

Route Plans 2008
Route 14
South and Central Wales
and Borders



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for you**

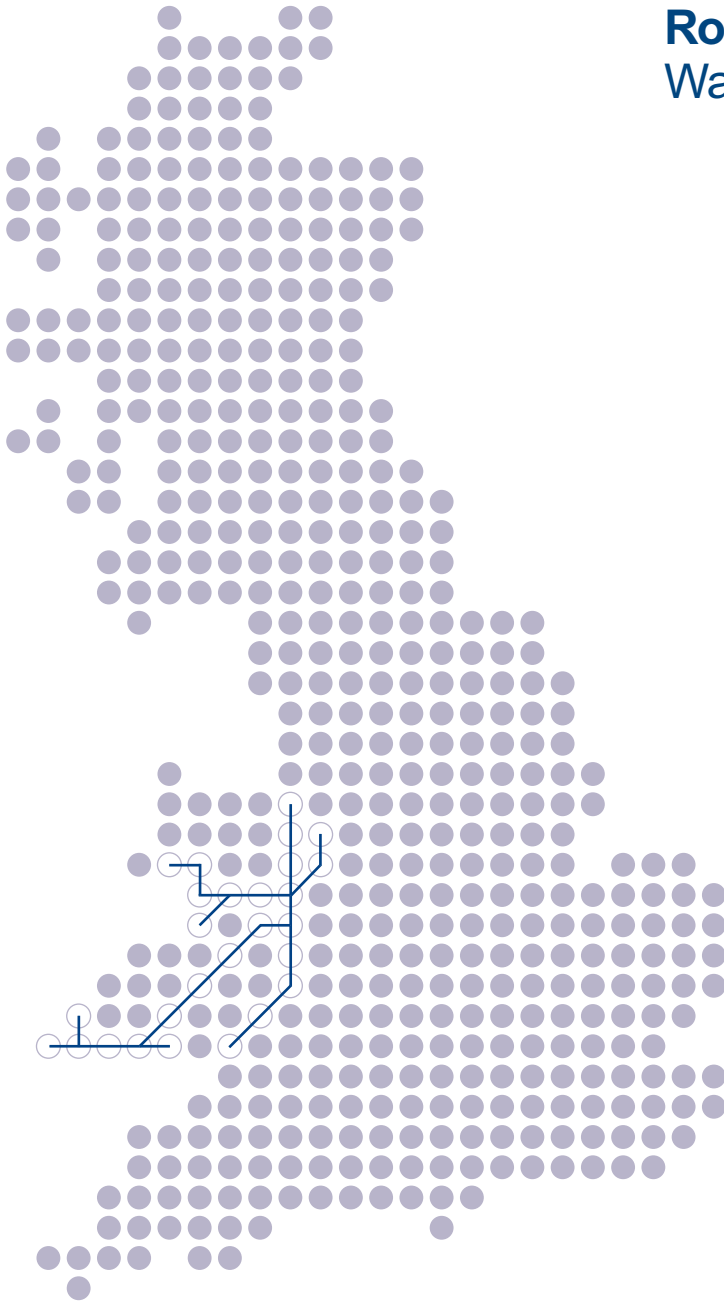


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Route 14 South and Central Wales and Borders



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.

The bulk of today's traffic is passenger. The Wales Rail Planning Assessment was published in 2007, and will be followed by the Wales Route Utilisation Strategy (RUS) which will be published

for consultation in May 2008. This will cover all of Wales, and also take account of the considerable portion of route in the English border counties of Herefordshire, Shropshire and Cheshire.

