

A photograph of a train station. A green and black train is stopped at a platform. Above the platform is a green metal pedestrian bridge with a white lattice railing. Several people are walking across the bridge. On the platform, a man in a brown t-shirt and a black bicycle helmet is adjusting his gear. He has a backpack and a bicycle with panniers. A woman is pushing a stroller with a child inside. Other people are standing near the train. The sky is clear and blue.

# Connecting local communities

**Network Rail helps bring Britain together. We own, operate and maintain the rail network, delivering improved standards of safety, reliability and efficiency.**

**Our investment programme to enhance and modernise the network is the most ambitious it has ever been. Delivering a 21st century railway for our customers and society at large.**

**Every day. Everywhere.**

---

## Route 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 was published in November 2008.

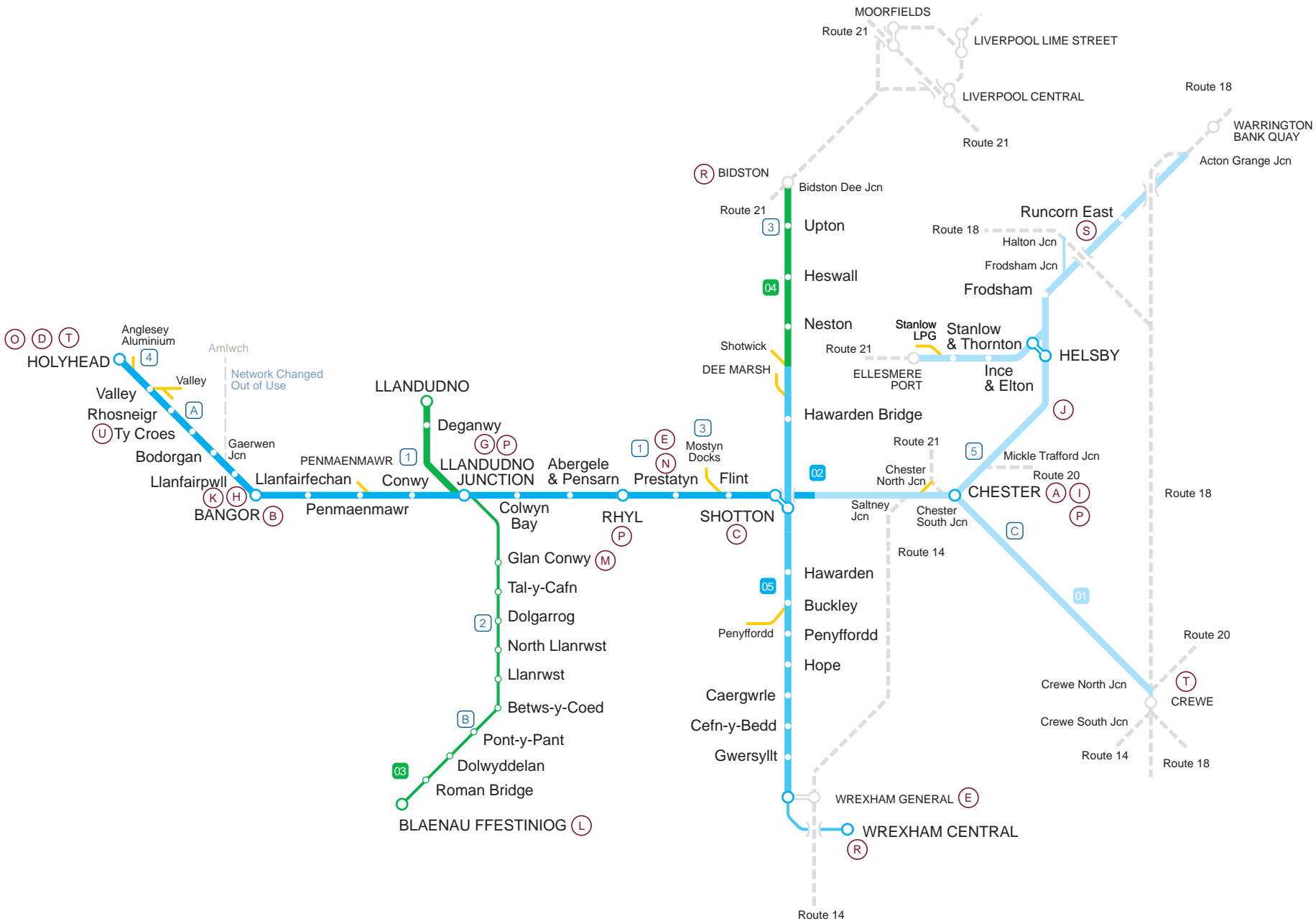
---

## 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 (ATW), Northern Rail, Merseyrail, Wrexham Shropshire and Marylebone Railway Company (WSMR), DB Schenker, Freightliner Heavy Haul Limited and DRS.

