



NORTH WALES RAIL STRATEGY

NORTH WALES REGIONAL TRANSPORT PLAN 2010 – 2015

APPENDIX 5

Taith

Anglesey, Conwy, Denbighshire, Flintshire, Gwynedd and Wrexham Councils working in Partnership

August 2009

North Wales Rail Strategy Study
Strategy Document

Taith Consortium
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North Wales Rail Strategy – Strategy Document

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1 Introduction

1 Introduction

1.1

Study Context and Objectives

The Taith Consortium represents the six North Wales local authorities in respect of strategic transport development in the region. Taith is currently developing the North Wales Regional Transport Plan (RTP), as required by the Welsh Assembly Government (WAG), taking forward at a regional level the policies contained in the Wales Transport Strategy (“One Wales: Connecting the Nation”). The RTP programme commences from April 2010 and therefore Taith is now formulating its strategy across a number of key transport strands, of which an emerging rail strategy for North Wales will form an integral part.

Faber Maunsell, with Elan PTC, was therefore engaged to assist Taith in developing a rail strategy, with the intention being that this work would feed directly into the emerging RTP.

In assessing the political and industry context for this work it became apparent that there are a number of different sources potentially providing guidance as to the direction of future rail services, both passenger and freight, in North Wales. These ranged from the National political context (One Wales: Connecting the Nation, Wales Rail Planning Assessment), through the industry strategies (Wales RUS, Network Rail Strategic Business Plan) to the regional and local political aspirations. These needed to be brought together through this study to be reflected in a common document for Taith, which essentially then feeds into the developing RTP moving forward. However, it shouldn't simply be a regurgitation of, or be restricted by, what is contained in the RUS or Network Rail Strategic Business Plan. It needed to address local political aspirations and balance this with the broader rail industry short and medium term planning, all within the policy context set by 'One Wales: Connecting the Nation' and the national implementation strategy that will be set out in the associated Wales National Transport Plan.

On this basis, the Brief for the study set out by Taith listed a number of key study requirements to be addressed by the study. These are set out in Figure 1.

In order to do this the Brief asked that consultants:

- Clearly identify the benefits to the region and assess which are worth pursuing;
- Utilise feasibility work that has already been carried out;
- Liaise closely with the rail industry stakeholders (Network Rail, TOCs and FOCs); and
- Produce a costed 15 year programme to implement the RTP strategy.

Figure 1: Core Study Requirements

- 1/ Developing schemes to upgrade the existing rail network;
- 2/ Appraising the potential for new stations;
- 3/ Developing the North Wales Rail Freight Strategy;
- 4/ Assessing how non-car access could be improved to principal stations (12 stations have been identified by Taith) and developing the principal of 'Station Travel Plans';
- 5/ Identify locations where station car parking needs to be expanded.

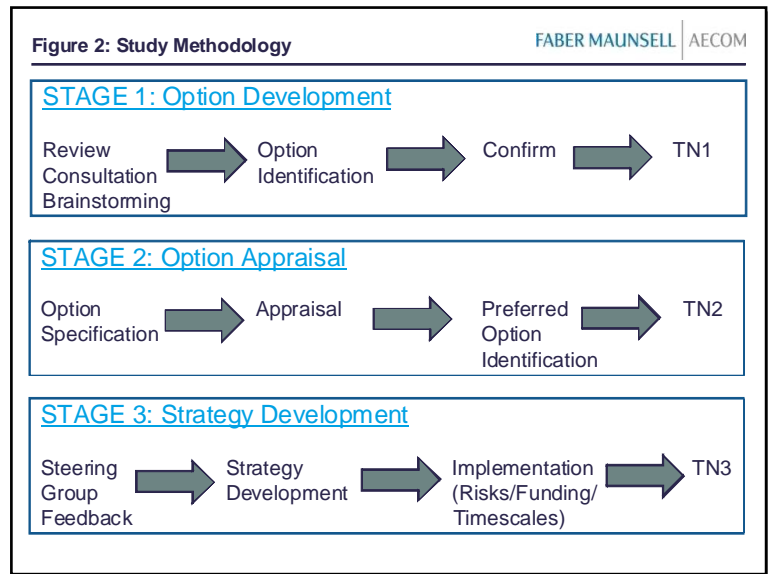
1.2

Outline Study Methodology

To address these requirements a methodology was developed that brought together the right blend of consultant expertise and tapped into the experience and knowledge of local, regional and industry stakeholders. This methodology is illustrated in Figure 2, and can essentially be split into three stages:

- Stage 1: Option Development;
- Stage 2: Option Appraisal; and
- Stage 3: Strategy Development.

The option development stage was documented in Technical Note 1 and presented to the Steering Group just before Christmas 2008. Under the five core areas of work identified by Taith in the Brief, a long list of potential options to improve the overall rail product in North Wales were identified. These options were developed following an intensive review and consultation exercise. An initial option sifting exercise, based on WelTAG principles, was undertaken to define the set of options to be taken forward to the second stage of the study, option appraisal. These were confirmed with the Taith Steering Group prior to commencement of Stage Two of the study.



In Stage Two of the study the key tasks included:

- To further develop the options identified from Stage One;
- To identify the core benefits and costs associated with each of the options;
- To apply industry-recognised appraisal techniques in order to assess each option on a consistent basis; and
- To provide key analysis that will inform the subsequent rail strategy formulation (Stage Three).

The focus for Stage Two was essentially on the appraisal of the options. However, given the varied nature of the options across the five broad categories, a number of different approaches to the derivation of benefits and costs were required. Our adopted approach in each case was defined by the nature of the rail enhancement proposals, available industry-recognised tools and the study timescales. Wherever possible, and given the timescales available to us, we made use of existing forecasting and appraisal tools.

Stage Two of the Study culminated with the production of Technical Note 2.

The key aim for Stage Three of the study was to develop a rail strategy for input to the overall emerging North Wales Regional Transport Plan. The focus was therefore on 'packaging' the various options that produced acceptable appraisal results into a viable strategy, and then developing an outline implementation programme for the 15-year period to be considered by Taith. The process and strategy recommendations were presented in Technical Note 3.

1.3

Contents of this Strategy Document

The purpose of this Strategy Document is to summarise the findings and recommendations that have emerged from the large body of work that has been undertaken in this study. Comprehensive Technical Notes have been produced at the conclusion of each of the key stages of the study and these contain the detailed information, data and audit trail that underpins the study outputs.

Following this Introduction, Chapters 2 to 5 set out the strategy recommendations under the five core areas (Figure 1). The close linkages between the new station proposals and the rail passenger service enhancements led to these being merged into the one strategy going forward (Chapter 2). Chapter 3 presents the North Wales rail freight strategy recommendations. Non-car station access improvements are outlined in Chapter 4 and station car park expansion recommendations in Chapter 5.

The rail strategy implementation is discussed in Chapter 6.

2 Rail Passenger Service Enhancements & New Stations

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2.1

Option Development

A long list of potential new/enhanced rail services and new stations was generated in Stage 1 of the study. This followed extensive stakeholder consultation and data/document review, coupled with the Consultant's own brainstorming exercise. Consultees included:

- Arriva Trains Wales;
- Network Rail;
- Wrexham & Shropshire;
- Passenger Focus;
- Taith Local Authority officers; and
- Taith Board (local politicians and Directors).

