

Route Plans 2007
Route 17
West Midlands

Network Rail

The Network Rail logo consists of the text "Network Rail" in a bold, sans-serif font, positioned above a stylized graphic of three white diagonal lines that taper to the right, suggesting a train or a signal.A man with short hair and glasses, wearing a red and white checkered shirt, is seated on a train. He is looking out the window to his left. The window shows a blurred landscape. A silver laptop is open on the table in front of him. The interior of the train is visible, including the window frame and the back of a blue seat.

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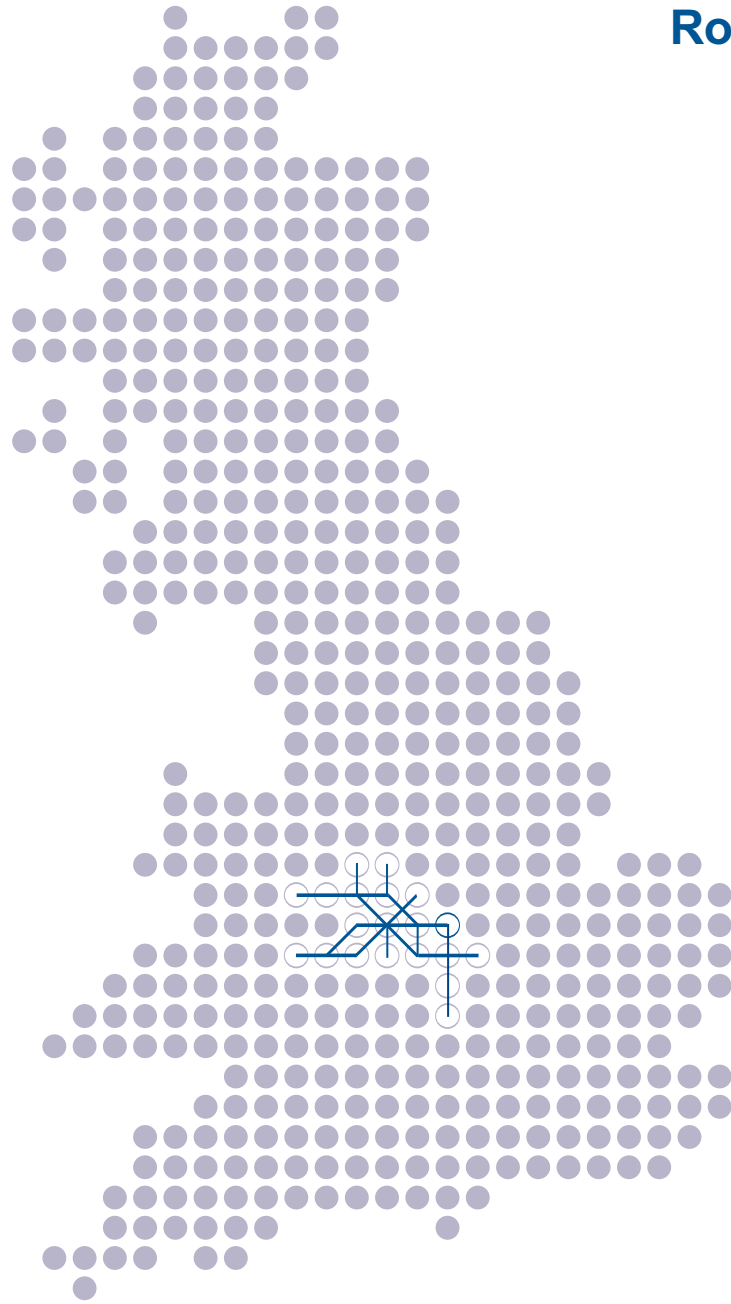


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Route 17 West Midlands



Route context

The West Midlands route is the key hub at the centre of the national rail network, with both the cross country and inter urban rail networks based on Birmingham New Street station. The principal routes into the area replicate and compete with the motorway network and rail services penetrate right to the heart of Birmingham.

The route also plays a key role in the transport system of the wider West Midlands region, with a busy suburban rail network, supported by the West Midlands Passenger Transport Executive (Centro), serving the business, commuter and leisure markets. This network has had an important role in supporting the revitalisation of central Birmingham and will be pivotal to continuing city centre growth. Additionally, rail has a major role in providing surface access to

Birmingham International Airport and the National Exhibition centre.

In July 2005 the SRA published a Route Utilisation Strategy (RUS) for the West Midlands region (broadly matching the area of Route 17) to cover the period up to December 2011. This set out scenarios of continuing growth in commuting to the centre of Birmingham. However, there is also an acknowledgement that the current network is operating at or close to capacity in terms of train paths and there is a critical passenger capacity issue at New Street station. The RUS outlines options and recommendations for accommodating future growth, a number of which take advantage of the resignalling schemes on this route over the next several years. These are developed further in this route plan.

Currently, the process to replace the Virgin Cross Country and Central Trains franchises with three new franchises – Cross Country; West Midlands and East Midlands – is well underway, and these new franchises are planned to begin in November 2007.

In September 2006, the seven Metropolitan Authorities and the West Midlands PTA, after a successful bid for pump-priming monies from the DfT's Transport Innovation Fund (TIF) published the Green Paper "Gridlock or Growth – Choices and Challenges for the Future". This acknowledges the important role rail can play in alleviating road congestion, through a regenerated New Street station and a re-invigorated network of suburban and regional rail routes. This paper is part of the West Midlands' bid to government to pilot a road congestion scheme, and a decision on the successful bid is unlikely to be known until around December 2007. The government is then keen that the successful pilot is substantially implemented by 2012, and this is likely to include a number of rail elements.

The Regional Planning Assessment, to cover the period from 2011 to 2026, was published by the DfT in July 2006. We have worked closely with the DfT to ensure consistency between our route plans and the RPA.

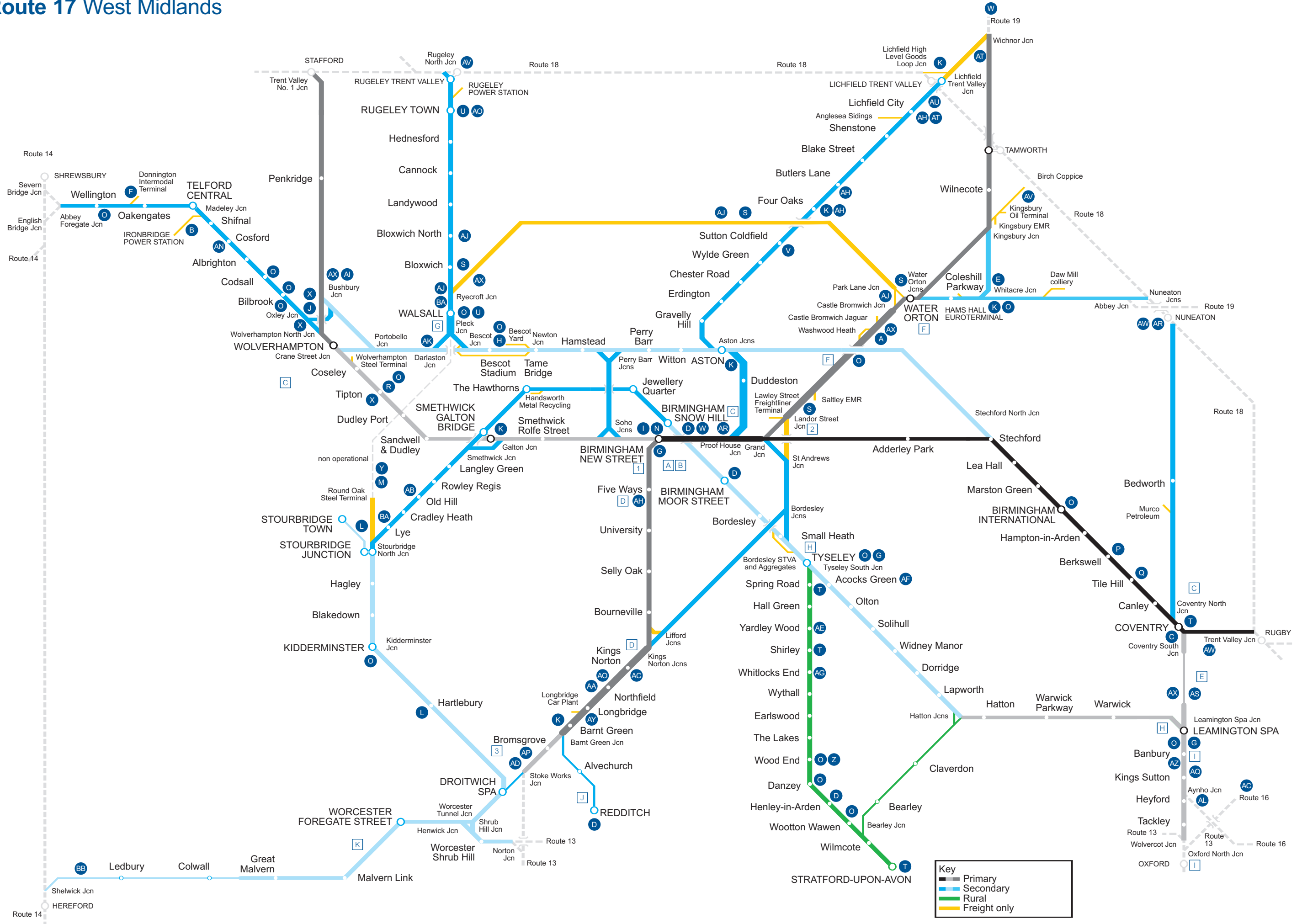
As part of our ongoing RUS programme, we plan to commence a West Coast RUS and a South Midlands RUS, both in autumn 2007. This will offer the opportunity to revisit and refresh elements of the West Midlands RUS as we analyse the impacts of the refranchising, December 2008 time table and (potential) road congestion pilot.

Today's route

The route is bounded to the east and north by the WCML, the west by Shrewsbury and Hereford and the south by Oxford and Worcester. The four principal elements of the West Midlands route are described below, with the relevant Strategic Route Section shown in brackets:

- WCML, including the Birmingham loop (Rugby – Coventry – Birmingham New Street – Wolverhampton, rejoining the WCML at Stafford) (17.01, 17.02, 17.03, 17.07) and the Stechford to Bushbury Junction line (17.09) (the Grand Junction which provides vital diversionary capability for both the WCML Trent Valley route and the Birmingham loop);
- Cross country and interurban routes, which include the radial routes from Birmingham to Cheltenham (17.11 and 17.17), Derby (17.06), Oxford, Leicester (17.18) and Worcester/Hereford (17.05), plus the route from Wolverhampton to Shrewsbury (17.16);
- West Midlands local routes, which form two main networks, centred on Birmingham's New Street and Snow Hill stations (17.04, 17.08, 17.10, 17.12, 17.13, 17.14, 17.15, 17.19 and 17.23); and
- freight routes, including heavily used through routes carrying long distance traffic (e.g. Sutton Park Line, St. Andrews Junction to Landor Street) and a number of branch lines serving private sidings and terminals on the route (e.g. Longbridge, Hams Hall, Birch Coppice, Round Oak) (17.20, 17.21 and 17.22).

Route 17 West Midlands



Key	
—	Primary
—	Secondary
—	Rural
—	Freight only

Passenger and freight demand

The most recent, comprehensive analysis of passenger demand was the West Midlands RUS (July 2005), and these figures, which are based on journeys in 2004 and earlier, are used for this route plan. Note, however that anecdotally, rail growth in the West Midlands over the last couple of years has exceeded RUS medium estimates for this period.

