



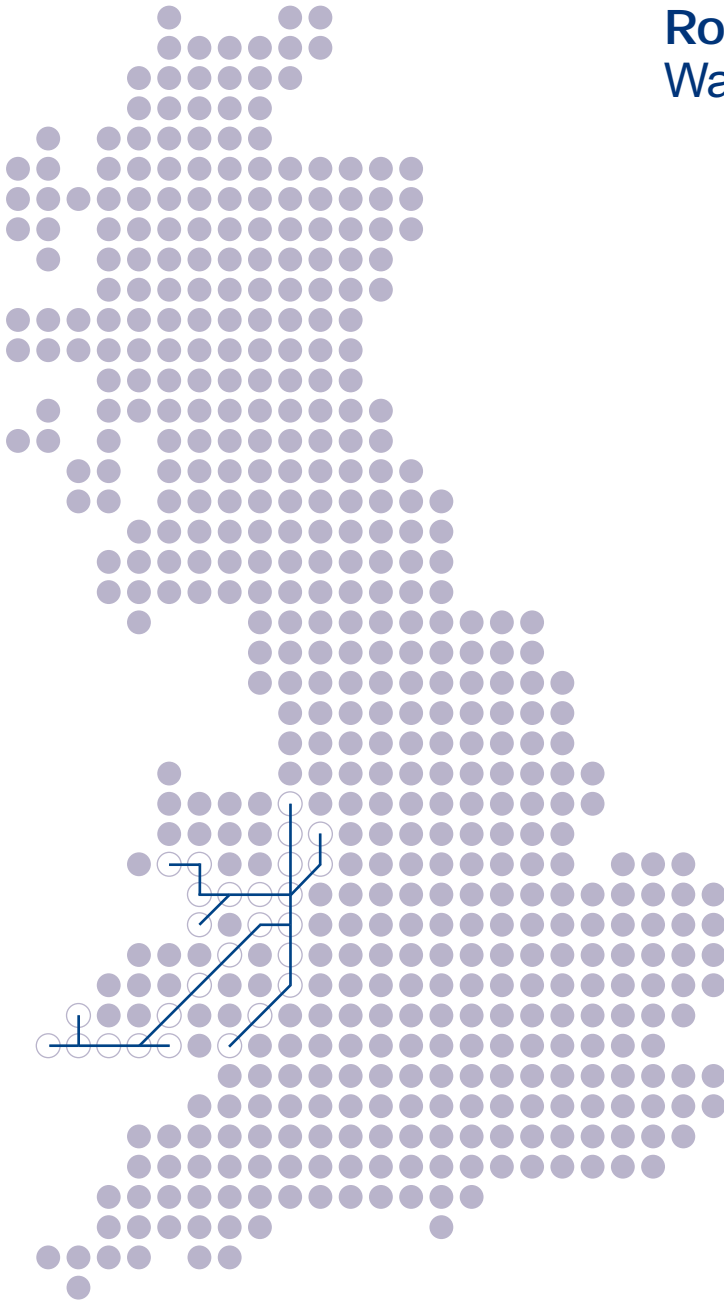
Connecting local communities

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 14 South and Central Wales and Borders



Section 1: Today's railway

Route context

The majority of this extensive route lies in the rural counties of Wales and its role and usage thus reflects the demographic features of numerous small towns and generally low population densities. Services operate beyond the confines of the route such that most components have a link to the primary network whether at Crewe, Birmingham or Cardiff. The route also includes the sole rail link between north and south Wales.

Today's route

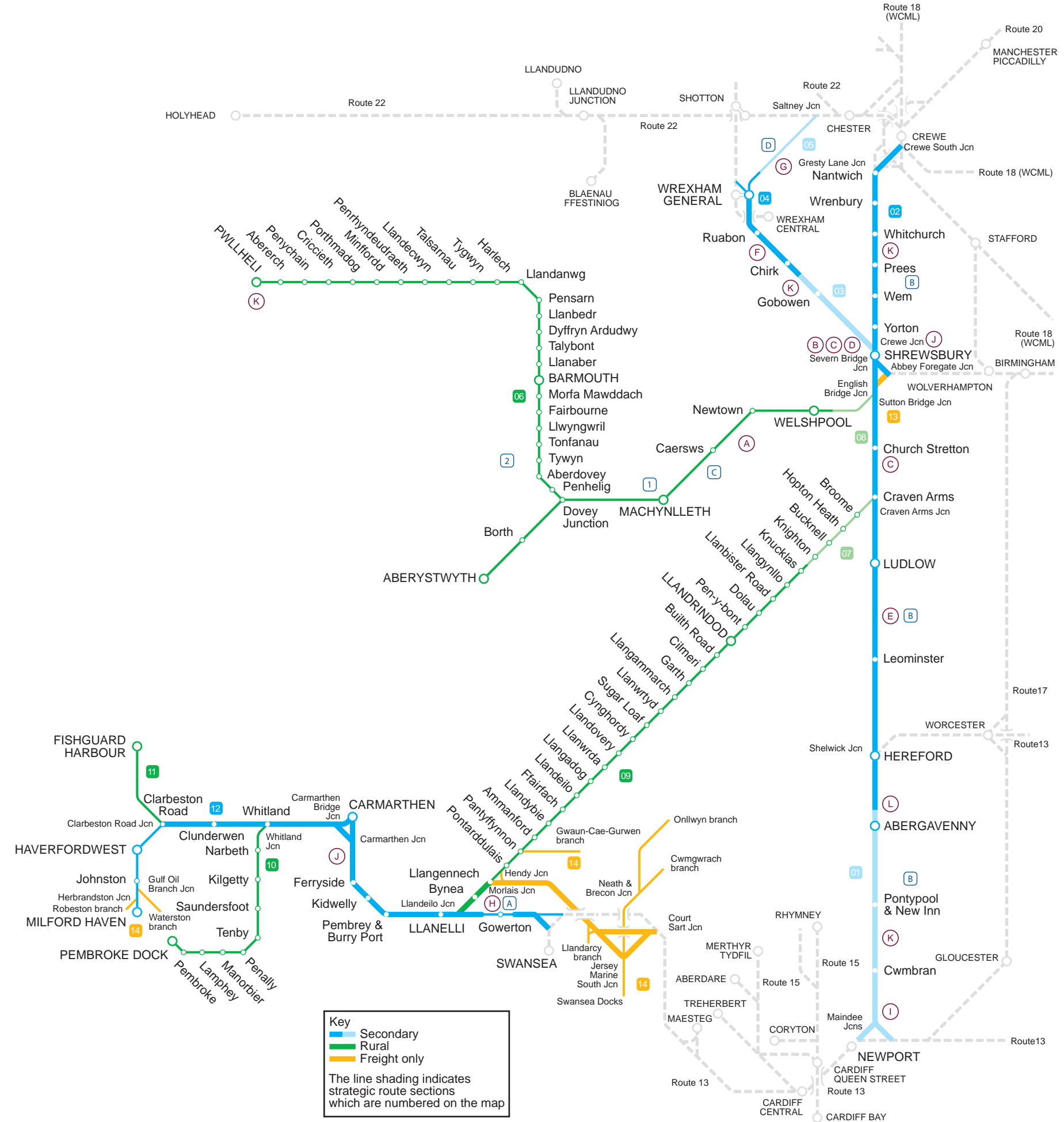
The principal elements of the route are described below. The relevant Strategic Route Section is shown in brackets:

