



Route 22 North Wales and Borders

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 Blaenau Ffestiniog (22.03);
- Ellesmere Port to Helsby (22.01); and
- Halton Curve (22.01).

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Route context

The route includes the North Wales Main Line (NWML), designated as a Trans-European Network (TENS) 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 direct competition from low cost airlines. For smaller communities on this route, rail provides an important public transport link.

The NWML forms an important route for freight, as do the branches between Wrexham and Bidston, and Ellesmere Port and Warrington.

The route will be considered in the Wales RUS scheduled for next year.

Route 22 North Wales and Borders



Key	
—	Secondary
—	Rural
—	Freight only

Passenger and freight demand

There are several sources of freight traffic on the route. These sources 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.

Passenger flows are mixed. There is some commuting and business traffic within the route, often of a localised nature, but there are significant commuter and business trips to destinations off route – Liverpool, Birmingham and Manchester, and in addition South Wales and London 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.

Current services

The following train companies operate services on this route: Virgin West Coast, Arriva Trains Wales, Northern Rail, Merseyrail, EWS, Freightliner Heavy Haul Ltd and DRS.

The timetable has been recently significantly revised, giving a more standardised pattern. The core section from Chester to Llandudno Junction sees broadly three passenger trains an hour through the day. One of these is the hourly Llandudno to Manchester via Warrington service, another is the hourly Holyhead to Chester which works onwards on alternate hours to Cardiff or Crewe. The third is one of the additional trains to Holyhead, Bangor or Llandudno that has origins of London, or Manchester. In addition there is an alternate hour service from Chester to Birmingham. Merseyrail operates a half-hourly off-peak service into Chester. The Crewe to Chester portion of the route has its long distance services supplemented by a shuttle to give a service of two an hour or better. 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 traffic. The remainder of the route has an hourly service through the day, with some additional peak services.

Current traffic

A significant proportion of the traffic on the route comes from or goes to the West Coast Main Line at Warrington and continues to Manchester, with a slightly smaller proportion going to or from the WCML main line (rather than the bays in the station or the freight yards) at Crewe, onto the Shrewsbury – Wolverhampton – Birmingham New Street line, or onwards to Newport and Cardiff.

The largest freight flow is steel traffic of about 3 trains a day between Wrexham and Dee Marsh. There is significant stone traffic of 2 or 3 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 2 trains a day between Warrington and Mostyn, and a coal flow of 2 trains a day between Ellesmere Port and Warrington. In addition there are flows of less than a train a day between Crewe and Holyhead and between Crewe and Valley.

