

**PROOF OF EVIDENCE OF ALLAN DARE
TRANSPORT**



**THE CHILTERN RAILWAYS (BICESTER TO OXFORD IMPROVEMENTS)
ORDER**

TRANSPORT AND WORKS ACT 1992

**TRANSPORT AND WORKS (APPLICATIONS AND OBJECTIONS
PROCEDURE) (ENGLAND AND WALES) RULES 2006**

Chiltern Railways

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1 INTRODUCTION

1.1 Qualifications and experience

- 1.1.1 My name is Allan Dare. I am the Strategic Development Manager for Chiltern Railways.
- 1.1.2 I hold a Diploma in Cartography from Oxford Polytechnic (now Oxford Brookes University) and an M.Sc. in Transport Planning & Management from the Polytechnic of Central London (now Westminster University).
- 1.1.3 I commenced my railway career in 1968 at the London offices of Canadian National Railways, working on transatlantic freight movements. I joined British Rail in 1972, working in freight operations and freight marketing. In 1975 I was appointed to the BR Management Training programme, and undertook 18 months of training in all aspects of railway management. Subsequently I worked in passenger operations on Merseyrail, including preparations for the opening of new lines; in personnel research at BR headquarters; and in strategic development and as Terminals Manager for BR's Provincial Sector. During this period I also participated in the British Rail / Nederlandse Spoorwegen management exchange programme, and spent 3 months in the Netherlands studying Dutch railway operations and technology.
- 1.1.4 In 1988 I joined British Rail Engineering Ltd. (latterly ABB Transportation Ltd, and then Adtranz, now Bombardier UK) as Product Development Manager, responsible for the specification of new vehicle types to meet customer needs, and for the development of marketing policies. In this role I was able to travel extensively, and gain greater knowledge of railway, metro and tramway schemes worldwide.
- 1.1.5 I joined Chiltern Railways in 1999, and have worked with the company on longer-term development ever since. This has included franchise bidding, rolling stock policy and procurement, route enhancements, and the line extension to and new station at Aylesbury Vale Parkway. I have been particularly connected with the Oxford scheme, carrying out route evaluations in 1999-2000 and authoring the report to the Department for Transport ("DfT"), "A New Route to Oxford", CD/2.3 in 2003. Since then I have taken a lead role in option development, stakeholder liaison and the preparation of the Transport and Works Act ("TWA") application.

1.2 Scope of Evidence

- The Secretary of State for Transport ("the Secretary of State") issued a Statement of Matters (X/4) for the TWA Inquiry on 25th August 2010. In this Proof of Evidence I address, in particular, the following matters from that Statement of Matters, in whole or in part:

Matter 1: The aims and objectives of, and the need for the proposed connection between the London to Birmingham railway and the Bicester to Oxford railway, and the proposed improvements to the line between Bicester Town station and Oxford station ("the scheme").

Matter 2: The justification for the particular proposals in the draft TWA Order, including the anticipated transportation, regeneration, environmental and socio-economic benefits of the scheme.

Matter 3: The main alternative options considered by Chiltern Railways and the reasons for choosing the proposals comprised in the scheme.

1.1.2 My Proof of Evidence covers:

- The aims and objectives of the Order Scheme (Statement of Matters 1)
- The existing rail network in the Order Scheme area (Statement of Matters 1)
- Rail travel demand (Statement of Matters 1 and 2)
- External demand factors in the Order Scheme corridor (Statement of Matters 2)
- Access to the rail network from Oxford and north and west Oxfordshire (Statement of Matters 2)
- The wider societal benefits of rail transport (Statement of Matters 2)
- The main alternative options considered (Statement of Matters 3)
- The transport services proposed
- Responses to outstanding objections related to the above matters

2 THE AIMS AND OBJECTIVES OF THE SCHEME

2.1.1 In this section I refer to Statement of Matters 1.

2.1.2 The main objectives of the Order Scheme, as set out in the Statement of Aims accompanying the TWA Application, are:

- **“To Increase rail capacity on the Oxford-Reading-London corridor.** Rail traffic in Great Britain has grown strongly over the past decade, and growth is forecast to continue. Railway capacity on the Oxford-Reading-London corridor is now under considerable pressure, and this will increase with planned economic growth and housing development in southern Oxfordshire and the Thames Valley. By providing an additional and alternative route to Oxford the Chiltern proposals will add extra capacity in this corridor. This will benefit both passengers between Oxford and London, and the substantial freight business from the Midlands via Oxford to the Solent ports.

In addition, the Chiltern line will provide an alternative route during the major engineering works planned in the Thames Valley over the next decade, including the Reading remodelling, CrossRail construction and Oxford re-signalling.

- **To provide improved access to the rail network for Oxford and north Oxfordshire.** Oxford station is sited to the west of the city centre, and is remote from many of the city’s residential and business areas. It also suffers from congested local roads and a lack of car parking spaces. Chiltern Railways’ proposed Water Eaton Parkway station will, in contrast, give easy access to the rail network from many parts of Oxford, by bus, cycle or car. It will provide Kidlington with its long desired railway station, and act as a railhead for other parts of north Oxfordshire which do not enjoy direct rail service. This will in turn relieve pressure on the existing car park at Oxford station, and thus release capacity there for traffic growth from other areas.
- **To provide a sustainable alternative to the car, particularly for commuting journeys into Oxford.** In common with other successful cities, Oxford and surrounding areas suffer from severe traffic congestion, particularly at peak periods. Commuter journey times into Oxford are amongst the longest in the country, whilst longer-distance journeys are affected by delays on the motorway and trunk road networks. However, rail’s market share on the Oxford-London and Bicester-Oxford routes is low by comparison with similar corridors elsewhere, due to the inconvenient location of Oxford station, and the relatively slow and infrequent train services.

Chiltern’s proposals will deliver a major increase in train frequency; greatly reduce journey times between Bicester and Oxford and give a direct rail link between the sub-regional centres of Oxford and High Wycombe for the first time in over 40 years. In addition the interchange with express buses at Water Eaton Parkway will give direct access to major employers, such as the John Radcliffe hospital who are currently hard to reach by rail. The railway will thus become a realistic alternative to the private car, and help relieve congestion on the A34, M40 and connecting roads.

- **To help deliver public policies for economic and spatial development.** By improving access to Oxford for both long-distance and commuter journeys, the Chiltern proposals will help reinforce the city’s position as an economic and research hub, whilst minimising the environmental impacts of the transport system. This Chiltern Railways development is consistent with national, regional

and local policies that address not only transport issues, but also wider issues including strategies for planning, environmental concerns and economic stimulus.

National policy, specifically PPS1 and PPG13, emphasise the need to combine spatial planning with an appreciation of transport networks to promote development around public transport routes and to provide an attractive and sustainable alternative to using a car.

At regional level, the Scheme will deliver strategic public transport links to support planned growth advocated through the South East Plan, and support the Plan's Central Oxfordshire sub-regional strategy. It has been endorsed by the South East Regional Transport Board. (Although the Plan and the Board have since been abolished, it is believed that this support reflects ongoing transport and planning needs). At a local level the scheme will support Oxford City and Cherwell District Councils' spatial plans to encourage alternatives to the car, support growth and protect the environment, and these authorities have endorsed the Scheme.

- ***To facilitate the East West Rail Link.*** *Provision of a rail link between Oxford, Milton Keynes and East Anglia is widely regarded as key to both the future success of the Oxford-Cambridge "Knowledge Arc", and to the growth of Milton Keynes. It is identified as a regional investment priority by the South East Regional Transport Board, in support of the South East Plan and the Regional Economic Strategy. East-West Rail would also deliver benefits to the wider railway network, which are recognised by the Network Rail and the Department for Transport.*

The East-West Rail Consortium of local authorities together with the South East England Partnership Board and the Milton Keynes Partnership have been actively developing plans to re-instate this route, with the Oxford/Aylesbury-Bletchley/Milton Keynes section being the first priority. The Chiltern proposals to upgrade the Bicester to Oxford section will significantly reduce the amount of public funding needed to deliver East-West Rail, and Chiltern Railways and the Consortium have thus worked closely together to maximise the wider transport, environmental and economic benefits.

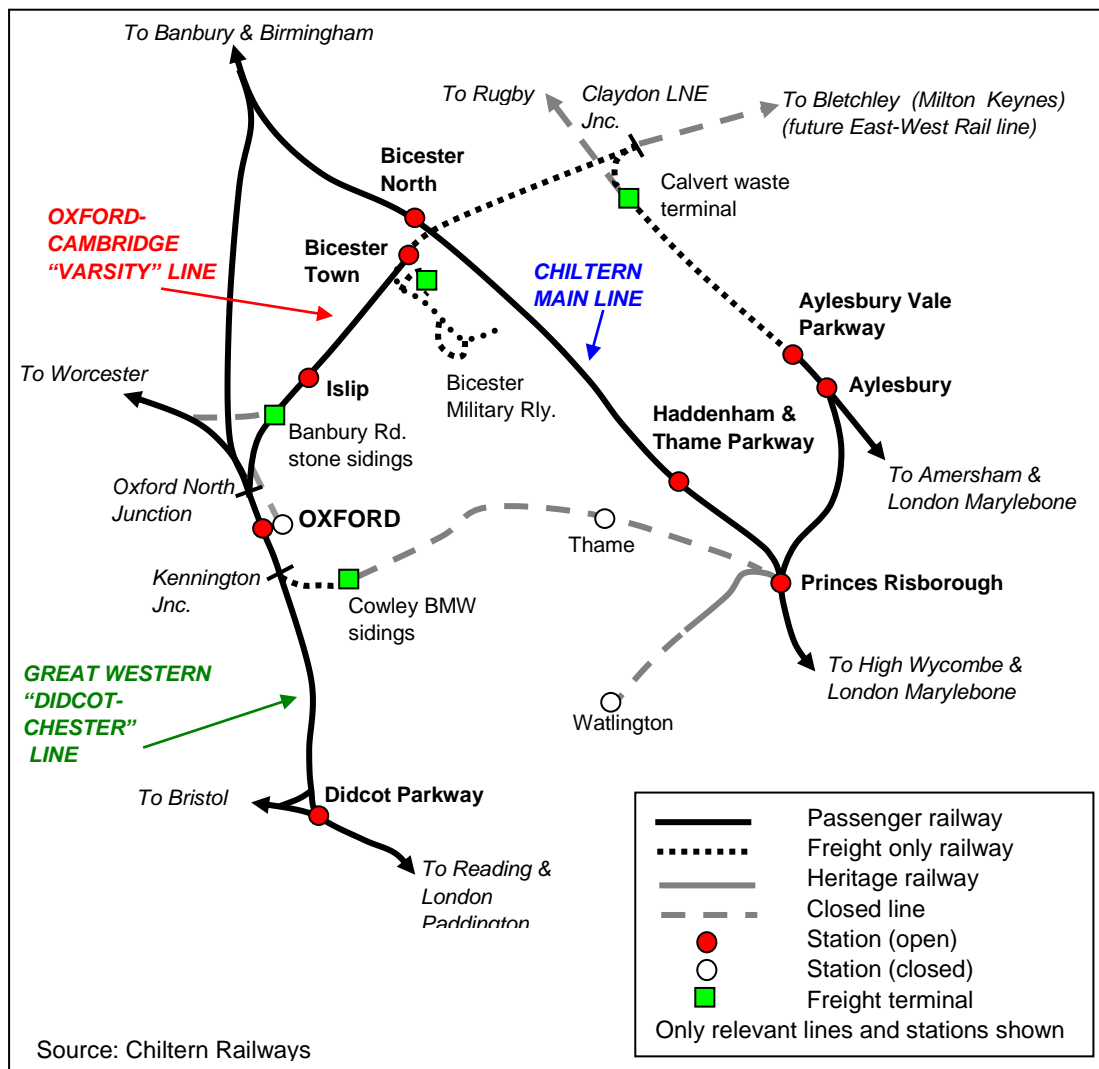
- ***To extend the use of an environmentally friendly and safe form of transport.*** *Due to running on steel rails and carrying a large number of passengers per vehicle, trains are significantly more energy-efficient than road vehicles. In turn they produce far lower emissions. Studies show that the average CO2 emission for Chiltern Railways' train services is one third of the equivalent passenger journeys made by car. Rail also has an excellent safety record, and by encouraging modal shift to train the Chiltern proposals will contribute to reducing road casualty levels.*
- ***To facilitate the Redevelopment of Oxford Station.*** *Oxford station has long been recognised as a poor quality gateway to one of Britain's finest cultural and academic centres, which has inadequate capacity to meet the future demands of a growing city. Network Rail and Oxfordshire County Council are therefore planning comprehensive remodelling of the station. The Chiltern proposals are designed to accommodate this objective and to enable the future construction of a high-quality station that is both welcoming for passengers and an asset for the City of Oxford".*

2.1.3 In this section I have set out evidence in relation to Statement of Matters 1. My conclusion is that the aims and objectives of the scheme will materially improve the capacity, functionally and sustainability of transport in the scheme area.