- the 'North and West' section between Crewe and Newport linking borders market towns with the county towns of Shrewsbury and Hereford, and serving multiple local demands as well as fulfilling an inter-regional role, linking the North West and South Wales, in the manner of a secondary main line (14.01 and 14.02).

Shrewsbury acts as the 'hub' for three other sections:

- the 'Cambrian lines' running westwards to Machynlleth and Aberystwyth, and around the coast to Barmouth and Pwllheli (14.06 and 14.08);
- the line north-westwards through Wrexham to Chester (14.03, 14.04 and 14.05);
- the 'Heart of Wales line' south-westwards, from Craven Arms to Llanelli (14.07 and 14.09).
- the fifth component runs westwards from Swansea, beyond the end of the Great Western Main Line, to Carmarthen and Milford Haven (14.12), with two branches:
 - from Whitland to Tenby and Pembroke (14.10); and
 - a short section beyond Clarbeston Road to Fishguard Harbour (14.11).

Route 14 South and Central Wales and Borders



Key

- Secondary
- Rural
- Freight only

The line shading indicates strategic route sections which are numbered on the map

Current passenger and freight demand

The Department for Transport (DfT) Regional Planning Assessment (RPA) for Wales emphasised the fundamental role rail has in delivering wider social and economic objectives.

Much of the route is rural in nature, and passenger traffic patterns vary considerably between the sections, with considerable long distance flows between the West Midlands and mid Wales over the Cambrian Lines which reflect through service provision as well as competitive journey times relative to roads across mid Wales. Road competition is more acute in west Wales where the M4 and its extensions often offer more direct journey opportunities than by train as the terminal stations at Swansea and Carmarthen necessitate time-consuming reversals. Much passenger demand to and from the rural parts of Wales is naturally long distance in nature, and rail reduces peripherality in the more remote areas by giving direct links to the capitals of both Wales and England as well as to the West Midlands and the North West.

West of Shrewsbury, the Cambrian lines principally serve a largely rural catchment, and nearly all services run through from Birmingham International and Birmingham New Street to Aberystwyth, with an element of through running to and from the Cambrian coast section between Dovey Junction and Pwllheli, where summer traffic levels make strengthening of trains necessary. Schools traffic on the Cambrian coast line (principally to Harlech, from either direction) drives the timetable on this single track section which has few passing loops.

Passenger volumes on the Heart of Wales line reflect the much lower frequencies with less of a pattern to demand, and a very large number of halts serving small communities which in some cases have practically no other public transport alternative. 'Heart of Wales' line services generally run throughout between Swansea, Llanelli (where reversal takes place) and Shrewsbury, calling at all of the stations and halts, in some cases only on demand. The highly scenic character of much of the route is a factor in the promotion of rail travel for leisure in this part of Wales, along with significant seasonal fluctuations in demand in the popular holiday areas along the Cambrian Coast and around Tenby.

West of Swansea, the majority of local train services are provided by two car or single vehicle units timed to connect with London services, supplemented (between Swansea and Carmarthen) by the Manchester to Cardiff services to cater for demand on the more urban part of this

section. The section beyond Clarboston Road to Fishguard Harbour is used solely by local, twice-daily trains running in connection with the Stena ferry service from Fishguard to Rosslare in southern Ireland.

The rail freight business in Wales is concentrated upon the corridors in North and South Wales and along the Marches line. Steel traffic from Llanwern in South Wales passes over the 'North & West' route (between Newport and Crewe) via Shrewsbury and Wrexham (for Shotton). This route is also used by coal traffic from Portbury Docks (Bristol) to Fiddlers Ferry and Rugeley power stations. In west Wales the oil refineries near Milford Haven generate long distance flows to the Home Counties. The Heart of Wales line is occasionally used for freight diversionary purposes.

On the freight-only sections of the route from Jersey Marine (near Neath) coal traffic is conveyed to Aberthaw power station from Onllwyn, and various destinations are served from Cwmngwrach. The principal traffic over the 'Swansea District' line is steel traffic to and from the Trostre works near Llanelli. This section also conveys coal traffic from the loading point at Gwaun-Cae-Gurwen on the reopened freight-only branch from Pantyffynnon and the southernmost portion of the 'Heart of Wales' line.

