

Connecting local communities



Network Rail helps bring Britain together. We own, operate and maintain the rail network, delivering improved standards of safety, reliability and efficiency.

Our investment programme to enhance and modernise the network is the most ambitious it has ever been. Delivering a 21st century railway for our customers and society at large.

Every day. Everywhere.

Route 16 Chilterns



Section 1: Today's railway

Route context

The Chilterns route consists of a main line from London Marylebone which divides into two at Neasden South Junction. One line goes to Banbury and the other to Aylesbury/Claydon, with associated branches and freight lines. In the 1970s the section of the route from Princes Risborough to Aynho Junction was singled. Since then the route has increased in importance, with growing levels of traffic and considerable investment. Shortly before privatisation the route benefited from full modernisation, with renewed signalling and rolling stock.

The current franchise operated by Chiltern Railways commenced in 2002. This franchise has a term of up to 20 years, depending on infrastructure investment and promotion. There has been significant investment in infrastructure over the past few years, including the redoubling of the singled Princes Risborough to Aynho Junction section, new depots and operational facilities and improved passenger facilities at stations. The Evergreen 2 Project, which was completed in 2006, delivered further significant infrastructure improvements, increasing capacity between Bicester North and London Marylebone. Chiltern Railways are currently committing to a greater level of investment on the route, 'Evergreen Project Phase 3'.

The line has been used as a strategic diversionary route for the WCML and has accommodated freight diversions and additional passenger services during recent West Coast blockades. The route has proved popular with passengers during these upgrade works, although due to capacity constraints, most were accommodated on existing timetabled services. It is possible that this route may be used as a diversionary route in future when access is restricted on the West Coast Main Line (WCML).

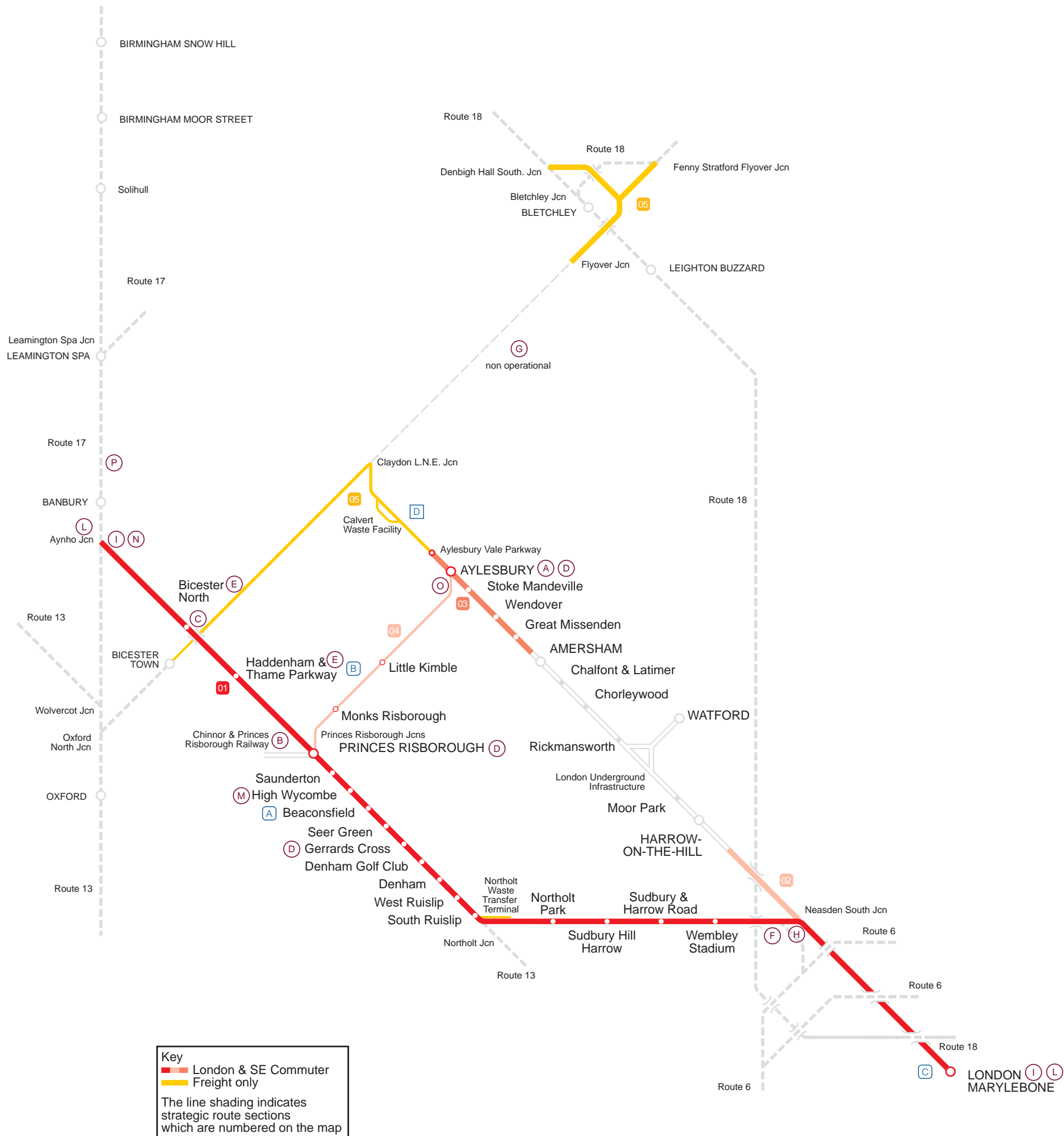
As part of our ongoing Route Utilisation Strategy (RUS) programme, we are currently working on the West Midlands & Chilterns (WM&C) RUS. The WM&C RUS will make recommendations for the route based on current growth scenarios and issues that are currently faced or predicted to arise over the next 30 years. The West Midlands & Chilterns RUS started in early 2008, with the Draft for Consultation document due out in late summer 2009 and the final document due late 2009.