3 THE EXISTING RAIL NETWORK

3.1 Railways in the Order Scheme Area

Figure 1: The rail network in the scheme area



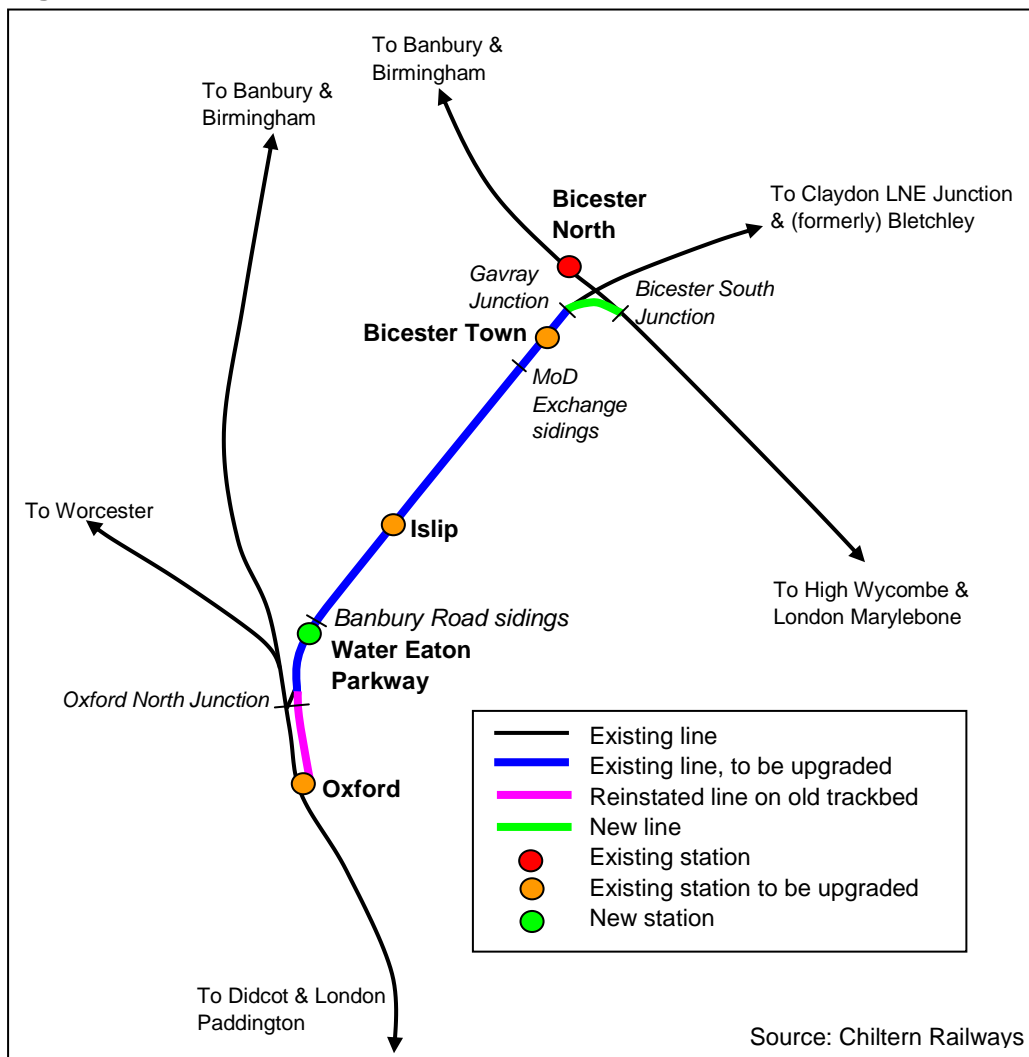
3.1.1 The rail network in the Order Scheme area is shown above. The key existing routes are:

- The Great Western "Didcot-Chester Line" through Oxford, which is used by passenger services from Worcester and Oxford to Reading and London Paddington, and from Birmingham to Reading and Southampton; and by freight trains from the Solent ports to the Midlands and the North of England.
- The Chiltern Main Line through Bicester North, which is used by passenger services between Birmingham and London Marylebone. This route has been substantially upgraded in recent years, and will be further enhanced as part of Chiltern's wider "Evergreen 3" project.
- The former Oxford–Cambridge "Varsity" Line, which is now only used by passenger services between Oxford and Bicester Town, and freight services to

local terminals. This line is abandoned east of Claydon LNE Junction, but is proposed for reinstatement as part of the East-West Rail project.

- 3.1.2 An alternative route to Oxford via Thame and Cowley was only ever used for local traffic, and was mostly closed in 1964
- 3.1.3 The Order Scheme is based primarily on the existing railway between Bicester Town and Oxford, with services running through from London Marylebone via the Chiltern Main Line.

Figure 2: The Order Scheme line



3.2 The history of the Bicester-Oxford line

- 3.2.1 The railway between Bicester and Oxford was authorised by the Oxford and Bletchley Junction Railway Act 1846 (**CD/5.1**), as modified by the Buckinghamshire Railway Act 1847 (**CD/5.3**). It eventually formed part of the “Varsity route”, linking Oxford Bletchley, Bedford and Cambridge. The construction of the line preceded the passage of the 1863 Railway Clauses Act, and it features a much higher number of level crossings than would be expected on a line built at a later date.
- 3.2.2 The line from Bletchley was opened in 1850 as far as a temporary station and coal depot at “Oxford Road” (the site of the proposed Water Eaton Parkway station) from where stagecoaches ran to Oxford. Train services through to Oxford (Rewley Road) station started in 1851, using tracks separate from but parallel to the Great Western main line north of Oxford. An intermediate station was provided at Islip and between

1905 and 1926 unstaffed halts served Port Meadow, Wolvercote, Oxford Road, Oddington, Charlton and Wendlebury. A siding connection with the Bicester Military Railway was constructed in 1941 and the line became a key strategic route for military traffic during World War 2.

- 3.2.3 The line was steadily run down from the 1950s. Oxford Rewley Road station was closed and passenger trains were diverted into the main Oxford station in 1951 (the site remained as a coal depot until the mid-1980s). The Cambridge-Bedford and Bletchley-Oxford passenger services were withdrawn 1968, and the intermediate stations on the line closed. This was widely regarded as a mistake, given that construction was about to start on the new city of Milton Keynes, which would otherwise have been served by the line. However, the route remained open for a small number of freight trains.
- 3.2.4 In May 1987 a limited passenger service was reintroduced between Oxford and Bicester Town, with 3 trains each way per day. This was jointly funded by Oxfordshire County Council, Oxford City Council, Cherwell District Council, Bicester Town Council and British Rail. The County provided both capital and operating funding, following a Council decision on 5th September 1986. In May 1989, further capital funding by the local authorities (primarily Oxfordshire) and British Rail paid for the reopening of Islip station, and for signalling alterations enabling the service to increase to 7 trains each way per day; British Rail then took sole responsibility for the operating costs. In 2008 Oxfordshire provided further operating funding to enable the service to be increased to 11 trains each way per day, and the introduction of a Sunday service.
- 3.2.5 The railway between Bicester and Oxford was originally built as double track throughout with a line speed limit thought to be at least 70 mph. Speed limits on the line were reduced when it became solely used for freight and in 1973 the line was singled as part of the Oxford resignalling scheme. The additional tracks between Oxford North Junction and Rewley Road were removed at the same time. Subsequently, the remaining track through Wolvercot Tunnel was moved to the centre of the trackbed to give vertical clearance for “W8 gauge”, i.e. freight trains carrying 8’6” high containers. The line east of Bicester to Bletchley was severed at Claydon LNE Junction on 24 January 1994.

3.3 Current services using the Bicester – Oxford line

Table 1: Current Bicester to Oxford train service, May 2010

Passenger Trains Each Way, per day, May 2010 Timetable			
	Monday to Friday	Saturday	Sunday
Franchise specified	7	7	0
Oxfordshire funded	4 (5 FO#)	6	9
Total Trains	11 (12 (FO#))	13	9
Source: First Great Western timetable and Oxfordshire CC agreement			
Note #: FO = Fridays Only			

- 3.3.1 Current passenger train services between Bicester Town and Oxford are operated by First Great Western. Services additional to those delivered through the GWR Franchise Agreement as specified by the Department for Transport, are funded by Oxfordshire County Council, under an agreement dated 29 November 2008 which expires on 31 March 2013 or by earlier agreement. **Table 1** above details the current frequency of service. The current journey time is 26 minutes

- 3.3.2 The line is used for freight trains operated by DB Schenker and Freightliner. These serve the Mendip Rail aggregates terminal at Banbury Road sidings, the Ministry of Defence (MoD) ordnance depot south-west of Bicester and the Waste Recycling Group terminal at Calvert, east of Bicester. Timetable paths are provided for 3 eastbound and 4 westbound freight trains Mondays-Friday and 1 each way on Saturdays. Freight movements are subject to market demands, and on average only 48% of these freight train paths are actually used on any given day.
- 3.3.3 The current speed limit on the line is 40mph for passenger and freight trains (reduced to 20 mph over the Millstream and Cherwell viaducts) and 30 mph from the Cherwell Viaduct to Oxford North junction. It is cleared for 25.5t axleloads and W8 loading gauge (i.e. for rolling stock able to carry 8'6" high containers) and freight trains of up to 645 metres in length have operated on occasion. (The loading gauge issue is further discussed in Appendix 5, **CRCL/P/2/B**).
- 3.3.4 In this section I have set out evidence in relation to Statement of Matters 1. My conclusions are that the Order Scheme for the most part uses an existing railway, for which Parliamentary powers exist, and on which much of the work, such as double-tracking, will be a reinstatement of infrastructure that formerly existed.

4 RAIL TRAVEL DEMAND

4.1.1 In this section I refer to Statement of Matters 1 and 2.

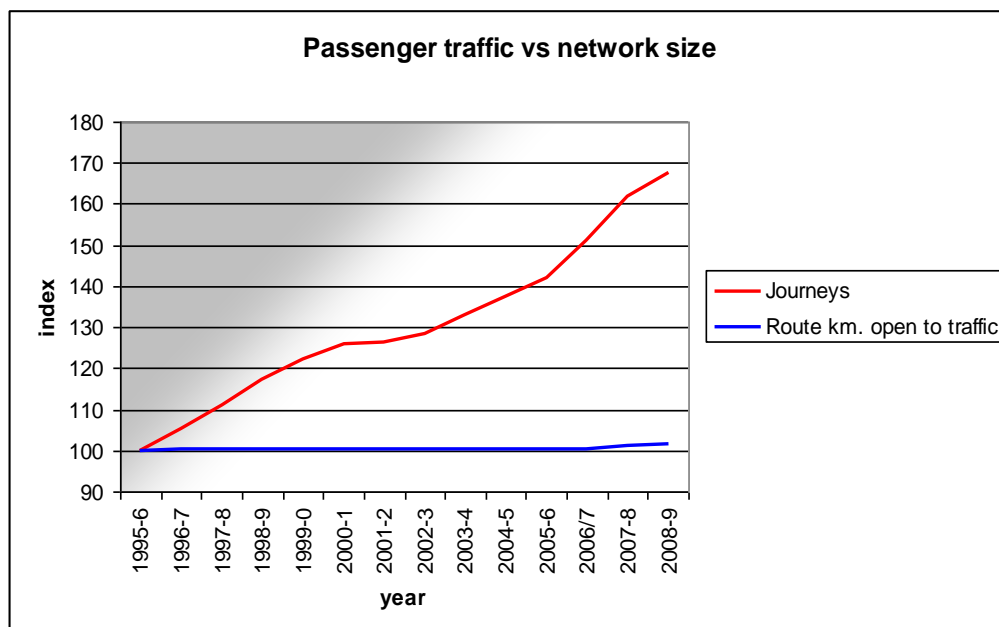
4.1.2 This Matter is also considered in the following Evidence:

- Graham Cross (**CRCL/P/1/A**): national rail policy; franchise requirements.
- Leo Eyles (**CRCL/P/5/A**): forecast demand for the Order Scheme services.

4.2 The National demand for rail travel

4.2.1 Over the past 15 years, the UK rail network has seen unprecedented growth in both traffic carried and trains operated. Passenger numbers have increased by 67% since 1995/6, and in 2008/9 rail passenger traffic was at the highest level since 1928, when the rail network was twice as large as today. This is due to factors including economic growth; the location of residential and business development at locations convenient to rail stations; improved train services; and increased highway congestion.

Figure 3: National rail passenger traffic



Source: DfT “Transport Statistics Great Britain 2009”, adjusted to eliminate time-series data discontinuities

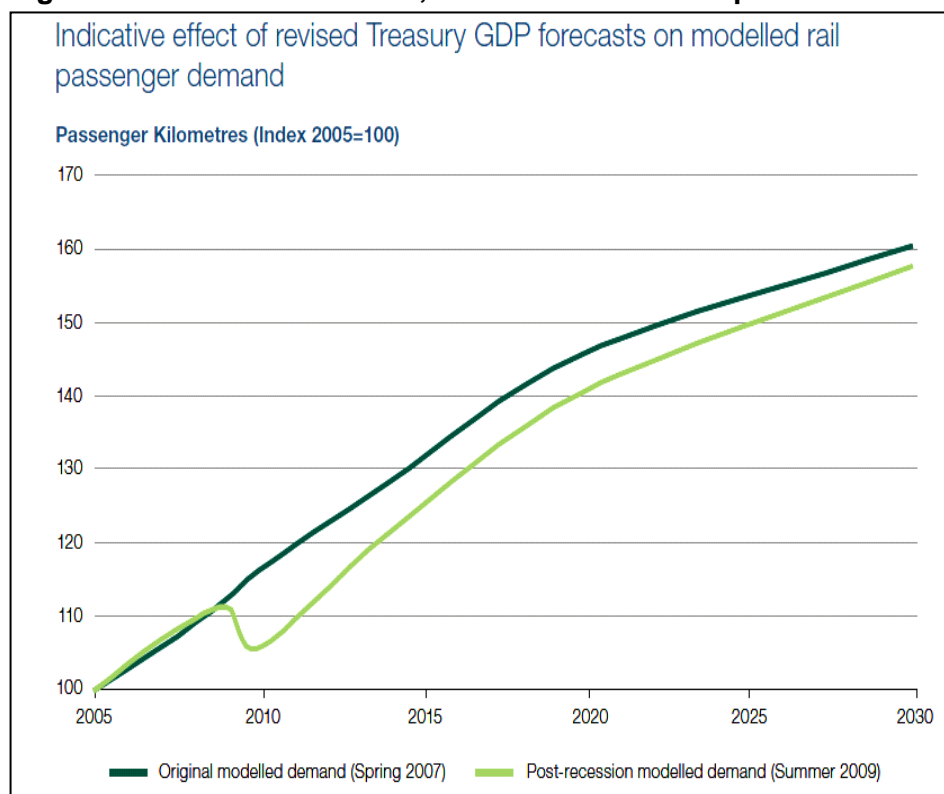
4.2.2 Whilst the overall length of the rail network has expanded by only a relatively small amount, a number of lines have been opened or reopened. These are typically along emerging commuter corridors, and include Nottingham-Mansfield-Worksop, Stirling-Alloa, Cardiff-Ebbw Vale, Bridgend-Maesteg, Abercynon-Aberdare, Kettering-Corby and Aylesbury-Aylesbury Vale Parkway. Work on the Airdrie-Bathgate and Edinburgh-Tweedbank lines is currently under way. In many cases the number of passengers carried has considerably exceeded that originally forecast.

