-rail.

Car Parking

Oxfordshire is one of the most rural counties in the South East. The private car is an important mode of access to rail stations, particularly in rural areas where the dispersed settlements and low level of demand makes the provision of commercial bus services unsustainable and publicly subsidised services are no longer affordable.

In many situations, a station may be too far away or the roads are not suitable for walking and cycling. The car becomes the only realistic option to reach the station.

The provision of suitable car park capacity enhances the attractiveness of the rail service for the longest portion of the journey. It is important that an appropriate level of car parking is provided, and that it is reviewed on an annual basis, so it meets the demand for travel at a particular station. A report for Transport Focus *Getting to the Station* concluded that insufficient parking at stations meant that passengers who had difficulty parking

were instead dropped off and picked up at the station by family or friends; doubling the number of car journeys or, worse still, they chose to travel all the way by car rather than use the train.

The number of parking spaces at each station is regulated by DfT and ORR and this makes it difficult to reduce parking in favour of more sustainable modes, even when they are the best option, for example in Oxford where high frequency bus services and the cycle network offer real alternatives from most areas of the city. It should be possible to reduce, or increase, car parking where it can be shown not to reduce the number of passengers using the station.

As the highway authority, the county council will need to consider the capacity of the road network to handle an increase in traffic generated by any car park expansion, and early engagement by the Train Operating Company will be necessary.

The county council will support car park expansion at rail stations where this can be accommodated without a detrimental impact on the environment and where the road network has capacity to handle the extra traffic.

We will also support the provision of charging points for electric vehicles as part of any car park expansion, andincentives to encourage multiple occupancy of private cars for users of the Oxfordshire LiftShare scheme.

Station Travel Plans

A Station Travel Plan brings together all the stakeholders with an interest in, and responsibility for, rail stations; to develop an action plan with clear common objectives and a coordinated approach to delivering and funding projects that will mitigate the transport impact of the station, such as reducing peak time traffic congestion or encouraging use of sustainable modes.

The county council would like the train operating company managing each station to establish travel plans at the six busiest stations: Banbury, Bicester North, Bicester Village, Didcot Parkway, Oxford and Oxford Parkway.

Journey Planning

The availability of travel information before the journey is important to enable people to plan their journey, and it should be easy to obtain at local stations, online or over the telephone. The information should be impartial and allow people to understand their journey options prior to buying tickets, for instance the most appropriate route and fare for their needs.

The Train Operating Companies produce detailed timetables but do not have the resources to produce bespoke information for every local community on their network. The county council had produced bespoke local guides and leaflets to encourage rail use, particularly on the 'branded' lines[11], but funding pressures mean our whole approach to information provision needs to change, with the emphasis shifting to the train operators to fund and provide what is required in conjunction with the local community.

[11] The 'branded' lines are The **Regatta Line** between Twyford and Henley-on-Thames; the **Oxford Canal Line** between Oxford and Banbury and the **Cotswolds & Malverns Line**.

It is particularly important that accurate and reliable real-time information is also provided to keep passengers informed when train services are disrupted or when an alternative means of travel is required.

Fares and Ticketing

Fares

Tickets are the first major interface between passengers and the rail network, but the complexity of fares and the multiplicity of tickets available can deter some people from travelling by train. Simple, easy to understand fares are vital to ensure people thinking about using the trains get the best ticket for their journey.

Rail fare rises are one of the most emotive transport issues for passengers who rightly want to feel they get value for money. For many years, the policy of successive Governments has been to focus on shifting the funding of the railways so that passengers pay a bigger portion of the cost and taxpayers a smaller share.

Between 2004 and 2013, successive governments allowed regulated fares, which account for nearly half of all rail journeys and include season tickets and off-peak return tickets on long distance trips, to rise by on average 1% above Retail Price Inflation (RPI). A decision by the coalition government froze commuter fares in real terms by allowing regulated fares to increase only by RPI in 2014 and 2015, and the Conservative government elected in May 2015 has committed to continue with an annual increase in line with RPI until 2020.

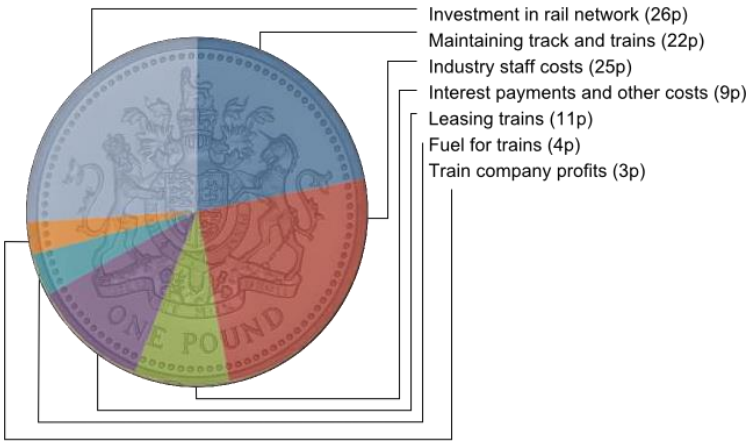

Figure 17: The Passenger's Pound [12]

In 2013-14 the annual cost of running the network was £12.7bn[13]. Income from passenger fares accounted for £8.2bn, and £3.8bn came from the taxpayer, representing 29% of the industry's total income. Government funding has decreased by 16.4% since 2010.