Today's route

The route has two main corridors from London Marylebone (dividing at Neasden South Junction) which are described below. The relevant Strategic Route Section is shown in brackets:

- one branch runs via High Wycombe, Princes Risborough and Bicester to Aynho Junction (16.01);
- the other branch runs via Amersham to Aylesbury (16.02 & 16.03), where the passenger service currently terminates, and then on to Claydon LNE Junction. This branch runs parallel to the LUL Metropolitan and Jubilee Lines as far as Harrow-on-the-Hill. From just south of Harrow-on-the-Hill station extending as far as Amersham, (where LUL trains terminate) all tracks become LUL property, with shared running between main line and underground trains. North of Amersham, the main line trains re-enter Network Rail infrastructure. In addition:
- a branch links Princes Risborough and Aylesbury (16.04). There are also two freight branches from Bicester Town to Claydon LNE Junction and Aylesbury to Claydon LNE Junction. The route between Claydon LNE Junction and Bletchley is currently out of use.

Route 16 Chilterns



Current passenger and freight demand

There is significant commuter and suburban traffic into London and central Birmingham from locations along the line of route. Traffic on the route has grown considerably since 1994, particularly in the commuter market to London from as far north as Solihull, helped by a high level of performance and reliability. The West Midlands services have experienced considerable development as a result of the Cherwell Valley resignalling (Route 17), which now facilitates an all day frequency of two trains per hour. The Chiltern route to London is increasingly regarded as a viable alternative to the West Coast Main Line (WCML), despite journey times being longer but train fares are generally lower.

Freight demand includes significant domestic waste traffic to the landfill site at Calvert. Waste Recycling Group (WRG) continues to seek further business in both domestic and industrial waste.

Current services

The passenger operators on this route are Chiltern Railways, London Underground Ltd (LUL) and Wrexham Shropshire and Marylebone Railway Company (WSMR).

Chiltern Railways

The basic Chiltern Railways off-peak service pattern consists of the following services:

Six departures per hour from Marylebone of which:

- two form stopping services to High Wycombe;
- two form semi-fast services to Princes Risborough or Bicester North, with a two hour extension to Stratford-Upon-Avon; and
- two form services to Birmingham Snow Hill;

There are also two trains per hour between London Marylebone and Aylesbury via Amersham, and one train per hour between Princes Risborough and Aylesbury.

This basic pattern is enhanced at peak times, with additional trains and altered stopping patterns, and with some Birmingham services extended to Kidderminster.

Wrexham Shropshire and Marylebone Railway Company

WSMR currently operate four daily limited stop services in the week between Wrexham General, Banbury and London Marylebone, and three trains on a Sunday.

London Overground Rail Operations Ltd (LOROL)

LOROL is part of Transport for London (TfL), which run tube services on the Metropolitan line from the City through Harrow-on-the-Hill to Amersham and Chesham. Much of the line is shared with the main line railway service which runs from Marylebone to Aylesbury.

Freight operators

The main freight operators along the route are DB Schenker, First GBRf, and Freightliner Heavy Haul Limited.

Since summer 2006 there has been an increase in freight traffic using the route on certain weekends in connection with Metronet renewals work on the London Underground. This traffic hauled by First GBRf, gains access to the LUL network via either Harrow on the Hill or Amersham and normally consists of up to eight trains to and from the LUL network each weekend. This infrastructure supply contract is expected to continue during 2009.

Four loaded domestic waste services run per day to the Calvert disposal site from Cricklewood, Dagenham, Bristol and Northolt. A fifth daily service, operated by DB Schenker, commenced in 2008, conveying industrial spoil from Willesden's 'Power Day' complex for landfill. Services from the London area are routed via High Wycombe and Aylesbury. Services from Bristol are routed via Oxford and Bicester. The Calvert site has capacity to accept similar quantities of waste for at least the next 20 years.

Aggregate services to Neasden from Croft Quarry in Leicestershire and from Wool on the South Coast, are operated by Freightliner Heavy Haul Limited.

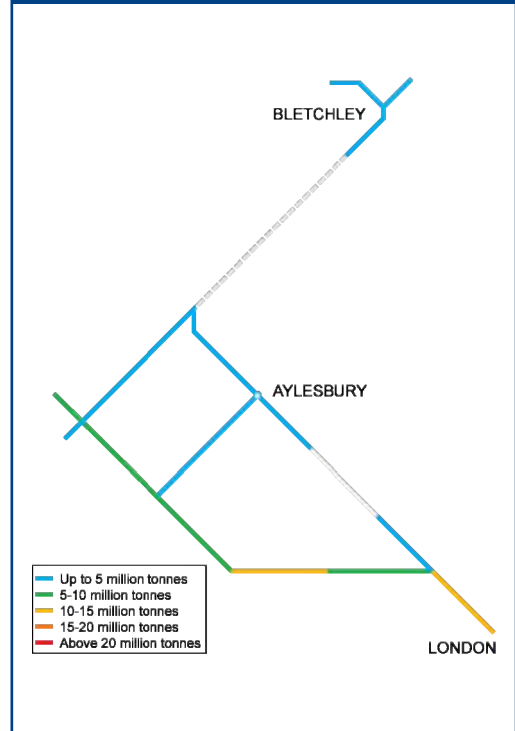
Figure 1 Current train service level (peak trains per hour)

Route section	Main Lines
Marylebone – Aylesbury	4
Marylebone – Princes Risborough	4
Marylebone – Banbury	3
Marylebone – Birmingham Snow Hill	2
Princes Risborough – Aylesbury	1

Figure 1 shows the current level of service to London from principal stations.

Figure 2 shows the total annual tonnage levels on the route.