Today's route

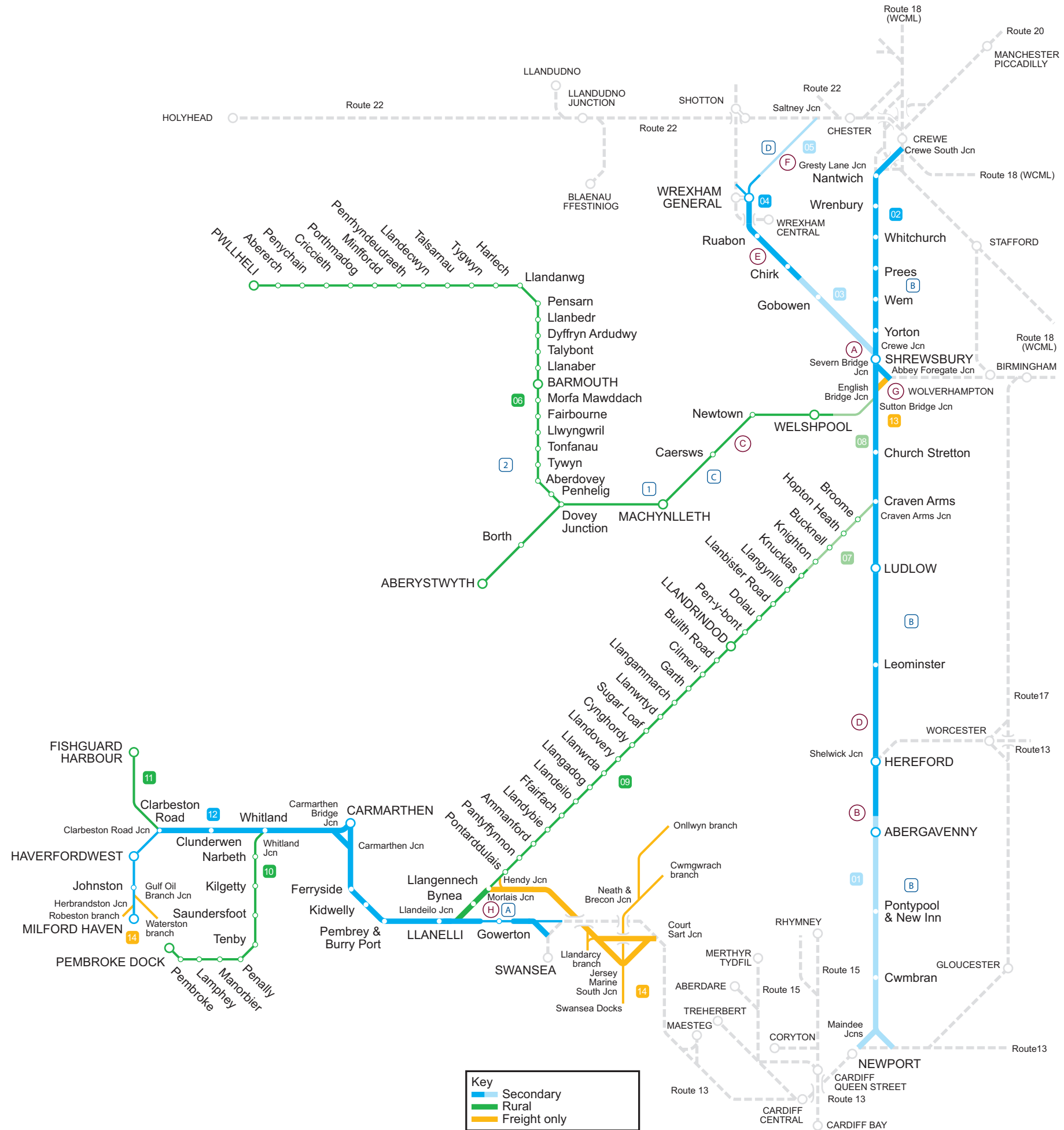
The principal elements of the route are described below. The relevant Strategic Route Section is shown in brackets:

- 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

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 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. In May 2007 the Welsh Assembly Government introduced free travel for concessionary bus pass holders on the Heart of Wales line and demand has outstripped capacity.

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 Clarbeston 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 largely confined to 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). In west Wales the oil refineries near Milford Haven generate long distance flows to the Home Counties. No scheduled freight services operate on either the Cambrian Lines or the Heart of Wales Line except between Morlais Junction (south of Pontarddulais) and Llanelli. Coal traffic is conveyed to Aberthaw power station from Onllwyn.

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.