4.2.3 There have also been a number of successful projects to partially or wholly re-double lines that had been reduced to single track in the 1970s-80s (e.g. Kilmarnock-Carlisle, Oxford-Worcester, Princes Risborough-Banbury, Leamington-Coventry, Salisbury-Exeter, Truro-St.Austell).

4.2.4 In the 2007 White Paper “Delivering a Sustainable Railway”, the DfT predicted that passenger rail traffic would increase by a further 30% over the following decade.

The White Paper therefore states that the rail industry must increase its carrying capacity. In 2009 the Network Rail “Network Route Utilisation Strategy” concluded that traffic would nearly double over the next 30 years. The National Audit Office 2010 report “Increasing Passenger Rail Capacity” notes that the recession has constrained growth during 2008 to 2010, but nevertheless expects that by 2030 rail passenger kilometres will have increased by ca. 65% over those for 2005. **Figure 4** below is extracted from the NAO report.

Figure 4: Future Rail Demand, as forecast in NAO report



Source: National Audit Office, after Department for Transport

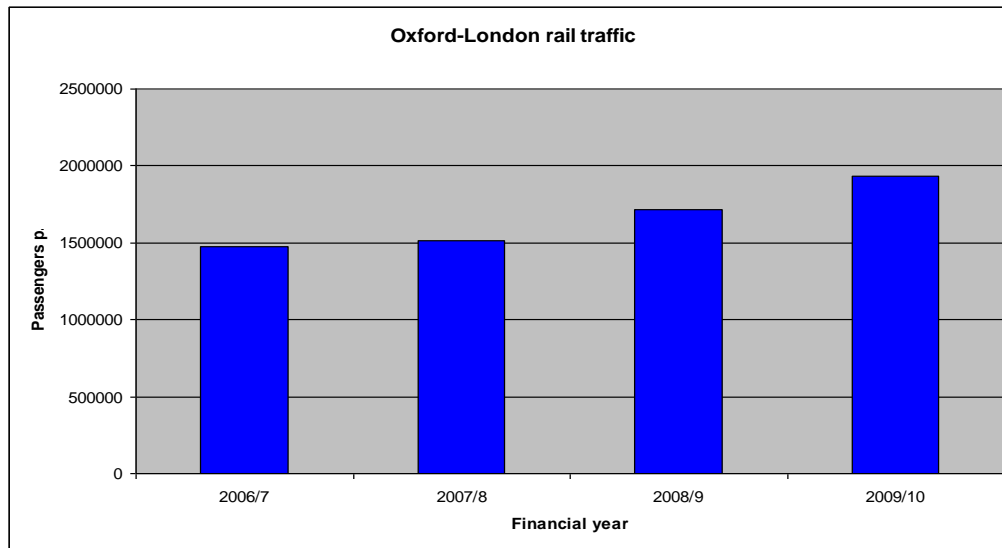
4.2.5 The Office for Rail Regulation’s “National Rail Trends” yearbook (which includes data for the rail network across Great Britain) (see Appendix 1 **CRCL P/2/B**) reports that national rail passenger journeys decreased by 1.3% in 2009-10 compared to the previous financial year. However, rail carryings are now rebounding from the recession, and it appears that autumn 2009 marked a turning point. The ORR Yearbook also reports that passenger journeys in the last quarter of 2009/10 (i.e. the first 3 months of calendar year 2010) rose by 6.1% compared to the same period in 2008-9.

4.3 Oxford to London rail demand

4.3.1 The Oxford to London Paddington trains form part of the Thames Valley group of services, operated by First Great Western. The Thames Valley has for some years been a focus for economic growth, and this has been reflected in the growth of rail travel in, to and from the area.

4.3.2 Oxford to London rail traffic has increased by 31.4% between 2006/7 and 2009/10.

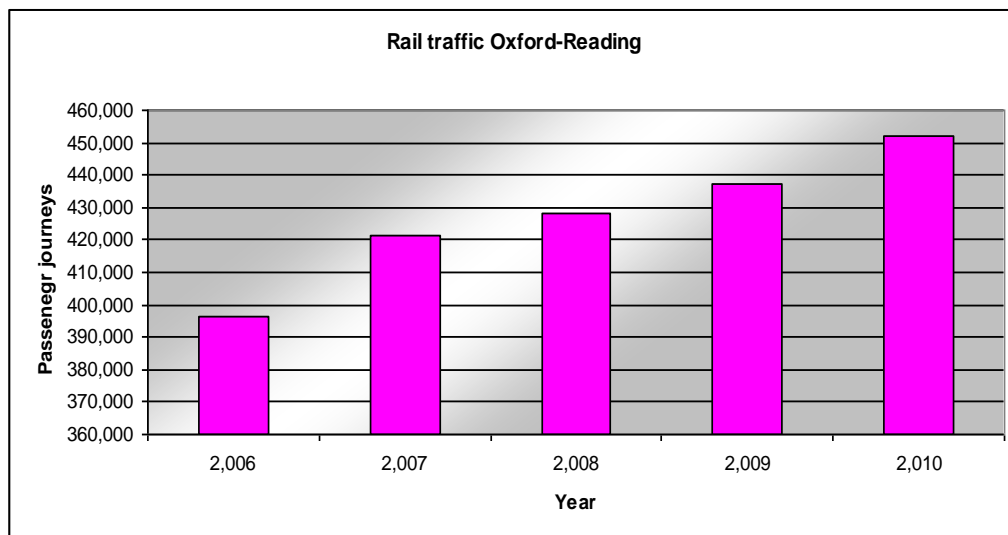
Figure 5: Oxford-London passenger journeys 2007 to 2010



Source: LENNON (the national rail industry passenger sales database)

- 4.3.3 This growth is continuing despite the economic recession. Passenger numbers on First Great Western’s Thames Valley services have been growing at between 3 and 4 percentage points above the average for the wider London & South East area, which in itself grown by about. 3.5% in the year to date.
- 4.3.4 Further growth is forecast in future. Work by Steer, Davies, Gleave indicates that by 2026 Oxford-London rail traffic will grow over the 2007 base by almost 50% for full-fare tickets (predominantly business travel); almost 40% for reduced-fare tickets (leisure travel) and 20% season tickets (commuting). This is further detailed in Leo Eyles evidence, **(CRCL P/5/A)**.
- 4.3.5 Any rail route needs to be considered as a whole, and Oxford-London trains also convey passengers for intermediate destinations in the Thames Valley. These flows have likewise experienced strong growth; Oxford-Reading traffic alone adds a further 25% to the loadings on Oxford – London trains.

Figure 6: Oxford – Reading rail journeys 2007 – 2010



Source: LENNON

4.4 Oxford – London rail market share

4.4.1 Despite this growth, rail's share of the Oxford to London market is disproportionately small compared to similar corridors elsewhere.

Table 2: Comparative Rail Passenger Flows to London

Comparative Rail Ridership			
	Oxford	Cambridge	Milton Keynes
Population #	153,900	122,800	232,200
Distance to London, miles	64	58	50
Trains per hour to London, weekday off-peak	4	6	7
Rail passengers to/from London, p.a.	1,928,434	3,277,919	3,626,000 Includes Bletchley and Wolverton stations
London rail journeys per head, p.a.	13.5	24.9	19.7

Source: LENNON, # ONS 2008 Mid-Year Estimate.

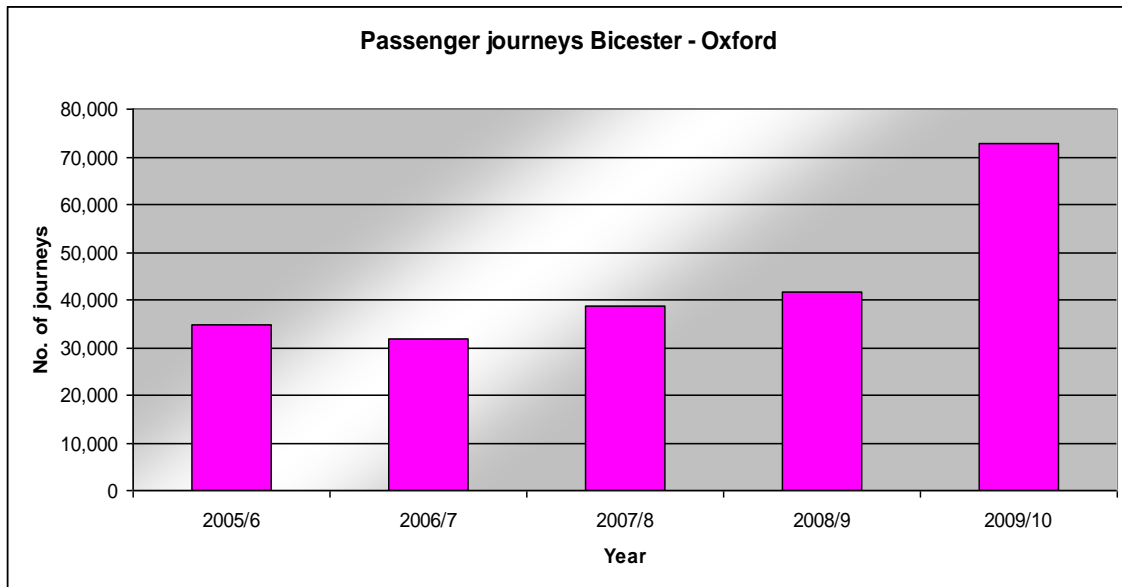
4.4.2 Oxford has only a single rail route to London via Didcot and Reading, and the station is inconveniently sited for many prospective passengers. The time taken to reach Oxford station thus makes rail less competitive than other forms of transport, particularly from those areas which have easy access to the M40 motorway. There is thus considerable potential for further rail growth and modal transfer from road if these factors can be overcome, as is proposed by the Order Scheme.

4.5 Bicester to Oxford Demand

4.5.1 There has been substantial population growth in Bicester in recent years. Despite the congestion on the parallel A34 road, rail carryings between Bicester Town and Oxford have until recently been low, primarily due to the slow and infrequent service.

4.5.2 However, rail traffic from Bicester Town has grown substantially of late, due to the service improvements funded by Oxfordshire County Council that commenced in May 2009. Rail industry ticket sales data shows that year-on-year passenger carryings have increased by about, 74% since the improved service was introduced. Surveys by the County Council in spring 2010 of passengers boarding and alighting at Bicester Town and Islip indicate that this growth at Bicester Town is continuing, and the number of journeys is now 84% higher than in 2008/9. (The increase at Islip is however much less pronounced).

Figure 7: Rail traffic between Bicester Town and Oxford



Source: LENNON

4.5.3 This is in line with experience elsewhere. Many commuter services into other provincial centres have experienced rapid growth in recent years (e.g. Matlock-Derby up 72% in 3 years). In most cases this is due to new housing development, growing road congestion, and improved train services –the same factors as will apply at Bicester.

4.5.4 The potential for rail traffic from Bicester is exemplified by experience at Bicester North station, where substantial improvements in journey time and train frequency have been matched by increases in rail carryings. As a result, rail trips per head of population from Bicester to London are 10 times higher than from Bicester to Oxford, despite the proximity of the latter.

4.6 High Wycombe to Oxford Demand

4.6.1 There have been no direct rail services between High Wycombe and Oxford since 1964, when the line via Thame was closed. Since then the population and economic role of both places has grown considerably, giving considerable potential for rail traffic and modal transfer from road.

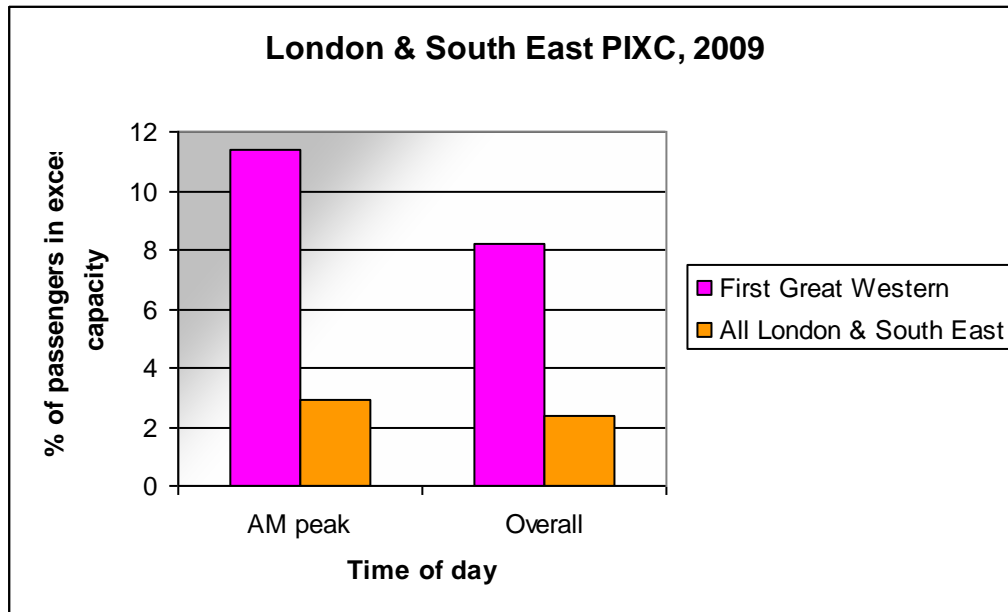
4.7 Overcrowding on Oxford to London services

4.7.1 The Thames Valley area from Oxford through Reading to London has experienced very strong economic growth in recent years. This has led to demand outstripping supply on some train services, and hence overcrowding.