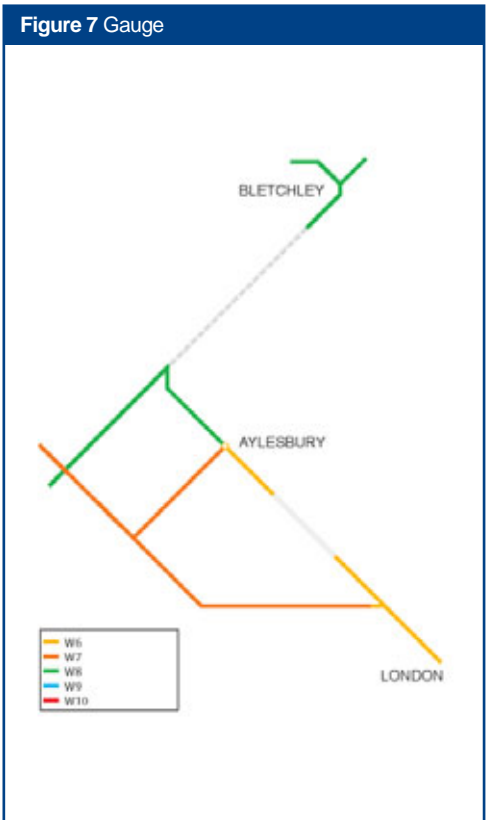
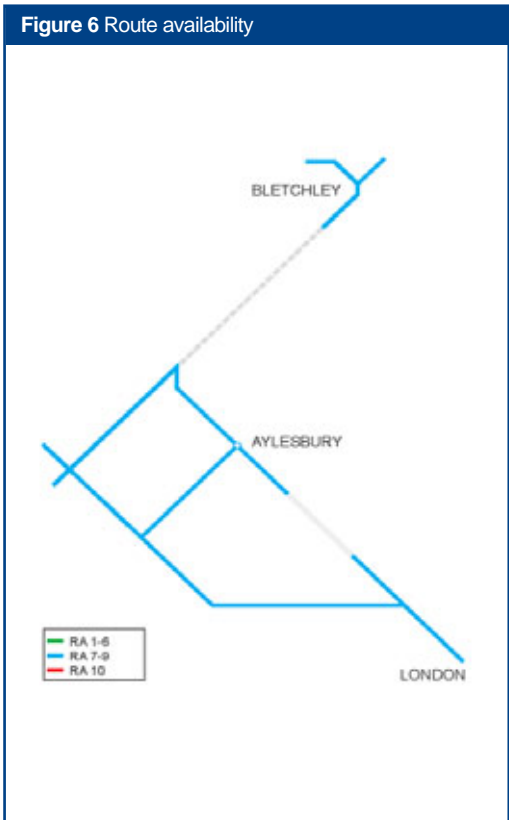
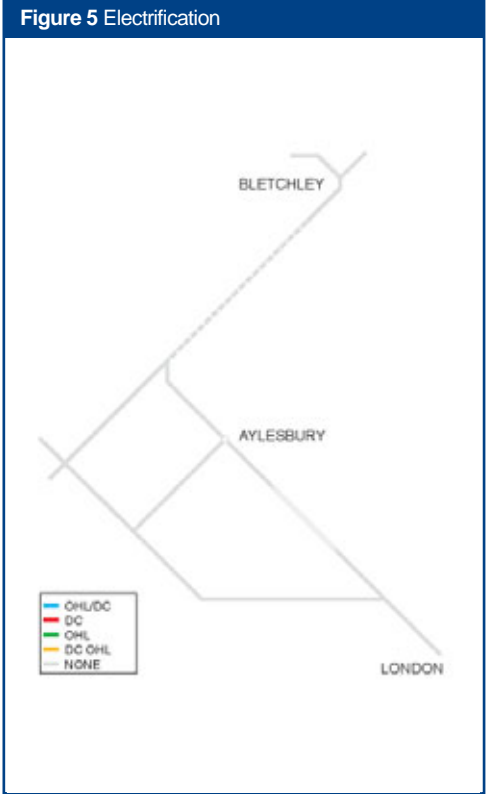
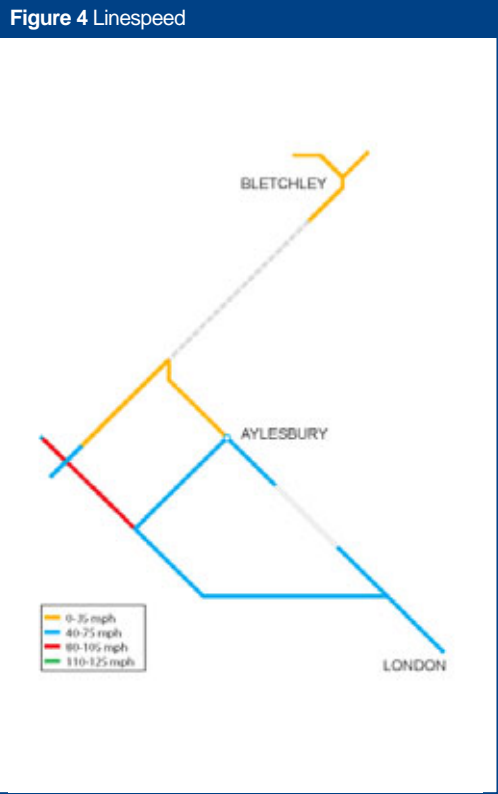
Traffic volumes are summarised in Figure 3.

Figure 2 Tonnage**Figure 3** Current use

	Passenger	Freight	Total
Train km per year (millions)	6	0	6
Train tonne km per year (millions)	794	144	938

Current infrastructure capability

The following maps set out the capability of the current network.



Current capacity

Network capacity

Redoubling of the Princes Risborough – Bicester – Aynho section of the route in 1998 resulted in a significant improvement in capacity which, along with the Cherwell Valley resignalling on Route 17, allowed the frequency of London – West Midlands services to be doubled to two trains per hour.

The ‘Evergreen Phase 2’ project, completed in 2006 delivered further capacity improvements, which allowed additional services from Bicester North southwards and greater operational reliability. The project included additional signal sections and track remodelling which helped improve capacity, flexibility and journey times across the route. Further improvements are planned in the next stage of the Evergreen project.

The requirement to share tracks with the frequent Metropolitan Line services between Amersham and Harrow-on-the-Hill imposes constraints and risks to performance on Aylesbury line services.

Stations capacity

Following investment by Chiltern Railways, most stations now have either seven or eight car platform lengths.

The completion of the new station at Aylesbury Vale was delivered to meet demand in the Aylesbury area. It is anticipated that this station will serve both a developing community in the area and provide a better option for London commuters than the station at Aylesbury Town.

Following continued growth in peak passenger demand and due to its close proximity to the Bull Ring development, passenger crowding at Birmingham Moor Street (Route 17) is reaching critical levels, exacerbated by its narrow platforms. This crowding can often have an impact on the services on this route.

In addition to scheduled passenger and freight services, capacity on the Chilterns line is further consumed at the weekends as it is used as a tactical diversionary route for W9 freight traffic. The route could be enhanced to W9 permanently if significant work was carried out on the earthworks and structures that currently limit its capability.

Rolling stock and depots

The majority of the Chiltern Railways fleet, Class 165 DMUs, date from the early 1990s. Since privatisation, Chiltern Railways has invested in additional rolling stock in the shape of the Class 168 Clubman DMUs, introduced in 1998, which are now three or four cars in length.

Two years ago, a new maintenance depot was opened at Wembley Stadium, delivering additional capacity for maintaining Chiltern Railway’s fleet, a reduction in empty stock mileage and capacity for expansion of the fleet in future.

