NORTHERN REVIEW

Summary Report

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DISCLAIMER

The objective of the Northern Review was to establish if there are potential opportunities for improving the overall value for money of the franchise. This has involved the preparation of projections of demand, revenues, benefits, resources and costs which represent Steer Davies Gleave's best estimates. While they are not precise forecasts, they do represent, in our view, a reasonable expectation for the future, based on the most credible information available as of the date of this report.

However, the estimates rely on data collected by third parties. This has been independently checked whenever possible. However, Steer Davies Gleave does not guarantee the accuracy of this third party data. They also depend on numerous assumptions and judgements and are influenced by external circumstances that can change quickly and can affect revenues, benefits, resources and costs and income.

Northern Rail's involvement in the Northern Review has been limited to providing data and information, and to being invited to comment on some of the practical and resource constraints of the operational case studies.

As this report contains information that can only be fully understood and interpreted within its full context, nothing should be quoted out of that context or in a manner that is clearly misleading or disingenuous.

1. INTRODUCTION

Background

1.1 In March 2005, the Strategic Rail Authority (SRA) appointed Steer Davies Gleave to undertake a review of the Northern Rail Franchise.

1.2 The context for the review is provided by the terms of the new Northern franchise that started operation in December 2004. The franchisee is Northern Rail. The franchise replacement process was conducted by the SRA with the *explicit* expectation of a review within the first two years to optimise value for money of the franchise.

Purpose and Remit of the Review

1.3 The key purposes of the review were therefore to:

- review the operational, financial and economic performance of the franchise;
- develop appropriate modelling and business case tools for the analysis;
- develop and assess service specifications and other options for improving value for money; and to
- undertake the operational, financial and economic appraisal of options.

1.4 Throughout the Review, Steer Davies Gleave consulted with the key stakeholders (DfT, Northern Rail, Metro, Greater Manchester PTE, South Yorkshire PTE, Merseytravel, Nexus and Network Rail). Various workshops, presentations and meetings were held.

Methodology and Approach

1.5 An extensive strategic review of the Northern franchise was undertaken, including its markets, operations and funding arrangements. This is reported in Chapter 2. The two key issues that have emerged from that analysis are the contribution made by each service group and the range of rolling stock costs.

1.6 While, in principle, there are a wide range of mechanisms/options for optimising the value for money of the franchise, not all are immediately feasible or practical. The potential mechanisms considered are set out in Chapter 3.

1.7 Chapter 4 describes the analysis of the rolling stock opportunities.

1.8 Given the need to understand fully the value for money, practical challenges and risks associated with each option, case studies were undertaken on a range of options selected in consultation with stakeholders. The Case Studies were intended to provide a cost effective way to develop an understanding of the practical development and implementation issues arising within the timescales available to the review. The Case Studies undertaken are described in Chapter 5.

1.9 The conclusions of the review are set out in Chapter 6.

2. FRANCHISE OVERVIEW

Market Analysis

The Franchise Area

2.1 The area that the franchise serves is both large in terms of its geographic spread and extremely diverse in its nature. It includes population densities that are the highest in the UK outside London as well as some of the most sparsely populated parts of the UK. Figure 2.1 is a map of part of the UK rail network *including* that of the Northern Franchise and shows the urbanised areas as well as large expanses of relatively undeveloped and agricultural land use. Note, however, that Northern rail services do not serve North Wales.

2.2 The franchise area includes the large metropolitan areas of the North West (Manchester and Liverpool conurbations), Leeds as well as the slightly smaller but important areas in South Yorkshire (Sheffield conurbation) and the North East (Newcastle).

2.3 In addition to the metropolitan counties there are other significant centres of population and economic activity in the franchise area. Blackburn, Preston, York, Middlesborough, etc. are important centres in their own rights and create a transport demand accordingly.

2.4 As well as thriving and growing urban centres the franchise does serve areas of urban deprivation and locations with extremely low population densities.

2.5 The franchise serves a number of locations that have particular patterns of demand. For example, there are strong, growing and expanding commuting in those markets where Northern Rail provides a competitive service and attractive alternatives are limited, for example commuting into Manchester and Leeds. Here, as expected the high levels of commuting heavily influence decisions on service provision. Elsewhere, tourism to the coastal resorts as well as the National Parks in the franchise area lead to seasonal peaks in demand as well as weekend and off-peak demand for services to some locations whose demand would otherwise not exist.

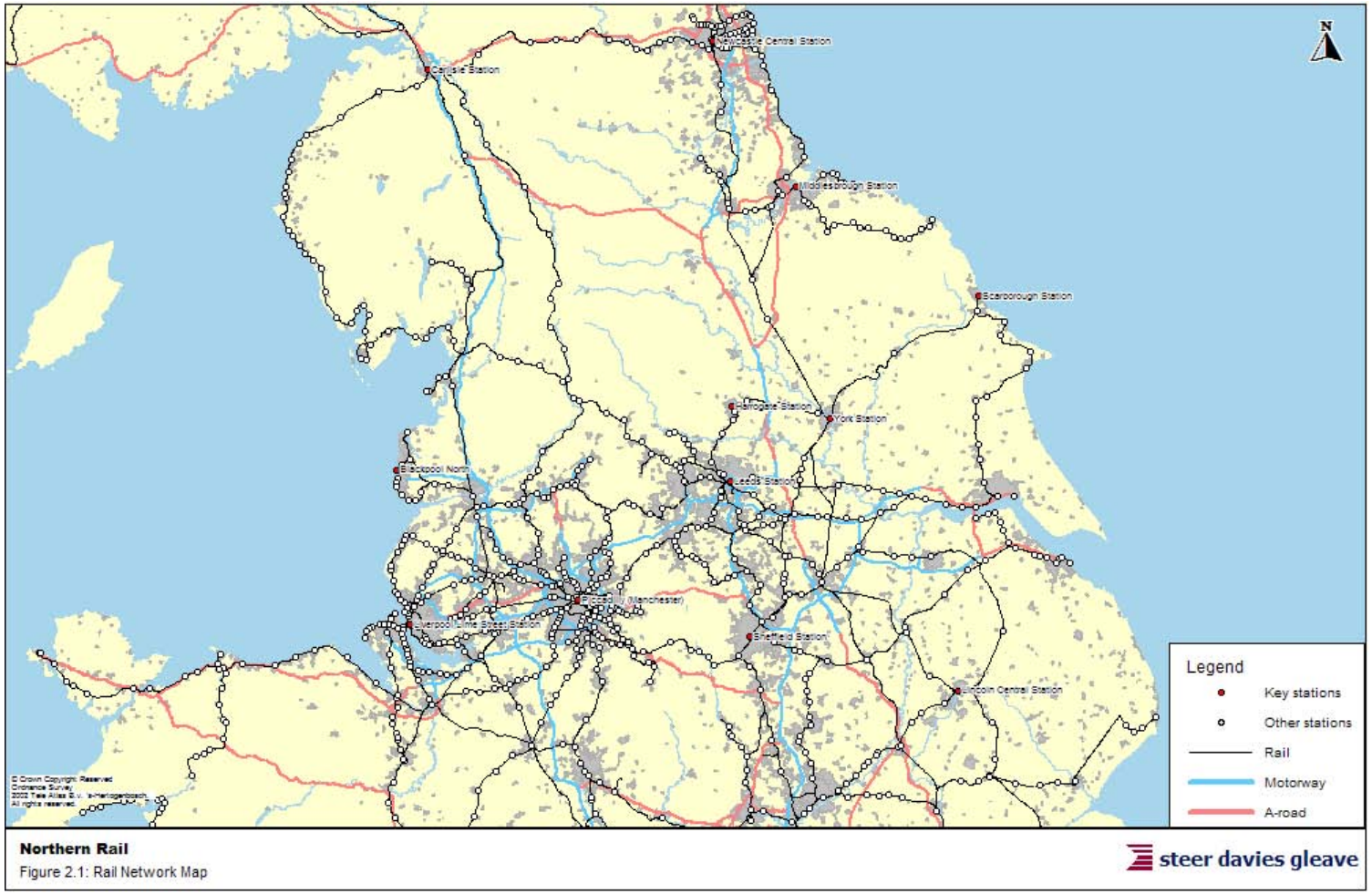
Northern Rail Network

2.6 The franchise operates over a large network of railway infrastructure, although only a minority of this network is used solely by Northern Rail; the majority of Northern's services have to share a network with freight and other passenger operators. The latter principally comprise Transpennine Express, Arriva Trains Wales, Virgin Cross Country, Virgin West Coast, Central Trains, Midland Mainline, Hull Trains and GNER.

2.7 The network includes 19 lines identified by the SRA as potential Community Rail lines including two that are pilots for the initiative:

- Guisborough Junction to Whitby (the 'Whitby Line'); and
- Barnsley to Huddersfield (the 'The Penistone Line').

FIGURE 2.1 THE RAIL NETWORK

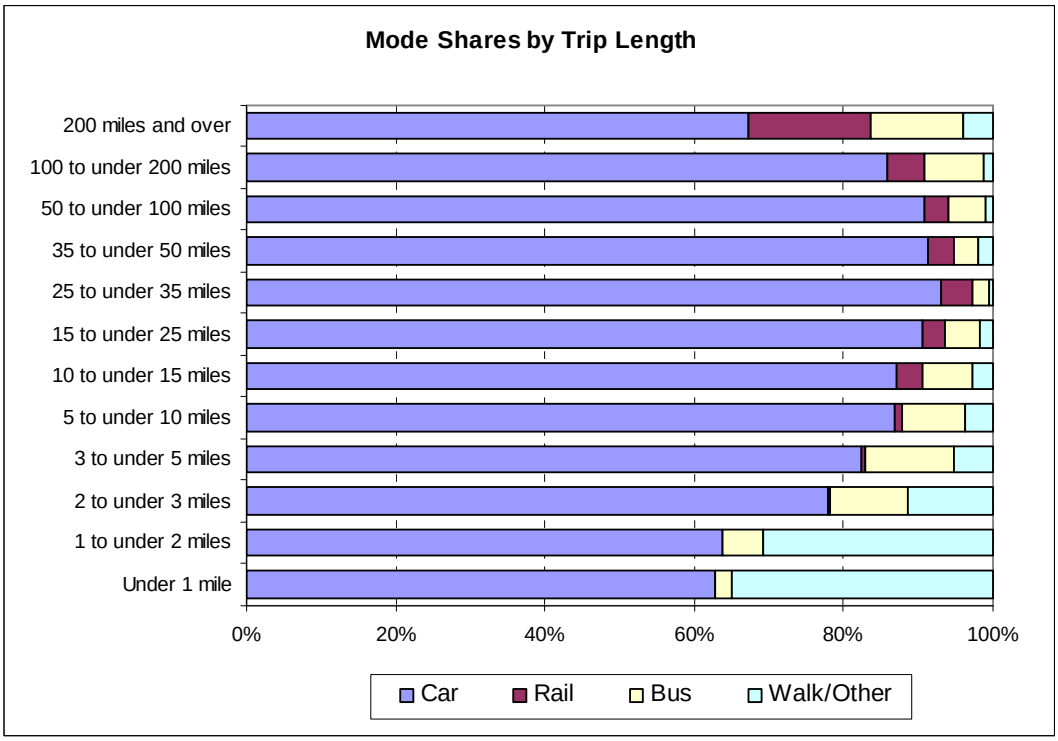


Modal Share

2.8 Other studies have demonstrated that at all distances, rail has a minority modal share of the northern market in general – both in the urban commuting and the rural markets. More detailed information on rail's modal share and the role of rail in across the different northern markets will be made more generally available as the various relevant Regional Planning Assessments are published.