4.7.2 The standard measure for passenger rail crowding is PIXC – Passengers in Excess of Capacity¹. Office of Rail Regulation data shows that First Great Western [FGW] services – including Oxford–London – have the highest PIXC figure for any train operator in the London & South East area.

(1) PIXC is defined by the DfT as the percentage of passengers in excess of capacity on a measured group of trains; capacity on Thames Valley trains is defined as 110% of the number of standard class seats (Intercity 125 trains) or the number of standard class seats plus standing room at 0.55m² per passenger (Class 165 and 166 trains). As the morning peak is more concentrated than the evening peak, PIXC is not uniform. The maximum acceptable level of PIXC is 4.5% for either peak considered alone.

Figure 8: Overcrowding in the South East



Source: Office of Rail Regulation "National Rail Trends" 2009

4.7.3 The 2007 Rail White Paper (**CD/3.19**) identified goals to:

- Move average peak load factors down towards 70%
- Avoid any increases in average peak load factor in any major city of London terminus
- Target capacity increases at the services with major overcrowding.

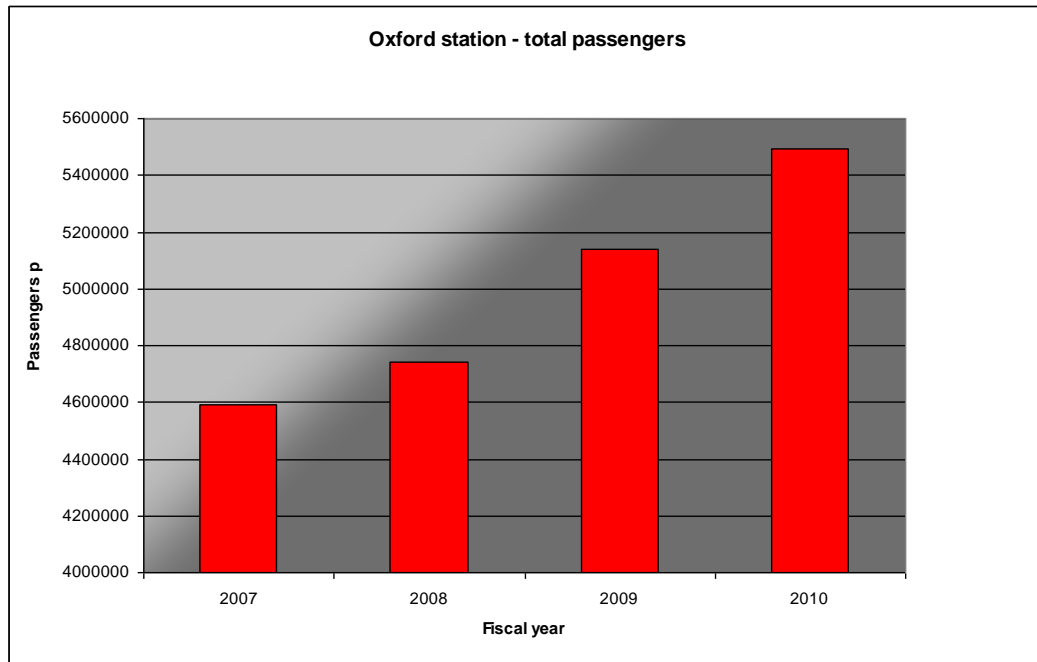
4.7.4 Almost all Oxford – London trains suffer from overcrowding at peak periods. Of 16 Oxford arrivals at Paddington in the morning peak (0700-1000), 9 have load factors² in excess of 100%, and a further 5 in excess of 80%. In the "high peak" (0800-0900) 5 trains have load factors of between 132% and 188%. This is despite First Great Western lengthening trains where possible, and they have proposed to the DfT that there is thus a strong case for further investment in rail capacity in the Thames Valley area, including from Oxford.

4.8 Demand Trends at Oxford Station

4.8.1 Oxford station occupies a key position on the rail network, and is served by cross-country and local passenger services well as trains to London. Despite the economic recession, passenger footfall at Oxford station (for all rail routes) increased by 19.6% between 2006/7 and 2009/10. This has increased pressure on capacity both at Oxford and on the roads serving it.

(2) Load factor is expressed as the percentage of passengers compared to the number of seats. A load factor of over 100% means that passengers are standing.

Figure 9: Rail passenger footfall at Oxford station 2006/7 to 2009/10



Source: LENNON

4.8.2 Oxford station is now routinely crowded for much of the day. It is widely agreed that the station is inadequate for both the number of passengers that has to be catered for and the number of trains using it; and that it does not form a suitable gateway for one of the UK's finest cultural and academic centres. The Oxford Local Plan **(CD/4.3)** notes that "Oxford station is currently operating at full capacity".

4.8.3 The Order Scheme will help manage crowding at Oxford station by providing an alternative railhead at Water Eaton Parkway, which will be more convenient for many areas in north Oxford and north and west Oxfordshire.

4.9 Plans to increase rail capacity in the Oxford to London corridor

4.9.1 Many parts of the network are now operating at or close to their capacity limits. Network Rail is therefore undertaking a number of Route Utilisation Strategy studies (RUS) to assess future demands, capacity constraints and investment solutions.

4.9.2 At present all rail passenger services between Oxford and London travel on the Greater Western line via Didcot and Reading. The Great Western Route Utilisation Strategy (GW RUS) **(CD/3.31)** was published by Network Rail in March 2010. This covers the area between London and the West Country, including routes to Oxford. It primarily focuses on a timeframe up to 2019, but also considers the implications of the growth in demand over the next 30 years. The GW RUS:

- Forecasts high levels of demand growth for intercity passenger, local passenger and freight services, particularly on the route section between Reading and London Paddington (which is used by the Oxford-London Paddington trains).
- Identifies that line capacity utilisation between Didcot and Oxford is already 87%³, and that, whilst the current infrastructure sufficient adequate for present service

(3) Capacity utilisation is calculated by summing the line capacity (in time terms) used by each train in the peak hour on the relevant section of route, and the expressing this as a percentage of the hour. The capacity used by each train is calculated as the planning headway, which is the

levels, infrastructure investment would be needed if the number of passenger trains on that route were to increase. *(It should be noted that, as a railway is fully signalled it has a finite capacity; 100% capacity utilisation is impractical, as this gives no robustness to deal with out-of-course running or other events. The practical maxima will vary with individual routes, depending on line speeds, signal spacing, and the “speed mix” between fast and slow trains; for Oxford-Didcot 87% is approaching the desirable limit.)*

- Identifies that line between Reading and London Paddington is operating at or near capacity for large parts of the day, and that Paddington station is operating to near capacity throughout the day, and to full capacity at peak times.
- Recommends further enhancement to Oxford station and the lines into and out of the station area.
- Recommends and relies on implementation of the Evergreen 3 project (i.e. the Order Scheme). This is categorised as a “Committed Scheme”, and thus one which is included in the baseline analysis of future available capacity.

4.10 Conclusions

4.10.1 In this section I have set out evidence in relation to Statement of Matters 1 and 2. My conclusions are that:

- The national demand for rail travel has grown rapidly, and that this growth is likely to continue.
- Railway lines elsewhere in Britain are being successfully reopened and upgraded to cope with this demand.
- The demand for rail travel in the Oxford-London rail corridors has grown significantly, and that this growth is likely to continue.
- The demand for rail travel in the Bicester-Oxford corridor has grown significantly, and that this growth is likely to continue.
- There is considerable crowding on rail services in the Thames Valley, including those from Oxford, and at Oxford station.
- The existing rail route from Oxford into London is nearing its capacity limits
- Rail industry capacity utilisation studies recommend that the Order Scheme proceeds.

time taken from a train entering a section to the line being clear for the following train, together with any differential necessary for slow trains, or if a stopping train is followed by a fast train. Thus a line with 4 trains with a headway of 5 minutes, and 2 with a headway of 10 minutes, will have a utilisation factor of $(4 \times 5 + 2 \times 10) / 60 = 66\%$.

5 EXTERNAL DEMAND FACTORS IN THE ORDER SCHEME CORRIDOR

5.1.1 In this section I refer to Statement of Matters 2.

5.1.2 This Matter is also considered in the following Evidence:

- Paul Tregear (**CRCL/8/A**): national and local transport policy; modal transfer.
- Ian Gilder (**CRCL/12/A**): spatial planning policy:

5.2 Economic and housing growth

5.2.1 The geographical area served by the Order Scheme is the focus for planned spatial growth and economic development as evidenced in the South East Regional Spatial Strategies (RSS) and the Local Development Framework's (LDF) for Cherwell District Council (**CD/4.13**) and Oxford City Council (**CD/4.16**). Although RSS are no longer part of the statutory Development Plan, it can be reasonably expected that the area served by the Order Scheme will remain a focus for growth on a significant scale, although the precise level and timing of that growth may change. Both Cherwell District Council and Oxford City Council continue to pursue growth agendas through their LDF programmes. In Bicester this is exemplified by Cherwell District Council's and Oxfordshire County Council's continuing support for the North West Bicester Eco-town development. The changes to the planning policy framework are discussed in Ian Gilder's evidence, (**CRCL/P/12/A**).

5.2.2 The Order Scheme falls within the Central Oxfordshire Sub-regional Strategy Area of the (former) South East Plan (**CD/4.11**). This predicted that 8,000 net additional new jobs will be created within the sub-region from 2006 to 2016 alongside 40,680 net additional dwellings which are planned to be delivered in the sub-region in the period to 2026. Of the planned housing growth some 8,000 dwellings are planned within Oxford and 4,900 in Bicester.

5.2.3 The South East Plan identified Oxford as a Regional Hub, and a focus for investment needed to be supported by multimodal transport infrastructure. Oxford anchors the western end of the "Oxford-Cambridge Knowledge Arc" which is one of the UK's main foci for the growth of knowledge-based industries. The South East England Development Agency (SEEDA) also further recognised Oxford's status as a city that is capable of stimulating prosperity, with further growth being unlocked through targeted investment in infrastructure.

5.2.4 The population of Bicester has grown by over 50% in the last 30 years, and it is planned to grow by a further 30% by 2026. Outline planning permission has been granted for 1,785 new dwellings in the South-West Bicester development, and for 500 new dwellings at Gavray Drive. It is anticipated that these will be completed not long after the Order Scheme comes into operation.

5.2.5 Further growth in Bicester will be focussed on the delivery of the North West Bicester eco-town. It is expected that 3,000 new eco-town homes will be built by 2026, and 5,000 by 2030, as outlined in the Cherwell Local Development Framework Draft Core Strategy. (**CD/4.12**) and Cherwell District Council Statement "Making NW Bicester a Reality" (**CD/4.15**).

5.2.6 The eco-town plans will create over 20,000 m² of new employment space by 2016, and over 80,000 m² by 2030. A new Business Park with 60,000 m² of Class B1 employment space, located south-west of Bicester Town station, has also recently been granted planning permission.

5.2.7 Much of Bicester's recent growth has been associated with outwards commuting to Oxford and London. Whilst the creation of new employment within Bicester will provide a wider choice of job opportunities, the disparity in house prices between Bicester and Oxford, and between Bicester and London, means that substantial outwards commuting is likely to continue, with rail as an obvious sustainable method.

5.3 Highway congestion

5.3.1 The Highways Agency reported its analysis of conditions on its core network in the south east in its South East Regional Network Report 2008 (SE RNR). The SE RNR provides operational Strategic Road Network information, including current and future predicted performance. This work confirms the extent to which the highway network in the south east is under stress now and will be in the future. The results of this analysis are shown pictorially in "Stress Maps."

5.3.2 These maps illustrate the strategic road corridors, which are under "stress", to varying degrees, at 2006 or will be under "stress" in the future in 2016 and 2026 with the planned growth (*as envisaged in the South East Plan*). Stress in its simplest terms, is the daily flow divided by the daily capacity; and because levels of traffic vary throughout the day, the daily capacity of the road is best determined by the maximum sustainable traffic flow in the peak hour. However, some roads are congested for longer than just the morning and evening peak hours, and in these cases, stress levels can be described as being "more than 100%".

5.3.3 The Highways Agency Stress Map for 2006 indicates that the M40 corridor through Buckinghamshire and towards Greater London, and the A34 both north of Oxford and in Oxford itself, are currently operating near to or exceeding capacity. By 2026 much of the M40 corridor through Buckinghamshire and Oxfordshire and most of the A34 in Oxfordshire will be operating at stress levels in excess of 130%. These maps are shown in Appendix 2 (**CRCL P/2/B**).

5.3.4 In this section I have set out evidence in relation to Statement of Matters 2. My conclusions are that:

- The population growth in the scheme area, especially in Bicester, has been substantial, and that this is likely to continue.
- The highway network that parallels the Order Scheme is already at or near capacity, and will become even more stressed in future years.