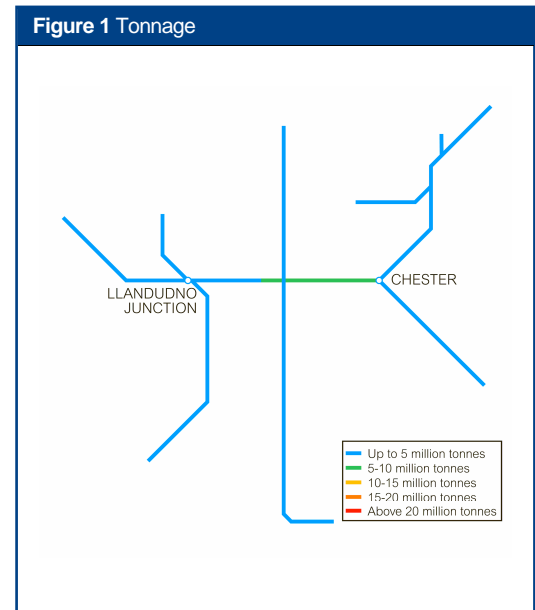


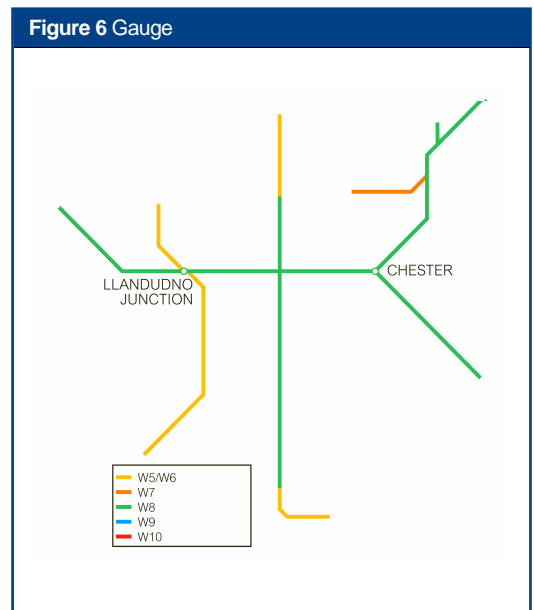
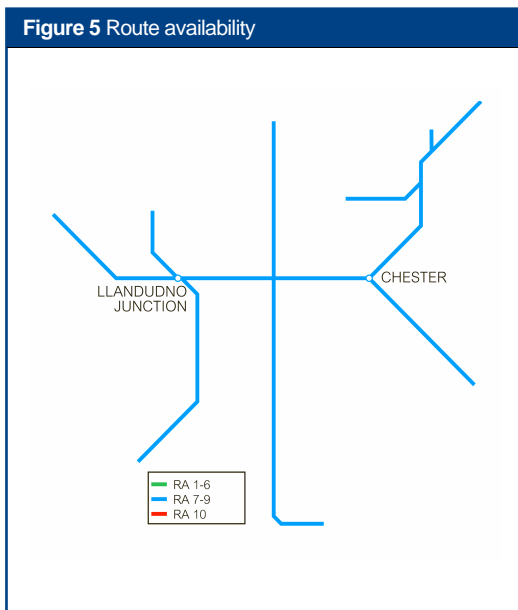
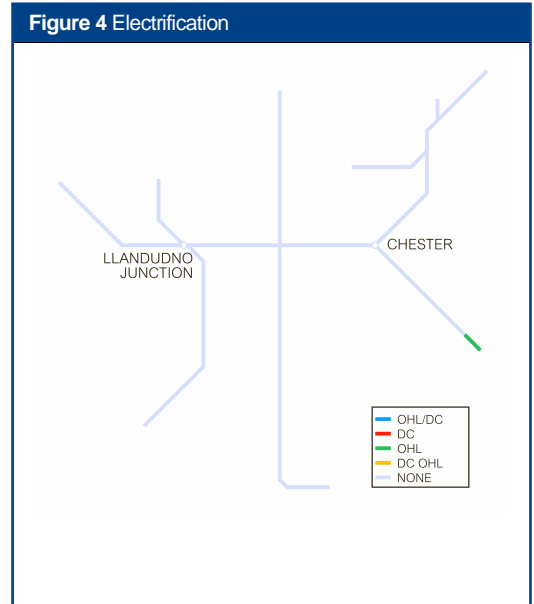
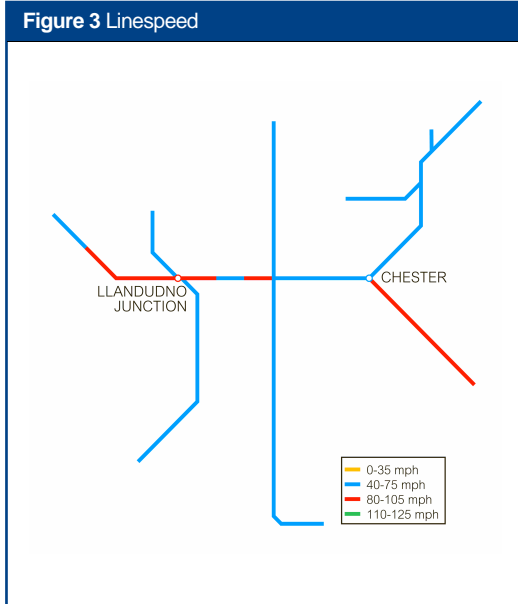
Figure 1 shows the tonnage levels on the route.

Traffic volumes are summarised in Figure 2.

Figure 2 Current use			
	Passenger	Freight	Total
Train km per year (millions)	5	0	5
Train tonne km per year (millions)	778	156	934

Current infrastructure capability

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



Current capacity

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. However, the move away from locomotive hauled stock and HSTs to multiple units and Voyagers has in the past led to certain services being particularly overloaded. The revised timetable is expected to smooth the overcrowding, and the main challenge will be the summer months.