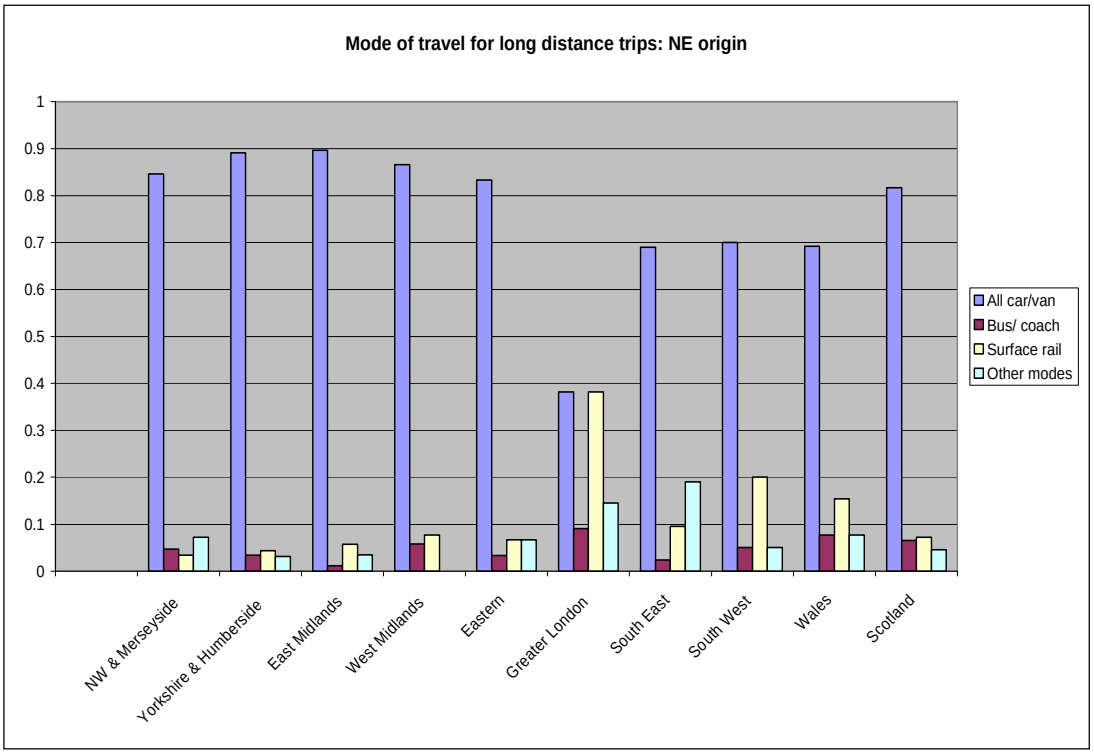
2.9 The National Travel Survey (1999/2001) indicates that rail's modal share increases as trip length increases. In the North West rail has the greatest mode share (16%) for trips in excess of 200 miles. Figure 2.2 indicates mode share in the North West for all distances and Figure 2.3 shows mode share for distances in excess of 50 miles for the North East.

FIGURE 2.2 NORTH WEST MODE SHARES BY TRIP LENGTH[1]



[1] Note that the bus category includes private hire, stage buses, express buses and excursion/tour buses.

FIGURE 2.3 MODE SHARE FOR TRIPS OVER 50 MILES MADE FROM THE NORTH EAST



Competition

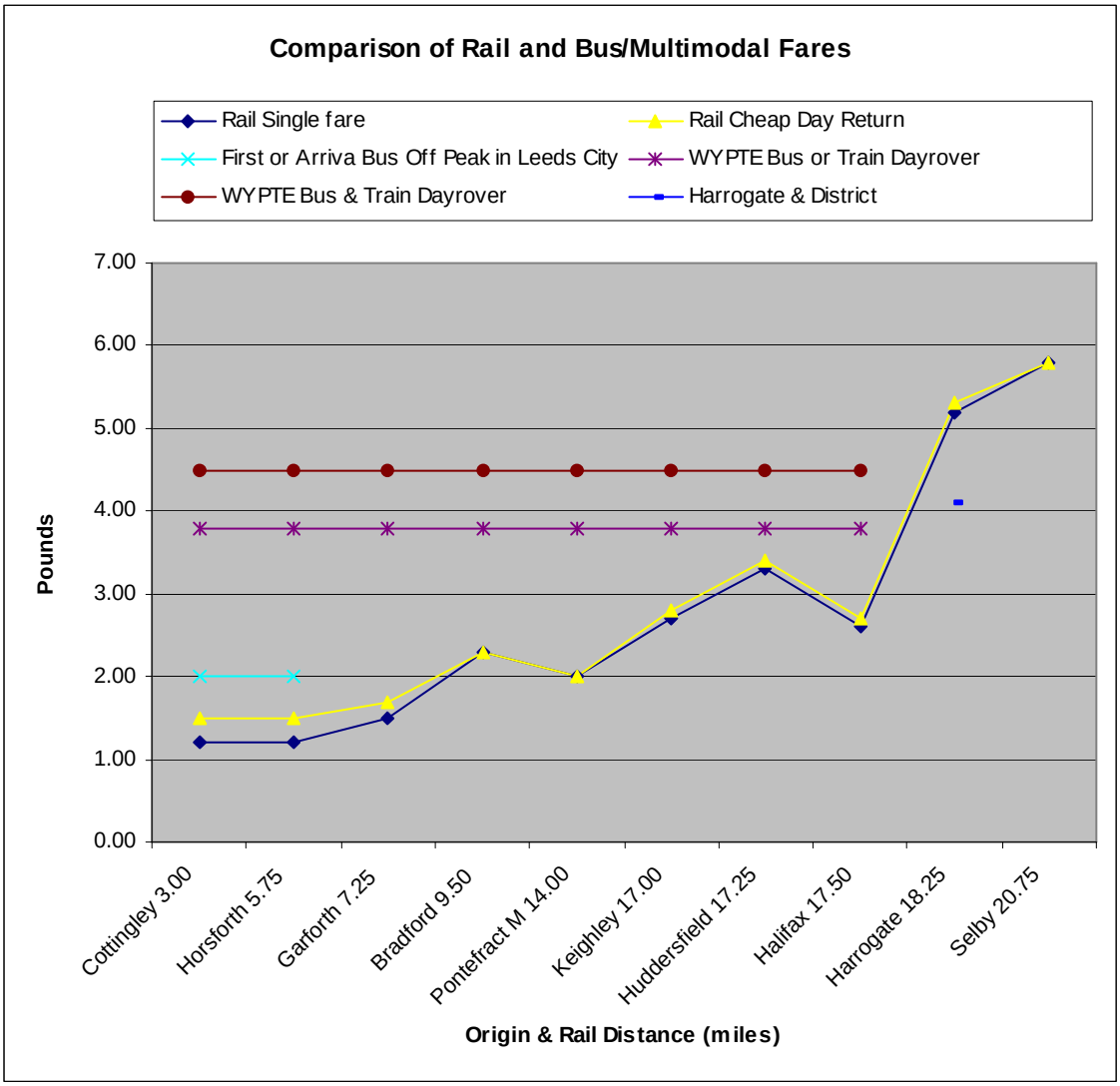
2.10 Modal share is underpinned by competition between transport modes in respect of journey time and cost as well as other attributes such as service frequency, accessibility, reliability and journey comfort/ambience. The competitive situation between public transport modes is dynamic and continues to evolve and respond to the market through innovative investment and new (bus and rail) services. The particular situation in West Yorkshire PTE (WYPTE) area has been examined as one of the Case Studies reported later.

2.11 Within the Metro area, and for sample journeys outside the PTE boundary, Figure 2.4 shows the difference in off peak rail fares compared to an operator's multiple-use tickets and multimodal tickets from the same origin locations as the rail journey.

2.12 Most competition between ticket types is in the off-peak given various restrictions on the availability of some multimodal and day pass tickets in the peak hours. The price differential does not reflect journey time differentials which typically favour rail but may reflect frequency advantages of non-rail modes and potentially better penetration into the city centre when compared to the location of the main rail stations

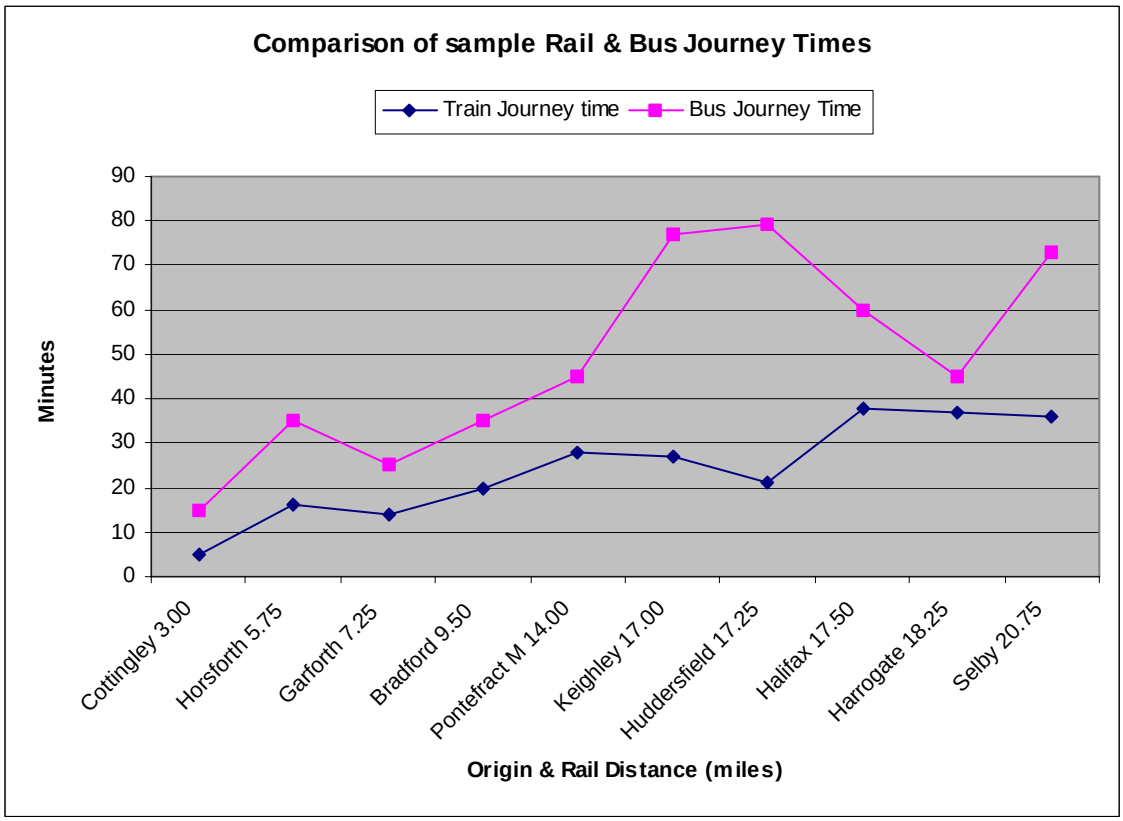
2.13 Off peak fares are analysed because this is when there is most competition between the various ticket types. Care needs to be taken in interpreting the graph as it is comparing single journey rail tickets with multi-journey bus and multi modal bus and rail tickets but the key point it shows is that the rail fares from each origin location to Leeds are pitched below the operator's multiple-use and multimodal tickets within the PTE area but then rise steeply for journeys across the PTE boundary.

