Route Plans 2008
Route 22
North Wales and Borders

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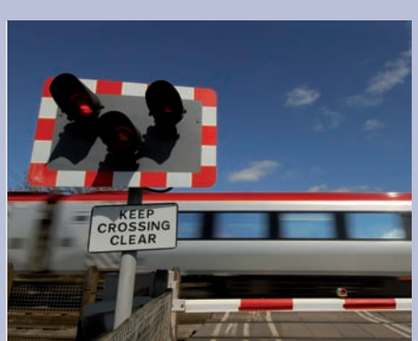
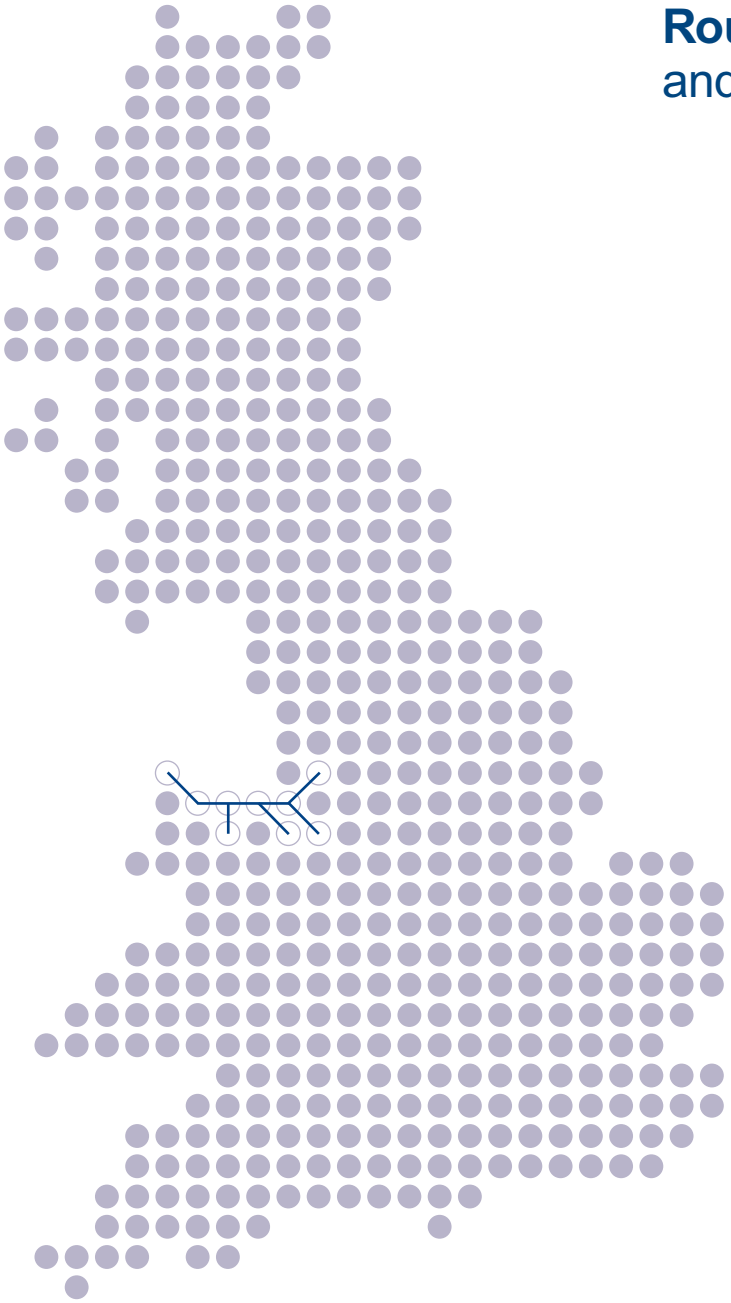