Virgin Trains was also contacted but, due to workload associated with the introduction of the December 2008 timetable, were unable to respond.

The generation of potential service enhancements was based on the feedback, stated aspirations and analysis undertaken in Stage 1. Some of the specific feedback/aspirations obtained included:

- Direct trains between North Wales and Manchester Airport;
- Faster trains between North Wales and Manchester;
- Potential use of the Halton Curve to link North Wales to Liverpool South Parkway (Airport);
- That direct trains between Wrexham and Liverpool should be via the Borderlands line (and therefore not via the Halton Curve);
- Frequency improvements on the Borderlands Line and better connectivity at Shotton;
- Faster line speeds to generate quicker north/south (Wales) journey times (we were advised that Network Rail are currently investigating this for WAG – reporting in summer 2009);
- Improved 'cross-Chester' services towards Crewe; and
- Assume re-doubling of the line between Wrexham and Chester (Saltney Junction) – a commitment to funding this scheme has been made by WAG.

We were advised by the Taith Steering Group that electrification of the North Wales Coast Line was not to be considered in this study. Equally, any potential new build (eg: Bangor-Caernarfon) was also deemed beyond the remit of this study. However, any service enhancement proposals that could potentially facilitate line re-openings were flagged as appropriate.

Over 35 separate rail service enhancement options were identified for appraisal. In addition a long list of 10 potential new stations was generated (Figure 3).

2.2

Option Appraisal

All the proposed options were appraised on an individual basis and their timetables had to be worked up and specified to an appropriate level so that a/ they could be tested using MOIRA and b/ associated operating costs could be determined. For the purposes of option appraisal a number of broad planning assumptions had to be made with regard to line speeds, capacity outside the study area, etc (these are all listed in Technical Note 2).

The baseline against which all the options were tested was the December 2008 timetable.

Standard rail industry modelling tools (MOIRA and the Passenger Demand Forecasting Handbook) were used to determine the demand and revenue impacts of the proposed service

Figure 3: New Stations (Long List)

Anglesey Airport
 Towyn and Kinmel Bay
 Rhyl and Prestatyn Parkway
 Greenfield (Holywell Jct)
 Queensferry
 Deeside Park
 Broughton Airbus
 Saltney
 Rossett

enhancements and the new station demand. Adjustments were made to reflect local catchments that incorporated a high proportion of seasonal population. Separate employment-based trip rates were applied at stations serving local employment zones.

Capital and operating costs were generated for each option based on previous studies/data or through the consultant's own extensive database of costs.

The costs and benefits were brought together through an economic appraisal ("RailTAG") to generate a Net Present Value (NPV) and a Benefit:Cost Ratio (BCR). This allowed all options to be considered on an equal basis.

A summary of the key findings from the appraisal of the individual options is presented in Figure 4. Technical Note 2 sets out in greater detail the results for each of the options appraised. From this appraisal it was possible to identify a number of preferred options that could be taken forward to the strategy development stage.

Figure 4: Appraisal Conclusions

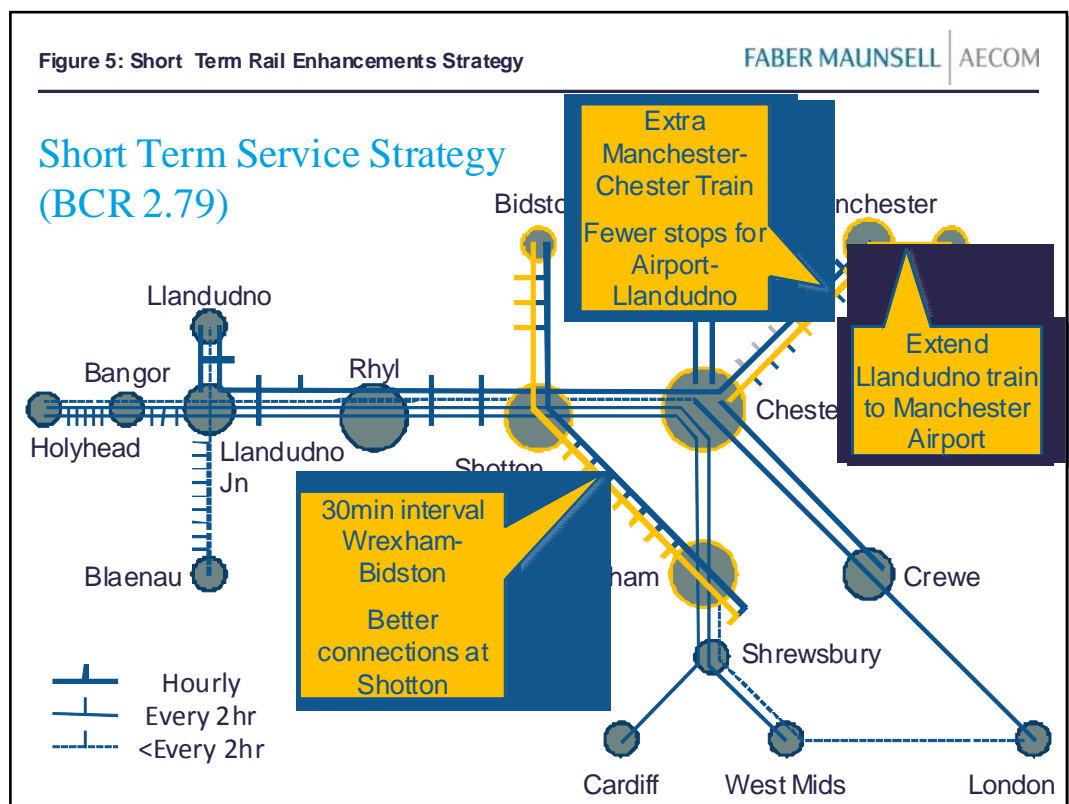
- An additional 'fast' North Wales Coast Line (NWCL) service (in the path when the London train doesn't operate) to/from Holyhead is economically viable;
- A new half-hourly local service between Rhyl and Chester/Crewe is viable and is the only viable way to serve new stations at Greenfield and Queensferry;
- The extension of the Llandudno-Manchester service to Manchester Airport is a 'quick win' which generates an extremely good BCR. This is currently being actively pursued by Arrive Trains Wales;
- The Llandudno-Manchester can be speeded up by dropping the local calls between Chester and Oxford Road (except Warrington Bank Quay). A new hourly stopping service between Chester and Manchester picks up these local calls and doubles the service frequency between Chester and Manchester.
- The re-doubling of the Wrexham-Saltney Jct line allows either a Wrexham-Chester shuttle service or a Wrexham-Manchester Airport service to be introduced. Both options record excellent BCRs (assuming re-doubling is already funded).
- The Halton Curve service options did not generate positive BCRs – although this can be partially explained by modelling constraints in this particular case. The recommendation is that further more relevant demand forecasting is undertaken to assess this proposed infrastructure enhancement.
- Line speed improvements on the NWCL are currently being investigated by Network Rail. Our initial analysis suggests that a positive business case for investment should be achievable and that line speed improvements should therefore be pursued.
- All proposals accommodate for one freight train path per hour along the NWCL.
- The parallel Borderlands Line Study has demonstrated that increasing the current service frequency to half-hourly generates a positive economic business case. It is only worthwhile calling all NWCL services at Shotton once the Borderlands service is half-hourly.
- The economic business case for the extension of the Borderlands service into Liverpool could be improved if dual power vehicles are considered. Short term extension into Birkenhead North should be investigated.
- The introduction of a new shuttle service between Llandudno Jct and Bangor produces a positive business case, mainly because it facilitates the speeding up of the Holyhead services.
- New stations at Queensferry, Greenfield, Towyn and Kinmel Bay, Johnstown, Rossett and Deeside Park produce a positive economic business case.