Station facilities

Chiltern Railways are currently progressing their franchise commitments to improve stations along the route. A project to reconstruct Denham Station was recently completed, and included a station upgrade, new footbridge, DDA compliant passenger lifts and platform improvements. DDA compliant lifts have been installed at Aylesbury Town station to provide safe disabled access, and this has enabled the closure of the foot crossing.

Figure 8 2008/09 PPM

TOC	MAA	As at period
Chiltern Railways	95.1%	10

Current performance

Figure 8 shows the 2008/09 PPM on the route.

Performance continues to be very good with some record breaking PPM achievements seen over the past few months. The route is one of the best performing in the country, helping Chiltern Railways to maintain their position as one of the top performing train operators, with a moving annual average of trains arriving within PPM of 95.1 percent. The continuing high level of infrastructure performance remains good and contributes towards achieving this result.

Underlying infrastructure performance has remained good and contributed to this excellent result. Flooding has been a recent issue, particularly at Fenny Compton, Brill and Beaconsfield. There is ongoing work at all of these sites to reduce the risk of further incidents. The 2008 autumn season started with above average incidents due to a higher than usual percentage of very early leaf fall, coupled with some very wet and windy spells. We mitigated against this locally with extra staff on the ground responding reactively, on top of the usual proactive treatment of sites. The 'predict and prevent' approach to track defect detection and correction has yielded important reliability benefits on the route. Improvements to signalling and communications power back-up supplies and systems are being progressively implemented by the maintenance team, with corresponding reductions in major failures from unreliable supplies and poor equipment.

Following the introduction of additional services on the route in the spring 2008 timetable, the Wrexham Shropshire and Marylebone Railway Company have achieved PPM levels of around 80 to 85 percent. The major contributor to this poor performance is disruption to services in the West Midlands compounded by schedule and SRT issues. These have presented a challenge to the performance levels of the last year but it is envisaged that the more realistic schedules of the December 2008 timetable change will turn this round in the longer term.

Section 2: Tomorrow's railway: requirements

HLOS output requirements

Figure 9 Total demand to be accommodated by Strategic Route

Routes	Annual passenger km (millions) forecast in 2008/09	Additional passenger km(millions) to be accommodated by 2013/14
Chiltern Lines	661	98

Figure 10 Peak hour arrivals to be accommodated by Strategic Route

London Terminals	Peak three hours			High- peak hours		
	Forecast demand in 2008/09	Extra demand to be met by 2013/14	Maximum average load factor at end CP4 (%)	Forecast demand in 2008/09	Extra demand to be met by 2013/14	Maximum average load factor at end CP4 (%)
Marylebone	9,100	1,000	67	4,600	600	76

Note: the load factor requirement in the HLOS applies as an average across 12 London stations.

Future demand in CP4

Demand for services on the Chiltern route between London and the West Midlands has grown over the past decade. It is expected that this growth will continue, following the improvements in service frequency, and will be catered for mainly by means of longer trains. The launch of the new Class 172 vehicles (planned for December 2010), will be enable further improvements to the current timetable, including standardised service patterns, increased capacity and improved journey times to key destinations.

Planned improvements to journey times offered by WSMR are also expected to yield more demand. This demand will be catered for by a combination of lengthening existing services and up to two potential additional services.

There is particularly high predicted growth in intermodal freight traffic using the West Coast Main Line. If growth continues, the Chiltern corridor can provide an alternative route for intermodal flows between the South and Midlands/North West.

Future demand beyond CP4

Demand is expected to continue into CP5 and beyond for both passenger and freight business. The 2007 government White Paper 'Delivering a Sustainable Railway' anticipated a doubling of freight and passenger demand over the next 30 years.

The lengthening of some of the Pendolino fleet to 11 cars on the WCML will provide sufficient passenger capacity between Birmingham and London until around 2016, after which services may become crowded due to the predicted levels of demand. The Chiltern route offers an alternative route to the WCML, and is considered an effective option for meeting both passenger and freight demands for increased capacity.

Planned future housing developments must be taken into account when considering future demand beyond CP4. The required level of future housing provision in the West Midlands region is still under consideration as part of Phase 2 revision of the Regional Spatial Strategy (RSS). The Government has recently responded to the RSS Phase 2 revision consultation recommending that consideration be given to growth scenarios that recommend an increase in housing provision above and beyond the preferred current option.

The eco town development planned at Weston Otmoor near Bicester is currently included in the short list issued by the Department of Communications and Local Government. If delivered, the development would have a major impact on demand for public transport in the area. Their transport plans would include a new railway station on site and a tram network connected to frequent train services to Oxford, Bicester, and Milton Keynes. The site connection to the East West Rail line is central to this. Current Government plans propose the completion of the eco towns between 2016 and 2020.

Section 3: Tomorrow's railway: strategy

Figure 11 summarises the key milestones, aspirations and proposed strategy for the route. Further explanation of the key service changes and infrastructure enhancements are set out in the following sections.

Figure 11 Summary of proposed strategy milestones			
Implementation date	Service enhancement	Infrastructure enhancement	Expected output change
2008 - 2015	Services strengthened with increased vehicles. Anticipated increases in vehicles: 2010 (8); 2011 (0); 2012 (8); 2013 (4); 2014 (4); 2015 (4) – Chiltern Railways Business Plan	Generally sufficient 'headroom' in terms of platform lengths and stabling. Requirement to lengthen a small number of platforms, if a suitable timetable solution cannot be found	HLOS targets for Marylebone and Birmingham. (Note that HLOS requires approx 12 vehicles, but Chiltern Railways Business Plan assumes a higher growth)
2008 - 2011	Additional car parking facilities	Provision of additional car park spaces at stations along the route, in line with demand projections and rolling stock provision	Key measure to enable access to the railway in line with demand forecast and train capacity provision
2009 - 2014	Additional capacity to accommodate longer trains	Modest infrastructure enhancements (platforms and signalling) to support longer and additional services	Increased passenger capacity by enabling stations to accommodate additional rolling stock
2009 - 2014	East West Rail	Development work to examine the re-opening of the Oxford/Aylesbury – Bedford railway between Bicester Town and Bletchley. Route to be gauge cleared for W12/W10 for the benefit of freight services	New route and services creating extra capacity on the route, including the potential operation of new freight services between eastern and western England
2012/13	Bletchley – Oxford route upgrade/re-opening	New infrastructure to support passenger/ freight growth on east/west axes (Oxford-Bletchley)	Increase and provides opportunities for new operational flexibility and capacity between two major urban areas. Enables 7 day railway to be introduced. Industry revenue to be increased while reducing costs.
2009 - 2014	Linespeed improvement project	Linespeed increases across route to improve journey time to grow patronage in line with HLOS metrics. There are associated future rolling stock performance improvements and timetable alterations	Improves end to end journey time for operators on the route, and releases additional operational capacity on corridor