6 ACCESS TO THE RAIL NETWORK FROM OXFORD AND NORTH AND WEST OXFORDSHIRE

6.1.1 In this section I refer to Statement of Matters 2.

6.1.2 This Matter is also considered in the following Evidence:

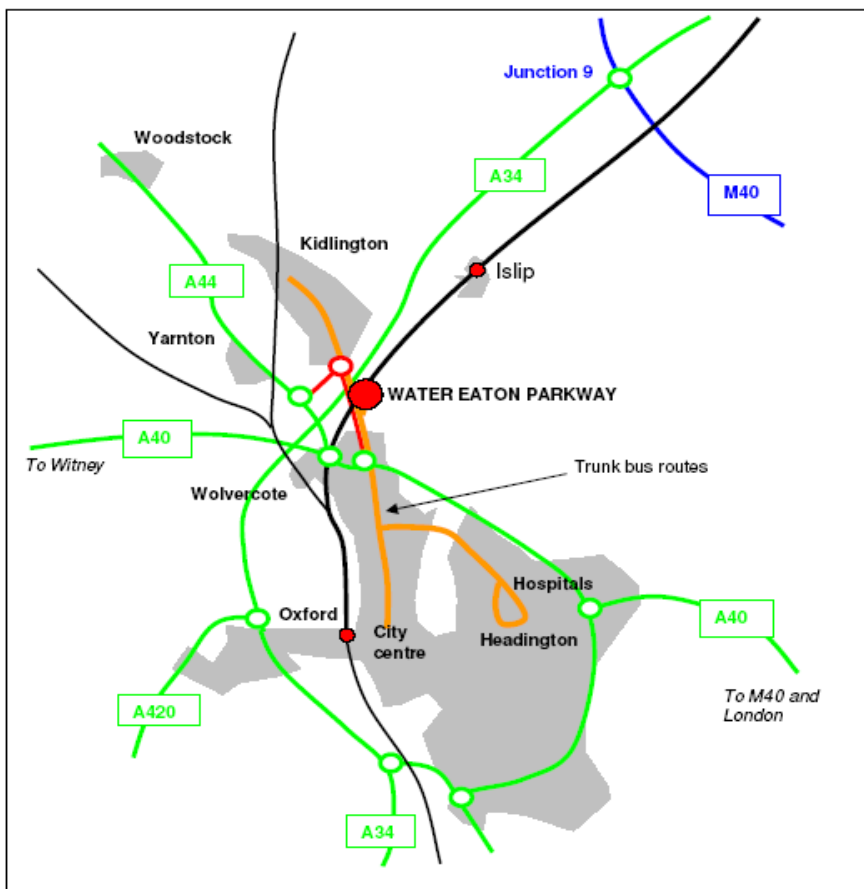
- Leo Eyles (**CRCL/P/5/A**): demand forecast, including station catchment areas
- Paul Tregear (**CRCL/P/8/A**): modal transfer.

6.2 Station locations

6.2.1 Oxford station is sited to the west of the city centre and is remote from many of the city's residential and business areas. It also suffers from congested local roads, and does not have direct bus services from areas in the north of the city such as Summertown and Wolvercote.

6.2.2 A large part of north and west Oxfordshire also has poor access to main-line rail services, including Kidlington (population of 14,945), Witney (24,338) and Carterton (11,805) (all figures from Census 2001). Longer-distance journeys from these and other settlements must be made either by road throughout, via congested urban roads to the existing station, or via the (also congested) A34 to Bicester North station.

Figure 10: Water Eaton Parkway location



Source: Chiltern Railways

- 6.2.3 The Order Scheme will provide an alternative railhead at Water Eaton Parkway (as in Figure 10 above). The location of the new station has comprehensive bus services (the express buses from the existing Park and Ride facility, and the local services along the Banbury Road); is within walking and cycling distance of Kidlington and Wolvercote; and has direct links to surrounding rural areas via the A40, A44 and A34 roads.
- 6.2.4 Water Eaton Parkway will be attractive for travel from locations in north and east Oxford, and north and west Oxfordshire, due to:
- shorter distances to a railhead compared to using Oxford or Bicester North;
 - faster overall journey times to London;
 - less need to use congested urban roads;
 - excellent bus-rail links
- 6.2.5 Leo Eyles' Evidence (**CRCL/P/5/A**) demonstrates that many passengers will be abstracted from Oxford and Bicester North stations to Water Eaton Parkway. This will result in both user benefits (e.g. shorter overall journey times) and non-user benefits (e.g. less road vehicle mileage, and less traffic on the congested Botley Road).

6.3 Conclusions

- 6.3.1 In this section I have set out evidence in relation to Statement of Matters 2. My conclusions are that:
- The existing Oxford station is poorly located for much of the city and its environs.
 - Chiltern's proposed new Water Eaton Parkway station will provide an additional railhead with more convenient access by cycle, bus and car from much of north Oxford and surrounding areas.

7 THE WIDER SOCIETAL BENEFITS OF RAIL TRANSPORT

7.1.1 In this section I refer to Matter 2.

7.1.2 This matter is also considered in the following Evidence:

- Leo Eyles (**CRCL/P/5/A**): economic benefits specific to the Order Scheme
- Paul Tregear (**CRCL/P/8/A**): local and national transport policy
- Ian Gilder (**CRCL/P/12/A**): emissions specific to the Order Scheme.

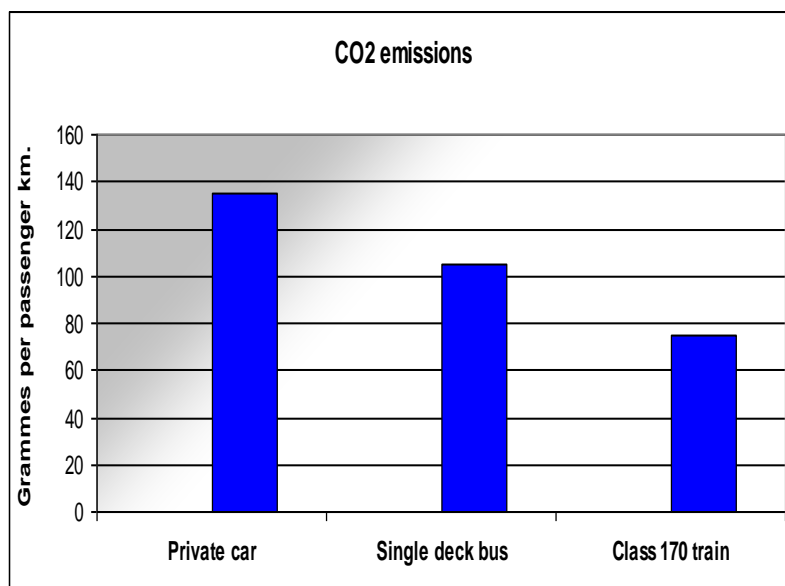
7.2 Energy and Emissions

7.2.1 Investment in the rail network is widely seen as an effective means of delivering a more sustainable transport system.

7.2.2 A steel wheel on a steel rail uses far less energy than a rubber tyre on tarmac. In particular rail transport produces less CO₂ per unit of travel than does the private car, and thus helps reduce carbon emissions. The DfT White Paper “Delivering a Sustainable Railway” (**CD/3.19**) published in July 2007 states at paragraph 1.15 that: *“The rail industry can make a significant contribution [to reducing CO₂] by accommodating the increasing demand for this “greener” travel choice, offering an attractive quality of service and reducing its own carbon footprint. Maximising that contribution must, clearly, be a key strand in any long-term strategy for the railway.”*

7.2.3 Research by the Rail Safety & Standards Board (RSSB) (Appendix 3, **CRCL P/2/B**) demonstrates that a train emits substantially less CO₂ per passenger kilometre than a car or single deck bus.

Figure 11: Relative CO₂ emissions



Source: RSSB Note that class 170 trains are identical in all respects except couplings to class 168 trains, which will be used for Chiltern’s Marylebone-Oxford services.

7.2.4 The CO₂ emissions resulting from the Order Scheme are discussed in Ian Gilder’s evidence (**CRCL/P/12/A**).

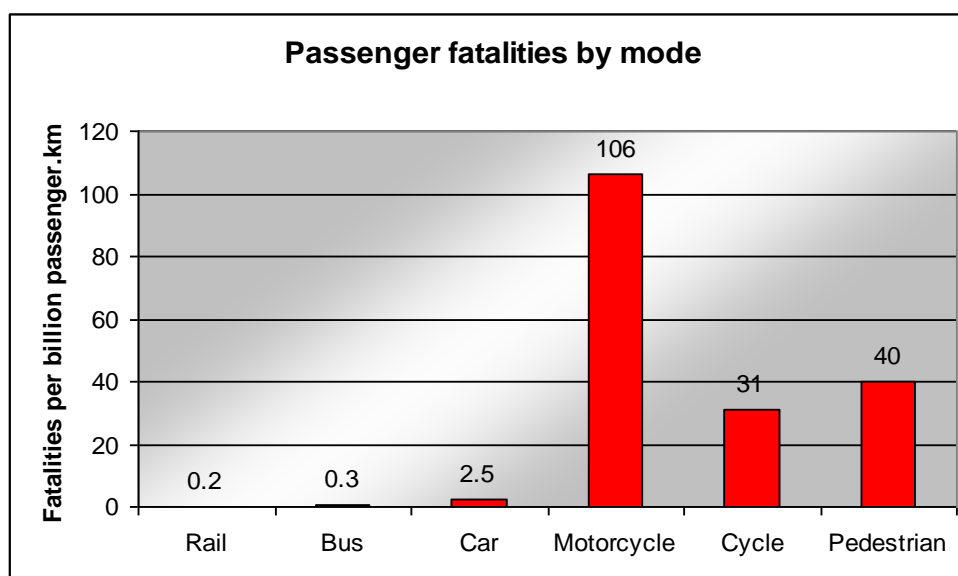
7.3 Land use and disruption

7.3.1 A railway line can provide far greater capacity per unit of land area taken than does a highway. A new railway line thus requires less land-take than does a highway of equivalent capacity. Incremental expansion of the existing rail network (as with the Order Scheme) is also far less disruptive to the community and the environment than is construction of new roads, or the widening of existing ones.

7.4 Safety

7.4.1 The British rail network is one of the safest forms of transport in the world. It is thus beneficial to encourage travel by rail rather than by road.

Figure 12: Modal safety comparison



Source: Transport Statistics GB 2009. Figures are for average rate p.a., 1999-2008

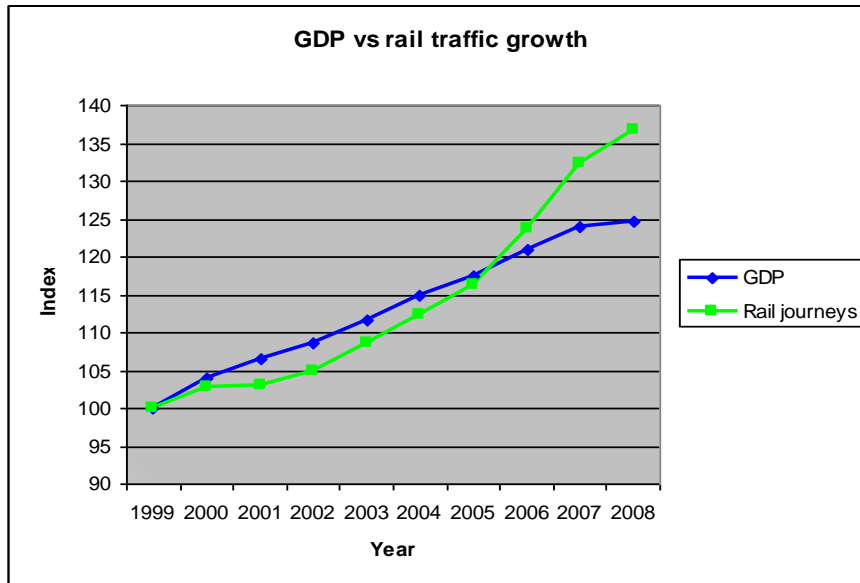
7.4.2 Level crossings are now considered to be the greatest source of safety risk on the rail network (as noted in Aidan Nelson's Evidence **(CRCL/P/7/A)**). By eliminating all but one level crossing on the Bicester to Oxford route, the Order Scheme will provide safety benefits additional to those resulting from modal transfer.

7.5 Economic development

7.5.1 There is a clear relationship between economic growth and rail traffic growth. In recent years the rate of rail growth has outstripped that for GDP, indicating that the overall role of rail in the economy is increasing.

7.5.2 Improved rail services give access to wider employment, retail and leisure markets, and to new business opportunities. New and upgraded rail lines have thus been used extensively to encourage regeneration (e.g. Cardiff-Aberdare, Cardiff-Ebbw Vale, Nottingham-Mansfield, Edinburgh-Bathgate, and the Docklands Light Railway).

Figure 13: National rail traffic growth compared to GDP



Source: Transport Statistics GB

7.5.3 Economic growth in turn generates extra commuting and business travel, and thus requires extra rail capacity. This is compounded by the trend towards service-industry employment in urban centres which can be most effectively accessed by public transport. This can be observed in the rapid growth of rail commuting in the Thames Valley area, and into cities such as Leeds and Birmingham, as their economy has turned from manufacturing to services.

7.6 Conclusions

7.6.1 In this section I have set out further evidence in relation to Statement of Matters 2. My conclusions are that:

- Rail uses less energy, produces less carbon emissions, and uses less new land, than does other transport systems, and is thus more sustainable than other motorised modes.
- Rail is safer than other forms of transport.
- Rail helps drive regeneration and economic growth, whilst economic growth helps drive rail carryings and thus rail capacity requirements.

8 THE MAIN ALTERNATIVE OPTIONS CONSIDERED

8.1.1 In this section I refer to Statement of Matters 3.

8.1.2 The detailed options considered at each location along the Order Scheme route will be presented in Stephen Barker's Evidence (**CRCL/P/6/A**). Aidan Nelson's Evidence (**CRCL/P/7/A**) will discuss level crossing options.

8.2 Strategic Objectives

8.2.1 All major projects involve the process of considering alternatives and refining route and engineering options to meet identified scheme objectives. The consideration of alternatives sought to meet Chiltern Railways' strategic objectives to:

- increase rail capacity on the Oxford-Reading-London corridor;
 - improve access to the rail network for Oxford and Oxfordshire;
 - provide a sustainable alternative to the car, and extend the use of an environmentally friendly and safe form of transport;
 - help deliver public policies for economic and spatial development;
 - facilitate the East West Rail Link; and
 - facilitate the redevelopment of Oxford Station.
- Other relevant considerations were the need to:
- minimise capital and operating costs;
 - cause the least disruption during construction and operation;
 - make sufficient operating profit to enable funding as a private sector project.