The West Midlands RUS identified that rail use in this route grew faster than the national average during 1995–2004, with journeys up by 44 percent compared to 34 percent nationally. Growth has been particularly strong at stations such as Walsall (180 percent), Sutton Coldfield (165 percent), Solihull (163 percent), Tamworth (135 percent), Stourbridge (128 percent), Leamington (12 percent) and Telford (113 percent). Reasons for this high level of growth are varied. Since 1995 there have been a number of significant service improvements. The Jewellery line was opened in June 1995 and later service improvements since 2002 include more frequent services on the Cross City Line and Snow Hill lines, improved frequencies to London Marylebone, the Cross Country upgrade and the WCML upgrade.

Other factors include retail expansion in Birmingham (especially the Bull Ring in September 2003) and employment growth in Birmingham city centre. In 1991, 12 percent of work journeys to central Birmingham were by rail. By 2004 this had increased to 20 percent, against a much higher employment base. The SRA's analysis for the West Midlands RUS indicates an average annual growth rate of 3.9 percent in rail travel in the West Midlands in the period 1999 – 2004. Despite this growth, on each radial route there is still capacity for additional passenger growth when measured across the three hour peak periods. However, there is evidence of significant overcrowding on trains in the core morning peak hour, arriving into Birmingham between 07.45–08.45.

At the other extreme are stations with very low usage. Eight of the 20 least used stations in the West Midlands are on the Stratford-upon-Avon and Leamington line including Bearley, with an average of just 6 passengers per day.

The route is vital for several long distance freight flows, including traffic to and from the WCML, along the Thames Valley line from Oxford (which forms part of the freight route from Southampton that joins the WCML in the West Midlands) and significant coal, steel and automotive flows. There are significant volumes of freight to local terminals and yards, including metals traffic (e.g. Handsworth, Round Oak, Wolverhampton Steel terminal),

automotives (e.g. Washwood Heath, Birch Coppice and Castle Bromwich) and aggregates (e.g. Walsall, Washwood Heath, Bordesley). Recently, strong growth has been seen in intermodal traffic to Lawley Street, Hams Hall and Daventry. Coal trains serve power stations at Ironbridge and Rugeley and originate from Daw Mill Colliery.

The new intermodal terminal at Birch Coppice opened in July 2006 and has attracted new services operated by Freightliner, Fastline and EWS to Southampton and Isle of Grain. In February 2007, the first freight services ran into the Prologis site between Coventry and Nuneaton. These trains carried water from Europe for distribution in the Midlands. This new flow will save lorries having to transport the water all the way from Greater London.

Current services

The main operators across this route are; Central Trains, Chiltern Railways, Virgin West Coast, Virgin Cross Country, Arriva Trains Wales, First Great Western, First Great Western Link, English, Welsh and Scottish Railway (EWS), GB Railfreight, Freightliner Ltd., Freightliner Heavy Haul Ltd., Advenza, Fastline Freight and DRS. Steam train services operate on part of this route. During the summer, the 'Shakespeare Express', runs between Birmingham Snow Hill and Stratford-upon-Avon.

Since 1999 train services on the route have been improved to offer higher frequencies on journeys to main centres. On weekdays there is a half-hourly service to and from London (on routes both to Euston and Marylebone), the Thames Valley, the North East, the North West, the South West and most Midlands regional centres. A high frequency service operates on three commuter routes from Birmingham – to Longbridge, Four Oaks and Stourbridge – with 6 tph throughout most of the day.

The West Midlands network carries a mix of traffic, with wide variation in speed, acceleration and stopping pattern. On many corridors this involves a complex mix of freight, urban, interurban and long distance Intercity services. There is little traffic segregation on the nine major radial corridors. As the route is predominantly two track, there are high levels of utilisation, imposing constraints on the timetable. Several radial routes into Birmingham are operating at or close to capacity, including the routes from Coventry, Wolverhampton, Leamington (via Solihull), Bromsgrove and Water Orton.

The franchising process, which will see the Central Trains and Virgin Cross Country franchises replaced with a new Cross Country, a West

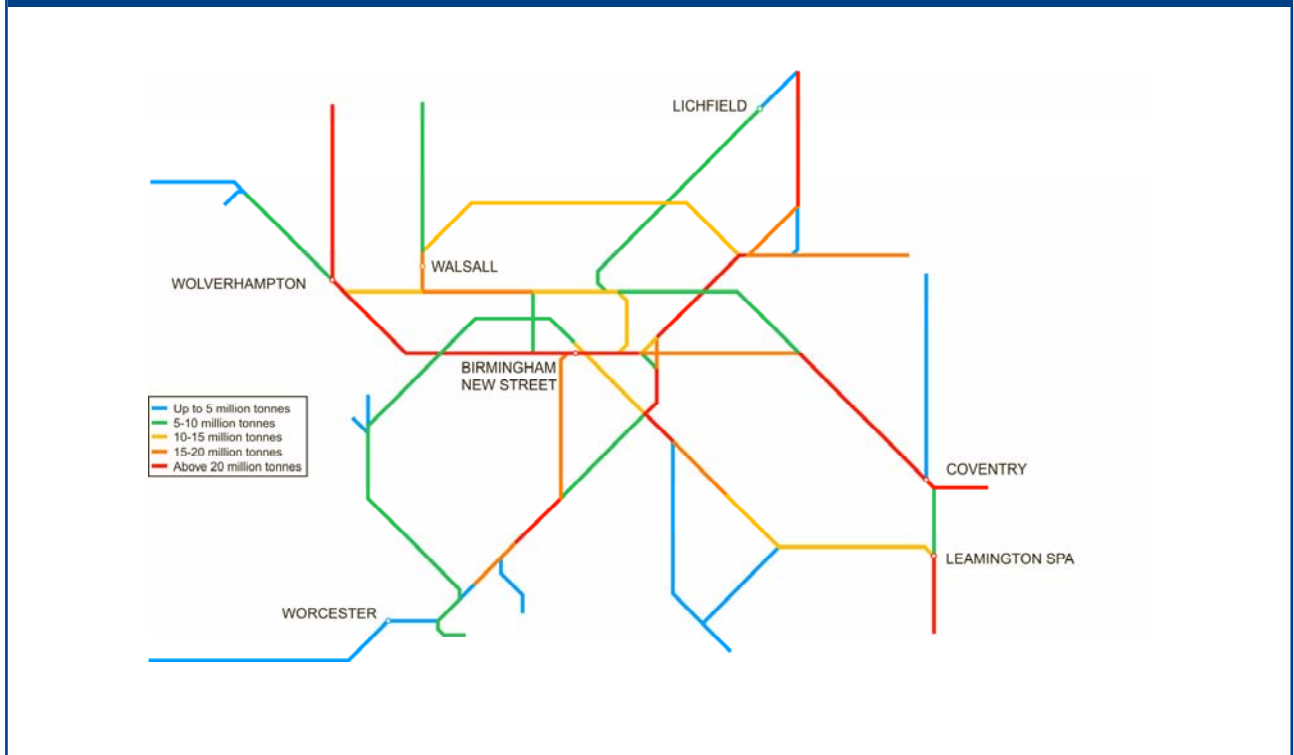
Figure 1 Current use

	Passenger	Freight	Total
Train km per year (millions)	24	4	28
Train tonne km per year (millions)	4,839	3,807	8,646

Midlands and an East Midlands franchise is currently underway. These new franchises will commence in November 2007.

Traffic volumes are summarised in Figure 1.