Figure 11 Summary of proposed strategy milestones

Implementation date	Service enhancement	Infrastructure enhancement	Expected output change
2009 - 2020	Accommodation of fast and slow services needed to match demand.	Three and four track of key sections of route.	Increases operational capacity and flexibility and improves journey time.
2010 - 2011	Evergreen Phase 3 project including: <ul style="list-style-type: none"> – journey time reductions – route capability improvements. – Bicester Chord 	Planned line speed improvements between Marylebone and Birmingham Moor Street and additional loops and turnback facilities. New chord line (Bicester West Chord) linking the Oxford – Bletchley line to the Chiltern line.	Improves capacity and journey times. Providing an alternative route between Reading , Oxford and London

Figure 12 Capacity enhancements to meet HLOS peak capacity in CP4

Description	Additional vehicles involved	Station served	0700 – 0959 Capacity Impact	0800 – 0859 Capacity Impact
Train lengthening on Chiltern route	12	Marylebone	1,400	1,400

The table below shows how the HLOS load factor targets for locations on the route are met by the proposed strategy

Figure 13 Impact on HLOS peak capacity metric

London Terminals and regional Hubs	Peak three hours				High peak hours			
	Demand end CP4	Capacity start CP4	Capacity end CP4	Load factor end CP4	Demand end CP4	Capacity start CP4	Capacity end CP4	Load factor end CP4
Marylebone	10,100	16,800	18,200	64%	5,200	7,400	8,800	74%
Other London Termini	551,800	727,200	863,700		277,100	316,000	327,800	

Strategic direction

This route is forecast to see continued growth in both passenger and freight demand. Capacity provision for passenger growth will be achieved by either longer trains or, where possible, increased levels of service frequency. The procurement of rolling stock and a commensurate increase in car park provision will help to further facilitate this.

If growth continues at the current rate, it is anticipated that the WCML will face further capacity challenges (beyond 2016). Improving infrastructure to sustain additional passenger and freight services on the Chilterns route will therefore provide essential additional capacity. As part of Chiltern Railways 20-year vision, significant infrastructure enhancements during CP4 are planned to support the continued expansion and improvement of the route. Catering for scheduled freight flows on a regular basis may also require some significant gauge clearance on key sections of the route.

The third stage of Project Evergreen, Evergreen Phase 3, is being specified to enable the full strategic potential of the Chiltern route to contribute more substantially to the market for rail travel between both London and the West Midlands and London and Oxfordshire. It involves a suite of enhancements to provide capacity improvements, journey time reductions and new journey opportunities based on market analysis and project capability. There are two key outputs to the project :

- a significant reduction in journey times across the route, with the objective of achieving a 30 minute time saving between Marylebone and Birmingham Moor Street, and
- the expansion of the Chiltern route to more effectively serve the significant market for rail travel in Oxfordshire.

The project objectives will be delivered through a programme which will include linespeed increases between Ruislip and Aynho Junction, revisions to track layouts at stations to remove restrictions on speed, the construction of a new chord at Bicester (Bicester West Chord), and the upgrade of the Bicester – Oxford section of line to double track. This new route offers the opportunity for Chiltern Railways to provide an additional service between Oxford and London, to compliment the existing service provided by First Great Western between Paddington and Oxford.

Additionally, the proposed chord at Bicester would facilitate the diversion of other services during the pending area reconstruction.

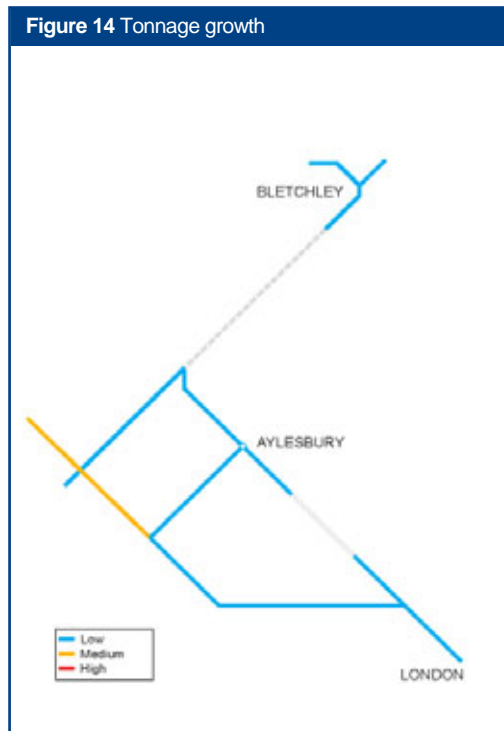
The concept of the Seven Day Railway is important to the industry. A key element to the achievement of this capability is through bi-directional signalling; this would possibly support the role in alleviating future crowding on the WCML. Chiltern Railways and Network Rail will work together during CP4 with the aim of developing and implementing an incremental bi-directional signalling strategy.

Car parking capacity remains an issue at some stations on this route as recent surveys have shown that many car parks are at, or near capacity. Chiltern Railways are continuing work to increase the number of car park spaces available on the route to increase station accessibility and to cater for this demand. In order to meet demand in the Aylesbury area, the new station at Aylesbury Vale includes park and ride facilities. This is intended to enable passengers in the area to avoid the need to travel into Aylesbury itself, thereby relieving congestion in the town.

Network Rail aims to address the station challenges set out in the 'Developing a Sustainable Railway' White Paper, in CP4 and beyond, through the development of a National Station Improvement Programme (NSIP). This programme is being developed with the industry, and is described in more detail in the future capability section.

Future train service proposals

Figure 14 indicates the forecast percentage change in tonnage to 2018.



Passenger

It is envisaged that the current pattern and frequency of service on the route will remain broadly the same south of Banbury. However, to meet forecast growth, the provision of longer trains and some additional services may be necessary. Catering for additional services may require three or four tracking key sections or opportunistic line speed increases.