Figure 1 Current train service level (trains per hour)

Regional/Rural Services	Trains per hour each way
Swansea – Milford Haven	1 every 2 hours
Swansea – Pembroke Dock	1 every 2 hours
Swansea – Carmarthen	3 every 2 hours
Swansea – Shrewsbury (via Heart of Wales line)	4 trains per day
Carmarthen – Manchester Piccadilly (via Cardiff)	1
Cardiff – Holyhead	1 every 2 hours
Shrewsbury – Crewe (stopping services)	1 every 2 hours
Shrewsbury – Chester	1
Shrewsbury – Aberystwyth	1 every 2 hours
Machynlleth – Pwllheli	1 every 2 hours

Current services

Arriva Trains Wales operates a 'Standard Pattern Timetable' for all services on the route, except in west Wales where First Great Western provides one return service per day between Carmarthen and Paddington and a summer Saturday service between London Paddington and Pembroke Dock, to address seasonal demand fluctuations.

On the north – south axis, the Standard Pattern Timetable typically offers an hourly service between Carmarthen and Manchester via Cardiff and a two-hourly service between Cardiff and Holyhead via Wrexham mainly operated by three car trains with 100mph capability. In the north east part of the route an hourly service operates between Shrewsbury and Chester and a two-hourly stopping service between Shrewsbury and Crewe. In mid Wales a two-hourly service operates between Shrewsbury and Aberystwyth and between Machynlleth and Pwllheli.

In the south western part of the route a two-hourly service operates between Swansea and Milford Haven/Pembroke Dock. Two trains per day, in each direction, operate on the Fishguard Harbour branch. The above services are mainly operated with two car trains. Four trains per day in each direction operate on the Heart of Wales line.

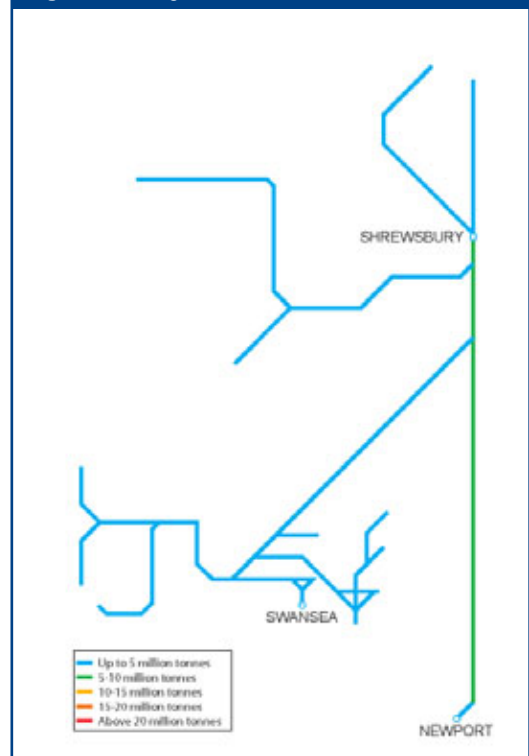
Services provided by the open access operator Wrexham, Shropshire and Marylebone Railway (WSMR) commenced operation in Spring 2008 from Wrexham General to London Marylebone, serving all stations between Wrexham and Shrewsbury.

DB Schenker, Freightliner Heavy Haul Limited and Freightliner Limited operate freight services throughout the route.

Figure 1 shows the current level of service on the route.

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

Figure 3 summarises traffic volumes.

Figure 2 Tonnage**Figure 3** Current use

	Passenger	Freight	Total
Train km per year (millions)	8	1	9
Train tonne km per year (millions)	1,017	962	1,978