## Passenger services

The timetable works on a standardised pattern, particularly during the off-peak. On the core route, this means:

- two trains per hour between Crewe and Chester (one of which is from London Euston)
- hourly services from Manchester to Llandudno and from Wrexham to Bidston
- two hourly Birmingham International to Holyhead, integrated with two hourly Cardiff to Holyhead services (retains the hourly Shrewsbury to Chester)
- Arriva Trains Wales operation of Class 57 locomotive hauled passenger trains between Holyhead and Cardiff via Crewe or via Wrexham.

On top of the above patterns 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 loop, 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.

Figure 1 shows the current train service frequencies to Chester.

## Freight services

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 trains a day along the NWML from the quarry at Penmaenmawr to our local distribution centre at Crewe. There is also a steel flow 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 operating between Valley and Sellafield in Cumbria.

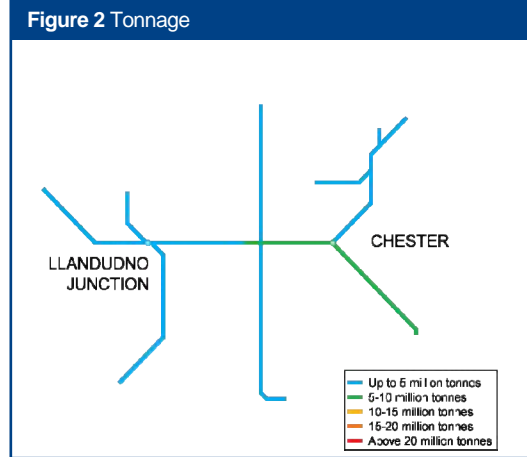
A new freight flow transporting paper from UPM Shotton has restarted to Barking. Currently this operates two trains per week.

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

Traffic volumes are summarised in Figure 3.



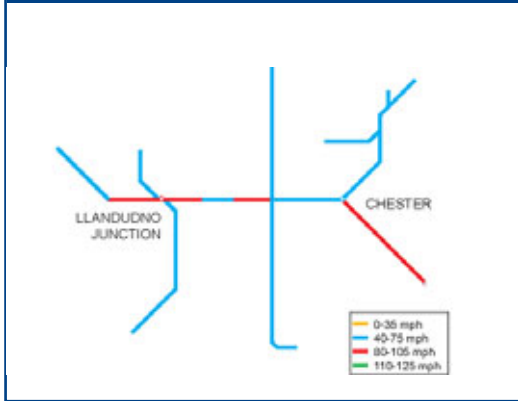
**Figure 3 Current use**

	Passenger	Freight	Total
Train km per year (millions)	5	0	5
Train tonne km per year (millions)	777	183	960