Route 22 North Wales and Borders

Section 1: Today's railway

Route context

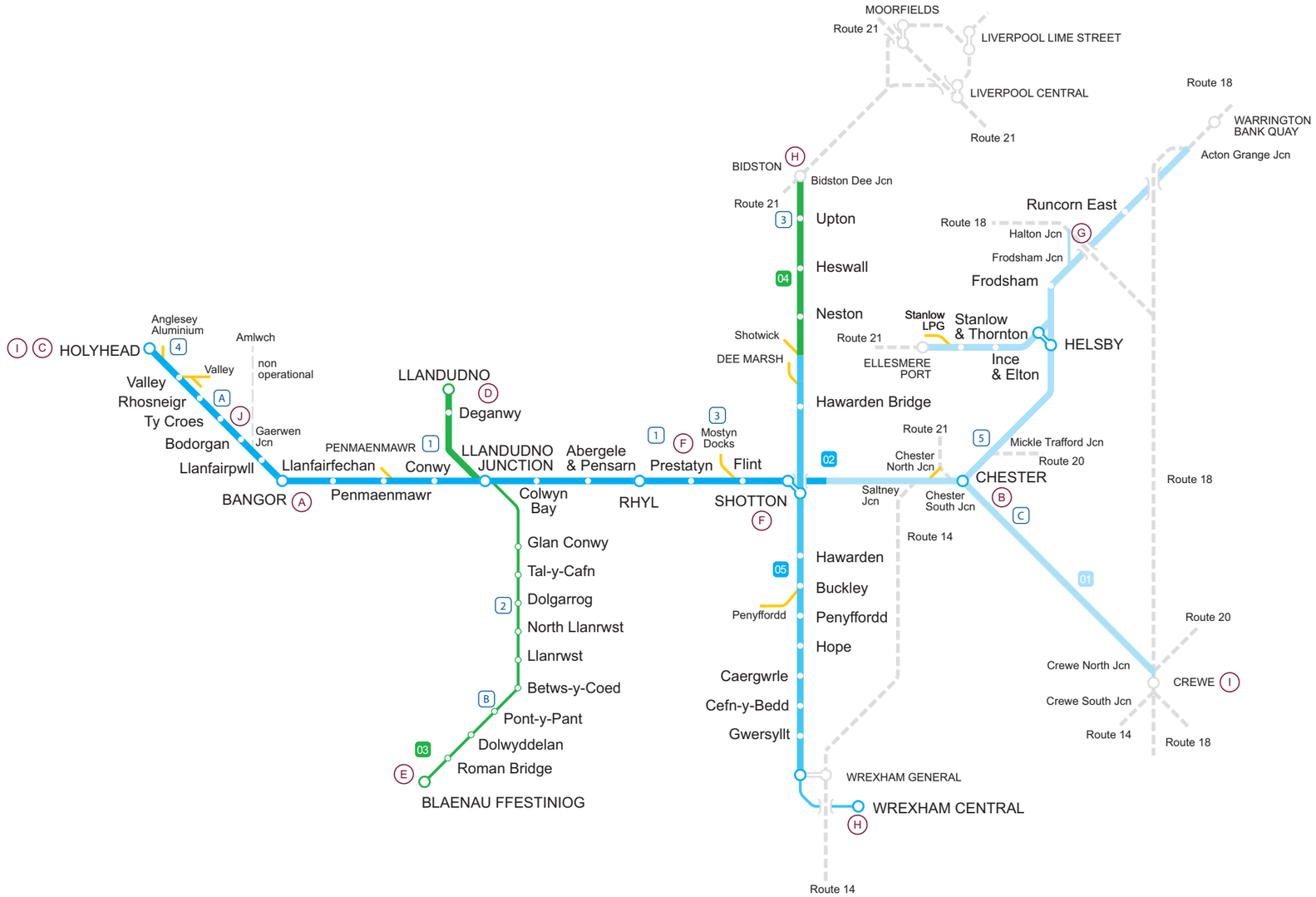
The route includes the North Wales Main Line (NWML), designated as a Trans European Network (TEN) route. It provides an important link between North Wales and Liverpool, Manchester, London, Birmingham, and South Wales. It also includes the branch lines to Wrexham, Bidston, Llandudno, Ellesmere Port and Blaenau Ffestiniog. Holyhead station acts as a railhead for the ferries to and from Ireland. The M56 is the road alternative to the Manchester to Chester rail routes, and suffers from heavy congestion during peak hours. In North Wales, the A55 provides the direct competition. Traffic to Ireland from Liverpool and Manchester has competition from low cost airlines. For smaller communities on this route, rail provides a valuable public transport link. The NWML forms an important route for freight, as do the branches between Wrexham and Bidston, and Ellesmere Port and Warrington. This route is included within the scope of the Wales Route Utilisation Strategy (RUS). Work on this RUS started in late 2006, and will be published for consultation in May 2008.

Today's route

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

- Holyhead to Chester and onto WCML via Crewe and Warrington (22.02, 22.01);
- Bidston – Wrexham line (22.04, 22.05 & 22.06);
- Branches from Llandudno Junction to Llandudno and Blanaeu Ffestiniog (22.03);
- Ellesmere Port to Helsby (22.01); and
- Halton Curve (22.01).

Route 22 North 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

Passenger usage on this route is mixed. There is some localised commuting and business traffic within the route, but there are also significant commuter flows to destinations off route – notably to Liverpool, Birmingham and Manchester – with South Wales and London being popular destinations for business travellers. There are flows to and from Ireland via the ferry terminal at Holyhead, as well as to and from the various resort towns along the coast, all of which vary in intensity according to season and weather.

There are several drivers of freight traffic on the route. These include: the steelworks at Dee Marsh; the ports of Mostyn and Ellesmere Port; the quarry at Penmaenmawr; and on Anglesey the power station and the aluminium smelter.