Figure 2 shows the tonnage levels on the route

Figure 2 Tonnage

Current infrastructure capability

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

Figure 3 Linespeed

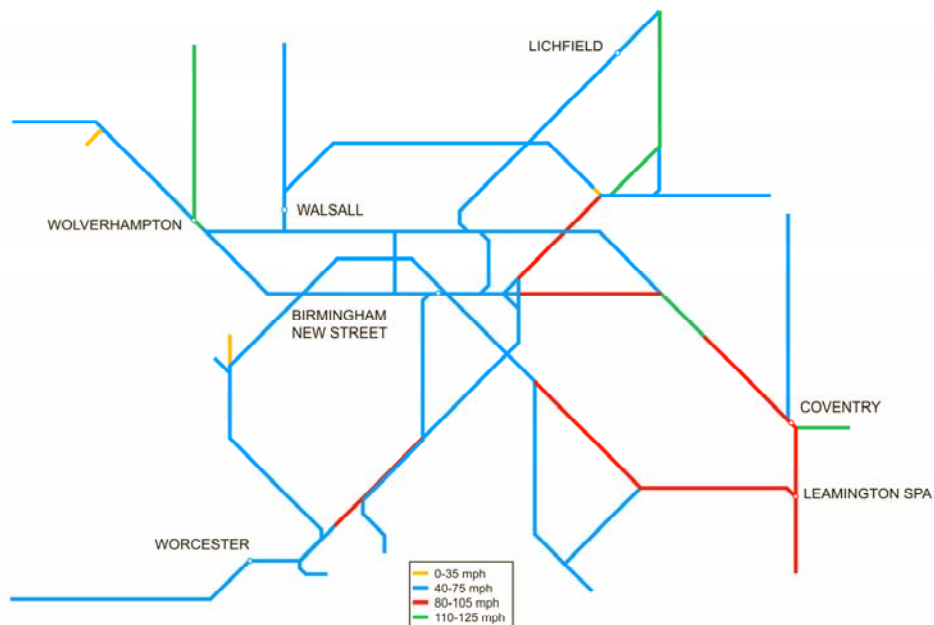


Figure 4 Electrification

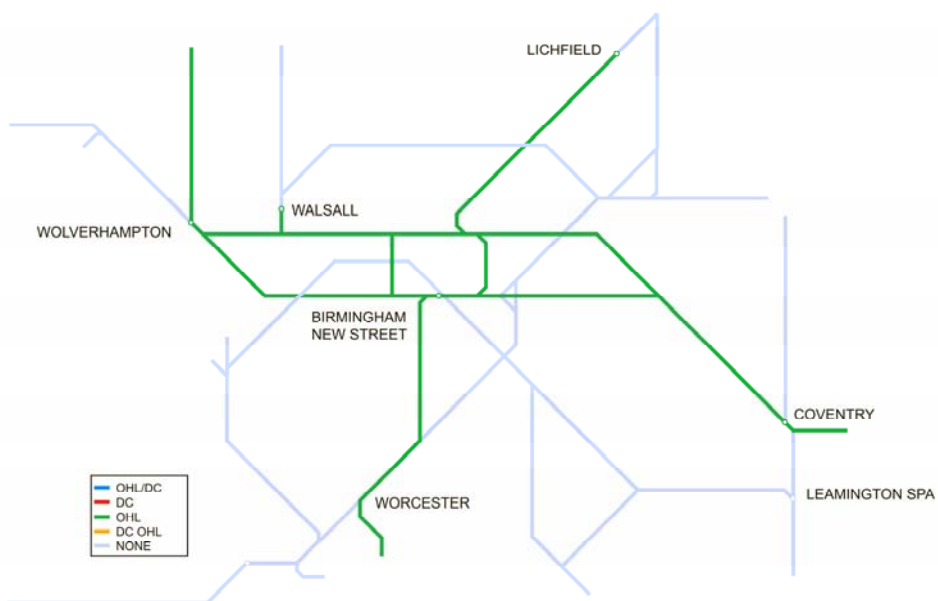


Figure 5 Route availability

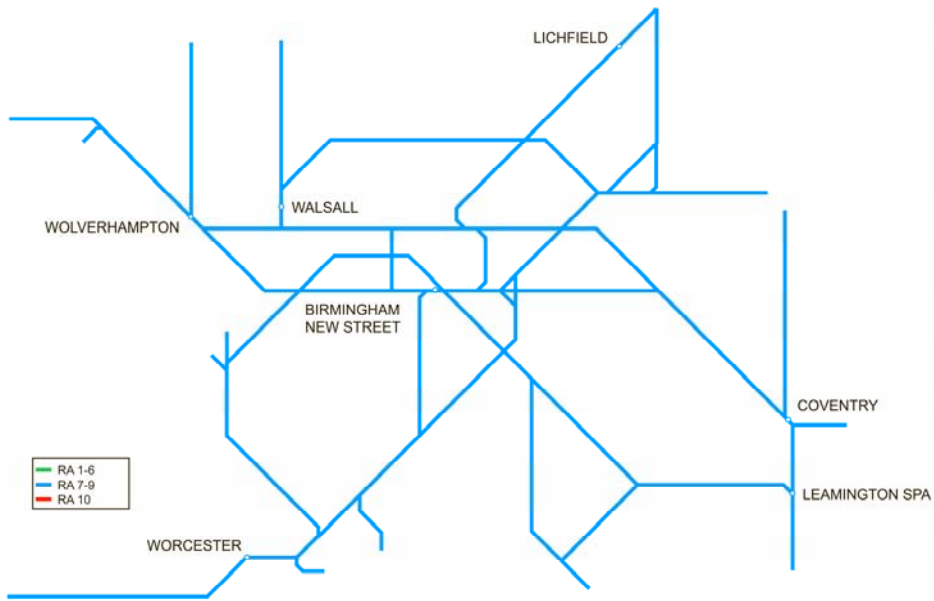
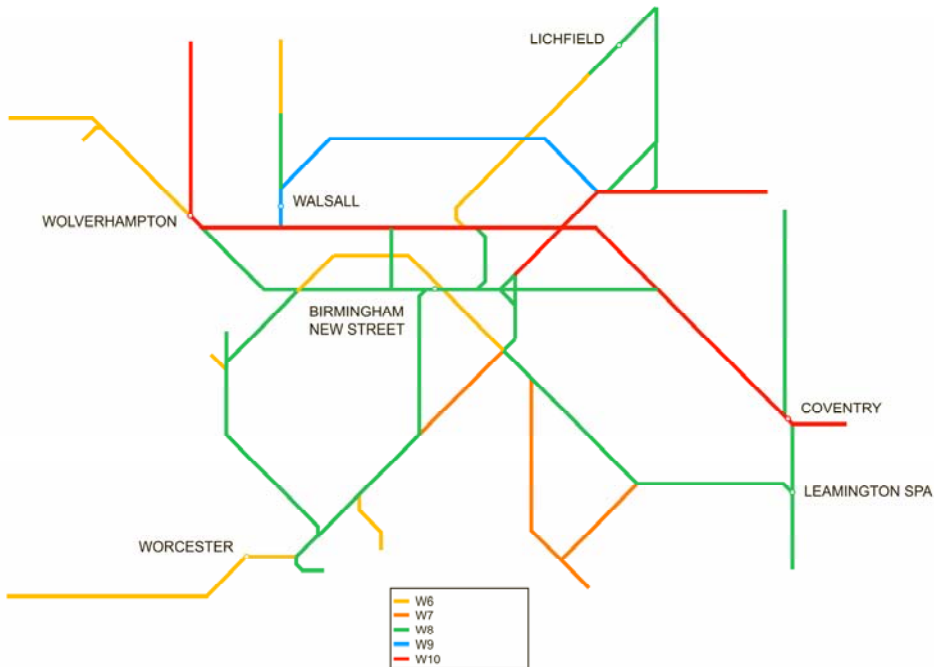


Figure 6 Gauge



Current capacity

There are several major capacity issues in the West Midlands.

There is a very high level of capacity utilisation on most radial routes into central Birmingham. On sections of the Coventry – Wolverhampton line the Capacity Utilisation Index (CUI) exceeds 90percent in peak hours. This has a severe impact on service resilience in times of disruption, with little reserve capacity to aid service recovery. The high CUI is due to the large number of services and the mix of traffic types. The signalling headways on some sections date back to the 1960s and there may be opportunities for small improvements when this equipment is renewed.

There are certain stretches of outlying routes that, due to having absolute block signalling with very long sections, restrict service frequency to important regional destinations such as Kidderminster/Worcester, Hednesford/Rugeley and Stratford. Another route with restricted signalling headways is the Sutton Park freight route, where the problem is exacerbated by the single track curves at its eastern end.

Capacity is very constrained at the hub of the network, in particular New Street, Snow Hill to Moor Street and the Landor Street/Water Orton junction areas. There are few opportunities for additional paths at peak times in any of these areas. In particular, utilisation of the throats and platforms at New Street is very high.

The route has a number of single lines that act as restrictions to the efficient operation of the network. Principal amongst these are the routes from Coventry to Leamington, Stoke Works Junction to Droitwich, Barnt Green to Redditch and the single track curves connecting the Sutton Park line to Water Orton and Castle Bromwich.

The route also has several highly restrictive layouts; for example, the section between Barnt Green and Kings Norton, which is exacerbated by the Lickey Incline south of Barnt Green. This restricts growth, particularly for heavy freight trains. The Birmingham – Water Orton route has intense freight traffic to numerous terminals on the route and the flat junction at Landor Street is a major constraint to growth.

Passenger capacity is a real issue at two stations on the route. There are problems at Moor Street with narrow platforms, compounded by recent strong growth in passenger numbers. The more critical problem is at Birmingham New Street station, one of the busiest stations on the national network, where recent passenger growth has left the station operating very close to capacity in terms of passenger numbers. More than 40,000 people have been known to pass through the station in the busiest three hours, leading to passenger congestion in key circulation areas. In some very busy periods we have been obliged to restrict access to platforms, or in extreme cases the whole station, in order to maintain passenger safety. The decision to close is however only taken when absolutely necessary and we will continue to work to minimise disruption to rail travellers.

The RUS identified a number of issues relating to overcrowding with at least 10 trains in the morning peak regularly exceeding the Centro target of no more than 10 percent standing (excluding Virgin CrossCountry and Virgin West Coast), although only one exceeded the SRA PIXC standard.

Figure 7 represents numbers of trains in the morning peak hour.

Figure 7 Current train service level (peak trains per hour)

Route Section	Number of trains
Wolverhampton – Birmingham New Street	13
Coventry – Birmingham New Street	10
Longbridge – Birmingham New Street	12
Four Oaks – Birmingham New Street	8
Stourbridge – Snow Hill	7
Dorridge – Moor Street	8

Figure 8 Current PPM MAA (2006/07)

TOC	MAA	As at period
Arriva Trains Wales	87.2%	11
Central Trains	84.2%	11
Chiltern Railways	93.9%	11
Virgin Cross Country	83.7%	11
Virgin West Coast	86.4%	11

Current performance

Figure 8 shows the current PPM for the main TOCs running along the route.

The key performance issue on the route is the potential for significant disruption following incidents on the busy two track routes into New Street and Snow Hill stations. This section of the network has a high mix of Intercity, suburban and interurban passenger services and heavy freight traffic. Once trains have lost their path, the tendency is for them to lose further time, rather than recover it. The late trains then cause other trains to lose their paths – reactionary delay frequently accounts for over 90 percent of incident delay minutes. Linespeed increases to 125 mph have increased the differential between fast and slow trains in some cases, to the detriment of overall capacity.

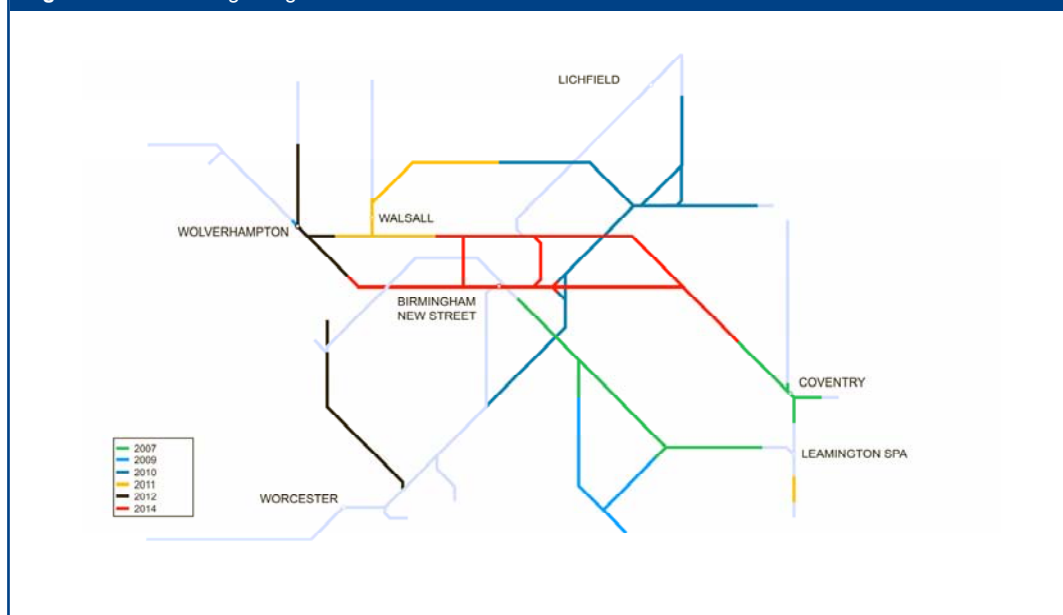
The high level of reactionary delay can be attributed to a combination of three factors:

- the role of the West Midlands at the hub of the network, with many long distance services crossing the area;
- the complex mix of services with different characteristics and stopping patterns; and
- the high capacity utilisation, exacerbated by restrictive signalling on many sections on the route.

The current challenge is that of managing performance on a route with many different TOCs. An Integrated Control Centre (ICC) was opened in Birmingham in Spring 2005, with two TOCs (Central Trains and Virgin West Coast) moving their control there. This has brought both operational and infrastructure controls together, providing opportunities for closer working and improved incident response. Whilst benefits have been realised, we believe there is further potential to improve, through ever closer integration and improvement of joint processes.

The trial Train Regulation Policy that commenced in June 2005 has been a success and is now key to delivery of good performance. Signallers have been allowed to make regulating decisions with the sole objective of ensuring the maximum number of train services arrive within their 5 or 10 minute PPM target, whilst being aware of peak charter targets. This policy is kept under constant review.

Figure 9 Indicative resignalling dates



Future requirements

Strategic direction

We expect that the route will continue to see high levels of growth, with passenger and freight growth forecast over the medium term by the RUS, and into the longer term by the RPA. The main drivers of this will continue to be growth in central Birmingham, especially employment and leisure/retail activities, service improvements and increasing road congestion. Broadly speaking, we would expect this growth to be met by train lengthening.

The West Midlands Transport Green Paper: "Gridlock or Growth – Choices and Challenges for the Future" outlines the issues around road congestion and a range of options for tackling them, which includes an important role for heavy rail. If the West Midlands is successful in its bid, this could lead to implementation of a pilot by 2012. The impact on rail demand arising from measures to stimulate modal shift from car to public transport is potentially very significant, but is not understood at this stage. Consequently, we do not address this topic at this stage, but will be working with stakeholders over the next year to ensure rail planning is aligned with developments.

The majority of this area is controlled by a number of power signal boxes which are approaching life-expiry and will be renewed. There are also a number of mechanical boxes that are due for renewal. The indicative commissioning dates for these are as follows:

Coventry	2007
Leamington corridor	2007

Stratford	2009
Oxley	2009
Water Orton	2010
Walsall	2011
Banbury	2011
Wolverhampton	2012
New Street	2014

The programme is illustrated in Figure 9.

As part of these renewals, we will be looking at enhancements that can be made in order to provide additional capacity and flexibility on routes where this is needed to help cater for predicted growth and changing journey requirements.

On selected routes there are drivers for increased loading gauge and line speed. These are described further in the sections below.

Future demand

Both the RUS and the RPA studies have examined wider regional changes as the context for the changing pattern of rail passenger demand. A detailed analysis of passenger demand growth was carried out for the West Midlands RUS. The Regional Spatial Strategy aims to focus development on the major urban areas and this is likely to start to reduce the rate of growth within the next ten years. However, continued growth in central Birmingham employment is expected.