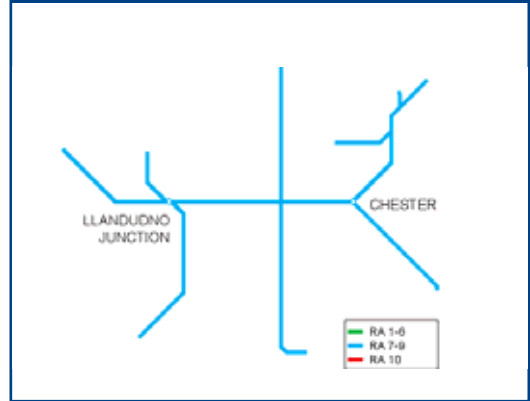
### Current infrastructure capability

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

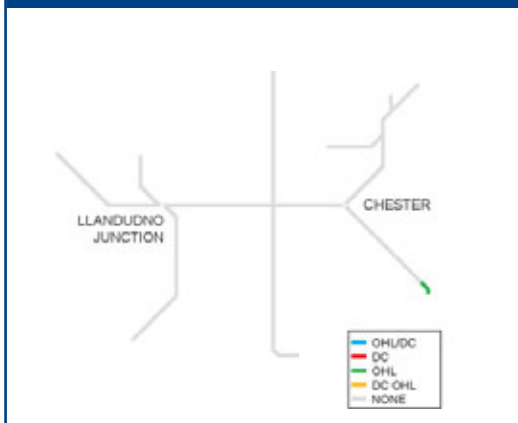
**Figure 4 Linespeed**



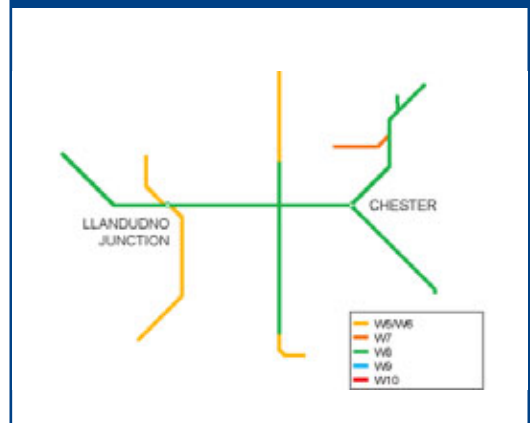
**Figure 6 Route availability**



**Figure 5 Electrification**



**Figure 7 Gauge**



### Current capacity

Generally 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 level of traffic. Examples of current constraints are:

- the restricted layout at Chester East Junction, which creates an interaction between North Wales – Crewe traffic and Manchester – Northwich – Chester traffic
- lack of regulating points Crewe/Chester to Holyhead
- 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
- the single line with one loop on the Blaenau branch
- and the Halton Chord is constrained due to traffic only being able to run in the one direction. This effectively prevents its use for regular passenger services.

### Stations

**Wrexham** – a third party scheme has been completed in 2008/09 to improve the stabling and train crew facilities at Wrexham. This has provided enhanced facilities at the network sidings and train crew amenities at the station buildings. Access at the station is also being improved in 2009. This forms part of a DfT funded scheme 'Access for All' including a new lift to platform 4.

### Current performance

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

Generally performance on this route improved during 2008 and continues to improve during 2009. This has been underpinned by improving infrastructure performance, particularly on the main Chester to Holyhead route. The route has been free of any significant delay causing speed restrictions throughout 2008. The improved performance can be traced to the investment and initiatives detailed below. Route crime has improved at Rhyl where ATW have installed ticket gates to assist management of this. The Wrexham-Bidston line has an hourly service with tight turnround times at both ends. This can lead to performance issues at times.

### Timetabling

December 2008 saw the introduction of a major timetable change in the North West. The main implications for the North Wales and Borders route was the launch of an hourly Euston to Chester service and a daily service between Wrexham and Euston via Chester. In order to accommodate these services the North Wales Coast timetable has been completely recast. Whilst such a major change always presents a risk to performance, there has been a robustness of the new timetable leading to performance improvements due to the separation of trains and the standard hour pattern.

### Seasonal preparedness

Any performance issues for the route tend to be weather related and also, being largely rural, animal incursions. A mild summer produced no significant heat related issues, though a great deal of preparation had taken place giving confidence that any issues would have been of a minor nature. Throughout the year however there have been spells of exceptionally heavy rainfall which have caused flooding issues, notably at Christleton on the Chester to Crewe line and between Gaerwen and Llanwrst. In each case the railway is the lowest point in the local topography, causing water from adjacent fields etc to outfall onto the railway with flooding resulting as the track drainage becomes overwhelmed.

**Figure 8 2008/09 PPM**

TOC	MAA	As at period
Arriva Trains Wales	92.7%	10
Virgin Trains	81.3%	10
Merseyrail	94.8%	10
Northern Rail	89.4%	10

We have invested significantly to provide a permanent high capacity automatic pump at the worst location Christleton and are conducting surveys at other sites to identify long-term solutions. In the meantime a number of mobile pumps have been purchased for deployment at flooding sites.

Autumn presented its usual challenge to performance as it does every year. Last year it was combated by running a successful joint project with train operators that has made significant improvements year on year. Measures included deployment of mobile "leaf busting" teams, railhead treatment trains and investment in trackside traction gel applicators which assist trains to gain traction on the slippery conditions encountered in autumn. We have also been successful in obtaining significant funding for additional devegetation work at locations identified by customers as being particularly at risk from adhesion difficulties, notably on the Bidston to Wrexham and Chester to Warrington lines of route. This work commenced in summer 2008 and is continuing into 2009.