Current infrastructure capability

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

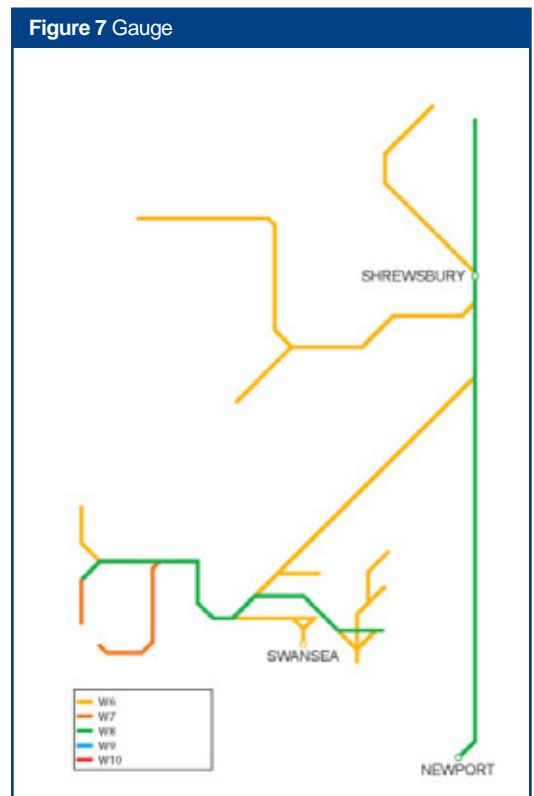
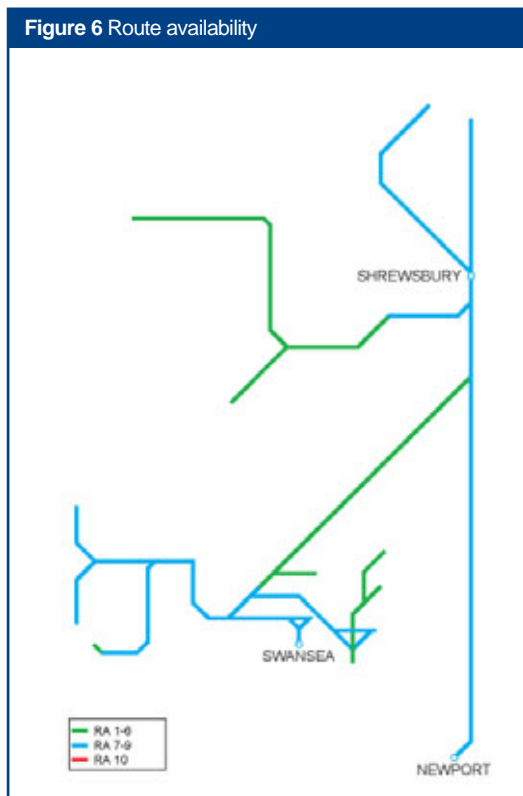
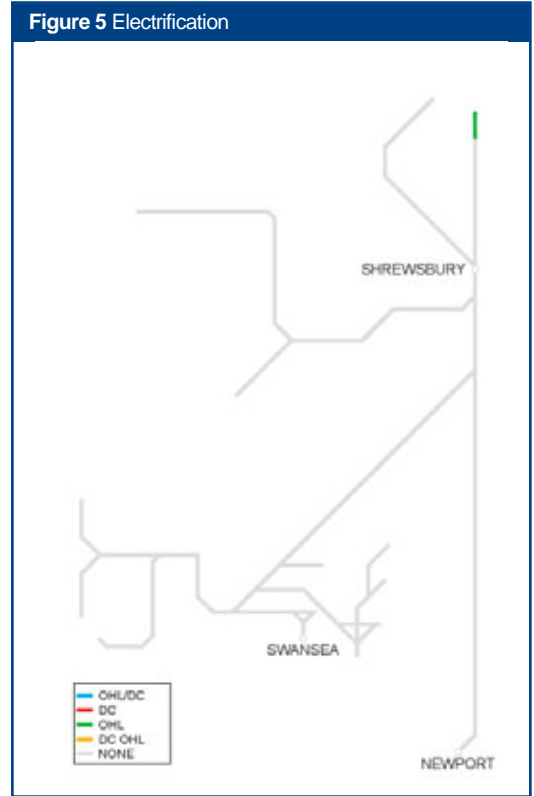
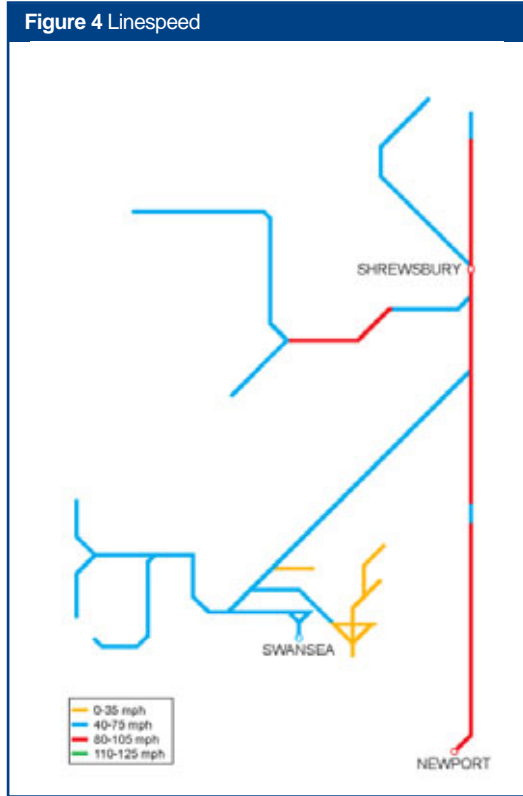


Figure 8 Current train service level (peak trains per hour)

Route Section	Peak trains per hour
'North & West', Leominster to Hereford	2
'Cambrian lines', Newtown to Shrewsbury	1 every 2 hours
Wrexham to Chester	1
West Wales, Llanelli to Swansea	4
'Heart of Wales line', Llandeilo to Swansea	1
'Heart of Wales line', Knighton to Shrewsbury	nil

Current capacity

Between Newport and Crewe/Wrexham, and beyond Swansea to west Wales, capacity is sufficient for existing volumes.

On the single track Cambrian lines section, the limited number of passing loops influences the availability of paths, but other factors off the route – principally pathing over the busy WCML and platform availability at Birmingham New Street – likewise drive overall service provision. The single track 'Heart of Wales' line between Craven Arms and Pontarddulais has numerous passing loops, not all of which are required to sustain existing service frequencies, but which provide a contingency in the event of out of course running on this long section.

Arriva Trains Wales' Standard Pattern Timetable introduced long distance services between west Wales and the north west of England, via Cardiff. This has increased capacity utilisation between Swansea and Llanelli, and puts pressure on the single line between Cockett and Duffryn.

To meet forecast growth, improve overall performance and passenger journey experience, Arriva Trains Wales has allocated their more modern two-car and three-car 100mph Class 175 train fleet to west/south Wales – Manchester long distance services. This has replaced the 90mph two-car Class 158 trains. Three-car Class 175 trains provide 64 extra seats per train. Class 175 trains have also been allocated to key south Wales to north Wales services; however, a small number of Class 158s remain on some of these services.

Current performance

Following on from the significant performance gains made by Arriva Trains Wales in 2007/08 to surpass their PPM target of 90.1 percent, a higher PPM target of 92.5 percent for April 2009 is being surpassed, with a current forecast PPM MAA of 92.7 percent.

The Temporary Speed Restriction (TSR) reduction strategy aims to reduce the number of TSRs on the route to 19 by 31 March 2009. We continue to increase handback speeds post engineering possessions at locations where there is a performance gain, for example, handback at 80mph delivers 65 percent reduction in delays compared to a 50mph TSR. We are continuing with a sustained High Output Track Renewal programme throughout the route. For 2009/10 it is proposed to report speed restrictions in two methods: planned speeds (those that are applied during the time we are enhancing and renewing the network) and unplanned speeds (condition-driven speeds). We will then be measured on the number of unplanned speeds, and for this the Western route will have a target of ten unplanned speeds by 31 March 2010.

Delays to the increased frequency of services west of Swansea are compounded when waiting to cross the five mile single line section between Cockett and Duffryn. Similar delays occur over the ten mile single line section between Wrexham North Junction and Saltney Junction (near Chester).

Delays on the Cambrian line are often exported to and imported from off route and due to the length of single line sections service recovery is difficult. Extension of services from Aberystwyth beyond Birmingham New Street to Birmingham International (from December 2008) and re-diagramming to provide more robust turnround margins at the latter station will improve Cambrian route performance, and reduce the number of occasions where late running towards Birmingham has often necessitated services being turned round at Wolverhampton short of their proper destination.