These factors were picked up by the demand forecasts in the RUS and the RPA. The SRA RUS sets out three different scenarios for central Birmingham commuting growth to 2011–12:

- low: 3.2 percent annual growth rate in trips up to 2006–07 and then 0.7 percent beyond. This is based on regional economic forecasts and thus does not take account of the additional specific factors that are driving up demand for rail commuting into Birmingham;
- medium: 3.9 percent p.a. based on projecting forward the average growth rate since 1999; and
- high: 5.5 percent p.a. using the multi-modal work undertaken for the West Midlands Districts' Local Transport Plan submission to the Department for Transport in 2003.

Overall the low forecasts for the RUS would see the typical three hour morning peak into Birmingham increase from 24,400 passengers in December 2004 to 27,800 passengers in 2011. The RPA continues this trend, forecasting 32,100 by 2026, an increase of 31 percent from 2004.

However a number of responses to the RUS consultation suggested that many regional stakeholders believed that growth would be most likely in line with the medium or high growth scenarios. This view is now supported by anecdotal evidence of growth over the last 2 years. The RPA includes a forecast with continued city centre employment growth and this indicates a continuation of higher than national average growth beyond 2011, but at a lower rate than the period from 2005 – 2011. This scenario would see three hour morning peak commuting into Birmingham increase to 31,900 passengers in 2011 and 38,100 passengers in 2026, a 56 percent increase from 2004.

In the regional context there are a number of investment initiatives likely to facilitate further growth, including new stations (e.g. Kenilworth, Aldridge, Brinsford and Fort Dunlop) and Centro's rolling programme of park and ride schemes. These proposals include a major new park and ride facility at Longbridge with 900 spaces, major car park schemes at Four Oaks and Sutton Coldfield, and tactical park and ride expansion at more than 20 stations across the conurbation, totalling a further 2,000 parking spaces. Further work is underway by Centro and other regional partners to identify and develop sites for new large regional park and ride facilities. Centro also have aspirations to the south of the route to operate a passenger service on the currently disused Frankley branch. This would further increase demand from South Birmingham. Other factors likely to influence growth include improved performance, induced growth from service improvements (e.g. later stages of the West Coast upgrade) and expansion at Birmingham International Airport (which is forecast to increase

from around 10 million passengers per annum to at least 30 million by 2030, with a target for a higher public transport share).

Detailed analysis on a train by train basis of the RUS medium growth scenario – and extrapolation beyond 2011 – has shown that increasing numbers of peak services would begin to suffer from severe overcrowding. The main conclusion from this work is that if the train service timetable were to remain as now the number of morning services suffering from overcrowding (as set out by the Centro measure of overcrowding, i.e. passengers in excess of 10 percent greater than seating capacity) would increase from 6 in 2004 to 52 by 2011 and 71 by 2026. (This excludes Cross Country and West Coast services). Peak spreading is generally not favoured by regional stakeholders; however, Passenger Focus are currently undertaking research into the scope (people's willingness) to change travel patterns. In principle, peak spreading could alleviate this situation and enable much growth to be accommodated within existing rolling stock resources and train paths. However, over time this would begin to suffer from diminishing returns as the number of peak services affected is forecast to spread beyond the core peak hour. This level of growth would require an increase in system capacity and generally the most appropriate way to achieve this is through train lengthening.

The RUS also indicated that there was a need for increased levels of services out from the conurbation to locations such as Redditch, Bromsgrove, Kidderminster, Rugeley, Stratford and Northampton. In each case most trains terminate short of these destinations as a result of a capacity and infrastructure constraints that currently limits the number of services.

The Virgin West Coast business plan envisages 100 percent growth in demand by the end of their franchise in 2012. Recent counts on Virgin Cross Country services indicate an overall growth rate of 8 percent p.a. Major influences on future growth include the December 2008 timetable, with Euston – West Midlands services increasing in frequency to 3tph, and the new Cross Country specification.

The Freight RUS predicts the number of freight services in the West Midlands to broadly increase to 2014/15. There is particularly high growth in intermodal traffic from deep sea ports, although the actual number of services will depend on the ability to carry W10 traffic from Southampton. The line with highest growth is from the WCML through Water Orton towards the terminals in the centre of the route. There are also increases in imported coal and aggregates; it is likely that the source points for

imported coal to West Midlands Power Stations will change with greater demand for services from ports in the South Wales and the Bristol area. In contrast, there is predicted to be decrease in metal traffic between the south west and north east of the route over the period to 2014/15.

Future services

The December 2008 time table will provide three tph from Euston to the West Midlands (two to Birmingham; one to Wolverhampton). It will also provide a redraft of the inter-urban services along the Coventry corridor, including a strengthened service between Birmingham New Street and Northampton/Liverpool.

As part of the DfT's refranchising process, a number of current Central Trains services will transfer to the new Cross Country franchise (e.g. Cardiff – Nottingham and Birmingham – Cambridge).

There are proposals from Wrexham, Shropshire and Marylebone Railway to run services from Wrexham to Marylebone.

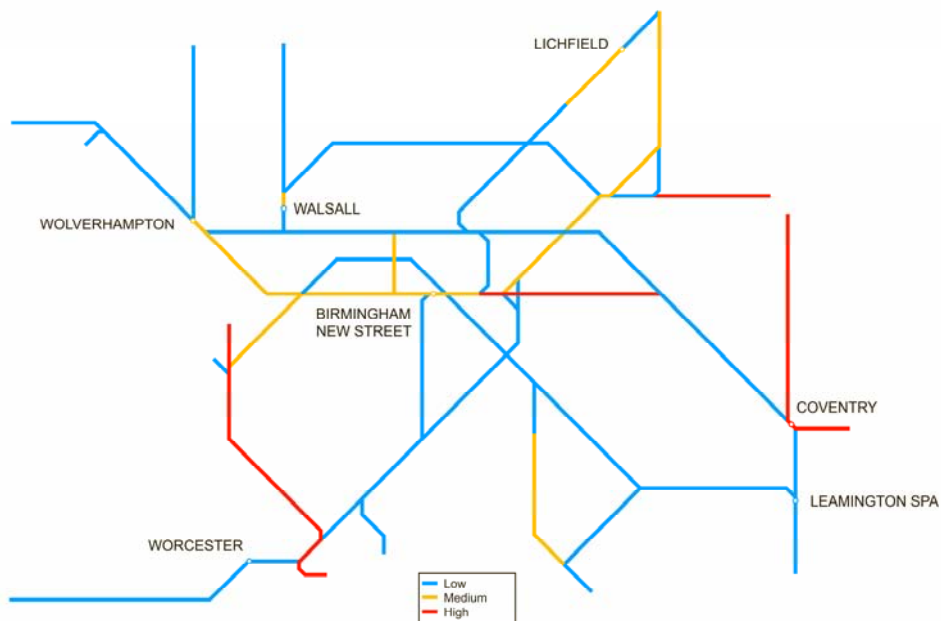
Figure 10 indicates the forecast percentage change in tonnage to 2016.

Future capability Gauge

The Freight RUS sets out a proposed intermodal freight network cleared for the transportation of 9' 6" high containers. The routes from Leamington – Coventry – Nuneaton and Leamington – Bordesley – Landor Street have been identified as priority core routes, with Castle Bromwich Junction – Walsall via the Sutton Park line identified as a priority diversionary route.

In December 2006, the DfT announced that a number of important rail freight projects to alleviate road congestion will be taken forward as part of the DfT's Transport Innovation Funding for productivity schemes. The schemes relevant to this route are gauge enhancement of Southampton – WCML near Birmingham (including Oxford north junction – Coventry – Nuneaton on this route), and gauge and capacity enhancements between Peterborough and Nuneaton.

Figure 10 Tonnage growth



Line speed

The routes from Wolverhampton – Shrewsbury and Walsall – Rugeley suffer from particularly poor line speeds. On the Shrewsbury route, the prevailing line speed (70 mph) is comparatively poor for such an inter-urban route. The Regional Spatial Strategy shows this corridor, and especially Telford, as a regional development site/high technology corridor. A higher line speed would also generate resource (train crew/rolling stock) benefits as well as performance improvement and revenue benefits. The medium term aim has for some time been to increase line speed to 90 mph. Consequently the various resignalling schemes on the route (Wellington (now delivered), Codsall – Madeley due shortly for implementation and Oxley) have all made provision for 90 mph.

Ongoing track renewals over the last few years have replaced much of the former jointed track with Continuous Welded Rail (CWR), removing some of the main obstacles to achieving a 90 mph railway.

There are similar pressures on the Walsall – Rugeley line, which has a very low 45 mph line speed. If a higher line speed was obtained, this route could be utilised as a key diversionary route, particularly during planned possessions between Bushbury and Stafford. This applies for both freight and passenger services. Once again, much of the jointed track has now been removed and forthcoming track renewals, including the renewal of Ryecroft and Walsall north junctions, will facilitate works to make a higher line speed easier to achieve.

Line speed in the Moor Street – Jewellery Quarter area is restrained by restrictive PSRs. This extends journey times significantly. The aspiration for the future is to remove the PSRs to enable the full line speed to be achieved. We are also looking at both ends of the Cross City line, and believe there are opportunities to provide reduced journey times from Lichfield and Redditch.

Both Central Trains and Virgin Cross Country have identified locations where beneficial line speed improvements could be delivered in the current regulatory control period. These include the Cross City and Camp Hill lines. In the short term, we are looking to increase the 20mph speed restriction at the junction from Kings Norton towards Bordesley in order to improve journey times. Longer term, there are aspirations to improve journey times between Birmingham and the West Country.

We recognise that passenger and freight speed differentials (in some areas) are not ideal to meet the capacity of the route. To overcome this, we

continue to work with industry partners to find the best solution.

Depots

Provision of an independent power supply to Oxley depot is being sourced in order for the maintenance activity to continue during times of isolation. This will mean the elimination of additional moves and improve availability of the Class 390's.

Signalling renewals are planned at Oxley within the same timescales, to ensure maximum efficiency of resources.

Stations

A new station is opening in April 2007 on the Birmingham to Nuneaton line (near Water Orton), which will be known as Coleshill Parkway. This will provide park and ride, and multimodal passenger facilities for the north Warwickshire area.

Improved access facilities are being provided at Kidderminster station, as part of the DfT's 'Railway for All' strategy, and a second access route (a new staircase and escalator) is due to open during 2007.

Platform lengthening and station enhancements are planned at Bromsgrove, in partnership with Worcestershire County Council and Centro. These enhancements will improve facilities at the station and the ability to run longer services. We continue to work with Wolverhampton City Council on the interchange project for Wolverhampton station.

There are currently aspirations for new stations on the route at Aldridge, Brinsford, Fort Dunlop and Kenilworth. As with all new station proposals, these will be subject to a robust business case.

Aldridge – passive signalling provision is being made within the Walsall resignalling scheme allowing for a turnback station off the Sutton Park line. This is in very early stages of development.

Brinsford – a proposal for a park and ride station at Brinsford, north of Wolverhampton (situated close to the A449) is currently under development. This station would be funded by the Local Authority and a developer.

Fort Dunlop – A feasibility study, as part of the Fort Dunlop development, has been commissioned to examine the aspirations for a station on the Birmingham to Derby line (near Water Orton).

Kenilworth – a new station located on the line between Coventry and Leamington Spa at Kenilworth is being proposed by developers.

Figure 11 Platform lengthening

	Maximum peak length	Platforms requiring lengthening	Platforms requiring SDO (or other measure)
Wolverhampton – Coventry	8 x 20m	Berkswell, Tile Hill, Tipton	Adderley Park, Stechford, Dudley Port
Lichfield – Redditch	6 x 23m	–	–
Leamington – Snow Hill	5 x 23m	–	–
Stratford – Snow Hill	4 x 23m	Wythall	The Lakes
Rugeley – Walsall – Birmingham	4 x 23m	Cannock, Landywood, Bloxwich	Bescot
Kidderminster – Birmingham	5 x 23m	Old Hill, Lye	

Car Parking

A car park extension scheme at Coventry station is nearing completion, and work continues to develop the Virgin Trains' Trent Valley car parking scheme which is in its initial stages. This will look at the following stations: Tamworth, Lichfield Trent Valley and Nuneaton.