8.3 Non-Rail Based Alternatives

8.3.1 Three non-rail based options were considered in parallel with the strategic route option development (below):

- **Park and ride using an existing railhead:** A considerable number of passengers from north and west Oxfordshire already drive to Banbury, Bicester North, and Haddenham & Thame Parkway stations. All three locations were considered to be unsustainable as they would result in longer car journeys to the stations alongside capacity problems with the existing car parks.
- **Conventional bus to an existing railhead:** A bus service along the A34 or other roads would be relatively slow and unreliable compared to a rail link. Moreover, many passengers would be faced with a double interchange penalty (car or local bus – railhead bus – train) which would make the journey uncompetitive in terms of both time and convenience.
- **Guided bus along the Oxford-Bicester railway:** In 2001-2002 proposals were made for the "GTE" guided busway along the Hinksey-Oxford-Wolvercote rail corridor. Extension of this along the Bicester railway line to give an interchange with Chiltern Railways at Bicester North station would have enabled faster and more reliable bus journeys than would be possible using the public highway. However, the busway technology has proved problematic elsewhere; the capital costs would be considerable and rail access to MoD Bicester would no longer be

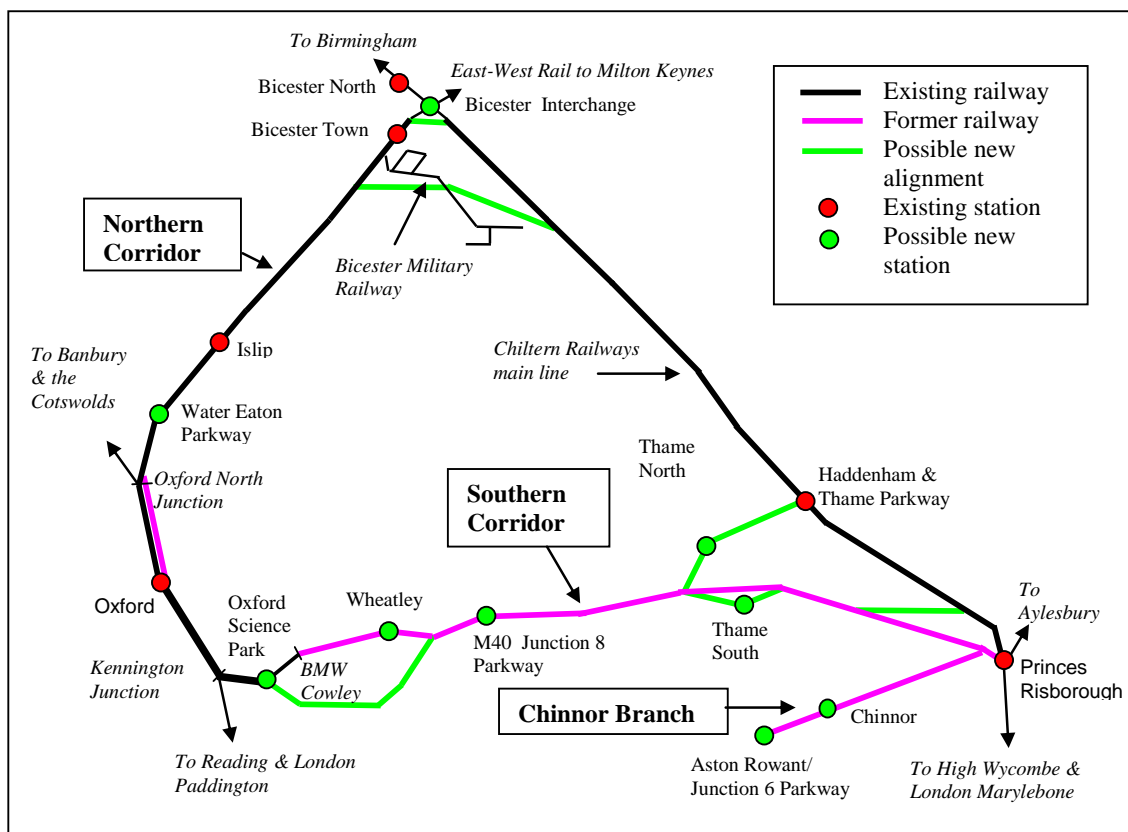
possible. The idea was, therefore, not progressed and in the event the GTE project did not proceed either.

8.3.2 It may be noted that none of these non-rail options would have provided assistance to the East-West Rail project.

8.4 Strategic Rail Route Options

8.4.1 Between 1998 and 2003, Chiltern Railways undertook a number of studies looking at three heavy rail route options: the Chinnor Branch; the Southern Corridor; and the Northern Corridor as shown below. The Northern Corridor served Bicester and Oxford. The routes were assessed on the extent to which they met Chiltern Railways' strategic aims, and gave either a through rail link between Oxford and the Chiltern line or access to Oxford via a Parkway railhead. The work included engineering assessments, demand and revenue forecasts and consultation with relevant stakeholders.

Figure 14: Route options considered



Source: Chiltern Railways

8.4.2 The Chinnor Branch option was dropped at an early stage due to a lack of stakeholder support and low forecast patronage.

8.4.3 The Southern and Northern Corridors were further evaluated in a report by Chiltern Railways to the Strategic Rail Authority (now DfT) in 2003 (**CD/2.3**) which considered the business case, deliverability and non-user benefits. The conclusion of the study was that the Northern Corridor route offered the following benefits over the Southern Corridor route:

- The amount of new construction would be significantly less, as the route largely uses an existing railway and disturbance to local communities would be

minimised accordingly. Conversely, significant stretches of trackbed on the Southern Corridor had already been built over.

- The proposed Water Eaton Parkway station has excellent bus links to Oxford city centre and other destinations such as the John Radcliffe hospital and would serve Kidlington. It also allows car users from north/east Oxford and north/west Oxfordshire to access the railway without crossing the city centre to access Oxford station.
- Significant extra revenue would result from improving the Bicester Town to Oxford commuter service with commensurate socio-economic benefits.
- Upgrading the line between Bicester and Oxford would also facilitate reinstatement of the East West Rail Link, which is a key public transport policy objective for the relevant local authorities.
- Trains on the Southern Corridor would need to use the existing, congested main line between Kennington Junction and Oxford station, whereas the Northern Corridor route would utilise abandoned tracks between Oxford North Junction and Oxford which could be reinstated to create extra capacity.

8.4.4 The 2003 report (**CD/2.3**) also demonstrated that the Northern Corridor had a higher Benefit Cost Ratio than the Southern Corridor and it was therefore chosen for further development into what has become the Order Scheme.

8.5 Northern Corridor options

8.5.1 Within the Northern Corridor consideration was given to alternative alignments, namely:

- a) a connection to the Chiltern Main Line via either the Bicester Military Railway or Arcott;
- b) a flying junction between the new Bicester Chord and the Chiltern Main Line;
- c) west of Water Eaton Parkway, an alignment that would run north-west of the existing Bicester – Oxford railway, joining the Banbury-Oxford or Worcester -Oxford main lines at a point south of Yarnton. This was considered primarily as a means of allowing an extension through to Witney

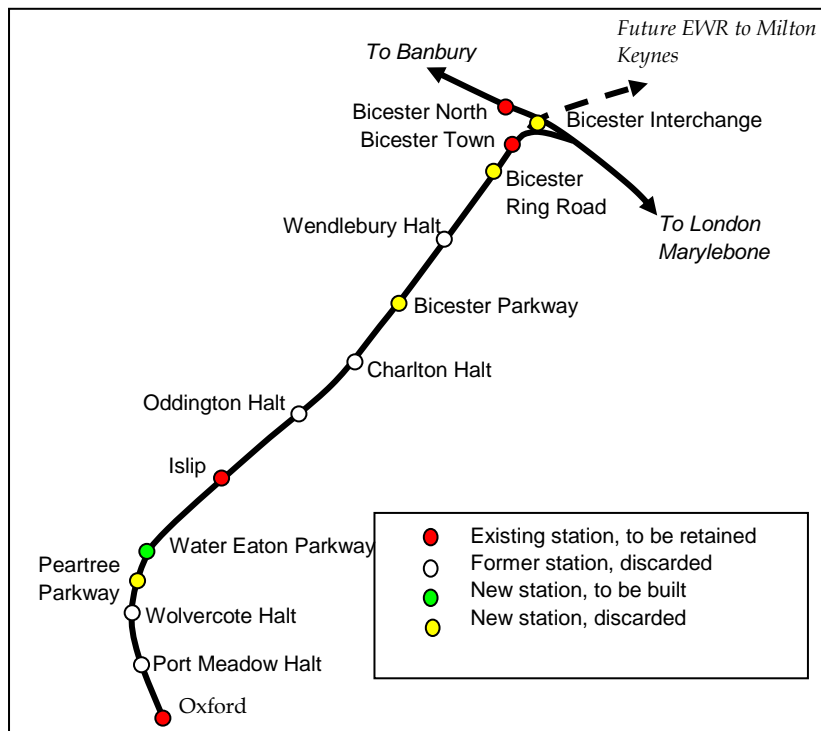
8.5.2 The appraisal showed that the three alternatives to the Order Scheme were unable to meet Chiltern Railways' strategic objectives as effectively as the Order Scheme and presented other difficulties in terms of the practicalities of developing the alignments, namely:

- higher capital costs (all);
- difficulties with track alignment (all);
- the need to extensively remodel the Military Railway (option a);
- security considerations on MoD land (option a);
- the need for substantial extra land acquisition (all);
- capacity constraints on the Banbury/Worcester - Oxford lines (option c);
- impact on landowners along a substantively new route (options a, c);
- not meeting the needs of Bicester to Oxford commuter traffic (option a)
- the multiple changes in levels required to cross the A34, A4165, A4260 and A44 roads and the Oxford Canal, and the capital costs thereof (option c).

8.6 Station location options

- 8.6.1 The location of the stations in the Order Scheme were determined based on a consideration of existing rail traffic flows and future levels of rail patronage, accessibility by all modes of transport, site availability and impacts on local residents.
- 8.6.2 A number of station locations shown in were considered during the design development phase in 2007-9, as shown below:

Figure 15: Alternative Station Locations



Source: Chiltern Railways

- **Bicester Interchange**, Although promoted in the adopted Cherwell Local Plan (see evidence of Ian Gilder **CRCL/P/12/A**) as a possible replacement for Bicester North and Bicester Town stations with a single interchange station where the Chiltern and East-West routes cross it presented a number of practical difficulties. These included poor road access, potential for greater traffic congestion, remoteness from Bicester town centre and Bicester Village and poor interchange with other modes of transport.
- **Bicester Ring Road**, sited to the west of the A41 overbridge. This was rejected because of its distance from Bicester town centre, difficulty in securing new road junctions with the A41, the cost of constructing a subway under the A41 to access Bicester Village and the town centre and flood risks.
- **Bicester Parkway**, close to Junction 9 of the M40, presented a number of difficulties. These included poor levels of patronage, lack of a suitable bus services, length of car journeys from Oxford and the west, high levels of road congestion at Junction 9 would make this location unsuitable as a rail park & ride terminal for traffic coming from the M40.
- **Former halts** were rejected due to minimal potential for rail patronage, except for Oxford Road Halt, the site of the proposed Water Eaton Parkway station.

- **Existing Stations at Bicester Town, Islip and Oxford.** These demonstrated positive attributes in terms of their existing levels of rail patronage, their convenience to town centres and other major traffic generators.
- **Peartree Parkway** was considered as an alternative to the station at Water Eaton Parkway. It has had the advantage of not being a Green Belt site but had other drawbacks: it did not serve Kidlington, it is not served by local as opposed to park & ride buses and the Peartree roundabout and its approach roads were already heavily congested. Other practical difficulties included the need for substantial engineering works to deal with changes in levels.
- **Water Eaton Parkway** offers significant potential as a multi-modal interchange with excellent bus, cycle and road links. It is close to Kidlington, a settlement north of Oxford which currently is not served by rail and for which the local authorities have long campaigned for a station. Water Eaton Parkway is in the Green Belt. However, an assessment of the site against the non-Green Belt alternative at Peartree showed it to be the more sustainable station location.

8.6.3 Further details of the factors affecting the choice of Water Eaton Parkway station are considered in Ian Gilder's evidence (**CRCL/P/12/A**) and the reports "North Oxford Park and Ride Site Appraisal" and "Water Eaton Rail Aggregates Depot" in the Appendices to Ian Gilder's evidence (**CRCL/P/12/B**).

8.6.4 Based on the assessment of the alternatives, the four chosen station locations were Bicester Town, Islip, Water Eaton Parkway and Oxford stations.

8.7 The relationship with other rail schemes

8.7.1 The Chiltern Main Line between London Marylebone, Bicester and Birmingham has been extensively rebuilt in recent years, by Chiltern Railways' projects "Evergreen 1" and "Evergreen 2. These have included the reinstatement of double track and the provision of additional signals, extra platforms at Marylebone station, and other measures to increase line capacity. Work is currently under way (also part of the "Evergreen 3" project) to substantially enhance line speeds between Neasden Junction (London) and Aynho Junction (near Banbury). This work will be completed by May 2011, and will result in journey time reductions of around 20%. The cumulative effect of these enhancements is that the Chiltern Main Line will be fully able to accommodate the planned Oxford-London service.