[12] Source: Network Rail and Association of Train Operating Companies, 2014
[13] Source: Rail Industry Financial Information 2013-14 (Office of Rail and Road, 2015)

To improve the value for money, initiatives such as reduced price contra-peak fares and promotions for flexible business travel may help to fill empty seats at times when there is spare capacity. Flexible working patterns often mean irregular travel and this can be met by using stored-value 'smart' ticketing.

The county council supports the policy of restricting annual fare increases to the retail price inflation, but also expects the rail industry to drive down the cost of running the railway through efficiency and innovation.

Ticket Purchasing

We recognise that people are changing the way that they buy tickets, and more and more people have chosen to buy their ticket online or through self-service ticket machines rather than from a staffed ticket office.

Modern technology means it is possible to print some train tickets at home, or have them displayed on a mobile phone, whilst contactless payments or smartcards, such as the key and keyGo smartcards on Southern Railway can also allow seamless travel on bus and train services.

Paper tickets could become a thing of the past as there are ambitious proposals to modernise train tickets over the next three years with a new flexible barcoded m-Ticket, which passengers download to their smartphones or other mobile devices. The rail industry is also working with the card payments industry to explore how people could use new 'ticket in the cloud' technology to use contactless credit or debit cards as a 'token to travel', replacing paper tickets.

Although some passengers still value the face-to-face transaction available at a traditional ticket office, the railway needs to adapt and embrace new technology to reduce its costs and improve efficiency. Many station ticket offices no longer open all day, and in London, all of those on the Underground have been closed. Whilst the way in which people buy tickets may be changing, there is still a need for staff to provide assistance to the infrequent traveller or to people who may struggle to use a self-service machine.

Self-service ticket machines often suffer from vandalism and crime. As a result most no longer accept cash and tickets can only be purchased using a credit or debit card. This becomes a barrier to travel for elderly people or those less than eighteen years of age, or the poorest in society who may not qualify for these cards.

The county council will support the rail industry in embracing new technology, but in doing so it will expect train

operating companies to ensure that:

- there will be public consultation on any proposal to reduce ticket office opening hours;
- staff will still be available to assist passengers in using the new technology;
- all self-service ticket machines will offer the full range of payment options;
- preferential pricing should be used to encourage the uptake of paper-free ticketing ; and
- help points are improved so people can easily obtain travel information.

Smarter Payment

Smarter fare collection is a key feature of *Oxford Science Transit* - a high-level 20-year vision to create a better-integrated, high quality transport network that serves the Oxfordshire Knowledge Spine and connects it with the rest of the Oxfordshire. Through our delivery of Science Transit we intend to evolve fare collection and aim for

countywide cashless and ticketless travel, with integration between rail, local bus, coach, and park and ride payment systems.

To make this a reality the focus of our work will be on technical and data interoperability between the transport operators, including a mechanism to apportion revenue. We will seek to introduce new family of fare products with simplified pricing to make Science Transit easy to use and value-for-money. We will develop online and interactive services via the web and smartphone apps that include on-the-fly payment for travel (while in motion) and explore the potential for location-aware software to facilitate automated payments.

The county council will work with train operating companies to develop new, innovative solutions for fares and ticketing, including:

- the introduction of new fare products based on multi-mode/operator ticketing;
- simplified pricing for journeys within the Oxfordshire Knowledge Spine;
- cashless payment systems and ticketless travel; and
- online services and interactive smartphone apps.

Plusbus

Plusbus is a national scheme that enables passengers to buy an "add-on" to their train ticket allowing unlimited use of bus services within a participating area at either the start or end of their train journey. Plusbus tickets are currently available in Oxford, Didcot and Banbury.

The county council will encourage local bus companies to work with Journey Solutions, the organisation behind Plusbus, to introduce Plusbus ticketing in Bicester and to review the scope of the existing schemes annually.

Service Quality

Getting to the destination on-time is a crucial aspect of travelling by train and is one that passengers rightly expect. Whilst reliability is generally good, punctuality can be affected by delays caused by trespass, suicide, infrastructure failure or weather and by congestion at bottlenecks like Oxford Station and Didcot.

Overall performance is measured using a Public Performance Measure (or PPM); this is the percentage of trains that arrive within five minutes (for local services) or ten minutes (for longer distance services) of their published time at their destination, and the number of trains completing their scheduled journey without being cancelled or omitting to call at stations on their journey. Performance targets are written into each franchise agreement.

The county council expects train operating companies to achieve high levels of reliability and punctuality and should meet, and sustain, the performance targets specified in their franchise agreement.