Platform lengths

The practical incremental approach to continued growth is to lengthen trains; this makes best use of the scarce and high value paths into Birmingham New Street. Despite the high network utilisation and demand for train paths, some services at Birmingham New Street are still operated by trains of just two vehicles. On the busy corridor into Birmingham New Street from Coventry, work is underway to extend the platforms at both Tile Hill and Berkswell to enable the longer trains on this section required by the 2008 timetable to operate. Figure 11 sets out the train lengthening options for each urban service group and the consequences for platform lengthening. At Berkswell there may also be an opportunity to provide a new station building in conjunction with the platform lengthening scheme. A separate exercise has confirmed that the longer trains can be accommodated within the platforming constraints at Birmingham New Street.

From the exercise outlined above – which identified the required length for each train service by 2026 using the medium RUS growth forecast – a maximum peak train length can be identified for each local service group. In almost all cases this is expected to cater for the expected per train loadings within the Centro loading standards (110percent of seating capacity) although the maximum peak length is also determined by reference to the practical maximum length of platforms. (On most routes there is a maximum length beyond which there is a steep increase in lengthening costs due to topology or structures). Figure sets this out as well as an initial assessment of those platforms which require lengthening to accommodate that maximum train length. However, at a number of stations, shown in the final column, even this train length cannot practically be achieved due to exceptional difficulty and high cost. A train

lengthening workstream, comprising Network Rail, Centro, TOCs and DfT has been established to lead the process of developing options for train lengthening, including investigation of alternatives (e.g. selective door opening).

Future capacity

The forecasts of significant further growth in commuting to central Birmingham will pose two problems.

Firstly, with no intervention, overcrowding on peak services would worsen, particularly in one core hour (07.46–08.45) into which there is considerable concentration of peak travel.

Secondly, Birmingham New Street station is already operating close to capacity in terms of passenger numbers, leading to passenger congestion in key circulation areas and the increasing risk of full or partial station closure. As we expect to see continued high levels of passenger growth there is an increasing risk that Birmingham New Street station will experience further instances of full or partial closure. In the short term we are ensuring the safe management of the station by applying robust passenger management plans and emergency evacuation plans, backed up by risk assessments. However, this can mean that passengers may be prevented from catching their preferred train. In the longer term, there are plans to redesign and redevelop the station. The preferred option would see a greatly increased passenger capacity, better access to platforms, and relieve current congestion. Over the next year, we will continue to work with regional and industry partners on funding arrangements and planning processes to progress the scheme. In the meantime, we are working on a scheme to provide an additional access to platform 12, which will reduce passenger congestion. The aim is to provide this facility within the next 12 months.

The RUS recommended a series of generic options for accommodating peak growth including:

- train lengthening: to be considered by DfT and Centro on a case by case basis – to be evaluated based on value for money appraisal

- and affordability constraints and taking account of crowding on individual services;
- changing off-peak fare restriction times and introducing lower pre-peak fares; and
 - a combined package consisting of raising peak fares, reducing shoulder peak fares and implementing selective car park pricing.

The RUS also makes specific line of route recommendations for service changes, as well as setting out the need for additional passenger capacity at Birmingham New Street station.

Train lengthening options exist for the majority of routes and service groups, including local, interurban and cross country services, supported where necessary by platform lengthening. For example, most trains on the Cross City line operate with 3 vehicles. Increasing the proportion of 6 car trains would deliver many more seats without any infrastructure changes or performance effects. The requirements for platform extensions are set out in the demand section above.

It is clear that continuous performance improvement and the demand for more capacity are driving a requirement for additional capacity across the West Midlands. Currently most of the West Midlands network is already operating at, or very close to, capacity, with high values of Capacity Utilisation Index (CUI). Consequently there are few options for increasing the number of train paths available at peak times (or, on some corridors, for changing the stopping patterns). This high level of capacity utilisation is a result of two factors – signalling headway and timetable mix.

Figure 12 sets out the current Rules of the Plan

(ROTP) planning headway for the main part of each radial route into central Birmingham (or the predominant headway) together with the most restrictive headway on the route (where applicable). The table also sets out the required future headway for each radial route, commensurate with the role of the West Midlands network and the drivers for greater demand and performance. The business case for reduced headways is improved by the forthcoming signalling renewal programme as listed in the strategic direction section. This lists the areas affected and proposed completion dates, whereby improved headways can be implemented as part of the renewal scheme at an efficient cost. Each of the routes set out in the Figure 12 is due for signalling renewal in the next 10 years, except Four Oaks – Birmingham and Stourbridge – Birmingham. These schemes, which are at various stages of development, are included in the investments section of this route plan.

To facilitate increased services to regional locations outside the conurbation such as Kidderminster, Rugeley, Stratford and Northampton, the capacity interventions would involve:

- reduction of the long absolute block signalling sections; (as part of the Droitwich – Kidderminster resignalling scheme, we are looking to extend the scheme through to Rainbow Tunnel, to alleviate the 9 minute bottleneck between Droitwich and Worcester)
- improvement of the layout at Stratford which limits train arrivals to just one platform; (this scheme is under development) and
- new timetable structure of the Birmingham – Coventry corridor (and new layout at Rugby: see Route 18).

Figure 12 Planning headway

	ROTP Planning Headway	Future required headway	Other restrictive headway on radial route	Future required headway
Wolverhampton – Birmingham New St	4 mins	3 mins	n/a	n/a
Coventry – Birmingham New St	4 mins	3 mins	n/a	n/a
Longbridge – Birmingham New St (via Selly Oak)	5 mins	3 mins	Single line Redditch – Barnt Green	n/a
Leamington – Solihull – Birmingham New St	4 mins	3 mins	n/a	n/a
Shirley – Tyseley	6 mins	3 mins	Henley-in-Arden– Shirley 20 mins	10 mins
Walsall – Birmingham New St	5 mins	3 mins	Rugeley Town– Walsall 14 mins	10 mins
Stourbridge – Birmingham Snow Hill	4 mins	4 mins	Kidderminster– Stourbridge 11 mins	5 mins
Water Orton – Birmingham New St	4 mins	3 mins	Tamworth – Water Orton 5 mins Nuneaton – Water Orton 5 mins	3 mins 3 mins
Four Oaks – Birmingham New St	5 mins	5 mins	n/a	n/a

Further path capacity may also be generated by changes to the train timetable and service mix. This also has a role in improving capacity by improving service interaction.

On the Coventry – Nuneaton line, studies have been undertaken by Warwickshire County and Coventry City Councils in conjunction with Centro to assess the relative benefits of increasing heavy rail frequency, train–tram services on shared track or alternative adjacent bus routes. The preferred option is to continue with the current heavy rail services frequency in conjunction with a high quality bus service.

Freight

A new intermodal terminal is opening soon at Donnington, near Wellington, which will stimulate freight growth on the route. This scheme has been funded by the local authority.

The upgrade from freight to passenger standard to the down goods loop at Bromsgrove, will improve capacity and performance at this location. Access and egress speeds to the loop are to be increased as part of this project.

Future performance

Figure 13 shows the forecast reduction in Network Rail delay minutes compared with 2006/07.

Figure 14 shows the forecast PPM for the main TOCs running along the route.

In addition to continued improvement in asset reliability, a major focus of attention going forward is the work necessary to devise more robust train timetables. Network Rail is working closely with all train operators to encourage the development of timetables and resource plans that are more robust in terms of recovery from incidents. Specifically, we are currently working with DfT, Centro and train operators to develop detailed plans for the

December 2008 timetable for the key section from Coventry – Wolverhampton.

Timetabling at Birmingham New Street is crucial to train performance across a significant part of the rail network. During 2006, we have worked closely with Central Trains and Virgin Cross-Country to develop more robust platforming plans for future timetables and improve the quality of short-term plan amendments. It is essential that we ensure that the benefits of this joint work are carried forward into future timetables, including the changes that will be introduced by new franchisees after November 2007.

As mentioned earlier, two TOCs have moved their control to the Integrated Control Centre in Birmingham. Based on benefits achieved to date, Network Rail is keen to promote increased participation at the ICC so that the full operational benefits of joint control working are realised. Progressive centralisation of the West Midlands signalling operations into the West Midlands Signalling Centre is expected to yield similar benefits.

Engineering access

The West Midlands has reasonable availability for diversionary routing over much of its network. Consequently, for some years we have operated and refined a pattern of possessions, cycling through each route in turn every 6 weeks. This has the benefit of greater traffic throughput, and, because of the predictability, more robust timetabling and performance with higher levels of site safety and productivity than are possible with the traditional use of single line working. However, on some parts of the network there is difficulty in gaining access for maintenance and renewals work, for example between Wolverhampton to Stafford where there is no competent diversionary route.

2007 sees the commissioning of the signalling

Figure 13 Forecast reduction in delay minutes

	2007/08	2008/09
% reduction in delay minutes	12%	18%

Figure 14 Forecast PPM MAA

TOC	2007/08	2008/09
Arriva Trains Wales	87.9%	88.5%
Central Trains	85.7%	
Chiltern Railways	94.2%	93.8%
Virgin Cross Country	85.1%	
Virgin West Coast	87.7%	87.6%

renewal of Coventry PSB at Easter, with a further Period of full weekend closures of the Coventry Corridor for recovery of redundant equipment, track renewals and maintenance activities. The Grand Junction route will be closed simultaneously for track renewals and maintenance.

Work on Leamington Corridor signalling renewal commences in 2007, along with remodelling and renewal work at Tyseley. Other renewal and maintenance work has been optimised with the access for signalling renewals, scheduled for commissioning in February 2008.

In 2008, work will begin on the Water Orton corridor signalling renewal.

A large programme of track renewals is planned across the area on all key routes, primarily in all-day Sunday possessions, although a number of SandC renewals require all-weekend closures, into which other large works such as bridgeworks have been optimised. Whenever possible, these closures have been planned in such a way that a diversionary route is maintained.

Opportunities and challenges

We anticipate that accommodating growth in commuting into central Birmingham will be a significant challenge on the route, as employment in central Birmingham continues to increase. The context is that most of the West Midlands network is already operating at, or very close to, capacity. This includes Birmingham New Street station itself.

We believe that the solution to passenger growth and future capacity requirements will be best met by a combination of initiatives:

- measures to spread the peak and smooth the high peak requirements. A number of possible measures are set out in the RUS. However, we do not believe that this will be sufficient to cater for all forecast demand growth, particularly if the medium (or high) growth scenarios set out in the RUS and continued in the RPA prove to be the outcome as early anecdotal evidence would suggest;
- train lengthening, often supported by platform lengthening;
- incremental enhancements, delivered on the back of planned track and signalling renewals, and certain limited stand alone enhancements. These have the potential to improve performance (necessary for growth), enable specific increases in train paths and facilitate timetable restructuring. This is also vital for freight growth which is not restricted by the lack of track capacity at Birmingham New Street;

- changes to the timetable structure to reduce the mix of different train types and the number of conflicting moves; and
- provision of additional passenger capacity at Birmingham New Street. The station building will require significant enhancement to enable it to handle, on a consistent basis, current passenger volumes and future passenger growth safely and efficiently. Until this takes place the lack of passenger capacity at New Street will act as a constraint to rail growth and growth in the city. This will also have an impact on schemes to attract passengers to rail. For example there may be insufficient passenger capacity at New Street to safely accommodate the extra traffic generated on the Cross City line by the additional 900 car parking spaces at the Longbridge park and ride site proposed by Centro.

Many measures are set out in the RUS and we are broadly supportive of the specific line of route recommendations, subject to a detailed evaluation of the impact on train performance, where appropriate. Initiatives and options for provision of the capacity and performance improvement required from the West Midlands network are set out in the next section.