#### ***Infrastructure reliability***

The only infrastructure delay has involved signalling systems on the Chester to Wrexham and Wrexham to Bidston route. However, as it is single line between Chester and Wrexham, special working has to be introduced and this compound the delays further. To alleviate the track circuit problems experienced we have invested in new digital track circuit equipment and remote monitoring systems. However, engineers have identified that a long-term solution requires significant track renewals. Therefore, renewals have been brought forward from 2011, and will now be completed in July 2009.

A major resignalling programme is also scheduled to take place at Wrexham in late 2009, which will bring further improvements.

Six miles of cable will be upgraded at Dee Marsh between Bidston and Wrexham to alleviate problems with axle counter systems. This work will be carried out during 2009 and is expected to significantly improve performance on the route. Other investment items that have produced further performance improvements recently include cable renewals and cable condition monitoring systems on the Chester to Holyhead line and enhanced fencing and dry stone wall renewal programme to reduce animal incursion incidents.

## Section 2: Tomorrow's railway: requirements

### HLOS output requirements

**Figure 9** Total demand to be accommodated by Strategic Route

Routes	Annual passenger km (millions) forecast in 2008/09	Additional passenger km to (millions) be accommodated by 2013/14
North Wales and Borders	223	26

#### Future demand in CP4

Arriva Trains Wales has moved to a timetable with a more regular pattern, including enhanced services between Chester and Shrewsbury. The December 2008 timetable increased the number of London – Chester trains to hourly, of these, seven will continue along the coast. 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. ATW have introduced a new premier service from Cardiff to Holyhead (with loco-hauled stock) which commenced in December 2008. This will further stimulate growth on this route.

Growth of commuter flows into Manchester may lead to the Chester to Manchester services becoming overcrowded. The NW RUS demonstrated that, whilst there was a case for lengthening trains into Manchester in the morning peak, there wasn't the justification to operate an increased service frequency to half hourly.

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, led to the Wales RUS examining the case for the reopening of the Halton Curve to a regular passenger service. This would

also include access to Liverpool John Lennon Airport via Liverpool South Parkway station. The case was inconclusive and Merseytravel is carrying out further demand forecasting work.

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 reopening 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 and Quinn Glass, to examine the possibility of further flows, such as glass and domestic waste.

There is a possibility that Birkenhead Docks will also reopen 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 to determine the scope of work and the likely funding mechanism.

#### Future demand beyond CP4

Demand growth is expected to continue into CP5 for both passenger and freight business. The 2007 Government White Paper 'Delivering a Sustainable Railway' anticipates a doubling of freight and passenger demand over the next 30 years.

## Section 3: Tomorrow's railway: strategy

Figure 10 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.

The current capacity of the route will allow the total additional passenger KM to be accommodated.

<b>Figure 10 Summary of proposed strategy milestones</b>			
<b>Implementation date</b>	<b>Service enhancement</b>	<b>Infrastructure enhancement</b>	<b>Expected output change</b>
2009 – 2014	Linespeed improvement project across the North Wales lines	Address linespeed issues during resignalling works between Chester and Llandudno (2011 and 2014)	Increase linespeeds, improved PSRs to improve journey time
2009 – 2014	Chester – Runcom – 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
2009 – 2014 and 2014 - 2019	Wrexham – Bidston linespeed improvements	Targetted track interventions to raise linespeeds on key sections of the route	Improved journey time sufficient to produce timetable robustness

## 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.

There are plans to address possible linespeed increases along the North Wales coast, ideally at the same time as we are carrying out resignalling on the route, some of which is due in CP4.

We aim to address some of the station challenges set out in the 'Developing a Sustainable Railway' white paper, for CP4 and beyond, through the development of a National Stations Improvement Programme (NSIP). This programme is being developed with the industry, and is described in more detail in the future capability section.

## Future train service proposals

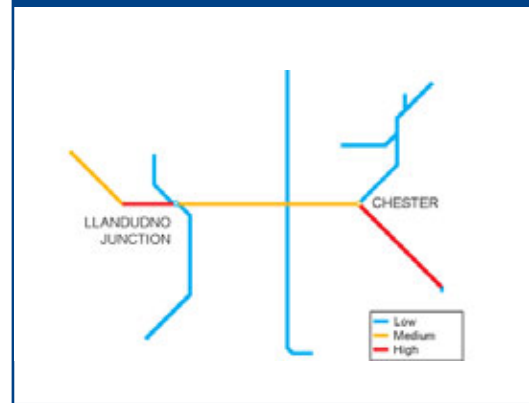
Figure 11 indicates the forecast percentage change in tonnage to 2018.