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 more than would be desired; and the single line with one loop on the Blaenau branch.

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

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

Current performance

Figure 8 shows the current PPM for each TOC running along the route.

It can be seen from the current traffic flows that the route is susceptible to importing delay from other congested places or exporting it to them.

Some delays and their duration arise from the physical geography. Severe weather can result in

disruption to services on the coastal route, and several lower-lying sections of the route, notably between Crewe and Chester and along the Conwy Valley, are susceptible to flooding. We have developed a 10-year strategy to strengthen these coastal sea defences at various locations along the route. There remains an issue with floodwater originating from land adjoining the rail network, for which we are seeking the cooperation of the relevant landowners to agree a solution.

The line between Llandudno Junction and Blaenau Ffestiniog was substantially rebuilt following a washout early in 2004. Although it is still susceptible to flooding problems during extreme rainfall, as happened in January 2005, it is now more resilient, with train services able to resume more quickly.

The route has no diversion capability apart from it being possible for Crewe – Chester traffic to be diverted either via Middlewich or via Wrexham depending on the ultimate destination, and for Ellesmere Port to Helsby traffic to go via Hooton and Chester.

We have renewed the train describer at Chester to improve reliability.

The track renewals programme is targeting the remaining pieces of jointed track on the route by replacing it with CWR. In particular there is a focus on the route section between Crewe – Holyhead during 2006/07 and 2007/08 and elsewhere will carry on with this strategy to reduce rail defects before it becomes a significant issue.

On some sections of the route, leaf fall is a problem. In recent years, rail temperature has been a particular issue north of Crewe, leading to speed restrictions to mitigate the risk of and consequence 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.

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

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

Figure 8 Current PPM MAA (2005/06)

TOC	MAA	As at period
Arriva Trains Wales	80.4%	10
Merseyrail	92.6%	10
Virgin Cross Country	80.2%	10
Virgin West Coast	80.3%	10

Route crime remains an issue around Rhyl and Prestatyn.

Future requirements

Strategic direction

There is a desire by all parties to reduce the journey time for passenger traffic along the North Wales coast. In addition, there are aspirations to increase the frequencies of some services.

The overall expectation for the route is for steady growth in passenger numbers, partially stimulated by the increased frequencies and better connections provided by the new timetable and, if they come about, the additional services.

The existing freight traffic is expected to remain steady, perhaps with some growth, but there is also a real possibility of new flows that could lead to a step change in traffic in certain areas. The return of rail freight traffic to Ellesmere Port and (should it come about) Birkenhead Docks could generate significant new freight flows out of those locations.

The local authorities see the corridor of the Bidston – Wrexham line as being one of significant economic growth even without electrification, and should it come about, the reopening of the Halton Curve to regular passenger traffic from Liverpool Lime Street and Liverpool South Parkway could stimulate significant passenger growth, between there and Chester.

It is expected that the Wales RUS will examine these issues in more detail.

Future demand

ATW has moved to a timetable with a more regular pattern, including a greater number of trains between Chester and Shrewsbury. It is anticipated that Virgin will increase the number of trains a day along the coast from the current 5. 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.

Peak passenger loadings on the busiest trains during the summer are likely to continue to be an overcrowding issue.

Growth of commuter flows into Manchester may lead to both the Chester – Northwich – Manchester service and the Chester – Warrington – Manchester service becoming overcrowded. 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.

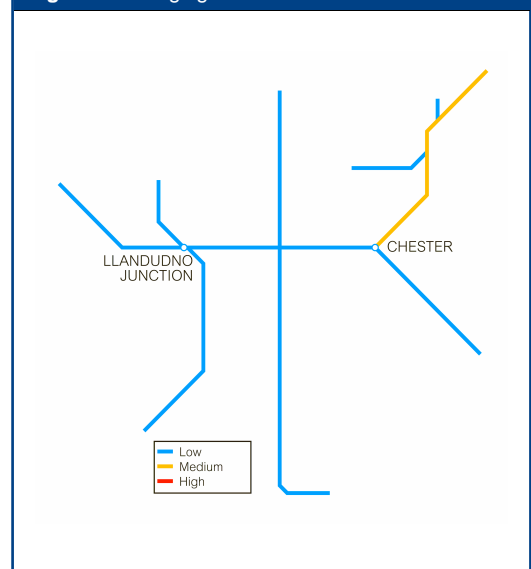
Whilst NDS's stone traffic from Penmaenmawr to Crewe is expected to remain steady, the other freight flows are likely to grow, and new flows may appear. Ellesmere Port has reopened to rail freight traffic. Not only is the existing flow of 2 coal trains a day expected to grow to 3, but there is a possibility that the reopening of the port will stimulate further traffic. On the Ellesmere Port to Helsby line, the connection to Kemira Fertilisers is expected to see a return of freight traffic in 2006, initially associated with Kemira, but with the possibility of further flows, such as for glass traffic.