Current services

The following train companies operate services on this route: Virgin Trains, Arriva Trains Wales, Northern Rail, Merseyrail, English, Welsh and Scottish Railway, Freightliner Heavy Haul Ltd and DRS.

In 2007 the timetable was revised, giving a more standardised pattern during the off-peak. On the core route, there are two trains per hour between Crewe and Chester, hourly services from Manchester to Llandudno and from Wrexham to Bidston, and two-hourly services from both Cardiff and Crewe to Holyhead and from Birmingham to Chester, On top of this pattern there are additional services in the peak and a number of long distance trains that serve the Irish ferries. The Blaenau Branch is single track with one passing place, restricting access for services, and sees half a dozen trains each way a day. The section between Ellesmere Port and Helsby sees only four passenger trains a day, and the Halton Curve sees no passenger traffic. At the periphery of the route, Merseyrail operates a half-hourly off-peak service into Chester, with up to four trains per hour in the peak.

The largest freight flow is steel traffic of about three trains a day between Wrexham and Dee Marsh. There is significant stone traffic of two or three trains a day along the NWML from the quarry at Penmaenmawr to Network Rail's local distribution centre at Crewe. There is also a steel flow of about two trains a day between Warrington and Mostyn Docks, and a coal flow of two trains a day between Ellesmere Port and Fiddlers Ferry Power Station (via Warrington Arpley).

There are a few trains a week between Warrington and Anglesey Aluminium and also Nuclear traffic between Valley and Sellafield in Cumbria.

Figure 1 Current train service level (trains per hour)

Originating station	tph to Chester
Crewe	2-3
Llandudno Junction	2-3
Holyhead	1-2

Figure 1 shows the current train service frequencies to Chester.

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

Traffic volumes are summarised in Figure 3.

Figure 2 Tonnage

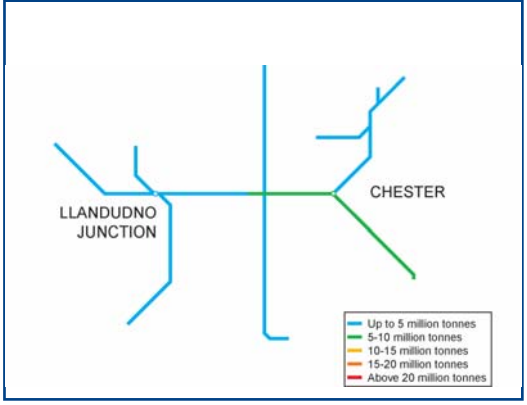


Figure 3 Current use

	Passenger	Freight	Total
Train km per year (millions)	5	0	5
Train tonne km per year (millions)	774	193	967

Current infrastructure capability

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

Figure 4 Line speed

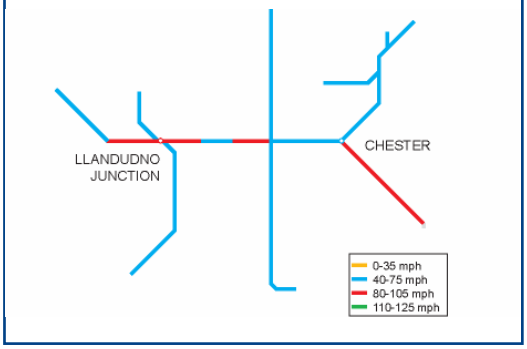


Figure 5 Electrification

Figure 6 Route availability

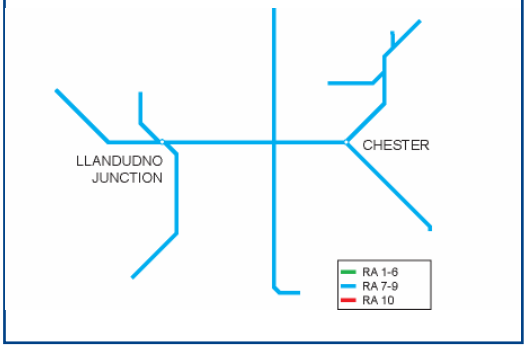


Figure 7 Gauge

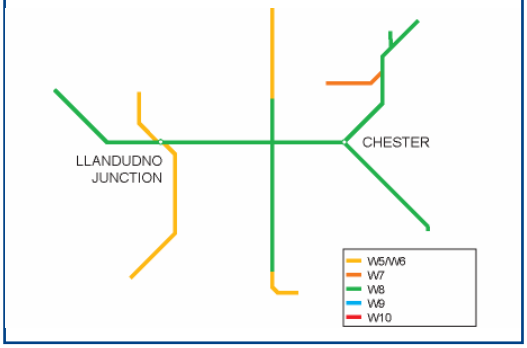


Figure 8 Current train service level (trains per peak hour)

Route Section	
Crewe – Chester	3
Chester – Mickle Trafford Junction	2
Chester – Saltney Junction	3

Current capacity

Figure 8 represents numbers of trains in the morning peak hour.