2.3

Strategy Development

In conjunction with the Taith Steering Group and Elan ptc (who are leading the wider development of the Regional Transport Plan), a strategy for introducing rail service enhancements was developed on a short (0 to 2 years), medium (3 to 10 years) and long term (11 to 15 years) basis. In packaging the various preferred options into the strategy, account was taken of the synergies and potential conflicts that arose once the options were being considered in combination.

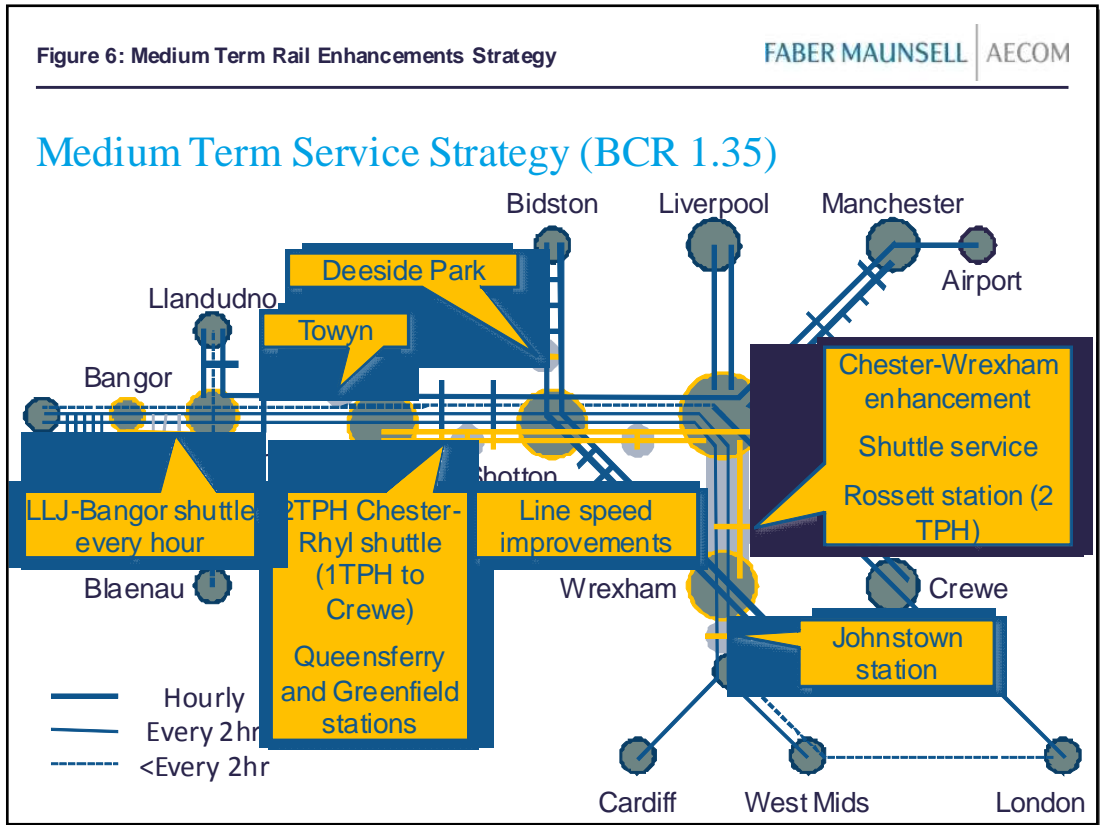
Figure 5 sets out the proposed short term package. This generates an overall BCR of 2.79 which reflects the key gains of accessing Manchester Airport, faster North Wales-Manchester services and improved service frequencies on the Borderlands Line (and possible extension to Birkenhead North subject to further assessment). The key risks associated with this strategy relate to potential capacity issues in the Manchester area and the availability of rolling stock in the short term (an additional 6 units would be required – refer to Figure 8). The ongoing ‘Manchester Hub’ study, now being led by Network Rail, is looking at issues of this type and therefore Taith aspirations should be fed into this study accordingly.



The medium term package essentially comprises schemes whose BCRs suggest they are worthwhile to implement immediately but this is not possible because they require infrastructure changes. Figure 6 sets out the proposed medium term package that produces an overall BCR of 1.35. The lower BCR reflects the additional capital and operating costs now being introduced, as well as the dilution of individual scheme benefits as they are packaged together (the whole is less than the sum of the parts). The risks in the medium term surround the provision of the additional infrastructure (refer to Figure 8), particularly in relation to the Wrexham-Saltney Jct redoubling (although funding has been secured from WAG’s Strategic Capital Investment Fund for this scheme).

An additional 6 units would be required (over and above the short term package) but in the medium term the rolling stock availability risk is likely to reduce. The emerging electrification strategy and programme should by then be clearer, increasing the willingness of leasing companies to buy new diesels and also possibly facilitating a cascade of diesel units.

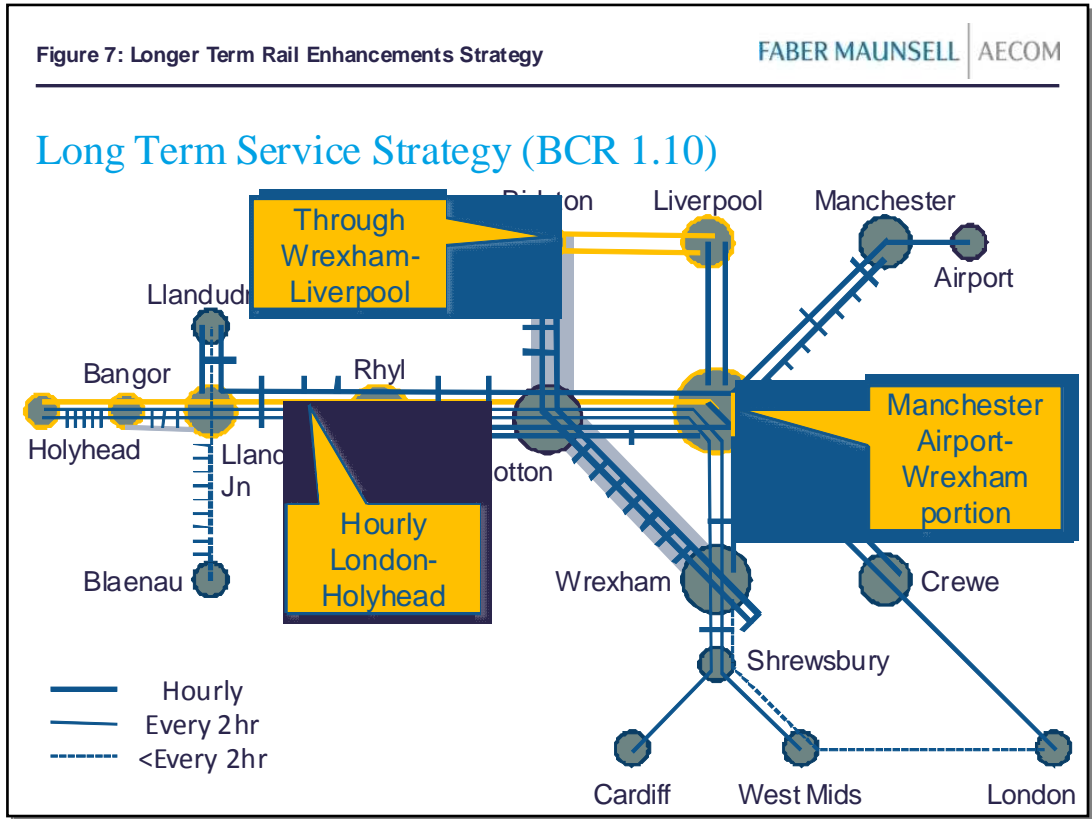
A further risk in the medium term surrounds the potential line speed improvements and how they might manifest themselves across the Welsh rail network. Our preferred strategy would be to fix the timetable at Chester, the justification for this being the relative importance of connections at Chester (compared to at Birmingham, Cardiff or Manchester) in all directions (eg: towards Manchester off the Holyhead services / towards Liverpool off North Wales services / towards London off North Wales services / etc).