Safety and Personal Security

High levels of safety and personal security are vital for all users, but especially for people who may be less confident and feel more vulnerable, particularly after dark or at quieter stations. Good lighting and clear sight lines should help create an environment that is welcoming and achieves a sense of personal security. Help Points should be easy to find on all platforms, be maintained in good working order and available at all times.

Calls for assistance should be answered promptly. CCTV should be provided at every station and monitor all entrances, car parks and waiting areas.

The county council would like to see an increased staff presence at stations and on trains to deter anti-social behaviour, particularly in the evenings. We will support specific funding being identified in franchise agreements to pay for extra staff and/or British Transport Police officers.

Accessible for Everyone

The rail network should be accessible to everyone. Train operators have a duty not to discriminate between groups of people who share a protected characteristic and those who do not. Under the Equality Act 2010, the protected characteristics are: age, disability, gender reassignment, marriage and civil partnership (in respect of eliminating unlawful discrimination), pregnancy and maternity, race, religion or belief.

Older people and people with a disability should be able to use train services as this can help to improve social inclusion and allow them to lead independent lives by giving them opportunities to travel that reduce isolation, such as going shopping or visiting friends. It is important that rail vehicles and infrastructure are fully inclusive and that people with disabilities receive excellent service and feel safe and secure when travelling.

The *Technical Specification for Interoperability: Persons of Reduced Mobility* (PRM:TSI) sets out the accessibility standards that all new heavy rail vehicles across Europe must meet. It dictates that rail vehicles built after 2010 must comply fully from the outset, and all rail vehicles, regardless of their age, should be compliant by January 2020, although DfT will still be able to grant exemptions where it is not technically possible to make changes.

The Equality Act 2010 places a legal obligation on station operators to take 'reasonable' steps to ensure they do not discriminate against disabled people. As this is essentially a civil right it also means that, until case law has been established, it is not possible to say what will or will not be deemed as 'reasonable'. However, the PRM TSI sets standards for new stations and for stations where major work takes place. These are included in the *Accessible Train Station Design for Disabled People: A Code of Practice* together with national standards for the built environment and other best practice guidance. Where passenger lifts are provided, they should have CCTV and a direct link to a 24 hour control room so they can be used even when the station is unstaffed.

The county council expects all rolling stock used on train services in Oxfordshire to be fully accessible by 2020. We will support Train Operating Companies who invest or seek funding to improve accessibility, and expect thatby 2020 the busiest Category 'E' stations[14] and above will have level access to all platforms .

Community Rail

The county council has been successful in working with community groups for many years and has helped to establish several station adoption groups. These groups bring together local people with an interest in nurturing active community involvement. Station adoption is an excellent opportunity to take part in making their station

[14] Category E stations are defined as small staffed stations with less than 250,000 trips per annum.

an attractive community asset. Activities are varied, including gardening, tidying, artwork but all help to raise awareness of the railway and the train services, thereby increasing usage.

A route can also be designated as a "Community Railway" as either a 'line' (covering track and signals) or 'services' (covering the train service), or both. It could be supported by a Community Rail Partnership, working with the rail industry, local community, businesses and local authorities to help promote the line and improve stations, train services, bus links and accessibility; all of which help to increase passenger numbers and improve the viability of the railway.

There is potential to establish a Community Rail Partnership that covers the branch lines in the Thames Valley, but funding and resource pressures mean the county council is unable to take this forward for the time being. The train operating company may wish to develop the proposal in conjunction with the local community.

The county council will support the creation of a Thames Valley Community Rail Partnership that includes the Henley-on-Thames branch line, subject to a proposal being developed and submitted by the rail industry.

Safeguarding land

The planning and funding of transport infrastructure can take a long time to prepare and it is therefore important that longer-term plans are not compromised by inappropriate development occurring in the interim. Where there remain realistic and deliverable proposals to use former railway land to reintroduce rail services or to create new walking and cycling routes we will seek to safeguard the land.

The county council will encourage district councils to protect land in their Local Plan from any development that
would be prejudicial to future transport use, in the following locations:

- The Kennington-Cowley railway, including land for two new stations;
- land for a new railway station near Grove;
- land north of the railway in Didcot;
- land adjacent to Charlbury, Culham and Hanborough stations;
- land between Yarnton and Ducklington, and between Witney and Carterton;

Chapter 8
Funding

Introduction

Delivering this strategy will require public and private sector investment, coming from central Government via a periodic review of rail industry funding and through a variety of private sector sources, especially those related to delivering job creation and housing growth.

The county council will need to work closely with the Oxfordshire LEP and Oxfordshire Growth Board to identify potential funding sources that may be necessary to bring forward public investment in rail infrastructure that unlocks local economic growth. This can ensure infrastructure is delivered when it is needed to support local growth rather than when national rail industry finances are available.

We will aim to optimise the use of the available funds by seeking joint funding whenever possible, especially where it can deliver multiple outcomes, or can be delivered in a more cost effective way or gives added value to other planned schemes.

This chapter therefore outlines the main sources of funding for investment in our rail network.