Broadly, the route is capable of handling the traffic expected of it, with no major issues. The most significant constraints are off route, such as the single lines between Wrexham and Saltney Junction, and between Mickle Trafford Junction and Mouldsworth.

Where constraints do exist, they tend to restrict flexibility when planning the overall timetable, or restrict perturbation management, rather than prevent the desired traffic. Examples of these are: the restricted layout at Chester East Junction, which creates an interaction between North Wales – Crewe traffic and Manchester – Northwich – Chester traffic; the single electrified access to Chester for Merseyrail trains; a few long absolute block sections that are adequate for the quantity of traffic, but restrict the spacing of trains and the single line with one loop on the Blaenau branch.

The Halton Chord is constrained by traffic only being able to run in the one direction, effectively preventing its use for regular passenger services.

Current performance

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

Some of the traffic on this route, notably the trains originating from London and Manchester, can import delay from other congested places or export it to them. Although there are comparatively few trains in relation to the geographical area, the signalling sections are generally long, meaning that the ability to recover from delay can be limited.

The standard pattern timetable (introduced for Arriva Trains Wales) has improved performance on this route due to the regular spacing of trains. At the same time, the opportunity was taken to increase station dwell and turnaround times, leading to a more robust schedule. The route has also benefited from reduced reactionary delays from the rest of the Arriva Trains Wales area.

Each year, there are a small number of instances where serious delay arises from the physical geography. For example, severe weather can result in disruption to services on the exposed coastal route, and several lower-lying sections. This is notably the case between Crewe and Chester and along the Conwy Valley sections, which are particularly susceptible to flooding. We have developed a 10-year strategy to strengthen the coastal sea defences at various locations along the route. There remains an issue with floodwater originating from land adjoining the rail network at locations including Llanrwst, for which we are working with relevant landowners and the Environment Agency to address.

Figure 9 Current PPM MAA (2007/08)

TOC	MAA	As at period
Arriva Trains Wales	92.3%	12
Virgin Trains	86.3%	12
Merseyrail Electrics	94.7%	12
Northern Rail	88.4%	12

The line between Llandudno Junction and Blaenau Ffestiniog was substantially rebuilt following a washout in 2004. Unfortunately it is still susceptible to flooding problems during extreme rainfall – as happened in January 2006 – but it is now more resilient, with train services able to resume more quickly, albeit at reduced speeds.

The route has no diversionary capability apart from services between Crewe and Chester, which can be pathed either via Middlewich or via Wrexham (depending on the ultimate destination), and for Ellesmere Port to Helsby traffic, which can be pathed via Hooton and Chester.

The track renewals programme is targeting the remaining pieces of jointed track on the route by replacing it with continuous welded rail. Significant work was carried out on the line from Crewe to Holyhead during 2006/07, and the programme is continuing. Elsewhere, we will carry on with the strategy to reduce rail defects before they become a significant issue. Around Bangor Bridge, we have carried out track circuit cable renewals, leading to a reduction in failures.

On some sections of the route, leaf fall is still a problem although the impact was reduced last year due to a number of infrastructure interventions: the completion of a 6m strip clear of vegetation either side of the tracks; proactive treatment of rails; and gel applicators that spread adhesive gel in front of trains to improve traction. We also worked closely with Arriva Trains Wales (ATW) to ensure that the types of trains most prone to slippage were used in areas with the least risk. In recent years, high rail temperatures have been a particular problem north of Crewe, leading to speed restrictions to mitigate the risk and consequences of rail buckles. Our maintenance teams have undertaken a major programme of rail stressing to reduce the possibility of having to impose speed restrictions in hot weather.

Route crime remains an issue around Rhyl and Chester, and around Prestatyn during school holidays. We are working with the British Transport Police and local authorities to address these issues.

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)
North Wales and Borders	223	26

Future demand

Arriva Trains Wales has moved to a timetable with a more regular pattern, including enhanced services between Chester and Shrewsbury. It is anticipated that in the December 2008 timetable, Virgin Trains will increase the number of trains from five to eight per day along the coast, and increase the service between London and Chester to hourly. The combined effect of these changes is expected to stimulate demand between the South Wales – Shrewsbury – Chester corridor and North Wales and Liverpool, as well as between North Wales and London and Birmingham.

Growth of commuter flows into Manchester may lead to the Chester – Manchester services becoming overcrowded. The NW RUS showed that whilst there was a case for lengthening trains into Manchester in the morning peak, in isolation there was not a case to increase the frequency of the service to half hourly – especially if they could not both service Piccadilly.