FIGURE 2.4 COMPARISON OF RAIL AND MULTI-USER/MULTIMODAL TICKETS



2.14 Despite the fare differential, the bus journey time is nearly always longer than the train for a comparable journey, but in instances where the rail route is indirect, or the road journey is relatively fast, the times can occasionally be quite similar. Figure 2.5 shows examples in the Metro area, and over the boundary into North Yorkshire. All journey times are sourced form public timetables, or in the case of road the standard journey planner software.

FIGURE 2.5 COMPARISON OF JOURNEY TIMES



2.15 By way of example to demonstrate the competition faced by Northern Rail and rail more generally, a few examples of journey choices faced by an adult passenger travelling during the peak and off-peak are presented in Figure 2.6 and paragraphs 2.16 to 2.20. Although the examples identified below are just a very small comparison they do provide a degree of insight into the competitive context of rail.

2.16 Note these examples all report the situation as of summer 2005. Since then some of the bus services have evolved. It is worth noting that the bus provision tends to be less stable than rail and continues to change by quite large degrees. For example bus provision between Sheffield and Barnsley (shown as three buses per hour in Figure 2.6) is now down to two buses every three hours as Stagecoach are withdrawing the X30 and the X33 is reducing from hourly to every 90 minutes. This illustrates the strength of the stability offered by the rail network when compared to the bus network (see Chapter 5).

FIGURE 2.6 EXAMPLES OF COMPETITION BETWEEN RAIL AND BUS AND/OR TRAM

Altrincham - Manchester			
	Bus	**Train**	**Tram**
Frequency (per hour)	8	1	10*
Travel time	00:57	00:30	00:22**
Single Peak	£2.40	£2.60	£3.10
Return Peak	£2.90***	£4.30	
Single Off-Peak	£2.90	£2.35	-

** Tram services operate at 5tph or 10 tph*

*** Tram time to Manchester city centre; Piccadilly is about 4 minutes more*

**** £2.90 saverfare before 9.30am and £2.60 after 9.30am*

Selby - York			
	Bus	**Train**	**Tram**
Frequency (per hour)	4	1*	-
Travel time	00:40	00:33	-
Single Peak	£1.90	£4.40	-
Return Peak	£3.20**	£6.40	-
Single Off-Peak	£3.20**	£6.40	-

** Irregular service - approx. one per hour if averaged out but longer gaps evident*

*** Day bus pass*

Barnsley - Sheffield			
	Bus	**Train**	**Tram**
Frequency (per hour)	3*	3	-
Travel time	00:40	00:30	-
Single Peak	£1.80	£2.70	-
Return Peak	£3.10**	£4.30	-
Single Off-Peak	£3.10**	£2.35	-

** buses have different journey times; fastest is shown*

*** return on fastest bus excludes day-pass ticket on other operators*

St Helens - Liverpool			
	Bus	**Train**	**Tram**
Frequency (per hour)	6	3*	-
Travel time	01:05	00:30	-
Single Peak	£1.70	£2.80	-
Return Peak	£3.30**	£3.35	-
Single Off-Peak	£3.30**	£3.35	-

** from St Helens Junction; 3 further services from St Helens Central*

*** Day bus-pass*

2.17 The train service from Altrincham to Manchester city centre cannot compete in terms of frequency given it has just one service per hour but it remains competitive in journey time against bus and only marginally behind tram times to the city centre. However, its return peak fare is significantly more than the bus service that is 8 times as frequent implying that this is probably not a market best served by rail.

2.18 Travellers between Selby and York are highly likely to use the bus given an infrequent and more expensive rail service. The seven minute journey time saving is unlikely to warrant the additional expense and the bus journey is likely to provide a more convenient destination than York's railway station.

2.19 Between Barnsley and Sheffield there are competitive journey times and frequencies between bus and rail. At the time of the analysis (summer 2005) in addition to the fast buses providing a frequency of 3 buses per hour there are further slower buses. Fares appear to be competitive but a return ticket for the fastest bus remains £1.20 (28%) cheaper than a similar rail return for a 10-minute journey time penalty.

2.20 Between St Helens and Liverpool, rail has the competitive advantage. If services from both stations in St Helens (Central and Junction) are included, rail matches buses for frequency but halves the journey time and for a return ticket is only marginally (five pence) more expensive than the return fare for bus.

Demand, Revenue and Costs

2.21 The analysis of Northern Rail's demand and revenue used data that is commercially confidential to Northern Rail, being derived for example from Northern Rail's management accounts (costs) or from flow and revenue data that is only available to Northern Rail and not its competitors. The detailed analysis of that data remains

confidential, but the analytical techniques and general conclusions drawn from the data are described below.

2.22 The proportionate breakdown of costs is generally typical of UK rail franchises, albeit exhibiting features that specifically relate to the nature of the franchise.

Allocation of Costs to Services

2.23 For the purposes of analysing the Northern Rail franchise within different geographical areas and for different groups of services, total operating costs were allocated between individual services operated (by Train Service Code). This allocation was based on a set of 'normalised' management accounts provided by the operator, in which exceptional costs were smoothed out to provide a set of typical costs for a current year. Although a normalised and typical year the accounts still reflect just a snapshot in time for a franchise, which has gone through and continues to go through significant change.

2.24 The method of allocating costs can be summarised as the following steps:

- Define what attribute would drive each type of cost; principally either train miles or vehicle miles;
- Use Schedule Repository[2] outputs for each of the Service Codes to establish train, unit and vehicle mileages as well as rolling stock type(s) for each TSC (based on public and working timetables);
- Allocate costs between services proportionally to the driving attribute (train miles or vehicles miles)

2.25 Various logical rules were also incorporated into the allocation, such as the allocation of fuel charges only between those services operated with diesel-powered stock. The mix, unit configuration and type of stock used on a particular TSC has been taken account of for a number of the cost items as follows:

- **Capital lease charges:** Weights introduced to reflect differential capital charges for each stock type, based on latest leasing agreements as advised by the SRA;
- **Non-capital lease charges: (**As with capital lease charges);
- **Class 175 unit hire:** Costs only distributed between services making use of this type (and other leasing charges not allocated to these services);
- **EC4T:** Allocated only to electric traction stock operations;
- **Fuel (own use):** Allocated only to diesel traction stock operations;
- **Variable Track Access:** Allocated on the basis of stock-specific VTAC rates.

Cost Variability / Escapability Categorisation

2.26 Costs were categorised according to their variability. Each cost type (as listed in the Northern franchise Management Accounts) was categorised as "fixed", "industry" or "variable". Variability is considered in a long-term context disregarding any synthetic

[2] Schedule Repository is a tool developed by Steer Davies Gleave, which, among more advanced functions is able to produce detailed statistics of vehicle, unit and train mileages associated with a specified timetable.

or structural reasons for costs being fixed. However, "industry" costs are deemed to be those that are variable in terms of the Franchise but fixed to the industry as a whole (such as station access charges).

2.27 In addition, a second categorisation of costs was used, relating to their 'escapability'.

2.28 For variable costs, a relationship (mechanism) between the change in the cost (of the variable cost items) in response to a change in service level was established. This relationship is based on benchmark observations and judgement and experience. While each specific change would have to be analysed in enormous detail to get a more accurate estimate of 'escapability' the relationship does provide a consistent framework for assessing, in strategic terms, the degree of 'escapability'. For example, one important feature is that in many cases a particular cost category could never be eliminated altogether. A proportion of costs are therefore 'inescapable'. The variability mechanisms related to the train, unit and vehicle miles operated and, in the case of leasing costs, the number of rolling stock units eliminated by a service change.

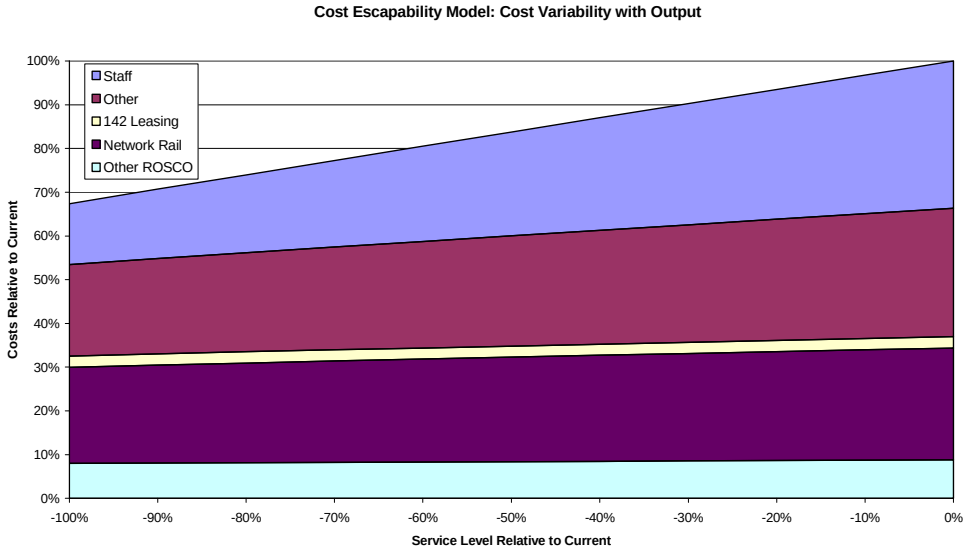
2.29 Cost escapability (as determined by the variability mechanism) was considered in practical terms, within the life of the franchise and reflecting industry structures where necessary. For example, the only rolling stock leasing costs deemed to be escapable were those of the Class 142 units, the lease on which was due for expiry within the life of the franchise. It should be noted, however, that in the context of individual services leasing costs were considered to be escapable for all non-electric operated services to reflect the possibility of rolling stock cascade between services. The variability mechanism and degree of escapability are illustrated in Figure 2.7, which shows cost changes for large, uniform changes in franchise-wide service level.

Costs by Area

2.30 To examine the geographical distribution of costs throughout the Northern franchise, costs allocated to service codes have been grouped together either by PTE area in which they operate or, where they do not operate in a PTE area, by geographical Market Groups.