Around the central Birmingham area, the increase in passenger capacity on the Snow Hill lines will be primarily achieved through longer services and timetable modification. The launch of London Midland's new Class 172s on the Snow Hill lines in 2009/10 will also enable journey time and performance improvements on this route. A local timetable recast is therefore planned on these lines in December 2010. Consequently, this timetable recast will improve capacity in the Birmingham area.

Chiltern Railways are also planning to recast their timetable as a result of the new and re-engineered rolling stock in 2011.

Freight

Aggregate traffic from the Mendips via Acton to Gerrards Cross to provide fill material for the Tesco development near Gerrards Cross station is expected to restart. Waste Recycling Group (WRG) continues to seek further business to Calvert to exploit the full terminal capacity which could result in one additional train service in due course.

Future capability

Gauge

We are investigating the feasibility of gauge clearing the route from Neasden to Aynho junction via High Wycombe, to allow W9 and possibly W10 traffic to use the line on a regular basis. Longer-term, W12 remains an aspiration.

Strategic freight site

A scheme to introduce a strategic freight site at Neasden Drury Way (immediately south of Chiltern Unit depot) is being developed currently. Brett Aggregates proposes to move sea-dredged aggregates from Cliffe which will involve the lease of one of the three yard lines to DB Schenker. This train will arrive and depart via the Anglia route.

Journey times

Journey time improvements are planned between London Marylebone and Central Birmingham within the next Control Period. Linespeed increases will be delivered between Wrexham and Marylebone, with the potential to stage the implementation earlier at locations where linespeed improvements will be easier to deliver. In addition to the journey time improvements that will be delivered, there may also be opportunities available for additional train paths into both Birmingham and London following completion of the scheme.

Stations

Platform Lengths

The lengthening of trains has been identified as one of the key approaches to enable the industry to meet the growth in passenger demand across the route. Consequently, some platforms throughout the route may require lengthening – see Figure 15 – enabling us to reduce overcrowding and meet the capacity targets set by the HLOS through CP4 and

Figure 15 Possible stations to be lengthened

Lengthening required to accommodate 7 or 8 x 23m vehicles at:-

South Ruislip (Platforms 3 and 4), West Ruislip (Platforms 3 and 4), Saunderton (Up and Dn), Kings Sutton (Up and Dn), Sudbury Hill Harrow (Up and Dn), Sudbury and Harrow Road (Up and Dn) and Northolt Park (Up and Dn)

beyond CP5. Options and estimates for platform extensions on Route 16 have now been completed and further work is now being undertaken to determine the proposed strategy is aligned to HLOS requirements.

National Station Improvement Programme (NSIP) –

The Government is funding £150m during CP4 to support the modernisation of a range of stations. The criteria for a station being selected include footfall and current facilities. The NSIP has been established to ensure that this money is invested in the most effective way by leveraging in third party funding. This programme is being developed within the industry through Local Delivery Groups (LDGs). On this route the stations that have been identified for NSIP funding are Aylesbury, Gerrards Cross and Princes Risborough. Some of these schemes are a contribution to a larger scheme.

A scheme at High Wycombe station is in early stages of development which will enhance the station area including new station buildings and improved modal interchange.

Linespeeds

We recognise that the entry and exit loop speeds at Fenny Compton are capable of a higher speed. It is planned to review these speeds when the infrastructure within the loop track is due for renewal.

Integrated Station Plans

The Joint Stations Board has developed the Integrated Stations Planning initiative which seeks to improve the planning and delivery of work at stations and to provide greater visibility of investment proposals to all stakeholders in the industry. This cross industry approach will increase the alignment of investment plans and funding streams at stations, improve productivity and develop more efficient ways of working. These principles are supported by Train Operators, Network Rail, the Office of Rail Regulation and the Department for Transport.

Future capacity

Chiltern Railways have commitments within their franchise agreement to invest in further capacity outputs required to meet demand – in particular, ensuring peak PIXC thresholds are not exceeded and, outside the peak hours, all passengers are seated. These investment outputs include the procurement of additional rolling stock, lengthening platforms (up to prescribed upper limits) and further investment in car park capacity, ensuring that certain average occupancy thresholds are not exceeded.

It is expected that additional rail capacity will be released through an ongoing review which identifies locations where tactical/opportunistic line and junction speed improvements can be made. A study is already underway to assess the best value locations for line speed improvements. A strategy for bi-directional signalling along the route, based on TOC funding, will be progressed.

There are a number of proposals to enhance the route between Oxford and Bletchley. These include the East West Rail Consortium proposal to enhance the route to enable the introduction of Oxford – Milton Keynes services, and Chiltern Railways' proposals to link the Chilterns route with Bicester Town via a new chord line (Bicester West Chord). The chord would facilitate an alternative route between London Marylebone and Oxford via High Wycombe during the Reading enhancement scheme. A new station, Water Eaton Parkway, to the north of Oxford would also be provided. This proposal is being examined as part of the Great Western RUS process.

A proposal for an Eco-town at West Otmoor, to the north of Oxford, includes the provision of a new station and enhanced transport links to Oxford and towards Bedford and London.

We will ensure that these schemes do not preclude the development of the route as a trunk route linking the South Coast/Thames Valley with the WCML for both long distance passenger and freight services. The scheme provides the possibility of a second gauge cleared route for W12 trains from Oxford to the WCML to support the expected major growth of container operations from the port of Southampton. Clearance of this route will also alleviate the conflicts at Coventry and Nuneaton.

The Bletchley resignalling scheme will make passive provision for the proposed East West Rail project.

Figure 16 Forecast MAA

	2009/10	2010/11	2011/12	2012/13	2013/14
Chiltern Railways	95.1%	95.3%	95.6%	95.8%	95.9%

Integrated Train Planning System

The implementation of Integrated Train Planning System (ITPS) is planned to be phased in during the next two years. The new system allows us to plan at a lower level of granularity, for example it calculates sectional running times to the nearest second. We believe that using a system that has the ability to plan at this level of detail, may unlock additional capacity and modestly improve some journey times.

Future performance

Figure 16 sets out the planned PPM MAA for Chiltern Railways for CP4.

Chiltern Railways

The performance of Chiltern Railways is currently 95.1% percent PPM. Underlying infrastructure and rolling stock performance has remained good and contributed to this excellent result. The J-PIP has recently been supported by the newly formed Joint Performance Improvement Group and the LUL/Network Rail/Chiltern interface group.