There is also a possibility that Birkenhead Docks will reopen to rail freight traffic. Although unlikely to involve a large number of daily train paths, it would add more traffic 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 (on Route 14).

There is still a desire to transport slate waste from Blaenau Ffestiniog by rail. We continue to work with the WAG and McAlpine to determine the scope of work this would require.

The following map indicates the forecast percentage change in tonnage to 2015.

Figure 9 Tonnage growth



Future capability

Line speeds

There are aspirations for improved journey times along the NWML. Some parts of the NWML will be forever constrained by curvature and clearances to structures. For the remainder, the underbridges are generally fit for 90mph running, and as and when there are appropriate renewals of track and signalling, we will make the new equipment fit for 90mph if it is a realistic option. However, the number and nature of footpath crossings on the line is an issue. Currently, we are taking the opportunity presented by some proposed signalling renewals at Bangor and Valley to investigate the possibility of increasing the line speed across Anglesey to 90 mph, and at the same time reduce the signalling headway. We plan to re-examine the interventions identified by previous work in order to assess their merits and viability. Having done so, we will then need to establish how those interventions with a business case can be funded.

We shall investigate the technical challenges associated with introducing a higher allowable speed for Voyagers, and if possible Class 175s, along the North Wales coast. If an increased speed is technically achievable, we will then identify and assess the opportunities this presents.

Stations and depots

Halton Borough Council and Merseytravel have proposed that the Halton Curve be upgraded to allow bidirectional running. This scheme, if it goes ahead, may include a new station in the Beechwood area of Halton, on the curve itself, and may include partial electrification of the line, sufficient to turn back electric services from Liverpool Lime Street.

There is a scheme being developed to relocate the ATW depot at Holyhead away from the town in order to facilitate a road scheme. Also at Holyhead, as a result of some planned renewals, we are investigating the possibility of shortening the distance over which there is a 15mph speed restriction.

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. There is also the intention, as part of this scheme, to build up to three new stations on the line on the Wirral, at Beechwood, Woodchurch and Deeside Industrial Park.

Freight

Should agreement be reached with the Welsh Assembly Government and McAlpine over the requirements and associated cost and funding, the Blaenau Ffestiniog branch will be made fit to take the slate waste traffic.

Depending on the extent to which freight growth materialises from Ellesmere Port and Kemira, we will investigate the case for restoring the line between West Cheshire Junction and Mouldsworth.

Fragile routes

Network Rail engineers have identified a set of 'Fragile routes' across the country where the addition of any further loco hauled traffic would have a significant impact on the residual life of track and/or structures.

The rail freight industry has recently provided to Network Rail a set of 10 year traffic forecasts, and we are presently assessing their implications. The key route section within this route that has been identified as a fragile route and has clearly defined additional tonnage/train numbers projected by the industry is Wrexham – Bidston.

The Amlwch branch remains non-operational, with no prospect in sight of any future freight traffic that might justify its restoration to use by mainline traffic. Discussions continue about using the line as a heritage railway, and we are hopeful that the line's future will be resolved in the coming year.

Future capacity

Capacity on the route is expected to remain unchanged. There are currently no plans to alter headways or capacity, although some opportunities for improvement are being investigated. There are a number of locations where the layout is inefficient in terms of capacity, and some long block sections where shorter ones would be desirable. Whilst resignalling schemes typically provide the best opportunity to improve capacity (and speed), the next major resignalling project for this route will be at Chester, and is not expected before 2017. This scheme would present the ideal opportunity to improve Chester East Junction, allow better access to the station for electric units, and address the issues surrounding the single line to Wrexham.