Following the 2008 West Coast timetable, there are additional passenger services introduced to Chester from London. There is also a further aspiration to increase the frequency of the services to Chester from the Merseyside area.

If the scheme to introduce regular passenger services round Halton Curve obtains funding, 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 to the Helsby line, although the exact traffic requirements have yet to be determined.

Figure 11 Tonnage growth



## Future capability

### Linespeeds

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 late CP4/early CP5, so cost effective linespeed increases will be considered at this time. Development of the resignalling of the Crewe area will take place during CP4. The new signalling will fringe onto Chester and the opportunity will be taken to carry out linespeed improvements on the Crewe to 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 linespeed and improve both performance and journey time. Some of this work was carried out in CP3 as part of renewals, but if there is a business case for further enhancements, the full package will be carried out in CP4.

### Stations

#### Proposed new stations

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 the proposed extension of the electrification beyond Bidston. Stakeholders have also suggested (linked to this electrification scheme) a new station on Deeside.

### North Wales coast

There are third party funded station improvement schemes being developed along the North Wales coast. One of which includes improving station facilities at Shotton station.

There are further aspirations to improve facilities at other stations across this route. 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 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.

Within the Wales RUS, the North Wales coast line was identified as requiring general service level improvements. The service changes that took place with the WCML December 2008 timetable has improved the service pattern by introduction of regular through London to Chester fast services, that proceed on to Bangor and Holyhead (provided by Virgin Trains).

### **Chester**

**Gateway scheme** – we have been working with Arriva Trains Wales and Cheshire County Council on a scheme to redevelop Chester station to provide an improved gateway to the city. Improvements have included the adoption of the station forecourt, architectural lighting of station façade, refurbishment of internal brickworks, CIS and roof renewal. At the same time, we are helping facilitate Arriva Trains Wales' aspirations to develop the concourse area including a new ticket barrier, booking office and retail outlets. The Gateway team continues to meet and progress potential work streams at Chester including further refurbishment works to other areas of the station.

**Car park** – the number of car parking spaces at the west side of Chester station is being increased as part of a separate scheme. This is in development GRIP stage 4 with a planned completion date of 2009/10.

### **Interchanges**

**Llandudno Junction** – 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. Improvements are currently being progressed as part of the National Stations Improvement Programme (NSIP). The proposal is to improve the functionality and appearance of the station, in keeping with its surroundings and existing heritage features. This includes enhanced waiting facilities, new passenger toilets, improved customer information and accessibility, and retail provision.

The project is expected to deliver socio-economic benefits to the area as part of a programme of works to improve the local environment.

**Bangor** – The scheme in progress at Bangor station will also provide a transport interchange facility. The stage to improve access and car park facilities was completed in late 2008. This element involved improving disabled access to the station, by providing ramp access to platform 2. The goods yard has been rationalised in order to accommodate space for the new car park facilities. Work continues at Bangor to provide a bus interchange facility on the station forecourt.

### **National Stations Improvement Programme (NSIP)**

The Government is funding £150m during CP4 to support the modernisation of a range of stations. The criteria for a station being selected include footfall and current facilities. The NSIP has been established to ensure that this money is invested in the most effective way by leveraging in third party funding. This programme is being developed within the industry through Local Delivery Groups (LDGs). On this route the stations that have been identified for NSIP funding are Rhyl, Llandudno and Chester. At Chester the Gateway team will align potential enhancements including improvements to passenger facilities, information and security.

### **Integrated station plans**

The Joint Stations Board has developed the Integrated Stations Planning initiative which seeks to improve the planning and delivery of work at stations and to provide greater visibility of investment proposals to all stakeholders in the industry. This cross industry approach will increase the alignment of investment plans and funding streams at stations, improve productivity and develop more efficient ways of working. These principles are supported by train operators, the Office of Rail Regulation, the Department for Transport and ourselves.