Figure 8 shows the peak hour train service level for key sections of the route.

Figure 9 shows the forecast 2008/09 PPM for the main TOC running along the route.

Figure 9 2008/09 PPM

TOC	Forecast MAA	As at period
Arriva Trains Wales	92.7%	10

Section 2: Tomorrow's railway: requirements

HLOS output requirements

Figure 10 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
South and Central Wales and Borders	328	29

Figure 11 Peak hour arrivals to be accommodated by Strategic Route

City	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 (%)
Cardiff	8,500	900	39	4,000	600	43

Future demand in CP4

The Wales Spatial Plan (published in 2004) recognised the importance of the East – West corridors for the movement of people and goods across Wales, and called for “... progressive improvements to North – South links within Wales and through England, which are important for connecting Wales as a country”.

This is further underpinned by the National Assembly for Wales’ ‘One Wales – a progressive agenda for the government of Wales’.

Development by the Welsh Assembly Government (WAG) of a Wales Transport Strategy commenced in 2005, and the document One Wales : Connecting the Nation was published in May 2008. The importance of good rail links between north and south Wales is emphasised.

Specific policies in the updated Wales Spatial Plan (which was updated in 2008) mentioned include some decentralisation of Welsh Assembly Government jobs to Aberystwyth, and (in the Central Wales region) enhancement to rail services through direct support, although it was noted that the area’s relatively low population density makes substantial improvements to external links uneconomic.

The DfT and WAG jointly commissioned Wales Rail Planning Assessment (WRPA) recognised that growth in traffic levels were mainly in south Wales. However, we recognise that the low levels of growth forecast for the more rural parts of the route may well increase depending on continued success of the Standard Pattern Timetable.

A forecast of future passenger demand undertaken for the WRPA indicates an increase of 35 percent by 2016 and to 48 percent by 2026.

The WRPA informed the Network Rail led Wales RUS, which was published in November 2008, providing a forward view of the next ten years. One of the key themes of the Wales RUS is the development of faster and more frequent passenger services between north and south Wales, in conjunction with recent growth in the demand for long distance freight movement on the corridor through Abergavenny. An upgrade to signalling capacity is envisaged during CP4 to recognise this growth combination.

Figure 12 Tonnage growth

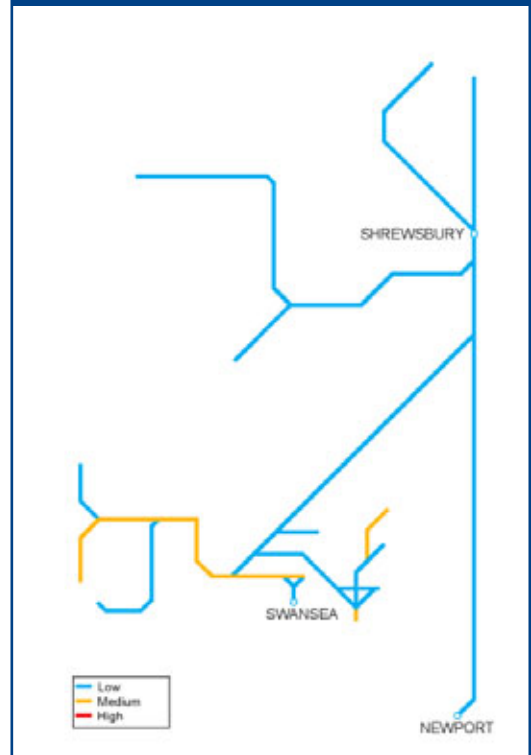


Figure 12 indicates the forecast percentage change in tonnage to 2018.

Future demand beyond CP4

Demand growth is expected to continue well into CP5, for both freight and passenger businesses. Beyond that the Government’s July 2007 White Paper challenged the industry to plan for a doubling of demand in the subsequent 30 years.

Section 3: Tomorrow's railway: strategy

Figure 13 summarises the key milestones during CP4 in delivering the proposed strategy for the route. Further explanation of the key service changes and infrastructure enhancements are set out in the following sections.

Figure 13 Summary of proposed strategy milestones			
Implementation date	Service enhancement	Infrastructure enhancement	Expected output change
2010/11		Newport Area Signalling Renewal (NASR) Phase 1	Improved reliability – facilitates additional capacity and improved track layout throughout the Newport area with a new platform at Severn Tunnel Junction – signal box closures
2010/11	2-hourly Cardiff – Holyhead service journey time improvements	Redoubling part or whole of the Wrexham North Junction – Saltney Junction single line	Improved reliability and additional track capacity. Reduced train service journey times
2010/11	2-hourly Cardiff – Holyhead and hourly Carmarthen – Manchester service reduced journey times	Newport – Crewe/Chester linespeed upgrade	Improved reliability and additional track capacity. Reduced train service journey times – facilitates 100mph capability on parts of the route
2010/11		Redoubling Cockett – Duffryn single line	Improved reliability and additional track capacity. Improved train service
2013/14		Cardiff Area Signalling Renewal (CASR)	Improved reliability – facilitates additional capacity and improved capability throughout the area with additional platforms at Cardiff Central – signalling controls migrate to new South Wales signalling centre – signal box closures
2013/14		Newport Area Signalling Renewal (NASR) Phase 2	Improved reliability – facilitates additional capacity and improved capability throughout the area – signalling controls migrate to new South Wales signalling Centre – signal box closures

Figure 14 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	6	Cardiff	600	200

Figure 15 shows how the HLOS load factor targets for locations on the route are met by the proposed strategy.

The measures will also allow the total additional passenger KM to be accommodated.

Figure 15 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
Cardiff	9,400	28,400	29,000	32%	4,600	9,000	11,800	39%

Strategic direction

The DfT and Welsh Assembly Government jointly commissioned Wales Rail Planning Assessment (WRPA) assesses rail traffic and infrastructure needs for the next twenty years. This recognised significant growth in traffic levels in south Wales and endorsed the need for development of schemes to enhance capacity at Cardiff Central station to cater for longer term projected growth. The WRPA informed the Wales Route Utilisation Strategy (RUS).