2.31 There is broad similarity in the proportions of cost-types across the different geographical areas. Key exceptions are areas where ROSCO rolling stock leasing charges are proportionately higher on account of the use of particular stock types. The relative costs of rolling stock must be seen in the context of the relative levels of economic benefits delivered through higher capacity and quality. For example the Class 333 is a high quality modern unit with the capacity to easily meet peak period demand (unlike some units). This in turn delivers higher levels of economic value (benefits).

FIGURE 2.7 COST VARIABILITY WITH OUTPUT, SHOWING COST ESCAPABILITY



Costs by Service

2.32 Costs were also analysed by individual Train Service Codes and Clusters. A wide range of service costs exists, the costs depending on the length and frequency of the service, as well as the stock used to operate it.

Funding Arrangements

2.33 When the Northern franchise was let it was under the arrangements in place prior to the changes proposed in the Railways Act 2005.

2.34 However, PTEs continue to fund capital programmes that are intended to improve Northern Rail services. All the PTEs play an active role through this mechanism. Some illustrative examples include:

- Metro's recently opened new station at Glasshoughton and the proposed programme of further new stations;
- Various Metro sponsored rail-bus interchange developments;
- SYPTE have supported investment in station improvements/upgrades at, amongst others, Doncaster, Sheffield, Rotherham, Swinton and Adwick plus CCTV along the Barnsley line;
- Merseytravel's funding of station internal improvements and working with St Helens Borough Council on revitalisation of St Helens Central station; and,
- The development of Liverpool South Parkway as a major interchange station, serving both the City Line (operated by Northern) and the Merseyrail Electrics network.

2.35 Projects of this kind involve substantial investment, often funded at the European as well as the national level, and give the PTEs a direct interest in train and station services outside the franchise agreement.

2.36 All PTEs also administer, or at least oversee, multi-modal and concessionary fare schemes in their areas. As noted above, the franchise operator is required to participate in specific schemes included in Schedule 2.5 of the franchise agreement, and receives a share of ticket sales (in the case of multi-modal tickets) and compensation (in the case of concessionary fares).

Conclusions

2.37 The analysis confirmed that there are two key issues or challenges facing the Northern franchise (in terms of optimising value for money), these are:

- The (generally poor) financial contribution achieved by each service group; and
- The wide range of rolling stock costs for different types of rolling stock operated across the Northern franchise.

Contribution Analysis

2.38 In order to look at the performance of the component parts of the franchise, an analysis was undertaken of costs and revenues at the levels of 68 Train Service 'Clusters' and the 5 Market Group Levels.

2.39 There is a slight variation in contribution at the train service cluster level but there are few obvious and significant targets for improving value for money within the Northern network that perform worse than the Northern Rail network as a whole.

Rolling Stock Costs

2.40 The cost of rolling stock varies considerably across the franchise. Including a variety of prices paid for relatively similar stock types.

2.41 The rolling stock is provided by various providers (ROSCO's, other franchisees and WYPTE) under a range of different arrangements as regards provision of maintenance etc.

3. POTENTIAL MECHANISMS TO OPTIMISE VALUE FOR MONEY

Introduction

3.1 While still in existence and responsible for the strategic planning, the SRA undertook, in late 2004/early 2005 a qualitative assessment of the potential 'generic' mechanisms that might be considered to optimise the value for money of the Northern franchise. This exercise was driven by the challenge posed by the underlying economics of the Northern franchise. Seven mechanisms were short-listed for closer consideration.

3.2 It is important to acknowledge that at this stage the consideration of the (seven) mechanisms was undertaken to provide a rational framework for assessing the materiality and feasibility of the mechanisms in relation to optimising value for money on the Northern franchise. The assessment allowed a judgement to be taken as to whether any mechanism might be worth pursuing further.

3.3 The seven mechanisms assessed were:

i. Bus Substitution – where a new bus service could be operated as a substitute for the rail service (either because the rail service is closed or because the number of services are reduced
ii. Fare Changes – either targeted or 'global' changes to fares, including changes to fare structures (ticket conditions, eligibility) and combinations of price increases and decreases to particular tickets
iii. Amending the KPI Service Quality Regime – changing the actual key performance indicator thresholds or targets (e.g. the frequency of train cleaning) and/or the level of reporting/validation (e.g. self reporting or external audit)
iv. Changing the Retail Strategy – changing the mix between the number of tickets sold by station ticket staff and number of tickets sold through other distribution channels (e.g. the internet, local newsagents)
v. Amending Network infrastructure Renewal expenditure plans and programmes – renewal expenditure is driven by the requirement to maintain certain levels of output/quality of the network. There is some potential for optimising that expenditure with the future level of usage (type, number and weight of trains using specific parts of the network)
vi. Train service specification changes to achieve synergies with other TOCs – in principle this involves reducing some train services but increasing the number of stops on alternative services to ensure that most stations (users) still retain a similar level of service
vii. Train service specification changes within Northern –as (vi) but limited to changing Northern rail train services alone without changing other TOCs services

3.4 For each mechanism in turn, the assessment considered:

- Possible variants
- Materiality to Northern (given the underlying characteristics of the franchise)
- The potential applications to Northern (the practical opportunities)

3.5 In addition, the feasibility of successful implementation was also considered, including:

- Timescales to enact
- Payback timescales
- Decision making framework, process and mechanism
- Contractual and regulatory issues
- Likely cost of implementation
- Stakeholder perspectives

3.6 The assessment made for each of the seven mechanisms is described below.

Bus Substitution

3.7 In principle, bus substitution can, for any given route or service, range from total bus substitution involving route closures down to partial substitution (no route closures) with only some services on a route being substituted.

3.8 In practice, while on rural routes train operations generally cost more than bus operations there are significant economic benefits associated with train operations that are not easily 'captured' by substitute bus operations. In simple terms, train services are seen as providing a significantly higher quality than bus services, be it ride quality, journey time, service frequency and network connectivity etc. These qualities are highly valued by customers and stakeholders.

3.9 Northern Rail operates the types of routes across the franchise that could potentially be considered for bus substitution.

3.10 In terms of feasibility there are a myriad of challenges. One is the ability to capture any infrastructure cost savings made by Network Rail as a result of a route closure. Infrastructure charges are set (in advance) through the regulatory process of five year control periods and periodic reviews. It is not immediately obvious that any infrastructure savings would actually be available to the DfT, Northern Rail and/or the PTE's to fund the capital and revenue expenditure necessary to deliver the substitute bus operation.

3.11 The second key challenge is that of stakeholder acceptability. Generally, bus substitutions, when subjected to a full economic cost benefit analysis (CBA), deliver a relatively poorer return than rail. This is due to the higher economic benefits associated with rail.

3.12 Any decision to pursue bus substitution would take into account the financial and the economic assessment and, most importantly, the policy framework and overall objectives in place for the stakeholders. At present, given this it appears most stakeholders, including DfT, but particularly local councils, PTEs and Regional Development Agencies are unlikely to pursue bus substitution.

Conclusion

3.13 While it is accepted that bus substitution could be applicable and could offer cost savings on particular routes, the issues of quality, reliability and public perception would be likely to lead to a loss of economic benefit.

3.14 The bus services would therefore need to be of a suitably high quality to minimise the relative economic disbenefits associated with them. This would increase bus capital

expenditure (new buses) and operational costs. Furthermore, another important factor is the degree to which the level of cost savings achieved (captured) is reliant upon the level of escapable infrastructure cost.

Fare Changes

3.15 The success of any changes to rail fare levels and structures (to increase revenue) will be influenced by the:

- regulatory regime UK rail fares enforced by the Office of the Rail Regulator;
- level of competition (price and attractiveness of alternatives); and,
- wider policy levers that government might apply.

Fares regulation

3.16 Regulated fares are defined in Schedule 5 of the franchise agreement. In simple terms there are two sets of regulated fares:

- Commuter Fares Basket – are specified flows (typically to/from the major centre(s) served by any particular TOC) and include:
  - All season tickets ("seasons")
  - Standard Day Singles and Returns ("full") – that is, this group excludes cheap day returns ("reduced")
- Protected Fares Basket (different to specified flows, that is not including the commuter baskets) includes:
  - Savers (if a saver fare existed for the flow in 2003)
  - Saver day returns (if no saver)
  - Weekly seasons

3.17 Regulated fares are subject to 'caps' on their increase both at the individual ticket type level and at the overall 'basket' level (typically RPI+6%). Unregulated fares are, in simple terms, all those fares not included above and, in principle, these be changed unfettered by the regulatory 'caps'

Market Competition

3.18 Irrespective of the regulatory constraints there the price and attractiveness of the competition that will dampen the ability to increase Northern Rail revenue by simply increasing fare levels. While there is some potential to increase fares and some of the existing rail fares (based upon average yield per mile) appear very low when benchmarked against other regions and PTE areas, there is competition from a range of concessionary/multi-modal ticket products developed and marketed by the PTEs. Typically, these tickets are priced just a little higher than the 'point to point' daily/or weekly/monthly rail-only tickets but *also* allow passengers to use the local bus/metro services. Any price increase in the Northern Rail ticket is likely to encourage more people to purchase the equivalent multi-modal ticket product.

3.19 However, there remains the potential to price more appropriately for the rail product in specific situations and locations where rail delivers a high value high quality service.

Policy Levers

3.20 Northern Rail operates where the level of road congestion is generally relatively low and or localised (geographically or by time of day). Therefore, the car remains a very attractive alternative to the train for many people for many journeys – any 'aggressive' rail price increase risks more people using their cars instead of the train. This is an outcome that runs counter to the overall thrust of the governments transport policy.

3.21 The government has other policy levers that it may wish to use to influence mode choice to better align outcomes with policy.

Conclusion

3.22 Changing the fare structures is feasible but does require considerable consultation, communication and negotiation. There are several contractual agreements (the franchise agreement itself, and revenue sharing between the franchisee and the PTEs) and third party organisations (ORR, Bus Operators etc) that would be commercially affected.

3.23 There is potential to optimise value for money from fare changes. Successful (and acceptable) changes must reflect the competitive advantage of rail at the local market level. It would be more difficult if the changes required changes to the regulatory regime. Case studies are the appropriate way of understanding, in the required level of detail, the potential value as well as the likely challenges of applying this mechanism.

Changing the KPI Service Quality Regime

3.24 Under the terms of the franchise agreement Northern Rail, as franchisee, are obliged to monitor 150 aspects of quality every (four week) period for a sample of services and stations.

3.25 The value for money issue here is whether the cost of managing the KPI regime is worth the benefits achieved and/or whether there are more efficient ways of achieving the same (or better) outputs.

3.26 The regime is being simplified for future franchise agreements.

3.27 The key implementation issue is that of acceptability to the local stakeholders (reflected by the PTEs) who regard the KPI regime as a guarantee of a minimum level of quality.

Conclusion

3.28 The precise overall costs of the KPI regime are very difficult to extract accurately – there is a significant amount of KPI activity embebbed within day to day 'best practice' TOC management. Therefore, should Northern Rail's KPI regime be scrapped or simplified it is very likely that only a small percentage of the franchisee's costs are actually escapable. Irrespective of the KPI regime a level of quality activity such as cleaning would continue. The actual cost of enforcing (implementing and managing) the regime is quite high but cannot be escaped without a fundamental overhaul of the system (scrapping the system is not acceptable to stakeholders and unlikely to be sensible in broader policy terms).