### **Depots**

There is a scheme being developed to relocate the Arriva Trains Wales light maintenance depot at Holyhead one mile away from its existing location. This is considering relocating it 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 late CP4, but, ultimately, funding and decisions on timescales will be determined by Anglesey County Council.

***Electrification***

The Welsh local authorities and Merseytravel are continuing to consider the business case for a scheme to electrify some or all of the line between Bidston and Wrexham. The initial costs for DC electrification were very high and feasibility work is continuing to assess possible AC electrification instead.

***Freight***

We are 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 the Port of 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 operating as a result.

Early talks are taking place for a potential new rail freight connection at Capenhurst (near Chester) for DRS and Sellafield Ltd to transport material in drums within the UK and to UK ports.

***Level crossings***

The level crossing at Glan Conwy is being renewed in 2010. Predictor technology is being applied there which will mean a reduction in the down time of the barriers, leading to safety benefits.

***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 would provide opportunities to determine whether there are cases to improve headways at targeted locations.

***Integrated train planning system***

The implementation of Integrated Train Planning System (ITPS) is planned to be phased in during the next two years. The new system allows us to plan at a lower level of granularity, for example it calculates sectional running times to the nearest second. We believe that using a system that has the ability to plan at this level of detail, may unlock additional capacity and modestly improve some journey times.

**Figure 12 Forecast MAA**

	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	85.0%	87.8%	90.3%	90.6%	90.9%
Merseyrail	94.8%	94.9%	95.1%	95.2%	95.2%
Northern Rail	90.1%	90.7%	91.2%	91.7%	91.8%

### Future performance

Figure 12 sets out the forecast MAA for each train operator for CP4.

#### Arriva Trains Wales (ATW)

The performance of the ATW franchise is currently 92.7 percent PPM MAA. The improved PPM is an outcome of Arriva Trains Wales and ourselves 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;
- Improved asset reliability through the use of Maintenance benchmarking and the full installation
- deployment of Remote Condition Monitoring;
- reduction in the impact of trespass, vandalism and fatalities; and
- autumn management.

The 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 ourselves to develop detailed year-by-year plans for delivery of a higher level of sustained performance.

#### Northern Rail

Northern Rail's performance is currently 89.4 percent PPM. 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;
- scope for growth in general and especially for services in the urban conurbations;
- the challenge of improving service delivery during disruption from the available resource base;
- ability to grow revenue across services,
- a complex mix of fleet;
- the challenge of maintaining unit availability with an expanding size of fleet whilst additional depot and stabling facilities will take time to make available;
- getting the right balance between performance, journey time and capacity benefits.

The other operators on this route are Merseyrail and Virgin Trains.

The future performance section for Merseyrail can be found in the plan for Route 21 and Virgin Trains can be found in the plan for Route 18.

### Network availability

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

Should a business justification be proven to electrify some or all of the line between Bidston and Wrexham, the expectation is that the majority of the work would take place in CP5.

The Merseyside RUS examined the business case to provide an additional DC electrified platform at Chester.

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 to 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 and Direct Rail Services. If new nuclear power stations were to be built on this area, this would potentially have a significant impact on freight services on the route.

There is a strong aspiration for a higher gauge capability between Warrington and Ellesmere Port which will accommodate potential new freight growth during CP5.

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.

### Wales RUS

The final version of the Wales RUS was published in November 2008. It concluded that in the longer-term, capacity on the North Wales coast could be increased. It was identified that route capacity exists for services to be increased from the current two to three trains per hour to three or four along the main line from Crewe and Chester to Holyhead, including doubling the current number of freight trains. An increase in capacity was also identified on the Wrexham to Bidston line where further growth could be accommodated by increasing frequencies. Capacity on this line would be looked into at the same time as the previously mentioned electrification scheme and the Halton Curve.

### Merseyside RUS

The Merseyside RUS Draft for Consultation was published in November 2008, with the final version planned for issue in April 2009. Among numerous recommendations was the need to increase connectivity and journey times between North Wales, Chester and the Merseyside area including Liverpool John Lennon Airport. It is proposed to introduce a 15 minute service frequency between Chester and Liverpool (currently 30 minute frequency) and also raise the linespeed between Bache and Hooton from 65mph to 75mph. Further analysis is also being undertaken for potential new services between Chester and Liverpool via the reinstated curve at Halton, south of Runcorn.