The long term package consists of options which are not justifiable on a shorter timescale, but which may become feasible and appropriate based on credible assumptions of passenger demand growth and technological development in the rail industry. Any rail re-openings in the Taith area, though outside the scope of this study, may also contribute towards the definition of the long term package. By definition the long term package is subject to significant uncertainty, and it is recommended that the package is reviewed and developed during the lifetime of the strategy as emerging demand, revenue, technological and operational trends become more evident. The long-term package is presented in Figure 7.

The Wrexham-Chester shuttle is replaced by a Wrexham-Manchester Airport service that splits/joins with the existing Llandudno-Manchester Airport service at Chester. This therefore ensures that additional capacity is provided in the longer term where it is needed between Chester and Manchester. The extended London-Holyhead service would replace the Llandudno Jct-Bangor service that was introduced in the medium term package.

The latest information suggests that third-rail electrification of Borderlands is too expensive. Alternatives for a through service to Liverpool, under investigation by others, include overhead line electrification with dual-voltage rolling stock, or tram-trains or other vehicles able to take power either from the third rail or from an on-board diesel engine. The strategic work undertaken in this study suggests that the benefits of the through service would justify a certain amount of investment, but until the costs of the new options are known it is not possible to quantify and confirm their cost-effectiveness. The approach taken to replacement of the Merseyrail rolling stock will also affect the choice of solution for Borderlands.



The other risks in the longer term relate to the availability of suitable rolling stock for the new services. By this time it is likely that new rolling stock will need to be considered and it is recommended that Taith move with WAG to ensure that appropriate rolling stock is procured for services in Wales (shorter units (ie; 2 car) with gangways, 100 mph top speed and reliable couplings). With regard to the extended London-Holyhead service, the rolling stock required to operate this service will need to be capable of tilting and operate at 125 mph. The availability of such rolling stock, even in the longer term, must be seen as a major risk issue.

Figure 8: Rail Passenger Service Enhancement Package Summary

Package	Infrastructure Requirements	Rolling Stock Requirements
Short Term	none	+6 units (+3 Northern & +3 Wales)
Medium Term	Capacity enhancement between Wrexham and Saltney Junction Improved turnback facilities at Wrexham for trains from Chester Re-instatement of east-facing bay platform at Rhyl Line speed improvements New stations	+6 units (+6 Wales)*
Long Term	Borderlands Line electrification?	+8 units (+3 West Coast & +5 Wales)**

* incremental to short term package

** incremental to medium term package

3 Rail Freight Strategy

3 Rail Freight Strategy

3.1 Introduction

A key part of this Study was to develop and update the North Wales rail freight strategy. This involved considerable stakeholder consultation and data/policy review, which led to various rail freight schemes being developed. The appraisal stage of the process identified those schemes worthy of inclusion towards a rail freight strategy for the North Wales region. Technical Notes 1, 2 and 3 set out the details regarding how the options were developed, appraised and packaged into an overall series of strategy recommendations.

3.2 Stakeholder Consultation

The first stage of the consultation involved a comprehensive review of literature currently available, including:

- One Wales: The Wales Rail Freight Strategy;
- the Wales Route Utilisation Strategy produced by Network Rail; and
- UK to Ireland Ferry Market - The Survey of U.K.

This allowed us to put any strategy ideas into the wider national planning and policy framework as well as tailor them, where appropriate, to current market positions. It also prevented duplication of ideas and being able to address specific issues with consultees not already dealt with in previous literature.

Potential stakeholders were identified from a combination of industry knowledge and databases. Around 50 hauliers and freight companies, such as C.S. Allen and Norfolkline, were contacted and asked a variety of questions regarding their operation in terms of frequency of travel, origins and destinations of trips, types of commodities carried and future plans. More detailed interviews were conducted with larger operators and stakeholders who were thought to have an interest in rail freight in Wales (including some of whom already operate rail freight in Wales). These are listed in Figure 9.

This extensive consultation/document review led to the formulation of 13 initial ideas for rail freight schemes.

3.3 Option Development

An initial sifting exercise was undertaken whereby the 13 schemes were put through an evaluation framework based on WelTAG criteria (Economy, Society, Environmental, Other Criteria), with each option given a score from +3 (highly beneficial) to -3 (highly adverse) against the defined criteria. The sum was then added up to produce the overall result, allowing a high level qualitative appraisal of the schemes. Figure 10 presents the results of this initial scheme appraisal.

On the basis of this appraisal the Bangor freight interchange was ruled out at this stage due mainly to there being direct conflicts with Gwynedd Council's plans to put a new priority car park on the site. In addition it was felt that the freight terminal would encourage additional lorry movements through the centre of Bangor and it was considered that alternative options for the movement of slate waste by rail via Blaenau Ffestiniog were preferable. Gauge enhancement was also not taken further as it was considered that it was a potentially large cost scheme where the advance in wagon technology would mean that there is a considerable risk that the investment would not be utilised. The Shotton Chord line scheme initially scored poorly, but subsequent changes in rail freight customer requirements in the area (Corus) resulted in this scheme being taken forward with the Deeside Park load consolidation centre scheme.