Figure 10 Forecast PPM MAA

TOC	2006/07	2007/08	2008/09
Arriva Trains Wales	83.6%	84.5%	85.2%
Merseyrail	94.1%	94.4%	94.6%
Virgin Cross Country	81.6%	83.5%	84.3%
Virgin West Coast	85.5%	87.8%	88.6%

The resignalling at Crewe, which is expected to be completed around 2015, will most likely incorporate into one point of control the railway from Crewe to the limits of Chester's control, and provide 4 minute headways.

We are investigating the case for returning the gate box at Ty Croes to being a block post to improve headways across Anglesey.

Future performance

Figure 10 shows the forecast PPM for each TOC running along the route.

We are continuing to improve our vegetation management, and have a policy of clearing a 6m strip from vegetation. Our specialised contractor is extending the parts of the railway included in this policy.

As part of the strategy to reduce crime and animal trespass, improvements are being made to fencing, with a view to bringing the whole route up to standard. In response to the particular issue of trespass and vandalism around Prestatyn and Rhyl, we have undertaken a major local education campaign targeted at young people, and we are starting to work with the local youth and community groups that cover the most problematic areas. Independently, the North Wales Post has launched a 'safer stations' campaign in the area, highlighting the problems we are facing as an industry.

Figure 11 shows the forecast reduction in Network Rail delay minutes compared with the expected outcome for 2005/06.

Engineering access

During May 2006, there will be a blockade in the Mickle Trafford area while the signal box is rewired. The work will be phased so as to cause minimum disruption during the week, but will severely affect weekend services between Chester and Manchester.

In the Autumn of 2006, we plan to block the line between Crewe and Chester for a number of Sundays. At the beginning of 2007, there will be several weekends of disruptive possessions on the NWML, again mainly affecting Sunday services but also some Saturdays.

Opportunities and challenges

Merseytravel has an aspiration to increase the service frequency to Chester to 4tph. To achieve this, work will need to be done to understand the interface with the Standard Pattern Timetable (especially regarding connections at Crewe), and the use of platform 7 at Chester.

The aspiration for shorter journey times along the North Wales Main Line, in addition to the obvious passenger journey time benefits, could provide benefits in terms of service frequency and (possibly) stock utilisation. However, it is likely that realisation of this aspiration would involve a long list of interventions.

We will need to identify the options and opportunities, to ensure that there is a prioritised list that is realistic in terms of benefits, funding and deliverability.

Figure 11 Forecast reduction in delay minutes

	2006/07	2007/08	2008/09
% reduction in delay minutes	7	12	17

Delivering future requirements

Expenditure

The table below shows the planned level of expenditure on renewals on this route over the next three years. However, the precise timing and

scope of renewals remains subject to review to enable us to meet our overall obligations as efficiently as possible, consistent with the reasonable requirements of operators and other stakeholders.

Figure 12 Forecast expenditure

£m (05/06 prices)	2006/07	2007/08	2008/09
Renewals			
Track			
Plain line	4	3	3
S&C	0	0	0
Drainage	0	0	0
Track Total	4	4	3
Civils			
Underbridges	2	1	1
Overbridges	0	0	0
Bridgeguard 3	1	1	–
Footbridges	2	–	1
Earthworks	1	1	2
Tunnels	0	1	–
Culverts	–	0	0
Coastal & estuary defence	0	0	0
Retaining walls	–	–	0
Major structures	–	–	0
Minor works	9	10	–
Other	0	8	0
Civils Total	15	23	4
Signalling			
Resignalling	0	0	0
Minor works/other	4	9	0
Signalling Total	4	9	0
Electrification			
AC Systems			
Other	0	1	–
Electrification Total	0	1	–
Telecoms			
Telecoms cables	0	0	–
Telecoms Total	0	0	–

<u>Plant and machinery</u>			
Signal supply point	0	0	–
Mobile plant/vehicles	0	0	–
Plant Total	0	0	–
<u>Operational property</u>			
Stations	2	0	0
Lineside buildings	–	0	–
Operational property Total	2	0	0
<u>Other Renewals</u>			
Maintenance delivery unit depots	0	–	–
Other Renewals Total	0	–	–
Total Renewals	26	37	8
<u>Enhancements (funded by)</u>			
<u>Network Rail</u>			
West Coast Route Modernisation	0	0	0
Network Rail Total	0	0	0
<u>Other Third Party</u>			
Llandudno Station interchange	0	1	–
West Coast Route Modernisation – TENS Funding Enhancements	0	0	0
Other	1	0	–
Other Third Party Total	1	1	0
Total Enhancements	1	1	0