The final Wales RUS was published in November 2008. It covers all of Wales, and also addresses the considerable portion of route lying in the English border counties of Herefordshire, Shropshire and Cheshire and sets the strategic direction.

There is continued interest from the Welsh Assembly Government in an improved frequency of services on the Cambrian line from Aberystwyth to Shrewsbury and Birmingham. The Welsh Assembly Government is contributing towards the additional infrastructure (i.e. passing loops) needed.

The Welsh Assembly Government will be promoting a number of strategic transport infrastructure projects, including major strategic rail enhancement schemes, for support under the Sustainable Transport theme of the Convergence programme of European Structural Funds. These schemes will achieve priorities under the forthcoming National and Regional Transport plans and the Welsh Assembly Government will develop schemes in partnership with the rail industry and the regional consortia of local authorities in Wales

As the hub of five different sections of route linking mid Wales with England, Shrewsbury station is clearly fundamental in enabling the levels of interchange that are sought to be achieved. Changes to platforming requirements at Shrewsbury station for this corridor would have an impact upon its growing 'hub' role.

The Government's White Paper 'Delivering a Sustainable Railway' proposes a hierarchy of solutions for each route to seek ways of increasing capacity:

- maximise the efficient use of existing rail assets by increasing service frequency
- lengthening existing train services
- enhance infrastructure to improve both frequency and capacity
- simplify service patterns
- make step-changes in infrastructure.

The initial application of ERTMS will be introduced on the Cambrian lines during 2009. ERTMS is an in-cab signalling system supported by the GSM-R radio network, replacing the need for fixed lineside equipment. In connection with the ERTMS scheme, we are upgrading the following level crossings to CCTV; Llanidloes Road, Caersws, Weig Lane and Merllyn. We are also developing a detailed level crossings strategy for the route.

The railway between Newport and Crewe is seen as a core freight route with capacity for growth.

Future train service proposals

The current Arriva Trains Wales franchise specification does not provide for additional services within the term of the franchise, which ends in 2018.

However, the Welsh Assembly Government is seeking to improve business travel between north and south Wales with the introduction of faster early morning and evening services offering first class seating and on-board facilities. A reduction in journey times for Holyhead and Manchester services to Cardiff is also sought.

Future capability

The Welsh Assembly Government is seeking to maximise the 100mph capability of the Arriva Trains Wales Class 175 fleet over the route between Newport and Crewe. The route is mainly restricted to 70mph with a 90mph differential speed limit and would need substantial investment to achieve 100mph capability.

The line from Shrewsbury to Crewe has been identified as a pilot route for the trial of modular signalling renewal. This is a programme that aims to deliver lower cost signalling, and will provide reverse direction functionality for the majority of the route. Works on site are planned to commence in January 2011.

Additional passing loops on the Cambrian line are necessary to facilitate the introduction of an enhanced train service and improve performance.

Redoubling of the Cockett – Duffryn single line would remove the constraint on the number of calls that can be made at Gowerton station at Cockett. A major park and ride development is being considered here by the regional transport consortium Swwitch, together with more frequent train services in west Wales generally.

Network Rail is developing a national programme for station improvements and car park expansion, which includes a number of stations on the route. Working in conjunction with our customers we have shortlisted a number of stations on the route for modernisation as part of the Government's £150m funding initiative. These are Abergavenny, Hereford, Shrewsbury, Whitchurch, Carmarthen and Aberystwyth.

The Department for Transport Access for All Programme also targets improvements to station access at a number of locations. The current programme includes Abergavenny and Wrexham General.

The services between Aberystwyth and Birmingham run for much of their distance over Route 17 east of Shrewsbury. A factor which would beneficially impact upon overall journey times between mid-Wales and England on this corridor would be the effect of potential line speed increases between Wolverhampton and Shrewsbury, identified in the West Midlands RUS, and subject to further development during CP4 to give journey time reductions. These potential improvements to track would build on recently completed renewal of much of the signalling equipment east of Shrewsbury.

Future capacity

We believe that the solution to passenger growth and future capacity requirements for the sections of route with a higher capacity utilisation can be met by a combination of train lengthening, and where appropriate supported by platform lengthening and incremental enhancements. These can be delivered as improvements to planned track, structures and signalling renewals as well as certain limited standalone enhancements. These have the potential to improve performance necessary for growth, enable specific increases in train paths and facilitate timetable restructuring.

On behalf of the Welsh Assembly Government we are developing schemes to redouble the Cockett – Duffryn and Wrexham North – Saltney Junction single line sections to increase capacity, improve reliability, and facilitate new stations. Work on the scheme to provide additional passing loops on the Cambrian line to facilitate an hourly service between Shrewsbury and Aberystwyth commenced in 2008.

At Shrewsbury we plan to enhance signalling on the approaches to the station from the Hereford direction to allow more flexible working at platform 3. This is a Network Rail funded scheme to be delivered in 2009.

The Department for Transport's Access for All Programme also targets improvements to station access at a number of locations. The current programme includes Wrexham General, Leominster, Hereford and Abergavenny.

We shall continue to maximise opportunities presented by future area signalling renewal schemes to improve capacity and reliability.

Any future capacity enhancements will take consideration of freight companies' aspirations, particularly over the North and West route. In particular, a new intermediate block signal is proposed on Llanvihangel bank in order to increase capacity. This is planned for 2010/11.

Future performance

Figure 16 sets out the planned PPM for the principal train operator on the route. These are lower than planned given the need for flexibility in achieving the HLOS targets and to reflect the greater uncertainty and risk associated with projecting performance at a disaggregated level. Reasonable requirements will finally be established for CP4 in our 2009 Business Plan.

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 and resource plans in terms of recovery from incidents.