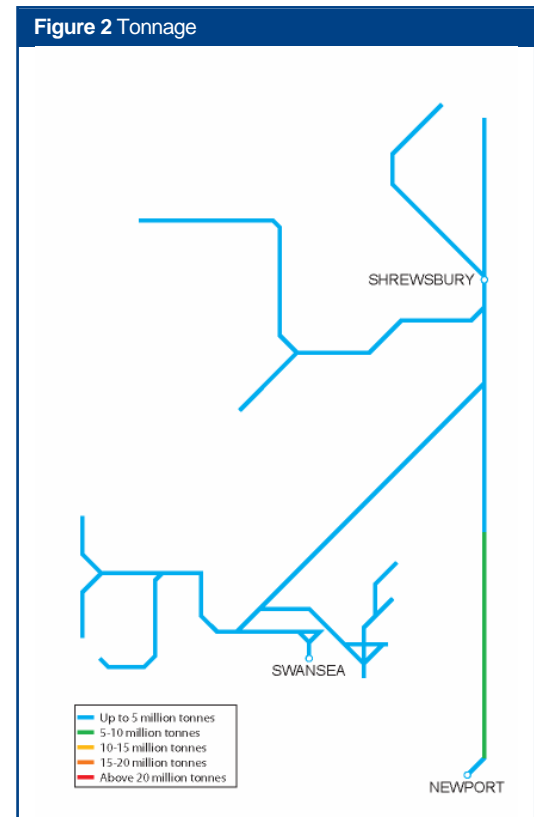
On the north – south axis, the Standard Pattern Timetable typically offers an hourly service between Carmarthen and Manchester via Cardiff and a two-hourly service between Cardiff and Holyhead via Wrexham mainly operated by three car trains with 100mph capability. In the north east part of the route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

English, Welsh and Scottish Railway, Freightliner Heavy Haul and Freightliner Intermodal 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** Current use

	Passenger	Freight	Total
Train km per year (millions)	8	1	9
Train tonne km per year (millions)	948	879	1,827

Figure 3 summarises traffic volumes.

Current infrastructure capability

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

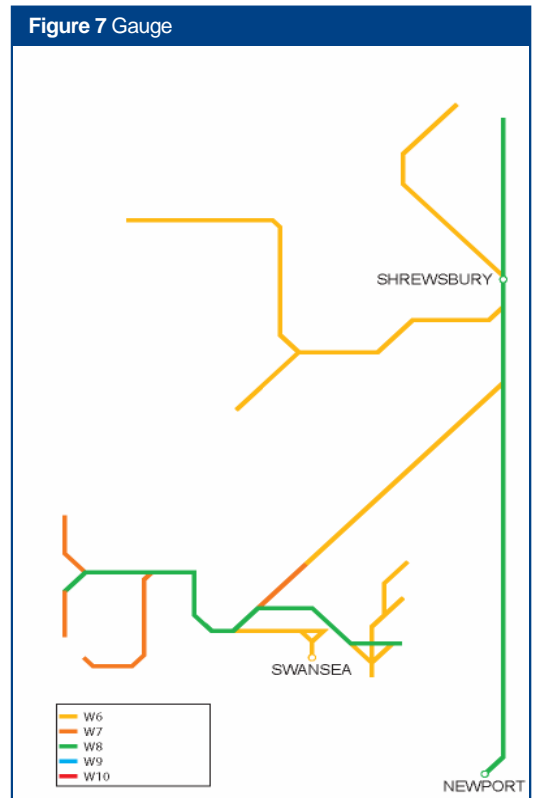
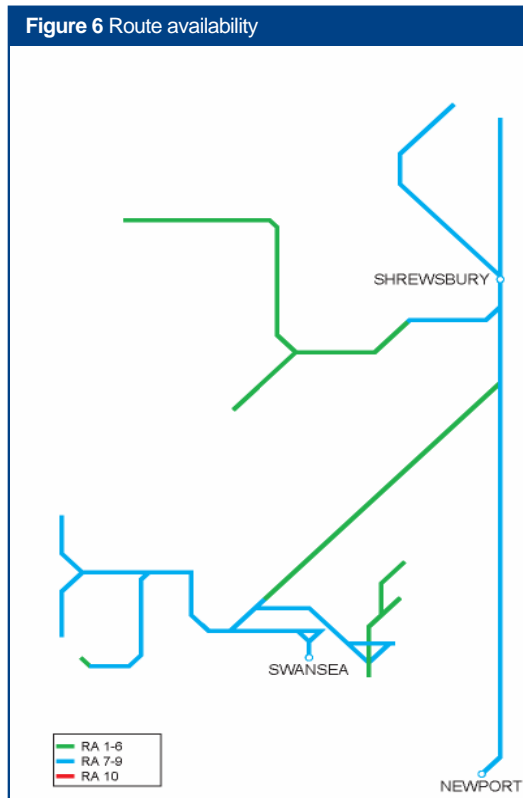
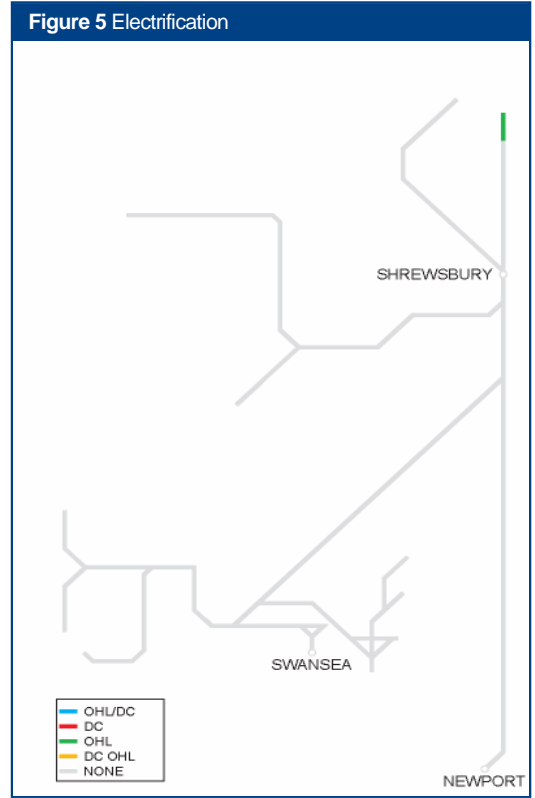
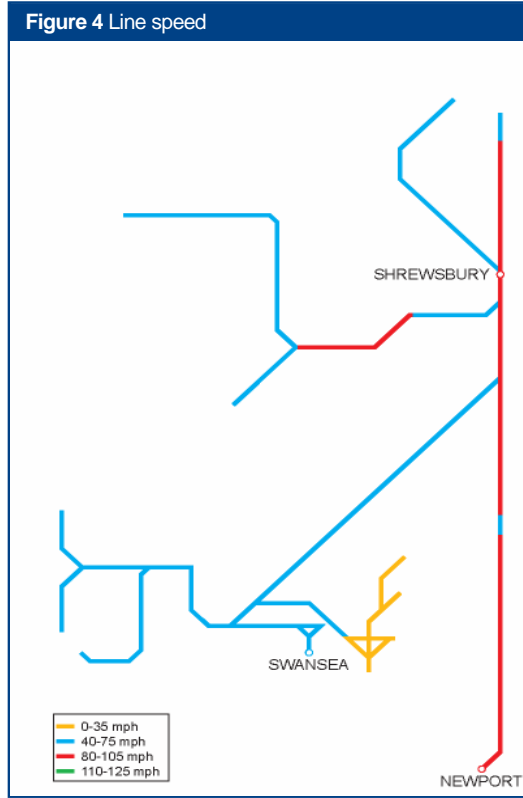