Rail Industry Funding Sources

High Level Output Specification (HLOS)

The Railways Act 2005 requires that, every five years, the Government sets out the rail services and projects it wants the rail industry to achieve over the next railway Control Period, and the public funds that are available to secure delivery (the Statement of Funds Available or SoFA). In doing so, it defines the railway the Government wishes to see at the end of each Control Period and priorities for investment.

HLOS is a high level strategic document and outlines the outputs, such as to increase capacity on a particular corridor, rather than the specific scheme inputs needed to make it happen which are the preserve of Network Rail. ORR will validate the Network Rail assumptions and costs, and set the access charges that Network Rail will receive to fund the schemes.

HLOS is the primary source of rail-industry funding for major enhancement schemes, and the culture in Network Rail is to focus their resources on delivering the regulated outputs it specifies.

In addition to the commitments to fund the delivery of specified enhancement schemes, there are ring-fenced funding allocations, including:

- Development Fund (£57 million, now reduced to £32 million) to develop an evidence base for an industry submission for infrastructure investment in Control Period 6 (CP6, 2019-2024); and to further develop schemes that are likely to be required and funded for delivery, primarily during CP6;

- Network Rail Discretionary Fund (£103 million, now reduced to £59 million) to fund small schemes that will result in an increase in the capacity or capability of the network, up to a maximum of £5 million per scheme;
- Strategic Freight Network (£253 million, now reduced to £235 million) to facilitate growth in the freight market by making best use of the existing network to reduce delays and reduce conflict between freight and passenger traffic;
- Passenger Journey Improvement Fund (£206 million, now reduced to £106m) to develop and deliver works that improve the passenger journey experience, with an emphasis on journey times along key corridors; and
- Level crossing safety (£96 million) to reduce the risk of accidents at level crossings.

These ring-fenced funds are targeted at the enhancement of the rail infrastructure. There are four other sources of potential funding for station-related enhancements that are not specifically detailed elsewhere in the HLOS.

Station Commercial Project Fund (SCPF)

A fund of £30m is included in Control Period 5 (CP5, 2019-2024) for station improvement projects delivering commercially focused investment at existing stations that can generate a financial return to the Government and reduce the cost of the railway to taxpayers.

It is available for capital projects, such as extra chargeable car parking, new retail units and revenue protection (e.g. ticket gates), that generate additional income and increase the value of a franchise when it is re-let.

Projects must provide a financial return with a benefit to cost ratio of 2:1 over the first 10 years, and should be delivered by March 2020. Franchised train operating companies, local authorities and other third parties are able to bid for funding, which is awarded on a competitive basis after being evaluated by the DfT and Network Rail. The fund is usually heavily over-subscribed, and the qualifying project criteria are strictly applied.

National Stations Improvement Programme (NSIP)

The objective of this programme is to achieve a noticeable and lasting improvement in the passenger perception of stations by focusing on high footfall, low passenger satisfaction stations. It aims to develop an efficient and coordinated approach to the planning and delivery of activities at station by all stakeholders. Previous projects have tended to focus on passenger facilities, such as waiting areas, retail facilities, wayfinding signage, toilets, lift and footbridge refurbishment.

Potential schemes are identified through a Local Delivery Group, comprised of Network Rail, the train operating companies and other stakeholders and proposed to the NSIP Board who then allocate the funding ensuring best use is made of the available funding.

A fund of £110m was ring-fenced in Control Period 5 (CP5, 2019-2024), although this has been reduced to £73m following the Hendy Review and the remainder of the original funding will be rolled forward into the next Control Period.

Access for All (AfA)

The objective of this programme is to increase accessibility at stations for older, disabled and other mobility-impaired passengers by providing an unobstructed and obstacle free route from the station entrance and all drop-off points, to each platform and between platforms served by passenger trains.

Accessibility proposals are identified by a Local Delivery Group, and submitted for funding approval to the AfA Programme Board (consisting of Network Rail, DfT and ORR). The Board also oversees delivery of the national programme, and allocates the funding ensuring best use is made of the available funding.

A fund of £135m was ring-fenced in Control Period 5 (CP5, 2019-2024), although this has been reduced to £87m following the Hendy Review and the remainder of the original funding will be rolled forward into the next Control Period.

Commercial Investment by Franchises

Train operating companies are also able to invest their own money in projects if there is a strong business case showing an adequate payback on their investment within the term of their franchise. The term of their franchise is a major consideration, and can discourage major investment. By law, a franchise may be awarded for up to 15 years, and can be extended by a further 7½ years to a total of 22½ years, but a more cautious approach to long franchises, involving short initial franchises with the potential for extension and intermediate break points is the Government's current favoured policy. Chiltern Railways are unique in being the only company awarded a 20-year franchise.

Chiltern Railways invested £130 million of the £320 million total cost of East West Rail (Phase 1) with Network Rail contributing the remainder. Their business case for investment was based on the financial return they will get from the revenue generated by the new services. Network Rail provided the capital for the upgrade and will recover this through a repayment (facility) charge over the next 30 years, paid by the existing Chiltern Railways franchise up to 2021 and by subsequent franchises; effectively the DfT is underwriting the financial risk.