8.7.2 In the period 2012 to 2017 the Oxford-Reading-London Paddington route may be constrained by a number of major renewals and enhancement projects. These include:

- London CrossRail (extending from London to Maidenhead, and possibly Reading)
- Reading station remodelling,
- Great Western Main Line electrification to Bristol, South Wales and Oxford
- Resignalling of the Didcot-Oxford-Banbury area.
- Rebuilding of Oxford station

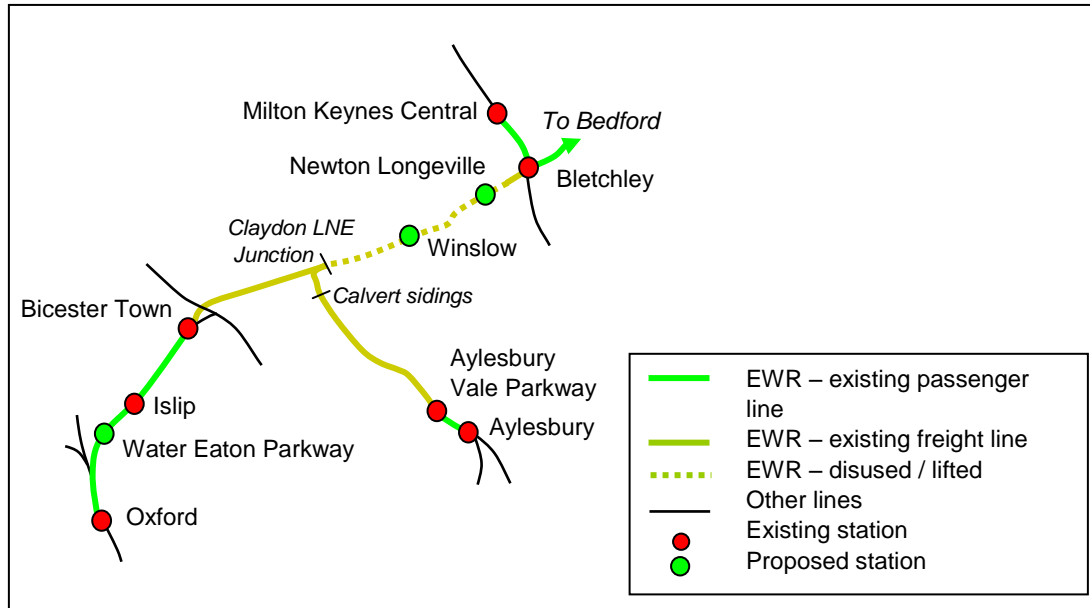
8.7.3 These will all entail significant disruption, during which time Chiltern's proposed route between Oxford and London Marylebone via High Wycombe will provide a reliable alternative. Once operational the CrossRail scheme will also take most of the Relief (i.e. Slow) Lines capacity east of Maidenhead thus creating timetabling constraints on the Main (i.e. Fast) Lines.

- 8.7.4 A programme to deliver an increased loading gauge along the main rail freight corridors is currently under way, to enable the carriage of 9'6"-high shipping containers on conventional wagons. This includes the Southampton-Oxford-Birmingham line. The gauge enhancement works in the Order Scheme, together with the potential re-opening of the East-West Rail route (western section), thus complement the work on the Southampton-Oxford-Birmingham line. Appendix 5 (**CRCL/P/2/B**) discusses the loading gauge issue in more detail.
- 8.7.5 Other current Network Rail plans include a new "South Bay" platform at Oxford, on the Up (East) side of the line south of the Botley Road bridge. If this proceeds it will have no impact on the Order Scheme proposals, except that:
- The number of train movements at the north end of Oxford station will reduce, as trains from Reading and London will no longer have to terminate in platform 2, and then draw northwards before reversing in to platform 1 for the return journey.
 - The capacity of the long-stay car park at Oxford station may be reduced, which may in turn encourage passengers to use Water Eaton Parkway.

8.8 The East West Rail (EWR) Link

- 8.8.1 Proposals to reopen the Oxford-Bletchley-Cambridge railway have been mooted since the mid-1970s. British Rail's "Regional Railways" Sector actively developed plans for a Bristol to Peterborough service in the late 1980s, but this was thwarted by an economic downturn. More recently the Milton Keynes & South Midlands Sub-Regional Strategy (**CD/4.2**) has given impetus to transport improvements on the Oxford-Bicester-Milton Keynes corridor.
- 8.8.2 The East-West Rail Consortium (EWRC) was established in 1995 with the objective of promoting and securing a strategic railway connecting East Anglia with Central, Southern and Western England, including a spur to Aylesbury. EWRC brings together local authorities and railway and regional stakeholders, including the Homes and Communities Agency, from across the South East and East of England.
- 8.9 The initial priority for the EWRC is to reopen the EWR "Western Section", for rail passenger services from Oxford and Aylesbury to Milton Keynes.

Figure 16: The East-West Rail Link (Western Section)



Source: Chiltern Railways

8.9.1 Phase 1 of the Order Scheme shares the same route between Oxford and Bicester, and will thus significantly reduce the cost of the EWR Western Section. This constitutes a significant potential saving to the public purse, and further enhances the deliverability of EWR. Chiltern Railways therefore, signed a Memorandum of Understanding with EWRC on 23rd June 2009 (**CD/2.6**), to ensure that the two schemes are complementary, and to avoid any unnecessary waste or duplication of works.

8.9.2 Engineering and business case studies (**CD/2.19**) for the EWR Western Section have recently been completed, and funding is being sought. This, together with the likely timescales for EWR implementation, is covered in more detail in the EWRC witness' Evidence (**CRCL/P/3/A & CRCL /P/4/A**).

8.10 Conclusions

8.10.1 In this section I have set out evidence in relation to Statement of Matters 3. My conclusions are that:

- Both rail and non-rail options have been considered
- A range of route options have been considered
- All potential station locations have been considered
- The proposed route and station locations meet the scheme objectives better than would the alternatives.
- The Order Scheme complements work to enhance the Chiltern Main Line
- The Order Scheme provides an alternative to the Great Western line when that will be disrupted by major works
- The Order Scheme facilitates the proposed EWR Link.

9 PROPOSED TRANSPORT SERVICES

9.1.1 In this section I refer to the proposed train services, and the integration between rail and other transport modes. These impact on a number of the Matters set out by the Secretary of State.

9.2 Passenger Trains

9.2.1 Chiltern Railways propose to operate two passenger trains every hour in both directions between London Marylebone and Oxford, calling at High Wycombe, Bicester Town, Water Eaton Parkway and Oxford stations; selected trains will also call at Islip. This service will operate throughout the day Monday-Sunday, except that services will be less frequent in the late evening and on Sunday mornings.

9.2.2 The Deed of Amendment to the Chiltern Railways Franchise Agreement (**CD/2.13**) includes the Passenger Service Requirement (PSR) for the London-Bicester- Oxford line - see Appendix 4 (**CRCL/P/2/B**). The PSR is specified by the Secretary of State, and sets out the service which he/she wishes to be operated in the public interest. The proposed Chiltern services meet the PSR, and in the case of Islip exceed it.

9.2.3 Subject to agreement with Oxfordshire County Council, Chiltern Railways will also commit to operate the existing “enhanced” service between Bicester Town and Oxford until the line is closed for rebuilding.

9.2.4 Should Phase 2B proceed, the proposed EWR “Preferred Case” services will consist of two passenger trains each hour in both directions between Milton Keynes, Oxford and Reading. These will use the Order Scheme route between Bicester (Gavray Junction) and Oxford North Junction, and then continue over the existing main line to Oxford station and beyond. However, operation over the Order Scheme line into the Chiltern Railways platforms at Oxford station has been assumed as a “reasonable worst case” scenario for the Environmental Impact Assessment (EIA). It is envisaged that EWR stopping patterns and journey times will be similar to Chiltern Railways’ services.

9.2.5 The EWR business case does not include any Cross-Country passenger services via EWR. However, these have been proposed from time to time and an hourly train each way was included as a part of the “reasonable worst case” in the Environmental Statement (ES) (**CD/1.15 to 1.18**). If these trains were to operate, they would not use the Chiltern Railways’ track south of Oxford North Junction.

9.3 Freight Trains

9.3.1 In Phases 1 and 2A of the Order Scheme, freight services will be similar to those currently operated, subject to any changes in commercial demand.

9.3.2 The Phase 2A works include the enlargement of Wolvercot tunnel and certain bridges to accommodate “W12+” loading gauge (i.e. able to accommodate 9’6” high containers on conventional wagons, plus overhead electrification). This is in accordance with national policy, as noted in Appendices 2 and 3 (**CRCL/P/2/B**). Phase 2A will not result in an increase in freight trains, unless and until Phase 2B also proceeds.

9.3.3 In Phase 2B additional freight trains may run. The EWR business case does not rely on additional freight services over the line, but notes that it may be attractive for

intermodal services carrying shipping containers from Southampton to the Midlands and the North, some of which may be diverted from the existing line through Oxford and Banbury. This is in accordance with the Department for Transport’s proposal to include the route in the national “Strategic Freight Network”, as noted in Graham Cross’s Evidence **(CRCL/P/1/A)**. Relevant extracts from the DfT’s 2009 report “The Strategic Rail Freight Network: the Longer-Term Vision” are set out in Appendix 6, **(CRCL/P/2/B)**.

9.3.4 The Phase 2B works provide capacity for one freight train each hour in each direction. In practice the number and type of freight trains on at any time is dependent on market conditions (e.g. port congestion, seasonal factors, and the day-to-day demand for the products being transported). Therefore, the provision of a freight train “path” does not mean that trains will always use the capacity made available. The rail industry “TRUST” database shows that typically around 50% of existing freight train paths between Oxford and Banbury are actually used in any 24 hours, and only 48% on the Bicester – Oxford line.

9.3.5 All freight trains will use the existing main line between Oxford North Junction and Oxford, and will not run on the new Chiltern Railway tracks between these points.

9.4 Summary of Passenger and Freight Services

9.4.1 The number of trains in each phase is summarised below.

Table 3: Proposed passenger and freight train services

Phases 1 and 2A of the Order Scheme		
	Maximum Number of Trains per Hour	
Service	Bicester to Oxford North Junction	Oxford North Junction to Oxford
Chiltern Railways passenger service Oxford to London Marylebone 2 each way per hour	4	4
Freight 2 to 5 each way, per day	2 (most hours nil)	0
TOTAL	6	4
Phase 1. 2A and Phase 2B of the Order Scheme, as in EWR business case		
Chiltern Railways passenger service Oxford to London Marylebone 2 each way per hour	4	4
EWR passenger service, Oxford to Milton Keynes 2 per hour each way	4	0
Freight 2 to 5 each way, per day	2 (most hours nil)	0
TOTAL	10	4

Phase 1. 2A and Phase 2B of the Order Scheme, “worst case”		
	Maximum Number of Trains per Hour	
	Bicester to Oxford North Junction	Oxford North Junction to Oxford
Chiltern Railways passenger service Oxford to London Marylebone	4	4
EWR passenger service Oxford to Milton Keynes 2 per hour each way	4	4
CrossCountry passenger service 1 per hour each way	2	0
Freight Up to 1 per hour each way	2 (not all will operate)	0
TOTAL	12	8
Source: Chiltern Railways, East-West Rail Consortium		

9.4.2 It is envisaged that passenger trains will operate from around 06:00 in the morning until midnight with one or two “empty stock” trains immediately before and after these times. A less frequent service may be operated in the late evening and on Sunday mornings. Freight services could operate 24 hours a day, but in practice not all freight paths are used, and it is likely that only 50% of potential freight trains will actually run on a given day.

9.5 Changes in Journey Times

9.5.1 The Order Scheme will deliver new routes for passengers and significant journey time savings in terms of the length of the train journey and access time to/from the rail station, as shown in **Table 4** below.

9.5.2 The location of Marylebone and Water Eaton Parkway stations also gives significant time savings to/from onward journeys in London (due Marylebone being nearer the West End than Paddington, and having easier interchange with the Underground) and from north Oxfordshire (due to the new Water Eaton Parkway station), as shown in **Table 5** below.

Table 4: Sample rail journey times with and without the order scheme

Sample station to station journey times			
From	To	Current Service (Minutes)	Planned Service (Minutes)
Oxford	London Marylebone	(London Paddington only) 54-92 minutes	66
	High Wycombe	No service	38
Water Eaton Parkway	London Marylebone	No service	58
	High Wycombe	No service	30
Islip	Oxford	15	8
	London Marylebone	76-85 minutes via Oxford	56
Bicester Town	Oxford	26 minutes	14
	Water Eaton Parkway	No service	8
Source: Chiltern Railways; First Great Western timetable			

Table 5: Sample journey times to/from off-line points

Sample Journey Times to/from offline points			
From	To	Current Service (Minutes)	Planned Service (Minutes)
Oxford station	London West End (Underground to Oxford Circus)	71-108 minutes via Paddington	72 minutes via Marylebone
Kidlington church (bus to station)	London West End (Underground to Oxford Circus)	101-138 minutes via Oxford and Paddington	75 minutes via Water Eaton Parkway and Marylebone
Source: Transport for London website; Travel line website			