3.29 It is therefore concluded that changing the existing KPI regime for Northern Rail will not materially improve or optimise value for money of the franchise.

Retail Strategy

3.30 Given the rapidly changing technology and the ever expanding opportunities offered by the internet, it is natural that the railway's somewhat traditional methods of selling tickets might be thought to be a source of achieving better efficiencies and optimising value for money.

3.31 The range of *potential* options for change can range from closing booking offices completely to de-staffing booking offices and/or with shorter opening times to be supplemented/replaced by ticket vending machines. In addition, there is the potential for providing better additional distribution channels through the internet, call centres and newsagents/general stores.

3.32 The major challenge in this area is that of local stakeholder acceptability. Removing or reducing staff from rail stations is not seen as either beneficial or improving value for money when assessed in the wider policy framework where the quality (attractiveness of rail), safety and security considerations are fully taken into account.

Conclusion

3.33 At this stage no material improvement in value for money is deliverable from changing the retail strategy and there is little or no local (or national) political support for, or acceptability of, such changes.

3.34 This mechanism is not therefore considered further in this review.

Renewals Savings

3.35 Over the whole of the Northern franchise route network Network Rail are planning to spend considerable sums of money on a regular basis as part of their agreed expenditure plan with the Office of Rail Regulation (ORR) for operations, maintenance and renewal (OMR). In principle, for this review, only the renewal expenditure is variable (and therefore material) – operational and maintenance expenditure across the franchise geography is not materially related to incremental changes in Northern Rail's service specification.

3.36 Renewals can, in principle, be avoided by:

- Route closure
- Changing (reducing) the output specification for the infrastructure

3.37 Typically, the most fruitful area for making savings is by avoiding or delaying a renewal where it is thought that the existing or future train service specification is such that the renewal can be delayed or avoided – that is, fewer (lighter/slower) train services across a given route will do less damage and may operate safely with lower levels of renewals. There is the potential opportunity to integrate the planning of existing or future train service specifications with that of related renewal projects.

3.38 The potential savings are large. Between 2005 and 2008 there are renewals either underway or planned on infrastructure that affects 16 of the franchise's 69 service clusters.

3.39 The practicality of route closures is untested under the new legislation. Any infrastructure renewal saving will not be 'captured' until after the next regulatory periodic review in 2008-09 without specific agreement being negotiated between DfT, Network Rail and the ORR. There is no contractual mechanism by which renewal cost savings can be 'captured' by, say, the DfT for the purposes of either reducing the subsidy, or re-investing elsewhere in the Northern franchise (or across the rail industry generally) – Network Rail expenditures (and savings) are regulated by the ORR.

Conclusion

3.40 The potential savings from better optimising renewal expenditure are large (orders of magnitude of tens of £millions) compared with all the other mechanisms discussed here. However, the specific opportunities where renewals can be delayed/avoided are relatively few in the next two to three years. Deliverability of any savings is problematic as there is no existing contractual mechanism beyond ORR's periodic reviews.

Service Specification Changes – Synergies with other TOCs

3.41 In concept, there may be opportunities to optimise the value for money represented by a group of train services operated by more than one TOC. Typically, there are two approaches:

- Transfer Northern services to other TOCs (and vice versa)
- Remove some services from Northern/Other TOCs and if necessary insert additional station stops into existing services from Northern/Other TOCs

3.42 Around 13 of the 69 service clusters have potential synergies with other TOCs, although the practicality of the synergy cannot be assumed in all cases. Moreover, some apparent opportunities to exploit synergy (for example, cessation of a Northern service being 'covered' by additional stops in a crowded TPE service) will deliver worse value for money, not better. Each opportunity will require careful, detailed assessment.

3.43 Implementation of the service specification changes is straightforward in the operational sense in that it would be 'signed off' via the annual timetable conference. More problematic will be the contractual negotiations between DfT and the affected TOCs through the change mechanism within the franchise agreements. The implications for rolling stock and crew diagrams (efficient utilisation of train sets and crew to allow maintenance and shift changes) could be complex and counter productive – each case will have to be assessed individually.

3.44 Changes in operating cost will be specific to the service under review. Typically they will involve:

- Operating costs for additional station stops with some knock-on resource implications
- Re-allocation of station charges where a station is not being closed
- Possible performance impacts in some limited cases

3.45 In addition, the distributional impacts will need to be understood in some detail by all stakeholders including the DfT. For example, mitigation plans are likely to be required to address any loss of service to existing users.

Conclusion

3.46 The service synergy approach offers more potential for improving value for money than straight service withdrawal because by retaining services at some (all) stations the majority of the revenue is retained along with the majority of the wider policy and economic benefits (journey times, accessibility etc). Case studies will illustrate the potential for improving value for money through inter-TOC service synergies.

Service Specification Changes – 'within' Northern Rail services

3.47 At one level this mechanism could be considered to be no more than "selected service withdrawal", however, the concept is that other Northern services would have their service specification changed (additional stops etc) to mitigate the impact of the initial service withdrawal.

3.48 Around 22 of the 69 service clusters are identified as sharing one-third of their route miles with another Northern service cluster. Again, the practicality of the synergy cannot be assumed in all cases. For example, many of the service clusters that share a route are relatively crowded or have quite distinct markets. In such cases, cessation of a Northern service is likely to deliver worse value for money, not better. Each opportunity will require careful detailed assessment.

3.49 Implementation of the service specification changes is straightforward in the sense that it would be 'signed off' via the annual timetable conference. More problematic will be the contractual negotiations between DfT and Northern through the change mechanism within the franchise agreement.

3.50 The key factor is whether the rolling stock savings can be captured (in the short term) with the service changes allowing rolling stock costs to be 'escaped' (units 'handed back' to ROSCOs). Each case will have to be assessed individually to establish just what rolling stock savings are possible. Smaller cost savings may accrue through staff and fuel savings but there are also potential increases in cost to consider such as additional station stops and possible performance impacts.

Conclusion

3.51 Case studies will help to establish the potential materiality of this potential mechanism for optimising value for money.

4. ROLLING STOCK

Introduction

4.1 There was a public commitment by Northern Rail to reduce the overall fleet size by three Class 158's by December 2005, and this has been delivered. As part of the Northern review there was a specific analysis of the opportunity to release some additional rolling stock units back to the ROSCO. The exact nature of the opportunity is commercially sensitive and confidential.

4.2 The review examined the medium term possibility of withdrawing a proportion of the Class 142 fleet in order to determine how many units (if any) could, in principle, be released.

4.3 The exercise was undertaken against a backdrop of Northern Rail making frequent changes (improvements) to its rolling stock deployments as part of experience gained in its first year of operation, and as a result of a new maintenance strategy being introduced in December 2005. In addition, Northern Rail had a franchise commitment to withdraw three Class 158 units at the same date. Thus analysis of diagrams undertaken for the study in July 2005 was subject to further change with new diagrams issued in September and December of that year.

4.4 Analysis was not confined to Class 142 diagrams themselves, since it would be possible to remove a Class 142 diagram by displacing it with another type of unit, if that unit could itself be made available from elsewhere within the franchise. The exercise therefore examined the complete set of Northern Rail diagrams available at the time.

4.5 Inevitably, changes in fleet size would imply changes in the level of train service being offered. The varying degrees of impact that could result from different opportunities, include:

- The number of spare and maintenance units could change (newer more efficient units, and/or more efficient operation)
- Changes (increases or reductions) in the number of units whose primary purpose is for peak period strengthening (longer trains by running more than one unit)
- Changes (increases or reductions) in actual train service frequency

Spare and Maintenance Units

4.6 At the time of the *initial* analysis (summer 2005 using the March 2005 and July 2005 diagrams), Northern Rail had four spare or standby units across the franchise area, a further two dedicated to driver training and one assigned to cover for the fitment of On Train Monitoring and Recording (OTMR) equipment to Class 142's.

4.7 Since then the situation has changed. In particular, the Oldham Loop is now operating at four trains per hour (absorbing the two operational spares in the Manchester area back into traffic). The operational spare created at Heaton to provide service resilience in the North East has now been removed as part of the Centres of Excellence initiative that delivered the three class 158s off lease. The spare class 150 at Newton Heath is used to deliver the Autumn timetables and this year will cover the Leven Viaduct blockade throughout the spring. This spare is one of six maintenance diagrams shown in the

December 2005 diagrams, making the maintenance cover five for most of the year. This equates to a ratio of 12%.

4.8 The two driver training units shown in the March 05 diagrams have now been reduced to just one as part of the Centres of Excellence initiative. The one remaining driver training unit is a class 153 and this is included in the four maintenance diagrams, making the maintenance coverage realistically only three for most of the year, which equates to a ratio of only 15%.

4.9 The class 142 unit diagram that was spare to cover the OTMR fitment at Heaton has not been released into traffic, because this unit is now covers requirements of the Heavy Maintenance programme for class 142s.

Conclusion

4.10 In summary a number of changes in unit deployment and maintenance strategy since the initial analysis has effectively removed any spare unit capacity from Northern Rail's unit diagrams. In simple terms, there is no material opportunity for optimising the value for money of the franchise through the future removal of rolling stock units from the franchise.

4.11 It is a dynamic situation as at each timetable change Northern Rail seek to maximise strengthening deployment and efficiency. There remains serious capacity issues for the franchise.

Modelling of theoretical scenarios

4.12 Any further reduction in units would only be achievable with a more visible impact on passenger services. However, in order to illustrate the likely impact of such changes a series of modelling exercises were run for two scenarios:

i. reduction in the number of units whose primary purpose is strengthening
ii. reduction in actual train service frequency

4.13 Each model run was undertaken with increasingly severe impact on passenger services in order to *illustrate the order of magnitude* of changes required to achieve given levels of saving.

Reduction in the number of units whose primary purpose is strengthening

4.14 Particularly given the urban nature of much of the franchise, it is inevitable that commuting flows at peak periods are often higher than the capacity of a single unit. A number of diagrams are therefore provided to strengthen these services, and many are idle in the inter peak period. A total of nine diagrams were identified which spent all or nearly all of their time in traffic as a second unit on specific train services – as four of these were of Class 153, the total of nine would be the equivalent of seven Class 142. Withdrawal of these strengthening units would therefore allow a further seven or possibly eight Class 142 units to be withdrawn, but would have a very serious impact on the levels of crowding on key commuting services in the conurbations some of which are already struggling to cope with rising numbers of passengers.

4.15 The worsening of crowding conditions would almost certainly lead to some modal shift away from rail and all that that implies - lower economic benefits and outcomes that run

counter to the governments wider transport policy.