Similarly, commuting into Liverpool could lead to overcrowding on the trains from the Bidston to Wrexham Line as they approach Liverpool. This increased growth is linked to additional jobs based in Liverpool city centre (as discussed in route 21), as well as to a large housing development near Shotton. In addition, as part of this development at Shotton, there are plans to create an industrial park. This will involve the creation of around 8,000 new jobs, and generate demand towards Shotton, especially as this is an area of comparatively high employment.

The growth of Liverpool and Speke industrial park as centres of employment, are expected to justify the re-opening of the Halton Curve to a regular passenger service. This should also include access to Liverpool John Lennon Airport via Liverpool South Parkway.

The stone traffic flow from Penmaenmawr to Crewe is expected to remain steady. However, the other freight flows are likely to grow, and new flows may be introduced. Ellesmere Port has reopened to rail freight traffic, with the existing flow of two coal trains a day expected to increase to three. There is a possibility that the re-opening of the port will stimulate further traffic, and on the Ellesmere Port to Helsby line, the connection to Kemira Fertilisers is expected to see a return of freight traffic. There are discussions ongoing with Kemira, to examine the possibility of further flows, such as glass and domestic waste.

There is a possibility that Birkenhead Docks will also re-open to rail freight traffic. Although unlikely to involve a large number of daily train paths, it would add more services to a busy freight line, and the ultimate destination of the traffic may add to the case for increasing capacity on the single line between Wrexham and Chester (see Route 14).

The demand remains to transport slate waste by rail from Blaenau Ffestiniog to the West Midlands and the North West. We continue to work with the Welsh Assembly Government and McAlpine to determine the scope of work this would require and the likely funding mechanism.

Section 3: Proposed strategy

Figure 11 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 11 Summary of proposed strategy milestones

Implementation date	Service enhancement	Infrastructure enhancement	Expected output change
2009 – 2014	Line speed improvement project across the North Wales lines	Address line speed issues during resignalling works between Chester and Llandudno (2011 and 2014)	Increase line speeds, improved PSRs to improve journey time
2009 – 2014	Wrexham – Bidston line speed improvements	Targetted track interventions to raise line speeds on key sections of the route	Improved journey time sufficient to produce timetable robustness
2009 – 2014	Chester – Runcorn – Liverpool service	Re-model Halton curve for bidirectional traffic and using units from strengthened rolling stock fleets	Passenger growth from new journey opportunities, and relief of overcrowding on other services.

Strategic direction

It is expected that the growth of Liverpool as an employment centre will continue and that this will stimulate rail demand as journey times and service provision to the outer region improves.

As well as commuters, the route is expected to experience steady growth in general passenger numbers, partially stimulated by the increased frequencies and better connections provided by the new timetable. This growth will be accommodated without the need for major infrastructure changes in general, but there will be the need for some interventions.

There are aspirations by local authorities and the Welsh Assembly Government to improve station facilities and accessibility, in order to improve the attractiveness of rail as a form of transport.

We expect to address possible line speed increases along the North Wales coast at the same time as carrying out major resignalling on the route, some of which is due in CP4.

Network Rail aims to address the station challenges set out in the 'Developing a Sustainable Railway' white paper, for CP4 and beyond, through the development of a National Station Improvement Programme. This programme is being developed with the industry, and is described in a separate section of the Strategic Business Plan.

Future train service proposals

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

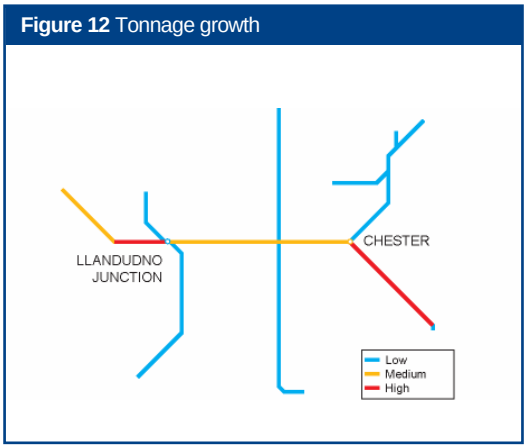
There are additional passenger services to Chester from London planned on this route in 2008.

There is also an aspiration to increase the frequency of the services between Merseyside and Chester.

It is expected that there will be an hourly service from Liverpool Lime Street to Chester (via Helsby) by the end of CP4.

In terms of freight services, a new flow carrying slate waste may start from Blaenau Ffestiniog, and there are expectations that there will be more traffic originating from the Ellesmere Port – Helsby line, although the exact traffic requirements have yet to be determined.

Figure 12 Tonnage growth



Future capability

Line speeds

There are aspirations for improved journey times along the NWML. The signalling is due for renewal between Prestatyn and Rockcliffe Hall and in the Llandudno area in CP4, so cost effective line speed increases will be considered at this time. Resignalling of the Crewe area will commence in CP4. The new signalling will fringe onto Chester and the opportunity will be taken to carry out line speed improvements on the Crewe – Chester line. It is anticipated that the phasing of the overall scheme will mean completion in CP5.