Figure 9: Stakeholder Consultees

- EWS (DB Schenker)
- Freightliner
- Colas Rail
- Malcolm Group
- Stobart Rail
- Network Rail Freight Manager
- RFG
- Corus Steel (Shotton Works)
- Port of Mostyn
- Stena Line
- Irish Ferries

Figure 10: Freight Option Initial Assessment

Rail Freight Scheme	Appraisal Score	Comment
F1: New 'Land-Bridge' service between Northern Europe, Daventry and Holyhead	8	Potential to carry both international and domestic traffic
F2: Holyhead freight terminal	4	Site location issues
F3: Freight on Conwy Valley line	3	Proposed slate-waste movements by rail, plus other possibilities
F4: Shotton Chord	-2	At time of appraisal, potential key rail user would not use chord
F5: Load consolidation centre at Deeside Park	4	Existing infrastructure opportunity and good local/sub-regional market
F6: Re-development of railhead facilities at Mostyn	3	Potential rail terminal to serve local industry (windfarm) / existing infrastructure opportunity
F7: Re-use of Mostyn Dock Ro-Ro Terminal	2	Recently lost last remaining rail traffic
F8: Re-use of mothballed freight terminal at Llandudno Junction	4	Existing infrastructure opportunity and good location to serve North Wales markets
F9: Bangor freight interchange	-1	Linked to specific slate waste traffic / Conflicts with car park expansion plans
F10: Load consolidation centre at Wrexham	1	New facility and infrastructure requirements
F11: Gauge enhancement	0	Potentially large cost and advance in wagon technology means risk of not being utilised
F12: Domestic waste removal by rail	2	Linked to sustainable treatment of waste and proposed incinerator for Region
F13: Rail freight awareness campaign/promotion	7	Evidence from stakeholder consultations suggested poor awareness of opportunities/possibilities

3.4

Option Specification, Appraisal and Strategy Development

The remaining 10 schemes were taken forward to the appraisal stage of the study, where they were specified in greater detail so that a full economic appraisal could be undertaken. The appraisal incorporated the calculation of Sensitive Lorry Miles (SLMs) using the DfT calculator (which measures the impacts of the removal of lorry kilometres in terms of congestion, environmental impacts, safety benefits, etc) , as well as an estimation of likely operating revenues/costs and capital costs.

The specification of the schemes was derived from market data and stakeholder interviews and considered:

- The potential demand for each idea / type of freight;
- Cost / implementation;
- Type of train; and
- Operation.

To help inform the operational feasibility and demand potential, as two of the key schemes are focussed on Holyhead, a survey was undertaken in and around the port of vehicular freight traffic, analysing traffic levels, origins and destinations, commodity carried and vehicle types. This provided invaluable data to feed into the appraisal of the schemes, in particular F1 and F2.

The strategy formulation exercise sought to 'package' the schemes based on defined criteria. A number of different strategies were identified and assessed, including:

- Low cost strategy;
- Quick win strategy;
- Environmental strategy; and
- Optimum (BCR) strategy.

These potential strategies were reviewed, alongside their ease of implementation, potential synergies between schemes and how they fitted with national freight policy. This exercise ultimately informed our decision as to which schemes would be taken forward to form a coherent rail freight strategy, the 'preferred scheme package'.

In the course of defining the preferred scheme package a couple of further schemes were dropped. The redevelopment of the Ro-Ro facility at Mostyn Docks (Option F7) was considered to be not as operationally efficient as using Holyhead and significantly is reliant on ferry operations being reintroduced, coupled with sustainable dredging. The proposed load consolidation centre at Wrexham was considered to be too close to the preferred site for such a centre in North East Wales at Deeside Park. The scheme was also dependant on the location of a suitable site that could be rail connected.

3.5

The Preferred Scheme Package

Each of the schemes that make up the preferred scheme package is outlined below.

Option F1/F2: 'Landbridge' Rail Freight Service from Mainland Europe to Ireland through a Holyhead Freight Terminal (BCR 1.3 to 1.7 (depending on freight terminal location))

The concept of a Landbridge involves replacing road journeys operating between South or East Coast Ports and Holyhead, with an intermodal rail freight train (consisting mainly of curtainside swap bodies). The option definition and appraisal work has identified that a service between Northern Europe and Holyhead, calling at Daventry for Midlands based freight, could be viable and has demonstrable interest from within the freight community. It would be the first of its type in the UK and could gain an additional market advantage for the short ferry crossing to Dublin. It also allows local traffic for Anglesey to arrive by rail assuming a "fit for purpose" freight terminal is built.

- Swap bodies on flat wagons similar to Anglo-Scottish Tesco/Stobart trains (Figure 11 opposite);
- Through rail service from France to Holyhead for Ireland calling at Daventry for Midlands traffic;
- Quicker than Coastal feeder;
- 87% of Holyhead traffic is regular;
- Just 5% modal shift would be commercial;
- Encourage rail freight to/through Holyhead;
- Rail can be a cheaper and greener alternative;



Figure 11: Swap Body Rail Vehicle

- Market advantage - encourage Irish/Continental traffic; and
- Best operationally and financially for terminal to be on port land. A number of potential sites for the freight terminal have been identified, taking into consideration the A55 Holyhead Scheme currently being developed. It is recommended that a freight forum consisting of relevant stakeholders is established to identify a suitable site and push this scheme forward.

Option F3: Freight Terminal at Blaenau Ffestiniog on the Conwy Valley line (BCR 1.4)

This option builds on a plan that has been in discussion for ten years to make more use of the Conwy Valley Line to bring slate waste out of the Blaenau Ffestiniog area by rail. This option has been selected as there are significant environmental benefits (in terms of removed Sensitive Lorry Miles) compared to the slate waste moving by road. There are some synergies in that if a freight terminal opens at Blaenau Ffestiniog and is done on an “open access” basis, as suggested by the EU, then other companies in the area may be able to make use of the facility. Services would be demand dependent, but apart from slate waste there could possibly be tonnage to/from Rehau plastics, steel for pre-fabs, timber at Llanrwst, and nuclear waste. If this plan is extended to cater for forest products it may be used as a source of commodity for the Chirk Mill that already accepts logs by rail albeit from Scotland. Also if flows of slate waste are started from the Conwy Valley line one possible destination is to Mostyn for scheme F6 (should it be reopened). It should be noted that the BCR assumes the line has been upgraded for freight.

Option F5: Load Consolidation Centre at Deeside, Shotton (BCR 1.9)

The concept of having a consolidation centre is to have a location that is reasonably accessible to allow several companies to bring goods to an “open access” facility, whose operator will aggregate the various disparate tonnages into effective train load sizes. There are existing rail services that run to/from Shotton on behalf of Corus and UPM Paper Milling and possibly extra traffic could be combined with these. During the study it became clear that Corus have tonnage to several destinations that currently goes by road that could be converted to rail if there was a viable service and a suitable terminal. A site at Shotton has a number of advantages being located in an area with many heavy industries and linked to serve North East Wales, Cheshire, the Wirral and potentially parts of Merseyside. There are some synergies in that Shotton may be one of the possible sites for a waste incineration plant, thus potentially requiring rail access. The Shotton curve (allowing movements between the Bidston and Chester directions), although discounted earlier in the study, may provide a more direct, higher gauge (W8) route to this industrial site and may offer better prospects for this scheme in the longer term.

F6 Redevelopment of the Rail Terminal at Mostyn (BCR 1.7)

The freight sidings at Mostyn that were taken out of use when the steel traffic to Ireland was transferred to Liverpool in 2008 are most likely to be reactivated if a flow of aggregate and/or cement is attracted to the site. It was established during the study that there will be a need for significant volumes of some form of aggregate to act as base material for the major wind farm developments that will be taking place over the next five years from the site on Mostyn Docks. This could be supplied by the quarries in Blaenau Ffestiniog, providing a linkage into option F3 (removal of slate waste by rail). Additionally waste from Flintshire could be loaded from these sidings in support of Option F12.