We are working with Centro, local authorities and Central trains on a 'rail showcase' project for the Cannock line between Walsall and Rugeley. The aim of this project is to deliver co-ordinated improvements to stations, rolling stock and rail infrastructure from multiple funding sources. This is likely to include improved station facilities, expanded car parks, longer and more frequent trains and reduced journey times. The aspiration is to then roll the process out to other lines.

The new franchises for Cross Country, West Midlands and East Midlands are at the bidding stage. Network Rail is working with DfT and bidders to ensure that opportunities for improvements are identified during this process.

If the West Midlands is successful in its bid to develop a pilot scheme for road congestion management, it will be very important to understand the implications for rail, and to ensure that the necessary investment in rail capacity is made at the right time. Over the next year, Network Rail will work with key stakeholders to develop a rail strategy.

Delivering future requirements

Expenditure

Figure 15 shows the planned level of expenditure on renewals on this route over the next two years. However, the precise timing and scope of renewals remains subject to review to enable us to meet our overall obligations as efficiently as possible, in accordance with the plans of operators and other stakeholders.

Figure 15 Forecast expenditure		
£m (2006/07 prices)	2007/08	2008/09
Renewals		
Track		
Plain line	28	31
Switches and crossings	19	25
Other	1	–
Track total	48	56
Civils		
Underbridges	3	4
Overbridges	0	1
Bridgeguard 3	1	1
Footbridges	1	0
Earthworks	1	2
Tunnels	0	0
Culverts	0	0
Retaining walls	0	0
Civils total	6	10
Signalling		
Resignalling	48	63
Minor works/other	0	0
Over-planning	(2)	–
Signalling total	46	63

Electrification		
AC systems		
HV switchgear	2	2
HV cables	0	–
OLE re-wiring	0	–
OLE campaign change/refurbishment	2	1
OLE structures	0	0
Other	2	0
Electrification total	5	3
Telecoms		
Concentrators		
Large	1	0
Customer information systems (CIS)	0	0
Telecoms total	1	0
Operational property		
Stations		
Franchised	2	5
Depots		
Light maintenance	0	–
Lineside buildings	0	–
Operational property total	3	5
Plant and machinery		
Fixed plant		
Point heating	–	0
Signal supply points	0	1
Depot Plant	1	1
Other	0	–
Plant and machinery total	1	2
IT and other expenditure		
Other	–	0
Total	–	0
Total Renewals	110	140

Enhancements (funded by)		
Network Rail		
Planned		
General management	3	1
Power supply to feeder stations (ESI)	2	1
West Coast North West LSE	1	1
Other	-1	0
Total	5	2
Network Rail (RAB)		
Planned		
Water Orton resignalling	4	4
Wolverhampton – Shrewsbury linespeed improvements	1	2
Bromsgrove platform lengthening	2	1
W10 gauge clearance Sutton Park line	0	2
Ledbury – Shelwick linespeed increase	-	2
Walsall resignalling	-	2
Tysely North Junction	2	-
Cross City – linespeed improvements	2	-
Cannock Line – linespeed improvements	0	2
Snow Hill – linespeed improvements	1	-
Birmingham New Street second access to platform 12	1	1
Tile Hill and Berkswell platform extensions	0	2
Other	1	2
Total	13	18
Potential schemes	2	4
Total	15	23
Other third party		
Planned		
Birmingham New Street station gateway	10	83
Chiltern franchise – Moor St. re-opening phase 3	-	9
Longbridge 'park and ride'	-	4
Berkswell Station reconstruction	0	2
Oxley depot independent power supply	1	1
Depot independent power supply stage 1&2	1	1
Bromsgrove station enhancement	0	2
Tipton level crossing removal	0	2
Other	1	0
Total	15	104
Potential schemes	0	0
Total	15	104
Total Enhancements	35	129

The planned volume of renewals is detailed in Figure 16.

It should be noted that in order to manage the deliverability of our Civils, Signalling & Electrification plans we have included an element of overplanning 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 16 Forecast volumes

	2007/08	2008/09
Track		
Plain line (km)		
Rail	54	46
Sleepers	43	45
Ballast	47	55
Total	144	145
Switches & crossings (no.)		
Complete renewal	32	49
Partial renewal/reballasting	8	–
Abandonment	3	11
S&C (equivalent units)	36	55
Other (km)		
Drainage	5	–
Civils		
Underbridges (m ²)	782	1,766
Overbridges (m ²)	151	732
Bridgeguard 3 (m ²)	871	524
Footbridges (m ² decking area)	250	–
Earthworks (m ² slope surface)	600	900
Tunnels (m ²)	–	30
Culverts (m ²)	–	10
Retaining walls (m ²)	–	24
Signalling		
Resignalling (SEUs)	721	63
Electrification		
AC systems		
HV switchgear (cb)	16	–
OLE re-wiring (t. length)	2	–
OLE campaign change/refurbishment (t. length)	167	25
OLE structures (no.)	6	6
Telecoms		
Concentrators		
Large (no.)	1	–
CIS (stations)	9	–

Maintenance

Figure 17 shows the planned level of expenditure on maintenance on this route over the next two years.

Figure 17 Forecast expenditure		
£m (2006/07 prices)	2007/08	2008/09
Maintenance	41	38

Infrastructure investment

Figure 18 highlights schemes that are planned for completion in the financial year shown.

Project	Project description	Output change	Main asset type(s)	Funding	GRIP stage	Completion year
A Washwood Heath Yard (17.06)	Relocation of slotting arrangements at Washwood Heath Yard, on the route between Water Orton and Birmingham	Improved performance	Track	Network Rail	–	Completed
B Civils Renewal (17.16)	Strengthening and repairs planned to bridge No.2 – Albert Edward Bridge	Renewal	Structures	Network Rail	6 (for first stage)	2007/2009
– E&P Renewal (Various)	OLE structure painting Structure painting at various locations along the route	Renewal	E&P	Network Rail	6	2007/08
C Coventry Station (17.01)	Renewal of car park and extension	Improved station facilities	Stations	3rd party	6	2007
D Customer Information Screens projects (17.10, 17.12, 17.15 & 17.08)	Replacement and installation of new CIS systems at stations around the Central Trains network e.g. Birmingham Snow Hill, Redditch and Henley-in-Arden	Improved station facilities and communication	Telecoms	Network Rail	6	2007
D Snow Hill second access (17.08 & 17.10)	New northern entrance to Snow Hill station including lifts, escalators and stairs	Improved access to the station/passenger flows	Stations	Centro	6	2007
E Coleshill Parkway (17.18)	New station, with large car park and bus interchange	New asset: Improved access to the rail network and capacity for growth	Stations	Laing Rail / Warwickshire CC / Network Rail	6	2007/08
– E&P Renewal (Various)	OLE Campaign Changes refurbishment Refurbishment of OLE on electrified lines (except Cross-city)	Renewal	E&P	Network Rail	6	2007/08

Figure 18 Planned Infrastructure Investment

Project	Project description	Output change	Main asset type(s)	Funding	GRIP stage	Completion year
C Coventry PSB Signalling Renewal (17.01 & 17.07)	Signalling renewal of the Coventry PSB control area. Part doubling of the Coventry – Leamington line between Park Junction and Gibbet Hill	Renewal Improved capacity and performance	Signalling	Network Rail Network Rail Discretionary Fund	6	2007
C Telecoms renewal (17.01 & 17.07)	Coventry - renewal of telephone concentrator as part of the Coventry resignalling scheme	Renewal	Telecoms	Network Rail	6	2007
F Donnington freight terminal (17.16)	New intermodal terminal	Freight growth on route	Terminal	Third party	6	2007
A Telecoms renewal (17.01)	Satley concentrator renewal in conjunction with FTN work (as part of the West Midlands signalling strategy)	Replacement of Satley selective SPT system with modern equivalent (PABX) to improve reliability of asset and cabling infrastructure	Telecoms	FTN/Network Rail	5	2007/08
G Leamington corridor signalling renewal (17.07 & 17.12)	Signalling renewal of the Satley Leamington corridor. New 60 mph junction at Tyseley Reduced signalling headways Tyseley – Warwick Platforms 1&2 renewals and maintenance at Tyseley station, in conjunction with resignalling.	Renewal Faster speed junction (reduced journey times) and improves capacity and performance Renewal	Signalling Track	Network Rail Network Rail Discretionary Fund	5	2007/08
H Gateway Scheme (see note 1 at end of table) (17.01, 17.02, 17.04)	Birmingham New Street Gateway	Increased passenger capacity, improved access and performance	Stations	Network Rail/TOC/PTE		
I Building Renewal (17.09)	Repair and reconstruct platforms at Bescot station	Renewal	Stations	Birmingham CC / Advantage West Midlands / DfT	4	2011/12
J Oxley Signalling renewal (17.16)	Renewal of signalling at Oxley	Renewal	Signalling	Network Rail	4	2009

Figure 18 Planned infrastructure investment

Project	Project description	Output change	Main asset type(s)	Funding	GRIP stage	Completion year
- E&P Renewal (Various)	Replacement of catenary support pulleys on cantilevers at various locations along the route	Renewal	E&P	Network Rail	4	2008/09
K E&P Renewal (17.09, 17.14 & 17.04)	Cross City Lines (north and south) 25kV switch gear (SMOS) renewals (Four Oaks, Galton Jn, Aston and Lichfield HL)	Renewal	E&P	Network Rail	4	2007-2010
G Buildings Renewal (17.01)	Repairs to water mains at Tyseley	Renewal	Stations	Network Rail	4	2007/08
L Stourbridge – Hartlebury signalling renewal (17.10 – 17.22)	Signalling renewals of Stourbridge – Hartlebury line. Reduced signalling headways Stourbridge – Kidderminster	Renewal Improved capacity	Signalling	Network Rail Network Rail Discretionary Fund	3	2010/11
M Midland Metro line 1 extension (n/a)	Introduction of the Midland Metro along Network Rail's disused South Staffordshire railway line	Introduction of new Metro facility	Railway Estates	Centro	3	2012
N Civils Renewal (17.06)	Ongoing Bridgeguard 3 programme – we plan to strengthen bridges in the Birmingham area.	Ensuring sufficient strength of bridge to carry appropriate load	Structures	Highways Agency	3	2007–2009
O Track Renewal (17.01, 17.04, 17.07, 17.08 & 17.12)	Plain line track renewals are planned at:–2007/08: Bromford, Shrewley, Wednesfield Heath, Strawberry Lane, Wooten Waven, Cofon and Shustoke 2008/09: Danzey, Bilbrook, Wellington, Bentley Road, Tipton, Wood End, Codsall and Blakedown	Renewal	Track	Network Rail	3	2007–2009

Figure 18 Planned infrastructure investment

Project	Project description	Output change	Main asset type(s)	Funding	GRIP stage	Completion year
<p>O Track Renewal (16.01, 17.07, 17.12, 17.14, 17.16 & 17.21)</p>	<p>Major S&C works are planned at:- 2007/08: Ryecroft Jn, Tyseley S Jn, Birmingham International and Bescot 2008/09: Oxley, Leamington and Bescot</p>	Renewal	Track	Network Rail	3	2007-2009
<p>P Berkswell Station upgrade (17.01)</p>	Upgrade scheme including extension to the Birmingham end of the platforms and works to improve the station facilities.	Increased platform capacity and improved station facilities	Stations	Centrol Network Rail Discretionary Fund	3	2008
<p>O Tile Hill station (17.01)</p>	Platform extensions at Tile Hill.	Increased platform capacity	Stations	Network Rail Discretionary Fund	3	2008
<p>D Moor Street station (17.08)</p>	Reconnection of the two terminal platforms at Old Moor Street station	Increased capacity and operational flexibility	Track	Lairing Rail	3	Tentative 2009
<p>R Tipton Owen Street level crossing (17.02)</p>	New underbridge to replace level crossing	Increased safety and performance	Safety	Network Rail/Local Authority	3	2009
<p>N West Midlands Signalling control centre (17.01, 17.04, 17.05, 17.06, 17.07, 17.09, 17.10, 17.12, 17.13, 17.15, 17.20 & 17.21)</p>	New signalling (control) centre for West Midlands	Renewal/improved performance	Signalling	Network Rail	3	2016/17