Figure 13 Forecast volumes

	2006/07	2007/08	2008/09
Track			
Rail (km)	7	7	7
Sleepers (km)	9	8	8
Ballast (km)	5	5	5
Switches & Crossings (no)			
Abandonment	2	2	2
Fencing (km)	0	0	0
Drainage (km)	1	1	1
Civils			
Underbridges (square metres)	278	1,020	87
Overbridges (square metres)	228	145	25
Footbridge (square metres)	400	–	–
Embankments (square metres)	700	900	2,100
Tunnels (square metres)	80	355	–
Culverts (square metres)	–	11	–
Coastal & estuary defence (linear metres)	76	185	–
Electrification			
AC Systems			
HV cables (km)	2	3	–
Booster transformers (no)	–	3	–
Plant			
Signal supply point (no)	0	1	0

The planned volume of renewals is detailed in Figure 13.

It should be noted that in order to manage the deliverability of our Civils, Signalling & Electrification plans we have included an element of overplanning in our work banks. As a consequence the sum of our route plans exceeds our plan for the network as a whole.

It is likely that a small proportion of the activities in these areas will slip to subsequent years

Maintenance

Figure 14 shows the planned level of expenditure on maintenance on this route over the next three years.

Figure 14 Forecast expenditure

£m (05/06 prices)	2006/07	2007/08	2008/09
Maintenance	14	13	12

Infrastructure investment

The following table highlights committed schemes that are planned for completion in the financial year shown.

Project	Scope	Enhancement or output change	Main asset Type(s)	Third Party funding	GRIP Stage	Completion year
A	Telecoms Renewals (22.02)	Small concentrator replacements at Rhyl and Prestatyn	Telecoms	None	1	2007/08
B	Civils Renewals (22.04)	Earthworks at Prenton (WDB3)	Earthworks	None	5	2006/07
C	Civils Renewals (22.01)	Bridgeguard 3 programme – we plan to carry out strengthening works to Bolderstones and Merrils Bridges	Structures	Local Authority	4	2006/07
D	Civils Renewals (22.05)	Repair and refurbishment of two bridges along the route, e.g. Hawarden Swing bridge over the River Dee. We are also developing a strategy with operating colleagues for possible strengthening in future years	Structures	None	1	2007/08
E	Civils Renewals (22.03)	Earthworks and drainage works are planned along the Conwy Valley branch line from Blaenau Ffestiniog to Llandudno Junction	Earthworks	None	2	2009/10
F	Track Renewals (22.05)	Plain line renewals are planned between Cefn-y-Bedd to Hope	Track	None	3	2006/07

Figure 15 Planned infrastructure investment

Figure 15 Planned infrastructure investment

Project	Scope	Enhancement or output change	Main asset Type(s)	Third Party funding	GRIP Stage	Completion year
⑥ Chester Gateway (22.01)	Redevelopment of Chester station scheme being lead by Cheshire County Council. Their plans include adoption of station forecourt, architectural lighting of station façade and refurbishment of internal brickworks. ATW are examining proposals for the development of the concourse area including a new ticket barrier, booking office and retail outlets. In addition they are looking at proposals for the improvement of the western car park	Network Rail has committed renewals for the station roof and access ways and for some stonework repairs	Stations	Cheshire CC ATW	3	2006/07, 2007/08
④ Blaenau Ffestiniog slate terminal (22.03)	Proposal for track, signal and earthworks improvements on the Conwy Valley line to enable slate traffic to be hauled from Blaenau Ffestiniog	Increased capacity	Track/Signals	Welsh Assembly/Third party	2	2008/09
① Bangor Station car park (22.02)	New car park and access improvements scheme	Improved access	Stations	Gwynedd CC	3	2007/08
⑤ Llandudno Transport Interchange (22.02)	Redevelopment of station site providing a new bus and rail interchange facility	Greater transport flexibility	Stations	Conwy CBC	3	2007/08
④ Holyhead Celtic Gateway (22.02)	Overbridge scheme, crossing depot in the vicinity of Holyhead, plus station improvement works	Improved layout at Holyhead	Depots	Isle of Anglesey Council	6-8	2006

Figure 16 highlights uncommitted schemes under development.