9.6 Transport Integration

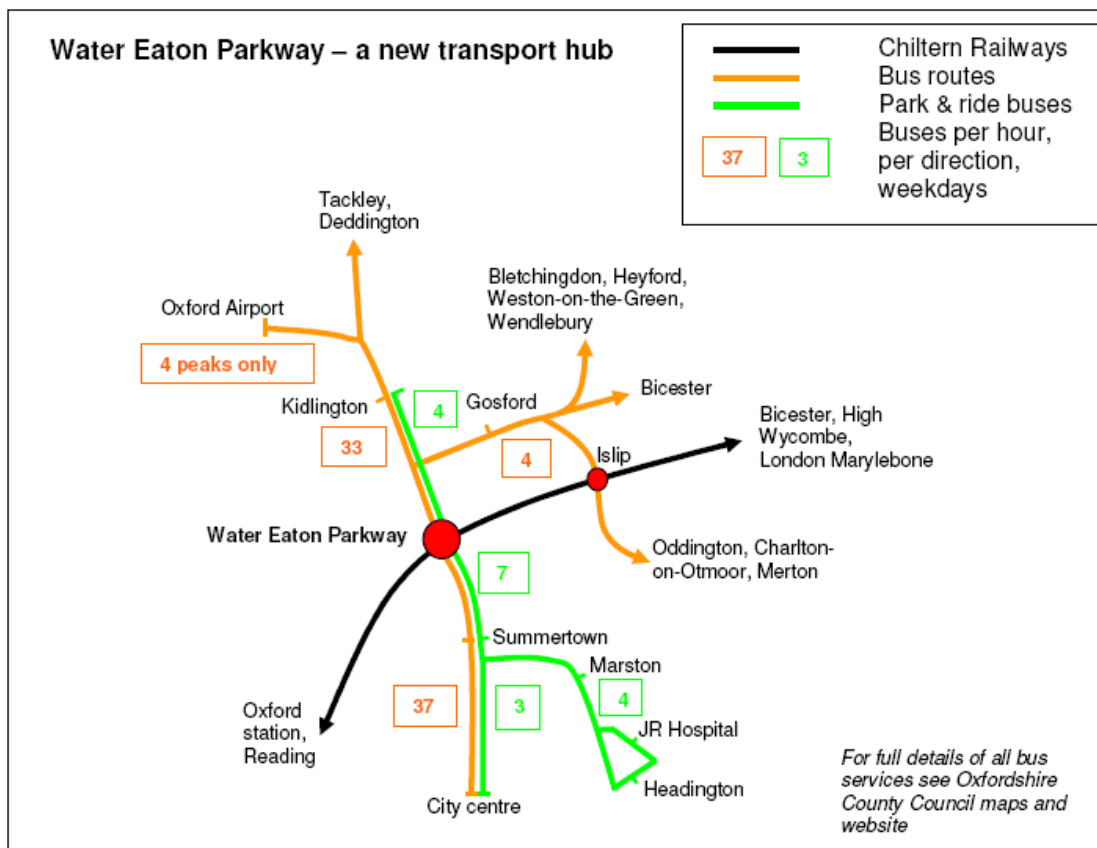
- 9.6.1 The Order Scheme has been designed to maximise opportunities for interchange between rail and other non-car modes of transport, specifically bus, cycle and walking. Access to the railway by private car is also important particularly from rural settlements which do not have suitable bus links. Sufficient station car parking is to be provided so that rail users do not need to park on-street or in other non-station car parks. The planned parking capacity will also provide for the forecast demand arising from the EWR project.
- 9.6.2 The development of the Bicester North West eco-town will be accompanied by the development of a sustainable transport network for the Bicester area and improved bus, cycle and pedestrian routes will be created to give an attractive alternative to the private car. This will be a requirement to be met in due course in the various planning permissions. The exact nature and layout of these improvements has yet to be decided, but it is likely that they will include a direct cycleway and bus route from the Eco-town, via the town centre, to Bicester Town station. Chiltern Railways will work closely with the local authorities, the Eco-town promoters and with bus operators to ensure that both Bicester rail stations are included as principal transport nodes in the evolving networks and that the needs of rail passengers are fully met.
- 9.6.3 At Bicester Town, Station Approach will be straightened and widened, and a bus turning area, lay-bys and bus stops will be provided adjacent to the station building. These improvements will be provided to enable operation of full-size buses and to

allow Bicester Town station to become an integrated transport interchange. Provision will be made for a bus-gate leading to the Bicester Village Retail Outlet Centre, to facilitate future through bus service. New bus stops and pedestrian crossings will be provided on London Road. The station will also have a large cycle-parking area. There will be safe walking routes on the station forecourt and along the station approach road, and a new footbridge and pedestrian route constructed to the road south of the level crossing to give easy access to adjacent housing and business areas.

9.6.4 Bus services through Islip are infrequent, but the station is adjacent to a bus stop on Bletchington Road.

9.6.5 Water Eaton Parkway will be developed as a multi-modal transport interchange. The site is already served by high-frequency bus services along the Banbury Road and by express buses to the existing bus park & ride site next to the proposed new Water Eaton Parkway station. Bus usage in Oxford is much higher than the national average, and it is envisaged that a high proportion of passengers from Oxford and Kidlington will use buses to access the station. As the express park & ride buses offer a fast, easy-to-understand product, it is envisaged that these will also be used by inward rail passengers to Oxford destinations. **Figure 17** below shows the extent of bus services from the new Water Eaton Parkway Station.

Figure 17: Bus Services from Water Eaton Parkway



Source: Chiltern Railways and Oxfordshire County council bus map

9.6.6 There will be direct access from Water Eaton Parkway station to the Banbury Road. New bus stops will be provided close to the station entrance served by the southbound bus lane and in a new bus lay-by for northbound buses. A new toucan crossing (traffic signalled controlled combined pedestrian and cycle crossing) will allow safe passage across the A4165. Within the Water Eaton Parkway site, a

landscaped pedestrian link will connect the station with the existing bus park and ride terminal. Given the close connection of the services it is expected that through ticketing and joint publicity will be appropriate and discussions are already underway with bus operators. A taxi stand will also be provided.

- 9.6.7 A dedicated cycleway will link the station with the existing cycleway along the Banbury Road, and there will be parking for 100 cycles. Additional car parking will be constructed additional to that already provided for bus park and ride users, so that rail parking demand will not take impinge on the parking spaces of bus users, and Chiltern Railways intends to enter into a legal agreement with Oxfordshire County Council to ensure efficient operation and management of the rail and bus car parks as a single entity..

9.7 Conclusions

9.7.1 In this section I have referred to issues that impact on a number of Matters. My conclusions are that:

- Chiltern Railways propose to operate services that meet the public interest as set out by the Secretary of State.
- The proposed services will be much faster and more frequent than those currently provided, and thus more attractive to passengers.
- Provision is made for the passenger services that may be operated as part of East-West Rail.
- The present level of freight services on the Bicester -Oxford line will continue.
- Additional freight services may be operated if Phase 2B proceeds; however, the availability of a freight train path does not mean that that train will always run
- The scheme provides for full integration between train, bus, cycling and walking.

10 RESPONSE TO OUTSTANDING OBJECTIONS

10.1 Objection 34 – Oxford & Bicester Rail Action Group (OBRAG): Train service at Islip

10.1.1 The OBRAG representation states that they are generally supportive of the Order Scheme, but that, as Islip station is currently served by 11 trains each way on weekdays, and 13 trains each way on Saturdays, Chiltern Railways should commit to this level of service.

10.1.2 The Secretary of State for Transport sets a Passenger Service Requirement (PSR) for all franchised rail passenger services, and this determines where the public interest lies. The present service is the result of an agreement between First Great Western (the present operator of the line) and Oxfordshire County Council, by which the latter subsidises the former to operate trains additional to those set out in the PSR. The Enhanced Service agreement expires on 31st March 2013.

Table 6: PSR and actual service at Islip, May 2010 timetable

Bicester Town-Oxford-return services per day. 2010			
	Mon-Fri	Saturday	Sunday
PSR as set by the DfT	7	7	0
Enhanced service as subsidised by Oxfordshire	11 (12 on Fridays)	13	9
Source: FGW & Oxfordshire County Council agreement, 2008			

10.1.3 The additional services on weekdays (i.e. those over and above the PSR) are all off-peak.

10.1.4 The Secretary of State has determined the PSR for Islip once the Order Scheme is in operation, as set out in Appendix 4 (**CRCL/P/2/B**), and summarised in Table 7 below. Chiltern Railways is however prepared to commit to running a service at Islip in excess of the PSR, without public funding. This will consist of 8 trains each way Monday-Saturday, in order to give a better range of departure times for commuter flows between Islip and Oxford, Bicester Town and London, and a Sunday service.

Table 7: PSR and Chiltern proposed train service at Islip

Services each way at Islip, per day			
	Mon-Fri	Saturday	Sunday
PSR	7	7	0
Chiltern Railways proposal	8	8	Trains will call at Islip, but number to be confirmed
Source: Deed of Amendment to Chiltern Railways Franchise Agreement, January 2010			

10.1.5 The main difference between the existing service and that proposed by Chiltern is that the number of train calls off-peak (1000-1559, and 1900-2359) are reduced. User surveys by Oxfordshire County Council show that relatively little use is made of these trains at Islip, as shown in **Table 8**.

Table 8: Passenger numbers at Islip, by time of day

Passengers boarding and lighting at Islip, Mon-Fri				
	AM peak 0600-0959	Inter-peak 1000-1559	PM peak 1600-1859	Evenings 1900-2359
Average number of passengers per train – trains to Oxford	7.7	3.5	1	1.3.
Average number of passengers per train – trains to Bicester	2.2	2.4	11.3	4.5

Source: Oxfordshire County Council, Bicester Link Passenger Surveys 2010

10.1.6 Total passenger journeys at Islip are 28,000 p.a., (Oxfordshire County Council Bicester Link 2010 Passenger Count), which equates to ca. 39 passengers boarding per day, of whom ca. 90% are travelling towards Oxford.

10.1.7 The Objection is not sustainable for the reasons stated:

- The main objective of the existing arrangement with Oxfordshire County Council is to give an enhanced service to Bicester, which is the main settlement on the line. The Order Scheme will provide a service to/from Bicester that greatly exceeds this.
- Only a very small number of passengers use off-peak services at Islip
- Chiltern Railways is nevertheless prepared to offer a greater number of trains than is demanded by the PSR
- Islip will also gain direct trains to High Wycombe and London; reduced journey times to Oxford (5 minutes less than now) and Bicester (4 minutes less); and easy interchange with the Oxford bus network at the new Water Eaton Parkway.

10.2 Objections 251 – Mary Oxford; 261 – Edith Holt; 264 – W. A. Platts: Electrification

10.2.1 Representations from these Objectors state that Chiltern Railways should electrify the Bicester-Oxford line. This issue was also raised during public consultation.

10.2.2 Electrification between Bicester and Oxford would only be viable if the main line between Bicester and London Marylebone was also electrified, as otherwise Oxford-London trains would require a change of traction at Bicester. The previous Government generally disfavoured electrification until a policy change in 2008. In 2009 plans for widespread electrification were announced, but these did not include the line to Marylebone. The incoming Government's policy on electrification is not clear (at the time of writing). It is thus unlikely that the Marylebone – Bicester line will be electrified in the near future.

10.2.3 Chiltern Railways is however designing all new structures and other works on the Bicester-Oxford line to have sufficient vertical and lateral clearances to enable electrification with overhead lines as 25kV ac (i.e. the national standard).

10.2.4 For these reasons the objection is not sustainable:

- It is not realistic to electrify the Bicester-Oxford line in isolation
- In any event the Order Scheme works will facilitate electrification in future.

11 OVERALL SUMMARY AND CONCLUSIONS

11.1.1 My overall conclusions are that:

- For the most part the Order Scheme uses an existing railway.
- The national demand for rail travel has grown rapidly, and this is likely to continue. Railway lines elsewhere in Britain are being successfully reopened and upgraded to accommodate this growth.
- The demand for rail travel in the Oxford-London and Bicester-Oxford rail corridors has grown rapidly, and this growth is likely to continue.
- Trains in the Thames Valley area suffer from overcrowding, and the rail route from Oxford into London Paddington is at or near its capacity limits. Rail industry capacity utilisation studies therefore recommend that the Order Scheme proceeds.
- The highway network is likewise at or near capacity.
- The population growth in the Scheme area, especially in Bicester, has been substantial, and this is likely to continue.
- The existing Oxford station is at full capacity, and is poorly located for much of the city and its environs. Chiltern's proposed new Water Eaton Parkway station will provide an additional and alternative railhead.
- Rail is more sustainable, and is safer than, other motorised transport modes. It helps drive economic growth, whilst economic growth in turn creates more demand for rail travel.
- Both rail and non-rail options have been considered, and a range of routes and station location studied. The proposed route and station locations meet the Scheme objectives better than would the alternatives.
- The Order Scheme complements other rail projects that are currently under way or planned, and in particular the proposed East-West Rail Link.
- Chiltern Railways propose to operate passenger services that meet the public interest as set out by the Secretary of State. These services will be much faster and more frequent than those currently provided, and thus more attractive to passengers.
- The present level of freight services on the Bicester - Oxford line will continue, and additional freight services may be operated if Phase 2B proceeds.
- The scheme provides for full integration between train, bus, cycling and walking
- The Order Scheme will thus materially improve the capacity, functionality and sustainability of the transport system.

11.1.2 With regard to outstanding objections, I conclude that:

- Retention of the present "enhanced service" at Islip is not justified; nevertheless Chiltern Railways are proposing to stop more trains there than is required by the Secretary of State.
- It is not realistic to electrify the Bicester-Oxford line in isolation, but the Order Scheme works facilitate electrification in future.

GLOSSARY

ATOC	Association of Train Operating Companies
DfT	Department for Transport
EWR	EWR: the proposed Oxford-Milton Keynes – East Anglia rail link
Evergreen 1,2,3	A series of infrastructure investment policies developed and delivered by Chiltern Railways
EWRC	East-West Rail Consortium: the group of local authorities promoting EWR
FGW	First Great Western Ltd. – current franchisee for the Bicester-Oxford service, and for Oxford station
LDF	Local development Framework
LENNON	National rail industry ticket sales database
Loading gauge	The clearance gauge for structures alongside or above the tracks
MoD	Ministry of Defence
OBRAg	Oxford & Bicester Rail Action Group
Order Scheme	The works as set out in the TWA application
PIXC	Passengers In eXcess of Capacity: rail industry measure of crowding
PPS1, PPG13	Planning policy and guidance notes issued by the Department for Communities and Local Government
PSR	Passenger Service Requirement: the minimum level of train service as defined by the Secretary of State
RSS	Regional Spatial Strategy
RSSB	Railway Safety & Standards Board
RUS	Route Utilisation Study (the GW RUS covers the Great Western lines from London Paddington to the West Country)
SEEDA	South East England Development Agency
SERNR	South East Regional Road Network Report
SFN	Strategic Freight Network
TRUST	Rail industry database recording details of all trains operated
TWA	Transport & Works Act 1992
W8	Loading gauge with clearances for 8'6" high containers on conventional-height wagons
W12+	Loading gauge with clearances for 9'6" high containers and European-width swap-bodies on conventional-height wagons; the "+" signifies clearance for overhead electrification at 25kV ac as well.