Option F8: Reactivation of the Mothballed Freight Terminal at Llandudno (BCR: 1.7)

The facility at Llandudno Junction is owned by freight train operator DB Schenker (formerly EWS) and they are keen to identify new freight traffic for rail. It is considered that one of the best opportunities for new rail freight traffic for Llandudno Junction, reflecting what already happens in Scotland (as illustrated in Figure 12), is as a base for handling intermodal boxes for supermarkets across North Wales, taking advantage of the strategic location of Llandudno Junction in North Wales and the close proximity of the A55 to the site. It is a low cost option as sidings and connection are already in place.



Figure 12: Supermarket Train

There are some synergies with other options in that the site could be used to load waste from Conwy and the surrounding area, providing a link with Option F12 (Waste by Rail option). There may be synergies with the site acting as a stabling site for trains operating on the Conwy Valley Line (Option F3 Slate Waste from Blaenau).

Option F12: Waste by Rail for Disposal at Central Processing Facility (BCR 0.6 to 0.8)

This proposal concerns the movement of domestic waste from strategic sites within North Wales to a central processing facility (incinerator?). For this idea to be progressed further, it needs some support from the waste departments in the TAITH Councils. As a transport option on its own right it does not have a particularly good BCR, but there is a wider sustainability aspect to this option. All Local Authorities have a commitment to finding alternatives to disposal of domestic waste by landfill and the movement of waste should be sustainable where possible. This option would contribute to fulfilling this objective.



Figure 13: ACTS Rail Waste Wagons

There are a number of examples across the UK of domestic waste being moved by rail. However, the scheme being proposed in this case is based on a Swiss system (Figure 13). Initial indications of potential tonnages across North Wales indicates a good match to the capacity of the system based on a train operating three times a week serving each Local Authority.

Option F13: Comprehensive Supply of Information

This option is about encouraging more movement of freight by rail within North Wales. Once a strategy has been agreed a comprehensive list of rail freight services/terminals can be made. This would include contact details for train operators and the location of terminals and an idea of the types of commodity that can be transported by train. It is often difficult for potential rail freight customers to establish information on key contacts. It is suggested that this initiative is carried out in conjunction with the Rail Freight Group. In theory it is possible to implement this proposal immediately. However, it would make more sense to delay any 'promotional campaign' until the chosen proposals are implemented. Then a positive leaflet in support of rail freight in the region could be designed to raise awareness.

4 Non-Car Station Access Improvements

4 Non-Car Station Access Improvements

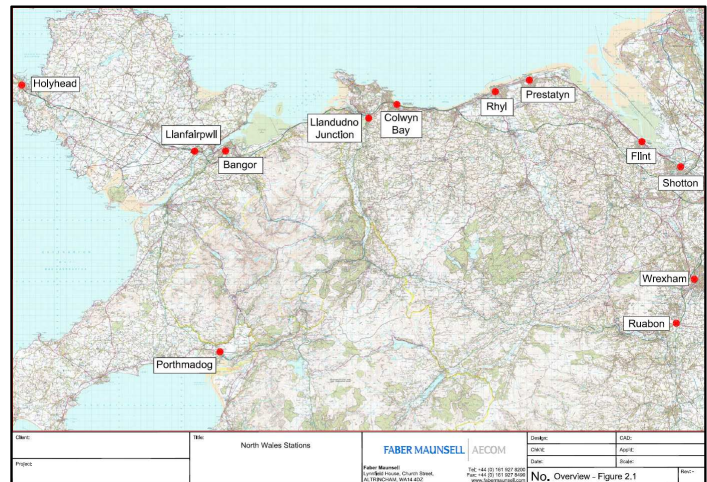
4.1

Strategy Objectives

The key objective for this part of the rail strategy development was to “assess how non-car station access (cycle, pedestrian, public transport) can be improved at principal stations, developing the principal of Station Travel Plans (STPs), including connecting stations to the cycle network”. Twelve stations were nominated by the Study Steering Group for assessment and these are presented in Figure 14. The aim of the work was to identify improvements to cycling, pedestrian and public transport access to/from the nominated stations that could form the basis for inclusion in STPs.

Figure 14: Twelve Principal Stations

To this extent, the assessment was supported by some parallel work undertaken for Flintshire County Council to develop a pilot STP for Shotton station. Shotton station is part of an ATOC-led STP pilot scheme and through this separate study it was possible to develop an appreciation of the likely requirements for the development of STPs.



4.2

Option Development

Non-car station access improvements were identified through a series of consultations, station audits and a document review exercise. Key stakeholders including Arriva Trains Wales, Taith's Walking and Cycling Group and Sustrans were consulted to identify the current issues at the twelve stations and to find out what the potential solutions might be. These were backed up by audits carried out at each station that extended beyond the station footprint to encompass the wider catchment area.

It became apparent that in a number of cases relevant schemes were already being developed/implemented, including:

- Ongoing study (by the Project Centre) looking at better bus/rail integration at Wrexham General;
- Bus/rail interchange proposals at Shotton and Flint being developed by Elan PTC, plus station improvement proposals at Shotton by Network Rail;
- “Access for All” improvements at Prestatyn;
- Rhyll bus/rail interchange facelift ongoing;
- Baylife Initiative scheme at Colwyn Bay; and
- Improved bus/rail interchange facilities at Bangor currently being implemented.

In most cases, the detailed proposals within these schemes addressed many of the identified issues, and where they did not then we identified specific proposals accordingly.

Over 45 separate proposals were initially identified to improve non-car station access across the twelve stations. These were then subject to an initial sifting exercise where they were ranked using standard WeITAG criteria. A short list of options were then taken forward to the option appraisal stage of the study where they were subject to further option refinement (including station catchment definition using ACCESSION) and outline costs were developed.

4.3

Strategy Recommendations

The proposed strategy at each station was presented in a series of appendices in Technical Note 2. These are summarised in Figure 15.

Figure 15: Non-Car Station Access Proposals

Station	Recommendations
Ruabon	Installation of footbridge & lifts Provision of cycle parking facilities
Wrexham General	Bus/rail interchange improvements (short & long term) Town centre shuttle link (Wrexham DRT?) Upgrade & relocate cycle facilities within station
Shotton	New bus/rail interchange Accessibility improvements within station (lifts and public realm) Upgrade & improved location for cycle facilities Improved on-highway cycle facilities & linkages to NCR5
Flint	Improvements to bus access to station Public realm improvements to pedestrian access Upgrade cycle facilities at station Improved on-highway cycle facilities & Linkages to NCR5
Prestatyn	"Access for All" scheme will improve station access Upgraded cycle facilities at station Improved cycle route signage to NCR5 & Dyserth Way
Rhyl	Development of station as a 'cycle hub' New station entrance on south side
Colwyn Bay	'Baylife Initiative' will stimulate improvements Upgraded cycle facilities at station & improved on-highway cycle facilities Diversion of more bus routes via station
Llandudno Junction	Upgrade & relocate cycle facilities within station Improved cycle route signage to NCR5 New station entrance on south side to Retail Park (scheme in development)
Bangor	Bus/rail interchange facility at station being implemented Relocation of cycle facilities within station Improved cyclist crossing facilities outside station (Toucan)
Porthmadog	Small bus/rail interchange facility improvements/formalise Development of station as a 'cycle hub' Improved on-highway cycle facilities & Linkages to NCR8
Llanfairpwll	Provision of cycle parking facilities in secure location Improved cycle route signage to NCR5
Holyhead	Improved cycle storage facilities Pedestrian public realm improvements Increase in local bus services calling at existing bus/rail interchange facility