On the Wrexham Bidston line, packages of work have been identified that would increase the line speed and improve both performance and journey time. Some of this work will be carried out in CP3, but if there is a business case, the full package would be carried out in CP4.

Stations and depots

Associated with two of the infrastructure schemes, there are aspirations to open new stations on this route. Halton Borough Council and Merseytravel have proposed a new station in the Beechwood area of Halton, on the Halton Curve itself. Merseytravel have also proposed a new station at Woodchurch, associated with extension of the electrification beyond Bidston. Stakeholders have also suggested (linked to this electrification scheme) a new station on Deeside.

There are aspirations to improve station facilities across this route (e.g. Shotton & Prestatyn). These improvements broadly fall into three categories: accessibility, interchange and regeneration. We are working with local authorities and the Welsh Assembly to identify and develop potential schemes to improve these areas. We will be using an integrated approach to identify synergies with

Figure 13 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%
Virgin Trains	88.1%	89.6%	90.8%	91.5%	92.0%
Merseyrail Electrics	94.8%	94.9%	95.1%	95.2%	95.2%
Northern Rail	90.5%	91.0%	91.5%	91.9%	92.2%

Figure 14 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%
Virgin Trains	85.8%	87.3%	88.5%	89.2%	89.7%
Merseyrail Electrics	93.6%	93.8%	93.9%	94.0%	94.0%
Northern Rail	89.9%	90.4%	90.9%	91.3%	91.6%

proposed asset renewals, looking at how improvements can be made in each of the areas mentioned. It is expected that some of these schemes would be implemented in CP4.

We are working with Cheshire County Council on a scheme to redevelop Chester station to provide an improved gateway to the city. Improvements include the adoption of the station forecourt, architectural lighting of station façade and refurbishment of internal brickworks. At the same time, we are helping facilitate Arriva Trains Wales' aspirations to develop the concourse area including a new ticket barrier, booking office, retail outlets and improved car parking.

There is a scheme being developed to relocate the Arriva Trains Wales depot at Holyhead. This is considering relocating it away from the town in order to allow the A55 to be extended into Stena Port. If the scheme goes ahead, the aspiration is to implement the relocation in 2009, but, ultimately, funding and decisions on timescales will be determined by Anglesey County Council.

At Llandudno station a new transport interchange has been proposed which will improve the station facilities both inside the station and also outside the immediate area. This scheme is still being developed with wider stakeholder support being sought.

Car Parking

The scheme currently in progress at Bangor station to improve access and car park facilities is due to be completed by late 2008.

Electrification

The Welsh local authorities and Merseytravel are considering the business case for a scheme to electrify some or all of the line between Bidston and Wrexham with third rail DC. It is expected that this scheme will be in progress by the end of CP4.

Freight

Network Rail is investigating the possibility of providing a connection to the rail network at Blaenau Ffestiniog and upgrading the Conwy Valley line. This would be to enable up to three trains per day of slate waste to run to the North West and Midlands for use as secondary aggregates. If this scheme were to go ahead, it is expected that the works would take place in CP4.

The owners of Port Weston (Runcorn), Stobart Group, are looking to extend the Runcorn Docks branch into their port (as a private siding), with potential freight traffic over the Halton Curve.

Future capacity

Capacity on the route is expected to remain broadly unchanged. However, if the Halton Curve scheme goes ahead, capacity would be improved on this section. The resignalling schemes at Crewe and on the North Wales Coast will provide opportunities to determine whether there are cases to improve headways at targeted locations.

Future performance

Figure 13 sets out the planned PPM for each train operator. Figure 14 sets out the trajectory we propose as local commitments with each 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.

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

Northern Rail

Northern Rail operates the local train networks both into the major conurbations and across the more rural areas in the North of England. Their performance is currently 88.4 percent PPM and should reach 90.0 percent by the end of March 2009. The franchise is extremely complex with a focus on cost management so that resources are efficiently used with little spare capacity for growth or recovery from incidents. Northern Rail recognises that there is a potential balance between aiming towards a high average performance and targeting a lower, but more consistently achieved level of performance with better use of capacity for passengers.