A similar approach can be taken with new rolling stock, which can be procured by an incumbent train operator even though its active use will extend many years beyond the end of their franchise. The DfT will need to reach agreement with the train manufacturer or leasing company and guarantee a use (and payment) for the trains by a future franchise. FirstGroup arranged an order for 29 new Hitachi AT300 trains to replace HSTs on services between London and the South West, valued at £361 million, which was 'approved' by the DfT.

Wider Funding Sources

Local Growth Fund (LGF)

The county council no longer receives funding directly to spend on transport improvements. Instead the funding from three central government departments - Transport, Business Innovation & Skills, and Communities & Local Government have been merged into a single Local Growth Fund (LGF), and forms part of the Oxfordshire Growth Deal. LGF funding is awarded on a competitive basis nationally.

The Oxfordshire LEP has sole responsibility for deciding on local investment priorities and for selecting the bids that go forward for assessment. This means that for each transport scheme for which the Council wants to seek Government funding, it has to prepare a bid and demonstrate a strong business case that shows how a scheme contribute towards economic growth. We are then wholly dependent on the Oxfordshire LEP selecting it for submission, and on a successful evaluation in competition with transport and non-transport schemes from all 39 LEPs across the country.

This challenging route to funding means we no longer have any certainty on funding until LGF bids are invited and decided. The funding for successful schemes is generally added to the Growth Deal, with governance of scheme delivery given to the Oxfordshire Growth Board.

The Oxfordshire Growth Board is a statutory decision making body comprising the leaders and chief executivesof the district and county councils, and non-voting partners that include Network Rail, Highways England, the Universities and government departments. The Board oversees the delivery of projects financed through the Oxfordshire Growth Deal and the previous City Deal and also monitors the delivery of priorities set out in the Oxfordshire Strategic Economic Plan on behalf of the Local Enterprise Partnership (OxLEP).

The Board also exists to seek agreement on local priorities and influence relevant local, regional and national bodies on economic development, strategic planning and growth.

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

Oxfordshire Growth Deal

The Oxfordshire Growth Deal is part of the government's long term Growth Fund which will devolve at least £12 billion from central government to local economies across the UK from 2016/17 to 2020/21. The Oxfordshire LEP has agreed a Growth Deal with the Government, which will see up to £118.4 million invested in Oxfordshire for projects including:

- Headington Phase 1 & Eastern Arc Transport Improvements
- Science Vale Cycle Network improvements
- Didcot Station Car Park Expansion (*due to open in 2017*)
- Bicester London Road Level Crossing
- Oxford Science Transit Scheme
- Enabling the Northern Gateway Development, including A44/A40 Link Road
- Improvements to the A34, including the Lodge Hill Junction.

Successful LGF schemes will be added to this list, and the value of the Growth Deal will generally be adjusted accordingly to reflect the award of further funding.

Local Major Transport Schemes

A £475 million Local Majors Fund was announced in the 2016 Budget, and is also part of the government's long term Growth Fund, but is intended to fund very large, maybe transformative, transport schemes that are too big to be taken forward within regular Growth Deal allocations. The Department for Transport rather than the LEP will oversee these larger schemes.

The individual scheme threshold is based on population and for the Oxfordshire LEP it is £31 million. Potential schemes must have an estimated cost exceeding this figure to be considered for submission.

There is a presumption against the Fund being used for schemes on the national rail, as it is harder to make the case that they have no other way of being funded, for example by the industry's five-year investment programme. Schemes that do not have any rail service or rolling stock implications, for example station expansion schemes, could be considered if there is a robust business case and clear delivery plan.

Oxford and Oxfordshire City Deal

In 2014, the county and district councils and the Oxfordshire LEP signed a one-off City Deal which saw £55m being committed to invest in a network of new innovation and incubation centres, accelerated delivery of 7,500 homes across the county and three transport schemes to increase connectivity in the 'Oxford Knowledge Spine'. The transport schemes are:

- Improved access to the Science Vale Oxford Enterprise Zone at Milton Interchange, Chilton Interchange and Hagbourne Hill (Harwell Link Phase 2);
- Highway improvements at A40 Wolvercote and Cutteslowe roundabouts to relief congestion and enable Oxford Northern Gateway; and
- Oxford Science Transit (Phase 1): Improvements on A34 between Abingdon and Oxford, and on A423 Southern Bypass between Kennington and Hinksey Hill roundabouts.

The delivery of these schemes is expected to be completed in 2016.

Section 106 Contributions

The traditional method of securing developer contributions is Section 106 of the Town and Country Planning Act 1990. Planning obligations (or "Section 106 Agreements") are negotiated between local authorities (County and District) and the developer, usually as part of a planning application. Obligations must be:

- Relevant to planning;
- Necessary to make the proposed development acceptable in planning terms;
- Directly related to the proposed development;
- Fairly and reasonably related in scale and kind to the proposed development; and
- Reasonable in all other respects.