Reduction in actual train service frequency

4.16 There were a number of stages to the reductions examined:

i. Service impacts limited to services not specified as part of core franchise Service Level Commitment, plus "residual" services and services in the 10 worst performing route clusters (in terms of financial contribution)
ii. Service impacts reducing frequency of services on Community Rail identified lines but not lower than 4 trains per day
iii. Wider service impacts permissible but not within metropolitan area
iv. Wider service impacts permissible everywhere
v. Wider service impacts permissible everywhere, including complete withdrawal of some services

4.17 In the first stage analysis services were so spread across the franchise area (and often operated in marginal time of a unit) that savings were minimal – a maximum of two units were assessed as being saved if services on the more frequently timetabled routes were halved.

4.18 A similar reduction was examined in stage ii) on the Community Rail designated routes (some of which, it should be noted, include heavy commuter flows, and are not confined to rural areas). Once again the service reductions assessed involved a halving of frequency, and the result was a potential saving of seven diagrams.

4.19 Wider service reductions on other rural routes across the franchise were then assessed (stage iii), and once again the criteria used was to halve the service where this would achieve some saving – lines only operated by one unit (such as the Whitby or Barton on Humber branches) cannot contribute towards the savings unless the unit can operate other services as a result of the additional time made available as a result of halving the frequency. It was considered that 21 diagrams could be saved if this policy was applied across the rural parts of the franchise.

4.20 Stages iv) and v) applied the same conceptual specification (halving of services) to the whole franchise including the urban areas, and a saving of 66 diagrams is *theoretically* possible.

Conclusions

4.21 The examination of Class 142 diagrams was carried out to establish the likely order of magnitude of the initiatives that would have to be taken in order to achieve savings in the fleet, and the degree of severity on passenger services that such savings would imply. In order to make significant savings, dramatic changes have to be made to passenger services.

4.22 It is concluded that the loss of revenue and the negative economic benefits and the negative impact on the thrust of the governments transport policy would significantly outweigh any cost savings that might theoretically be delivered by widespread and 'deep' service cuts.

4.23 The most productive and practical approach is to work with the franchisee to assess in more detail what further potential incremental improvements in performance and maintenance there are to reduce the levels of spare and maintenance cover that would, at the same time, have minimal impact on passenger services, demand, perception and revenue. Given the high level of optimisation and efficiency that has been achieved by Northern Rail to date any further improvements are likely to be very incremental in nature.

5. CASE STUDIES

Introduction

5.1 The choice as to what and where the Case Studies would be was based on discussions with the stakeholders and the study team to combine local knowledge and insight with expert technical knowledge, judgement and experience.

5.2 The objective was to define Case Studies that would allow a cost effective way to understand and illustrate as many of the practical development and implementation issues as possible within the timescales available. On this basis, five case studies were defined to allow a detailed analysis of both the materiality and feasibility of the opportunities for optimising the value for money of the Northern franchise.

5.3 As set out in Chapter 4 the assessment of the mechanisms concluded that there was little merit in pursuing the following mechanisms as part of this review:

- Bus substitution - generally poor economic cases;
- Changing the KPI Service Quality Regime - limited materiality and acceptability
- Changing the Retail Strategy - difficult to 'capture' any savings and some aspects already being developed and implemented as part of the franchise agreement, while others are more contentious and have limited acceptability with key stakeholders.

5.4 While it was also accepted that improved value for money from renewals would be difficult to optimise around revised service specifications in the short term and that there is no mechanism for the Authority (DfT) to 'capture' such improved value for money it was felt that, given the potential, it would be worth undertaking a case study on a route closure.

5.5 The case studies were therefore built around the four generic mechanisms that appear to have most potential for optimising value for money. Namely, fare changes, renewals savings, synergies with other TOCs and synergies within Northern. The five case studies were:

A: Fares increases;

B: Reductions in "residual" services;

C: Route Closure;

D: Service Synergies;

E: Reductions to off peak services.

Case Study A: Fares Increases

5.6 Case Study A developed and expanded in scope as it continues to suggest that there is an attractive financial case for increasing some fares in some markets. However, there are limited financial returns if the fares changes (increases) are implemented within the existing regulatory constraints (fares basket). There is greater potential if rail's

competitive position is exploited.

5.7 The search for improved value for money from fares increases is not straightforward in that it needs to take into account (and optimise) the optimal fare for the rail product(s) and the impact on mode share at a high level of granularity (location by location basis). Any 'global' or wide spread fare increase will have significant (and potentially negative/unacceptable) distributional impacts. These impacts will need careful consideration and appraisal.

Initial Analysis

5.8 The initial concept was to target fare increases on those services that were identified as having a low revenue yield (measured as pence per passenger mile). At the same time the concept was to re-deploy resources (train sets) made available from other optimising initiatives to those services experiencing high levels of over crowding.

5.9 The aims of Case Study A were to:

- better understand the revenue mix of the services, including materiality of multimodal tickets;
- identify how current fares and services compare to alternatives;
- Assess the impact of fare increases that would support raising the yield of the services towards that of Northern Rail average; and
- Assess the potential for intervening operationally to alleviate crowding.

5.10 The ten service clusters that were originally identified included some of the key commuting flows into Leeds.

5.11 The Case Study analysed the scope for increasing revenues through increasing the prices of the full price tickets. There is no real scope for increasing revenue from passengers who use reduced ticket products. The market is too price sensitive and any increase in revenue from the increase in price would be more than offset by the reduced number of tickets bought. Similarly, there is (in West Yorkshire PTE area) a very high level of price sensitivity to the rail season tickets as there is a very attractive alternative in the form of the multi-modal travel card ticket whose price is set by participating bus and rail operators and over which Northern Rail has only partial influence. The multimodal ticket is only marginally more expensive but offers use of the bus services as well.

5.12 In broad terms, a standard conditional elasticity model was developed to assess the impact of various targeted fare increases on revenues and demand on the route by route basis. No primary research has been undertaken to establish the likely elasticities that apply to these specific markets in the case study. Therefore, the results should be treated with caution as it applies the 'standard' PDFH elasticities for these non-London commuting markets.

5.13 For the ten service clusters initially identified, full price tickets represent around 36% of the total revenue and 20% of the total demand.

5.14 The impact of the fare increases on revenue for full price tickets within the PTE area

would be relatively limited.

- A targeted 10% fare increase on ***full price tickets*** is estimated to increase revenue from full price tickets by just 3.5% (and reduce demand by 6%).
- A 30% increase in the ***full fare tickets*** would increase revenue from full price tickets by around 10% (and reduce demand by 15%).

5.15 The impact on ***overall TOC revenue*** is diluted when revenue from all ticket types is taken into account. In simple terms, because full price tickets represent around 36% of the total revenue in this Case Study, then:

- A targeted 10% fare increase on full price tickets increases ***36% of the total TOC revenue*** by 3.5% - an increase of just 1% in total TOC revenue (3.5% of 36%)
- A 30% price increase in the full fare tickets increases ***36% of the total TOC revenue*** by 10% - an increase of just 3% in total TOC revenue (10% of 36%).

5.16 If such relationships are extrapolated across the Northern franchise then even quite drastic increases in full fares (circa 30%) would only deliver around 2% to 3% additional revenue.

5.17 Implementation costs would be of the order of £200k to cover timetabling, business case development, marketing communication and advertising and some transaction costs (contractual/regulatory agreements).

5.18 The real scope for increasing revenue could only come from finding a way to increase rail fares for season tickets that did not result in a compensating reduction in demand. The rationale for this could only come from establishing that rail was a much better product than bus and that passengers could be persuaded of the added value of using rail as opposed to bus for many commuting journeys into, say Leeds. Analysis of the Leeds journey-to-work area confirmed that, in many cases, rail offers much better journey times, ride quality and other attributes than bus and that this competitive position is not being realised through the rail ticket prices.

Initial Conclusion

5.19 For this initial stage of the "fare increase" case study the conclusions are as follows:

- There is limited potential for increasing revenue if full fare products are the only fares which are considered to be within scope for changes.
- Any change to increase yields would require an amendment to the existing fares policy of RPI+1 for the fare basket and RPI+6 for individual fares.
- The existing rail product appears to undervalue its competitive advantage in some cases:
  - Historic legacy pre-privatisation and application of an RPI based formula thereafter.
  - Impact of multimodal price competitiveness against bus-only operator tickets has consequential impact on rail multimodal and point-to-point fares.
- There might be potential for re-valuing rail fares to better reflect the Value of Time benefit that rail mode offers.

- Any implementation would require new relationship between rail, multimodal and other fare products.

5.20 In addition, this initial analysis was underpinned by five key presuppositions that need to be tested and assessed. These presuppositions are:

i. Fares were fixed at privatisation in 1994 and have remained largely fixed thereafter save for an RPI related adjustment (was RPI-1 now RPI+1)

ii. There has been a real and material change of much of the franchise area and people are far more able to fund their travel through higher prices

iii. Rail has competitive advantage, (i.e. frequency, journey time, service quality, reliability) that is not being valued in current fares

iv. It is possible to realise the implied potential in presuppositions i) to iii) through changes to fare levels and fare structures

v. If a change were to be implemented the impact on the franchise costs and passenger demand would not negate or nullify the point of increasing the fares

5.21 Further research and analysis was undertaken to establish whether these presuppositions were actually true.

5.22 In general, the findings are that presuppositions iii), iv) and v) are true. There is no conclusive answer to presupposition ii). However, for presupposition i) there is some evidence that it is false but it is not conclusive. Given these findings a second set of analyses of fares increases were undertaken.

Franchise-wide fare increases

5.23 The aim was to establish to what extent presupposition four holds true given the application of the standard rail passenger forecasting handbook (PDFH) approach to the existing Northern market, and the fare and patronage levels and splits across the main ticket types. The key questions to be answered by the analysis included:

- To what extent can the potential of fare increases materially affect franchise subsidy?
- What risks are inherent in the implementation of such changes?
- What are the wider impacts and policy implications?

5.24 The Starting Proposition is that:

- Season tickets are the least elastic - therefore apply a fare increase of 10%
- Full fare tickets are increased by 5%
- Reduced fare tickets are the most elastic - therefore limit fare increase of 2%

5.25 The results of the analysis show:

- Season ticket demand reduces by 6%, revenue increases by 3%
- Full fare ticket demand reduces by 5% (1% down trade to Reduced fare tickets), revenue decreases by 2%
- Reduced fare ticket demand reduces by 2%, revenue increase from base of 1%

5.26 The total impact is that demand reduces by 3%, and overall revenue increases by 1%. One impact of the increase in full fares is to increase the number of passengers using reduced fares – that is, there would be significant down trading.

5.27 The theoretical *optimum* fare increases for Full and Reduced ticket passengers was established using the fares model developed and this concluded that the highest forecast increase in yield is delivered by:

- Increasing Season fares by 10% *and* increasing Reduced fares *and* holding Full fare tickets constant

Conclusion: Franchise-wide fare increases

5.28 Any franchise wide fare increase could have significant (and potentially negative/unacceptable) mode shift and distributional impacts with important implications for transport policy.

5.29 The overall impact of a 10% franchise wide increase in Season and Reduced ticket fares is to:

- Increase revenue by 1.5%
- Decrease overall demand by 5.2% and 'peak' demand by 1.6%`

5.30 Given these findings, it was decided to apply the optimisation model to those routes where it was felt there was maximum potential for generating further additional revenue *over and above* that from the franchise wide increase in fares by increasing fares still further on targeted routes.