Arriva Trains Wales (ATW)

The performance of the ATW franchise is currently 92.7 percent PPM MAA. The improved PPM is an outcome of Network Rail and Arriva Trains Wales working together to improve the PPM performance across the whole franchise, and with the Standard Pattern Timetable benefiting performance. Route Improvement Groups are focused on individual service groups, particularly the Cambrian, to sustain PPM improvements. The 2009/10 Joint Performance Plan targets a PPM of 92.7 percent by April 2010.

Figure 16 Forecast PPM MAA – CP4 plan

	2009/10	2010/11	2011/12	2012/13	2013/14
Arriva Trains Wales	92.7%	92.9%	93.2%	93.4%	93.5%

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

- construction works risk due to the resignalling works in South Wales
- operational benefits from ERTMS on the Cambrian line
- reduction in the impact of trespass, vandalism and fatalities
- Autumn management.

The Network Rail route plan is being developed around these key points and currently suggests that performance on ATW by April 2014 will be around 93.5 percent. This includes an allowance for passenger/traffic growth and an increase in engineering work. ATW is willing to work closely with Network Rail to develop detailed year-by-year plans for delivery of a higher level of sustained performance.

The other operators on this route are First Great Western (FGW) and CrossCountry. The future performance section for FGW can be found in the plans for Routes 12 and 13 and CrossCountry can be found in the plans for Routes 8, 12, 13 and 18.

The steps we are taking to achieve these performance improvements are described in the Performance section of the Strategic Business Plan.

Network availability

The Newport – Crewe route features key seven day per week freight flows and has a strategic role in handling freight diverted from the route between Crewe, Wolverhampton, Birmingham and Gloucester.

For engineering access purposes the route divides broadly into three sections – south, mid and north. On the south between Newport (Maindee West Junction) and Hereford, and mid, between Hereford (Shelwick Junction) and Shrewsbury (Sutton Bridge Junction), restrictive midweek night access is routinely available through single line working. However, diversionary activity frequently affects the pattern.

On the northern section between Shrewsbury (Crewe Bank) and Crewe (Gresty Lane), access is heavily restricted to two opportunities per year.

Between Shrewsbury (Crewe Junction) and Chester (Saltney Junction), midweek nights access can be granted.

On the Cambrian lines, midweek night access can be granted, based around start-up times of empty stock workings from Machynlleth depot. The installation works for ERTMS, due for completion in mid-2009. Major work tends to take place in the spring and autumn school holidays, by agreement with Arriva Trains Wales.

The west Wales section divides broadly into two sub-sections. Between Swansea and Llanelli, midweek night access can be granted provided that this does not conflict with periods when the Swansea District line (between Briton Ferry and Llandeilo Junction via Llangyfelach) is under occupation. Beyond Llanelli, midweek nights access can be granted, with single line working on the double track section to Clarbston Road (provided that the night-time Fishguard boat train can still be passed).

On the Heart of Wales section (north of Morlais Junction through to Craven Arms), ample midweek night access is available. The route is maintained to W5 standard because it is essential for occasional DB Schenker diversions for Margam and Llanwern traffic when the south Wales route is closed (e.g. for signalling commissioning).

This route was not identified in the Strategic Business Plan as a priority route for enhancing network availability under the Seven Day Railway initiative. However, all operators on the route have expressed an aspiration to operate a more comprehensive timetable seven days a week. Passenger operators would like to operate as much of the published timetable as possible, which would reduce the need for replacement bus services. Freight operators wish to maintain their existing level of operation on weekdays, and improve the scope to operate services at weekends.

Long term opportunities and challenges

To address future growth beyond 2014 the introduction of replacement higher speed rolling stock with improved seating will need to be considered in order to provide additional capacity. Selective door operation would also reduce the need for further major infrastructure enhancement.

Infrastructure investment in CP4

Figure 17 Infrastructure investment in CP4 (formerly Proposed enhancements in CP4)

Implementation date	Project	Project description	Output change	Funder	GRIP stage
2009/10	Ⓐ Cambrian line	New and improved passing loops	Improved reliability and additional capability	Network Rail and Welsh Assembly Government	6
2009/10	Ⓑ Shrewsbury platform 3	Direct access to platform 3 from the Craven Arms direction	Improved reliability – modernised signalling system	Network Rail Discretionary Fund	4
2009/10	Ⓒ Track renewals	S&C renewals at Church Stretton and Shrewsbury	Renewal	Network Rail	
2009/10	Ⓓ Shrewsbury	Buildings renewals at Shrewsbury station	Renewal	Network Rail	6
2010/11	Ⓔ Crewe – Newport	Options to develop linespeed increase	Reduced journey times	Welsh Assembly Government	1
2010/11	Ⓕ Chester – Shrewsbury	Options to develop linespeed increase	Reduced journey times	Welsh Assembly Government	1
2010/11	Ⓖ Wrexham North Junction – Saltney Junction single line	Options to redouble single line in part or whole	Increased capacity and linespeed improvements – journey time reductions	Welsh Assembly Government	1
2010/11	Ⓗ Cockett – Duffryn single line	Options to redouble single line	Increased capacity and improved performance	Welsh Assembly Government	3
2010/11	Ⓖ Track renewals	S&C renewals at Maindee North Junction	Renewal	Network Rail	
2010/11	Ⓙ Earthworks renewals	Earthworks renewals at Battlefield and Pibwrwen	Renewal	Network Rail	
2011/12	Ⓚ Track renewals	S&C renewals at Gobowen, Panteg, Pwllheli and Whitchurch	Renewal	Network Rail	

NRDF candidate schemes in CP4

Figure 18 Candidate NRDF schemes in CP4

Implementation date	Project	Project description	Output change	Funder	GRIP stage
2010/11	Ⓛ Llanvihangel bank	Introduction of a new intermediate block signal on Llanvihangel bank	Reduced signalling headways and increased capacity	Network Rail Discretionary Fund	3