Figure 8 Current train service level (peak trains per hour)

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	3
'Heart of Wales line', Llandeilo to Swansea	1
'Heart of Wales line', Knighton to Shrewsbury	nil

Current capacity

Between Newport and Crewe or Wrexham, and beyond Swansea to west Wales, capacity is sufficient for existing volumes and the gradual reduction in freight services has tended to reduce any constraints when catering for passenger demand. 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 five mile long single line section between Cockett and Duffryn.

To meet forecast growth, improve overall performance and the passenger journey experience, Arriva Trains Wales has allocated their more modern two car and three car 100 mph Class 175 train fleet to west/south Wales – Manchester long distance services. This has replaced the 90 mph 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

2007/08 has seen a significant improvement in Arriva Trains Wales' overall performance with the PPM target of 90.1 percent consistently achieved.

We are undertaking a programme to remove Temporary Speed Restrictions, imposed due to the poor condition of track, which aims to reduce the number of TSRs on the Western route to 19 by 31 March 2009.

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.

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

Figure 9 shows the current PPM for the main TOC running along the route.

Figure 9 Current PPM MAA (2007/08)

TOC	MAA	As at period
Arriva Trains Wales	92.3%	12

Section 2: Tomorrow's railway

HLOS output requirements

Figure 10 Total demand to be accommodated by Strategic Route

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

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 of a Wales Transport Strategy commenced in 2005, and it is intended that transport funding will be used to further the aims of the Wales Spatial Plan. Specific policies 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 Welsh Assembly Government (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 informs Network Rail led Wales RUS, which is due to be published for consultation in May 2008, providing a forward view of the next ten years.