Additional Fare Increases on Targeted Routes

5.31 The routes were selected on the basis of a high level analysis of socio economic factors. The key indicators included:

- where rail journey time is significantly better than peak car journey time
- where there is a large 'step change' in fares between stations
- where the Average House Prices in 2004 were extremely high
- areas with a *low* Index of Multiple Deprivation 2004 ranking
- areas with a high proportion of Working Population currently travelling to work by Train (existing market)
- areas with a High level of Car Ownership
- areas with a Proportion of Working Population currently travelling to work by Car (potential market)
- areas of high Population Density

5.32 From this, eight routes or flows were selected. These are:

TABLE 5.1 TARGETED ROUTES FOR FARE INCREASES

Selected Flows
G1 Leeds – Harrogate – York
G2 Manchester – Bramhall – Maccesfield
G3a Manchester – Stockport - Crewe
G3b Manchester – Gatley - Crewe
G4 Carlisle – Hexham – Newcastle
G5 Sheffield – New Mills – Manchester
G6 Middlesborough – Whitby
G7 Leeds – Menston – Ilkley

Conclusions: Additional Fare Increases on Targeted Routes

5.33 In summary, the optimisation analysis suggests that an *additional* increase in season ticket fares of 10% (giving a total of 20%), allied to a 20% increase in full fares and no additional increase in reduced ticket fares beyond the franchise wide increase of 10% would:

- increase revenue by 3%
- reduce demand on the targeted routes by 5.5% (peak demand by around 11%).

Overall Conclusion

5.34 Any franchise wide and/or targeted fare increase ought to be tied in with any improvements in quality of the overall product. Even then, there could still be significant (and potentially negative/unacceptable) outcomes in terms of mode shift and distributional impacts that run counter to the thrust of the governments transport policy. These inputs, outcomes and impacts would require careful consideration and appraisal with the aim of achieving an improvement in overall value for money. All these aspects would need to be taken into account in any decision to change fares and fares policy.

5.35 The overall financial impact of a 10% ***franchise wide*** increase in Season and Reduced ticket fares plus, on the targeted routes, an additional 10% in season tickets and a 20% increase in full fare tickets with no further additional increase to reduced ticket prices is to:

- Increase revenue by 1.8% over current levels
- Decrease overall demand by 5.9%

5.36 Therefore the scale of revenue generation is unlikely to be greater than 2% but there are likely to be important distributional and mode shift impacts arising from the reduction in rail patronage of around 6%. In policy terms this may:

- Reduce any peak crowding on trains at the margin
- Lead to a windfall gain for bus operators
- Increase road traffic and congestion (but mostly during the off-peak period)

- Leave some people unable to afford to travel (with some negative impact on GDP/productivity)

5.37 However, there is evidence of a substantial growth in fare yields for the franchise in recent years. There has been a significant improvement in economic prosperity within the franchise area, but at no greater rate than for the country as a whole, but overall there may be scope for further increasing fares. Selected areas have experienced greater wealth gain and there is, in theory, scope to target higher fare increases in these areas.

5.38 A mix of fare product rises can generate net income gain. Season ticket increases will generate income (although long-term impacts not considered in this analysis). The balance of increase in full fare and reduced product tickets depends in part on average journey length as a determinant of cross-elasticity between products. The convenience of a fully-flexible ticket is a key factor in whether rail fare increases generate or lose revenue.

5.39 There are, however, important constraints to the implementation of such fare increases to consider along with the ability to achieve the forecast revenue increases. The most important constraints include:

- The design of the changes has to be based on a detailed, route specific basis that properly take into account the competitive position and the value of rail.
- To maximise success any change needs to take into account the wider distributional and policy impacts and in particular, any increase in fares ought to be tied in with an improvement in the quality of the product(s).
- Multimodal ticketing complexity – The multi-modal ticket products are not in the direct control of the Franchisee or DfT and in some cases not the PTE. Although the situation is complex, multimodal ticket prices are set by participating bus and rail operators over which Northern Rail has only partial influence.
- Complex and contentious area – any changes will require specific legal advice and can probably only be tested in practice but in any event there will be strong stakeholder reactions to any fare increases. There is also a potential conflict with other Government wider policy objectives such as social inclusion and accessibility – fare increases will reduce rail demand.

Case Study B: Withdrawal in "residual" services

5.40 Case Study B was selected to respond to the perception that there are numerous low frequency/irregular services with poor patronage that could be withdrawn to deliver material improvements in value for money.

5.41 "Residual service" is the phrase used to describe/define services that may provide poor value due to their low frequency, poor scheduling and/or inability to compete with alternative modes. It is not an official term.

5.42 The key aims of Case Study B are to:

- identify whether the withdrawal of residual-type services would improve or optimise the value for money of the franchise; and
- identify the risks and challenges of any potential withdrawal.

5.43 The following services are included in Case Study B on the basis of their low level of services and judgement and experience that they would make appropriate case studies to illustrate key insights – ***not*** *that they should be subject to service withdrawal*:

- Stockport – Stalybridge (1 service per week)
- Sheffield – Cleethorpes (6 services per week, 3 trains in each direction on Saturday only)
- Knottingley – Goole (18 services per week)
- Morpeth – Chathill (24 services per week)
- Lancaster – Heysham Port (20 services per week)
- Helsby – Ellesmere Port (20 services per week)
- York – Sheffield (14 services per week)

5.44 The objective is to establish whether there is a prima facia case for taking forward the *concept* of selected service withdrawals. The analysis is not a full appraisal – it is merely an initial high level assessment of the concept.

5.45 As the analysis is at a 'high level' there is no attempt, for example, to work up detailed train and crew diagramming to 'optimise' layovers etc. The assumed high level service specification assumptions for each service are summarised below:

- Stockport – Stalybridge: One train per week withdrawn, resulting in closure of Denton and Reddish South.
- Sheffield – Cleethorpes: Cleethorpes (SO) - Services withdrawn throughout from Sheffield. In practise may need to run between Sheffield and Retford
- Knottingley – Goole: Goole - Services would be withdrawn east of Knottingley. No attempt was made to optimise/reduce layovers at Knottingley
- Morpeth – Chathill: Chathill - Services would be withdrawn north of Morpeth. No attempt was made to optimise/reduce layovers at Morpeth - might in extremis save a unit
- Lancaster – Heysham Port: Heysham - Services withdrawn throughout from Lancaster. No replacement to Morecambe though in practise this could probably be provided at little extra cost.
- Helsby – Ellesmere Port: Helsby - Services would be withdrawn "south" of Warrington. No attempt was made to optimise/reduce layovers of units at Warrington
- York – Sheffield: Withdrawal of 2 trains per direction per day, resulting in closure of Pontefract Baghill.

5.46 To complete the assessment some key assumptions are made. First, that the loss of Long Term Charge revenue at stations is equivalent to Network Rail costs that would be escaped through closure of stations. Second, that Network Rail reap one-off benefit realised through sale of the station assets. Third, Implementation costs have

been assumed to arise in relation to the closure process, timetable and resource planning and business case development. Fourth, redundancy costs have been assumed to be zero.

5.47 Important specific local issues to consider include, in respect of the Helsby services, that Halton Borough Council and Merseytravel are likely to resist service withdrawal (and any closures) and indeed are supporting the case for reinstatement of Halton Curve (proposed for closure through the WCRM project processes). While the Ellesmere Port – Helsny route has previously been raised as possible extension to Merseyrail electrified route. The Heysham services exist, in policy terms, also to provide additional access to the Isle of Man ferry and, more importantly perhaps, the additional costs of the service are marginal given the requirement to maintain the route for nuclear flask traffic.

Conclusion

5.48 The concept is not worth pursuing. Although there may be some small financial gains these are more than outweighed by the negative economic and wider policy considerations.

Case Study C: Carnforth-Settle Junction

5.49 Case Study C was selected because it provides the opportunity to test the materiality to the Northern Franchise and UK Rail of withdrawal of services *and* the closure of a route to railway traffic. Settle Junction to Carnforth route closure would include the closure of four stations (Giggleswick, Clapham (Yorkshire), Bentham and Wenningnton). Two scenarios are developed :

- (C1) Removal of ALL Leeds/Skipton – Lancaster/Morecambe services Throughout. This equates to 10 services per day and the closure of the four stations.
- (C2) As above, but with the addition of a single peak service operating in the peak direction in both morning and evening peaks between Leeds – Skipton to retain some capacity that would otherwise be lost to/from Leeds. The 0827 Skipton – Leeds and 1652 Leeds – Skipton would be retained. The retention of these two peak services causes an additional unit to be retained over C1 specification, which could be used to operate further services between Leeds and Skipton. The station (and route) closures are as per C1

5.50 The likely level of future renewal expenditure saved is highly dependent on the Route Availability (RA) to which the route is maintained. At present the RA allows steam specials. If this were removed, a significant chunk of the structures renewals and maintenance programme *may* not be needed. Freight is already effectively barred from the route and has not used it for years. Ignoring the major structures expenditure (related to the RA level), there is little planned and committed renewals spend in the next 3 years. However, the rural nature and the topography of the route means there is always risk of unplanned renewals driven by events (e.g. landslips), though there have not been any significant examples, in financial terms, in recent years.

5.51 Should the route be closed, there may be onward stewardship costs for land and structures on the route but these cannot be easily estimated, at this stage, as they will

depend on any deal done on future liabilities with interested parties.

5.52 The assessment of the annual maintenance of the route has relied upon assumptions, for example on a purely track km basis, the route is around 9% of the NR 'North West Rural' routes. Implementation costs allow for the plain lining of the junction should the services be withdrawn and the route closed.

Conclusion

5.53 Closure of this line would be akin to the previous contentious debate about the closure of the Settle & Carlisle line. There would be a similar level of lobbying strength and opposition and there would be a need to address stakeholder concerns. The West Coast Railway's (steam and charter operator) depot at Carnforth end of the route would provide probable justification for compensation claim under Network Change if closure was proposed.

5.54 The Community Rail concept may provide a way forward and while there would be no material impact on maintenance or renewals costs conversion to community rail would (potentially) avoid the expensive implementation costs caused by plain-lining. There may be some possible revenue gain through marketing and local ownership/promotion (e.g. Esk Valley Line 25% revenue increase and Penistone Line 36% increase 2002-2005).

Case Study D: Optimising train services through service synergies

5.55 The first opportunity analysed was that of the range of local and regional services serving York-Hull-Doncaster-Scunthorpe based upon three slightly different 'synergistic' service specifications (In addition, a second alternative was developed but not pursued).

5.56 In addition, a further 28 potential opportunities were 'sifted' through by DfT, Network Rail and Northern Rail, based upon materiality and feasibility criteria. This led to two further opportunities being analysed:

- Wigan to Southport; and
- The Hope Valley.