A number of generic improvements to non-car station access were also developed that could be considered across all rail stations in the Taith region, not just the twelve selected stations for this exercise. These included:

- Developing a marketing and branding strategy to promote non-car station access options under a common theme/brand. This might be best considered as part of a wider 'Taith' branding exercise that encompasses all public transport initiatives in North Wales (a more 'top-down' approach, than 'bottom-up' approach);
- Improved secure cycle parking provision at other stations across North Wales, providing a consistent level of cycle parking facilities at all Taith rail stations; and
- Improving integrated ticketing options between bus and rail. The only multi-modal ticket currently available in North Wales is the 'Taith Rover', which is a day ticket. With the development of Smartcard technology and the use of ticket vending machines at stations it should be possible to introduce new multi-modal ticket products such as season tickets on a regional and/or local basis. Regular travel across all modes using a 'Taith'-branded multi-modal ticket should become an adopted strategy to be pursued as the technology allows.

All the options highlighted in Figure 15 are achievable in the short to medium term. Their implementation would be driven by the priorities of the relevant Local Authority as appropriate.

5 Station Car Parking

5 Station Car Parking

5.1

Overview

Station car park facilities in the Taith area vary considerably. There are free car parks, pay and display car parks (either managed by the local authority or by the Stations Facilities Operator/third party contractor), along with some stations where no formal parking arrangement is in operation either within the station lease area or nearby. The objective of this area of the study was to principally identify those stations where there are station car park capacity problems (either currently or forecast over the next 15 years). Through addressing this issue, it became apparent that at some stations there is also the problem of effective management of the facility (eg: use of free station car parks by non-rail users). On this basis our assessment was expanded to identify and develop potential solutions where this is the case, as well as the identification of locations where some form of formalised parking could encourage rail use (where currently no formalised station parking exists).

There is a clear need to recognise the close linkages between the provision of additional car park capacity and the encouragement of non-car station car access (as outlined in the previous Chapter). Clearly, the expansion of car parks partly contradicts the objectives which seek to reduce car travel. Therefore, any options that encourage station access/egress by car should only be put forward where absolutely necessary, and also in conjunction with improvements to non-car station access where possible. It should also be recognised that the majority of stations in the Taith area are in rural areas so adequate parking facilities are necessary and may replace longer car journeys with a combination of shorter car journeys and rail travel.

The Wales Rail Planning Assessment (2007) identifies car parking as a factor in contributing to the suppression of rail demand, albeit mainly in South Wales, although this may also be the case at some North Wales stations. This document identifies the need for “enhanced station access facilities, car parking and integration of bus services” on the rail network within Taith, in order to increase the both the mode share for rail and also the improvement in access to rail services which will be required in order to serve urban development plans within the region.

5.2

Station Identification

Station car parking was discussed at each of the stakeholder consultation meetings, again to highlight stations where there were currently parking problems, as well as those stations where schemes were being developed. From these discussions it quickly became apparent that Wrexham General, Flint and Bangor were identified as the main stations where the car parks were currently operating at capacity on weekdays.

Further evidence was gathered from a comprehensive site visit of all stations in the Taith region. The station audit exercise ascertained current car park provision, usage and identified potential land availability for expansion should it be required. This assessment then facilitated a demand analysis whereby the current demand was matched to capacity, where growth in rail use (sourced from the Wales RUS) was applied to this demand, and therefore it was possible to identify station locations where the existing car park capacity is/would be insufficient over the next 15 years.

Figure 16 sets out those stations identified for attention, either because the current car park capacity is insufficient, where some form of car park management is required or where some form of formalised car parking is required.

5.3

Strategy Recommendations

The proposed strategy at each of the identified stations is summarised in Figure 17.

Figure 16: Stations Identified for Attention

Bangor
 Buckley
 Caergwrle
 Chirk
 Flint
 Holyhead
 Llandudno
 Prestatyn
 Rhosneigr
 Ruabon
 Wrexham General

Figure 17: Station Car Parking Strategy Recommendations

Station	Issue	Recommendations
Bangor (85 spaces)	Car park is full before 9am	Support current Gwynedd Council proposals for new car park on south side of station (+150 spaces)
Buckley (13 spaces)	Car park is full. Non users (from adjacent businesses) are filling the car park spaces	Promote use of existing local shuttle bus service
Caergwrie (0 spaces)	No car parking facilities	Promote usage of neighbouring station car parks (Cefn-y-Bedd & Pennyfford)
Chirk (15 spaces)	Car park is becoming full	Car park expansion: +10 spaces on adjacent Network Rail land
Flint (55 spaces)	Car park is full. Non users (town centre is nearby) are filling the car park spaces	Introduce pay & display. Rail users provided with free parking ticket from ticket office upon purchase of rail ticket
Holyhead	No dedicated short-stay car park and long-stay car park is off-site	Support current A55 Extension scheme proposals for dedicated rail user car park
Llandudno (0 spaces)	No dedicated car parking for rail users	Support 'National Station Improvement Programme' scheme currently being implemented which will create 134 car park spaces for rail users
Prestatyn (35 spaces)	Car park is full (and will lose some capacity due to 'Access for All' station improvements)	Charging disparity between Town Council and County Council car parks needs to be addressed – introduce pay & display at Town Council car park to spread usage across both car parks. Rail users provided with free parking ticket from ticket office upon purchase of rail ticket
Rhosneigr (0 spaces)	No formalised parking facilities	Creation of 8 formal parking spaces on existing railway land
Ruabon (30 spaces)	Car park is often full	Car park expansion: +12 spaces on adjacent Network Rail land
Wrexham General (68 spaces)	Car park is full before 9am. Space is required for a bus/rail interchange facility	Additional 10 spaces being implemented. Pricing differentials between station and town centre car parks have recently been addressed. Ongoing study (by Project Centre) will develop recommendations for Wrexham General. A new station at Rossett will help to re-distribute demand ('Wrexham North' Park-&-Ride)

Two further strategy considerations were identified:

- Ensuring that information on car parking facilities is accurate and up-to-date; and
- Ensuring that station car park charging policies are consistent with neighbouring town centre car parks to discourage their use by non-rail users.

The estimated capital cost for the identified car park expansion schemes is circa £100,000 (this does not include the costs associated with non-expansion related schemes (eg: Flint, Prestatyn, Buckley) or those schemes already being developed (eg: Bangor, Holyhead, Llandudno)).

6 Strategy Implementation

6 Strategy Implementation

6.1 Introduction

Technical Note 3 set out a proposed implementation plan that brought together the various rail strategy packages. The costs associated with this implementation plan were divided into capital expenditure and revenue related expenditure and presented through the identification of short term (2010 and 2011), medium term (2012 to 2019) and long term (2020 to 2024) schemes. Clearly there will be significant milestones during the course of these timescales that will have a major bearing on the availability of funding, such as the renewal of the Wales rail franchise in 2018 and the availability of new rolling stock to operate the new services.