Planning obligations cannot be used solely to resolve existing deficiencies in infrastructure provision; or to secure contributions to fund wider planning objectives that are not necessary to allow consent to be given for a particular development.

Community Infrastructure Levy

Community Infrastructure Levy (CIL) is a discretionary levy that local planning authorities are choosing to charge on new developments in their area, in place of seeking contributions under Section 106 of the Town & Country Planning Act 1990. Unlike S.106, the money raised can be used to fund a wider range of off-site infrastructure, and excludes works related to accessing the development site which would be secured through S.106 or S.278 agreements or planning conditions.

The planning authority is required to publish the projects or types of infrastructure that CIL funding may be spent on in a document called the 'Regulation 123 List'. This can include open spaces, recreation, sports and leisure facilities, community and cultural facilities, strategic and local transport and schools. Most district councils have decided to show the type of infrastructure and only Oxford City Council has so far adopted a list of specific projects; although their list does include Oxford station redevelopment. CIL charges are set out in a document called the 'charging schedule', with the charging rate based on a pound per square metre for residential and retail warehouses or supermarkets.

Value Capture Mechanisms

Value capture is an innovative type of public financing that recovers some or all of the added value that publicly funded infrastructure can generate, either through increases in land value or an increase in a council's tax base. The main types of value capture include:

- Land Value Tax (LVT)
  LVT aims to recover the capital cost of public investment in transport infrastructure by capturing some or all of the resultant increase in adjacent land values that otherwise generates an unearned profit for the private landowners at no cost to them. This unearned value may be "captured" directly by converting it into a public revenue, and may be particularly relevant around new stations or along a new rail line.

- Tax Increment Financing (TIF)
  TIF is a means of investing public funds in infrastructure that is necessary to unlock regeneration which otherwise may be unaffordable to local authorities. It works on a 'buy now pay later' basis by allowing local authorities to borrow now on the basis that the infrastructure results in an overall increase in the council's tax base, which in turn increases the potential revenue generated from taxation i.e. the "tax increment". The borrowing can then be used to fund key infrastructure that in turn create those gains. TIF might be suitable funding for projects that enable economic development within enterprise zones by attracting investment in new property and business which contribute to additional business rates.

- Air rights
  Another form of value capture involves selling the development rights to build shops or offices above, or below, a railway station that will increase surrounding land value and generate a tax increment. Using 'air rights' to build over an existing railway station or rail tracks is something property developers have already become adept at in London's key business districts; the railway stations at Liverpool Street and Charing Cross both boast office complexes built over their platforms.

Locally Retained Business Rates

Since 2013, local authorities have been able to keep up to half of business rate receipts in their area instead of contributing all business rates into the central pool and receiving formula grant. Business rate revenue is split into the 'local share' and the 'central share' on a 50/50 basis. The central share goes into a single national pot and is redistributed to councils in the form of revenue support grant in the same way as the previous formula grant. The local share is retained by local government, but is also partly redistributed, with 80% going to the district council (responsible for the billing and collection of business rates) and 20% to the county council.

There is increased financial risk for local government, as receipts will rise or fall depending on the size of the business rates tax base in the area, but also a strong incentive to grow the business rate base by encouraging new or expanding businesses into the area.

In the 2015 Spending Review, the Chancellor abolished uniform business rates and announced that revenue support grant will be phased out completely by 2020. Instead, local government will be given powers to set their own business rate and retain 100% of business rate receipts in their area.

Within the Enterprise Zones, it is permissible to retain all business rate growth up to 2038, but whilst the district council will collect the income, the Local Enterprise Partnership will take the decisions on how it used according to its priorities.

Business Rate Supplement (BRS)

In order to raise revenue for local projects, county councils and unitary authorities are permitted to levy an additional Business Rate Supplement of up to two pence in the pound of rateable value on properties with a rateable value in excess of £50,000.

The revenue generated from BRS will be retained locally and can only be used on economic development that supports the productivity and prosperity of the locality. This may include transport infrastructure which can be shown to benefit the business community by improved productivity to facilitate trade and competition in goods and services. Under the prudential borrowing system, local authorities are able to raise finance and pay it back using BRS.

New Homes Bonus

The New Homes Bonus was introduced by the Coalition Government to tackle the shortfall in new housing. It aims to encourage local authorities to grant planning permissions for the building of new houses in return for additional revenue. Under the scheme, the Government matches the additional Council Tax raised on new homes and empty properties brought back into use, with a higher rate for affordable homes.

The payment of the New Homes Bonus lasts for a period of six years (although after the 2015 Spending Review it is being reviewed) and is split between district councils and the county council; the split being subject to local negotiation. The extra funding does not need to be spent on other housing development, and although it may not yield large sums of money, it may be a useful supplement as part of a wider funding package in development areas.