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 and 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 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	6	16	9	9	12	51
Signalling	13	13	11	3	2	42
Civils	9	13	12	10	9	53
Operational property	6	5	5	5	4	26
Electrification	0	0	0	0	0	0
Telecoms	4	4	1	1	1	12
Plant and machinery	1	1	1	1	2	6
Total	39	51	39	29	31	190
Renewals volumes						
Track						
Rail (km)	7					
Sleeper (km)	25					
Ballast (km)	28					
S&C (equivalent units)	3					
Signalling						
SEUs (conventional)	0	0	96	1	0	97
SEUs (ERTMS)	0	0	0	0	0	0
Level crossings (no.)	0	0	6	0	0	6

Appendix

Figure 20 Strategic route sections

Predominant aspect recorded (secondary aspects recorded in brackets) ELR is Engineers Line Reference and 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
14.01	Newport – Pandy (North and West Route, Wales)	MAI, HNL1	Secondary	DfT	No	W8	8	80	none	AB	(AB)	2
14.02	Pandy – Crewe (North and West Route, England)	SYC, WSJ, SHL, HDC, HNL1	Secondary	DfT	No	W8	8	90	none	AB	(AB)	2
14.03	Shrewsbury – Chester South (England)	WSJ	Secondary	DfT	No	W6A	8	70	none	AB	(AB)	2
14.04	Shrewsbury – Chester Central (Wales)	WSJ	Secondary	DfT	No	W6A	8	60	none	AB	(AB)	2
14.05	Shrewsbury – Chester North (England)	WSJ	Secondary	DfT	No	W6A	8	60	none	TCB	(AB)	1
14.06	Cambrian lines (Wales)	SBA, DJP	Rural	DfT	No	W6A	5	80	none	RETB	(n/a)	1
14.07	Craven Arms – Knighton (Heart of Wales line, England)	CWL1	Rural	DfT	No	W6A	5	60	none	NSKT	(n/a)	1
14.08	Sutton Bridge Jn – Border (Welshpool)	SBA	Rural	DfT	No	W6A	7	75	none	RETB	(n/a)	1
14.09	Llanelli – Knighton (Heart of Wales line, Wales)	CWL1, CWL2, VOT, LLA	Rural	DfT	No	W6A	5	60	none	NSKT	(n/a)	1
14.10	Pembroke Dock – Whitland Jn	PEM	Rural	DfT	No	W7	6	50	none	OTW	(AB)	1

Figure 20 Strategic route sections

Predominant aspect recorded (secondary aspects recorded in brackets) ELR is Engineers Line Reference and 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
14.11	Fishguard – Clarbeston Road Jn	CRL, NPF	Rural	DfT	No	W6A	7	55	none	OTW	(AB)	1
14.12	Swansea – Milford Haven	SWL, SWM2, CAN, CNW	Secondary	DfT	No	W8	8	75	none	TCB/AB	6	2
14.13	Freight Lines (England)			DfT	No				none			
14.14	Freight Lines (Wales)			DfT	No				none			

Capacity and operational constraints

- A Cockett – Duffryn: Single line limits capacity
- B Newport – Crewe: Existing line speeds restrict journey time improvements
- C Cambrian Line: Single line sections limit capacity
- D Wrexham North Junction – Saltney Junction: Single line limits capacity

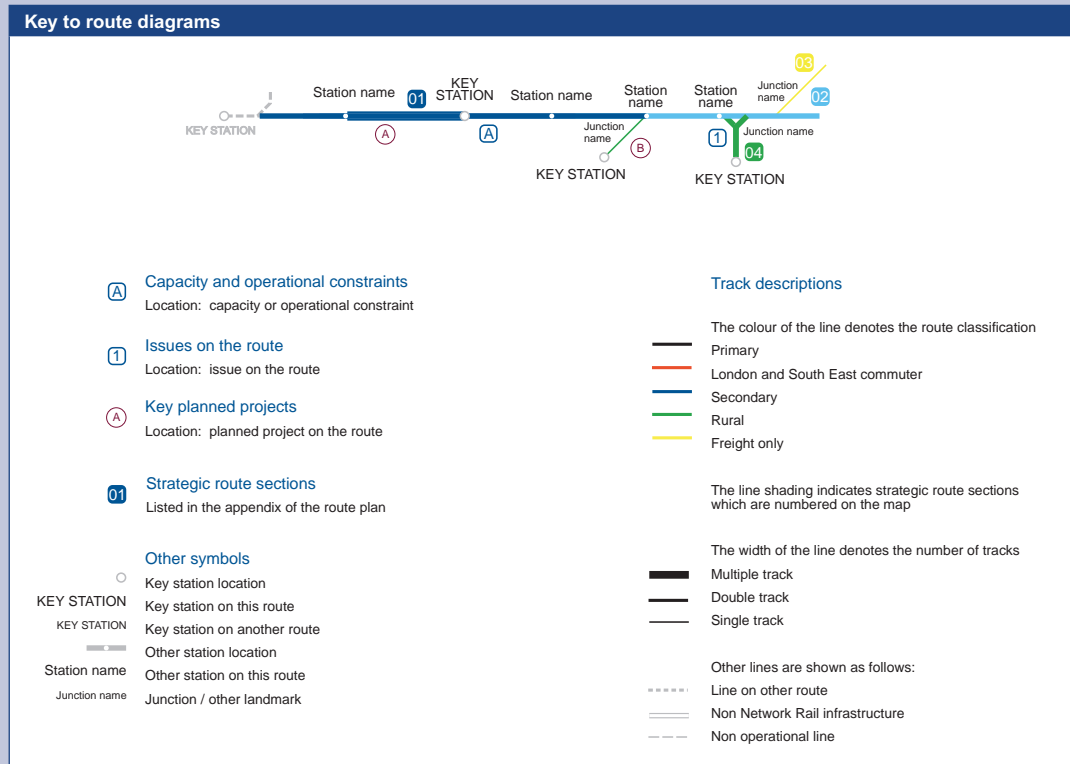
Other issues on the route

- 1 Cambrian line: introduction of ERTMS
- 2 Tywyn Sea Defences: require constant monitoring

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