6.2 Capital Expenditure

Capital costs have been allocated to either the short, medium or long term and this therefore gives some indication of when the likely levels of capital expenditure would be required. Clearly the availability of funding will have a direct bearing on when the expenditure might occur, as well as other issues such as rolling stock availability.

In the short term, the capital expenditure can be broken down into the following categories:

- Service enhancements: £10m;
- Freight schemes: £1m;
- Car park expansion: £0.1m; and
- Non-car station access improvements: £10m.

The assumption is made that all the proposed station car park and non-car station access improvements could be implemented in the short term.

In the medium term, there is a significant increase in the levels of capital expenditure, reflecting the construction of new stations and the redoubling of the line between Wrexham and Saltney Junction. In the case of the latter, it is acknowledged that WAG has secured Strategic Capital Investment funds for this scheme and therefore we have outlined the levels of proposed spend in the medium term with and without this scheme.

- Service enhancements: £25m (or £2m assuming Wrexham-Saltney Junction already funded);
- New stations: £23m; and
- Freight schemes: £33m to £74m (dependant on freight terminal location at Holyhead).

In addition, there could also be circa £30m of capital investment in line speed improvements between Holyhead and Wrexham. It should be noted that this is an indicative figure only, based on a reverse appraisal process (Technical Note 2), that illustrated the level of capital expenditure required to generate a BCR of circa 1.5, on the basis that the work would result in a journey time reduction of 10%. Network Rail is currently evaluating line speed improvements between North and South Wales for WAG and will be reporting during summer 2009. However, our initial analysis has indicated that there is a potential economic case for line speed improvements in North Wales.



In terms of implementation there are certain schemes which are linked and would only commence once other events are completed, such as infrastructure renewals and/or franchise changes. For example, the proposed Crewe/Chester to Rhyl shuttle service requires the installation of a bay platform at Rhyl. This in turn is dependent on the completion of signalling renewals in the Rhyl area, which, according to the Network Rail Business Plan, has been scheduled to take place at some point during Control Period 4 (2009-2014). The new stations at Greenfield and at Queensferry would only be opened once they can be served by the new Rhyl-Chester/Crewe service.

Rossett station could be constructed at the same time as the track re-doubling between Saltney Junction and Wrexham.

There are a number of cases where certain synergies between options that offer benefits should they both be delivered could be obtained. This may in turn provide capital cost savings that have to date been ignored as the schemes have been appraised on an individual basis. For example, the scheme to move domestic waste by rail will require a certain level of infrastructure in terms of loading facilities at strategic locations. Should the proposed freight terminals at Holyhead, Llandudno Junction and Mostyn go ahead, these sites could be used, providing a potential capital cost saving for the domestic waste by rail scheme of circa £3m.

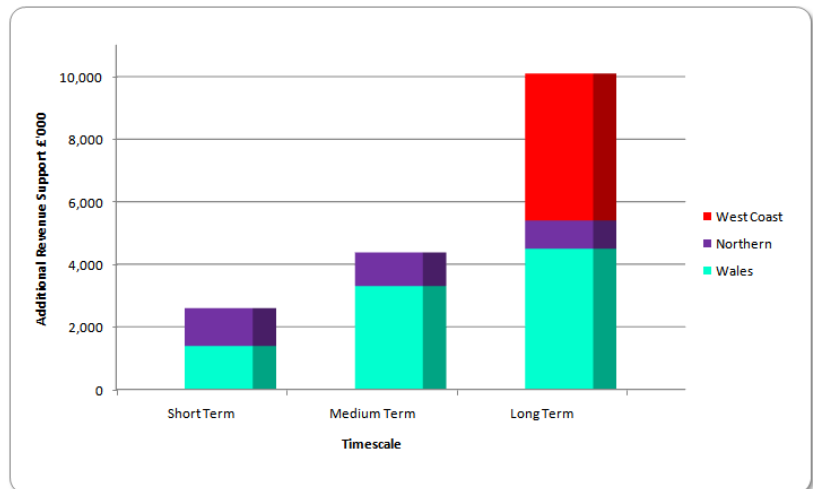
6.3

Ongoing Revenue Support

The requirement for revenue support reflects the difference between operating costs and fare box revenue and our analysis assumed that annual operating costs remain constant whilst fare box revenue grows in line with forecast passenger growth (based on the Wales RUS growth profile). This analysis took a year in the short term (2011), a year in the medium term (2015) and a year in the long term (2022) to estimate the change in revenue support anticipated.

Figure 18 presents an outline estimated breakdown of the additional annual revenue support over the short, medium and long term between potential franchise operators.

Figure 18: Estimated Annual Additional Revenue Support Breakdown



Assumes Borderlands Line service remains with the Wales franchise once extended into Liverpool.
 Does not take into account any potential line speed improvements impact.
 Northern franchise requirement is likely to be a slight underestimation (and Wales franchise a slight overestimation) due to merging of schemes in appraisal.

In 2011, there is a requirement for an additional £2.6m in revenue support to cover for the additional services being implemented in the short term. Not all these services are necessarily Wales franchise services and therefore change mechanisms would need to be invoked across more than one franchise.

By 2015 (and assuming all the medium term service enhancements are in place by then) the additional revenue support has increased to £4.4m per annum. The increase reflects the large number of additional services that have now been introduced such as the Rhyl-Chester/Crewe service. Offsetting this is the contribution being made by the new stations, where the additional revenue being generated by the new stations is greater than the annual operating costs.

Line speed improvements will also have an impact on the potential revenue support requirements. Faster journey times will increase farebox revenue, whilst operating costs should remain unchanged (unless sufficient time is reduced to allow a diagram to be lost, which is unlikely). Therefore, line speed improvements should lead to a reduction in the levels of revenue support required.

During the medium term, the Wales franchise is up for renewal in 2018 and this would provide the opportunity for a re-specification of services to accommodate the strategy recommendations.

Assuming all the longer term rail service enhancement schemes are in place by 2022, the impact on the revenue support requirement is to increase it by circa £10m per annum. As fare box revenues increase in line with anticipated passenger growth, and operating costs are assumed to not change in real terms, then the revenue support for schemes is declining. However, the additional service enhancements, such as Wrexham-Manchester and the extension of all London-Chester services to Holyhead, has increased the overall requirement for revenue support. This requirement would potentially be split across a number of franchises; the Wales franchise, the Northern Franchise and the West Coast Main Line Franchise (London-Holyhead services). It is also possible that once the Borderlands line service is extended into Liverpool then this might be transferred to the Merseyrail Franchise.

Rail freight services are generally operated in a competitive market and with several operators trading in this sector the industry is becoming even more competitive. But there needs to be a reasonable business case for a rail Freight Operating Company to consider running a service. There is not an insignificant risk in establishing a new rail service and this is where in many cases the cooperation between several interested parties can help broker a solution. The pump-priming of a new service by using public sector financial support can benefit the operator who might otherwise be forced to withdraw the service before it is fully market tested. The freight market is relatively inelastic and it can take several years for companies to change their supply chains to incorporate alternative modes of transport. New rail freight services often start with a lower volume than is anticipated in the longer term and hence revenue may not cover costs in the short term. New rail services may have a positive environmental impact and the REPS scheme (Rail Environmental Benefits Purchase Scheme) is designed to help fund operational costs in the short term.