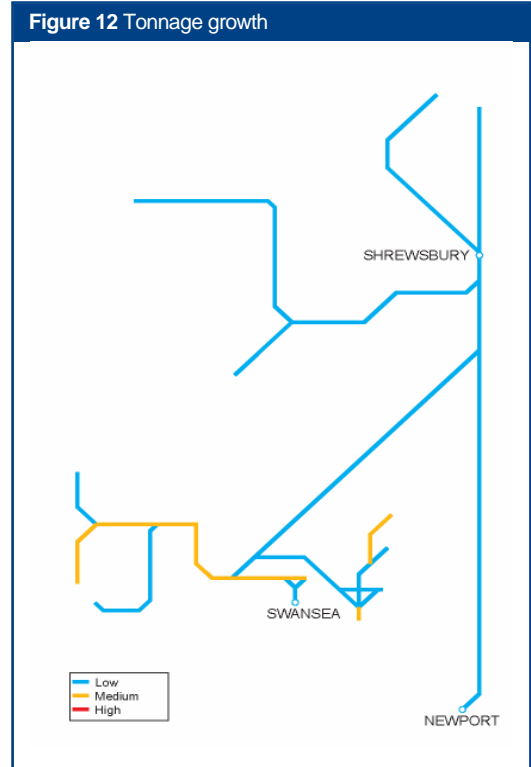


Figure 12 indicates the forecast percentage change in tonnage to 2017.

Section 3: Proposed 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 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

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. They recognise 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 informs Network Rail's Wales RUS, which will be published in May 2008.

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. A further factor which would impact upon the operation of Shrewsbury station would be the effect of line speed increases between Wolverhampton and Shrewsbury, identified in the West Midlands RUS.

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; and
- make step-changes in infrastructure

The initial application of ERTMS will be introduced on the Cambrian lines during 2008. 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.

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.

The train service operator, Wrexham, Shropshire and Marylebone Railway proposes to introduce five return services per day during 2008 under their new open access contract.

Future capability

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

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 facilitate an additional station at Cockett and train service improvements.

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 Cardiff Central, Hereford, Shrewsbury, Carmarthen and Aberystwyth.

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 and a scheme to provide additional passing loops on the Cambrian line to facilitate an hourly service between Shrewsbury and Aberystwyth.

At Shrewsbury we plan to reconfigure 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 December 2008. Also proposed is the remodelling of the Abbey Foregate loop, where the existing double track is proposed to be made into a bi-directional single loop capable of accommodating longer freight trains.

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.

Future performance

Figure 14 sets out the planned PPM for the principal train operator on the route. Figure 15 sets out the trajectory we propose as local commitments with the operator. 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 92.3 percent PPM MAA and the forecast for April 2009 is to improve to 92.5 percent PPM. 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 key performance issues and opportunities for this route have been identified as:

- construction works risk due to the re-signalling works in South Wales;
- operational benefits from ERTMS on the Cambrian;
- reduction in the impact of trespass, vandalism and fatalities; and
- 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.

Figure 14 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%

Figure 15 Forecast PPM MAA - proposed local commitments

	2009/10	2010/11	2011/12	2012/13	2013/14
Arriva Trains Wales	91.7%	91.9%	92.2%	92.3%	92.5%

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.

Engineering access

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. Thus it is complex to assess for engineering access.

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 Clarboston 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 EWS diversions for Margam and Llanwern traffic when the south Wales route is closed (e.g. for signalling commissioning).

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.

Enhancements to be completed by end of CP3

Figure 16 CP3 enhancements

Implementation date	Project	Project description	Output change	Funder	GRIP stage
2008/09	Ⓐ Shrewsbury platform 3	Direct access to platform 3 from the Craven Arms direction	Improved reliability – modernised signalling system	Network Rail Discretionary Fund	3
2008/09	Ⓒ Cambrian line	New and improved passing loops	Improved reliability and additional capability	Network Rail and Welsh Assembly Government	6

Proposed enhancements in CP4

Figure 17 Proposed enhancements in CP4

Implementation date	Project	Project description	Output change	Funder	GRIP stage
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	1

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	1
2010/11	ⓒ Abbey Foregate loop	Options to remodel double track to an extended single line	Bi-directional single loop line capable of accommodating long freight trains	Network Rail Discretionary Fund	1

Maintenance and renewals activity

Figure 19 shows the estimated maintenance and renewal costs and activity volumes.