Figure 18 Planned infrastructure investment

Project	Project description	Output change	Main asset type(s)	Funding	GRIP stage	Completion year
S Water Orton corridor signalling renewal (17.06, 17.18 & 17.22)	Signalling renewals on the Saitley – Water Orton corridor.	Renewal	Signalling	Network Rail	3	2009/10
	Improved layout at Water Orton – remodelling of Landor St and Water Orton Jns increase capacity Water Orton West – Castle Bromwich, reduced headways Water Orton – Tamworth/Nuneaton, reduced signalling headways on Sutton Park Line	Increased capacity due to reduced signalling headways. Improved performance and capacity	Track	Network Rail Discretionary Fund		
T Civils Renewal (17.12)	Strengthening and repairs planned to bridge No.20 near Stratford-upon-Avon	Renewal	Structures	Network Rail	3	2007/08
U Walsall signalling renewal (17.09, 17.14 & 17.22)	Signalling renewals in the Walsall area.	Renewal	Signalling	Network Rail	3	2011/12
	Turn back facility at Pleck (to increase capacity on Grand Junction route and ease congestion at Bescot yard)	Increased capacity and ease congestion at Bescot.		Network Rail		
	Electrification of platform 2 Conversion of platform 3 to through platform	Improved performance		Discretionary Fund		
T Shirley – Stratford (17.12)	Signalling renewals	Renewal	Signalling and Track	Network Rail	3	2009/10
	New tumbuck facility at Whitlocks End (relocated crossover)	Improved capacity and performance		Network Rail		
	New crossover at Stratford Reduced headways Rationalisation of equipment at Henley-in-Arden			Discretionary Fund		
	Provision of new ticket office at Whitlocks End (PTE funded)	Improved station facilities	Stations	Centro		

Figure 18 Planned infrastructure investment

Project	Project description	Output change	Main asset type(s)	Funding	GRIP stage	Completion year
C	Civils Renewal (17.01) Detailed design for remedial embankment works at Willenhall near Coventry	Renewal	Structures	Network Rail	3	2007/08
U	Cannock Line Showcase (Walsall – Rugeley) (17.14) Improved station facilities Car park extensions Platform lengthening	Improved station facilities and capacity	Stations	Centro	3	2011/12
V	Sutton Coldfield Station Upgrade (17.13) Refurbishment of station and installation of lifts.	Improved station facilities	Stations	Centro	3	2009
W	Gauge clearance for D78 stock (17.06) Gauge clearance for EWS D78 underground stock along the Birmingham – Derby section	Allows EWS stock movements along route section	Track, Structures	FOC	3 (on hold)	2007/08
X	Wolverhampton signalling renewal (17.02, 17.03, 17.09 & 17.16) Signalling renewals in the Wolverhampton area. Reduced signalling headways Penkridge – Tipton Creation of direct access to bay platform 6 Remodelling of Bushbury Junction	Renewal Improved capacity	Signalling	Network Rail Network Rail Discretionary Fund	2	2012
Y	Midland Metro Future Routes (n/a) New Metro routes which have potential interfaces with Network Rail infrastructure	Introduction of new Metro facility	Railway Estates	Centro	2	2012
Z	Buildings Renewal (17.12) Footbridge repairs at Wood End station	Renewal	Stations	Network Rail	2	2008/09
T	Civils Renewal (17.12) Reconstruction of Bridge over the canal at Stratford-upon-Avon	Renewal	Structures	Network Rail	2	2007/08
G	Buildings Renewal (17.08 & 17.21) Carriage washer renewal feasibility – Tyseley	Renewal	Stations	Network Rail	2	2007/08

Figure 18 Planned infrastructure investment

Project	Project description	Output change	Main asset type(s)	Funding	GRIP stage	Completion year
X Wolverhampton Interchange (17.02, 17.03, 17.09, 17.16)	Improved station building and facilities	Improved station building and facilities	Stations	Local Authority	2	2012
AA Civils Renewal (17.04)	Embankment works to Longbridge cutting	Renewal	Earthworks	Network Rail	2	2007–2009
AB Civils Renewal (17.10)	Embankment works at Old Hill	Renewal	Earthworks	Network Rail	2	2009/10
AC Civils Renewal (17.07)	General programme to address defects on Knightcote embankment	Renewal	Earthworks	Network Rail	2	2008/09
J Oxley – independent power supply (17.16)	Provision of independent power supply to Oxley depot to provide the maintenance activity to continue during times of isolation	Elimination of additional moves and improved availability of 390 sets	E&P	Network Rail	2	2008/09
AD Bromsgrove Down Goods Loop (17.05)	Conversion of goods loop to passenger status with entry and linespeed increase	Improved capacity and performance	Track and Signalling	Network Rail	2	2008/09
AE Yardley Wood Station Upgrade (17.12)	Extension to car park and improved station facilities	Improved station facilities	Stations	Centro	1	2009 – 2011
AF Acocks Green Station (17.12)	Extension to car park	Increased capacity at stations	Stations	Centro	1	2009 – 2011
T Spring Road Station (17.12)	Extension to car park	Increased capacity at stations	Stations	Centro	1	2009 – 2011
AG Whitlocks Ends (17.12)	Extension to car park	Improved station facilities	Stations	Centro	1	2009 – 2011
K Whitacre Jn (Birmingham to Nuneaton line) (17.06)	Diversion of level crossings at Whitacre	Improved freight working arrangements in Whitacre siding	Signalling	Network Rail	1	2007/08

Figure 18 Planned infrastructure investment

Project	Project description	Output change	Main asset type(s)	Funding	GRIP stage	Completion year
ⒶH Telecoms renewal (17.07)	Central Trains retail phase 1 scheme (CIS, PA and Clocks) on the Cross-city lines e.g. Butlers Lane, Five Ways, Four Oaks and Lichfield (plus other locations)	Renewal	Telecoms	Network Rail	1	2008/09
ⒶI Brinsford station (17.09)	New station, with large park and ride facility	New Asset: Improved access to the rail network and capacity for growth	Stations	Local Authority	1	2009/10
ⒶD Bromsgrove station enhancements (17.05)	Network Rail is working closely with Worcestershire County Council and Centro on the feasibility of: both north and south bound platforms being lengthened to 4 x 23m, 5 x 23m and 6 x 23m increasing car parking provision of ticket office and waiting facilities provision of step-free access to the south bound platform	Increased capacity and improved station facilities	Stations	Local Authority / PTE / Potential Network Rail Discretionary Fund	1	2007/08
ⓧ Wolverhampton to Shrewsbury (17.16)	Linespeed improvement between Wolverhampton and Shrewsbury to achieve 90 mph linespeed	Reduced journey times	Track	Network Rail Discretionary Fund	1	2008/09
Ⓚ Cross-City Line Speed Improvement (17.13)	Linespeed increases north of Blake Street and South of Barnet Green.	Improved performance and journey time	Signalling	Network Rail Discretionary Fund	1	2009
Ⓥ Buildings Renewal (17.13)	Repairs to Footbridge at Sutton Coldfield	Renewal	Stations	Network Rail	1	2007/08
Ⓛ Additional access (17.01, 17.02 & 17.04)	Additional access to platform 12 at Birmingham New Street station	Reduces passenger congestion	Stations	Network Rail Discretionary Fund	1	2008
Ⓛ Birmingham New Street – Customer Information Screens (17.01)	Provision of new screens 'next train to Birmingham airport' at Birmingham New Street	Increased communication at station for airport services	Telecomms	Third party	1	2008

Figure 18 Planned infrastructure investment

Project	Project description	Output change	Main asset type(s)	Funding	GRIP stage	Completion year
1 Birmingham New Street – Ticket barriers (17.01)	Provision of automatic ticket barriers at Birmingham New Street	Improved throughput of passengers through barriers	Stations	TOC	1	2008
U Linespeed improvement (17.04)	Cannock Line – linespeed upgrade	Reduced journey times	Track and signalling	Network Rail Discretionary Fund	1	2009/10
D Linespeed improvement (17.10)	Snow Hill – linespeed upgrade	Reduced journey times	Track and signalling	Network Rail Discretionary Fund	1	2008/09
A Sutton Park W10 Clearance (17.21)	Clearance of Sutton Park line to link up with W10 gauge at either end	Provide greater flexibility and opportunity of additional W10 capability	Track	Network Rail	1	2008
AK Darlaston (17.09)	Provision of a single north-west facing connection between Walsall and Wolverhampton in the Down Line, to provide 2 sidings for the loading of scrap metal by European Metals Recycling (EMR)	Increased capacity	Track	Third party	1	Currently on hold

Notes: 1

Birmingham New Street station: After 18 months of detailed analysis by a study group including senior representatives from Network Rail, Birmingham City Council, Advantage West Midlands, Centro, and the West Midlands Passenger Transport Authority (WMPTA), we have developed a comprehensive proposal for an enhanced station building. The preferred “Birmingham Gateway” scheme would see £500 million of public and private investment in the complete redesign and redevelopment of the station and surrounding area. The analysis shows that Birmingham Gateway is good value for money, and meets transportation and regeneration objectives.

The plans include:

More space, greatly increasing passenger capacity and relieving congestion

- World class passenger facilities
- Brighter, cleaner and clearer platforms
- Better access to platforms facilitated by 42 new escalators and 14 new lifts
- A new, enlarged concourse that is three and a half times bigger than the current space
- A hi-tech transparent roof
- Transformation of the concourse level into a giant atrium, flooding the station with natural light

- Comfortable, spacious and modern waiting lounges
- World class customer information systems, improving communications with passengers
- A new contemporary station exterior, in keeping with a modern city centre
- Two new open public spaces: a piazza on the south side of the station and a public square opposite the Bullring
- New pedestrian links across the city centre with direct access and interchange with the planned Metro stop in Stephenson Street

Over the next year the Birmingham Gateway partners will be working on funding arrangements and planning processes to get the scheme moving. Work on the project could start as early as 2008. More information can be found at renewstreet.co.uk

Figure 19 highlights other schemes under consideration

Project	Project description	Output change	Main asset type(s)	Funding	GRIP stage
A Longbridge Station	New park and ride facility with 900 car park spaces	Increased capacity at station	Stations	Centro	0
B Buildings Renewal (17.02)	Platform renewals at Tipton	Renewal	Stations	Network Rail	0
C Buildings Renewal (17.07)	Refurbishment of platform riser walls and roofworks at Coventry Station	Renewal	Stations	Network Rail	0
D Telecoms Renewal (17.16)	Renewal of telephone concentrator in conjunction with Oxley signalling renewals	Renewal	Telecoms	Network Rail	0
E New platform (17.01, 17.02 & 17.04)	New bay platform at Birmingham New Street station. Conversion and lengthening of East Dock to create additional platform at Birmingham New Street	Increases capacity and performance	Stations and track	Network Rail	0
F E&P Renewal (17.16)	Retensioning of OLE Tramway at Oxley/Wolverhampton (in conjunction with Oxley resignalling)	Renewal	E&P	Network Rail	0
G E&P Renewal (Various)	OHL dropper renewals at Stechford, Wolverhampton and Wednesfield	Renewal	E&P	Network Rail	0