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

- the ability to maintain a highly performing service connecting multiple key transport nodes each with challenge for delivery in their own right and limited spare capacity for growth;
- scope for growth in general and especially for services in the urban conurbations where there is incomplete scope for infrastructure enhancements and low spare resource to deliver increased capacity from existing supplies;
- the challenge of improving service delivery during disruption from the available resource base driving a preference for focus on incident avoidance;
- taking ability to grow revenue across services, including community rail opportunities;
- a consequential need to focus on detailed day to day delivery and good quality operating practice;
- a complex mix of fleet some of which has an inherently low level of reliability;
- the challenge of maintaining unit availability with an expanding size of fleet whilst additional depot and stabling facilities will take time to make available;
- the specific issues arising from the December 2008 timetable, especially regarding the recast of the timetable in the Manchester area with pathing and platform occupation issues;
- the issues arriving from efficient utilisation of the larger fleet, particularly those arising from longer trains, and from any additional infrastructure required to be put in place;
- parallel scope for a significant improvement to the quality of the infrastructure over which Northern Rail operates services, including need to ensure these services link into more dense operation around conurbations. Some of their key revenue flows are also within their worst performing service groups;
- specific need to improve track quality;
- real ability to management the impact of weather and drive down cable theft; and
- getting the right balance between performance, journey time and capacity benefits from the enhancements planned on routes operated by Northern (e.g. York Holgate 4th track); and driving delivery of smaller scale enhancements such as line speed improvements.

The other operators on this route are Merseyrail Electrics and Virgin Trains. The future performance section for Merseyrail Electrics can be found in the plan for Route 21 and Virgin Trains can be found in the plan for Route 18.

Engineering access

Most renewal work is planned at weekends on this route, which can cause some disruption to services

due to the lack of diversionary routes, particularly on the route to Holyhead. This means that if short notice access is required, planned work may have to be cancelled. There is a need for better mid-week access, particularly on the long sections between Chester and Holyhead.

Long term opportunities and challenges

Electrification

The expectation is that the majority of the scheme to electrify some or all of the line between Bidston and Wrexham with third rail DC, will take place in CP5.

With resignalling and remodelling at Chester, there will be an opportunity to provide a second DC electrified platform, thereby improving performance.

If there is a business case for electrifying strategic diversionary routes, then priorities need to include the lines from Crewe to Chester, from Chester to Warrington, and the Halton Curve. All would require be electrified with 25kv overhead lines.

Freight

Two Nuclear Power Stations are in the process of being de-commissioned. This may have an effect on rail transportation in the area. Trawsfynydd Power Station (near Blaenau Ffestiniog) is being shut, while the Nuclear Power Station at Wylfa (Anglesey) is likely to be de-commissioned around 2010. There is a proposal to reinstate the line from Blaenau to Trawsfynydd. This would enable the transport of waste from the decommissioned nuclear power station to Sellafield in Cumbria. Discussions are on-going between the Nuclear De-Commissioning Authority & Direct Rail Services.

If sufficient freight growth is experienced between Ellesmere Port and Helsby (or Birkenhead), we will investigate the case for restoring the line between West Cheshire Junction and Mouldsworth. This scheme is not expected to be required before CP6.

Resignalling

The aspiration for shorter journey times along the North Wales Main Line could provide benefits in terms of service frequency and stock utilisation, in addition to the passenger journey time benefits. The ideal opportunity to progress schemes to achieve journey time reductions is during resignalling works.

It is anticipated that CP5 will provide the opportunity to resignal the Chester area. The aspiration is to remodel Chester East and Saltney junctions in order to increase train capacity, to allow better access to the station for DC units and enable better access to the depot.

It would also be an opportune time to centralise control of Wrexham and Chester signalling. Other signalling renewals in CP5 include Rhyl and Helsby.

Enhancements to be completed by end of CP3

Figure 15 CP3 enhancements

Implementation date	Project	Project description	Output change	Funding	GRIP stage
2008	Ⓐ Bangor Station	New car park and access improvements scheme	Improved access	Third party	5
2008/09	Ⓑ Chester Station Improvements	To devise and implement a Gateway Project for Chester Railway Station to improve the visual appearance of Chester Railway station, improve passenger facilities and enhance the surrounding area of Chester	Network Rail has committed renewals for the station roof and access ways, and for stonework repairs	Third party	3

Proposed enhancements in CP4

Figure 16 Proposed enhancements in CP4

Implementation date	Project	Project description	Output change	Funding	GRIP stage
2009	Ⓒ Holyhead Celtic Gateway	Overbridge scheme, crossing depot in the vicinity of Holyhead, plus station improvement works	Improved layout at Holyhead	Third party	3-4
2010	Ⓓ Llandudno	New transport interchange	New bus stops, car parking, taxi and drop off area. Improved station facilities	Third party	3
2009	Ⓔ Blaenau Ffestiniog slate terminal	Proposal for track, signal and earthworks improvements on the Conwy Valley line	Increased capacity	Third party	2
2008/09	Ⓕ Station improvement schemes	Improved station facilities at Shotton and improved access at Prestatyn	Improved station facilities	Third party	1