Figure 16 Infrastructure investment under consideration

Project	Scope	Enhancement or output change	Main asset type(s)	Status
L Halton Curve (18.13)	Reinstate bi-directional working.	Bi-directional signalling, or restore other track. May include electrification.	Signalling	Case under consideration
M Wrexham – Bidston Electrification (22.05)	Electrify all or part of the Wrexham – Bidston line. May involve signalling changes for improved headways and track changes to allow turnback moves.	Electrify, possibly improve headways, possibly provide turnback facilities	Electrification and plant	Case under consideration by local authority funders
N Anglesey Linespeed (22.02)	Increase linespeed between Gaerwen and Valley	Raise maximum speed to 90 mph	Signalling	Case under consideration for inclusion with renewals scheme
K Holyhead speeds (22.02)	Increase linespeed on approach to Holyhead	Raise from 15mph to 25 mph for at least a part of the approach to the station	Track	Case under consideration for inclusion with renewals scheme
N Headway across Anglesey (22.02)	Convert Ty Croes from gate box to block post	Significantly shortened headways: 14 minutes fast, 22 minutes slow, becomes 9 fast, 12 slow	Signalling	Case under consideration for inclusion with renewals scheme
O Headways Crewe – Chester (22.01)	Abolish Beeston Castle & Tarporley Signal Box, TCB Crewe - Chester	Significantly shortened headways: 8minutes fast, 9½ minutes slow becomes about 4 minutes	Signalling	Case under consideration for inclusion with renewals scheme
N Signalling Renewals (22.02)	Holyhead rewiring works and renewals of lineside equipment to Valley	Renewals	Signalling	GRIP Stage 0, renewals under early development
I Signalling Renewals (22.02)	Renewal of lineside equipment over the Britannia Bridge (Bangor – Garwen Jn)	Renewals	Signalling	GRIP Stage 0, renewals under early development

Figure 16 Infrastructure investment under consideration

Project	Scope	Enhancement or output change	Main asset type(s)	Status
P Signalling Renewals (22.01)	Signalling renewals work at Ellesmere Port. This is in conjunction with planned work at Stanlow and Thornton	Renewals and removal of redundant assets	Signalling	GRIP Stage 0, case under early review
G Flint Station Scheme (22.02)	Station improvements including access works at Flint station. Flintshire Council have grant money to improve facilities at Flint station	Improved station facilities/access	Stations	GRIP Stage 0, case under early review
R Shotton station (22.05)	Station refurbishment scheme	Improved station facilities	Stations	Local Authority scheme, currently under early review
S Croes Newydd North Fork MCB and SB	Renewals to level crossing	Renewals	Signalling	GRIP Stage 0, under review

Non infrastructure developments

The following significant timetable scheme for the route is under development.

Figure 17 Timetable development

Description	Key issues	Actions or options being developed	Benefits	Target timetable implementation
<p>1 Merseyrail TT – 4 trains per hour to Chester (22.01)</p>	<p>Effectiveness of increased service with regards connections at Chester</p>	<p>Being developed by Merseytravel</p>	<p>Improved service between Wirral and Chester, and connections onwards</p>	<p>Not yet identified</p>

Appendix

Figure 18 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	No of Tracks	SRS
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	22.01
22.02	Border (nr Chester) – Holyhead	CNH3	Secondary	DfT	No	W8	8	90 (75)	none	TCB AB	4 to 22	2	22.02
22.03	Llandudno – Blaenau Ffestiniog	LJ1, LLJ	Rural	DfT	Yes	W6	7	45 (50)	none	TCB, ETB NSKT	4 to 74	1 (2)	22.03
22.04	Bidston Dee Jn – Dee Marsh	WDB3	Rural	DfT	No	W5	7	50	none	TCB	10	2	22.04
22.05	Wrexham Central – Dee Marsh	WDBD1 WBD2	Secondary	DfT	Yes	W8	8	40	none	AB	4 to 14	2	22.05

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