## Infrastructure Investment in CP4

**Figure 13** Infrastructure investment in CP4

Implementation date	Project	Project description	Output change	Funding	GRIP stage
2009/10	(A) Chester Station : car park	Expansion of car park on west side of station	Increased car parking spaces	Third party	4
2009/10	(B) Bangor Transport interchange	Provision of a new car park, improved access and a bus interchange on the station forecourt.	Improved station facilities – Forecourt Car park	Third party	6 4
2009/10	(C) Station improvement schemes	Improved station facilities at Shotton	Improved station facilities	Third party	3 & 4
2012 – 14	(D) Holyhead LMD relocation	Relocation of existing depot to allow dual carriageway A55 trunk road improvement.	Relocated depot	Third party	3
2009/10	(E) Access for All schemes	Wrexham General – provision of DDA access including a new lift to platform 4. Prestatyn – improved access at station.	Improved access at station	DfT	4
2009 – 2012	(F) E&P Renewal	Renewal of signalling supply points	E&P Renewal	Network Rail	3
2009/10	(G) Llandudno interchange	New transport interchange facility including new bus stops, car parking, taxi and drop off area.	Improved station facilities	Third party	3
2009/10	(H) Signalling Renewal	Signalling works and track circuit conversions between Bangor and Britannia Bridge	Signalling Renewal	Network Rail	6
2009/10	(I) Buildings Renewal	Repairs to platform 7 train shed cladding and West Pavilion at Chester station	Buildings Renewal	Network Rail	2
2010/11	(J) Structures Renewal : Earthworks	Examination and remedial work to embankment at Worleston between Frodsham and Chester	Earthworks	Network Rail	4
2010/11	(K) Structures Renewal : major structures	Repairs and repainting of Britannia Bridge near Bangor	Structures Renewal	Network Rail	1
2010/11	(L) Blaenau Ffestiniog slate terminal	Proposal for track, signal and earthworks improvements on the Conwy Valley line	Increased capacity	Third party	2

**Figure 13** Infrastructure investment in CP4

Implementation date	Project	Project description	Output change	Funding	GRIP stage
2010/11	(M) Signalling Renewal	Renewal of Glan Conwy Level Crossing	Signalling Renewal	Network Rail	3
2011/12	(N) Buildings Renewal	Rebuild platforms 1 and 2 at Prestatyn	Buildings Renewal	Network Rail	1
2012/13	(O) Buildings Renewal : Depots	Renewal of carriage wash plant (Phase 1) at Holyhead LMD	Buildings Renewal	Network Rail	1
2009 – 2012	(P) NSIP : National Stations Improvement Programme	Station improvement schemes planned at Rhyl, Llandudno and Chester.	Improved customer facilities	Network Rail	1 - 2
2009 – 2014	(Q) Track Renewal Programme	Track renewal works are planned at various locations on the route.	Track Renewal	Network Rail	Various

## NRDF candidate schemes in CP4

**Figure 14** Candidate NRDF schemes in CP4

Implementation date	Project	Project description	Output change	Funding	GRIP stage
2009 – 2014	(R) Wrexham – Bidston	Linespeed Improvements on the Wrexham to Bidston line	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	2
2012 – 2015	(S) Halton Curve	Reinstate bi-directional working	Bi-directional signalling, or restore other track. May include electrification.	Network Rail Discretionary Fund	2
2010 – 2014	(T) North Wales Linespeed improvements (Crewe to Holyhead)	Removal of speed restrictions, and raising maximum linespeed	Journey time reductions, with the objective of achieving a diagram saving for the London – North Wales service	Network Rail Discretionary Fund	1-3
2009 – 2014	(U) Headway across Anglesea	Convert Ty Croes from gate box to block post	Increased capacity	Network Rail Discretionary Fund	–

## Renewals activity

Figure 15 shows the estimated renewals costs and activity volumes.