5.57 These three case studies and the conclusions are discussed in turn below.

York-Hull-Scunthorpe and Doncaster

5.58 This case study was developed to test the materiality of synergies within Northern Rail's own services and between its services and that of other franchises, principally TPE. The detailed service specifications used in the case, that is, which services are replaced and in what form, are just examples of a possible approach. The case study's specification has not been optimised at this stage. The detailed appraisal and execution of any synergies would require a detailed assessment of the train planning, resource and crowding constraints together with optimisation against clear priorities to develop a final robust service specification. For example, this initial analysis assumes that the same rolling stock and drivers are used on one line. This is not the case and therefore any estimated savings are likely to be overstated.

5.59 For this case three specifications are developed (the 3rd is the sum of the previous two):

- D1: Hull orientated synergies
- D2 Scunthorpe orientated synergies
- D3: Impact of both Hull and Scunthorpe synergies

5.60 In summary the Hull orientated synergies (D1) are:

- No station left without a service and those with very low level of service receive no less than now.
- Assumed timings would probably have to be pinned at Doncaster, to preserve existing important opportunities for interchange, therefore later arrivals/earlier departures at Hull.
- Despite insertion of additional stops into existing Doncaster to Hull fast trains, many of which work through onto the Hull to Scarborough line, no retiming of the latter was carried out. It is assumed that the service can stand alone in diagramming terms if necessary (up to 3 units are spare at Hull for much of the day in this scenario).
- Additional stops inserted in "North" Trans-Pennine services are few, but would imply retimings in/out of Hull. At present units have a 65-minute turnround so this change is not unreasonable.
- On York - Hull one service each way retained in each of the morning and evening peaks.
- All York - Selby short workings retained.
- The Northern operated services between Doncaster and Hull via Selby are retained as is the early morning shuttle from Doncaster - Selby and visa versa.
- Local commuter possibilities at Hull and Doncaster are retained.

5.61 In summary the Scunthorpe orientated synergies (D1) are:

- No station left without a service, but Kirk Sandall and Hatfield lose nearly all trains on this service (retaining those to/from Hull).
- Additional stops every hour in "South" TransPennine at Thorne South (alternate hours) and at Crowle and Althorpe (alternately, every 2nd hour).
- No consequential retiming of TPE undertaken, but turnrounds at Cleethorpes are quite long.
- One morning commuter stopping service from Scunthorpe to Doncaster retained - used to cycle the Class 153 set back from the Barton on Humber branch.
- Last round trip at night from Doncaster to Scunthorpe also retained.
- The Sheffield to Doncaster stopping service worked by the Scunthorpe units also assumed to be withdrawn

5.62 For the purposes of this analysis the simplifying assumption has been made that the example specification proposed is feasible in timetabling terms to implement and resource.

5.63 Material constraints will exist in the detailed execution of the proposed synergies, particularly in the Hull orientated specification. For example, finding modified paths

for amended trains will be difficult given interactions at Sheffield, Doncaster and between Gilberdyke and Hull on a route with traditional signalling. Operation onto Wolds Coast introduces further complexity due to its single lines and the existing (optimised) timetable. Cycling of stock to/from Hull and Wolds Coast is only possible via York/Doncaster/Sheffield services (no Northern rights for York-Scarborough route) and the impact of cycling through the service alteration would have to be analysed further.

5.64 There is some risk that detailed assessment of the resourcing of crew and re-timing of services might prevent the realisation of some savings, including the one unit identified in the case study as potentially being released in Hull orientated specification.

5.65 For the Scunthorpe orientated changes the amount of change is less but significant issues remain. The South Humberside line heavily used by freight and route knowledge retention issues may arise with the new service specification. The proposed withdrawal of service between Sheffield and Doncaster is likely to be highly contentious, only leaving an hourly stopping service. Crowding already occurs on the single car Class 153s on this route.

Conclusion

5.66 There is, potentially, a net reduction to Northern Rail's subsidy (franchise support payment) and there would be a windfall to Hull Trains. However, the *net* economic impact (including the financial impacts) would be highly negative.

Southport – Wigan – Manchester

5.67 This route has three of the least used stations in the North West and it is one where one would expect there to be little payback for the ongoing OMR expenditure and investment. Currently there are two trains per hour and two service scenarios are assessed.

5.68 Scenario A would terminate off peak Rochdale – Manchester Victoria – Southport services at Wigan thereby reducing the level of service between Wigan and Southport to an hourly frequency but it does maintain all existing services in the Wigan to Manchester corridors. Additional stops are inserted into Manchester Airport to Southport services to maintain, broadly, the level of service at intermediate stations west of Wigan.

5.69 Scenario B would withdraw all Southport to Manchester Airport services thereby reducing the level of service between Manchester and Southport to an hourly frequency, except in peaks where additional trains run from Manchester Victoria. This scenario reduces the level of service between Wigan – Bolton – Manchester Piccadilly by one service per hour.

Conclusions

5.70 For scenario A there is, potentially, a net reduction to Northern Rail's subsidy (franchise support payment). However, the *net* economic impact (including the financial impacts) would be *negative*.

5.71 For scenario B there is, potentially, a net reduction to Northern Rail's subsidy (franchise support payment). However, the *net* economic impact (including the financial impacts) would be *negative*.

5.72 The rolling stock savings would need to be secured and a detailed review of local demand issues such as school commuting needs to be considered.

Hope Valley (Manchester to Sheffield via Dore)

5.73 The Hope Valley route traverses an area of low population density, and much of the route is in the Peak District National Park. The original scope for synergies was thought to revolve around putting additional stops into the TPE and Central services to allow some or all of the Northern services to be withdrawn. However, this was not acceptable to a range of stakeholders. In particular, the DfT view is that it is of strategic importance to protect TPE's core offer and not dilute or undermine TPE's market proposition by adding in local stops that would lengthen journey times and undermine competitiveness. Therefore more modest synergy specifications were developed.

5.74 The route is used by Freight and the passenger services provide commuter services into both Manchester and Sheffield. Currently, the services are hourly at the Manchester end with a two-hourly service in the middle of the day through to Sheffield. Historically the service has been operated from one end of the route.

5.75 Three scenarios were assessed:

- A: Removes off-peak services from Hope Valley (saves 16 trains per day)
- B: Maintains peak services between Hope Valley and Sheffield but not between Hope Valley and Manchester (saves 16 trains per day) – Manchester - Marple peak commuter services are reduced by one train per hour.
- C: Maintains peak services between Hope Valley and Manchester but not between Hope Valley and Sheffield (saves 14 trains per day) - Sheffield peak commuter services are reduced by one train per hour.

Conclusions

5.76 There is, potentially, a net reduction to Northern Rail's subsidy (franchise support payment). However, the *net* economic impact (including the financial impacts) would be broadly neutral to negative.

5.77 The tourist attraction and high profile of the National Park is likely to increase public concerns over any service changes that reduce access to the Hope Valley stations.

Case Study E: Revised Off-Peak service specification Hyde-Rose Hill-Marple-New Mills

5.78 The aim of this case study was to establish the likely cost savings and revenue losses that might accrue from a significant service withdrawal. Importantly, GMPTE has plans for tram-train services on the Marple line involving track sharing between light and heavy rail vehicles on the heavy rail network and extension of the light rail vehicles onto existing or new LRT lines for city centre access. Therefore, the service

withdrawal would actually undermine the potential market for the future tram-train and for this reason alone GMPTE are very unlikely to support any service withdrawal.

5.79 For the purpose of the assessment, two scenarios were developed which reduced the frequency from three to two trains per hour.

Conclusion

5.80 There is a net potential financial saving but this is more than off set by the *negative* economic benefits.

6. CONCLUSIONS

6.1 The findings of the review are that the Northern Rail franchise is an efficient and well managed operation and that there are no obvious and acceptable 'quick wins' to improving value for money. Northern Rail continues to develop and improve the overall efficiency and value for money of the franchise through well developed and focused initiatives.

6.2 During the review Northern Rail has continued to optimise its fleet diagrams. Initially it was thought that some fleet reductions might be possible without impacting upon service provision and the quality of service (reliability, availability and levels of crowding). Since the December 2005 diagrams were introduced this no longer appears to be the case.

6.3 Three areas of the Northern review have emerged as providing *potential* for optimising the overall value for money of the franchise:

i. Fare increases;
ii. Reduced service specifications;
iii. Re-profiling Network Rail's renewal expenditure across the franchise.

6.4 Initiatives i) and ii) have significant *net negative* economic benefits and would run counter to the thrust of the DfT's transport and wider social and economic policies such as increasing the public transport mode share, reducing road congestion, reducing environmental impacts improving quality and accessibility.

6.5 The general stakeholder acceptance or 'buy-in' to the sort of initiatives assessed – fares increase and selected or targeted service reductions is likely to be very low – not least because of the economic and wider policy implications.

6.6 In addition, there are important implementation risks and transaction costs that could easily wipe out any small financial savings.

Fare Increases

6.7 The significant (optimised) global fare increases plus additional targeted fare increases of around 10% to 20% assessed in the review would only deliver (in the best case assumptions) around £2m to 3m per annum. While this is clearly a significant figure, it would come at the 'cost' of a large *negative* net economic benefit. This reflects the impact of pricing people off the trains to generate additional revenue and runs counter to the government's wider policy objectives and would have major implications for fares policy and transport policy in general.

6.8 Implementation would be both difficult (stakeholder acceptability would be minimal) and complex. Fares structures are highly regulated and radical fare increases would require changes to the several commercial contracts (e.g. multi-modal ticket pricing) and regulatory arrangements ('caps' on fare baskets). In addition, rail's competitiveness is highly inter-dependent with price and attractiveness of other transport modes and this has to be understood at a detailed route/market level to develop a practical and appropriate fare pricing strategy. Any fares increases would

need to be tied in with improvements in quality if the revenue increases were to be captured and stakeholders convinced of the case.

Changes (reductions) in service specifications

6.9 The original concept was to develop synergies with other TOC services (or within Northern) to allow the service specification to be reduced to save costs but with a minimal impact on the market and its access to rail services.

6.10 The analysis of synergies with, for example TPE services, was not pursued for policy reasons (it would undermine the TPE service offer and would not therefore deliver better overall value for money for UK Rail). There are important stakeholder concerns in relation to service synergies – in particular that the "synergy" is actually a service "reduction" by another name.

6.11 A variety of opportunities were assessed to establish the likely potential for improving value for money. Generally, only around £3m per annum improvement could realistically be considered as potentially possible. There remain significant issues of stakeholder acceptance and that the implementation costs could be higher than assumed once a more detailed analysis is undertaken. In particular, there would be a major management challenge to actually capture the potential savings from across a disparate set of 'line items' in the franchisee's business plans and accounts.

Network Rail Renewal expenditure

6.12 The key issue with respect to Network Rail renewal costs is the (lack of) immediate processes for either the franchisee or the DfT to capture any savings made. Network Rail's expenditure is regulated by the ORR and any changes in output are addressed through the regulatory process (the five yearly periodic reviews). There is no direct mechanism for using renewal cost savings made by Network Rail to reduce the subsidy for Northern Rail or any other TOC.

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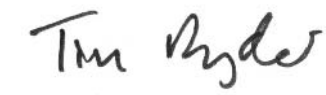
	Sign: 

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