The key performance issues and opportunities for this route have been identified as:

- impact of the West Midlands re-signalling schemes;
- improved asset reliability through the use of maintenance benchmarking and the full installation and deployment of remote condition monitoring;
- implementation of further bridge strike prevention and mitigation measures;
- reduction in the impact of trespass, vandalism and fatalities;
- higher quality Automatic Route Setting (ARS);
- right time railway – reduction in late starts;
- extreme weather mitigation through enhanced drainage;
- Efficient Engineering Access improvements and
- continued maintenance of Automatic Train Protection (ATP) system.

The route plan is being developed around these key points and currently suggests that performance for Chiltern Railways by April 2014 will be around 95.9 percent. This includes an allowance for passenger/traffic growth and an increase in engineering work. This figure has been discussed with Chiltern Railways and is in line with their aspirations.

Network availability

Engineering access is available through a regular pattern of eight hours on Saturday nights and five hours on Sunday nights, as well as possession opportunities on week-nights which are limited due to Chiltern Railways late night services and empty stock movements.

Possession planning on Route 16 is carefully integrated with the Birmingham to Didcot and West Coast Main Line routes, to enable the route to be used as an alternative for passengers and freight from London to the West Midlands.

2008 saw the Chilterns route being successfully used as a diversionary route for Virgin Trains services, during West Coast South all-line blocks at Bank Holidays. The 2009 plan has been carefully co-ordinated to ensure that the Chilterns and West Coast South are not blocked simultaneously.

Engineering access is available through a regular pattern of eight hours on Saturday nights and five hours on Sunday nights, as well as possession opportunities on week-nights which are limited due to Chiltern Railways late night services and empty stock movements. The weeknight pattern is expected to change to 1 week in 2 from April 2009, due to overnight freight requirements.

Long term opportunities and challenges

Beyond CP4

Consolidation of the various schemes to enhance the route between Oxford and Bletchley would facilitate the development of a major freight and passenger trunk route from the South Coast and Thames Valley to the WCML. The DfT's Thames Valley Regional Planning Assessment states that a journey time saving of 40 minutes could be achieved between Reading and Manchester via this route.

If the Oxford – Bicester – Bletchley route were re-instated, Chiltern Railways have an aspiration to re-open to passenger trains along the Aylesbury North – Claydon LNE Junction route. This would enable an Aylesbury to Bedford or Milton Keynes service to operate. The further addition of a crossover at Princes Risborough, together with an upgrade to the Aylesbury – Princes Risborough branch, would facilitate a London – High Wycombe – Princes Risborough – Aylesbury – Milton Keynes service, fulfilling multiple stakeholder aspirations.

Signalling renewals are planned at Banbury (on Route 17) in early CP5. Track works and enhancements will be aligned to this scheme in order to improve functionality and flexibility at and around the station area. Discussions with stakeholders will start in CP4 to examine and develop the most viable and cost efficient options at Banbury.

Infrastructure Investment in CP4

Figure 17 Infrastructure investment in CP4					
Implementation date	Project	Project description	Output change	Funding	GRIP stage
2009/10	(A) Passenger lifts – Aylesbury Town station	Installation of DDA compliant passenger lifts at Aylesbury Town station	Improved passenger access	Network Rail/DfT/TOC/Third Party	4
2009/10	(B) Chinnor & Princes Risborough Railway	Extension of heritage railway to Princes Risborough	Extension of Line	Third Party	5
2009/10	(C) Line speed review – Route 16	Linespeed improvement project across the route including increasing the linespeed on up fast, south of Bicester. Other locations include linespeed improvements on the Wrexham to Marylebone service.	Improved Performance and Capacity	Network Rail Discretionary Fund	6 (Bicester)
2009/10	(D) NSIP : National Station Improvement Programme: various stations	Station works proposed at the following stations: Aylesbury, Gerrards Cross, and Princes Risborough	Station improvements	Network Rail/TOC/Third Party	1-3
2009/10	(E) Structures Renewals : embankment works	Earthworks and drainage work between Haddenham & Thame Parkway and Bicester	Embankment works	Network Rail	3
2009/10	(F) Petts Hill underbridge replacement works	Replacement of underbridge in connection with road improvements	Underbridge works	Third party	4
2013/14	(G) East West Rail Link	Re-opening of the Oxford/Aylesbury – Bedford railway between Claydon and Bletchley	New route and services creating extra capacity on the route	Third party	2-3
2010/11	(H) Neasden Drury Way strategic freight site	FOC lease of line next to Strategic Freight site in Neasden Engineers Sidings being sought to support the movement of sea dredged aggregate from Cliffe	Increase freight capacity	Third Party	0
2010 - 2013	(I) Evergreen Phase 3 Project	Expansion of route's capability and extension of services to Oxford (includes provision of crossover between Aynho – and Banbury and crossover between West Ruislip and London Marylebone)	Shorter journey times, improved performance	Third Party	2-3

Figure 17 Infrastructure investment in CP4

Implementation date	Project	Project description	Output change	Funding	GRIP stage
2009 - 2014	(J) Chiltern HLOS interventions	To deliver the HLOS targets for the Chilterns line, enhancement options are being developed that may include platform lengthening, signalling and track works	Increased capacity	Periodic Review 2008	0
2009 - 2014	(K) Track Renewals Programme	S&C works are planned at various locations across the route.	Track Renewals	Network Rail	Various
2009 – 2014	(L) Additional car parking provision	Expansion of car parking facilities across the route	Increased car parking capacity	TOC	Various
2009 – 2014	(M) High Wycombe station development	Enhancement to the station area including new station buildings and improved modal interchange	Improved station facilities	Third party	2

NRDF Candidate schemes in CP4

Figure 18 Candidate NRDF schemes in CP4

Implementation date	Project	Project description	Output change	Funding	GRIP stage
2009 - 2014	(N) Chiltern Gauge Clearance	Review provisions for a larger gauge to allow Chiltern Route to be used as an alternative to the West Coast Main Line	Higher gauge capability	Network Rail Discretionary Fund	0
2009 - 2014	(O) Aylesbury – Princes Risborough new connection	Introduction of a new crossover at Princes Risborough	Improve operational flexibility, increased capacity and line speeds	Network Rail Discretionary Fund	0
2009 - 2014	(P) Fenny Compton loop (may align with Banbury resignalling project)	Increase speeds of entry and exit to loop at Fenny Compton	Increased speeds	Network Rail Discretionary Fund	0

Renewals activity

Figure 19 shows the estimated renewals costs and activity volumes.