Chapter 10

Glossary of Terms

Term	Meaning
Aggregates	refers to the broad category of bulk materials used in construction, including sand, gravel, crushed stone (e.g. granite or limestone) and recycled ballast.
Bi directional	The provision of signalling that allows one or more tracks on a multiple track railway to be operated in either direction, whether for regular or emergency use.
Bi mode	A train that can be powered either from an overhead electricity supply or from an onboard diesel engine (on non electrified tracks).
Capacity	(1) the theoretical number of train paths that can be operated over a section of route, based on track layout (e.g. junctions) and signalling (i.e. distance between trains), as well as station platform (layout or the time a train is stationary in the platform); and also (2) the available passenger capacity(seating and standing) of rolling stock.
Capital Expenditure	The cost of investing in fixed assets, such as stations, track and signalling, interchanges, new trains etc
Carnet	A number of tickets, usually ten, which are valid for a fixed period of time and give a discount for non regular rail passengers.
CCTV	short for Closed Circuit Television
Chord	A stretch of (curved) track between two interconnecting railway lines allowing train movements between them.
Clockface timetable	A timetable where the trains leave at the same minutes past every hour making it easier for passengers to remember.
Connectivity	Describes the range of rail services from a particular station to another station.
Contra peak	Travel in the opposite direction to the main direction of commuters, i.e. away from London in the morning peak, and into London in the afternoon peak.
Control Period	The five year time periods which are used for rail industry planning and investment. We are currently in Control Period 4, also known as CP4 (2009-14). Future Control Periods will be from (CP5) 2014-19, (CP6) 2019-24, (CP7)2024-2029, and (CP8) 2029-2034.
DMU	short for Diesel Multiple Unit. A two, three or four carriage train with on-board diesel engines, that can be coupled together to form a longer train of up to 12-carriages.
Deep sea container	A weatherproof box designed for the shipment of overseas freight. Each container can be lifted between ship, lorry or train. Historically, they were 8'6" high but the industry is now moving to larger 9'6" 'high-cube' containers.
Direct service	A train journey that does not require passengers to change train.
Down	Generally means the direction of travel heading away from London (i.e. Down Main Line or down train).
Electrification	The provision of 25Kv AC overhead power lines and lineside equipment to allow trains to pick up electricity using a pantograph.
EMU	short for Electric Multiple Unit. A four carriage train with electricity pick up equipment, that can be coupled together to form a longer train of up to 12-carriages.
Enterprise Zone	an area designated by the Government to boost the economy and job creation

	with super-fast broadband, lower taxes, and simplified planning controls.
Franchise	The right of a private company to provide passenger rail services for a number of years; with the Department for Transport managing the process.
Gauge	short for Loading Gauge. It defines the maximum height and width for trains and their loads to ensure safe passage through bridges, tunnels and other structures.
Heathrow Express	An open-access operator, owned by BAA Limited, operating non-stop services between London Paddington and Heathrow Airport.
High Level Output Statement, or 'HLOS'	the Government's statement of the outputs it requires from the National Rail network for the next five year control period.
HSTs	short for Intercity 125 High Speed Train. They have been the mainstay of long-distance services on the Great Western Main Line since 1976.
Hybrid Bill	a parliamentary bill which affects the private interests of a particular person or organisation. It is generally initiated by the Government to obtain authorisation for major projects deemed to be in the national interest, but which would affecta large number of private interests.
IEP	short for Intercity Express Programme (*see below*).
Infrastructure	Physical assets including railway tracks, stations, freight depots, tunnels, bridges, level crossings and communications equipment (such as signalling),and access to stations via the highway.
Intercity Express Programme	A Government programme to purchase new electric and bi-mode trains to replace the HSTs – supplier identified as Hitachi.
Interchange	term used to describe people transferring between transport modes, such as between bus and rail, or between two separate rail journeys.
ITSO	short for Integrated Transport Smartcard Organisation. A Government standard for 'smart' card ticketing that ensures compatibility between bus and rail companies across the country.
Journey time	The time taken by a train between its origin and destination stations.
LDF	short for Local Development Framework. A series of documents produced by each local planning authority setting out future spatial planning (housing andemployment) in their area.
LENNON	short for Latest Earnings Networked Nationally Overnight. A national system that collects all ticket sales information and distributes the revenue to the train operators.
Local Enterprise Partnership, or 'LEP'	A locally-owned partnership between local authorities and businesses that will determine local economic priorities and undertake activities to drive economic growth and the creation of local jobs.
Loop	A section of track that allows slower, or stopping, trains to be overtaken by faster non-stop services. Often used to manage the mix between freight andpassenger trains.
Main Line	In general, means any non-branch line. In the local context, the tracks with the highest line speed between Didcot and London Paddington.
National Stations Improvement Programme, or 'NSIP'	A DfT programme intended to achieve a noticeable improvement in the station environment for the benefit of passengers.
Off-peak	Generally means the time between 10:00 and 16:30 on weekdays, and at anytime at weekends and Bank Holidays
OHL	short for Overhead Line. Used to describe the masts and wiring necessary to provide a 25Kv AC electricity supply.