Figure 19 Infrastructure investment under consideration

Project	Project description	Output change	Main asset type(s)	Funding	GRIP stage
1 C E&P Renewal (17.01)	25 kv circuit breaker renewals at Birmingham New Street and Coventry	Renewal	E&P	Network Rail	0
- E&P Renewal (Various)	OLE structure painting Structure painting at various locations along the route	Renewal	E&P	Network Rail	0
J Oxley Chord (17.16)	Introduction of new chord line at Oxley	Increased capacity	Track	Network Rail	0
AL Aynho – Banbury new crossover (17.07)	Introduction of new crossover at Banbury to allow use of bi-directional signalling	Increased capacity	Track and signalling	Network Rail	0
AN Buildings Renewals (17.16)	Reconstruct platforms at Cosford station	Renewal	Stations	Network Rail	0
AC OHLE Fast lines Kings Norton to Longbridge (17.04)	Electrification of the fast lines between Kings Norton and Longbridge	Increased capacity	E&P	Network Rail	0
U Walsall – Rugeley (17.14)	Signalling renewals Reduced signalling headways Bloxwich – Hednesford and line speed improvement	Renewal Improved linespeed	Signalling and track	Network Rail	0
AP Extension of cross city services to Bromsgrove (17.04)	Extension of cross city services to Bromsgrove providing a 20-min electrified service	Increased capacity	E&P	Network Rail	0
1 West Midlands additional stabling -	Creation of a new stabling facility / depot for the outstabling of current and future rolling stock. Depot would need to be required if current growth rates continue.	Increased capacity	Depots	Network Rail	0

Figure 19 Infrastructure investment under consideration

Project	Project description	Output change	Main asset type(s)	Funding	GRIP stage
AQ Banbury remodelling (17.07)	Remodelling of Banbury station layout in conjunction with track and signalling renewals	Improve operational flexibility and freight and passenger capacity, capability and performance	Track & Signalling	Renewal Potential Network Rail Discretionary Fund	0
AR Nuneaton to Proof House electrification (17.18)	Electrification of route to enable the line to be used as a diversionary route for electric hauled freight	Capacity, performance and operational benefits	E&P	Network Rail	0
AU Sutton Park Electrification (17.21)	Electrification of the route between Water Orton and Ryecroft	Increased capacity	E&P	Network Rail	0
I West Midlands Platform Lengthening (Various)	Platform lengthening in the West Midlands to allow future train lengthening to cope with increased passenger numbers.	Capacity and safety	Stations	Network Rail	0
I Birmingham New Street resignalling (17.01, 17.04, 17.05, 17.06, 17.07, 17.09, 17.10, 17.12, 17.13, 17.15, 17.20 & 17.21)	Renewal of signalling in the Birmingham PSB area	Improved capacity and performance	Signalling	Network Rail	0
AS Extension of Loop (17.08)	Extension of Kenilworth Loop	Reduced extent of single line and increases capacity	Track	Network Rail	0
T Stratford-upon-Avon (17.12)	Station redevelopment scheme including proposals for car park extension and bus interchange facilities	Improved station access and facilities	Stations	Third party/ Network Rail	Scheme on hold
BB Linespeed improvement (17.11)	Ledbury to Shelwick line speed upgrade	Reduced journey times	Track and signalling	Potential Network Rail Discretionary Fund	0

Figure 20 highlights route enhancement aspirations

Project	Project description	Output change	Main asset type(s)	Funding	GRIP stage
AT Lichfield TV (high level) extra platform (17.13)	Provision of additional platform	Improved capacity	Track and stations	Network Rail	Aspiration
AU Lichfield City – crossover (17.13)	Provision of trailing crossover to allow southbound trains to terminate in the northbound platform	Operational flexibility and performance	Track and signalling	Network Rail	Aspiration
AT Kings Norton Approach Control (17.04)	Removal of approach control to reduce time penalty	Performance improvement	Signalling	Network Rail	Aspiration
AV Kingsbury Freight Access (17.06)	Improved access to Kingsbury freight site, moving freight trains off the main line quicker	Performance improvement	Track	Network Rail	Aspiration
AD Rugeley Trent Valley run round loop (17.14)	Extension of run round loop at Rugeley Trent Valley to accommodate longer trains	Performance and capacity improvement	Track	Network Rail	Aspiration
AV W10 clearance on the Cov – Nuneaton line (17.19)	Gauge clearance works	Increased freight capability	Track and structures	Network Rail	Aspiration
AX New stations at Fort Dunlop, Brinsford, Kenilworth and Aldridge (17.22, 17.06 & 17.07)	Provision of new stations	New asset	Stations	Third party	Aspiration
AY Re-opening of Frankley branch (17.04)	Reinstatement of Frankley branch to passenger traffic	Increased capability	Track and signalling	Third party	Aspiration
AZ Fenny Compton down goods loop (16.01)	Linespeed and length increase at down goods loop	Increased linespeed and operational flexibility	Track and signalling	Potential Network Rail Discretionary Fund	Aspiration
BA Stourbridge to Walsall line re-opening	Reinstatement of former Round Oak to Walsall to Pleck Jn line (DBJ)	Improved network capacity and capability	Track, civils and signalling	Potential Network Rail Discretionary Fund	Aspiration

Non Infrastructure developments

The table below shows potential developments which do not involve changes to the infrastructure.

Figure 21 Timetable development

Description	Key issues	Actions or options being developed	Benefits
Coventry – Wolverhampton timetable development (17.01 & 17.02)	West Coast Strategy incorporates increase in Euston – West Midlands services on route with an already very high capacity utilisation and existing poor performance	Skip-stopping pattern for local services 20 minute all day frequency Birmingham – Euston	Increased inter-city service Euston – West Midlands Improved local service for key local stations Improved performance
Refranchising	Re-mapping and respecification of Central, Silverlink and Cross Country franchises		
Train lengthening	Peak crowding on certain trains with further growth as forecast in the RUS	Joint industry group	Longer trains to accommodate growth

Appendix

Figure 22 Strategic route sections

SRS	SRS Name	ELR	Classification	Funding	Community Rail	Freight Gauge	RA	Speed	Electrification	Signalling Type	Signalling Headway	No of Tracks
17.01	Rugby – Birmingham New Street	RBS1	Primary	DfT	No	W9 & W10	8	100 (125)	25Kv (AC)	TCB	4 (3)	2
17.02	Birmingham New Street – Wolverhampton	RBS2	Primary	DfT	No	W8	8	75	25Kv (AC)	TCB	4 (3)	2
17.03	Wolverhampton – Stafford	RBS2 RBS3 OXC	Primary	DfT	No	W9 & W10	8	125	25Kv (AC)	TCB	5	2
17.04	Birmingham New Street – Bant Green	BAG1 BAG2	Primary	DfT	No	W8	8	60 (90)	25Kv (AC)	TCB	5 (4½) (3)	4
17.05	Bant Green – Stoke Works Junction	BAG2 SKN SAG	Primary	DfT	No	W8	8	90	No	TCB	4	2
17.06	Wichnor Junction – Grand Junction	DBP1 DBP2 DBP3 KJW	Primary	DfT	No	W8	8	90 (125)	No	TCB	5 (4) (3)	2 (6)
17.07	Wolvercote Junction – Hatton Junction/Coventry South Junction	DCL LSC1 LSC2	Primary	DfT	No	W8	8	90	none	TCB (AB)	4 (6) (5) (3)	2 (1)
17.08	Hatton Junction – Show Hill	DCL	Secondary	DfT	No	W7 (W6)	8	100 (90)	none	TCB	3 (4)	2
17.09	Stechford Junction – Bushbury Junction	PJB BJW1 WDJ PJW PBL SAS	Secondary	DfT	No	W9 & W10	8	75	25Kv (AC)	TCB	5 (7) (3)	2
17.10	Birmingham Show Hill – Stourbridge Junction plus Galton Junction	GSJ1 GSJ2 HSJ DCL	Secondary	DfT	No	W8	8	60	none	TCB	4 (5)	2

Figure 22 Strategic route sections

SRS	SRS Name	ELR	Classification	Funding	Community Rail	Freight Gauge	RA	Speed	Electrification	Signalling Type	Signalling Headway	No of Tracks
17.11	Shelwick Junction – Worcester – Stourbridge Junction	OWW WAH STO ABW	Secondary	DfT	No	W8 (W6)	8 (7)	70 (60)	none	AB (TB)	2 to 16	2 (1)
17.12	Stratford-upon-Avon Lines	TSB HAS	Rural	DfT	No	W7	8 (7)	60	none	AB (TCB)	5 (6) (12)	2
17.13	Cross City North	ALC1 ALC2 PBJ BJW3	Secondary	DfT	No	W6	8	60	25Kv (AC)	TCB	5	2
17.14	Rugeley – Bescot	RRN1 RRN2 BJW2	Secondary	DfT	No	W6 (W9) W(8)	8	45	none	AB (TCB)	5 (8) (15)	2
17.15	Redditch – Barnt Green Junction	BEA	Secondary	DfT	No	W6	8	55	25Kv (AC)	OTW	–	1
17.16	Wolverhampton – Abbey Foregate Jn	WSJ1 WSJ2	Secondary	DfT	No	W6	8	70	none	AB	6 (8½) (3)	2
17.17	Camp Hill Line	LSS SKN	Freight	DfT	No	W7	8	60	none	TCB	3 (4) (5)	2
17.18	Water Orton – Nuneaton	NOW	Secondary	DfT	No	W9 & W 10	8	70	none	TCB	5	2
17.19	Nuneaton – Coventry North Junction	CNN	Secondary	DfT	Yes	W8	8	45	none	AB	10	2
17.20	Soho Junctions – Perry Bar Junctions	SCL SSP	Secondary	DfT	No	W8	8	45	25Kv (AC)	TCB	5	2
17.21	Main Freight Lines	OWW BCV	Freight	DfT	No	various	8	various	none	various	various	2
17.22	Other Freight Lines	OWW DPJ CBR2 DBP1B.JW3	Freight	DfT	No	various	8	various	none	various	various	2
17.23	Stourbridge Branch	SJS	Secondary	DfT	Yes	W6	8	20	none	OTS	–	1

Capacity and operational constraints

- A Birmingham New Street: platform and junction capacity
- B Birmingham Snow Hill: restricted platforms, and limited headway
- C Coventry – Birmingham – Wolverhampton: two-track sections with intensive and mixed traffic
- D Five Ways – Kings Norton: stopping patterns and signalling headways
- E Coventry – Leamington Spa: single line capacity constraint
- F Landor St – Water Orton: track layout and convergence of freight traffic
- G Walsall – Bescot: track layout and convergence of freight traffic
- H Tyseley – Leamington Spa: stopping patterns and signalling headways
- I Banbury – Oxford: signalling headways and traffic mix
- J Barm Green – Redditch: single line section
- K Worcester – Hereford: single line sections and long headway

Other issues on the route

- 1 Birmingham New Street: passenger capacity at peak times
- 2 St. Andrews Curve – 15mph speed restriction
- 3 Lickey Incline: restricts tonnage and speed of freight trains

Note

This Route Plan forms part of the business plan suite of documents which is produced annually and in accordance with our network licence condition 7. Our plans and the way in which we intend to achieve those plans are summarised in the Business Plan itself. This document provides further detail on the specific plans for this Strategic Route including the expenditure over the next two years to the end of Control Period 3.

This year our business plan focuses on the remainder of Control Period 3 (to March 2009). We shall provide a submission to the Office of Rail Regulation in October 2007, which will set out our view of the expenditure and activities that will be required in Control Period 4 (2009/10 to 2013/14).

The Route Plan shows in more detail how the strategies set out in the Business Plan will be delivered at a route level across the network, and how we are working with our customers and other stakeholders to improve the

performance and utilisation of the network. It presents a portfolio of activities to develop the network.

The expenditure section contains tables showing the planned level of expenditure and volumes on renewals on the route over the next two years, split by asset category. Expenditure figures are shown in 2006/07 prices, and are rounded to the nearest £1 million. An entry of £0 indicates spend of less than £0.5 million. It should be noted that in order to manage the deliverability of our Civils, Signalling & Electrification plans we have included an element of overplanning 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.

Please note that figures in tables may not sum to the totals shown, because of rounding.

The other documents in the business plan suite can be found on the Network Rail website www.networkrail.co.uk



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