The precise timing and scope of renewals will remain subject to review to enable us to meet our overall obligations as efficiently as possible consistent with the reasonable requirements of operators and other stakeholders.

It should be noted that in order to manage the deliverability of our Civils, Signalling & Electrification plans we have included an element of over planning in our work banks. As a consequence the sum of our route plans exceeds our plan for the network as a whole. It is likely that a small proportion of the activities in these areas will slip to subsequent years.

Figure 19 Summary of estimated renewals costs and activity volumes						
£m (2009/10 prices)	2009/10	2010/11	2011/12	2012/13	2013/14	CP4 total
Renewals						
Track	1	2	0	0	1	5
Signalling	16	2	1	1	1	19
Civils	0	3	4	4	4	15
Operational property	6	4	3	2	1	17
Electrification	0	0	0	0	0	0
Telecoms	0	0	0	0	0	1
Plant and machinery	0	0	0	0	0	0
Total	23	12	8	7	6	56
Renewals volumes						
Track						
Rail (km)	3					
Sleeper (km)	12					
Ballast (km)	14					
S&C (equivalent units)	1					
Signalling						
SEUs (conventional)	0	0	0	0	0	0
SEUs (ERTMS)	0	0	0	0	0	0
Level crossings (no.)	0	0	0	0	0	0

Appendix

Figure 20 Strategic route sections

Predominant aspect recorded (secondary aspects recorded in brackets). ELR is Engineers Line Reference, RA is Route Availability												
SRS	SRS Name	ELR	Classification	Funding	Community Rail	Freight Gauge	RA	Speed	Electrification	Signalling Type	Signalling Headway (mins)	No of Tracks
16.01	Marylebone – Aynho Jcn	NAJ2 & 3 MJC1	London & SE	DfT	No	W7 (W6)	8 (7)	100 (60)	none	TCB	3 (5) (7) (11)	2
16.02	Neasden South Jcn – Harrow	MJC1	London & SE	DfT	No	W6	8 (7)	75 (60)	none	TCB	4	2
16.03	Aylesbury – Great Missenden	MJC2	London & SE	DfT	No	W6	8	75	none	TCB	9	2
16.04	Princes Risborough Jcn – Aylesbury	PRA	London & SE	DfT	No	W7 (W6)	7	40	none	TCB	15	1
16.05	Freight Lines	OXD MJC3	Freight	DfT	No	W8	8 (7)	30	none	KT TB	various	1

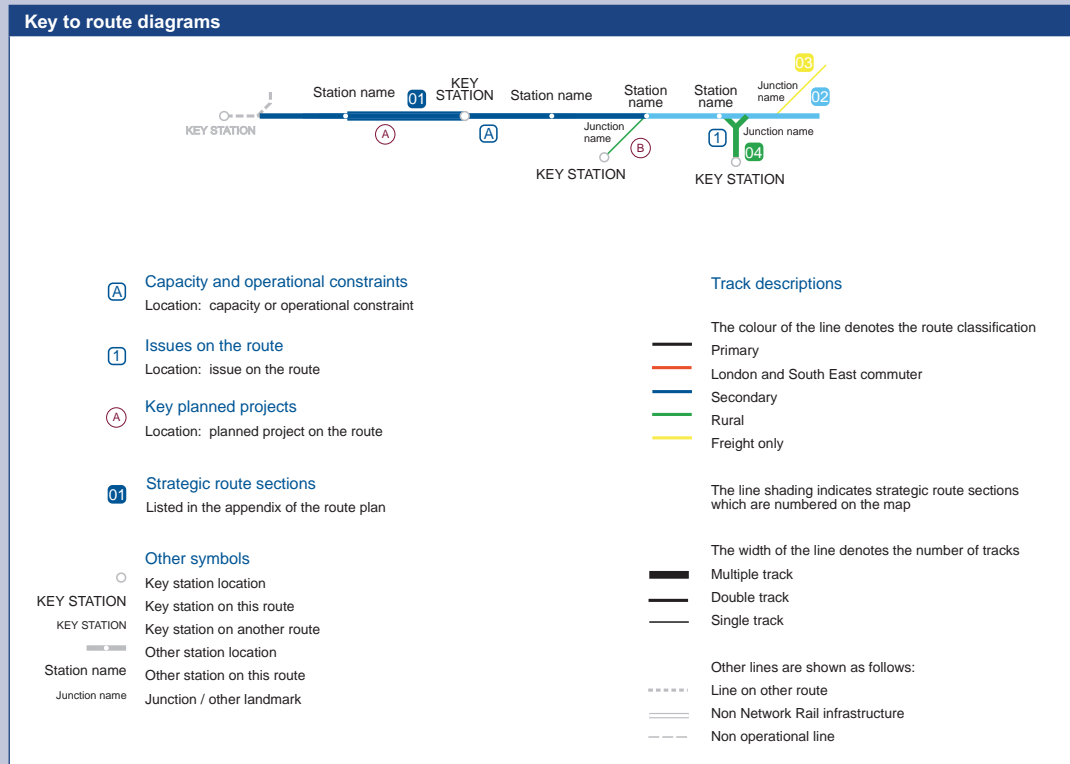
Capacity and operational constraints

- | | |
|----------|------------------------------------------------------|
| A | Beaconsfield station: no through fast lines |
| B | Aylesbury – Princes Risborough: single track section |
| C | Marylebone to Banbury: no loops for overtaking |
| D | Token working Aylesbury – Claydon LNE Junction |

Note

This Route Plan forms part of the Control Period 4 (CP4) Delivery Plan and supersedes the version published in April 2008.

Other documents in the Delivery Plan can be found on the Network Rail website www.networkrail.co.uk



GRIP stages

- 1 Output definition
- 2 Pre-feasibility
- 3 Option selection
- 4 Single option selection
- 5 Detailed design
- 6 Construction, test and commission
- 7 Scheme hand back
- 8 Project close out

Cover printed on box board which is both FSC and TCF. Text pages printed on Greencoat Velvet which is produced from pulp containing 80% recycled fibre. The remaining 20% virgin pulp is 10% totally chlorine free and 10% elemental chlorine free. Greencoat has been awarded both the National Association of Paper Merchants and the Eugropa recycled marks, two of the most prestigious and recognisable recycled certificates available.

**This Route Plan is part of a set.
To view or download the others
visit www.networkrail.co.uk**

Network Rail
Kings Place
90 York Way
London N1 9AG
Tel: 020 3356 9595