ORCATS	short for Operational Research Computerised Allocation of Tickets to Services. A computer system used for sharing revenue on inter-available tickets when a ticket or journey involves trains operated by more than one train operator.
Passing Loop	see *Loop*.
Path	the timing of a possible train movement along a given route. All the train paths on a given route constitute the timetable.
Peak time	Generally means the time between 0700-1000 and 1630-1900 on weekdays.
PPM	short for Public Performance Measure. A combination of figures for punctuality and reliability into a single percentage showing trains 'on time' compared to thetotal number of trains planned.
Punctuality	A train is defined as 'on time' if it arrives within five minutes of the planned destination arrival time for service from the Outer Thames Valley, or 10 minutes for long distance services.
RA	short for Route Availability. A system to determine the type of locomotive and rolling stock that may travel over a route, normally governed by the strength of bridges in relation to axle-loads and speed.
Rail industry	The collective term for a number of organisations (see Chapter 1) who have direct investment, regulatory and operational responsibility for the rail network.
Railbus	In Oxfordshire, used to describe dedicated rail-feeder bus services, such as the Cotswold Line Railbus, which are specifically time to connect with trains.
Redoubling	Reinstatement of track that was removed in the past to save money.
Regulated Fares	These fares are 'capped' to 3% above inflation each year and include saver returns, season tickets, standard singles and standard returns to any station in the London travelcard zones from a suburban area up to 50 miles from London.
Reliability	A train is regarded as being reliable if it completes all of its planned route and calls at all scheduled stations.
Relief Line	In the local context, the tracks with the lower line speed between Didcot and London Paddington, used by freight and 'local' stopping services.
Revenue Expenditure	The cost of investing in project feasibility and development, the marketing and promotion of rail services, and the cost of subsidising train services.
Route Utilisation Strategy, or 'RUS'	Network Rail study identifying current operations and forecast changes in demand to identify 'gaps', and a strategy with options for closing each 'gap'
Services	The running of trains, stations and freight terminals.
Statement of Funds Available, or ''SoFA'	the Government's statement of the public funds they are prepared to invest in the National Rail network for the next five year control period.
Station Commercial Projects Facility	A DfT/Network Rail funding facility that supports commercially focused station improvements, such as retail/car parks/revenue collection to reduce the costof the railway to the taxpayer.
Skip stop	A calling pattern which minimises end-to-end journey times and increases capacity over a section of route by not having all trains call at all stations.
Station Travel Plan	A strategy for managing the travel generated by a station, with the aim of reducing its environmental impact.
Stored value	A top-up 'smart' card that deducts the cost of a train journey from the balance stored on the card. An example is London's Oyster Card.
tpd	short for Trains Per Day.
tph	short for Trains Per Hour.

Up	Generally means the direction of travel heading towards from London (i.e. Up Main Line or up train).
Transport Focus	nationwide independent consumer watchdog covering bus and rail
Value for money	Creating the maximum benefits from the resources available. A project or investment should generate more benefits than the cost of the project or investment.
'W10' Gauge	Height above rail 3.90m and width at station platform level 2.50m. This loading gauge is important as it allows the large fleet of existing Freightliner wagons to carry 9'6" deep sea maritime containers.
'W12' Gauge	Height above rail 3.90m and width at station platform level 2.60m. No route is currently cleared to this loading gauge. It would allow movement of all maritimecontainers and European gauge freight wagons through the Channel Tunnel.

Chapter 11
Delivery Plan

Introduction

It is vital for the success of our economy that we create the conditions to facilitate residential and employment growth and create a thriving, attractive county in which to live and work. That means we need an efficient and reliable transport network that will support planned growth and meet the needs of new developments.

It is vital that enhanced rail infrastructure is delivered in good time so it can meet the challenge of a growing population and strong economic growth. More jobs, more housing and more demand will drive the need for greater connectivity and new train services, including fast, reliable access to international gateways, such as Heathrow Airport. These are viewed as a critical factor in attracting inward investment and for growing the international science sector in Science Vale.

The county council is not responsible for planning and delivery of major rail investment schemes, and our role and that of our local partners is to make the case for rail investment that underpins our economic objectives. We will support the rail industry to facilitate and deliver a better rail network in a timely and efficient manner.

The schemes range from those that are already being developed by the rail industry to those that are emerging ideas and therefore will need further development to determine if they are viable. Improving the railway will include:

- Physical infrastructure to provide capacity and capability, i.e. the track, stations and structures;
- Improvements to equipment (such as signalling, in-cab radio and customer information systems);
- Service enhancements, including the provision of new rail vehicles and/or new services; and
- Supporting measures, such as how people get to the station, integrated ticketing and travel planning.

As a way of informing funders, we have considered how the rail network can support growth and generate added value to other government initiatives such as garden towns and enterprise zones. Our delivery plan sets out how locally we would expect to see rail investment prioritised over the next four five-year control periods. Of course, the timescales can be influenced by a number of different factors and may be subject to change.

The Delivery Plan is shown in Annex A.