NRDF candidate schemes in CP4

Figure 17 Candidate NRDF schemes in CP4

Implementation date	Project	Project description	Output change	Funding	GRIP stage
2011/12	Ⓖ Halton Curve	Reinstate bi-directional working	Bi-directional signalling, or restore other track. May include electrification	Network Rail Discretionary Fund	1
2009 - 2014	Ⓗ Wrexham – Bidston	Line speed Improvements	Generalised journey time savings (especially during leaf fall season) and performance improvement on this line and on the Merseyrail network impacted by services on this line	Network Rail Discretionary Fund	–
2010 - 2014	Ⓘ North Wales Line speed improvements (Crewe to Holyhead)	Removal of speed restrictions, and raising maximum line speed	Journey time reductions, with the objective of achieving a diagram saving for the London – North Wales service	Network Rail Discretionary Fund	–
2009 - 2014	Ⓙ Headway across Anglesea	Convert Ty Croes from gate box to block post	Increased capacity	Network Rail Discretionary Fund	–

Maintenance and renewals activity

Figure 18 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 18 Summary of estimated maintenance & renewals costs and activity volumes

£m (2006/07 prices)	2009/10	2010/11	2011/12	2012/13	2013/14	Control Period Totals CP4	CP5	CP6	CP7
Maintenance expenditure									
Track	7	7	6	6	6	32	30	28	28
Signalling	1	1	1	1	1	7	6	6	6
Electrification	0	0	0	0	0	0	0	0	0
Telecoms	1	1	1	1	1	6	5	5	5
Plant and Machinery	0	0	0	0	0	1	1	1	1
Other (overheads / indirect)	6	6	6	6	6	30	27	26	26
Total	**16**	**16**	**15**	**15**	**14**	**76**	**69**	**66**	**66**
Renewals									
Track	6	7	6	7	6	32	22	25	51
Signalling	2	1	2	1	1	8	53	14	8
Civils	6	6	6	6	6	31	33	31	31
Operational Property	3	3	3	3	3	14	14	14	14
Electrification	1	0	0	0	0	1	0	0	0
Telecoms	5	5	2	2	1	14	5	4	6
Plant and Machinery	1	1	1	1	1	4	4	4	4
Total	**25**	**23**	**20**	**20**	**17**	**105**	**131**	**92**	**114**
Renewals Volumes									
Rail (KM)	4	4	4	4	4	19	19	22	27
Sleepers (KM)	11	11	11	11	11	54	37	46	99
Ballast (KM)	8	8	8	8	8	39	29	37	91
S&C Units	1	2	1	6	3	13	7	18	27
SEUs commissioned	0	0	0	0	0	0	261	68	19

Appendix

Figure 19 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
22.01	Crewe/Chester Lines	CHW1, CNH1, CNH2, HHJ	Secondary	DfT	Yes	W8	8	90 (75)	none (25kv, 750dc)	TCB AB	3 to 9	2
22.02	Border (nr Chester) – Holyhead	CNH3	Secondary	DfT	No	W8	8	90 (75)	none	TCB AB	4 to 22	2
22.03	Llandudno – Blaenau Ffestiniog	LTJ1, LLJ	Rural	DfT	Yes	W6	7	45 (50)	none	TCB , ETB NSKT	4 to 74	1 (2)
22.04	Bidston Dee Jn – Dee Marsh	WDB3	Rural	DfT	No	W5	7	50	none	TCB	10	2
22.05	Wrexham Central – Dee Marsh	WDBD1 WBD2	Secondary	DfT	Yes	W8	8	40	none	AB	4 to 14	2

Capacity and operational constraints	
A	Holyhead – Llanfairpwll: long signalling block section
B	Conwy Valley: single line
C	Chester East Junction, and Platform 7 Access: capacity constraints

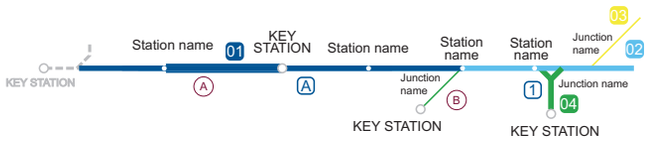
Other issues on the route	
1	Sea defence issues: various sites
2	River Conwy flooding issues
3	Route crime hotspot
4	Holyhead A55 road scheme
5	Chester Gateway initiative

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

Key to route diagrams



Capacity and operational constraints
A — Location: capacity or operational constraint

Issues on the route
1 — Location: issue on the route

Key planned projects
A — Location: planned project on the route

Strategic route sections
01 — Listed in the appendix of the route plan

Other symbols
- Key station location
- KEY STATION — Key station on this route
- KEY STATION — Key station on another route
- Other station location
- Station name — Other station on this route
- Junction name — Junction / other landmark

Track descriptions

The colour of the line denotes the route classification
- Primary
- London and South East commuter
- Secondary
- Rural
- Freight only

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

The width of the line denotes the number of tracks
- Multiple track
- Double track
- Single track

Other lines are shown as follows:
- Line on other route
- Non Network Rail infrastructure
- Non operational line

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

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