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

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

Figure 19 Summary of estimated maintenance & renewals costs and activity volumes

£m (2006/07 prices)	Control Period Totals								
	2009/10	2010/11	2011/12	2012/13	2013/14	CP4	CP5	CP6	CP7
Maintenance expenditure									
Track	16	15	14	14	14	72	62	57	55
Signalling	4	4	4	4	3	18	16	16	16
Electrification	0	0	0	0	0	0	0	0	0
Telecoms	2	2	2	2	2	9	8	8	8
Plant and Machinery	0	0	0	0	0	1	1	1	1
Other (overheads / indirect)	20	19	19	18	18	94	85	81	81
Total	42	40	38	38	37	195	173	163	161
Renewals									
Track	23	24	22	21	22	112	84	89	104
Signalling	13	6	9	12	20	60	29	26	87
Civils	16	23	14	13	11	77	58	55	55
Operational Property	5	5	5	5	5	26	25	24	24
Electrification	0	0	0	0	0	0	0	0	0
Telecoms	15	11	7	5	1	39	11	8	13
Plant and Machinery	2	2	3	2	3	12	9	8	9
Total	74	72	60	59	61	326	215	211	292
Renewals Volumes									
Rail (KM)	10	10	10	11	11	52	177	114	56
Sleepers (KM)	38	38	38	38	38	192	99	164	242
Ballast (KM)	37	37	37	37	37	187	93	158	236
S&C Units	5	13	8	8	11	45	32	31	39
SEUs commissioned	49	0	0	22	0	71	176	15	576

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	Yes	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	Yes	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	Yes	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

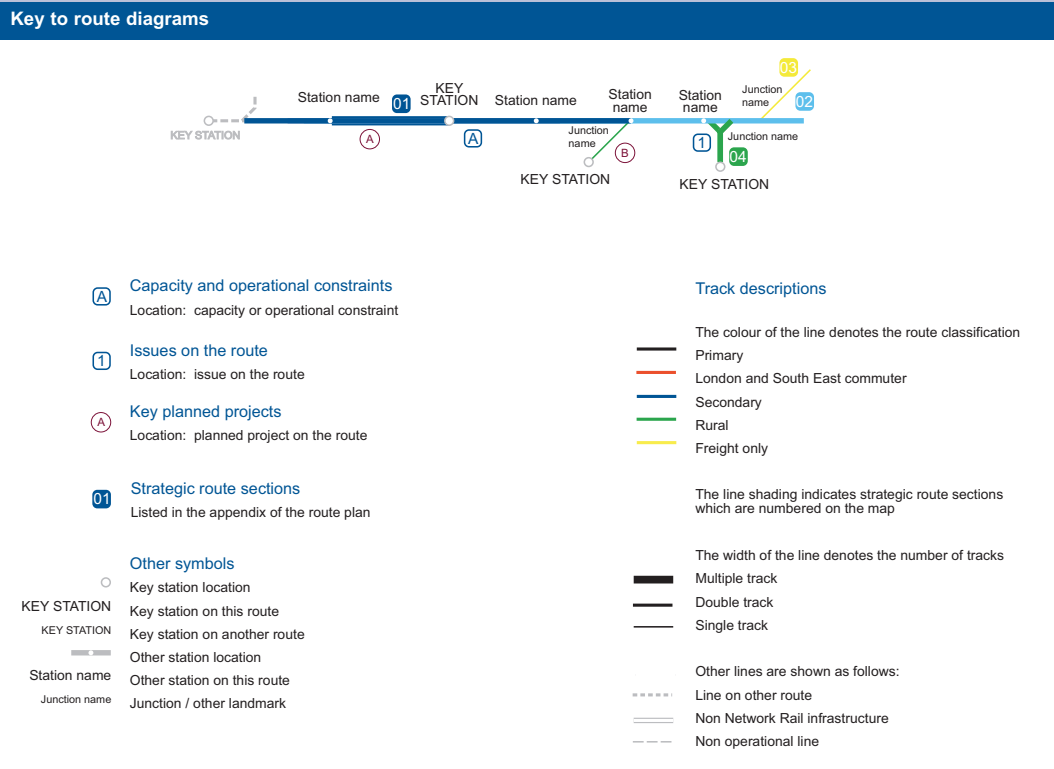
Other issues on the route

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

Note

This Route Plan forms part of the April 2008 update of Network Rail's Strategic Business Plan. The Route Plan supersedes the version published on 1 November 2007.

Other documents in the Strategic Business 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

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

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