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

It should be noted that in order to manage the deliverability of our Civils, Signalling & 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 15** Summary of estimated renewals costs and activity volumes

£m (2009/10 prices)	2009/10	2010/11	2011/12	2012/13	2013/14	CP4 total
<b>Renewals</b>						
Track	1	2	1	7	3	15
Signalling	2	1	1	2	4	10
Civils	7	8	5	5	5	30
Operational property	3	3	3	4	3	16
Electrification	0	0	0	0	0	0
Telecoms	0	1	0	0	0	2
Plant and machinery	0	0	0	0	0	1
<b>Total</b>	<b>13</b>	<b>15</b>	<b>11</b>	<b>18</b>	<b>16</b>	<b>74</b>
<b>Renewals volumes</b>						
Track						
Rail (km)	2					
Sleeper (km)	7					
Ballast (km)	6					
S&C (equivalent units)	1					
Signalling						
SEUs (conventional)	0	0	1	0	0	1
SEUs (ERTMS)	0	0	0	0	0	0
Level crossings (no.)	0	0	0	0	1	1

## Appendix

Figure 16 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

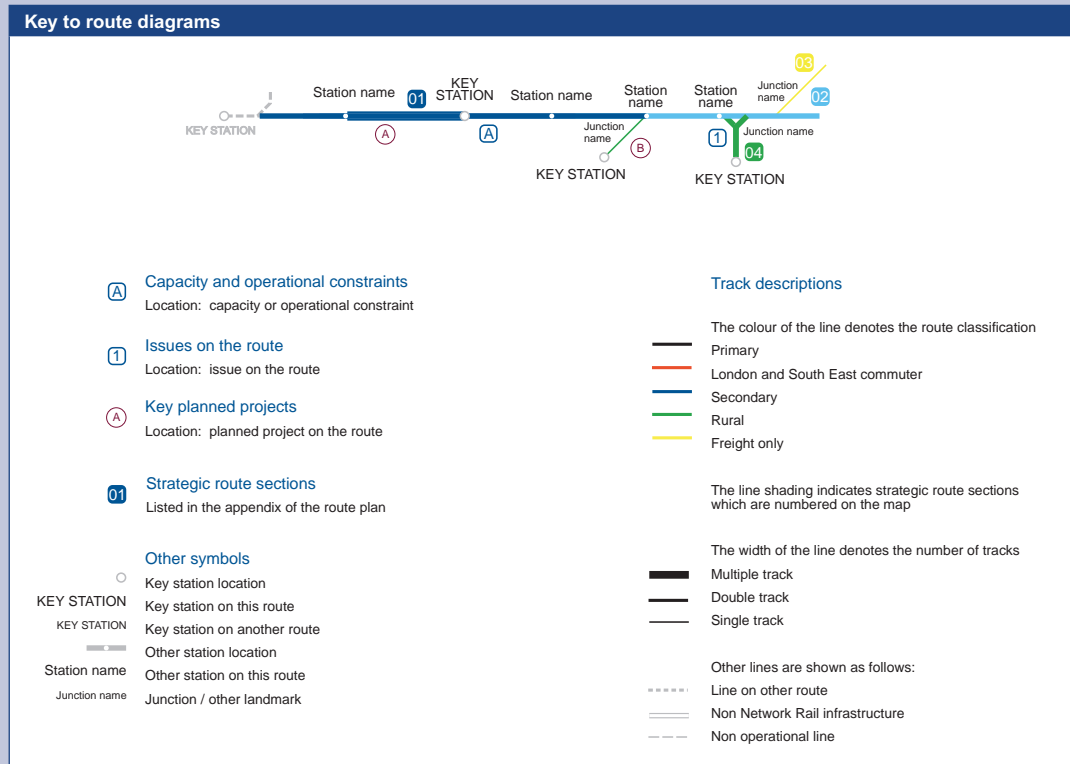
**Other issues on the route**

- 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 Control Period 4 (CP4) Delivery Plan and supersedes the version published in April 2008.

Other documents in the Delivery Plan can be found on the Network Rail website [www.networkrail.co.uk](http://www.networkrail.co.uk)



## GRIP stages

- 1 Output definition
- 2 Pre-feasibility
- 3 Option selection
- 4 Single option selection
- 5 Detailed design
- 6 Construction, test and commission
- 7 Scheme hand back
- 8 Project close out

Cover printed on box board which is both FSC and TCF. Text pages printed on Greencoat Velvet which is produced from pulp containing 80% recycled fibre. The remaining 20% virgin pulp is 10% totally chlorine free and 10% elemental chlorine free. Greencoat has been awarded both the National Association of Paper Merchants and the Eugropa recycled marks, two of the most prestigious and recognisable recycled certificates available.

**This Route Plan is part of a set.  
To view or download the others  
visit [www.networkrail.co.uk](http://www.networkrail.co.uk)**

Network Rail  
Kings Place  
90 York Way  
London N1 9AG  
Tel: 020 3356 9595